

LOCAL AREA TRAFFIC MANAGEMENT PLAN

ZONE 3 - CLARENCE PARK/ MILLSWOOD (2019)



GREENHILL ROAD

ANZAC HIGHWAY

LEADER STREET

EAST AVENUE

GOODWOOD ROAD

RAILWAY LINE

CROSS ROAD

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1. INTRODUCTION

1.0 Introduction

The City of Unley has been progressively completing a series of local area traffic management (LATM) studies across the City. This latest study includes the area bounded by Greenhill Road, Goodwood Road, Cross Road, Adelaide to Seaford railway line, East Avenue, Leader Street, and Anzac Highway.

The study was completed by Council's City Design team rather than using external consultants. The study was based upon both new and existing traffic data, officer knowledge of the area, and consideration of previous community feedback.

The study focusses on three themes:

- Parking,
- Walking and Cycling, and
- Traffic Management and Safety.

Council undertook a comprehensive engagement program with the local community. It was evident during the first stage of consultation that local residents and businesses generally agree with the issues identified, and a limited number of additional concerns were raised.

Recommendations address the key traffic related issues in a systematic manner while minimising impacts on local residents. However, as is the case with any traffic/parking interventions, there will be some residents/businesses that will be impacted, but will overall result in a positive change to traffic, parking and road safety.

1.1 LATM Prioritisation Study

Local area traffic management (LATM) is the planning and management of road space within a local area. It considers neighbourhood level traffic-related problems, and proposes solutions in context of the local area, rather than in isolation.

In order to establish these 'local areas', the City of Unley was divided into six precincts that are bounded by natural traffic boundaries (e.g. tram/train lines, arterial/collector roads), which are depicted in Figure 1.1. The LATM Prioritisation Study compared these areas based on community concerns received, crash history (safety issues), and traffic data, which informed a relative priority. This LATM is Area 3, which was considered the third highest priority of the six areas.

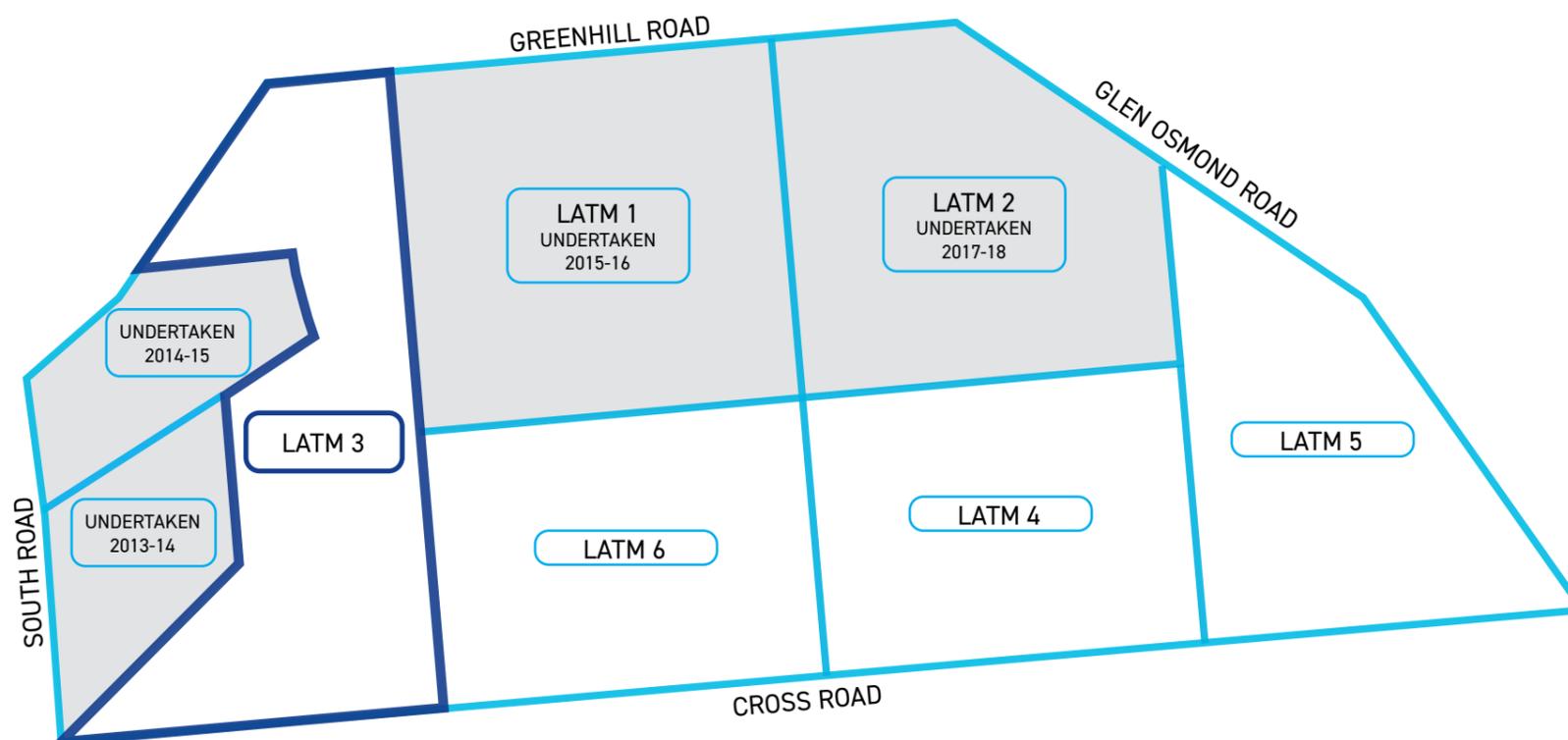


Figure 1.1 Local Area Traffic Management Study Areas, City of Unley

1.2 Strategic Overview

Local area traffic management plays a key role in delivery of the Unley Integrated Transport Strategy, and in turn the City of Unley Community Plan 2033 (refer to Figure 1.2 for the strategic planning hierarchy). Measures resulting from LATM directly support objectives of the following:

Community Plan 2033 and Four Year Delivery Plan 2017-2021

Community Living theme

- Objective 1.5 - Our City is connected and accessible
- Strategy 1.5a Ensure an effective network for all modes of transport.
- Strategy 1.5b Encourage walking and cycling as methods of transport.
- Strategy 1.5d Manage parking across the city to maximise its availability.

Unley Integrated Transport Strategy

Active Transport focus area

- Unley is recognised as a leader in providing connected, efficient and safe active transport choices.
- Active transport options are more utilised by the local community.

Parking focus area

- Unley is recognised for its proactive, innovative, and customer centric approach to parking management.
- Equitable and convenient parking options are delivered throughout the City.

Traffic Management and Road Safety focus area

- Unley is recognised as a leader in road safety and traffic management outcomes.
- Safety is at the core of all of our infrastructure, traffic and transport management initiatives.
- Unley's street and path networks provide effective, safe routes for all users.

1.3 Purpose of a LATM Study

The objective of a LATM study is to create safer and more pleasant streets, by achieving acceptable levels of traffic volume and speed, and improving the general amenity of the area.

These objectives are primarily achieved through influencing driver behaviour, either through physical influence of vehicle operation, or by influencing the driver's perception of what is appropriate behaviour in a street or area.

In order to meet these objectives, a LATM study considers traffic volumes, traffic speeds, crash history, parking, local street connectivity and proximity to main roads, as well as community perceptions to local traffic issues.

The need for LATM arises from:

- An intent to reduce traffic-related problems, including:
 - Traffic safety, leading to measures to control traffic speeds and behaviour,
 - protection or improvement of local amenity focussing on appropriate allocation, design and use of street space.
- Orderly traffic planning and management (i.e. to align with a desired road hierarchy), including:
 - Coping with the pressure of traffic growth,
 - the need to reduce traffic impacts on resident amenity,
 - spill-over from traffic routes – restraints on 'rat-running',
 - direction of traffic to the most appropriate routes,
 - creating conditions for safe and comfortable cycling and walking.
- A desire to improve the community space and sense of place.
- A desire to improve environmental, economic and social outcomes.
- A need for traffic interventions associated with new development.
- The implementation of walking and cycling plans and other policies/ strategies.

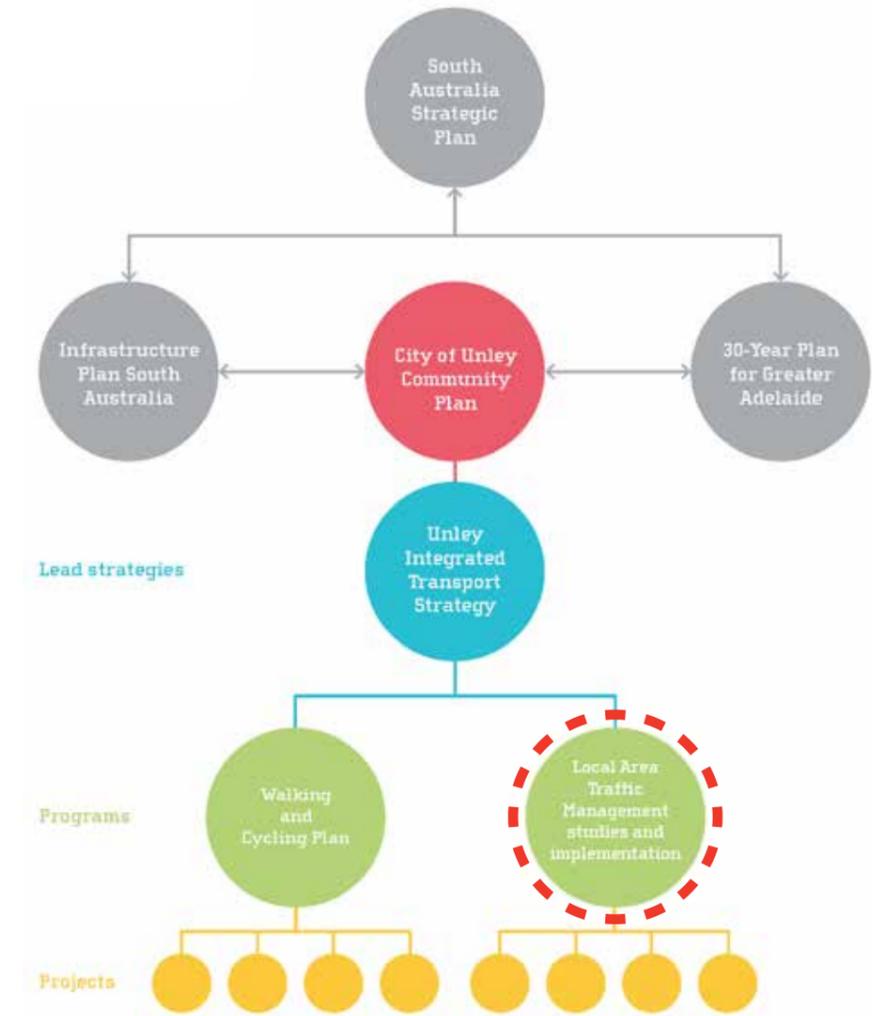


Figure 1.2 Strategic Planning Hierarchy

2. METHODOLOGY

Methodology

The methodology reflects four stages/steps, as detailed below.

1. Historical analysis
2. Early community engagement
3. Draft recommendations
4. Final report

Step 1 – Historical analysis

The approach aimed to 'build on' the historical knowledge of the issues in the area and to identify potential solutions. The process involved analysis of traffic data, crash history, traffic pattern changes, and consideration of community correspondence received from local residents over the last five years.

Following collation of all the necessary data, the analysis was summarised into three (3) key themes:

- Parking,
- Walking and Cycling, and
- Traffic Management and Safety.

Potential projects were developed based on these themes, opportunities with other scheduled projects, and in alignment with Council strategies.

Step 2 – Early community engagement

The issues specific to the above themes, with the associated potential directions, was provided to residents and businesses of the local area as part of the community engagement material. This approach resulted in a more informed early community engagement process. Community engagement was conducted during September 2018 via an online survey and a mail-out enclosing the survey.

A total of 3,609 circulars were mailed out, with 190 formal responses received. It was evident from the community engagement process that the local residents and businesses were enthusiastic to see solutions to the identified issues.

Step 3 – Draft recommendations

The feedback was then analysed, together with the technical findings and site observations, and this guided the final draft set of recommendations.

In response to the three (3) key themes affecting the study area, 18 key recommendations were explained in the draft LATM Plan which was endorsed by Council for consultation in July 2019.

Step 4 – Final report

Following Stage 2 of community feedback on the draft recommendations and a further technical review, a final set of recommendations and report were developed for presentation to Council for endorsement in September 2019.

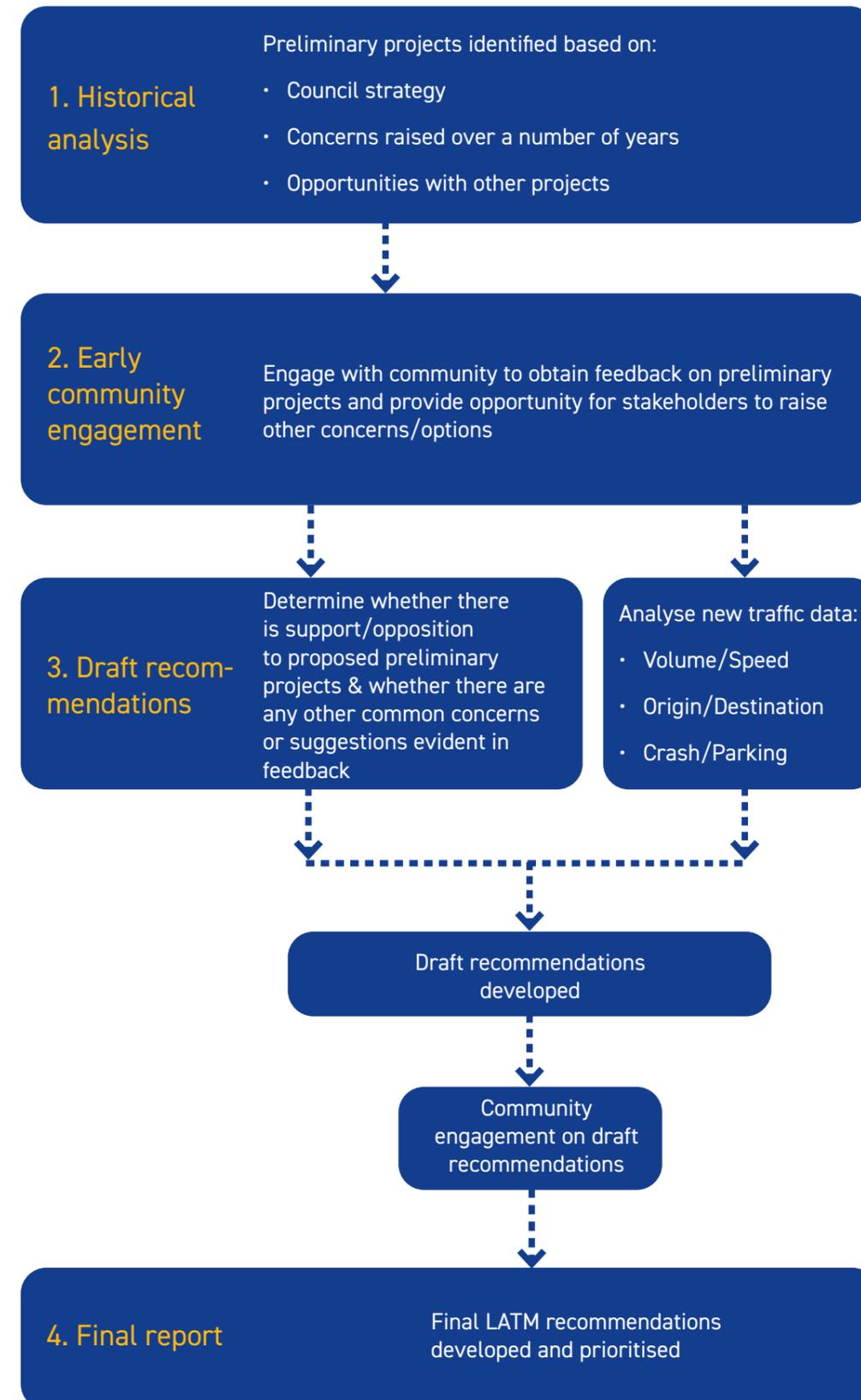


Figure 2.1 Methodology Flow Chart

3. CONTEXT

3.1 TRAFFIC NETWORK

With only 600m separating the Adelaide CBD and the northern extent of the City of Unley, a heavy transport demand passes through the area. The City also generates many local intra-city trips to/from activity centres.

The City of Unley traffic network consequently includes primary and secondary arterial roads for use by north-south through traffic, and major collector roads for use by through traffic and non-local traffic with their destination in the City of Unley. The remainder of the network consist of 'local crossing collector' roads providing locals access to/from higher order roads, as well as residential streets.

The residential areas can be separated into eight distinct traffic zones by arterial roads, collector roads, and railway lines ('interrelated traffic areas' in figure 3.1). In terms of traffic movement through the area, to an extent these zones may be considered separately as changes in one are unlikely to affect another.

The majority of north-south traffic travelling through the area use Goodwood Road (30000vpd), and then to a lesser extent use East Avenue/ Leah Street (6-9000vpd) followed by Leader Street.

Delays are often experienced on these roads during peak times, mainly due to traffic signals at the tram crossing on Goodwood Road, train and tram crossings on East Avenue, and Goodwood Road/Cross Road intersection. This can lead to motorists using other streets to travel through the area.

It is desirable for north-south non-local traffic to utilise South Road/Anzac Highway or Goodwood Road to travel through the area, and to a lesser extent East Avenue/Leah Street. It is desirable for non-local east-west traffic to utilise Cross Road and Greenhill Road to travel through the area, and to a lesser extent Leader Street. However it is acceptable for local traffic to use 'local crossing collector' roads, including Victoria Street and

Legend

- █ Primary arterial road
- █ Secondary arterial road
- █ Major collector road
- █ Local crossing collector road
- ▤ Railway/Tram line
- Interrelated traffic area
- Bicycle route

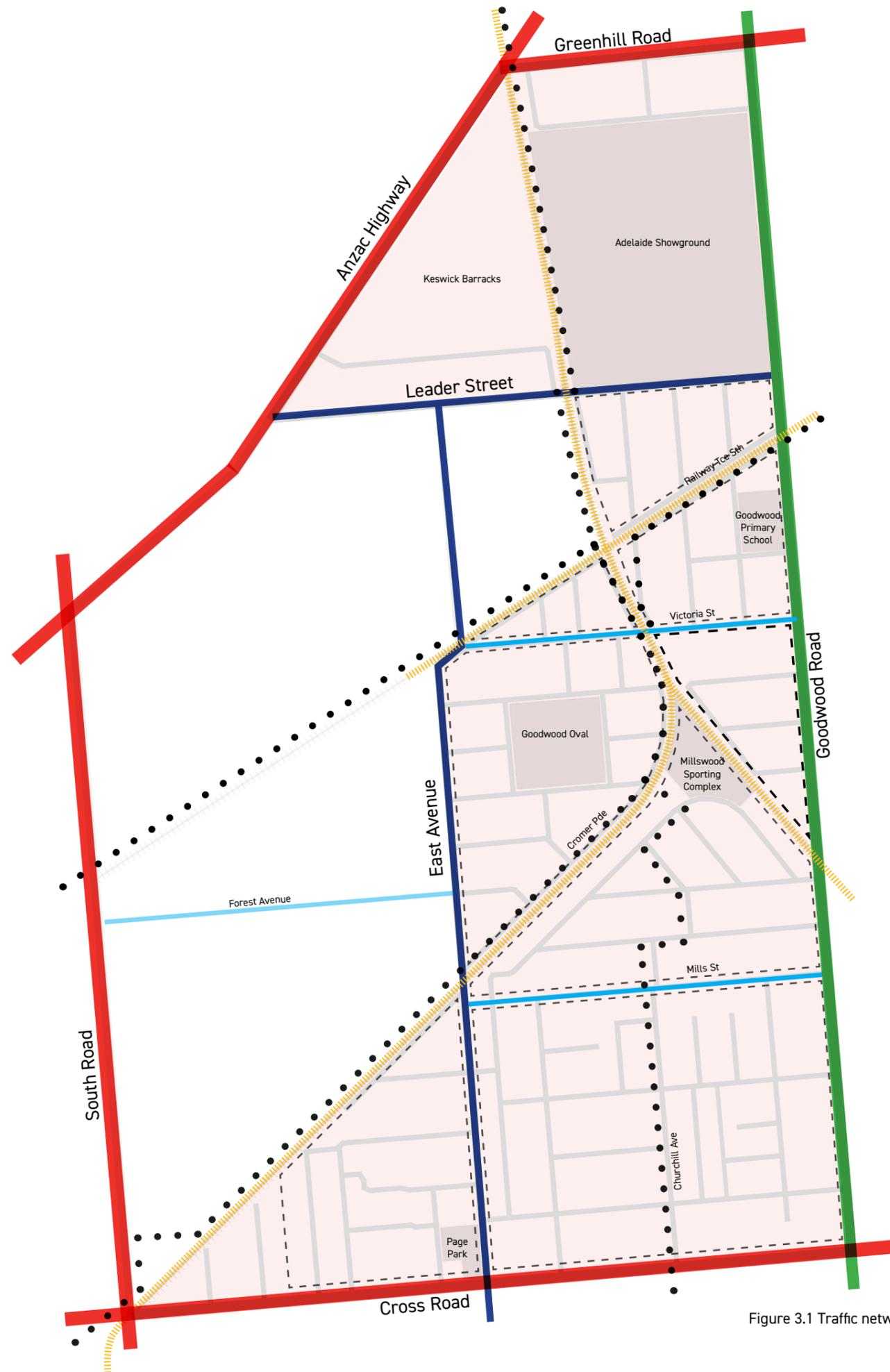


Figure 3.1 Traffic network

3.2 LAND USE

The LATM area consists predominantly of residential suburbs with commercial businesses primarily concentrated along Goodwood Road and north of Leader Street.

Commercial businesses (indicated by darker blue shading) along Goodwood Road are primarily restaurants, shops, as well as consulting rooms and office to a lesser extent. Greenhill Road businesses are offices, whereas those on Maple Avenue and Leader Street are generally light industry.

Several institutional entities are present in the area, including the Keswick Barracks and the Adelaide Showground. The Adelaide Showground generates traffic and parking demand during frequent events held generally on weekends.

Several major developments have been proposed or are expected in the coming years. These developments will have implications on parking and traffic in the local area. These include:

- Arcadian residential development on Anzac Highway
- Kaufland supermarket development at Anzac Highway/Leader Street

A future residential development is anticipated on Leader Street in the next five years as well as generally within mixed use, neighbourhood centre, and urban corridor zones.

Legend

- Commercial
- Institutional
- Recreational



Figure 3.2 Land use

4. TRAFFIC DATA

4.1 WARRANTS

When using traffic data to aid decision making, there is ideally an agreed level or condition where action is warranted (i.e. traffic volume over a certain value). Establishing when LATM action is necessary or desirable is often based on objective measures of relative need, usually referring to traffic speeds, traffic volumes, or crash rates, called 'Warrants'.

There is no agreed or formally-adopted statement of conditions in Australian Standards or Austroads Guides at which LATM measures must be implemented. These conditions must be determined based on the individual circumstances and with professional judgement of traffic engineering practitioners, and expectations of the community. Austroads Guide to Traffic Management Part 8: 'Local Area Traffic Management' suggests that the categories set out in Table 4.1 should be adopted.

Warrants for the City of Unley

Warrants for the City of Unley are based on objective measures and community perceptions. Objective measures include, for example, the traffic volume that could cause delays at intersections, speeds at which it is difficult for pedestrians to cross a road, or speeds where it is potentially unsafe for bicycles and motor vehicles to share the road.

An understanding of community perceptions is developed through interactions with the community in the LATM 3 area, and through other LATM's in the City of Unley, to determine what is perceived as appropriate. There is often a threshold where residents start to consider traffic a problem.

However, the role and function of a street must also be considered as well as traffic generators on the street or in the area. For example, a street adjacent a school may have a high percentage of traffic during the peak morning or afternoon period, or a street may be classified as a local crossing collector. This may not be considered acceptable for residents, but may not be a technical problem if it is aligned with the role of the street.

Table 4.2 sets out the general warrants applicable for the City of Unley for 40km/h residential streets. Analysis of daily traffic volumes, 85th percentile speeds, and peak volumes through the LATM area support these values.

Problem level and likely response	Technical Criteria	Response/Action
Substantial problem (a deficiency)	Above the problem warrant level or threshold, i.e. fails the deficiency standard	The problem is significant enough to be included on a funded treatment program, in order of funding priorities
Acknowledged technical problem	Satisfies the deficiency standard but fails the desirable planning standard	Acknowledged problem justifying investigation, but not sufficient to attract funding in the short-term. Alternative (non-LATM) low-cost approach may be considered
Possible technical problem	Achieves the planning standard but conditions are perceived to be above tolerance levels for some in the community	There may be a problem, but not so serious as to attract funding, even in the longer-term. Alternative (non-LATM) low-cost approach may be considered

Table 4.1 Problem categories

Applicable in local residential streets only	Daily Traffic Volume	85th percentile speed (40km/h streets)	% of daily traffic in peak AM and PM	Casualty crashes in 5 year period	Action
Substantial problem (Deficiency Standard)	> 3000	>/= 50	> 20	3+	Further investigation required
Acknowledged technical problem (Planning Standard)	> 2000	48-49	17-20	3+	
Possible technical problem	> 1500	46-47	14-16	3+	
No agreed problem	< 1500	</= 45	< 13	< 3	No investigation required

Table 4.2 Traffic warrants for the City of Unley

Definitions

Daily traffic volume

Total number of vehicles recorded travelling past a particular point in a road over a 24 hour period. Ideally an average of weekdays across an entire year is used. Data provided in this report is an average of two week days, typically a Tuesday and Thursday.

The average daily traffic volume for the area is 501 vehicles per day.

85th percentile speed

Speed at which 85% of vehicles travel at or below under free flowing conditions past a nominated point (AS1742.4) i.e. 15% of vehicles travel at the 85th percentile speed or higher. This provides a measure of the frequency and extent of speeding. This is more useful than a mean (or average) speed as a mean speed is affected by outliers (if several vehicles travel at a very low speed past the measurement point it will impact the average and distort the data).

Free flowing conditions are periods when traffic is not significantly delayed by the volume of vehicles. As roads within the LATM area are free flowing for the majority of the day, the highest 15% of vehicle speeds measured is considered accurate.

The average 85th percentile speed for the area is 40.4km/h (on 40km/h roads only). Although this is above the speed limit, 85th percentile speeds up to 10% over the speed limit is commonly observed and is typically the threshold at which enforcement is possible. It is important to consider this when assessing individual streets/intersection treatments.

Average 85th percentile speed for the area is 40.4km/h.

Percent of daily traffic volume in peak AM and PM hours

The percentage of traffic travelling along a street, in the busiest hour in the AM and PM periods, is used to determine whether the street is used as part of a rat run/short cut. Generally, in a residential street, it is common for up to 15% of the daily traffic volume to use the street in each of these hours. This would consist of residents going to and from their homes, any visitors, and some through traffic accessing other local streets or businesses. This varies depending on the various land uses and residential density. As an example, if a street carried 1000 vehicles per day, approximately 100-150 vehicles would generally use the street in the AM peak hour (8-9am in most cases), and approximately 100-150 vehicles would generally use the street in the PM peak hour (often either 3-4pm, 4-5pm, or 5-6pm).

The percentage of traffic considered appropriate (the 'warrant') is generally based on residents' perceptions. Figure 4.1 indicates that 75% of peak hour volumes (AM or PM) are less than the 14% 'Possible problem' threshold, and most are within the 8.8-15.5% range (one standard deviation). This supports the chosen warrant categories as residents generally perceive traffic as being too high if it is higher than 'normal'.

The data suggest that there are a number of streets with a high percentage of daily traffic in the peak AM or PM, suggesting these streets are used as part of a rat run. Although it should be noted that the peak school drop-off period usually coincides with the peak traffic period in the AM so may be misleading in the vicinity of a school. Streets used for commuter parking can often also result in a high AM or PM peak traffic volume.

Average for the area is 11.7% and 12.2% in the AM and PM respectively.

Casualty crash

A casualty crash consists of an injury or a fatality involving a pedestrian, cyclist, or driver. The Department of Planning, Transport and Infrastructure compile this data from reported crashes to SAPOL and analyse it over the previous five years. A single casualty crash does not necessarily indicate a traffic hazard. If three crashes have occurred, this suggests there could be a pattern. Much higher casualty crash rates occur on arterial roads due to the higher traffic volume and speed. Typically certain crash types are common on arterial roads, such as rear end crashes at intersections and right turn crashes when motorists turn out of side streets. Although turning restrictions or median treatments on DPTI controlled arterial roads could reduce right turn crashes, these issues are under DPTI authority and not within the scope of this LATM.

