Stepney Maylands Evandale

Local Area Traffic Management (LATM) Study - Final

City of Norwood, Payneham & St Peters

21 January 2019
Ref: 20171315

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outcomes together

Document History and Status

Rev	Description	Author	Reviewed	Approved	Date
A	For Client Review	SS	PS	PS	6/11/18
B	Final (following Council briefing feedback)	SS/PS	PS	PS	21/1/19

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Executive Summary and Recommendations

Tonkin has been engaged by the City of Norwood Payneham & St Peters ("the Council") to develop a Local Area Traffic Management Plan in the Stepney Maylands and Evandale precinct which is bounded by Portrush Road, Payneham Road and Magill Road ("the Study Area").

The process has included the following core elements; including community and stakeholder consultation:

- Stage 1 consultation commenced in November 2017 and sought community input to the identification of traffic management issues they considered needed to be addressed throughout the Study Area.
- Key issues identified included high traffic volumes, adverse traffic speeds and inappropriate driving behaviour, particularly during the peak morning and afternoon periods.
- Stage 2 consultation commenced in July 2018 when residents were asked to comment on the draft recommendations as endorsed by Council.
- Three workshop briefings have been held with Council Elected Members (at project initiation, following receipt of the Stage 1 consultation and endorsement of the draft recommendations, and review of the final recommendations)
- Traffic volume and speed was collected by Council in 86 sites throughout the precinct
- A detailed review of crash data for the latest 5-year period (2012-17)
- Consultation with Department of Planning Transport and Infrastructure (DPTI) on the process and draft recommendations

This Report sets out the final recommendations for Council endorsement.

Traffic Volumes (Refer Section 2.1 and Section 6.1)

Concern over through traffic volumes was the highest reported concern of the community. Total traffic volumes per day are not considered excessive and are reasonably typical of metropolitan local street networks.

However, there is a high percentage of traffic volumes in the morning peak hour during the peak period (typically from 8 AM to 9 AM) and afternoon peak hour during peak period (ie from 5 PM to 6 PM), reflecting a high usage of 'through traffic' using the network.

This issue (high peak volumes) was reiterated during both stages of community consultation, with reference to various streets throughout the study precinct. It remains one of the more problematic issues to resolve.

A range of traffic control measures have been considered, including road closures, peak hour turning bans, and physical traffic control devices. However, the disadvantages of each option often outweigh any potential benefits.

The implementation of peak hour turning bans from the arterial network into the local streets was also considered, but not fully supported by Council as it was felt these would be too restrictive to local resident's access.

Council has initiated consultation with DPTI to address the capacity of the arterial road network, and development of corridor management plans for the main roads and key intersections.

Recommendations:

1. That the Council continue to work with DPTI to address the capacity of the arterial road network, and development of Network Operating Plans for the main roads and key intersections.

2. As part of this ongoing consultation, cautious consideration be given to the implementation of peak hour turning restrictions off the main roads at key roads within the study precinct, noting council concerns over reduced accessibility for local residents.

Traffic Speeds (Refer Section 2.2 and Section 6.2)

Concern over speeding throughout the Study Area was the second highest community concern as identified in the Stage 1 community consultation phase. Actual recorded speeds are reasonably typical of most residential streets, with averages speeds typically less than 45 km/h. Streets with average speeds more than 40 km/h were those in eastern half of the Study Area (between Portrush Road and Frederick Street).

A range of options have been considered to address 'speeds' in local streets, including the installation of additional traffic control devices such as road humps, chicanes, slow points, roundabouts, and the like. However, these treatments are considered costly, and are not considered warranted based on the actual data collected.

Numerous residents suggested consideration be given to a 40 km/h precinct speed limit. Potential benefits of the lower speed limit could be:

- Expected average speeds to reduce in those streets with averages speeds currently greater than 40 km/h. Speeds in those streets with speeds already lower than 40 km/h are unlikely to change.
- The lower speed limit would serve to reinforce the local residential precinct and improve the residential amenity.
- In principle there would be road safety benefits to all road users, particularly pedestrians and cyclists.
- The lower limit would serve to complement existing traffic controls currently in place, rather than replace them. The existing traffic controls including roundabouts and speed humps, are considered to be functioning appropriately and their removal would be considered retrograde and is therefore not supported.

The Draft Report sought the level of community support for the introduction of a 40 km/hr speed limit within the Study Area. Should there be a majority level of support, it was recommended that the Council pursue the implementation of this lower speed limit within the Study Area. It was not expected that any further consultation after Stage 2 should be required for the implementation of the 40km/h speed limit.

There was general support for a reduced speed limit, with 68% either agreeing or strongly agreeing to the recommendation.

Recommendation: That Council formally seek approval from the Minister to implement a 40 kph speed limit in the part of the Study Area which is bound by Portrush Road, Magill Road, Nelson Street and Payneham Road, in accordance with the procedure outlined in 'Speed Limit Guidelines'.

Narrow Street (Refer Section 6.3)

A number of residents raised concerns during the Stage 1 community consultation phase regarding the narrowness of various streets throughout the Study Area and the difficulties of on street parking and two-way traffic movements (e.g. Ann Street). While the Council have guidelines surrounding the implementation of line marking adjacent driveways, there is currently no formal policy or procedure in place to manage on street parking and traffic congestion along narrow streets.

Council has identified the need to develop a strategic parking plan for the whole Council. Council could consider developing a policy or procedure to manage narrow streets, as part of this Strategy. This approach has the advantage of maintaining consistency for residents throughout the City.

Recommendation: That the Council develop a policy or procedure for the purpose of undertaking assessment to manage on street car parking on both sides of the street versus traffic congestion along streets with a narrow carriageway width that has a consistent approach throughout the City.