Property damage only crash

A property damage only (PDO) crash not resulting in a reported injury. This is more common than a casualty crash, particularly in a 40km/h area where modern vehicles protect occupants. It is general practice to assign less weighting to a PDO crash as funds are more effectively spent addressing locations where there has been a casualty. This is due to the higher costs to the community associated with treating injuries or due to fatalities.

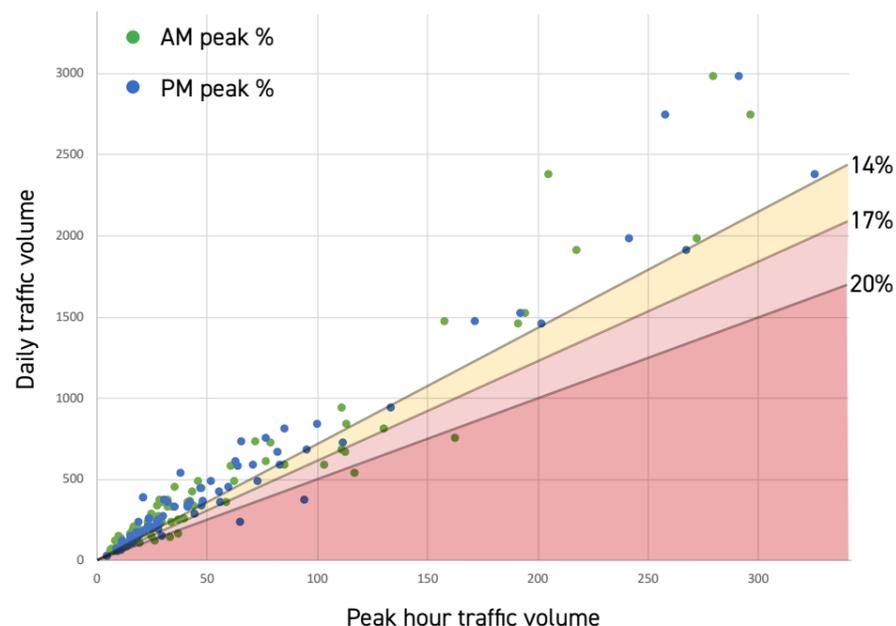


Figure 4.1 Peak period traffic volume

Average Daily Traffic Volume



501 vehicles per day

Average 85th Percentile Speed



40.4 km/h

Average % of Daily Traffic Volume



11.7% AM

12.2% PM

4.2 TRAFFIC SPEED

This shows which streets have a higher than expected 85th percentile speed. Streets highlighted as a 'Possible Problem' or 'Acknowledged Technical Problem' have been identified as having 15% or more of the traffic travelling a significant amount above the speed limit. Full data is available in Appendix A.

Streets to be further investigated

- **Maple Avenue**

53km/h (ranges from 49-56km/h over four days of data) suggesting a 'Substantial Problem'. High speeds, particularly considering 33% of traffic are heavy vehicles. Commercial business land use and therefore speeding is unlikely to affect resident amenity. Future developments occurring on the street which will result in more pedestrians using the street. Difficult to reduce speeds without impacting heavy vehicles. Data will be further analysed to understand when vehicles are speeding.

- **Churchill Avenue**

46km/h. Traffic volume of approx. 850vpd in this section. Part of a bicycle route. Actions to be considered to reduce peak traffic volumes which will likely reduce speeding.

- **Frederick Street**

47km/h. Low traffic volumes (approx. 370 vpd). High peak PM traffic volumes. Actions to be considered to reduce peak traffic volumes which will likely reduce speeding.

Legend

- Substantial Problem (50km/h+)
- Possible Problem (46-47km/h)

Note that there were no 'Acknowledged Technical Problems' (48-49km/h)

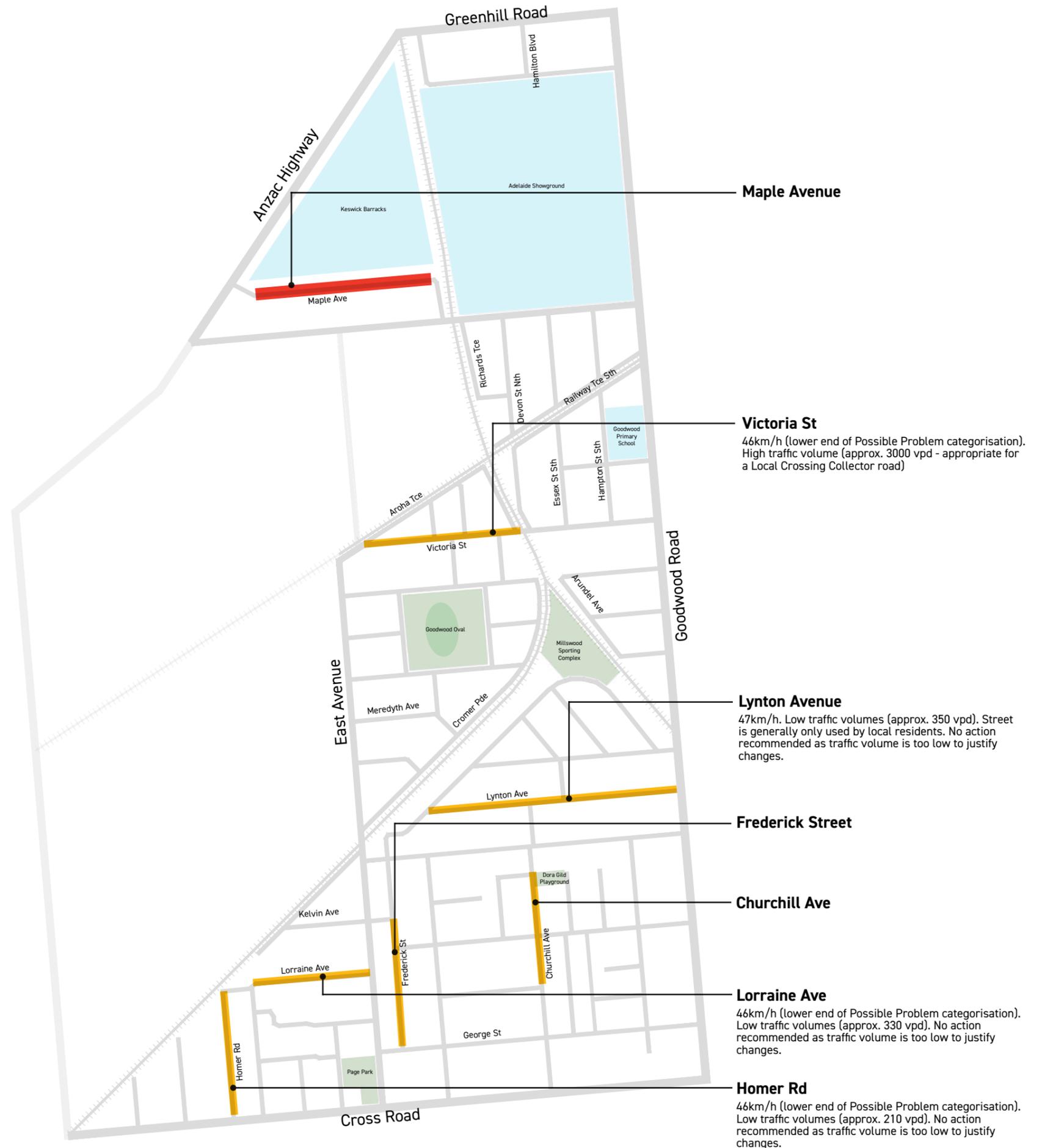


Figure 4.2 Traffic speed data

4.3 DAILY TRAFFIC VOLUME

This shows which streets carry a higher than expected amount of traffic each day. This indicates that generally most streets carry an appropriate amount of traffic. Full data is available in Appendix A.

Streets to be further investigated

- **Churchill Avenue**

Churchill Avenue from Cross Road to George Street is highlighted as a Possible Problem, with a traffic volume of approximately 1529 vehicles per day. This section of the street provides access to the suburb from Cross Road via a left or right turn, and 500 of these vehicles turn to/from George Street. The street is however used as part of an AM and PM short cut through Millswood and recommendations for the overall area (area bounded by East Avenue/Mills Street/Goodwood Road/Cross Road) would reduce this volume.

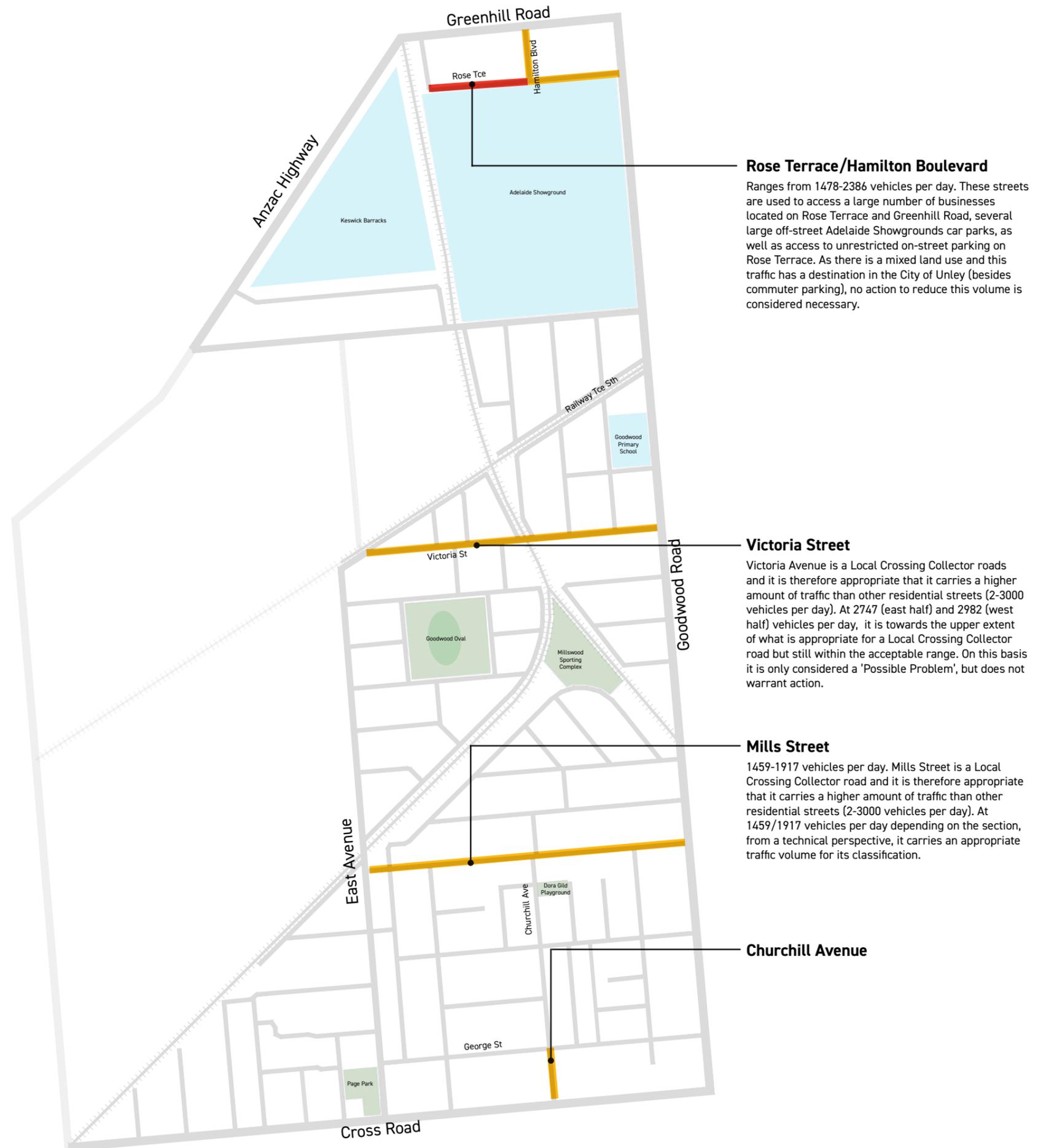


Figure 4.3 Daily traffic volume data

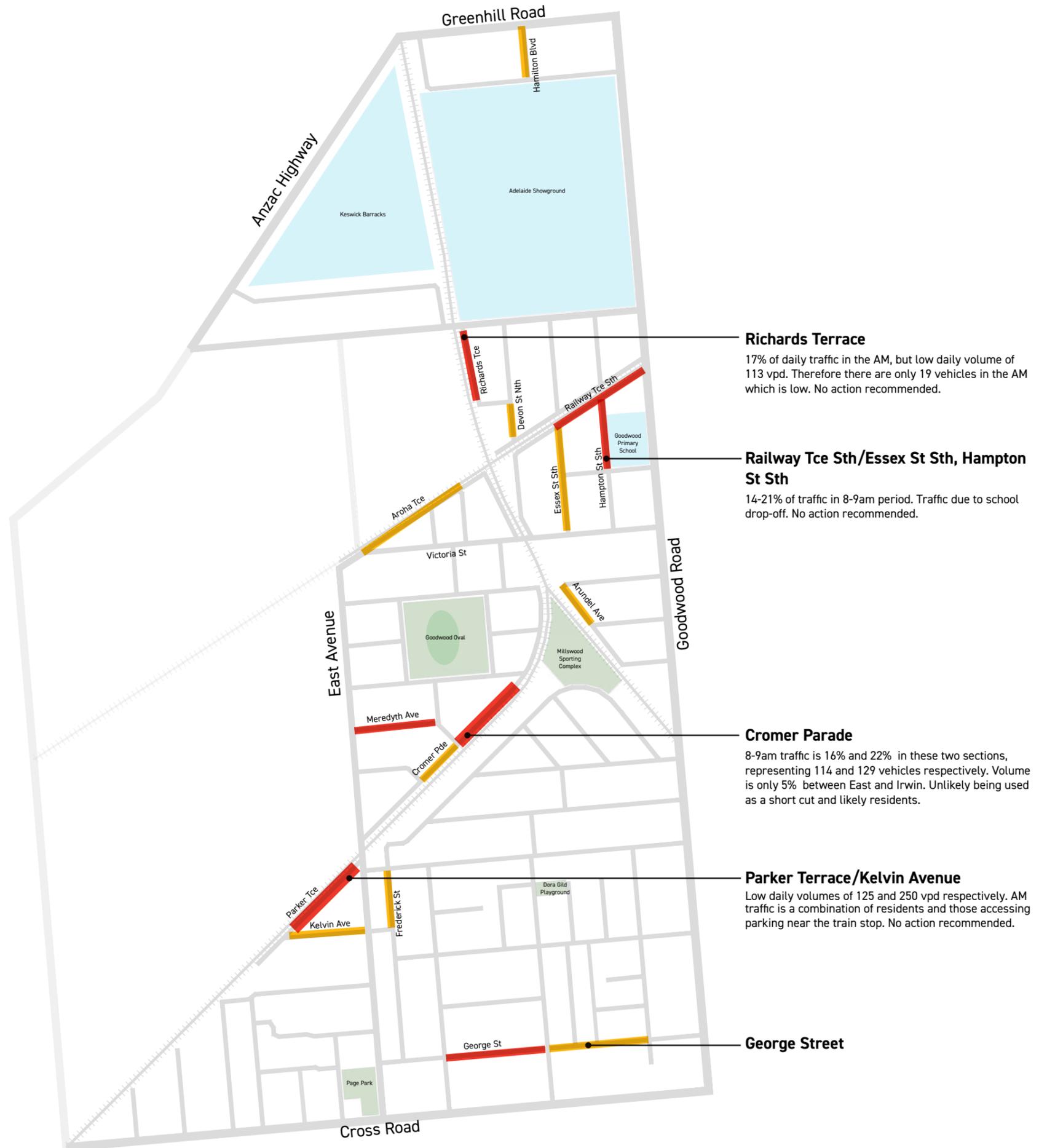
4.4 AM PEAK PERIOD VOLUME

This shows which streets carry a higher than expected amount of traffic during the particular street's peak one hour in the AM. Although this varies from street to street, it is generally 8-9pm. As an example, Aroha Terrace, which is highlighted in yellow, carries 16% of its daily traffic during the 8-9am period, hence the 'Possible Problem' classification. Full data is available in Appendix A.

Streets to be further investigated

- George Street**

16-17% of traffic in 8-9am period. Suggests rat running from Cross Road to Goodwood Road.



Richards Terrace
17% of daily traffic in the AM, but low daily volume of 113 vpd. Therefore there are only 19 vehicles in the AM which is low. No action recommended.

Railway Tce Sth/Essex St Sth, Hampton St Sth
14-21% of traffic in 8-9am period. Traffic due to school drop-off. No action recommended.

Cromer Parade
8-9am traffic is 16% and 22% in these two sections, representing 114 and 129 vehicles respectively. Volume is only 5% between East and Irwin. Unlikely being used as a short cut and likely residents.

Parker Terrace/Kelvin Avenue
Low daily volumes of 125 and 250 vpd respectively. AM traffic is a combination of residents and those accessing parking near the train stop. No action recommended.

George Street

Legend

- Substantial Problem (20%+)
- Acknowledged Technical Problem (17-20%)
- Possible Problem (14-16%)

Figure 4.4 AM peak period traffic volume data

4.5 PM PEAK PERIOD VOLUME

This shows which streets carry a higher than expected amount of traffic during the particular street's peak one hour in the PM. Although this varies from street to street, it is generally 5-6pm (often 3-4pm near a school). As an example, Rose Terrace, which is highlighted in yellow, carries 14% of its daily traffic during the 5-6pm period, hence the 'Possible Problem' classification. Full data is available in Appendix A.

Streets to be further investigated

- **Area bounded by Mills St/East Ave/Cross Rd/Goodwood Rd**

High PM peak traffic volumes in seven streets. This suggests that rat-running is occurring throughout the area in general and that it is spread across a number of streets. Any traffic management measures must be in the form of an area-wide solution.

Legend

- Substantial Problem (20%+)
- Acknowledged Technical Problem (17-20%)
- Possible Problem (14-16%)



Figure 4.5 PM peak period traffic volume data

4.6 ORIGIN + DESTINATION DATA

Origin-destination data involves matching vehicles (using number plate recognition) at various intersections within a road network to understand the routes they take. This can help quantify and understand rat-running through the area. Stations are chosen at likely locations where vehicles enter and exit the area. If they are matched, it suggests that they are taking a short cut through the area. This is generally undesirable when the volume of motorists rat-running is significant and congests the area and impacts resident amenity. Surveys were undertaken during the 7:30-9am and 4-6pm periods on Wednesday 5 December 2018. This data largely supports the AM and PM peak data in sections 4.4 and 4.5, but suggests that the 'Substantial Problem' designation for Frederick Street in the PM is not warranted.

AM PEAK PERIOD: 7:30-9:00AM



FOCUS AREA
WITHIN ZONE 3

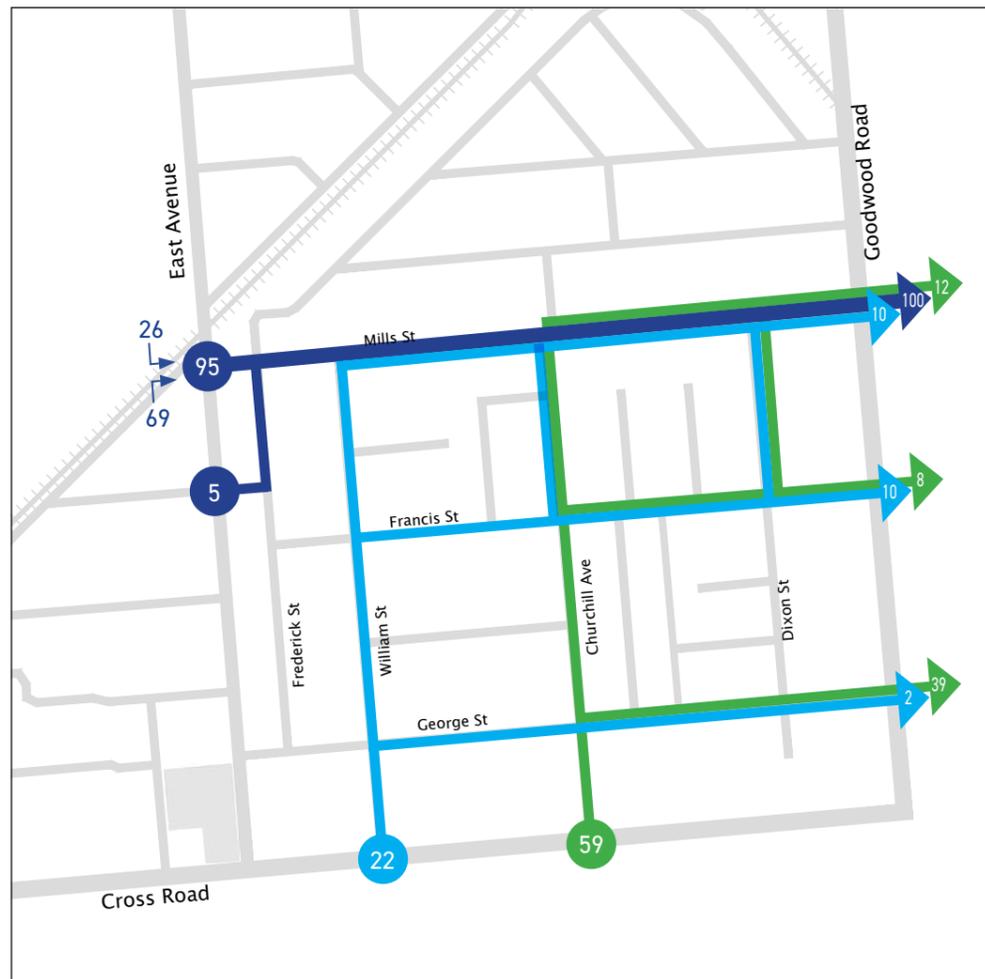


Figure 4.6 AM origin destination data

PM PEAK PERIOD: 4-6:00PM



Figure 4.7 PM origin destination data

4.7 CRASH DATA

Crash data is used to determine whether there are specific deficiencies or hazards in the road network that should be further investigated. Crashes generally occur due to human error and to a greater extent on higher speed and higher volume roads where there are a high number of traffic movements to and from the road. This results in a high number of crashes at signalised intersections. Locations with a high number of crashes on roads under the care and control of the Department of Planning, Transport and Infrastructure are generally out of scope for the LATM.

Crash data includes both 'Casualty' (injury or fatality) crash data and 'Property damage only' data available through the State Government. As mentioned in the Warrants section of the report, generally crashes are considered likely isolated incidents unless there have been three or more crashes at a location in the previous five years (2013-2017 data) to suggest a pattern or increased likelihood of a crash. This suggests that, disregarding those on arterial roads, there are few locations within the LATM area that have experienced a high number of crashes.

Locations to be further investigated

- **Aroha Terrace/East Avenue/Victoria Street intersection**

Eight crashes have occurred in the vicinity of this bend. The crash type varies; three 'Hit fixed object', one 'Hit pedestrian', one 'Hit parked vehicle', one 'Right angle', and one 'Rear end'. Five comments were received from the community about this intersection.

- **George Street/William Street intersection**

Two crashes have occurred at this intersection; one 'Right angle' crash due to an eastbound motorist not stopping at the stop sign, and one 'Right angle' crash due to a westbound motorist not stopping at the stop sign.

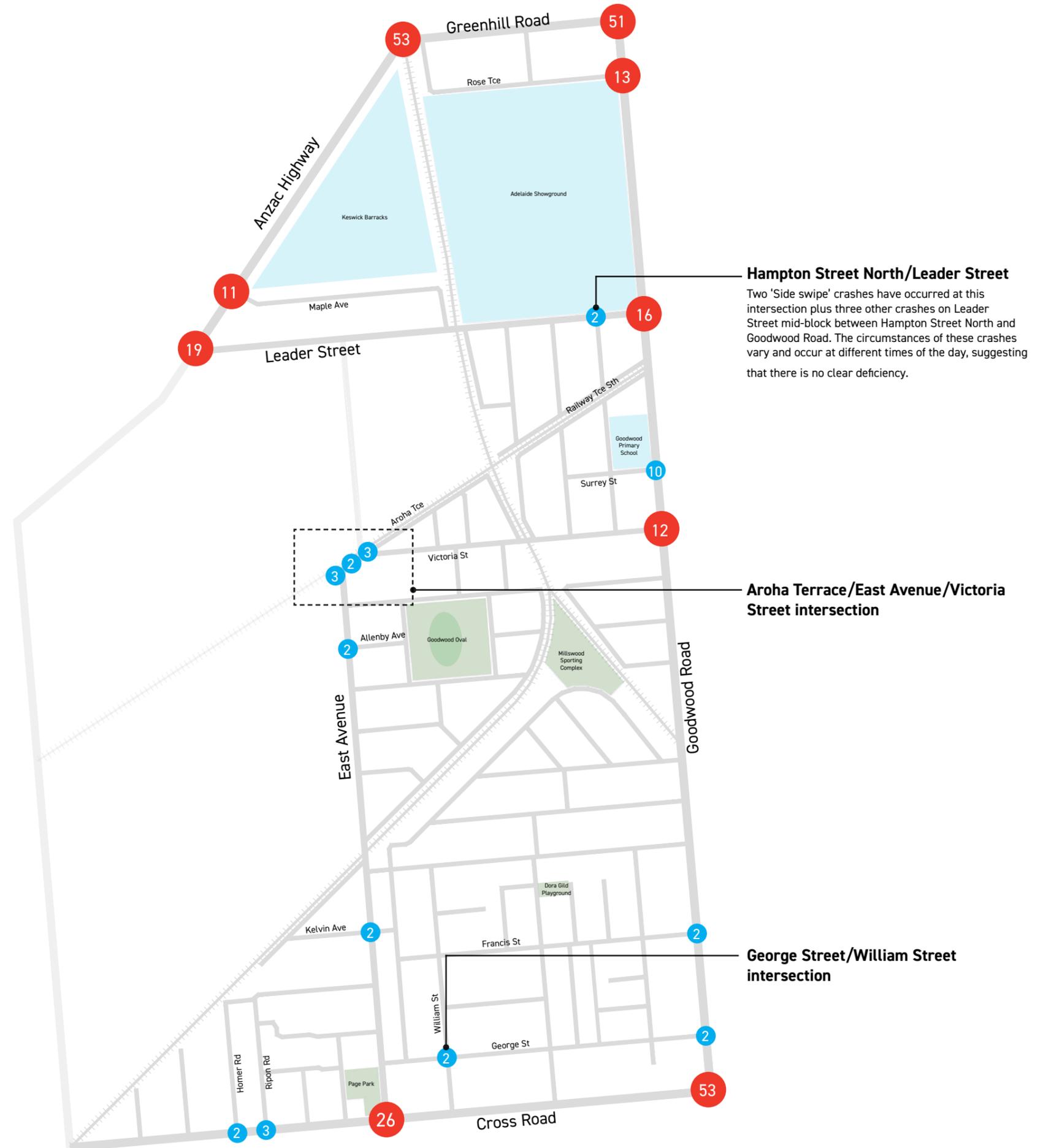


Figure 4.8 2013-17 crash data

Legend

- 10+ Crashes
- 0-10 Crashes

4.8 PARKING DATA

Parking occupancy data was collected on two typical weekdays. Parking is considered a possible problem if a street is 50-70% occupied, and a substantial problem if it is 80% occupied or more.

In general, streets north of Victoria Street have parking controls (typically a 2-4 hour time limit). Several streets still have high parking occupancy despite this, which suggests that the controls should be amended, or there are local parking generators such as businesses or residential properties with insufficient off-street parking.

Streets south of Victoria Street, with the exception of those around Goodwood Oval, generally do not have parking controls. Parking demand is generally low in these streets which suggest that this is operating successfully. There are a few isolated locations where parking demand associated with residents or businesses is resulting in moderate occupancy.

Streets to be further investigated

- **Rose Terrace/Cooke Terrace**

High parking demand due to residents and businesses on Rose Terrace, businesses on Greenhill Road, and those parking and catching the train or walking into the Adelaide CBD.

- **Leader Street**

The northern side is unrestricted from Anzac Highway to Leah Street and is consistently close to 100% occupied. Those parking are likely a combination of Ashford Hospital staff and staff of nearby businesses.

- **Area around Goodwood Oval**

Parking was previously in high demand in this area due to commuters using tram stop 4 (near East Ave/Victoria intersection). This was addressed as a separate project in October 2018.

Concern exists over parking during times of peak Goodwood Oval use. Data suggests that occupancy is high during these times generally within 200m of the oval. Disabled parking on Fairfax Avenue is also not DDA compliant.

- **Langdon Avenue**

Parking demand is associated with a cafe on the East Avenue/Langdon Avenue intersection. Only a 100m section is affected and there is still parking available. This parking was highlighted as a concern by respondents but predominantly due to congestion as they enter the street and when turning on to East Avenue.

Legend

- █ Acknowledged Technical Problem (80–100%)
- █ Possible Problem (50–80%)

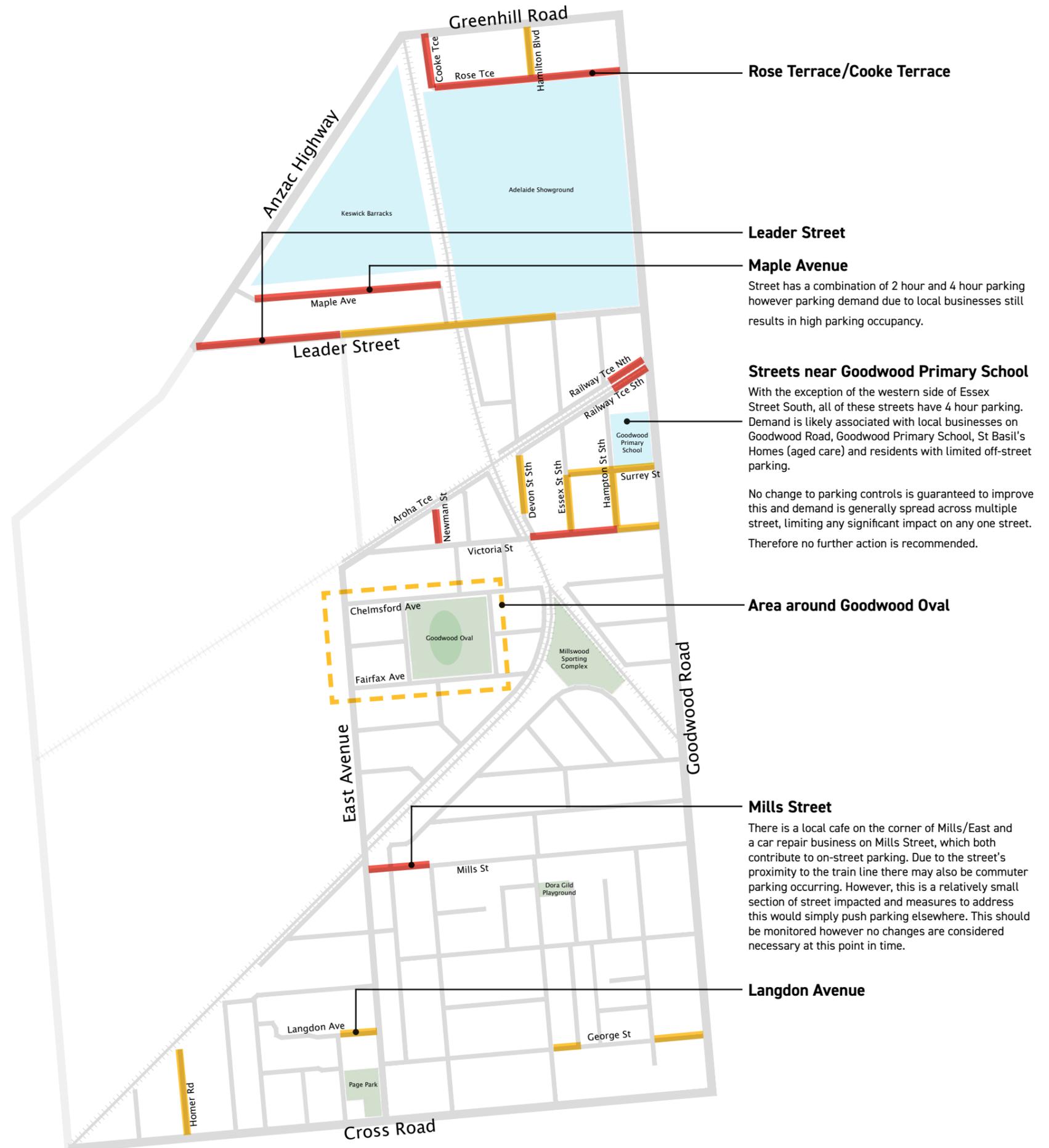


Figure 4.9 Parking data

5. COMMUNITY ENGAGEMENT

5.1 STAGE 1

Stage 1 of community engagement was conducted during September 2018 via an online survey and a mail-out enclosing the survey.

3609 letters were sent, including a feedback form (Figure 5.1), to all residents, businesses, and property owners in the Clarence Park/Millswood Zone 3 area. 190 completed surveys forms were received from the community (including 62 online and 128 hard copy).

Feedback was directed through two questions to focus on:

1. Potential Projects and Community Concerns map:

Specific feedback was sought on a map showing 18 potential projects or community concerns (Figure 5.2). Potential projects were developed during the 'Historical analysis' stage of the LATM (refer to page 5 for additional details)

2. General feedback on stakeholders' experiences in the area

An opportunity was provided for other general feedback on walking/cycling/driving/parking in the area. This allowed stakeholders to raise any issues for investigation or suggest projects for consideration.



FEEDBACK FORM

LOCAL AREA TRAFFIC MANAGEMENT STUDY

1. DO YOU HAVE ANY COMMENTS ON THE POTENTIAL PROJECTS HIGHLIGHTED IN THE ATTACHMENT?

We are seeking your feedback on the LATM study being undertaken in your area, as well as your experiences as a motorist, pedestrian, or cyclist.

Feedback can be provided until **17 SEPTEMBER 2018** and will be considered by Council's Transport and Traffic team & used to determine priority outcomes from the LATM.

PLEASE PROVIDE YOUR CONTACT DETAILS:

Name (optional)

Address

Email (optional)

Would you like to receive LATM updates via email?
 Yes No

Phone number (optional)

Return this form by **17 SEPTEMBER 2018** by using the reply paid envelope provided
OR
 Provide feedback online by visiting the Local Area Traffic Management study online community engagement page at yoursay.unley.sa.gov.au

yoursay.unley.sa.gov.au

Civic Centre 181 Unley Road
 Unley, South Australia 5061
 Postal PO Box 1
 Unley, South Australia 5061
 Telephone: (08) 8372 5111
 Facsimile: (08) 8271 4886
 Email: pobox1@unley.sa.gov.au
 Website: www.unley.sa.gov.au

Figure 5.1 Survey

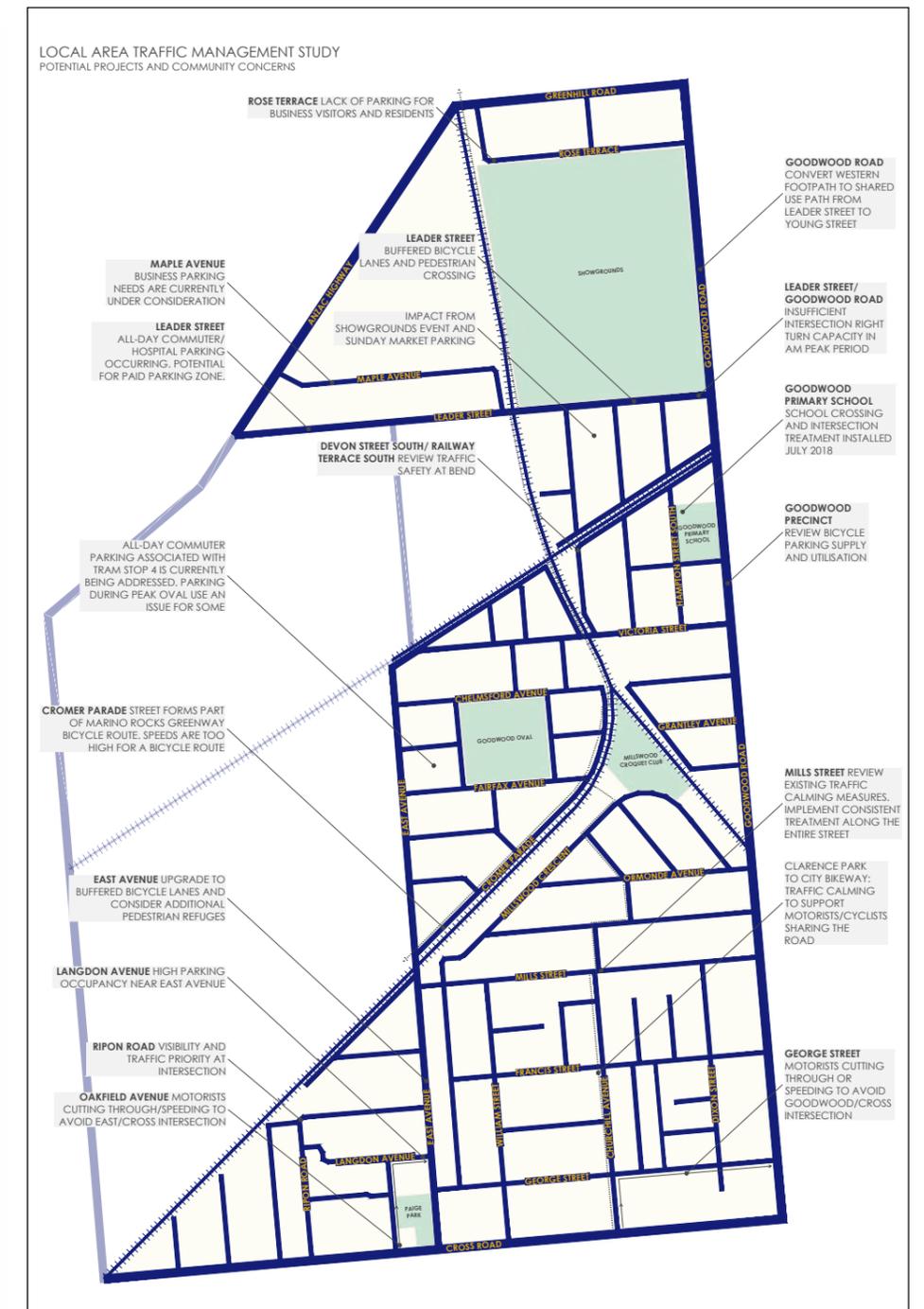


Figure 5.2 Potential Projects and Community Concerns map

5.1.1 Feedback on 'Potential Projects and Community Concerns' map

Feedback was provided in the form of written comments discussing the potential projects/concerns on the 'Potential Projects and Community Concerns' map. Respondents commented only on projects of their choice, with most projects attracting 5-10 comments. In order to analyse the feedback, comments were broken down into those supporting, those neutral, and those not supporting, thus providing the quantitative feedback in Table 5.1 below.

Support for projects on community engagement map	Background/Information provided to residents	Supporting	Neutral	Not supporting	Comment
Mills Street traffic calming	Review existing traffic calming measures. Implement consistent treatment along the entire street.	27	4	5	Includes 20 supporting and 0 non-supporting from Mills Street
Cromer Parade bicycle route	Street forms part of Marino Rocks Greenway bicycle route. Speeds are too high for a bicycle route.	3	8	7	General consensus from cyclists is that interventions are not necessary and they feel safe as it is. Generally local residents consider that, at present, the speed of cyclist may cause a hazard for motorists.
Oakfield Avenue rat-running	Motorists cutting through/speeding to avoid East/Cross intersection.	5	4	2	Mixed support - some believe it is an issue, but residents from Ripon and Homer are concerned over the impact on their streets
Langdon Avenue parking	High parking occupancy near East Avenue.	9	0	1	Supported - however many understand the need to retain parking for the nearby cafe.
East Avenue pedestrian refuge(s)	Consider additional pedestrian refuges.	7	2	1	Supported
George Street rat-running	Motorists cutting through to avoid Goodwood/Cross intersection.	7	2	1	Supported
Leader Street pedestrian refuge	Consider pedestrian refuge adjacent Showground	9	0	0	Supported
Goodwood Road shared path	Convert western footpath to shared use path from Leader Street to Young Street	5	1	2	Supported - however there are concerns raised
Churchill Avenue bicycle route	Clarence Park to City Bikeway: Traffic calming to support motorists/cyclists sharing the road	2	3	3	
Goodwood Oval - Parking during peak oval use	All-day commuter parking associated with tram stop 4 is currently being addressed. Parking during peak oval use an issue for some.	4	1	2	
Devon St Sth/Railway Tce Sth 'bend'	Review traffic safety at bend.	4	0	2	
Leader Street buffered bicycle lanes	Upgrade to buffered bicycle lanes from railway to Goodwood Road	4	0	2	
Leader Street paid parking	All-day commuter/hospital parking occurring. Potential for paid parking zone.	1	2	3	
Streets near Showground	Impact from Showground event and Sunday Market parking	5	0	1	Considering the large number of residents directly impacted (approx. 300 properties in LATM 3 area alone), this is a low level of support
Ripon/Homer/Lorraine intersection	Visibility and traffic priority at intersection	5	0	0	Supported
East Avenue buffered bicycle lanes	Upgrade to buffered bicycle lanes from railway to Cross Road	3	0	1	
Rose Terrace parking	Lack of parking for business visitors and residents	3	0	0	
Goodwood precinct bicycle parking	Review bicycle parking supply and utilisation	1	1	0	
Leader/Goodwood intersection	Insufficient intersection right turn capacity in AM peak period	2	0	0	

Table 5.1 Support for projects on community engagement map

5.1.2 General Feedback

Common comments	Number
Support for cycling measures in general	12
Request for parking to removed on Goodwood Road in main retail precinct	9
Specifically stating that they do not support any traffic calming measures	7
Support for potential projects on community engagement map in general	6
East/Aroha/Victoria/Leah intersection - Conflict between traffic, parking and pedestrians	5
Mills Street - Parking congestion at western end	4
Cromer/East Ave intersection - Concerns over conflict between left turning vehicles and cyclists	4
Irwin Avenue - Conflict between parked vehicles and pavement bars	3
Oakley/Victoria intersection - Sight distance concerns	2
Lynton/Spiers intersection - Sight distance concerns	2

Table 5.2 Other projects/concerns consistently raised in general feedback

5.2 STAGE 2

18 draft recommendations were developed based on the 'Historic analysis' step, analysis of traffic data obtained specifically for the purposes of the LATM, and stage 1 of community engagement. Council endorsed the Draft LATM, including these recommendations, for consultation on 24 June 2019.

Stage 2 of community engagement was conducted during July 2019 to obtain feedback on the 18 draft recommendations. The intention was to then adjust these recommendations where necessary based on this feedback, including the community's preference where options were presented, as well as confirm the prioritisation of projects. A summary of the 18 recommendations is included in Appendix B.

Stakeholders were engaged in the following ways:

1. Traditional mail-out to all residents and businesses in the area (Figure 5.6)
2. Unley's 'Yoursay' online engagement platform
3. Information signs at six locations of several key recommendations (Figure 5.4 & Figure 5.5)
4. Community drop-in session on 30 July 2019 (Figure 5.3)

Community response:

- 369 responses were received
 - 212 via Yoursay,
 - 155 via hard-copy survey
- Approximately 70 locals attended the Community Drop-in Session to discuss the project.



Figure 5.4 Community Engagement Signs



Figure 5.3 Community Drop-in Session

Proposed Pedestrian Refuge Your Say

A Local Area Traffic Management study is being undertaken in this area. A potential safety hazard has been identified at this intersection. Pedestrians accessing the tram stop cannot see cars approaching far enough in advance to safely cross.

A pedestrian refuge outside Cherry Darlings Bakehouse is proposed to allow pedestrians to cross in two stages. It has been identified that pedestrians accessing the tram stop have limited view of approaching cars, making crossing unsafe. This will require a loss of three parking spaces. In addition to this, advisory speed signs will be installed in advance of the western bend in the road.

RECOMMENDATION 3
For additional information on the 18 recommendations or to provide feedback go to:
yoursay.unley.sa.gov.au/latm3

The City of Unley
Ph (08) 8372 5111
Pobox1@unley.sa.gov.au
unley.sa.gov.au

THE CITY OF *Unley*

Figure 5.5 Community Engagement Signs

5.2.1 Letters to the Community

Letters were sent, including a feedback form, to all residents, businesses, and property owners in the Clarence Park/Millswood LATM area (approx. 3600 total). Stakeholders that may be directly affected by a particular recommendation, including loss of on-street parking, received a more tailored letter highlighting this to ensure they are provided an opportunity to comment.

The various letters consisted of the following:

Letter 1 - General letter

Letter 2 - Recommendation 4 - Clarence Park Traffic Management (Options)

Letter 3 - Recommendation 11 - Goodwood Oval Parking Controls

Letter 4 - Recommendation 8 - Rose Terrace Paid Parking

Letter 5 - Recommendation 3 - Forestville Tram Stop Pedestrian Refuge

Letter 6 - Recommendation 17 - East Avenue Pedestrian Refuge

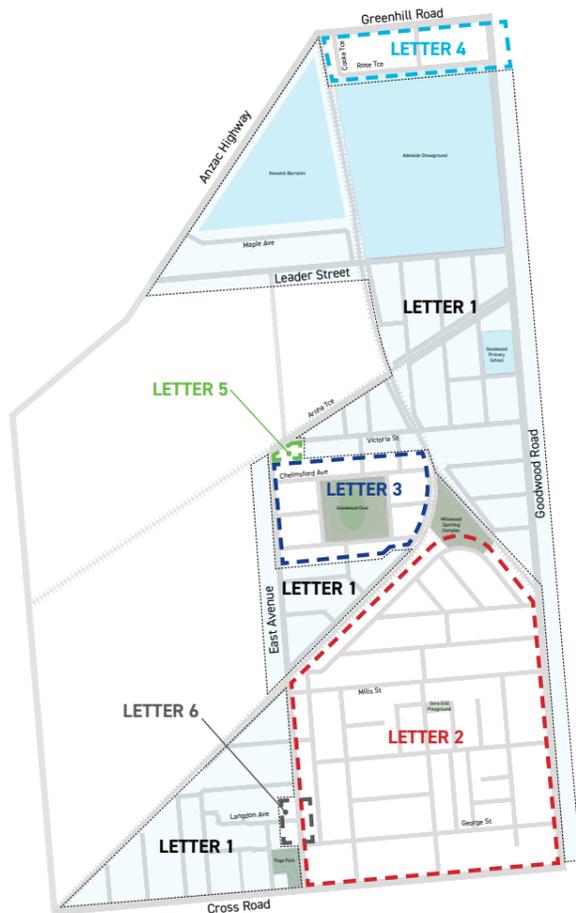


Figure 5.7 Map showing areas corresponding to particular letters

Local Area Traffic Management
Clarence Park/ Millswood

10 July 2019

Dear Resident/Property owner/Business operator,

A Local Area Traffic Management (LATM) study is currently being undertaken in the Clarence Park/Millswood area. You may recall receiving a letter and survey about this in August 2018. Based on your feedback from this survey, as well as further technical analysis, a series of draft recommendations have been developed for the area. We now seek feedback on these recommendations, which will help inform the final projects undertaken over the coming years, and be focused on improving the following key areas:

- Traffic Management and Road Safety
- Parking
- Walking and Cycling

BACKGROUND
LATM is an approach to identify and address traffic issues in a local area. It is a holistic approach that considers an area as a whole, rather than addressing individual streets in isolation. It involves the following steps:

1. Analyse traffic and parking data
2. Obtain general feedback to understand community priorities/issues (Stage 1 of community engagement)
3. Develop draft recommendations
4. Obtain community feedback on draft recommendations (Stage 2 of community engagement)
5. Finalise recommendations and Council endorsement of final projects to be undertaken

RECOMMENDATIONS
Currently we are undertaking step 4 of this process, where we obtain feedback on draft recommendations. Recommendations range from pedestrian crossings/refuges, changes to parking controls, and options to reduce traffic short cutting through residential streets. These recommendations are detailed briefly overleaf. However, we encourage you to view the full study report online at yoursay.unley.sa.gov.au/latm3 (a copy is also available at the Unley Civic Centre) which provides further detail on each recommendation, including a concept plan where applicable.

PROVIDING FEEDBACK
We seek community feedback to understand whether these recommendations are supported. This feedback will help us finalise the recommendations as well as assign a relative priority for implementation.

Options to provide feedback:

- Go to yoursay.unley.sa.gov.au/latm3 to complete an online feedback form by Monday 5 August 2019
- Complete and return the attached feedback form by Monday 5 August 2019
- Attend our Community Drop In Session on Tuesday 30 July, 5-8pm, at the Clarence Park Community Centre, Black Forest Room. Please come any time between 5pm and 8pm to discuss the recommendations with the project team.

For additional information, please contact us by email at pobox1@unley.sa.gov.au, or by phone on 8372 5111.

Yours sincerely
H. Scharberg
Hayden Scharberg
Transport and Traffic Technical Officer

Civic Centre 181 Unley Road
Unley, South Australia 5061
Postal PO Box 1
Unley, South Australia

Telephone (08) 8372 5111
Facsimile (08) 8271 4886
Email pobox1@unley.sa.gov.au
Website www.unley.sa.gov.au

Draft Recommendations

Project	Draft Recommendation	Priority
TRAFFIC MANAGEMENT	1. Maple Avenue - Speed Reduction High speeds identified, however future investigations will be undertaken once adjacent development construction works are complete.	Medium
	2. Railway Tce Sth / Devon St Sth Intersection - Safety Improvements Corner cutting and conflict between cyclists/motorists identified. Pavement bars at the bend, advisory speed signs and a formal bicycle path intersection are proposed.	High
	3. Forestville Tram Stop pedestrian refuge Minimum sight distance for pedestrians not provided. A pedestrian refuge is proposed adjacent the existing tram line crossing, including loss of 3 parking spaces.	High
	4. Clarence Park Rat-Running (options) Mills Street chicanes to be redesigned and existing speed humps to be replaced with an alternate treatment. Four options for area wide treatment to deter rat-running are presented for community comment (see yoursay.unley.sa.gov.au/latm3 for options).	Medium
	5. Churchill Avenue Bicycle Route Speeds are too high for a bicycle route, however Council will continue to monitor local speeds and volumes following implementation of recommendation 4.	Medium
	6. Forestville / Everard Park - Local traffic and parking review Future investigations will be undertaken once all construction works are complete at the adjacent Kauffland Development and nearby Arcadian Development.	Medium
	7. Ripon/Homer/Lorraine Intersection - Change in priority Insufficient sight distance from motorists on Ripon Road turning into Lorraine Ave. Intersection traffic priority be changed so Ripon-Lorraine operates as a bend.	High
PARKING	8. Rose Terrace - Paid Parking To increase parking availability for local businesses in the area, a restructure of parking is proposed, including time limit parking (suitable for residents and business visitors), a paid parking zone (\$4/day), whilst retaining some unrestricted parking.	Medium
	9. Leader Street - Paid Parking Introduction of paid parking along Leader Street proposed (\$4/day). To occur after the major works are undertaken at the adjacent Kauffland development.	Medium
	10. Curzon Avenue - Disabled Parking Improvements to disabled parking will occur on Curzon Avenue as part of the Goodwood Oval grandstand upgrade. The LATM supports this improvement.	High
	11. Goodwood Oval - Parking Controls To improve local traffic flow and access for residents and their visitors during peak use, 1-hour parking is proposed on one side of Chelmsford Ave, Allenby Ave, Fairfax Ave, Argyle Ave. Refer to full study report for a detailed map and days.	Medium
	12. Langdon Avenue / East Avenue intersection To provide additional space at the intersection, parking is to be restricted for the first 20m (additional 10m extension). This will result in a loss of one parking space.	Medium
WALKING & CYCLING	13. Goodwood Road Bicycle Connection Wayfinding and pavement decals to direct cyclists along the footpath to the safe crossing point at Young Street (pedestrian actuated crossing).	Medium
	14. Leader Street Pedestrian Crossing Installation of a wombat crossing (raised zebra crossing with pedestrian priority) on Leader Street west of Devon St Nth. This will result in a loss of 2 parking spaces.	Medium
	15. Leader Street - Buffered bicycle lanes Upgrade bicycle lanes on Leader St (Seaford Railway to Goodwood Rd) to buffered bicycle lanes through line-marked clearance in 'car door' zone for cyclist safety.	Medium
	16. East Avenue - Buffered bicycle lanes Upgrade bicycle lanes on East Avenue (Seaford Railway to Cross Road) to buffered bicycle lanes through line-marked clearance in 'car door' zone for cyclist safety.	Medium
	17. East Avenue Pedestrian Refuge Installation of a pedestrian refuge on East Avenue, south of Langdon Avenue, resulting in the loss of three on-street car parks.	Medium
	18. Goodwood Road Bicycle Parking Additional bicycle parking locations identified within the Goodwood Road retail precinct (Victoria Street to Leader Street).	Low

A4 SIZE VERSION IN APPENDIX B

Figure 5.6 Consultation letter, survey, and map indicating draft recommendations

Feedback Form

**Local Area Traffic Management
Clarence Park/ Millswood**

We seek community feedback to understand whether these recommendations are supported. This feedback will help us finalise the recommendations as well as assign a relative priority for implementation.

**You can complete the online survey at
yoursay.unley.sa.gov.au/latm3**

**Written feedback must be submitted by:
Monday 5 August 2019**

Name

Address

Email (optional)

Phone Number (optional)

How to complete the survey
Rather than providing feedback on every recommendation, you have an opportunity to comment on only those you want to by adding in the applicable recommendation number.

EXAMPLE:
Recommendation 7 Fill in the recommendation number you want to provide feedback on.

I think this recommendation is: Tick the applicable comment

Not important at all
Somewhat unimportant
Neutral
Somewhat important
Very important

Comments: Provide comments to further elaborate
I negotiate this intersection daily and often experience difficulty, I therefore support the proposal.

Recommendation

I think this recommendation is:

Not important at all
Somewhat unimportant
Neutral
Somewhat important
Very important

Comments:

Recommendation

I think this recommendation is:

Not important at all
Somewhat unimportant
Neutral
Somewhat important
Very important

Comments:

Recommendation

I think this recommendation is:

Not important at all
Somewhat unimportant
Neutral
Somewhat important
Very important

Comments:

5.2.2 Summary of Feedback

Draft Recommendation	Description	Very important	Somewhat important	Somewhat unimportant	Not important at all	Written comments	Level of Interest	Response to Community Engagement
1. Maple Avenue - Speed Reduction	High speeds identified, however future investigations will be undertaken once adjacent development construction works are complete.	11	16	3	24	15	Low	Retain
2. Railway Tce Sth / Devon St Sth intersection - Safety Improvements	Corner cutting and conflict between cyclists/motorists identified. Pavement bars at the bend, advisory speed signs and a formal bicycle path intersection are proposed.	27	29	4	18	31	Medium	Change
3. Forestville Tram Stop pedestrian refuge	Minimum sight distance for pedestrians not provided. A pedestrian refuge is proposed adjacent the existing tram line crossing, including loss of 3 parking spaces.	58	28	2	11	58	Medium	Retain
4. Clarence Park Rat-Running (options)	Mills Street chicanes to be redesigned and existing speed humps to be replaced with an alternate treatment. Four options for area wide treatment to deter rat-running are presented for community comment.	117	33	13	56	205	High	Change
5. Churchill Avenue Bicycle Route	Speeds are too high for a bicycle route, however Council will continue to monitor local speeds and volumes following implementation of recommendation 4.	2	17	4	22	44	Medium	Retain
6. Forestville / Everard Park - Local traffic and parking review	Future investigations will be undertaken once all construction works are complete at the adjacent Kaufland Development and nearby Arcadian Development.	6	14	4	12	11	Low	Retain
7. Ripon/Homer/Lorraine intersection - Change in priority	Insufficient sight distance form motorists on Ripon Road turning into Lorraine Ave. Intersection traffic priority be changed so Ripon-Lorraine operates as a bend.	15	20	0	13	21	Low	Retain
8. Rose Terrace - Paid Parking	To increase parking availability for local businesses in the area, a restructure of parking is proposed, including time limit parking (suitable for residents and business visitors), a paid parking zone (\$4/day), whilst retaining some unrestricted parking.	5	8	2	28*	45	Medium	Change
9. Leader Street - Paid Parking	Introduction of paid parking along Leader Street proposed (\$4/day). To occur after the major works are undertaken at the adjacent Kaufland development.	9	10	4	33	29	Medium	Retain
10. Curzon Avenue - Disabled Parking	Improvements to disabled parking will occur on Curzon Avenue as part of the Goodwood Oval grandstand upgrade. The LATM supports this improvement.	24	24	1	9	12	Low	Retain
11. Goodwood Oval - Parking Controls	To improve local traffic flow and access for residents and their visitors during peak oval use, 1-hour parking is proposed on one side of Chelmsford Ave, Allenby Ave, Fairfax Ave, Argyle Ave. Refer to full study report for a detailed map and days.	19	21	3	30	57	Medium	Change

Table 5.3 Feedback Summary

Draft Recommendation	Description	Very important	Somewhat important	Somewhat unimportant	Not important at all	Written comments	Level of Interest	Response to Community Engagement
12. Langdon Avenue / East Avenue intersection	To provide additional space at the intersection, parking is to be restricted for the first 20m (additional 10m extension). This will result in a loss of one parking space.	15	15	1	19	18	Low	Retain
13. Goodwood Road Bicycle Connection	Wayfinding and pavement decals to direct cyclists along the footpath to the safe crossing point at Young Street (pedestrian actuated crossing).	20	22	0	12	22	Low	Retain
14. Leader Street Pedestrian Crossing	Installation of a wombat crossing (raised zebra crossing with pedestrian priority) on Leader Street west of Devon St Nth. This will result in a loss of 2 parking spaces.	25	26	0	14	26	Medium	Retain
15. Leader Street - Buffered bicycle lanes	Upgrade bicycle lanes on Leader St (Seaford Railway to Goodwood Rd) to buffered bicycle lanes through line-marked clearance in 'car door' zone for cyclist safety.	25	19	1	16	25	Medium	Retain
16. East Avenue - Buffered bicycle lanes	Upgrade bicycle lanes on East Avenue (Seaford Railway to Cross Road) to buffered bicycle lanes through line-marking clearance in 'car door' zone for cyclist safety.	27	21	0	23	26	Medium	Retain
17. East Avenue Pedestrian Refuge	Installation of a pedestrian refuge on East Avenue, south of Langdon Avenue, resulting in the loss of three on-street car parks.	31	26	2	22	45	Medium	Retain
18. Goodwood Road Bicycle Parking	Additional bicycle parking locations identified within the Goodwood Road retail precinct (Victoria Street to Leader Street).	15	28	2	12	20	Low	Retain

Table 5.3 Feedback Summary cont.