Ann Street (Refer Section 6.4)

A number of residents raised concerns during the Stage 1 community consultation phase regarding Ann Street, largely surrounding high volumes of parked cars and two-way traffic movements. Three options were considered including No Entry into Ann Street from Payneham Road, trialling a one-way street, or parking restrictions to reduce the conflict between oncoming vehicles. On balance the introduction of No Entry from Payneham Road into Ann Street was the preferred option (subject to DPTI approval).

Several concerns were raised as part of the Stage 2 consultation mainly related to reduced access to the Avenues Shopping Centre and impact on access to the St Peters Village Shops. DPTI did not support the recommendation. One resident also noted the need for pedestrian safety improvements on Ann Street adjacent the zebra crossing (within the Avenues Shopping Centre car park), just south of Olive Road.

Given the concerns raised by DPTI and the community, it is not appropriate to progress with the draft recommendation.

Further consideration has been given to the implementation of parking restrictions on one side of the road. Other options investigated include positioning the half road closure in Ann Street, south of Olive Street.

It is clear that none of the options explored can adequately address the concerns raised by the community, without introducing some other constraint on mobility for local residents in the study precinct, or restriction on parking for local residents adjacent their properties. It is also clear that none of the options considered will be met with overall strong support from the community.

- One way traffic – will significantly impact on local accessibility and change traffic volumes in nearby street
- Parking restriction – mostly considered unnecessary and favours traffic movements over the needs of residents; may increase speeds with free flow conditions
- No Entry at Payneham Road – not supported by DPTI or traders
- No Entry in Ann Street (south of Olive) – reduced accessibility for local residents.

On balance, and through consultation with Council Elected Members, the significance of the issue as originally reported does not warrant the significance of these traffic control measures and potential impacts.

Recommendation: That Council not implement traffic or parking restrictions along Ann Street to specifically address the concerns over traffic volumes, parked cars and narrow street.

In regard to pedestrians crossing Ann Street adjacent car park zebra crossing (south of Olive Street), we recommend:

- Relocate the No Stopping signs to match the end of the yellow no stopping lines

- Construct an appropriate kerb ramp on both sides of Ann Street, which will require removal of one car park on the eastern side of the road

- Install pedestrian ahead warning signs on each approach in Ann Street

Ann Street and Olive Street Intersection (Refer Section 0)

Four (4) right angle crashes occurred at the intersection between 2012 and 2016. Visibility at the intersection is partially restricted. Consideration has been given to a range of options including roundabouts and raised intersection plateau.

We note that parking is already prohibited on the east side of Ann Street for around 20m either side of Olive Street (i.e the standard 10m restriction has already been increased to address the sight distance issue). We do not believe that a further restriction is required.

Recommendation: No further action is required at this stage.

Ann Street and Flora Street Intersection (Refer Section 6.6)

Residents raised concerns during the Stage 1 community consultation phase regarding poor visibility at the intersection of Ann Street and Flora Street. While parked vehicles may cause some restriction, sight distances are generally considered adequate.

We note that parking is already prohibited on the east side of Ann Street for around 20m either side of Olive Street (i.e the standard 10m restriction has already been increased to address the sight distance issue). We do not believe that a further restriction is required.

Recommendation: No further action is required at this stage.

Lindas Lane (Refer Section 6.7)

Residents raised concerns during the Stage 1 community consultation phase regarding the amount of 'through traffic' using the road particularly travelling south west toward Nelson Street. The Council has previously investigated a range of options for the Lane including a one-way restriction and/or road closures.

Recommendation: That the Council install a 'NO ENTRY' sign at the eastern end of the Lane at the Lindas Lane and Morcomb Street intersection.

Laura Street (Refer Section 6.8)

Residents raised the concern during the Stage 1 community consultation phase that drivers were cutting the corner on entering Laura Street. During the site inspections this was observed to be occurring at the Frederick Street and Laura Street intersection.

Recommendation: That the Council implement a pavement bar median to maintain lane separation at the intersection. This will result in the loss of approximately three (3) on street car parking spaces at the intersection.

Henry Street (Refer Section 6.9.3)

Residents raised concerns during the Stage 1 community consultation phase regarding the blind bend on Henry Street. It should be noted that the pavement width along Henry Street varies and is narrowest at its northern end, measuring approximately 5.3 metres wide.

The draft recommendation highlighted a significant sensitivity over the function of Henry Street in the local precinct. As a narrow street it is not conducive to function as a connecting road, although it clearly does provide this role linking the areas east of Frederick Street to Nelson Road. It is also one of the key routes that bears the burden from external through traffic (discussed in 6.1).

The implementation of the parking restriction was seen by some residents as Council favouring the needs of through traffic drivers over the needs of local residents. However, Council is also obliged to manage road safety in narrow streets, and retention of parking on both sides of Henry Street through the bend does not address the fundamental concerns being raised by the majority of the community.

Through discussion with two of the affected residents, it was felt that a peak hour parking restriction (7-9am, 4-6pm weekdays) would be a reasonable compromise.

As a separate issue, concerns were also raised over driver cutting the corner when entering Ann Street from Frederick Street (a similar concern was also raised about driver behaviour at Olive Road).

Recommendation:

1. That Council implement a No Stopping restriction around the bend in Henry Street between 7-9am and 4-6pm Monday to Friday.
2. That Council install pavement bars in Frederick Street (northern leg) to control vehicle turning movements into Henry Street.

Henry Street and Ann Street Intersection (Refer Section 6.10)

Several residents raised concerns during the Stage 1 community consultation regarding poor visibility at the Henry Street and Ann Street intersection. Visibility on the approach from both sides of Ann Street is restricted by adjacent property fencing. Four (4) right angle crashes have also occurred at this intersection between 2012 and 2016.