Level of Interest	
High	>200 responses + comments
Medium	100-200 responses + comments
Low	<100 responses + comments

Response to Community Engagement	
Change	Following community feedback the recommendation is significantly changed
Retain	Following community feedback the recommendation is retained either completely unchanged or with minor changes

5.2.3 Key Changes to Draft Recommendations

Draft Recommendation	Feedback Received	Final Recommendation
2. Railway Terrace South / Devon Street South- Safety Improvements	Concern over increased neighbourhood noise from the installation of particular traffic calming initiatives	Revised centre island design undertaken to avoid the use of perceived 'noisy' elements
4A. Clarence Park Traffic Management (Options)	Overwhelming support for Option 5 - No Change	Change recommendation to support Option 5 - No Changes
4B. Mills Street Traffic Management	Strong support for additional traffic calming, noting diversity of further comment regarding additional streetscape changes, loss of on-street parking and potential for traffic queuing	Confirm recommendation to redesign the placement of new Watts Profile traffic control devices along Mills Street to replace existing infrastructure and better control local speeds, as well as improve the performance and presentation of the two chicanes
8. Rose Terrace - Paid Parking	Resistance to removal of unrestricted parking and introduction of paid parking by local businesses and residents	Restructure the distribution of unrestricted, time limit and paid parking within the precinct
11. Goodwood Oval Parking Controls	Lack of support for further time limit parking on weekends in proximity to Goodwood Oval. Single street support for alternate parking controls along Allenby Avenue.	Amend recommendation to support parking control change for Allenby Avenue only - No Parking, northern side of the street
17. East Avenue Pedestrian Refuge	Review location of pedestrian refuge to avoid conflict between pedestrian access and turning vehicle movements	Additional technical review of refuge positioning to ensure safe setting, and maintaining ease of pedestrian access, confirming the original design for inclusion
19. East Avenue 'Keep Clear'	Vehicle queuing when crossing is down, prevents people with limited mobility to safely cross East Avenue	'Keep Clear' pavement marking to be installed in line with existing median opening and pram ramp crossing point

Table 5.4 Summary of key changes to recommendations

6. RECOMMENDATIONS

Following a technical analysis of traffic data and two stages of community engagement, the following final recommendations have been developed based on the themes of Traffic Management, Parking, and Walking & Cycling. Recommendations have been prioritised based on the criteria in Table 6.2.

	Project	Priority
TRAFFIC MANAGEMENT	1. Maple Avenue - Speed Reduction	Medium
	2. Railway Terrace South / Devon Street South - Safety Improvements	High
	3. Forestville Tram Stop pedestrian access	High
	4A. Clarence Park Traffic Management	N/A
	4B. Mills Street Traffic Management	Medium
	5. Churchill Avenue Bicycle Route	Medium
	6. Forestville / Everard Park - Local traffic and parking review	Medium
PARKING	7. Ripon/Homer/Lorraine intersection - Change in priority	High
	8. Rose Terrace - Paid Parking	Medium
	9. Leader Street - Paid Parking	Medium
	10. Curzon Avenue - Disabled Parking	High
	11. Goodwood Oval - Parking Controls	Medium
WALKING & CYCLING	12. Langdon Avenue / East Avenue intersection	Medium
	13. Goodwood Road Bicycle Connection	Medium
	14. Leader Street Pedestrian Crossing	Medium
	15. Leader Street (Railway to Goodwood Road) - Buffered bicycle lanes	Medium
	16. East Avenue (Railway to Cross Rd) - Buffered bicycle lanes	Medium
	17. East Avenue Pedestrian Refuge	Medium
	18. Goodwood Road Bicycle Parking	Low
	19. East Avenue 'Keep Clear' Pavement Message	Medium

Table 6.1 Final recommendations

Prioritisation definitions

High	Identified safety risk that requires short term action (timeframe 1-2 years)
Medium	Potential safety risk or high level of community support for change (timeframe 3-5 years)
Low	Not a safety risk and only a low-medium level of community support (timeframe 5+ years)

Table 6.2 Prioritisation definitions

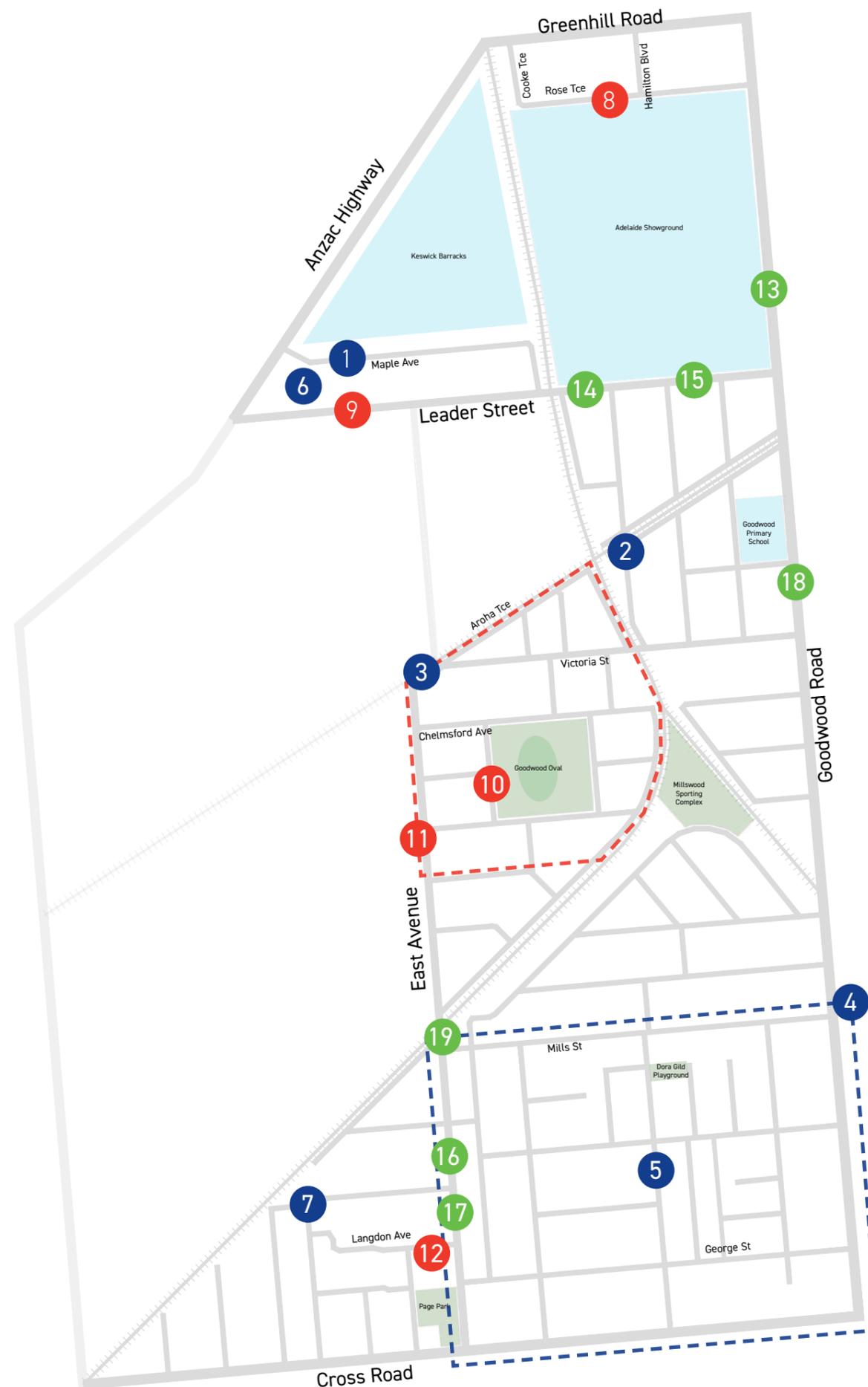


Figure 6.1 Recommendations map

RECOMMENDATION 1

MAPLE AVENUE - SPEED REDUCTION

Background

Traffic data collected over four days shows that motorists exceed the speed limit by a significant amount. Maple Avenue is primarily a commercial and light industrial land use area and thus should be considered differently to a residential street (more from a safety perspective rather than amenity). Note there is a large retail development (Kaufland supermarket) occurring on the street at the Anzac highway end, and potential for a large residential development in the street. This will change the role of the street somewhat and walking and cycling conditions will become important.

Data

Traffic data collected indicated 85th percentile speeds ranging from 49.3km/h to 55.9km/h, including up to 70% of vehicles speeding. 33% of traffic are heavy vehicles (i.e. large commercial vehicles).

Community Engagement

There was generally a low response to this recommendation in Stage 2 of community engagement, likely because there are few residents located in close proximity to this location. Comments that were received were generally positive and community engagement therefore does not warrant changes to the recommendation.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
11	16	3	24	15

Response to community engagement process: Retain recommendation

Details of recommendation

Options to reduce speeds generally involve horizontal (i.e. road narrowing) and vertical (i.e. road hump) displacement. Anticipating the increase in heavy vehicles required for the construction of Kaufland, installation of devices to reduce speeds would present significant disruption and risk damage due to the frequency of heavy vehicles.

Recommendation: Council will continue to monitor local speeds in the street, whilst major redevelopment works are undertaken at the adjacent Kaufland Development. Future investigations will be undertaken once all works are complete (approximately late 2020).

Subject to driver behaviour, further assessment of local speeds will be undertaken, and concept designs developed in response to the local requirements. Concept design would be tested with the local community, in co-ordination with the expectations of the LATM, prior to confirmation of the preferred solution.

"I think you are right to hold off until the development in this area is completed to see what the traffic implications are."

Positives

- Postponing further investigation and implementation of measures will avoid potential disruption and damage due to construction activities.
- Changes to traffic and pedestrian activity in the street due to development will be more accurately reflected in the review.

Negatives

- Speeds will continue to be high until any changes are made.
- There will be a period of time when the Kaufland development has been completed and there are increased pedestrians in the area, but changes are yet to be made.

Estimated cost

\$20-80,000 (Cost estimate to be developed as part of a future concept design at the conclusion of the major developments)

Priority

Medium (subject to redevelopment of adjacent sites)

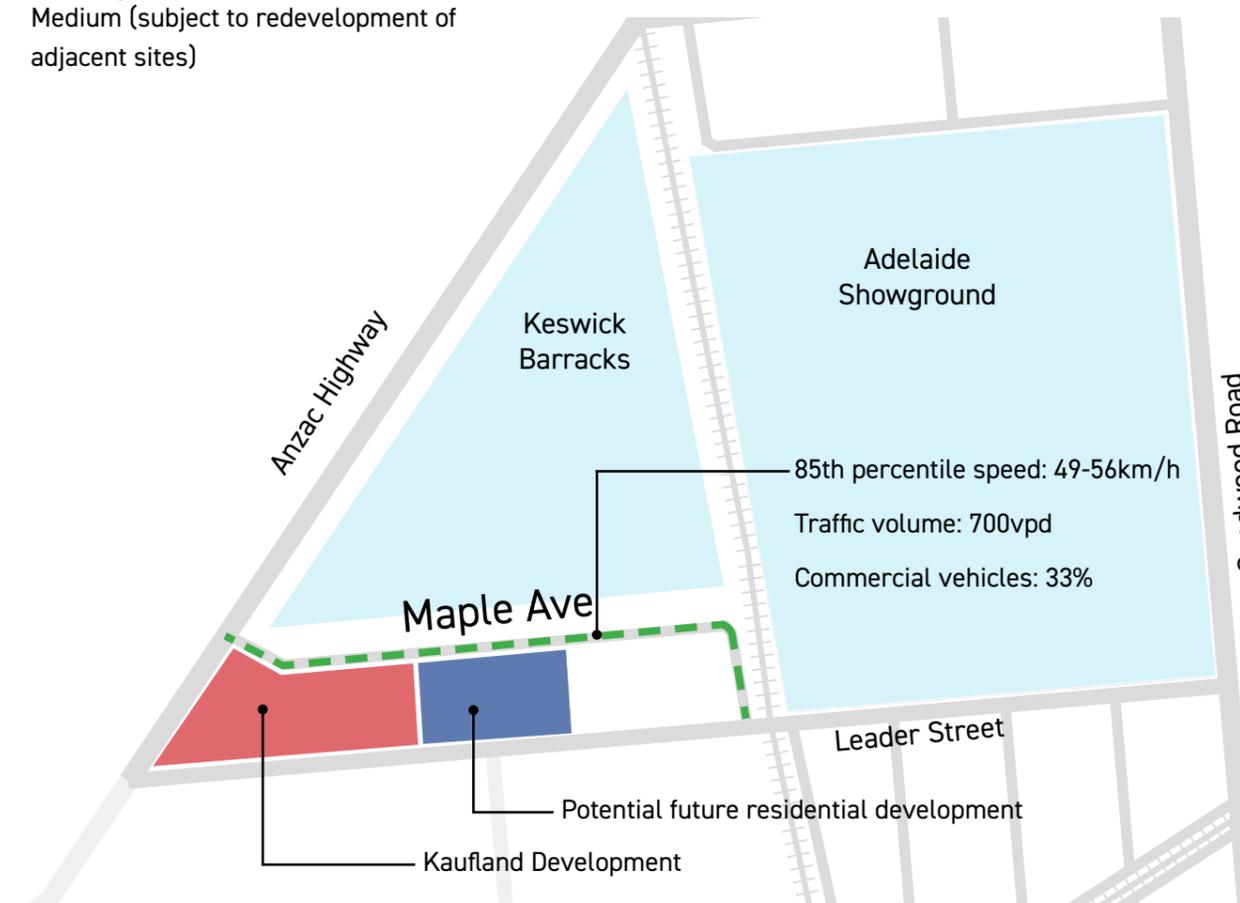


Figure 6.2 Maple Avenue context map

RECOMMENDATION 2

DEVON ST SOUTH/RAILWAY TCE SOUTH 'BEND'

Background

Devon Street South and Railway Terrace South in Goodwood meet at a bend. This bend has a spoon drain through its centre which helps to reduce traffic speeds, however anecdotally north/eastbound motorists cut the bend. A walking/cycling link under the tram tracks is accessed from the northern side of the bend. Devon Street South and Railway Terrace South also form part of the Mike Turtur Bikeway. Measures would be focused on ensuring vehicles do not cut the bend, and that the walking/cycling link is formalised where it intersects with the street.

Data

Traffic volumes at the bend are estimated to be in the vicinity of 250 vehicles per day (Devon Street South traffic volume), which is low. It is estimated that approximately 500 cyclists negotiate the bend per day (346 in 2015). No data has been collected for the pedestrian/cyclist underpass. No crashes have occurred at the location.

Community Engagement

Stage 2 of community engagement highlighted that changes are strongly supported by local users of the intersection, however pavement bars were not universally supported, particularly by residents in the direct vicinity of the intersection.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
11	16	3	24	15

"I strongly support this proposal in the interest of safety."

Details of recommendation

Improvements focus on reducing traffic speeds at the bend, ensuring that motorists do not cut the corner, as well as ensuring cyclists take adequate caution when entering the road from the underpass.

Recommendation:

- **Width of traffic lanes to be reduced at bend through central painted median and painted islands on Devon Street South.**
- **Relocate the pedestrian/cyclist path intersection with the road to ensure south-westbound cyclists turning right on to the path have visibility to northbound motorists**
- **'Green' bicycle lane on the approach to the pedestrian/cyclist path intersection**
- **Consider advisory speed signs (decision whether to install depends on the result of a standard test using a 'ball bank indicator' device)**

Additional long-term recommendation:

- **Propose additional pedestrian/cyclist crossing location clear of bend to Department of Planning, Transport and Infrastructure (land part of DPTI tram corridor)**

Positives

- Will reduce corner cutting and slow speeds
- Will help ensure pedestrians/cyclists entering the road or crossing the road at the bend take the required level of caution and have better visibility

Negatives

- Nil

Cost Estimate

\$8000

Priority

High

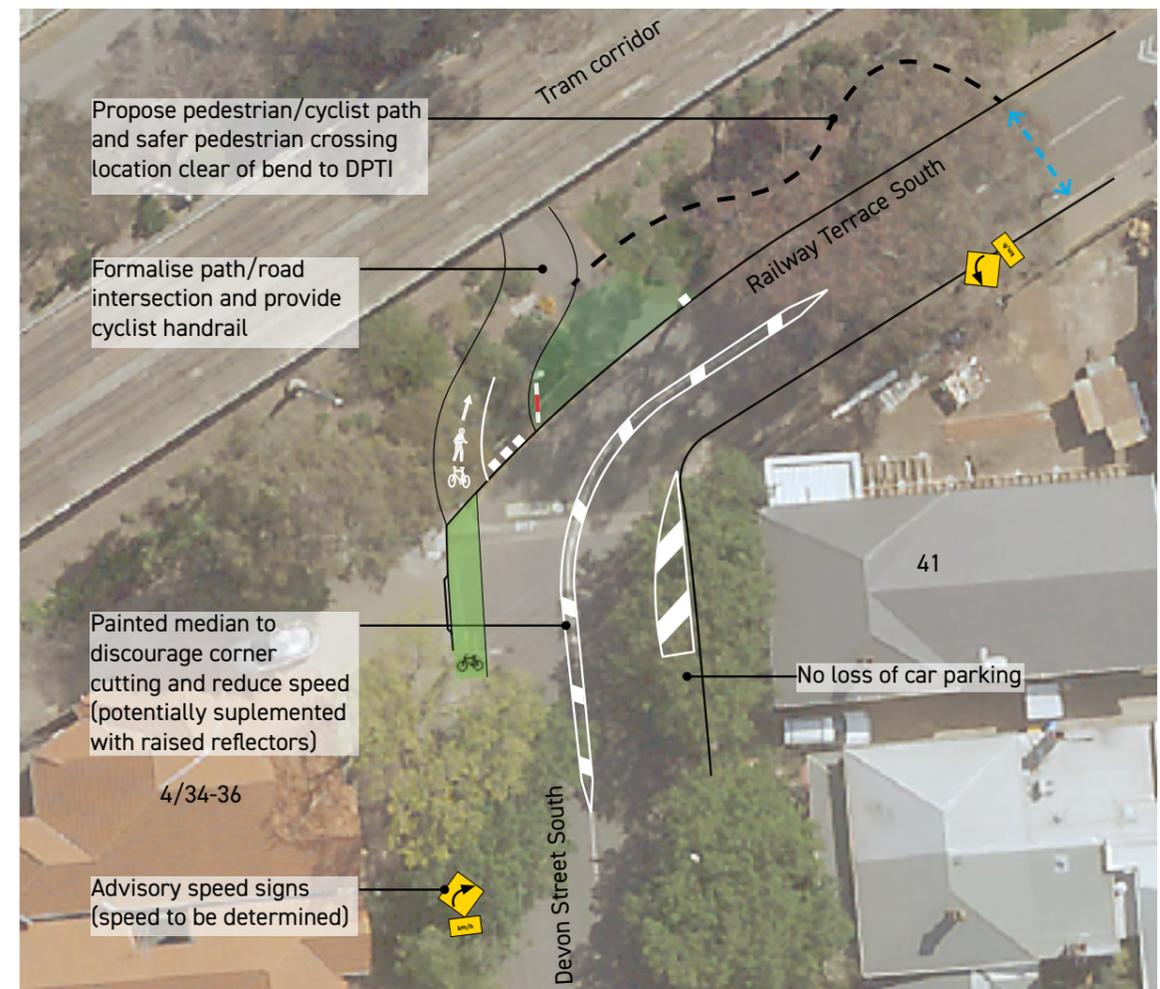


Figure 6.3 Railway Terrace South/Devon Street South proposed changes

RECOMMENDATION 3

EAST/AROHA/VICTORIA/LEAH INTERSECTION

Background

Concerns were raised over the intersection of East Avenue/Aroha Terrace/Victoria Street/Leah Street during Stage 1 of community engagement. Concerns were from a pedestrian perspective, citing difficulty crossing the road to access the tram, as well as from a motorist perspective, raising concerns over vehicles parked on the southern side of Aroha Terrace. There is also a crash history at the intersection (discussed further under 'Data' section). In light of these concerns, the intersection was further investigated and a review of pedestrian sight distance was undertaken, which led to a recommendation for a pedestrian refuge.

Deficiencies at the intersection are a result of changes over a number of years that prioritised the movement of vehicles. This intersection is a combination of two modified t-intersections. Aroha Terrace previously continued through the intersection and traffic on East Avenue was required to give way before proceeding east/north towards Leah Street. As East Avenue->Leah Street was the dominant traffic flow, this was changed in 2008 to a bend to improve both safety and efficiency. An older pedestrian crossing point to the tram is still present (location 1) and a new pedestrian crossing point was added at the time (location 2)

In addition to this, a bend in the road may be unexpected by unfamiliar motorists as East Avenue (and Winston Avenue to the south) is straight for a distance of 4.5km prior to this. As the intersection was not designed as a bend from scratch the radius and width of traffic lanes are not ideal and may have contributed to crashes that have occurred. The road is a bus route and approximately two buses use the intersection every 15 minutes.

Data

Crash History

Eight crashes have occurred in the vicinity of this bend. The crash type varies; three 'Hit fixed object' (all stobie pole near 'pedestrian crossing location 2' on map), one 'Hit pedestrian', one 'Hit parked vehicle', one 'Right angle', and one 'Rear end'. This suggests that there is a crash history at the intersection that should be considered. Other than the three 'Hit fixed object' crashes, which could be related to the visibility of the bend or negotiating speeds, there is no clear deficiency indicated by the data.

Traffic Volume

The intersection is negotiated by approximately 8100 vehicles per day, including a relatively high proportion of heavy vehicles (9%).

Pedestrian Sight Distance Assessment

A pedestrian sight distance assessment has been undertaken at both of the existing crossing locations to the tram stop. This assessment assumed a 30km/h traffic speed and 1.2m/s pedestrian speed. This assumes that a pedestrian observes approaching traffic in both directions to enable them to cross the road without stopping in the middle.

Crossing location 1: 9m crossing distance - crossing sight distance requirement of 62.5m

1a - visibility to east sufficient (looking through tram fence), visibility to west insufficient (65m)

1b - visibility to west insufficient (47m), visibility to north sufficient, visibility to east (Victoria Street) insufficient (41m)

Crossing location 2: 13.6m crossing distance - crossing sight distance requirement of 95m

2a - visibility to south sufficient but visibility to east insufficient (69m)

2b - visibility to south (if standing on ramp) sufficient but visibility to east insufficient (78m)

This indicates that the minimum pedestrian crossing sight distance is not provided. A pedestrian crossing the road from any of these locations would observe approaching traffic and it would appear to be clear to cross, only to then see a car approaching after already starting to cross.

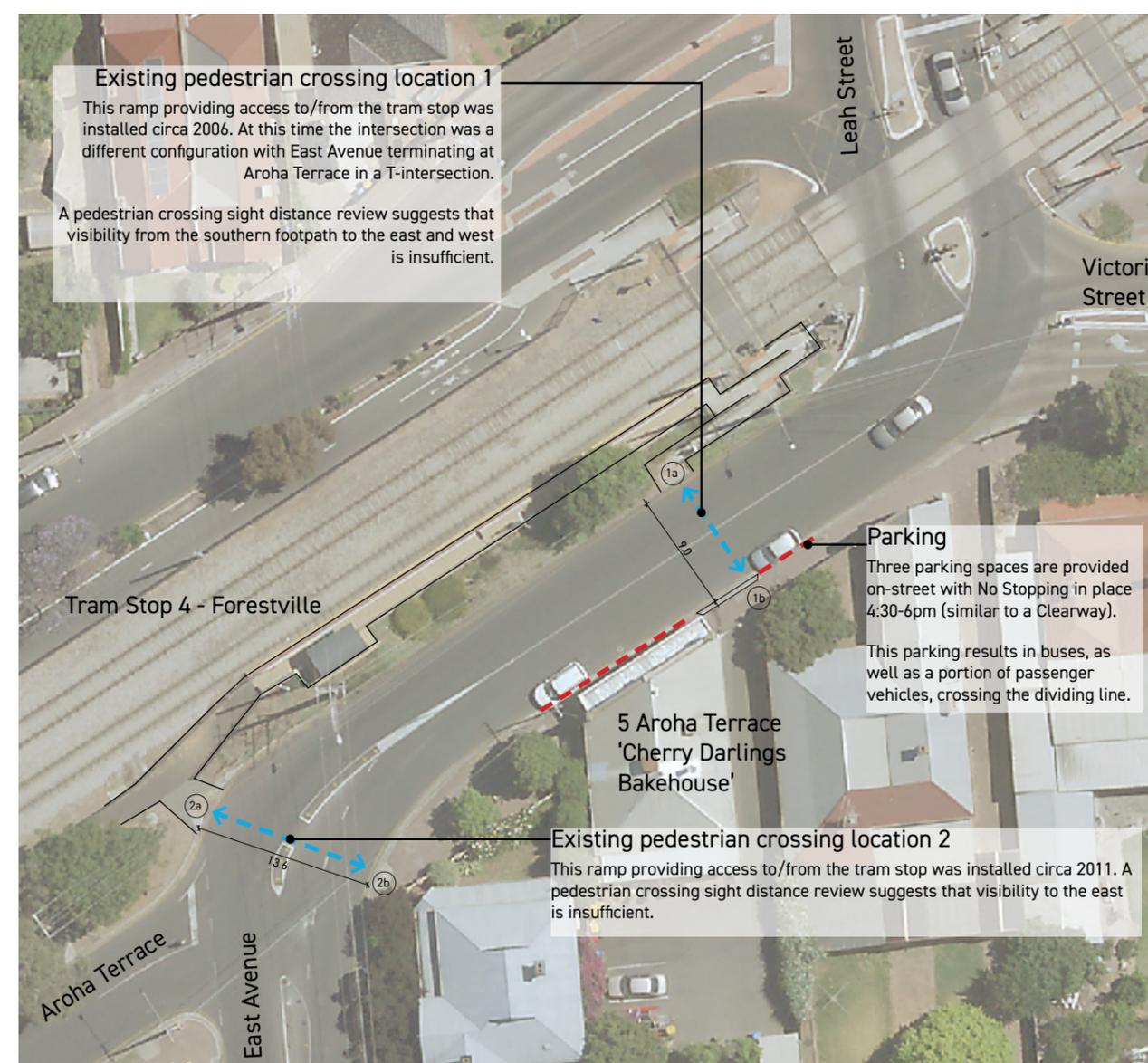


Figure 6.4 Existing crossing locations

Community Engagement

The community were consulted in Stage 2 of community engagement on a recommendation to install a pedestrian refuge in the location shown in Figure 6.5. The recommendation attracted a relatively high number of 'Very Important' ratings and comments. Generally respondents had personally experienced difficulty at this intersection either crossing the road or driving through when cars are parked on-street. There was a portion of respondents that do not support the recommendation due to the impact a loss of parking would have on Cherry Darlings Bakehouse.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
58	28	2	11	58

Following this feedback, although there was clear support for change, several other options were considered to try and retain 1-2 of the parking spaces. The implications of locating the refuge at crossing location 2 were considered. This would likely reduce the space for southbound buses negotiating the bend and would likely require removal of the right turn lane to Aroha Terrace (west) or a right turn ban. A third option of locating the refuge adjacent the tram stop shelter was considered, however this would have resulted in a significant diversion for pedestrians, have a greater impact on buses, and present other difficulties related to physical site constraints, including the shelter and adjacent stobie pole.

*"Currently priority is given to cars, not people.
Pedestrians need safer access in this area."*

Response to community engagement process: Retain recommendation

Details of recommendation

The goal of changes would be to improve pedestrian crossing movements, slow northbound traffic at the bend, and encourage motorists to remain on the correct side of the road in the mid-block section.

Pedestrian crossing sight distance can only be achieved at this location by reducing speeds to approximately 19km/h, by providing a two-stage crossing (i.e. refuge), or providing a crossing location that achieves minimum sight distance requirements. To complement the relatively low existing speeds and integrate with the fixed infrastructure (i.e. buildings and fences), the most achievable option is to providing a two-stage crossing (i.e. refuge), to reduce the sight distance requirement.

Recommendation:

- **Sub-standard curve advisory speed sign for northbound traffic (i.e. 20km/h advisory speed)**
- **Improve delineation of bend to provide a larger radius curve**
- **Install pedestrian refuge to improve safety of crossing - location subject to further detailed design, acknowledging the following key elements:**
 - **Loss of three parking spaces**
 - **Maintain entry/exit manoeuvres from 5 Aroha Terrace driveway**
 - **Pedestrian refuge as close as practical to desire line**
 - **Maintain access to Aroha Terrace (west)**
 - **Maintain manoeuvrability by buses (as well as largest design vehicle)**

Positives

- Advisory sign will provide motorists guidance on the speed to negotiate the bend
- Refuge will improve safety of pedestrian crossing
- Addresses a key community concern

Negatives

- Will result in a loss of three parking spaces on the southern side of Aroha Terrace in the vicinity of a business
- Manoeuvring space for buses negotiating the intersection will be reduced

Cost Estimate

\$90,000 (Cost to include survey, detail design, community notification and construction of the required works.)

Priority

High

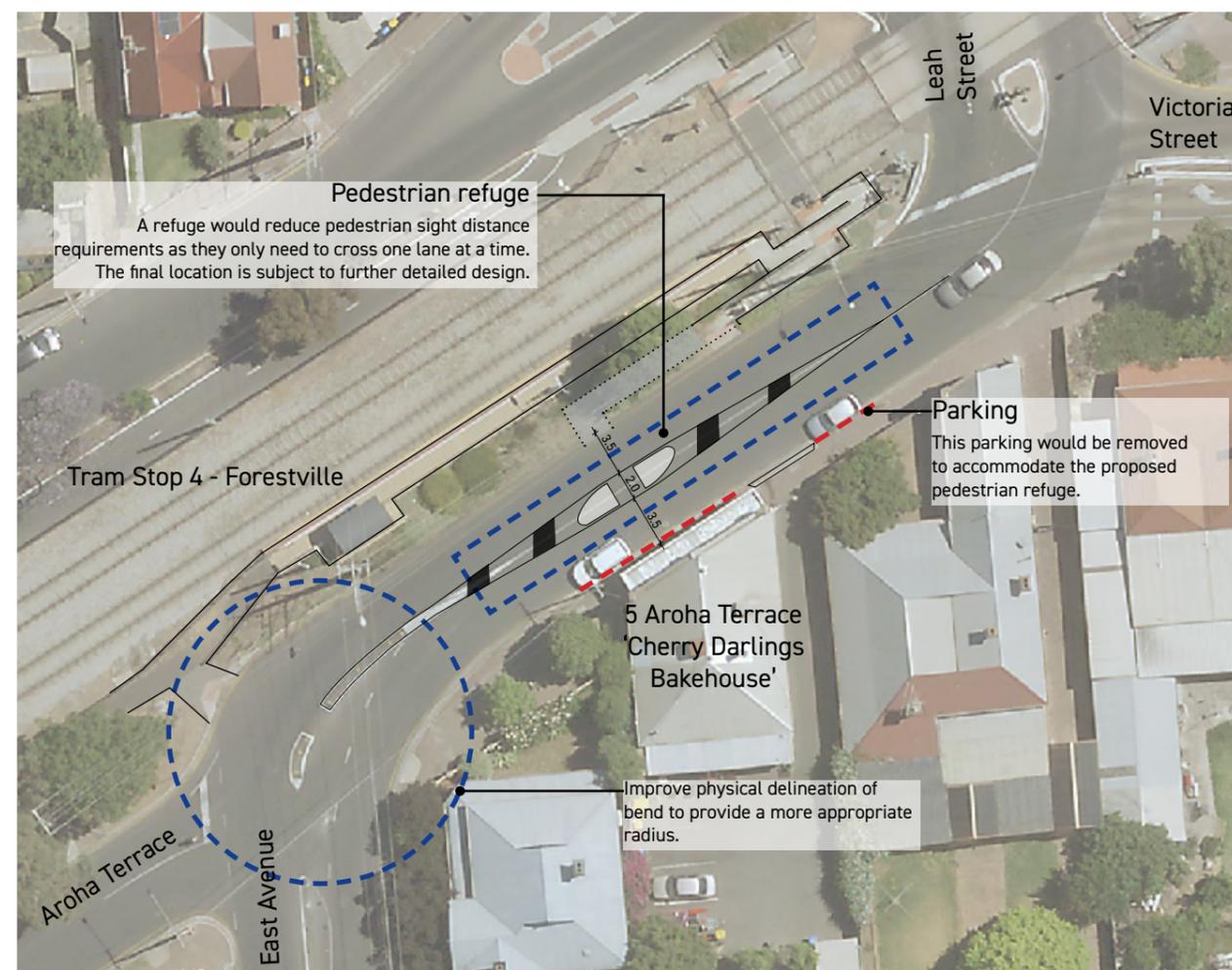


Figure 6.5 Indicative pedestrian refuge concept - Final location of refuge subject to detailed

RECOMMENDATION 4A

CLARENCE PARK TRAFFIC MANAGEMENT

Background

Feedback from residents on a number of streets, such as George Street and Mills Street, suggests that motorists use the area bounded by Goodwood Road/Cross Road/East Avenue/Mills Street to avoid the Cross Road/Goodwood Road intersection during peak times.

Data

Origin-destination data indicates that 181 motorists use the area bounded by Goodwood Road/Cross Road/East Avenue/Mills Street in the 7:30-9am period, and 176 motorists in the 4-6pm period. Mills Street was used (either entirely or as part of a route using multiple streets) by 122 motorists during 7:30-9am and 134 during 4-6pm. As can be seen on page 14, other than Mills Street, traffic is spread relatively evenly throughout the area and most streets accommodate a portion of the cut-through traffic. Churchill Avenue accommodates 1500 vehicles per day from Cross Road to George Street, which is relatively high. All streets in the area are within an acceptable daily traffic volume range and measures to reduce rat-running are primarily focused on improving resident amenity rather than road safety.

Rat-running traffic has been likely to contribute to the 47km/h 85th percentile speed on Frederick Street and 46km/h 85th percentile speed on Churchill Avenue.

Community Engagement Stage 1 and Draft Recommendation

In Stage 1 of community engagement, feedback was sought on measures on Mills Street to reduce rat-running. However, upon receiving this feedback, as well as feedback from other surrounding streets, and combined with origin-destination data, it was evident that changes to Mills Street should not be considered in isolation.

Ideally traffic in the area bounded by Mills Street/Goodwood Road/Cross Road/East Avenue would be limited to local traffic and intra-city trips. In order to achieve this, a traffic management scheme should discourage rat-running traffic from using the area.

Treatments must address both currently affected streets and unaffected streets to ensure traffic is not simply relocated to other rat-running routes through a suburb. This is the role of a LATM as it avoids these potential flow-on effects.

When designing a traffic management scheme, the correct balance between effectiveness and impact on residents must be achieved. There are different levels of intervention which are effective to different degrees. Generally, a road closure is the highest level of intervention and most effective, whereas measures to slow vehicles, such as road humps, are at the lower end of the spectrum in terms of impact on residents and effectiveness.



Five traffic management measures were considered for the area as a whole, each presenting a different level of intervention to the community:

Option 1 involved full road closures at the William Street/Cross Road intersection and the Churchill Avenue/Cross Road intersection. Full road closures eliminate all traffic movements at an intersection and has been used successfully in the Malvern area. This option would have eliminated rat-running between Cross Road and Goodwood Road.

Option 2 involved a series of partial road closures. This limits entry and exit movements to the surrounding arterial roads. It would have essentially reduced a portion of the current rat-running routes through the area. It would therefore have generally reduced traffic volumes in the area whilst ensuring that traffic that does travel through the area is more evenly distributed across streets.

Option 3 involved a series of modified intersections ('diagonal road closures'). This involved converting existing four-way intersections into two bends. This reduces traffic permeability through an area, as well as breaks up visibility along a street, which reduces traffic speeds. This has been used in Clarence Gardens to discourage through-traffic.

Option 4 involved turning bans during 7:30-9am and 4-6pm. These times were based on traffic data and cover the majority of traffic in the peak a.m. and peak p.m. periods. Entries into Mills Street in the a.m. and p.m. would have been retained to allow local residents access to the area.

Option 5 (not visually represented) was to take no action. It could be accepted that approximately 180 motorists cut through the area in the peak a.m. and peak p.m. periods. Despite this, traffic volumes in all streets are below the acceptable threshold. This would also maintain residents' existing access through the area. It also acknowledges that the area already has road humps in George Street and Francis Street, and Mills Street, and some residents do not support additional traffic calming measures.

Options 1 - 4 are provided in Appendix C.

CLARENCE PARK TRAFFIC MANAGEMENT (OPTIONS) CONT.

Community Engagement Stage 2

Stage 2 of community engagement sought feedback on the community's preference of option and whether they consider this a priority recommendation. This prompted the highest number of responses for any of the draft recommendations. Although most respondents considered the recommendation 'Very Important', some of these also voted for Option 5 - No changes. This inconsistency indicates that the a choice of option should be main source of quantitative feedback used in the decision making process.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
117	33	13	56	205

As detailed below in Table 6.3 and further broken down geographically in Figure 6.6, the option that received the greatest support was Option 5 - No changes. From all respondents, there were 111 responses supporting changes (options 1-4) and 140 not supporting changes. The area most affected by the issues being addressed (area bounded by Goodwood Road/Cross Road/East Avenue/Mills Street) responded in similar proportions, as detailed below.

Option	All Respondents		Respondents in Goodwood Rd/Cross Rd/ East Ave/Mills St area	
	Count	Percentage	Count	Percentage
Option 1 - Road closures	18	7%	16	9%
Option 2 - Partial road closures	20	8%	15	9%
Option 3 - Modified intersections	28	11%	20	12%
Option 4 - Turning bans	45	18%	35	20%
Option 5 - No changes	140	56%	85	50%

Table 6.3 Option preference summary

This feedback was also supplemented by comments included as part of their feedback, letters from residents or groups of residents, conversations at the Community Drop-in Session, and conversations between residents and Elected Members. Most respondents had a strong view for or against a particular option or options. Most respondents not supporting changes either did not consider traffic a problem in the area or consider the potential impact on their daily activities too great (i.e. restriction to existing journeys / turning movements).

Support for particular options in the Goodwood Road/Cross Road/East Avenue/Mills Street area was generally spread throughout the area with few patterns emerging. However, there were pockets clearly supporting Option 5 - No Changes, such as Birkdale Avenue, James Street, Avondale Street, and parts of George Street. Residents located on Churchill Avenue and William Street near Cross Road appeared to support Option 1 - Road Closures.

Although 50% of respondents in the area most affected by rat-running traffic support change in some form (Options 1-4), support is spread across the four options for change. It is highly likely that if a particular option was selected, this 50% would be fractured into those supporting and those not supporting the particular option (i.e. a respondent who supports road closures may not support turning bans).

Recommendation: Option 5 is the recommended option. This option received the greatest level of support and segments of the community strongly opposed change.

Recommendation 4B involves changes to Mills Street which will satisfy some of the respondents supporting changes, and will have a marginally positive affect on reducing volumes in the area as a whole. The local area should continue to be monitored in the coming years and traffic volumes and speeds compared with the data recorded in 2018/19.

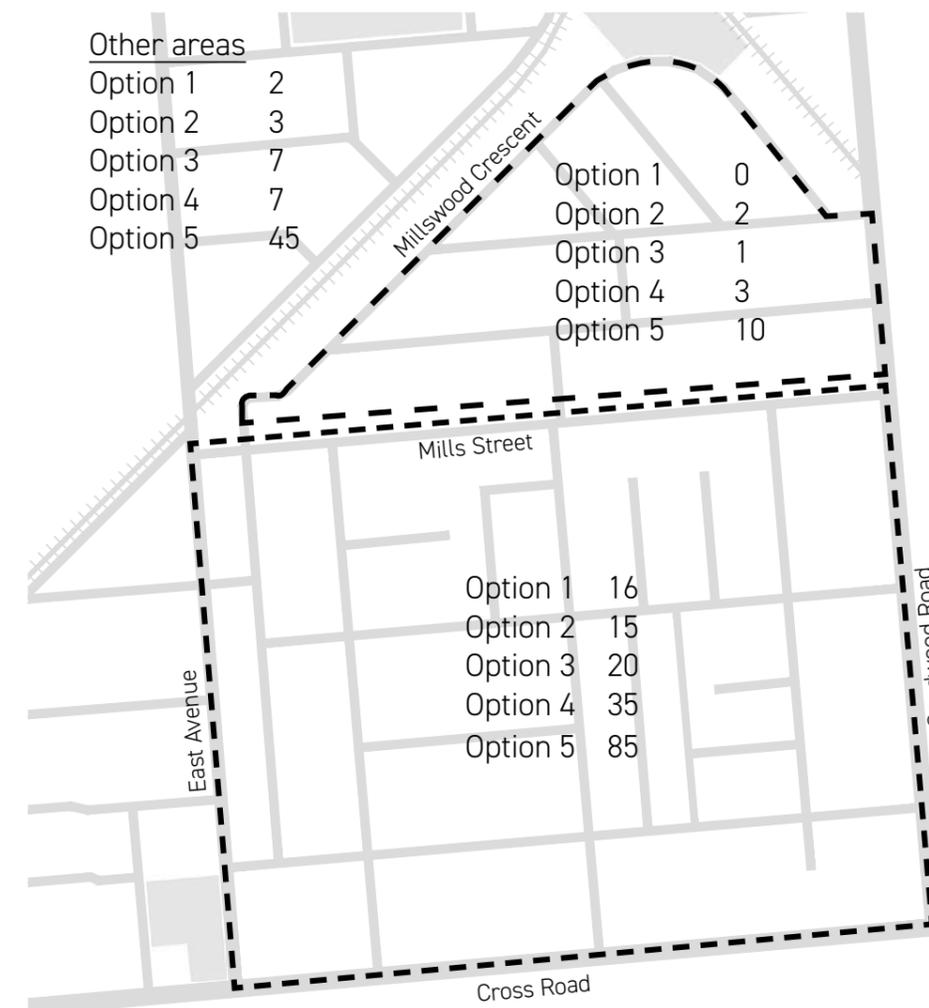


Figure 6.6 Option preference distribution

RECOMMENDATION 4B

MILLS STREET TRAFFIC MANAGEMENT

Background

There is a history of resident concerns over traffic volumes and rat-running traffic using Mills Street. A petition was received by Council in February 2017 with 69 signatures, requesting that Council install 'No right turn' signs to discourage motorists from entering Mills Street during peak periods. At the time it was highlighted that a review of the Unley Integrated Transport Strategy (UITS) was underway and this LATM was scheduled to occur, and therefore no changes were made at the time.

Mills Street is classified as a 'local crossing collector road'. Local crossing collector roads are important for local residents when accessing arterial roads and for intra-city trips. Traffic volumes up to 3000 vehicles per day are appropriate for these streets. This contrasts with a typical residential street where ideally traffic volumes are less than 1500 vehicles per day.

Feedback from residents of Mills Street suggests that they have historically been concerned by the speed and volume of traffic along their street.

Data

Mills Street:

Mills Street traffic data (2018)	Section William to Churchill	Section Churchill to Dixon
Traffic volume	1459	1917
85th percentile speed	45	35
Percent of vehicles in 8-9am	13	11
Percent of vehicles in 5-6pm	14	14

Table 6.4 Mills Street traffic data

Traffic data in Table 6.4 suggests that the traffic volume exceeds the desired maximum for a residential street, but is well within the acceptable limit for a local crossing collector road.

Origin-destination data indicates that Mills Street is used by motorists attempting to cut through the area to avoid the Goodwood Road/ Cross Road intersection. This data indicates that Mills Street is used (either entirely or as part of a route using multiple streets) by 122 motorists during 7:30-9am and 134 during 4-6pm.

Community Engagement

Stage 2 of community engagement sought feedback on five options for the area bounded by Goodwood Road/Cross Road/East Avenue/Mills Street to discourage rat-running traffic from using the area (refer Recommendation 4A for details). This also included specific actions for Mills Street, including modifications to the existing chicanes, changing the flat-top road humps to watt's profile road humps, and installation of additional road humps. Respondents from Mills Street generally supported changes and there was strong support for the measures proposed for Mills Street. As the recommended option for the greater area is Option 5 - No Changes, it is necessary to separate out changes to Mills Street as Recommendation 4B.

“The only changes required are to improve the effectiveness of speed humps or chicanes or both along Mills street. Options 1-4 will only increase activity on Mills street.”

The traffic patterns in the area do not warrant deterring through traffic along Mills Street by diverting to other local residential streets or preventing access. This alternate raised through consultation does not provide for safe and effective traffic management for the local area and will likely result in an increase in problems throughout the area.

As a result of the high community interest and different community drivers between the neighbourhood impact and Mills Street, Recommendation 4 was split into A (Neighbourhood Rat-running) and B (Mills Street).

MILLS STREET TRAFFIC MANAGEMENT CONT.

Details of recommendation

Mills Street Traffic Calming

The performance of the existing traffic control devices has declined with the age of the infrastructure. Existing devices should be redesigned to better manage local speeds and safety, in addition to deterring through traffic (rat-running). This would include the following:

Existing chicanes / two-lane angled slow points

Chicanes adjacent Dixon Street and William Street should be re-constructed to reduce local speed, maintaining two way traffic and increasing greening opportunities (refer Figure 6.7). Existing plantings under the care of local residents should be retained where ever possible.

Replace flat-top road humps with Watt's profile road humps

Existing flat-top road humps should be replaced with Watt's profile road humps at more regular spacing to achieve a design speed of approximately 25km/h at the device and approximately 40km/h throughout the street. Road Humps to allow for two-way traffic. Refer to Figure 6.8 for road hump type.

Install three additional road humps

A more uniform speed will be achieved by installing three additional road humps in the locations shown in Figure 6.9. This would provide more regular and shorter spacing between devices and would provide a device closer to the start of the street to align with DPTI's Code of Technical Requirements.

Improvements at major intersections

In order to support pedestrians on East Avenue and Goodwood Road, opportunities to reduce the width of Mills Street at both intersections will be considered. This will also help Mills Street appear as a local residential street. Further engagement with DPTI is required to address concerns regarding u-turn movements along Goodwood Road.

Streetscape Upgrade

The proposed concept design at up to eleven locations along the street, should be considered as a holistic streetscape upgrade, and co-ordinated with the long term planning for future asset renewal works required.

Recommendation:

- Replace flat-top road humps with Watt's profile road humps
- Install three additional road humps along the street
- Re-construct chicanes to reduce local speed and increase greening
- Consider opportunities for improvements at the East Avenue and Goodwood Road intersections
- Align works with any future stormwater upgrades and consider implementing changes as part of a streetscape upgrade

Positives

- Reduces traffic speeds on Mills Street
- Helps reduce rat-running traffic on Mills Street and in surrounding streets

Negatives

- May cause rat-running motorists to use alternative routes through Clarence Park
- Reduced traffic speed and more devices will also increase trip time for local residents
- Road humps can have a audible impact (vehicles negotiating hump and acceleration sound)

Cost Estimate

\$160,000 (Cost to be co-ordinated with future asset management planning and to include survey, detail design, community notification and construction of the required works.)

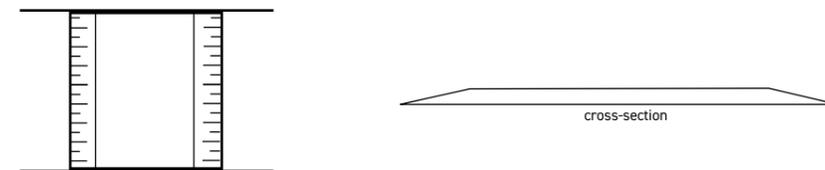
Priority

Medium



Figure 6.7 Proposed enhancements to existing Mills Street chicanes

Existing - Flat top road humps - Generally reduces traffic speeds by 24%



Proposed - Watt's profile road hump - Generally reduces traffic speeds by 45%



Figure 6.8 Mills Street road hump type comparison

MILLS STREET TRAFFIC MANAGEMENT CONT.



Figure 6.9 Mills Street proposed changes

MILLS STREET TRAFFIC MANAGEMENT CONT.

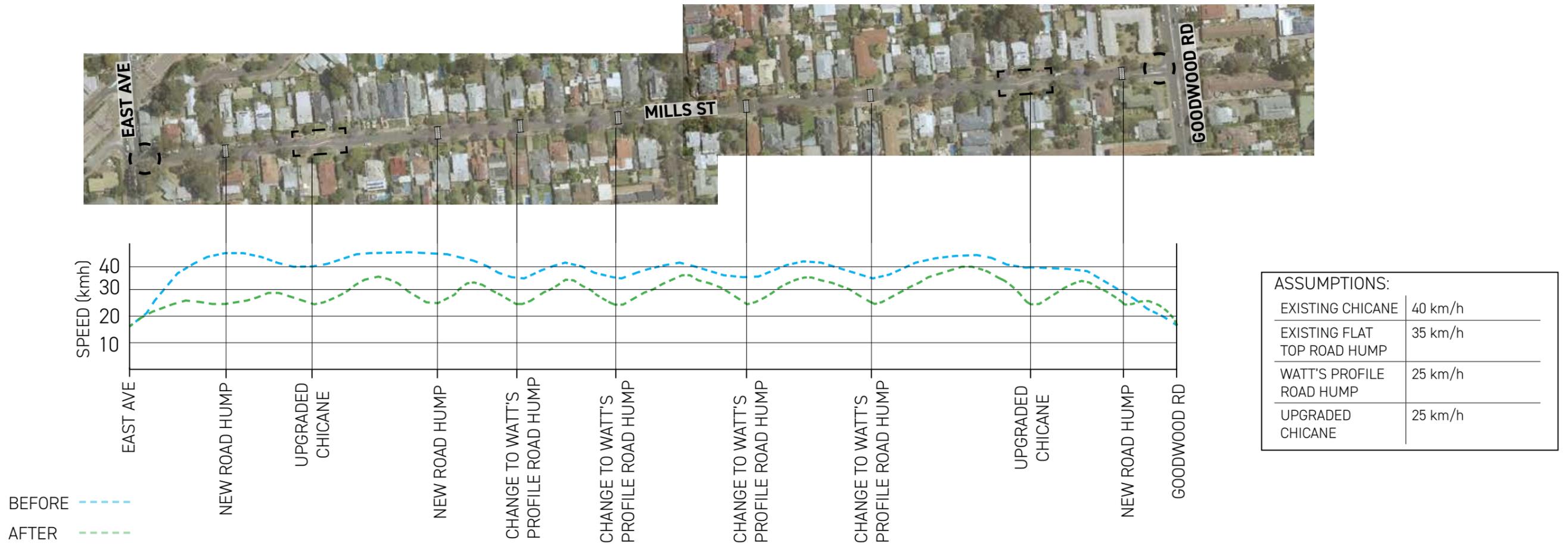


Figure 6.10 Mills Street estimate speed profile

RECOMMENDATION 5

CHURCHILL AVENUE BICYCLE ROUTE

Background

A low traffic cycle route, 'Clarence Park to City Bikeway', runs along Churchill Avenue, followed by Spiers Street and Ormonde Avenue (refer to page 6). The route is currently designated by wayfinding signs and sharrows (bicycle symbols) on the road pavement. The City of Unley Walking and Cycling Plan (W&CP) indicates that a street with an 85th percentile speed less than 40km/h is appropriate for mixed traffic (i.e. cyclists and motorists sharing the traffic lane), and above this, separation should be considered. It recommends that traffic calming is required along this route, including Churchill Avenue.

Data

The 85th percentile speed on Churchill Avenue ranges from 43km/h to 46km/h depending on the section. Speeds along the remainder of the route, north of Mills Street, are lower. The W&CP indicates that traffic calming in streets with speeds from 40-45km/h are low priority and 45-50km/h are medium priority. This suggests that in context of our cycling network, traffic calming is low to medium priority along the street.

Community Engagement

There generally was not support for the recommendation in Stage 2 of community engagement. Local residents do not consider traffic speeds a problem in the street nor do cyclists that responded.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
2	17	4	22	44

Details of recommendation

Recommendation 4A discusses potential options for the Millswood area to reduce rat-running. If either of options 1-4 of Recommendation 4A were to proceed, this would reduce traffic on Churchill Avenue and could have a positive impact on traffic speeds. However, no changes are recommended for the area as part of Recommendation 4A. The W&CP suggests that certain traffic conditions are required to support safe sharing of the road by cyclists and motorists. However, as there is not community support, and the speeds are only marginally in the 'medium priority' (46km/h within 45-50km/h category) for traffic calming, this recommendation should be considered low priority as part of the LATM.

Recommendation: Review traffic speeds on Churchill Avenue in future years and, if necessary, implement measures to reduce speeds as part of any future asset renewal (reseal or re-construction).

Positives

- Will ensure measures to reduce speeds are only implemented if necessary and costs are minimised

Negatives

- Speeds will continue to be in the 45-50km/h range

Priority

Medium

RECOMMENDATION 6

TRAFFIC & PARKING REVIEW FOLLOWING DEVELOPMENTS

Background

A large supermarket development (Kaufland) is occurring at the intersection of Leader Street/Anzac Highway, with construction likely occurring in 2019/20. A major residential development (Arcadian) is also occurring on Third Avenue, Forestville, in 2019/20. These developments were approved by the State Commission Assessment Panel (SCAP) and will potentially have implications for traffic and parking in the local area.

Community Engagement

Generally very few comments were received regarding the recommendation. However, note that these developments are located on the fringe of the LATM area and generally not near residents consulted. Residents adjacent the developments are likely the main stakeholders in this recommendation and have not been consulted as they are not within the LATM area.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
6	14	4	12	11

Details of recommendation

Although the Kaufland development provides ample off-street parking, it will likely increase both vehicular and pedestrian traffic in the area. The Arcadian development, although having an access on Anzac Highway, will also increase traffic and parking in the local area. It is necessary to review this area to ensure that pedestrian facilities are adequate, that appropriate parking availability is provided for existing residents, and that traffic volumes are within acceptable limits.

Recommendation: Undertake a holistic parking and traffic management review post commencement of the developments.

Post commencement would be considered as six months after the Kaufland development opens, and six months after the Arcadian development has achieved an adequate level of occupancy for parking and traffic to be accurately reflected in the surrounding area. The surrounding area would include (but not be limited to) Grove Avenue, First Avenue, Second Avenue, Third Avenue, Leader Street, Maple Avenue, and the Leah Street/Leader Street intersection.

Positives

- Will help ensure that increased parking and traffic in the area does not negatively impact existing residents

Negatives

- Nil

Cost Estimate

\$5000 (for investigations)

Priority

Medium

RECOMMENDATION 7

RIPON ROAD / LORRAINE AVENUE INTERSECTION

Background

This intersection of three streets operates as a t-intersection, with Lorraine Avenue the continuing leg and Ripon Road the terminating leg. Sight distance from Ripon Road to the east is limited due to a private property fence. A sight distance assessment supports this, indicating that sight distance is only available to a point 17m east of Ripon Road (between a motorists waiting on Ripon Road and a westbound motorist on Langdon Avenue). Refer to Figure 6.12.

This does not achieve the 83m of sight distance necessary for 'safe intersection sight distance' or the 64m necessary for a motorist to be comfortable undertaking a right turn. Although these distance are likely conservative as a motorist would likely reduce their speed considerably on the approach to the intersection. Nonetheless, sight distance would still be significantly less than necessary.

Although ideally the fence would be removed as it impacts sight distance, this would likely be difficult to achieve. There are potential traffic management solutions to improve sight distance, other than the convex mirror that is currently present.

Data

Ripon Road: 173 vehicles per day, 85th percentile speed of 45km/h
 Homer Road: 210 vehicles per day, 85th percentile speed of 46km/h
 Lorraine Avenue: 332 vehicles per day, 85th percentile speed of 46km/h

This indicates that traffic volumes are low. With reference to Figure 6.11, existing peak hour traffic volumes are low, suggesting that if any rat-running is occurring, it is only a very low number of vehicles.