Recommendation: That the Council undertake a design feasibility for the installation of a mini-roundabout at the intersection.

Stepney Street and Henry Street Intersection (Refer Section 0)

Crash data indicates that there have been four (4) right angle crashes at the Stepney Street and Henry Street intersection. Various options have been considered including roundabouts and raised intersection plateaus. However, these options were not considered viable.

Recommendation: That the Council re-prioritise the intersection movements and install Stop signs in Stepney Street.

Morris Street (Refer Section 6.12)

Residents raised concerns during the Stage 1 community consultation phase regarding drivers cutting corners when entering Morris Street.

Recommendation: That the Council install a pavement bar median on the centre line of Morris Street at the intersection.

Adelaide Street and Dover Street Intersection (Refer Section 6.13)

Crash data indicates that between the period of 2012 and 2016, there have been two (2) right angle crashes at the Adelaide Street and Dover Street intersection. The Council have reported an additional crash that occurred at this location in late 2017.

Recommendation: That the Council undertake a design feasibility for the installation of a roundabout and kerb extensions at the intersection.

1 Introduction

1.1 Scope

Tonkin has been engaged by the Council to review traffic conditions in the Study Area, and prepare a strategic Local Area Traffic Management Plan ("the LATMP") with recommendations to address any issues identified.

The Study Area is bounded by Portrush Road, Payneham Road and Magill Road (refer Figure 1.1). Nelson Road, being owned and operated by the Department for Planning Transport and Infrastructure (DPTI), has been excluded from the Study.

The scope of the LATMP included the following:

- Review and analyse vehicle volume and speed data provided by the Council.
- Review and analyse collision data for the most recent five (5) years; where the information was to be summarised and mapped, including the number and types of collisions per site.
- Obtain and analyse collision data for the most recent five (5) years. This data will also be summarised in map format including the number and types of collisions per site. Blackspots (as defined in DPTI guidelines) will be identified for future potential funding applications.
- Review access and egress around the Study Area via the arterial road network to identify issues that may need actions from DPTI.
- Collate and review concerns raised during Stage 1 public consultation, during which residents were invited to provide comment, through the post or via an online survey.
- Undertake site investigations to independently assess identified concerns and possible treatment options.
- Produce base mapping of existing traffic controls and line marking including:
  - Existing traffic management controls.
  - Existing line marking (not including parking controls).
- Review known concerns as already reported to the Council regarding Lindas Lane and Henry Street.
- Review and incorporate cycling issues as already identified in the Council's City-Wide Cycle Plan.
- Develop a draft LATMP suitable for the Stage 2 community consultation, and based on feedback received, finalise the Plan including prioritised recommendations and cost estimates suitable for budgetary purposes.
- Conduct three (3) Information Sessions with Elected Members at key stages of the development of the LATMP.
- Issues related to parking have been excluded from the scope of this LATMP. It is understood that the Council aims to conduct a City-Wide Car Parking as a separate project.

Figure 1.1 Study Area

1.2 Background

In 2001, the Council undertook an LATM Study for the area bound by Portrush Road, Payneham Road, Magill Road and Nelson Street. The LATM Study involved the collection of traffic data, consultation with residents to assist in identifying traffic management issues and the development of treatments to address these issues. The LATM Study included a detailed community consultation process.

In 2002, the Council adopted to implement a number of short-term recommendations over a period of years following completion of the LATM Study.

Most recently, residents along the northern end of Henry Street have raised concerns regarding traffic utilising Henry Street as a 'through-route', particularly during peak times.

Subsequent investigations undertaken by the Council supported the idea that Henry Street is being used as a 'through-route', however it was unclear as to what proportion of this was internally generated within the Study Area or originated from outside.

Following the recent concerns that were raised and given the length of time since the previous LATM Study, the Council decided to undertake an updated LATMP, and expand the scope to include the Stepney Triangle area (ie the area bound by Payneham Road, Magill Road and Nelson Street).

1.3 Process

Various investigations have been undertaking in preparing this final report as outlined below.

Tonkin Consulting were engaged in October 2017 to prepare a strategic Local Area Traffic Management Plan ("the LATMP") with recommendations to address any issues identified.

The Council engaged HDS Australia Pty Ltd to collect 7-day traffic volume and speed data along local roads located within the Study Area. At total of 86 sites were identified and data collection occurred during October 2017 and November 2017.

Stage 1 Consultation Stage 1 consultation commenced in November 2017 and sought community input to the identification of traffic management issues they considered needed to be addressed throughout the Study Area.

Three workshop briefings have been held with Council Elected Members:

- at project initiation
- following receipt of the Stage 1 consultation and endorsement of the draft recommendations, and
- review of the final recommendations)

A detailed review of crash data for the latest 5-year period (2012-17)

Consultation with Department of Planning Transport and Infrastructure (DPTI) on the process and draft recommendations

At its meeting held on 2 July 2018, the Council endorsed this Draft Report for the purpose of conducting the Stage 2 community consultation phase. Stage 2 consultation commenced in July 2018 when residents were asked to comment on the draft recommendations as endorsed by Council.

All comments received during the Stage 2 community consultation phase have been considered and in guiding the development of this final LATMP and Final Report.

Final recommendations were presented to workshop briefing of Council in November 2018.

2 Traffic Data Collection

The Council engaged HDS Australia Pty Ltd to collect 7-day traffic volume and speed data along local roads located within the Study Area. At total of 86 sites were identified and data collection occurred during October 2017 and November 2017. This data is summarised below and shown in full in Appendix A.