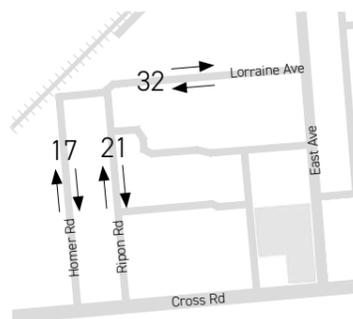


Figure 6.11 Existing 8-9am traffic volumes

Community Engagement

It was evident from Stage 2 of community engagement that local residents are all aware of the existing deficiency. Most support changes but some are concerned that it will increase rat-running or speeding from Cross Road to East Avenue, or asked whether the fence could just be removed or reduced in height.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
15	20	0	13	21

Details of recommendation

In order to address sub-standard sight distance, either the physical obstruction can be removed, traffic speeds can be reduced which lowers the necessary sight distance, or the need for sight distance can be eliminated altogether.

There is an opportunity to eliminate the need for sight distance from Ripon Road by changing the traffic priority. With reference to Figure 6.13, Ripon Road to Lorraine Avenue would operate as a bend. The only sight distance required would be from Lorraine Avenue (west of Ripon Rd), which would have adequate sight distance to approaching vehicles. Sight distance to/from vehicles on the road approaching the bend and residents exiting driveways would need to be considered. The treatment at the bend should be designed to ensure low traffic speeds.

Recommendation: Change traffic priority at the intersection of Ripon Road/ Lorraine Avenue, designating Lorraine Avenue (west of Ripon Rd) as the terminating approach.

Positives

- Will improve safety at the intersection by eliminating the risk associated with insufficient sight distance when exiting Ripon Road
- Will slow vehicles from Homer to Lorraine as they will be required to slow and give way.

Negatives

- May encourage more vehicles to use Ripon Road - however this would be minimal
- May increase the difficulty of exiting driveways on Ripon Road and Lorraine Avenue near the intersection as they cannot see around the bend

Cost Estimate

\$3000

Priority

High

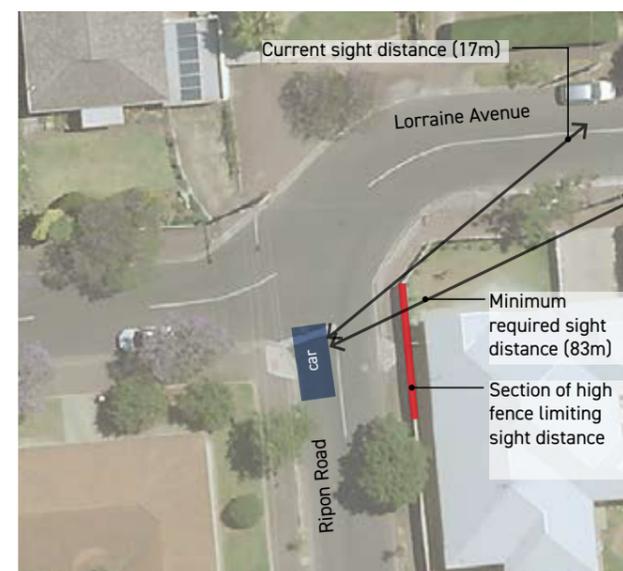


Figure 6.12 Existing conditions



Figure 6.13 Proposed changes

RECOMMENDATION 8

ROSE TERRACE PAID PARKING

Background

Rose Terrace (section west of Goodwood Road) consists of a mix of businesses and medium density residential on the northern side, and the Adelaide Showgrounds on the southern side. Businesses also front Greenhill Road, with some relying on on-street parking for staff and visitors. These land uses, as well as the adjacent railway station, result in high demand for on-street parking on Rose Terrace and Cooke Terrace. Existing controls are shown in Figure 6.14, and consist of a mix of 2 hour parking and unrestricted parking.

Data

Parking data indicates that Rose Terrace and Cooke Terrace are 80-100% occupied Monday to Friday during business hours. This is consistent in both the unrestricted parking and the 2 hour parking zones, with a slightly higher occupancy in the unrestricted parking.

Community Engagement

The community were engaged on a plan to introduce paid parking on Rose Terrace and Cooke Terrace, as well as increase the provision of 2 hour parking. The recommendation was strongly opposed by the community. Businesses did not support it due to the reduction in unrestricted parking as they do not want to pay for parking. Residents acknowledge that they face difficulty accessing parking but do not see this as a solution as they do not want their visitors to pay for parking.

Details of recommendation

This recommendation focuses on improving the parking availability for residents and businesses through additional time limit parking and new paid parking zones. This also provides an opportunity for income generation for Council.

It is difficult to achieve a balance between meeting resident and business parking needs in this location and similar locations, plus the added complexity of paid parking. However, taking this feedback into consideration, the recommendation was reviewed and parking allocation adjusted from the Draft Recommendation values to the Updated Recommendations in Table 6.5.

The revised recommendation aims to find a more equitable balance across the local area between unrestricted and 2 hour parking. Whilst this still represents a reduction in unrestricted parking, and will likely still be opposed by some local residents and businesses, it provides a balance between maintaining existing conditions and aligning with Council strategy. Some of the community and business concerns could be address with additional information regarding the use of Council parking permits.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
5	8	2	28*	45

*An additional 26 responses indicating 'Not important at all' (opposing) the recommendation were received however these were all from one property and have been removed to avoid distorting the feedback.

"This area is not just about the businesses it's our home which friends and family come to visit."

"I am strongly against the recommendation as it will significantly reduce the amount of unrestricted parking options near my work."

Existing Parking Controls



Figure 6.14 Existing conditions

ROSE TERRACE PARKING IMPROVEMENTS CONT.

The City of Unley's Community Plan is a comprehensive community vision for the City in 2033. It works in conjunction with the Strategic 4 Year Delivery Plan which outlines the activities Council will undertake over 4 years to achieve the community's long term goals as set out in the Community Plan.

The current 2017-2021 Delivery Plan includes Objective 1.5 – Our City is connected and accessible, which is supported by the strategic direction to 'Manage parking across the city to maximise its availability'. The Plan confirms Council will 'Review and implement City wide parking traffic controls, including expansion of Pay For Use parking in key locations'.

The introduction of smart technology sensors and Pay for Use Parking recommended for Rose Terrace and Cooke Terrace provides the Council with an effective pilot project to deliver its strategic direction and test new ways to manage resident, business and visitor parking in areas traditionally used for CBD commuter parking.

Recommendation: Install a combination of 2 hour parking zones and paid parking zones on the southern side of Rose Terrace and western side of Cooke Terrace, as indicated in Figure 6.15. Implement parking changes through use of smart technology. Paid parking would be charged in accordance with Council's Schedule of Fees and Charges.

Positives

- Will limit the negative impact of all-day CBD commuter parking within the City of Unley
- Use of smart sensor parking will allow the Council to better manage the local area
- Provide the Council with a pilot area to test use of smart sensor technology
- Will improve parking availability for residents and visitors to businesses
- Provides an income generation opportunity
- Retains a portion of unrestricted parking

Negatives

- Will remove 40 unrestricted parking spaces that are used by nearby business staff and residents
- Nearby business staff who rely on on-street parking would be required to pay for a permit
- Commuters will be required to pay for parking, which could result in additional parking in other areas or negative publicity

Cost Estimate

\$75,000 (subject to integration with the Council's Digital Strategy and other existing smart city initiatives)

Priority

Medium

Street	Capacity	Existing controls		Draft recommendation			Updated recommendation		
		Unrestricted	2P (9am-5pm) (Un-paid)	Unrestricted	2P (9am-5pm) (Un-paid)	Paid parking	Unrestricted	2P (9am-5pm) (Un-paid)	Paid parking
Cooke Terrace	21	13	8	0	8	13	0	8	13
Rose Terrace (west of Hamilton)	51	30	21	0	31	20	10	28	13
Rose Terrace (east of Hamilton)	36	23	13	13	23	0	16	20	0
Total %	100%	61%	39%	12%	57%	31%	24%	52%	24%

Table 6.5 Parking provision percentages comparison

Proposed Parking Controls

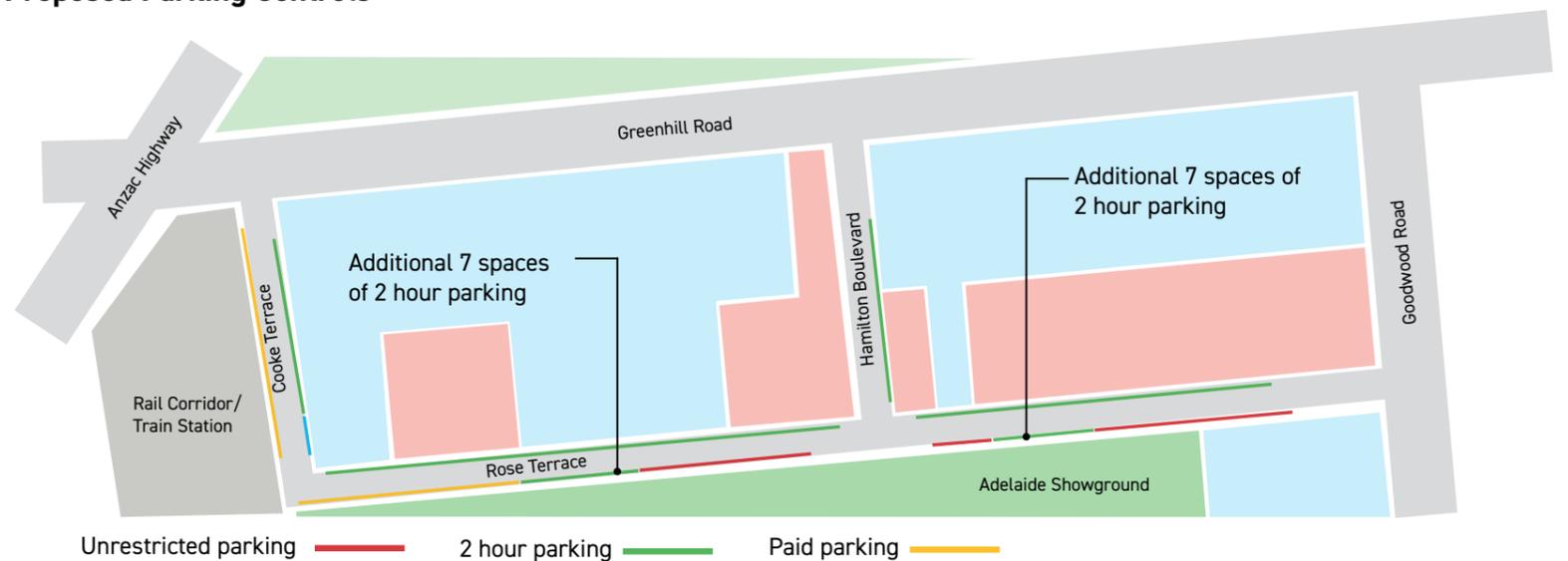


Figure 6.15 Proposed changes

RECOMMENDATION 9

LEADER STREET PAID PARKING

Background

Parking is unrestricted on the northern side of Leader Street from Anzac Highway to Leah Street. This parking area is highly occupied and can accommodate up to 42 vehicles. Although the generator of this parking has not been specifically identified, it is likely a combination of Ashford Hospital staff and commuters parking and catching public transport into the Adelaide CBD.

Data

Parking data indicates that the unrestricted parking zone on the northern side of Leader Street is highly occupied. Generally there are 1-2 free spaces out of 42 at any point in time during business hours.

Community Engagement

This recommendation was generally not supported during Stage 2 of community engagement. Respondents do not consider paid parking desirable in a residential area, nor do they support income generation through paid parking by Council.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
9	10	4	33	29

Details of recommendation

A paid parking zone would provide an opportunity for income generation for Council. It would however require parking controls in surrounding streets to limit flow on effects. Several major developments are occurring in the area, including Kaufland supermarket on Leader Street (adjacent this parking area), as well as a major residential development on Third Avenue. Parking conditions may change in the area due to these developments. After these developments have been completed and parking conditions are reviewed (Recommendation 6), any changes can be combined with introduction of paid parking on Leader Street. In line with the City on Unley On-street Parking Policy, business staff, such as staff of Goodman Fielder, would be eligible for exemption permits to park in time limit zones (at a cost).

Recommendation: Following, and subject to, a review of parking conditions following the completion of major developments, implement paid parking on the northern side of Leader Street from Anzac Highway to Leah Street.

Positives

- Will limit the negative impact of all-day CBD commuter parking within the City of Unley
- Use of smart sensor parking will allow the Council to better manage the local area
- Provide the Council with a pilot area to test use of smart sensor technology
- Provides an income generation opportunity

Negatives

- Commuters/hospital staff will be required to pay for parking, which could result in additional parking in other areas or negative publicity
- May require parking controls in surrounding residential streets to manage flow-on effects
- May impact local businesses who park on-street in this zone

Cost Estimate

\$18,000

Priority

Medium

RECOMMENDATION 10

CURZON AVENUE DISABLED PARKING

Background

Two disabled parking spaces are provided on Curzon Avenue adjacent the Goodwood Oval grandstand (in operation on sporting match days only). These spaces do not have adjacent kerb ramps and are therefore not compliant with Australian Standard 2890.5-1993 - Parking facilities - On-street parking. This recommendation is opportunistic in nature as the grandstand is being upgraded in the near future and there may be an opportunity to make improvements to this parking as part of the project.

Data

No occupancy data has been obtained.

Community Engagement

The recommendation was supported as part of Stage 2 of community engagement.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
24	24	1	9	12

Details of recommendation

Upgrading the disabled spaces would require the construction of two new kerb ramps on the eastern side of Curzon Avenue, as well as paving the verge area adjacent the spaces.

Recommendation: Upgrade the disabled parking spaces on Curzon Avenue to ensure they meet the requirements of AS2890.1.

Positives

- Provides a compliant, safer, and more convenient disabled parking facility for the community

Negatives

- Nil

Cost Estimate

\$10,000 - to be included in scope of Goodwood Oval Grandstand works

Priority

High - To align with Goodwood Oval Grandstand works

"I support this proposal as providing better, safer access for people who cannot access public space without it."



Figure 6.16 Location of disability parking zone

RECOMMENDATION 11

PARKING DURING PEAK GOODWOOD OVAL USE

Background

Goodwood Oval is used by multiple sports teams and can have several training sessions on some weeknights, as well as multiple sporting matches on weekends (generally Saturdays). This can generate parking and result in high demand for on-street parking.

Parking controls were installed in September 2018 to address commuter parking associated with tram stop 4. These controls are in effect 9am-5pm, Monday to Friday, and therefore have no influence on parking during times of peak oval use.

Data

Parking data collected on Saturday 4 May at 3:20pm (during a Goodwood Saints Australian rules football match) indicated that all parking areas within 200m of the oval are highly occupied, with a greater parking concentration to the west of the oval (refer Figure 6.17). Parking areas further east (Cromer Parade for example), generally experienced no parking associated with oval use. In addition to this, parking data collected on a typical Tuesday night during Australian rules football training session indicates that Allenby Avenue and Curzon Avenue can become 85-90% occupied, and Chelmsford and Fairfax Avenue can become 50% occupied.

This suggests that during both of these busy times at the oval, some areas were very highly occupied, whereas other areas a reasonable distance from the oval are underutilised. Parking could be better spread throughout the area to limit the impact on streets west of the oval.

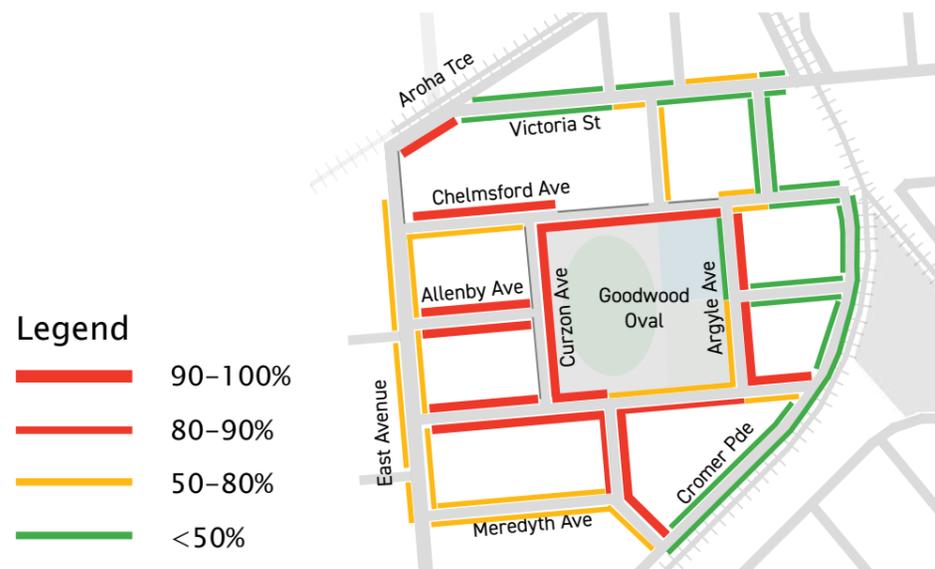


Figure 6.17 Parking occupancy in the vicinity of Goodwood Oval

Community Engagement

The draft recommendation was to install 1 hour parking (all times) on the northern side of Chelmsford Avenue, Allenby Avenue, and Fairfax Avenue, as well as 1 hour parking (Saturdays) on a section of Fairfax Avenue and Argyle Avenue.

Based on the feedback received, with either a lack of response or a number of 'Not Important At All' ratings, changes to Chelmsford Avenue, Fairfax Avenue and Argyle Avenue are not supported. The feedback suggests that changes to Allenby Avenue area supported however, with all four properties fronting the street responding. In addition to this, separate correspondence was received from a resident of Allenby Avenue proposing an alternative of No Parking on one side of the street, with signatures from 12 local residents (including all properties fronting or adjacent Allenby Avenue).

	Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
	19	21	3	30	57
Argyle	-	-	-	-	
Allenby*	2	2	-	-	
Chelmsford	-	-	-	1	
Fairfax	-	2	-	7	

*Not including the 12 signatures on a co-signed letter received prior to the LATM consultation, which requested a No Parking Zone on one side of Allenby Avenue

Details of recommendation

Parking demand suggests that there is a conflict between parking supply and demand during peak times around Goodwood Oval. However, feedback suggests that either this is not a concern for residents or not to an extent that they support changes. There is however support from residents of Allenby Avenue for change, in the form of a No Parking zone on one side of the street to improve access to driveways and reduce congestion.

As there is a tendency for sporting players or attendees to arrive at various times, but potentially leave all within a shorter period, it would be beneficial to place this zone on the northern side of the street to support ease of exiting the area.

Recommendation: Install No Parking zone on the northern side of Allenby Avenue.

Positives

- Reduces congestion and improves access to driveways on Allenby Avenue

Negatives

- Will reduce on-street parking for residents
- Will reduce on-street parking associated with sporting activities and marginally increase parking in surrounding streets

Cost Estimate

\$500

Priority

Medium

"Parking is only a problem for a few hours on 11 Saturday afternoons of the year, we live by an oval - deal with it people. Its not like it is every weekend for the whole weekend."

RECOMMENDATION 12

LANGDON AVENUE/EAST AVENUE PARKING CONGESTION

Background

A cafe is present on East Avenue at the intersection with Langdon Avenue. This results in parking congestion both on East Avenue and on Langdon Avenue. Anecdotally this can result in eastbound motorists traveling in the centre of the road which can result in potential conflict with those entering from East Avenue.

Data

Parking data indicates that parking on Langdon Avenue from East Avenue to Oakfield Avenue is 50-80% occupied, and parking on East Avenue is <50% occupied. Langdon Avenue is 8.3m in width, indicating that when vehicles are parked opposite each other there is space for one vehicle at a time only.

Community Engagement

The community were consulted in Stage 2 of community engagement on a plan to extend the No Stopping zone at the intersection. The recommendation supported by frequent users of the intersection (see Langdon Avenue specific feedback below). Concerns were also raised over sight distance when turning on to East Avenue due to parked cars, and also illegal parking in the existing No Stopping Zone. Those not supporting consider the current controls adequate.

	Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
	24	24	1	9	12
Argyle	3	1	-	1	

“Excellent idea - café generates lots of parked cars and turning space into Langdon can be tricky.”

Details of recommendation

Changes would be focused on reducing parking congestion at the intersection. Parking is already restricted on Langdon Avenue to a point 14.5m from East Avenue, which exceeds the standard 10m restriction. However, community feedback suggests that this still results in potential conflict at the location. If parking is restricted up to the first driveway crossover on the southern side, no parking would occur until a point 25m from the intersection. This would provide additional space for an entering motorist and an eastbound motorist to share the road.

Concerns were also raised over sight distance at the intersection when accessing East Avenue. Parking is restricted to a point 10m from the intersection and the bike lane enhances sight distance between a vehicle on Langdon Avenue and a northbound vehicle on East Avenue. Sight distance is therefore considered adequate. The dividing line on Langdon Avenue could be extended to the bike lane to guide motorists to position themselves to maximise sight distance. Sight distance may be improved further if parking is removed as part of recommendation 18 (pedestrian refuge).

Recommendation: Extend No Stopping Zone on both sides of Langdon Avenue and extend dividing line, as indicated in Figure 6.18.

Positives

- Increases manoeuvrability space on the approach to the intersection

Negatives

- Results in a loss of one parking space

Cost Estimate

\$300

Priority

Medium

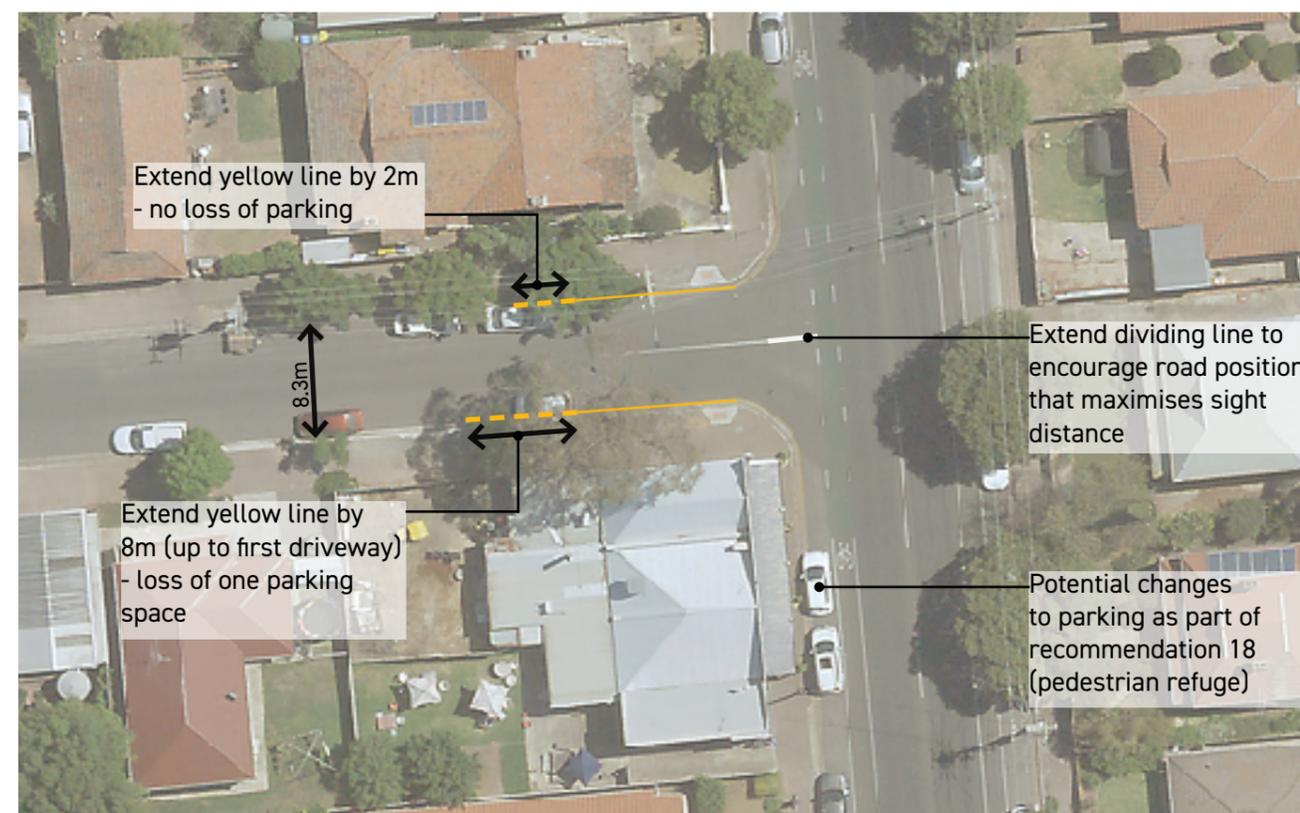


Figure 6.18 Recommendation No Stopping zone extension

RECOMMENDATION 13

GOODWOOD ROAD FOOTPATH CYCLING INFRASTRUCTURE

Background

The Walking and Cycling Plan recommends that cyclists be guided to safe crossing locations of high traffic volume roads. One such location is the pedestrian actuated crossing on Goodwood Road near Young Street. Although not part of a formal cycling route, Leader Street has bicycle lanes and is a direct east-west link between Anzac Highway and Goodwood Road. It also intersects with the Marino Rocks Greenway along the Seaford-Adelaide railway line. Young Street in Wayville is also not part of a formal cycling route but provides access to the Adelaide Parklands via Joslin Street and links with the Mike Turtur Bikeway at the Greenhill Road/King William Road intersection.

Goodwood Road is a four lane, two-way road, carrying approximately 30,000 vehicles per day and has a speed limit of 60km/h. As such, most cyclists would not feel comfortable sharing the road and stopping on the road to undertake a right turn (i.e. turning from Goodwood Road into Young Street). In order to establish a connection between Leader Street and Young Street, cyclists need to be guided to the pedestrian actuated crossing on Goodwood Road near Young Street. Measures to establish this connection were a recommendation of the Walking and Cycling Plan.

Data

Leader Street: 9000 vpd, 51 km/h 85th percentile speed (motorist/cyclist separation - bicycle lanes)
 Goodwood Road: 30000 vpd, 60 km/h speed limit (no motorist/cyclist separation)
 Young Street: 1200 vpd, 45-48 km/h 85th percentile speed (no motorist/cyclist separation)

Data suggests that it is not appropriate for cyclists to share the road with motorists on Goodwood Road. It supports the Walking and Cycling Plan recommendation of guiding cyclists along the Goodwood Road footpath.

Community Engagement

In Stage 2 of community engagement, many respondents indicated support for measures to encourage cycling in general. Concerns were raised over cyclists sharing the footpath during large events, and several respondents suggested that we direct cyclists to the Mike Turtur Bikeway instead.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
20	22	0	12	22

Details of recommendation

An assessment was undertaken to determine whether a shared use path can be installed on the western footpath of Goodwood Road (Leader Street to Young Street). The minimum width required for a shared use path is 2.5m.

The footpath width varies from 3.3 to 5.2m however there are 18 locations where trees, hedges, and infrastructure reduce the available width to less than 2.5m (minimum width for a shared use path) - although generally there is 2-2.4m still available. In addition to this, there are times (i.e. events and university exams) when the volume of pedestrians is such that the entire footpath is required. With a shared use path, technically pedestrians must stay on the correct side of the path, which would likely not be possible on these occasions. Given the numerous 'pinch point' locations along the path, there is insufficient width to create consistent separated cycle and walking paths along the western footpath area.

A future link should be developed from the Leader/Goodwood intersection along Parsons Street to meet with Joslin Street and (via other streets) to Bartley Crescent. However, cyclists should be encouraged to use the Goodwood Road footpath as an informal alternative to the road.

Recommendation: An informal shared path treatment be installed on the western footpath of Goodwood Road (Leader Street to Young Street), including:

- Pavement logos to guide cyclists to the safe crossing point and alert pedestrians that cyclists are encouraged to be on the footpath in that location,
- 'Cyclists give way to pedestrians' pavement decals to reduce conflict between cyclists and pedestrians,
- Trimming of hedges
- Advisory signage to encourage cyclists to dismount during events.

Positives

- Encourages less experienced cyclists to use the footpath rather than Goodwood Road
- Provides wayfinding for cyclists unfamiliar with the area

Negatives

- May result in conflict between pedestrians and cyclists during busy periods. However, faster cyclists likely will use the road rather than the footpath.

Cost Estimate

\$10,000

Priority

Medium



Figure 6.19 Example wayfinding sign



Figure 6.20 Example cyclist path pavement decal



Figure 6.21 Context of bicycle route

RECOMMENDATION 14

LEADER STREET PEDESTRIAN CROSSING

Background

A high number of pedestrians cross Leader Street near the Adelaide Showground during events. This includes the Royal Adelaide Show (ten days per year), the Adelaide Showground Farmers' Market (generally every Sunday), as well as other events such as concerts and exhibitions. Large events have traffic management implementing a 25km/h zone to improve pedestrian safety and ease of crossing. However, no traffic management is put in place during the Farmers' Market.