2.1 Volumes

2.1.1 Weekday Average Traffic Volume

A summary of the 2-way weekday average volume, categorised into brackets, is shown in Figure 2.1. A full map showing this data is attached in Appendix A. The 2-way weekday average volume describes the average number of vehicles travelling in both directions on a weekday.

In accordance with the Council's Local Area Traffic Management Policy, the road classifications in terms of functionality have been determined by the Council to be up to 2000 vehicles per day for a local street and 2000 to 3000 vehicles per day for a Collector Road.

For the Study Area, average volumes are considered to be reasonable and approximately what would be expected of such a local area.

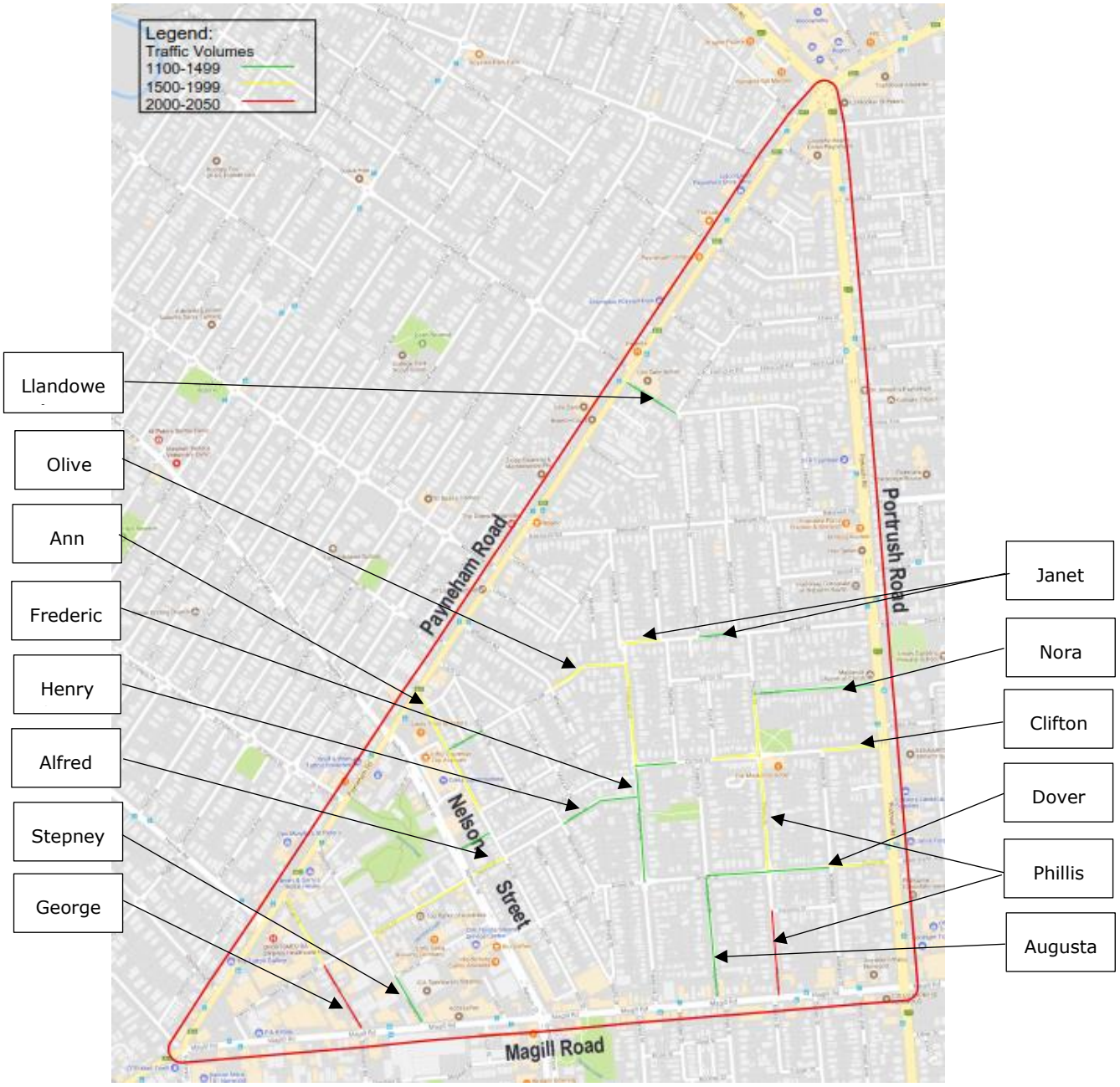


Figure 2.1 2-way weekday average volume

2.1.2 Peak Hours

Traffic volumes during the morning and afternoon peak were also observed for selected streets. These streets were selected for higher than average observed peak volumes, noted during site inspections. Morning traffic volumes typically peaked at 8:00am, with some peaks experienced at 11:00am. Afternoon traffic volumes typically peaked between 3:00pm and 5:00pm.

For local roads it would be reasonable to expect peaks in the order of 10% of total daily traffic volume in the same direction during the peak hour. Peak volumes in excess of this often indicate that vehicles are using this route as a cut-through.

During the peak hour of the morning peak period (typically 8am to 9am), the data indicates that a disproportionally larger percentage of daily traffic travelled in the south-western direction (towards the city). Figure 2.2 indicates the percentage of daily traffic volume greater than 10% of the average daily volume, travelling in this direction.

During the peak hour of the afternoon peak period (typically 5 PM and 6 PM), data indicates that a disproportionally larger percentage of daily traffic travelled in the north eastern direction (away from the city). Figure 2.3 indicates the percentage of daily traffic volume greater than 10% of the average daily volume, travelling in this direction.

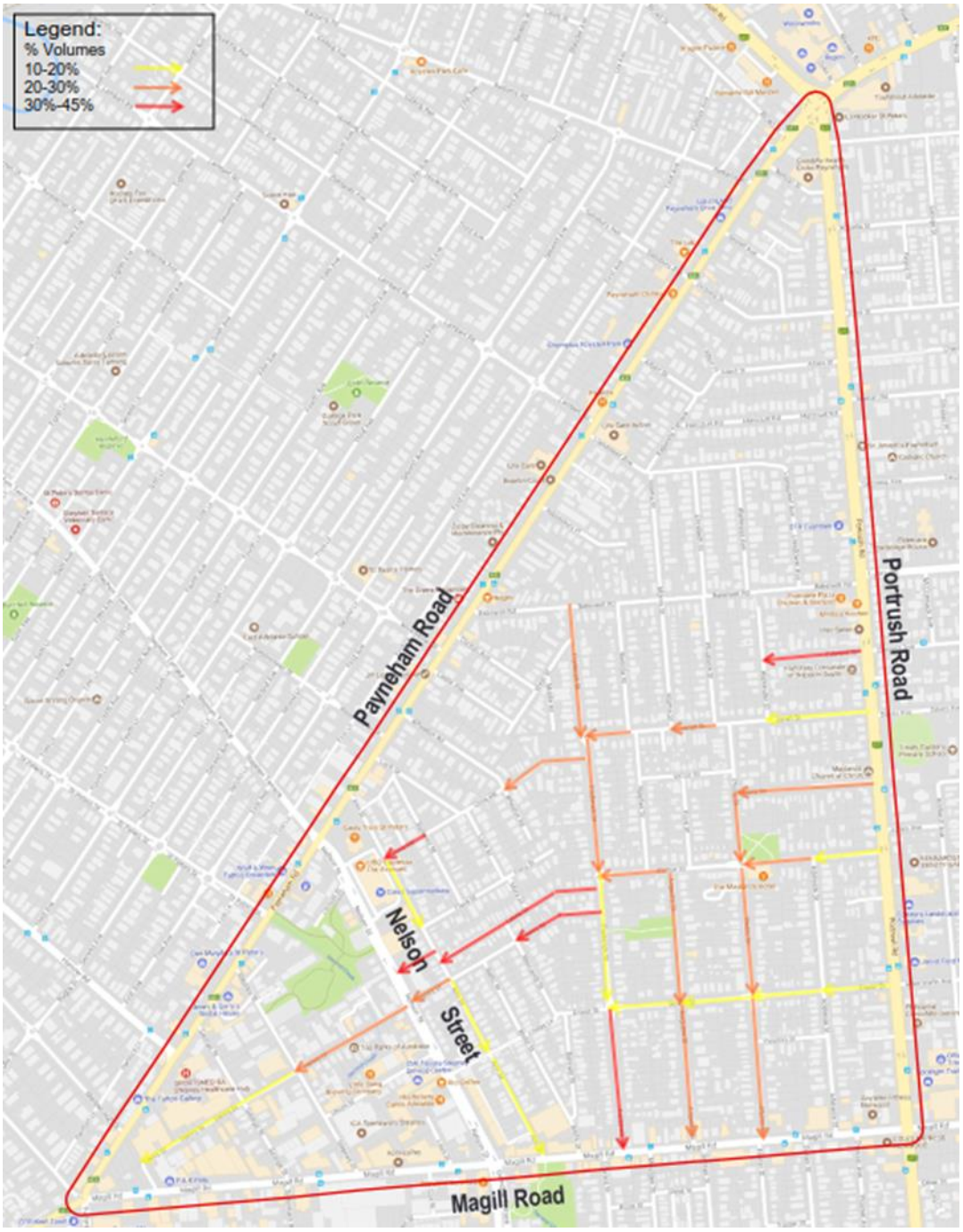


Figure 2.2 **Morning percentage of traffic travelling towards city, greater than 10% of daily volume in the same direction, during peak hour of peak period**

Figure 2.3 **Afternoon percentage of traffic travelling away from the city, greater than 10% of daily volumes in the same direction, during peak hour of peak period**

2.1.3 Commercial Vehicles

It would be expected that the percentage of commercial vehicles on local roads would be in the vicinity of 3%. The proportion of commercial vehicles is generally low throughout the Study Area, as shown in Figure 2.4, where few streets demonstrate percentages greater than 5. The percentage of commercial vehicles is marginally higher in the south western quadrant, however, this is to be expected given land use in this region is predominantly commercial.

In general, volumes of commercial traffic throughout the Study Area are considered acceptable.

Figure 2.4 Proportion of daily commercial vehicles 5%

2.1.4 Previous Study

Traffic volume data collected during the LATM Study was compared to volume data that was collected during the 2001 LATM Study (Appendix B). Not all streets surveyed in this study were surveyed in the 2001 Study.

While some local roads have seen reductions in traffic volumes between 2001 and now, daily volumes have increased on most roads during this period. In some instances, volumes have approximately doubled, including on Clifton Street, Dover Street, Morris Street and Kapunda Terrace.

2.2 Speed

2.2.1 Current Speed

The 'average speed' data collected describes the average vehicle speed for a particular segment of road. The '85th percentile speed' describes the speed for which there are 85% of vehicles travelling at, or slower than.

To understand the relative magnitude of these speeds throughout the Study Area, benchmarks were selected and presented on maps. Streets for which 2-way average speed is greater than 40 km/h is shown in Figure 2.5, and street for which the 2-way 85th percentile data is greater than 50 km/h is shown in Figure 2.6.

Average speeds over 40 km/h varied from 40.1 km/h on the northern end of Phillis Street to 44.7 km/h on the southern end of Phillis Street. Average speeds throughout this Study Area are generally representative of local roads.