Data

Pedestrian crossing data was collected on Sunday 10 March from 8am to 1:30pm. With reference to Figure 6.22, the most common crossing location was the 30m segment west of Devon Street North. The central segment between Richards Terrace and Devon Street North also attracted a high number of crossing movements. During observations undertaken on Sunday 21 April, it was apparent that pedestrians chose to cross near Devon Street North due to its proximity to the Farmers' Market entrance and also due to the pedestrian kerb ramps defining a crossing point.

Community Engagement

During Stage 2 of community engagement this recommendation was generally supported by the community. Several respondents do not find it difficult to cross at this location despite the high number of pedestrians/vehicles, and others do not think it will be of benefit on a daily basis. However, other respondents cited concerns and difficulty they face crossing at this location.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
25	26	0	14	26

Details of recommendation

Investigation into a pedestrian crossing facility consists of :

1. Considering whether a facility is justified (based on pedestrian crossing data),
2. Determining the type of facility (i.e. refuge, pedestrian actuated crossing, zebra crossing),
3. Determining the location (based on crossing demand, parking, safety).

DPTI's Code of Technical Requirements provides numerical guidelines to assist in assessing the demand for pedestrian facilities. This considers the number of crossing movements and the traffic volume, with the premise that a higher combination of pedestrian volume and traffic justifies a safer crossing.

Options:

- **Pedestrian actuated crossing (PAC):**
Pedestrian and traffic volume requirements are met however pedestrian demand is primarily limited to weekends and not a typical weekday. This is therefore not an appropriate solution (high cost of a PAC is also not justified for a single weekend day).
- **Zebra crossing:**
Pedestrian and traffic volume requirements are met Numerical requirements are therefore met Speeds would need to be reduced to 30km/h in advance of the crossing by narrowing the road width. This may be difficult to achieve particularly during times of low pedestrian use. A loss of parking would be required.
- **Pedestrian refuge:**
There are no numerical requirements for a pedestrian refuge. A refuge would enable a two-stage crossing (a pedestrian only needs to cross one lane. The size of the refuge would need to be designed such that it has capacity to accommodate the anticipated demand. As this requires 2-3m of road width this will require a loss of parking.

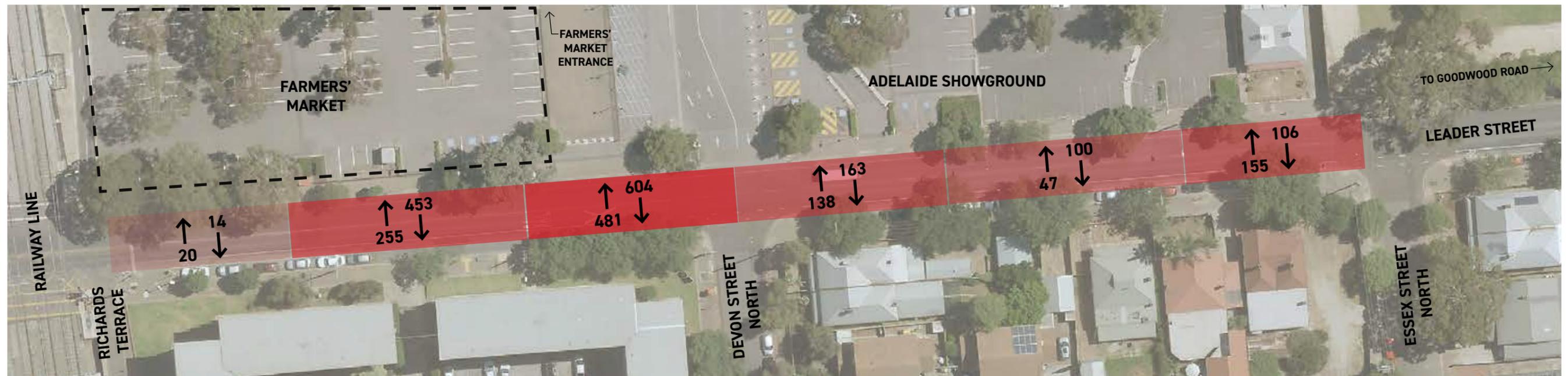


Figure 6.22 Pedestrian crossing data

LEADER STREET PEDESTRIAN CROSSING CONT.

- **Wombat crossing:**

Pedestrian and traffic volume requirements are met:

- 40 or more pedestrians per hour during two separate hours - Yes
- 200 or more vehicles per hour during the same two separate hours - Yes

A wombat crossing is a raised version of a zebra crossing. In order to safely provide pedestrians priority over traffic, speeds need to be reduced to 40km/h in advance of the crossing either through physical measures or a change in speed limit. The raised platform would need to be lengthened to accommodate buses. A loss of parking would be required.

Preferred Option:

A wombat crossing is the preferred option. This is preferred over a zebra crossing as achieving a 40km/h speed environment on the approach is more achievable than 30km/h.

A wombat crossing would provide pedestrians priority over vehicles when crossing, thus reducing delay for pedestrians and improving safety. During times of low pedestrian activity it would have minimal impact on traffic flow on Leader Street. However, modeling must be undertaken to ensure that traffic backed up at the crossing does not extend to the Seaford-Adelaide railway line as this can present a hazard.

The location for the crossing should be based on the pedestrian crossing data and situated within the 30m long segment that accommodated 1085 crossing movements. However, the following factors must also be considered:

- Proximity to the intersection with Devon Street North,
- the Showground access opposite Devon Street North,
- the property access of 49 Leader Street (large residential unit complex),
- impact on the existing bus stops,
- impact on on-street parking,
- requirement to maintain the bicycle lane and adequate road width.

These various factors are highlighted on the aerial image in Figure 6.23. A crossing can be accommodated directly west of Devon Street South whilst avoiding access points and retaining the bus zones. This would also only have a minimal impact on on-street parking, resulting in a loss of only two parking spaces.

Recommendation: Install a wombat crossing on Leader Street approximately 15m west of Devon Street South, subject to confirming that traffic queues will not extend to the Seaford-Adelaide railway line and liaison with RAHS.

Positives

- Provides a safe crossing location for pedestrians on Farmers' Market days and during other events at the Adelaide Showground, such as the Royal Adelaide Show

Negatives

- Requires a minor relocation of bus stops
- Requires a loss of one parking space
- Will result in traffic delays for motorists during peak pedestrian periods
- Peak pedestrian times are limited to one day per week and large infrequent events. Those using the street outside of these times may become complacent and not adequately check for pedestrians.
- Traffic may back up to the railway line which presents a safety hazard

Cost Estimate

\$100,000

Priority

Medium

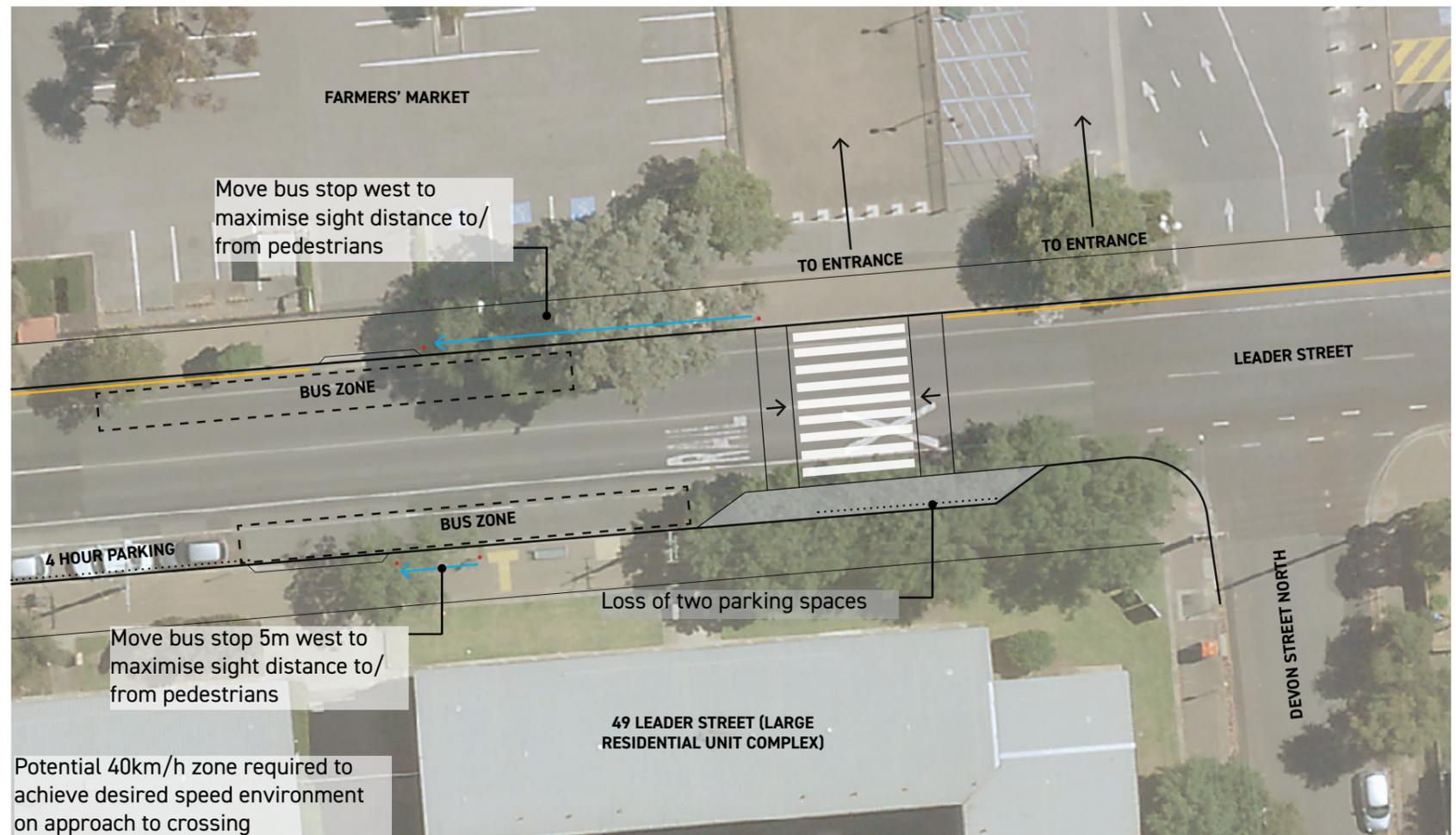


Figure 6.23 Wombat crossing concept plan

RECOMMENDATION 15

LEADER STREET BUFFERED BICYCLE LANES

Background

The Walking and Cycling Plan 2016-2021 recommends that bicycle lanes be upgraded on cycle corridors to buffered bicycle lanes. A buffered bicycle lane provides a line marked clearance area adjacent a bicycle lane. This helps ensure adequate space is maintained between a bicycle and a motor vehicle, and also helps a cyclist position themselves to avoid conflict with car doors. There is an opportunity to upgrade the southern (westbound) bicycle lane on Leader Street (Seaford Railway to Goodwood Road).

Data

Leader Street (Seaford Railway to Goodwood Road)

- 12.0m in width, including a 2.2m parking lane (southern side), 2 x 1.4m bicycle lanes and 2 x 3.5m vehicle lanes.
- 6800 vehicles per day, 52km/h 85th percentile speed.

Community Engagement

During Stage 2 of community engagement, the recommendation was generally supported.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
25	19	1	16	25

Details of recommendation

Modifying the bicycles lanes on Leader Street (Railway to Goodwood Road) would involve a reallocation of road space. A preliminary assessment suggests that buffered bicycle lanes could only be provided on one side of the street. Although reducing the lane width to 3.0m on a bus route is generally not advisable, the edge of the traffic lane is a painted buffer rather than hard infrastructure or parked vehicles. This would be similar to Leader Street (Anzac Highway to Railway). Council will need to liaise with DPTI prior to any changes as both streets are part of a bus route.

Recommendation: Install a buffered bicycle lane on Leader Street (Seaford Railway to Goodwood Road)

Positives

- Improves cyclist safety along a 50km/h collector road

Negatives

- Will reduce traffic lane widths

Cost Estimate

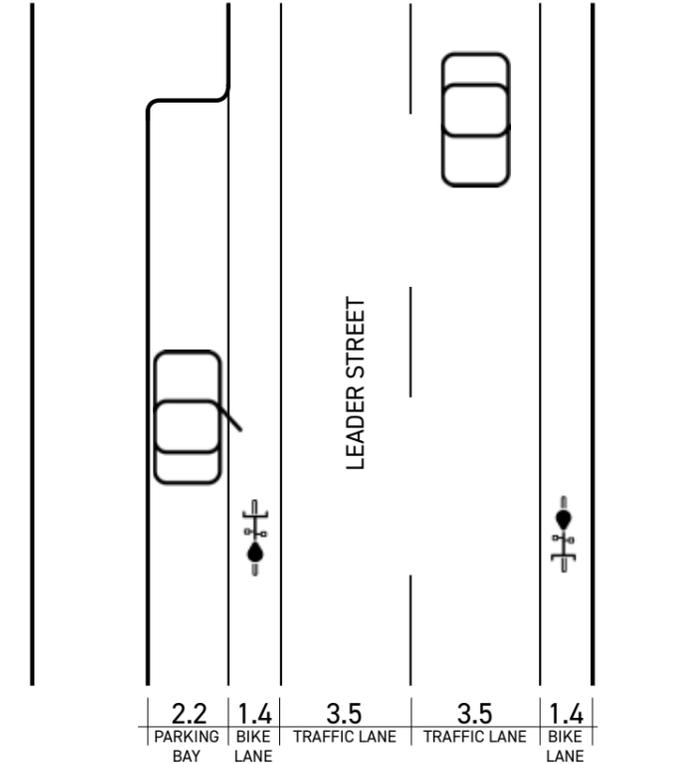
\$5,000

Priority

Medium

"Anything to encourage the use of bicycles and the safety of cyclists, in preference to motor traffic is to be supported."

EXISTING:



PROPOSED:

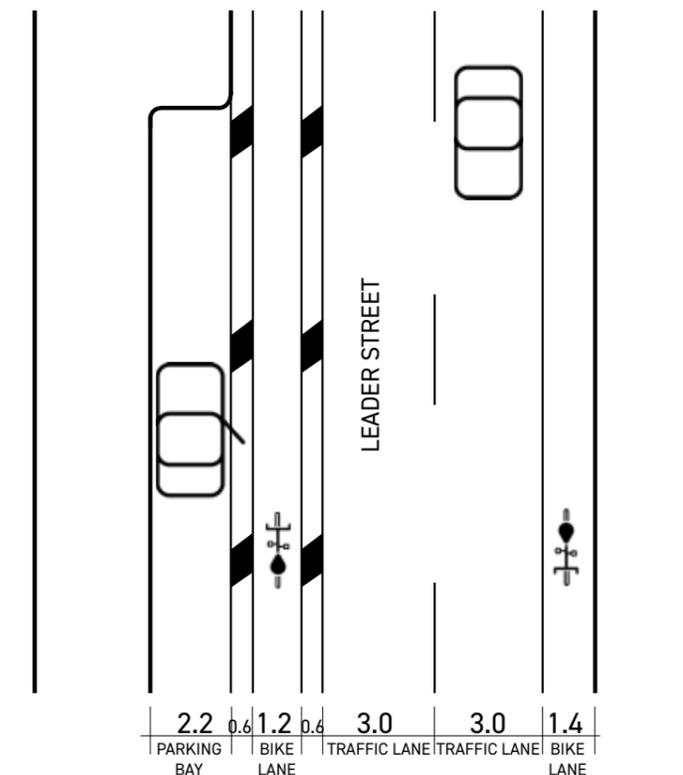


Figure 6.24 Proposed road space reallocation

RECOMMENDATION 16

EAST AVENUE BUFFERED BICYCLE LANES

Background

The Walking and Cycling Plan 2016-2021 recommends that bicycle lanes be upgraded on cycle corridors to buffered bicycle lanes. A buffered bicycle lane provides a line marked clearance area adjacent a bicycle lane. This helps ensure adequate space is maintained between a bicycle and a motor vehicle, and also helps a cyclist position themselves to avoid conflict with car doors. There is an opportunity to upgrade bicycle lanes on East Avenue (Seaford Railway to Cross Road).

Data

East Avenue (Seaford Railway to Cross Road)

- 14.4m in width, including 2 x 2.1m parking lanes, 2 x 1.5m bicycle lanes and 2 x 3.6m vehicle lanes.
- 8600-9600 vehicles per day, 53km/h 85th percentile speed.

Community Engagement

During Stage 2 of community engagement, the recommendation was generally supported. Some concerns were received over impact on motorists and congestion due to the reduced traffic lane width. Traffic lanes of 3.0m are common in the road network and not considered to result in congestion or delays.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
27	21	0	23	26

Details of recommendation

Modifying the bicycles lanes on this routes would involve a reallocation of road space. A preliminary assessment suggests that 2.1m (4.2m total) could be allocated to bicycles but not the 2.5m that is desirable (i.e. 1.3m bicycle lane with two 0.6m buffers). Although reducing the lane width to 3.0m on a bus route is generally not advisable, the edge of the traffic lane is a painted buffer rather than hard infrastructure or parked vehicles. Council will need to liaise with DPTI prior to any changes as both streets are part of a bus route.

Recommendation: Install buffered bicycle lanes on East Avenue (Seaford Railway to Cross Road).

Positives

- Improves cyclist safety along two 50km/h collector roads

Negatives

- Will reduce traffic lane widths

Cost Estimate

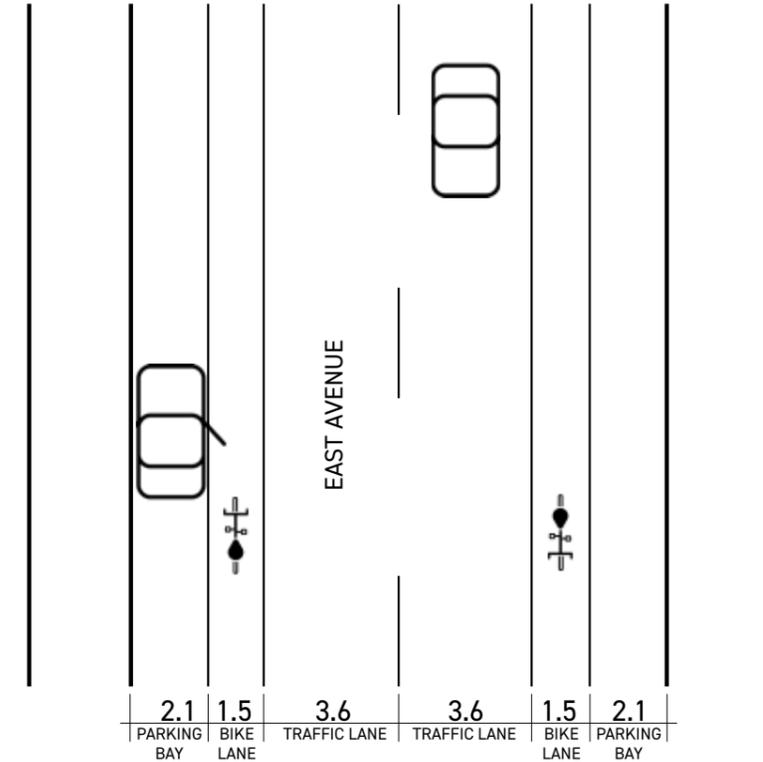
\$10,000

Priority

Medium

"Our family cycles up East Ave frequently and it is always a bit scary for the kids when cars are parked there ... and would use it more with better cycle lanes."

EXISTING:



PROPOSED:

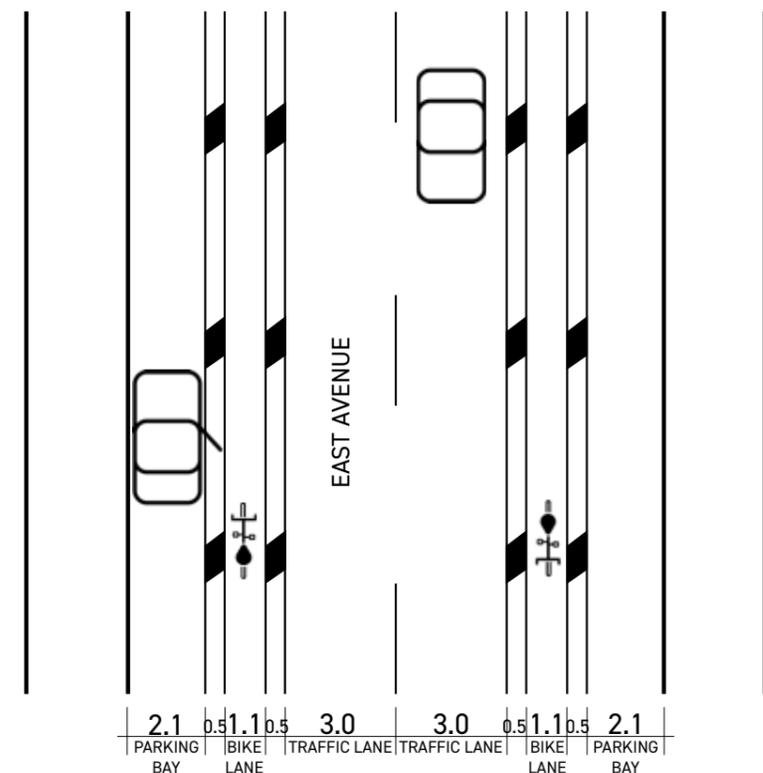


Figure 6.25 Proposed road space reallocation

RECOMMENDATION 17

EAST AVENUE PEDESTRIAN REFUGE

Background

Anecdotally, local residents encounter difficulty crossing East Avenue. There are no pedestrian crossings or refuges between the Seaford-Adelaide railway line and Cross Road (670m length).

Data

East Avenue has a 50km/h speed limit and 85th percentile speed of 53km/h. The traffic volume ranges from 8600-9600 vehicle per day. The Walking and Cycling Plan recommends pedestrian refuges where volumes exceed 3000 vehicles per day. Pedestrian crossing data was collected on Thursday 7 March from 8am to 6pm. With reference to Figure 6.26, the most common crossing location was the 30m segment south of Langdon Ave. This is likely due to the local cafe at this location., although crossing numbers are generally relatively low along the street.

Community Engagement

During Stage 2 of community engagement, there was a mix of supporting and non-supporting residents. Generally a portion of pedestrians (able bodied, not with a pram or children) do not consider crossing of roads a problem. We must design for those less able to cross easily, even if they are not the majority. There was feedback on the location, including concerns over conflict with the intersection of East Ave/ Langdon Ave (including the owner of Rise & Grind Cafe), as well as others over a loss of parking.

Very Important	Somewhat Important	Somewhat Unimportant	Not Important At All	Number of Comments
31	26	2	22	45

Details of recommendation

Investigation into a pedestrian crossing facility consists of three steps :

1. Considering whether a facility is justified (based on pedestrian crossing data),
Although crossing numbers are relatively low, a traffic volume of 8600-9600 vehicles per day, 670m distance between existing crossing points, and 14.4m road width, suggests that a crossing facility is justified. This would provide greatest benefit to seniors, children walking to school, parents with a pusher/pram, and those with a disability.

2. Determining the type of facility (i.e. refuge, pedestrian actuated crossing, zebra crossing),
Due to the low pedestrian crossing numbers, a formal crossing facility (i.e. zebra crossing or pedestrian actuated crossing) is not justified. Convenience and safety of crossing movements could be achieved by providing a two-stage crossing in the form of a pedestrian refuge. This would enable a pedestrian to cross one lane of traffic at a time.
3. Determining the location (based on crossing demand, parking, safety).
It is anticipated that pedestrians in a 30m road segment would utilise a crossing facility, as well as pedestrians in directly adjacent 30m segments. Pedestrian crossing data therefore suggests that a location between Langdon Avenue and George Street would provide the most benefit, with 106 to 109 pedestrians likely to use a refuge at this location (depending on the exact location).

Non-negotiables when designing a refuge at this location are that a minimum refuge width of 2.0m is provided (minimum in Australian Standard 1742.10) and that the bicycle lanes are retained in both directions. This therefore would result in a loss of on-street parking. A location should be chosen within the vicinity of the highest demand, whilst taking into consideration loss of parking.

Preliminary investigation suggests that a pedestrian refuge towards Langdon Avenue would have less of an impact on parking than mid-block between Langdon Ave and George St. This is because the bicycle lane could be relocated to the kerbline at the Langdon Avenue intersection where there is already no parking permitted. There is also a stobie pole approximately 20m south of Langdon Avenue which could be utilised to achieve adequate lighting levels. This location is also an appropriate distance from Langdon Avenue and helps address concerns raised during community engagement. A concept is provided in Figure 6.27.

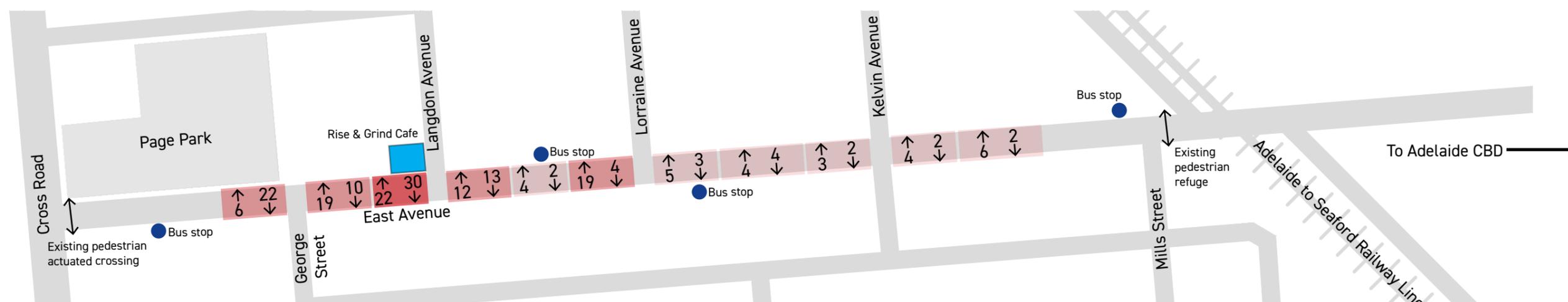
Recommendation: Install pedestrian refuge 20m south of the intersection of East Avenue with Langdon Avenue.

Positives

- Improves safety and convenience of pedestrians crossing East Avenue

Negatives

- Will result in a loss of approximately 3 parking spaces



RECOMMENDATION 18

GOODWOOD PRECINCT BICYCLE PARKING REVIEW

Background

In order to encourage cycling to the Goodwood retail precinct, as well as support existing demand, adequate bicycle parking is necessary. A review of bicycle parking in the area would establish whether there is adequate supply or whether improvements can be made.

Parking for cyclists should be located in an intuitive, easy to find location. Short-term parking for visitors is usually in the form of rails located in an area of passive surveillance, and close to the entry point of destinations.

Community Engagement

This project was highlighted on the 'Potential Projects and Community Concerns' map in stage 1 of community engagement. Out of the 2 respondents commenting on this potential project, 1 was in support and 1 was neutral. However, in addition to this, 12 respondents commented that they support cycling related initiatives in general.

Details of recommendation

Review bicycle parking supply in the Goodwood main retail precinct, including:

- Determine existing supply and locations (on-street and off-street)
- Collect occupancy data and observe where any informal bicycle parking is occurring (i.e. locked to fence)
- Recommend additional parking locations (if applicable)

Positives

- Encourages cycling to the precinct
- Discourages parking of bicycles in inappropriate locations

Negatives

- Nil

Cost Estimate

\$5000 (allowance for parking for an additional ten bicycles)

Priority

Low



Figure 6.28 Bicycle parking review area

EAST AVENUE PEDESTRIAN REFUGE CONT.