The 85th percentile speeds over 50 km/h ranged from 50.1 km/h on Frederick Street to 51.5 km/h on the southern end of Phillis Street. The 85th percentile speeds within the Study Area also generally match what would be expected for local roads.

Speeds are generally higher in the south eastern quadrant of the Study Area. Within this quadrant, average speeds are generally higher along routes that do not currently have traffic control measures specifically targeting speed reduction, such as speed humps or slow points. The 85th percentile speeds were also generally higher in these same streets, where there are no speed reducing measures. In some cases the 85th percentile speed exceeded the speed limit.

In the northern quadrant of the Study Area, average speeds are higher along Albert Street and Harcourt Street; routes that provide east-west connectivity. The 85th percentile speeds were also higher in these streets, as well as Kapunda Terrace.

It should be reiterated that, while speeds are slightly higher in the areas noted, they are generally what would be expected of local roads.

Figure 2.5 **2-way Average Speed >40km/h**

Figure 2.6 2-way 85th Percentile Speed >50km/h

2.2.2 Previous Study

Speed data collected during the LATM Study was compared to the available speed data that was collected during the 2001 LATM Study. As highlighted previously, not all streets surveyed in this study were surveyed in the 2001 Study.

For those streets where a comparison was drawn, average speeds have generally reduced by between 1 km/hr and 9 km/h. In almost all streets throughout the Study Area, the 85th percentile speed has reduced over this period by between 1 km/hr and 11 km/h. These reductions are marked and likely a consequence of the reduction in the Default Urban Speed Limits from 60 km/hr to 50 km/h which came into effect in 2003.

2.3 Summary

To summarise this data relative to other residential precincts within the Council (and the greater metropolitan area):

- Actual traffic volumes per day are not considered excessive and are reasonably typical of metropolitan local street networks.
- Average speeds are not considered excessive and are reasonably typical of metropolitan local street networks.
- However, there is a high percentage of traffic volumes in the morning and afternoon peak periods reflecting a high usage of 'through traffic' using the Study Area.

3 Crash Data

Crash data as available from DPTI for the five (5) year period of 2012 to 2016 (inclusive) has been reviewed.

This information was used to identify the nature and number of crashes. A map of the Crash Types and Crash Severity is presented in Appendix C. Within the Study Area there have been no crashes resulting in fatalities. Incidents have resulted in injury, or in the majority of cases, property damage.

Crashes throughout the Study Area largely consist of right angle incidents and hitting parked vehicles or fixed objects.

A summary of key locations and incident types is shown in Table 3.1.

Table 3.1 Key Collision Data

Location	Incident Type	Incident Severity
Stepney Street / Henry Street Intersection	Four (4) Right Angle	Three (3) Property Damage One (1) Injury
Ann Street / Henry Street Intersection	Four (4) Right Angle	Three (3) Property Damage One (1) Injury
Adelaide Street / Dover Street Intersection	Two (2) Right Angle*	Two (2) Property Damage*

*Note: Following the 2012-2016 period, an additional crash occurred in 2017

Given the incidence of crashes as outlined in Table 3.1 above, these intersections were considered, and draft recommendations have been made for improvements (refer Section 6), in addition to issue raised during the Stage 1 community consultation phase.

4 Description of the Local Area

4.1 Road Network

The Study Area is bound by arterial roads, where Nelson Street (owned and operated by DPTI) divides the northern quadrant from the southern quadrant.

In general, the internal road network is open and permeable. There are some physical controls restricting right hand turns into the Study Area, notably at the following locations from Portrush Road:

- Nelson Street
- Harcourt Road
- Bakewell Road
- Janet Street
- Dover Street

There appears to be no clear road hierarchy; there are no defined or obvious local collector roads and all roads within the Study Area are characteristic of local roads. Nevertheless, select roads provide key connectivity throughout the Study Area:

- Bakewell Road (whilst narrow) provides east-west connectivity between Portrush Road and Payneham Road.
- Frederick Street provides north-south connectivity between Bakewell Road and Magill Road.

The internal geometry of the Study Area is not uniform in nature, but can instead be classified into four (4) distinct quadrants (refer Figure 5.1):

4.1.1 South Western Quadrant

Comprised of an area bound by Nelson Street, Payneham Road and Magill Road, this forms most of Stepney. It is characterised by narrow streets and largely commercial/industrial land uses.

4.1.2 Central Quadrant

Comprised of an area generally bound by Nelson Street, Frederick Street, Bakewell Street and Payneham Road, this area is characterised by narrow streets and cottage-style residential properties.

4.1.3 South Eastern Quadrant

Comprised of an area generally bound by Bakewell Street, Frederick Street, Magill Road and Portrush Road, this area is characterised by a 'grid-like' pattern of wider roads.

4.1.4 Northern Quadrant

Comprised of an area bound by Payneham Road, Bakewell Road and Portrush Road, it is generally characterised by a non grid-like pattern.

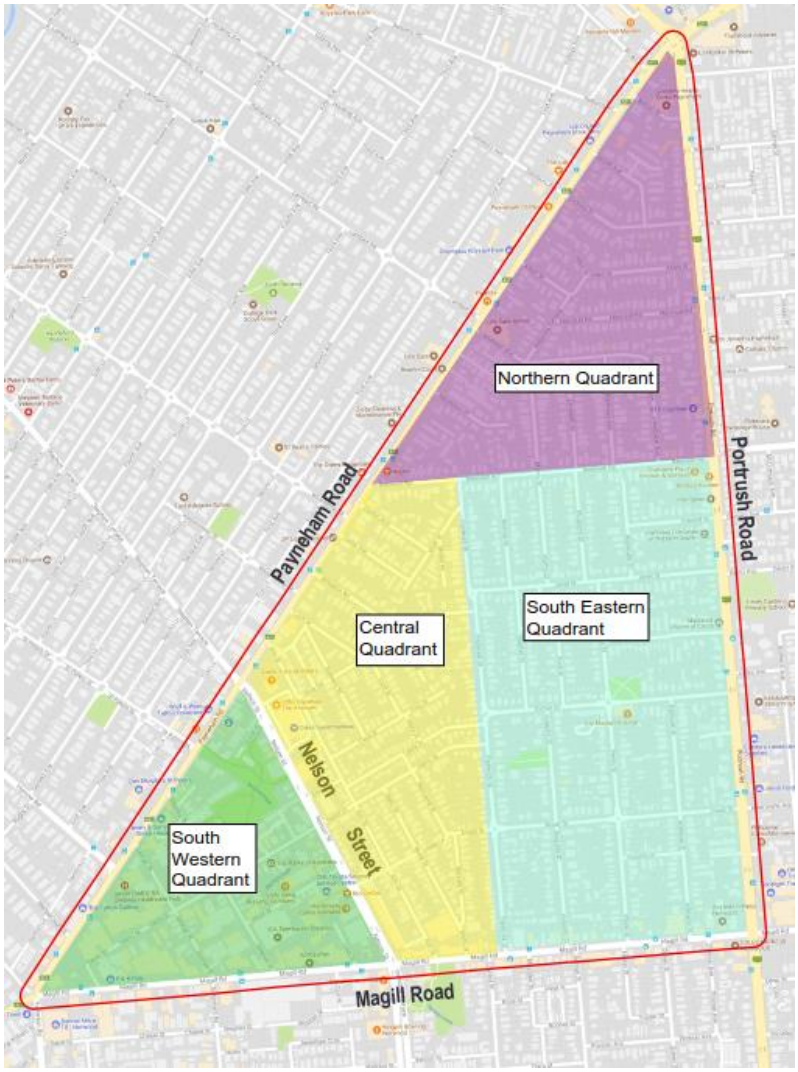


Figure 4.1 Road Network Geometry – Quadrant Classification

4.2 Existing Traffic Controls

4.2.1 Major Treatments

Roundabouts are located at various junctions within the south eastern quadrant of the Study Area, at the junctions of:

- Janet Street and Frederick Street
- Clifton Street and Frederick Street
- Clifton Street and Phillis Street
- Dover Street and Frederick Street
- Dover Street and Phillis Street

Speed humps are located on select east-west routes providing connectivity through the Study Area. Historically, these streets were used as local collector routes. However, the 2001 LATM Study found that the effect these speed humps was the creation of a more balanced distribution of traffic throughout the general area.

4.2.2 Pavement Bars

Pavement bars are installed at various locations throughout the Study Area. Most were present prior to the 2001 LATM Study and some were installed following recommendations adopted by the Council which were put forth by the 2001 LATM Study.

4.2.3 Speed Limit

The speed limit east of Nelson Street is currently 50 km/h, following the 2001 LATM Study and the subsequent findings of the Joint Parliamentary Committee regarding Traffic Calming and Suburban Speed Limits, which saw a State-wide reduction in Default Urban Speed Limits from 60 km/h to 50 km/h which came into effect in 2003.

The speed limit throughout the entire Stepney Triangle or South Western Quadrant of the Study Area (ie west of Nelson Street) is 40 km/h.

4.2.4 Stop Signs and Give Way Signs

There are various Stop and Give Way signs installed at intersections and junctions throughout the Study Area.

The intersections previously identified as having a crash history (Henry Street/Ann Street and Henry Street/Stepney Street) are currently controlled with Stop Signs.

4.2.5 Road Closures

Access to the northern end of Alexander Street from Bakewell Road is prevented by a road closure. This was implemented prior to the 2001 LATM Study.

4.2.6 Slow Points

There are two (2) slow points, located on the eastern end of Albert Street and midway along Nora Street which were implemented following the adoption of recommendations outlined in the 2001 LATM Study.

4.2.7 Turning Restrictions

Left turns into the Study Area from surrounding arterial roads are not restricted. Right turns into the Study Area from Portrush Road for southbound traffic are restricted at Bakewell Road, Janet Street and Dover Street.

The 2001 LATM Study recognised that during the afternoon peak, traffic tended to utilise Adelaide Street to avoid the Magill Road and Portrush Road intersection. Consequently, it recommended restricting left turns into Adelaide Street during the afternoon peak. This is not currently in place as it was not adopted by the Council as it was considered too restrictive for local residents.

The existing traffic controls were documented and mapped for the Study Area (refer Appendix F).

4.3 Land Uses

Land use in the Study Area is predominantly residential, where some properties in the central quadrant are 'cottage-style' houses with access provided by a rear laneway.

The South Western Quadrant is largely commercial, where it is expected vehicles as large as service trucks will be utilising the local road network.

There is a retail centre (the Avenue Shopping Centre) located on the western side of Ann Street, which generates traffic volumes in the Study Area and parking demand along Ann Street. On the southern end of Ann Street there is timber and hardware store.

Within the Study Area, the Maylands Hotel (located on the corner of Phillis Street and Clifton Street) would be expected to generate some level of traffic, particularly during the evening period.

Along the perimeter of the Study Area there are a number of retail and commercial properties on the arterial roads. This includes a Goodlife Health Club, located on Nelson Street.

Figure 5.2 gives an indication of land use in the Study Area.