Cost Estimate

\$50,000

Priority

Medium

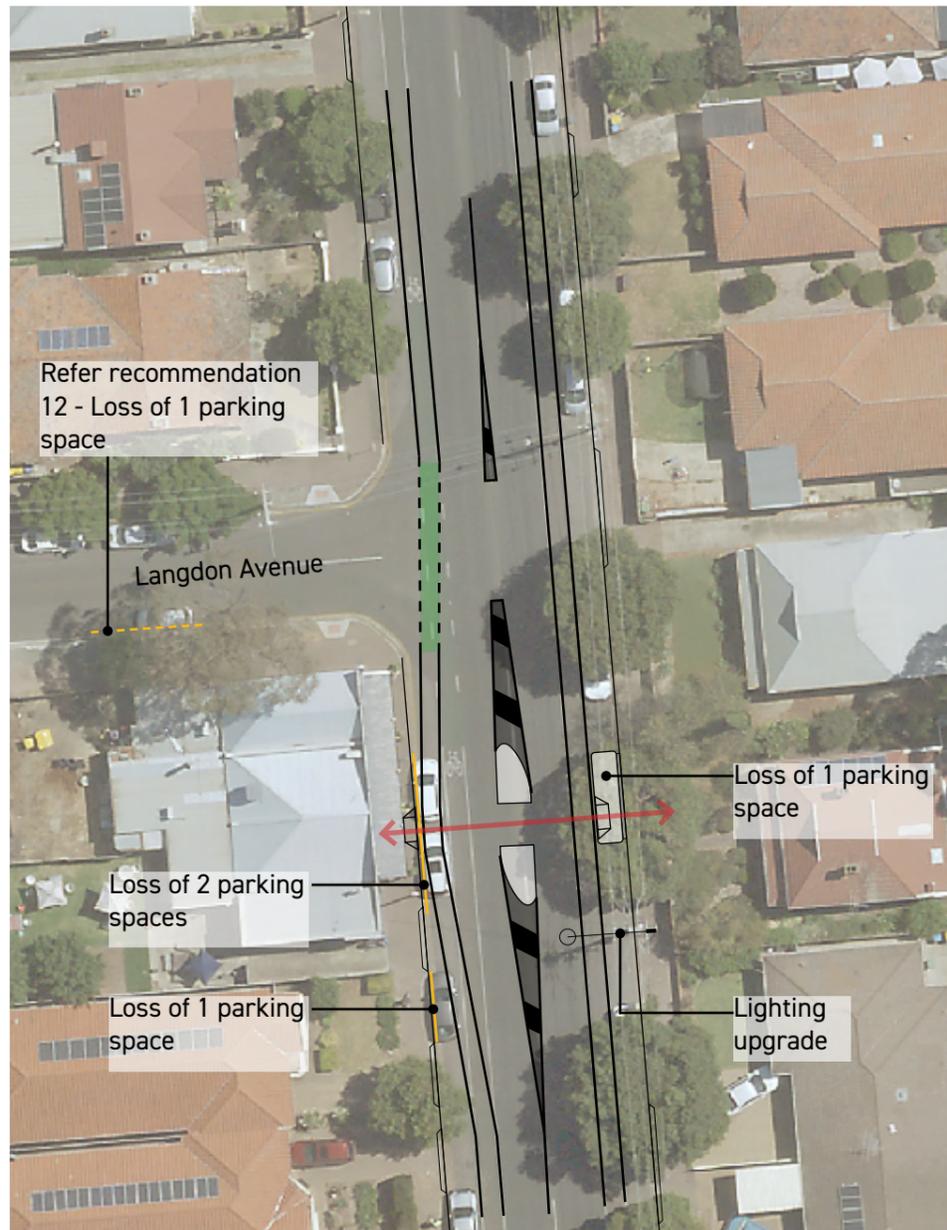


Figure 6.27 Pedestrian refuge concept plan

RECOMMENDATION 19

EAST AVENUE 'KEEP CLEAR' PAVEMENT MESSAGE

Background

During Stage 2 of community engagement, concerns were raised over crossing of East Avenue near the Adelaide-Seaford Railway. The concern is that when motorists queue for a train to cross, vehicles back up past the refuge/opening in the raised median. This makes it difficult to cross, particularly for those with a disability who cannot easily manoeuvre around parked vehicles.

Data

East Avenue has a 50km/h speed limit and 85th percentile speed of 53km/h. The traffic volume ranges from 8600-9600 vehicle per day. This suggests that dedicated crossing points are necessary to provide a two-stage crossing and the effectiveness of existing crossing points should be maintained.

Community Engagement

This recommendation was a result of Stage 2 of community engagement and the community has therefore not been consulted. This will only marginally affect the queue length and is extremely unlikely to be contentious. A lack of consultation is therefore acceptable.

Details of recommendation

This recommendation is focused on ensuring that queued vehicles do not obstruct pedestrian access through the refuge/opening in the median on East Avenue. With reference to Figure 6.29, this would involve installation of a 'Keep Clear' pavement message. DPTI's Keep Clear Pavement Markings Operational Instruction indicates that a message of this type can be installed to ensure access to formalised passive pedestrian crossings.

Recommendation: Install a 'Keep Clear' Pavement Message on East Avenue south of the Adelaide-Seaford Railway.

Positives

- Helps ensure pedestrians can cross East Avenue when vehicles are queued

Negatives

- Increase the vehicle queue length on East Avenue

Cost Estimate

\$1000

Priority

Medium



Figure 6.29 'Keep Clear' Pavement Message concept plan

APPENDICES

APPENDIX A - TRAFFIC DATA

Street	Cross street 1*	Cross street 2*	Average daily traffic	85th percentile speed (km/h)	AM peak %	PM peak %
Allenby	East	Curzon	119	44.8	11.3	13.4
Argyle	Chelmsford	Hackett	197	41.8	12.7	14.0
Aroha	Newman	Foster	156	36.1	15.8	9.6
Arundel	Cranbrook	Grantley	91	38.4	14.3	12.1
Birkdale	William	Churchill	125	41.9	8.4	13.2
Chelmsford	Northbrook	Curzon	428	43.3	10.1	12.9
Churchill	Francis	Birkdale	843	46.1	13.4	11.8
Cooke	Greenhill	Rose	449	34.9	10.5	10.4
Cranbrook	Arundel	Goodwood	141	41.6	7.4	11.7
Cromer	Irwin	Graham	686	40.4	16.1	13.8
Cromer	East	Irwin	392	42.2	5.2	5.2
Cromer	Graham	Fairfax	540	44.5	21.6	7.0
Curzon	Allenby	Fairfax	232	39.7	12.1	12.1
Devon St Nth	Leader	Richards	373	35.2	8.6	8.0
Devon St Nth	Richards	Railway	260	33.6	15.0	9.0
Devon St Sth	Railway	Victoria	238	42.1	12.2	7.8
Dixon	Mills	Francis	294	41.5	8.3	15.0
East	Cross	George	8999	49.7	11.3	11.5
East	Lorraine	Langdon	9510	52.5	11.1	12.0
East	Mills	Kelvin	9336	53.1	11.7	12.4
Essex St Nth	Leader	Railway	96	37.3	9.1	11.5
Essex St Sth	Surrey	Victoria	592	41.6	14.3	13.9
Essex St Sth	Railway	Surrey	364	39.8	16.0	15.3
Fairfax	Graham	Argyle	342	39.8	7.9	13.8
Foster	Aroha	Victoria	198	38.6	9.3	12.4
Francis	Churchill	William	582	41.1	10.4	10.9
Francis	William	Hammond	360	33.2	11.4	11.7
Francis	Dixon	Avondale	615	40.6	12.4	10.2
Frederick	Francis	George	374	47.1	7.5	25.2
Frederick	Francis	Mills	237	45.0	14.1	27.2
George	Dixon	Henry	813	39.1	16.0	10.4
George	Churchill	William	595	39.2	17.3	11.9
Graham	Fairfax	Meredyth	146	38.8	22.6	12.3
Grantley	Arundel	Goodwood	167	42.0	9.0	11.1
Hackett	Argyle	Cromer	35	35.1	11.6	11.6
Hamilton	Greenhill	Rose	1986	41.0	13.7	12.1
Hammond	Francis	Bend	65	42.3	9.2	16.2
Hampton St Nth	Leader	Railway	177	35.7	10.3	10.5
Hampton St Sth	Surrey	Railway	673	34.0	16.7	12.1
Henry	Lane	Dixon	76	31.9	8.6	12.5

*Data collected between cross street 1 and cross street 2

Homer	Cross	Ripon	210	46.4	7.9	10.7
Irwin	Forest	Cromer	190	41.3	8.4	11.1
Kelvin	Parker	East	258	42.2	14.3	10.8
Langdon	Oakfield	East	336	40.0	10.1	12.2
Langdon	Oakfield	Bend	124	38.7	6.5	12.6
Leader	Devon	Essex	8658	49.3	8.2	10.8
Leader	First	Second	9350	51.0	11.1	10.2
Leader	Charles	Ethel	6135	47.7	9.8	10.0
Churchill	Cross	George	1529	43.4	12.7	12.5
Churchill	George	Birkdale	948	44.8	11.7	14.0
Churchill	Francis	Hammond	728	45.9	10.8	15.3
Lloyd	Millswood	Ormonde	112	41.5	9.0	12.1
Lorraine	Ripon	East	332	46.1	9.7	10.6
Lynton	Millswood	Spiers	361	47.3	8.0	8.7
Lynton	Lloyd	Ellesmere	344	47.4	12.7	11.9
Maple	Outside # 40		735	52.5	9.7	8.8
Margaret	Cross	Rossllyn	74	39.5	11.5	11.5
Meredyth	East	Graham	166	41.1	22.0	10.8
Mills	Church	Dixon	1917	34.7	11.3	13.9
Mills	William	Churchill	1459	45.3	13.1	13.8
Millswood	Ormonde	Lloyd	263	45.1	9.9	8.9
Newman	Aroha	Victoria	154	32.1	6.2	18.9
Northbrook	Victoria	Chelmsford	372	40.2	11.3	12.8
Oakfield	Rossllyn	Cross	212	45.3	11.1	11.6
Oakley	Victoria	Chelmsford	459	40.4	7.6	13.0
Ormonde	Lloyd	Ravensthorpe	242	44.5	9.3	11.3
Parker	Kelvin	East	125	39.1	20.9	8.8
Railway Tce Nth	Devon	Essex	159	42.0	11.0	12.0
Railway Tce Nth	Hampton	Goodwood	278	37.8	9.9	10.6
Railway Tce Sth	Essex	Hampton	755	34.0	21.5	10.1
Ravensthorpe	Millswood	Ormonde	103	36.7	10.2	14.1
Richards	Bend	Devon	82	30.4	10.4	14.0
Richards	Leader	Bend	113	30.6	16.9	9.8
Ripon	Rossllyn	Langham	173	44.8	12.2	10.1
Rose	Goodwood	Hamilton	1478	44.9	10.7	11.6
Rose	Hamilton	Cooke	2380	41.1	8.6	13.7
Rossllyn	Ripon	Margaret	61	38.4	12.4	14.9
Spiers	Lynton	Mills	494	22.1	9.2	10.4
Thames	Francis	George	113	44.3	8.8	14.2
Victoria	Essex	Hampton	2982	43.8	9.4	9.8
Victoria	Newman	Northbrook	2747	46.3	10.8	9.4
William	Francis	Birkdale	493	41.5	12.6	14.7

APPENDIX B - STAGE 1 COMMUNITY CONSULTATION - DRAFT RECOMMENDATIONS TABLE

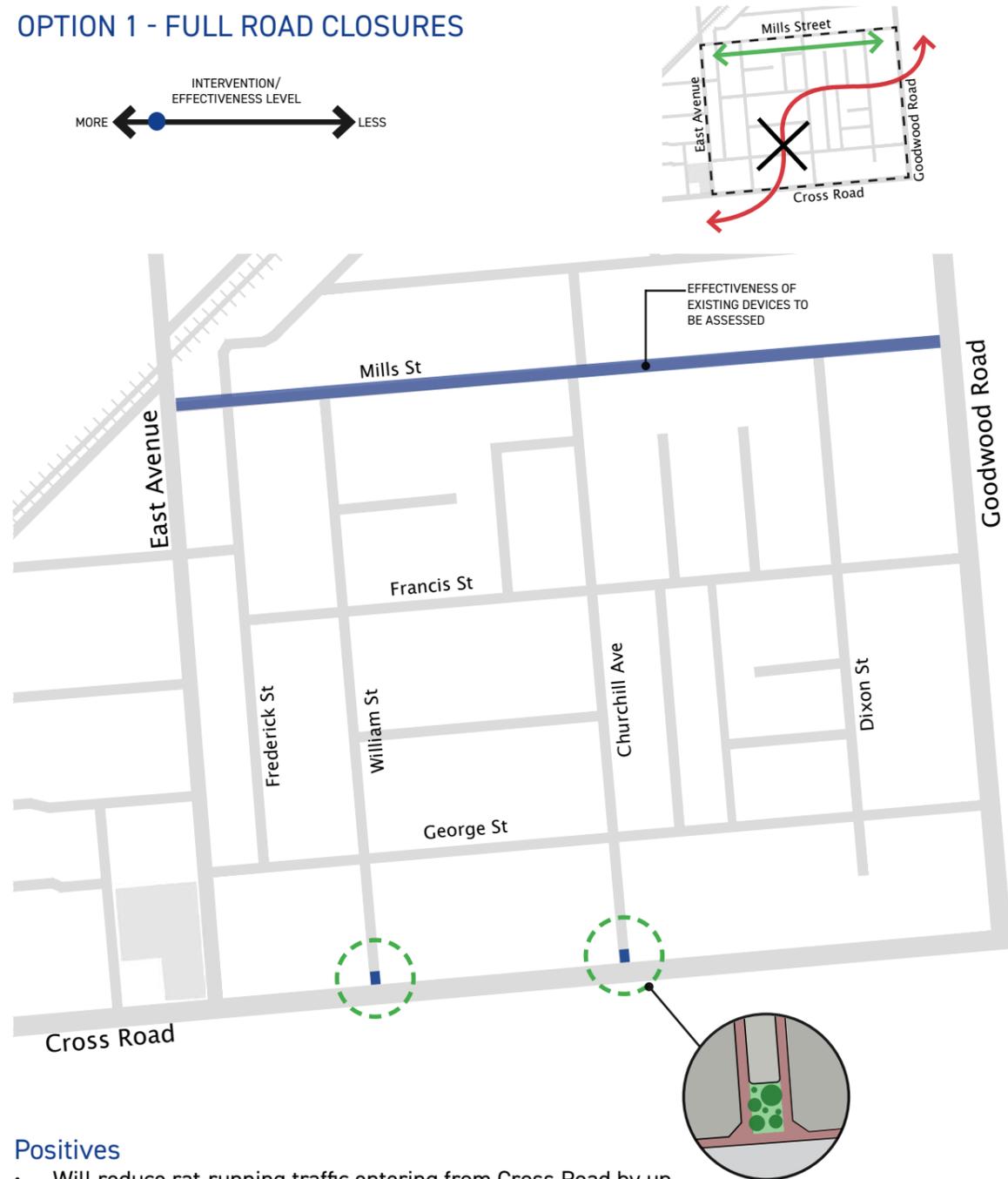
Draft Recommendations

	Project	Draft Recommendation	Priority
TRAFFIC MANAGEMENT	1. Maple Avenue - Speed Reduction	High speeds identified, however future investigations will be undertaken once adjacent development construction works are complete.	Medium
	2. Railway Tce Sth / Devon St Sth intersection - Safety Improvements	Corner cutting and conflict between cyclists/motorists identified. Pavement bars at the bend, advisory speed signs and a formal bicycle path intersection are proposed.	High
	3. Forestville Tram Stop pedestrian refuge	Minimum sight distance for pedestrians not provided. A pedestrian refuge is proposed adjacent the existing tram line crossing, including loss of 3 parking spaces.	High
	4. Clarence Park Rat-Running (options)	Mills Street chicanes to be redesigned and existing speed humps to be replaced with an alternate treatment. Four options for area wide treatment to deter rat-running are presented for community comment (see yoursay.unley.sa.gov.au/latm3 for options).	Medium
	5. Churchill Avenue Bicycle Route	Speeds are too high for a bicycle route, however Council will continue to monitor local speeds and volumes following implementation of recommendation 4.	Medium
	6. Forestville / Everard Park - Local traffic and parking review	Future investigations will be undertaken once all construction works are complete at the adjacent Kaufland Development and nearby Arcadian Development.	Medium
	7. Ripon/Homer/Lorraine intersection - Change in priority	Insufficient sight distance form motorists on Ripon Road turning into Lorraine Ave. Intersection traffic priority be changed so Ripon-Lorraine operates as a bend.	High
PARKING	8. Rose Terrace - Paid Parking	To increase parking availability for local businesses in the area, a restructure of parking is proposed, including time limit parking (suitable for residents and business visitors), a paid parking zone (\$4/day), whilst retaining some unrestricted parking.	Medium
	9. Leader Street - Paid Parking	Introduction of paid parking along Leader Street proposed (\$4/day). To occur after the major works are undertaken at the adjacent Kaufland development.	Medium
	10. Curzon Avenue - Disabled Parking	Improvements to disabled parking will occur on Curzon Avenue as part of the Goodwood Oval grandstand upgrade. The LATM supports this improvement.	High
	11. Goodwood Oval - Parking Controls	To improve local traffic flow and access for residents and their visitors during peak oval use, 1-hour parking is proposed on one side of Chelmsford Ave, Allenby Ave, Fairfax Ave, Argyle Ave. Refer to full study report for a detailed map and days.	Medium
	12. Langdon Avenue / East Avenue intersection	To provide additional space at the intersection, parking is to be restricted for the first 20m (additional 10m extension). This will result in a loss of one parking space.	Medium
WALKING & CYCLING	13. Goodwood Road Bicycle Connection	Wayfinding and pavement decals to direct cyclists along the footpath to the safe crossing point at Young Street (pedestrian actuated crossing).	Medium
	14. Leader Street Pedestrian Crossing	Installation of a wombat crossing (raised zebra crossing with pedestrian priority) on Leader Street west of Devon St Nth. This will result in a loss of 2 parking spaces.	Medium
	15. Leader Street - Buffered bicycle lanes	Upgrade bicycle lanes on Leader St (Seaford Railway to Goodwood Rd) to buffered bicycle lanes through line-marked clearance in 'car door' zone for cyclist safety.	Medium
	16. East Avenue - Buffered bicycle lanes	Upgrade bicycle lanes on East Avenue (Seaford Railway to Cross Road) to buffered bicycle lanes through line-marking clearance in 'car door' zone for cyclist safety.	Medium
	17. East Avenue Pedestrian Refuge	Installation of a pedestrian refuge on East Avenue, south of Langdon Avenue, resulting in the loss of three on-street car parks.	Medium
	18. Goodwood Road Bicycle Parking	Additional bicycle parking locations identified within the Goodwood Road retail precinct (Victoria Street to Leader Street).	Low



APPENDIX C - RECOMMENDATION 4A - OPTIONS 1 - 4

OPTION 1 - FULL ROAD CLOSURES



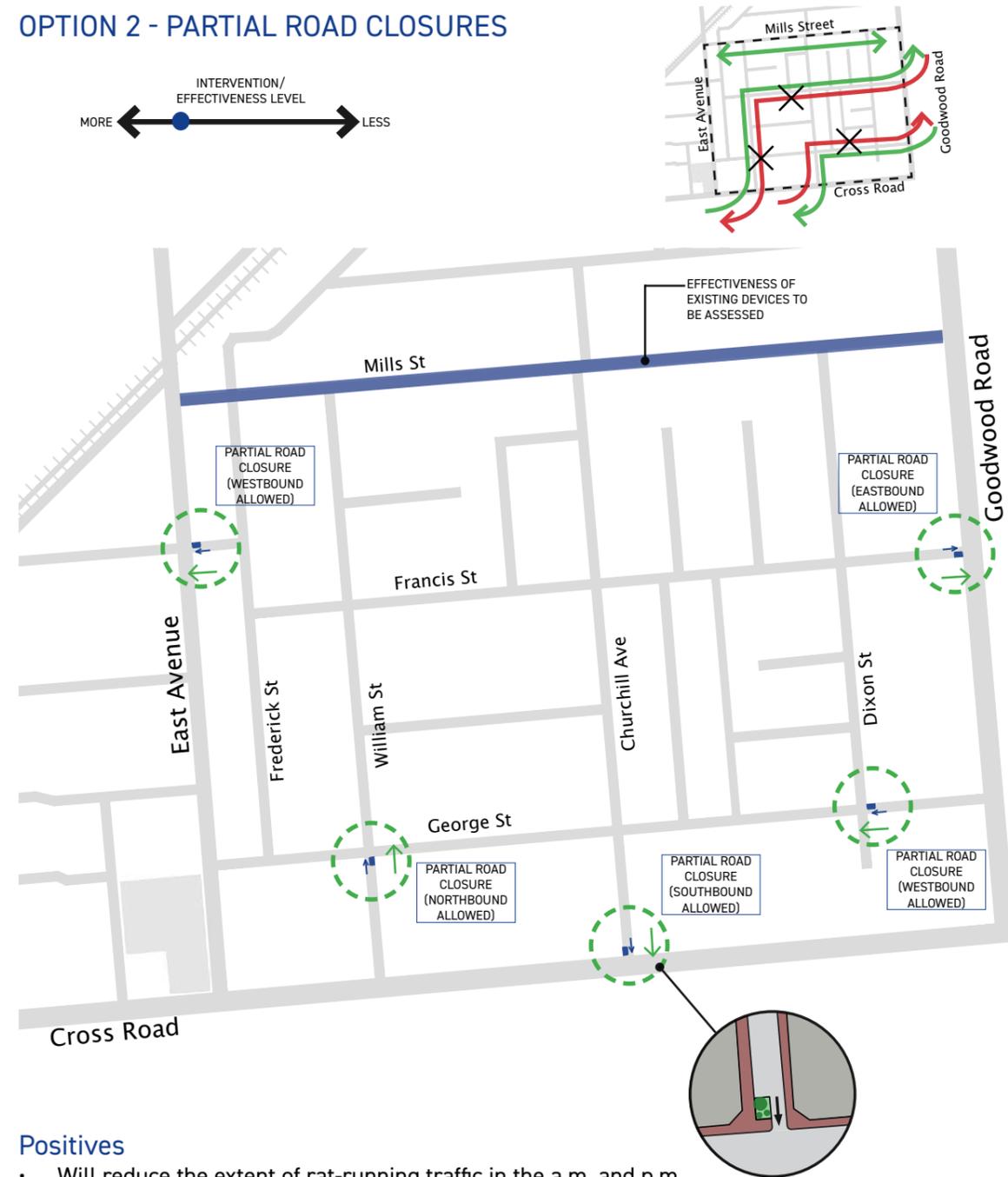
Positives

- Will reduce rat-running traffic entering from Cross Road by up to 80 vehicles in the a.m. and traffic exiting to Cross Road by up to 75 in the p.m.
- Anticipated reduction in traffic on Mills Street by reducing rat running routes and improvements to traffic control devices (road humps and chicanes), if required.

Negatives

- Traffic wishing to travel east on Cross Road will need to undertake a right turn on Goodwood Road, or utilise East Avenue, rather than turn left on to Cross Road as would be the current practice.
- May encourage motorists to use Mills Street (from East Ave to Goodwood Rd and vice versa) rather than routes involving William St or Churchill Ave. However, it is anticipated that this will be offset by reducing rat running route options and improved traffic control devices (road humps and chicanes), if required.

OPTION 2 - PARTIAL ROAD CLOSURES



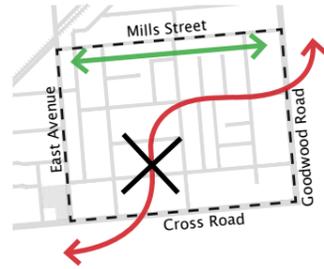
Positives

- Will reduce the extent of rat-running traffic in the a.m. and p.m.
- Anticipated reduction in traffic on Mills Street by reducing rat running routes and improvements to traffic control devices (road humps and chicanes), if required.

Negatives

- Will increase the trip time for local residents. In most cases the maximum additional distance is 500m, which corresponds to approximately 60 seconds.
- Will not discourage use of Churchill Avenue and George Street as a rat-run in the p.m.
- May encourage motorists to use Mills Street (from East Ave to Goodwood Rd and vice versa) rather than routes involving William St or Churchill Ave. However, it is anticipated that this will be offset by reducing rat running route options and improved traffic control devices (road humps and chicanes), if required.

OPTION 3 - MODIFIED T-INTERSECTIONS



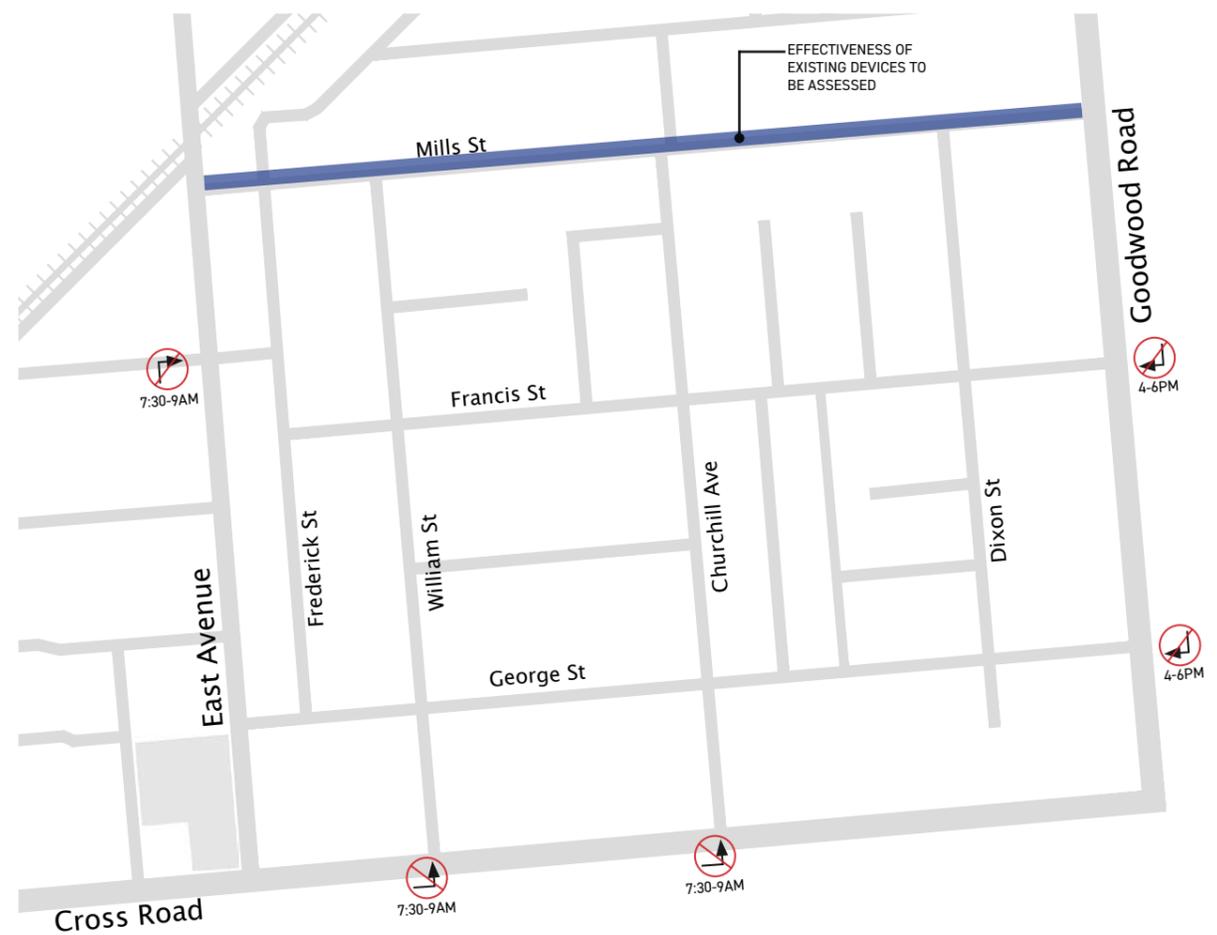
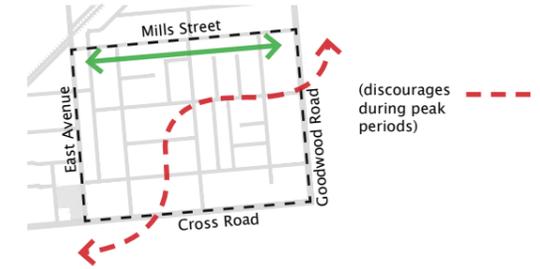
Positives

- Will reduce rat-running traffic entering from Cross Road by up to 80 vehicles in the a.m. and traffic exiting to Cross Road by up to 75 in the p.m.
- Will discourage traffic from using Frederick Street in the p.m. instead of East Avenue
- Anticipated reduction in traffic on Mills Street by reducing rat running routes and improvements to traffic control devices (road humps and chicanes), if required.

Negatives

- Will increase the trip time for local residents. The most affected would be residents of George Street (west of Churchill) wanting to access Goodwood Road, with an estimated increased trip time of 84 seconds.

OPTION 4 - TURNING BANS



Positives

- Factoring in an estimated compliance rate, it is estimated that this will reduce up to 52 vehicles rat-running through the area in the a.m. and 25 in the p.m.
- Will not impact residents and other locals outside of peak times
- Anticipated reduction in traffic on Mills Street by reducing rat running routes and improvements to traffic control devices (road humps and chicanes), if required.

Negatives

- Turning bans rely on motorists obeying the signs and SAPOL enforcement. Data collected at a nearby location indicated approximately a 60% compliance rate (i.e. 40% disobeying the signs).
- Traffic volumes outside of the designated hours will not be reduced