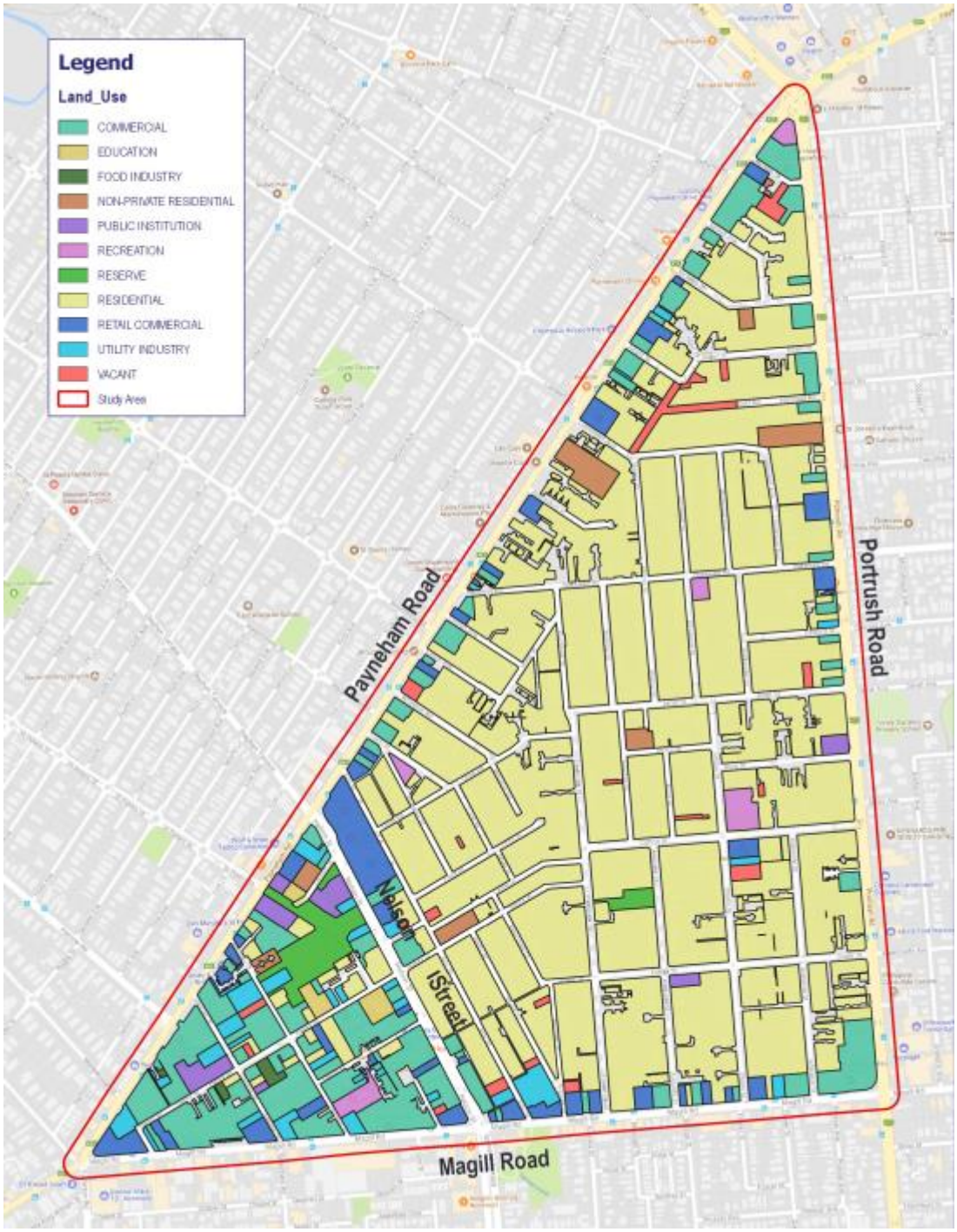


Figure 4.2 Land use in the Study Area

5 Community Consultation

Community consultation for this LATMP has been undertaken in two (2) stages:

- Stage 1 Identify Issues
- Stage 2 Draft Recommendations

5.1 Stage 1 Identify Issues

On 20 November 2017, the Stage 1 community consultation phase commenced whereby residents and the wider community were invited to raise traffic management issues they considered needed to be addressed throughout the Study Area. Comments were invited through a letterbox drop to each property located within the Study Area (a copy of the cover letter and Feedback Form inviting comments is attached in Appendix D), through the Council's website and through an advertisement in the Messenger Newspapers which are circulated within the City of Norwood Payneham & St Peters and Council offices displays.

The community was asked to provide comment on a number of traffic management topics as well as any other relevant issues. Comments were invited via:

- letter box drop to all properties (~ 3500).
- Council website.
- Messenger Newspapers.
- Council offices displays.

Respondents were asked to provide feedback by return envelope or completing an online survey or email. In response for the invitation to provide feedback, 420 written submissions were received, representing a response rate of approximately 10%. All feedback received was collated in December 2017. Comments were obtained via:

- Feedback Form reply paid envelopes (~370).
- Online survey (~40).
- Emails (~10).

The traffic management concerns raised during this stage of community consultation, combined with site investigations undertaken, formed the basis for the key issues identified and addressed in the Draft Report.

The feedback received through the Stage 1 community consultation phase was collated. A full table summarising the feedback received is shown in Appendix E.

5.1.1 Key Issues Identified (Speeds and Volumes)

Figure 4.1 summarises the perceived magnitude of severity according to respondents, for various types of traffic management issues, varying from "No Problem", "Minor Problem" or "Major Problem". According to feedback received, traffic management issues considered to be major concerns were associated with:

- High traffic volumes.
- Adverse traffic speeds.

Few respondents were concerned with the number of crashes throughout the Study Area.

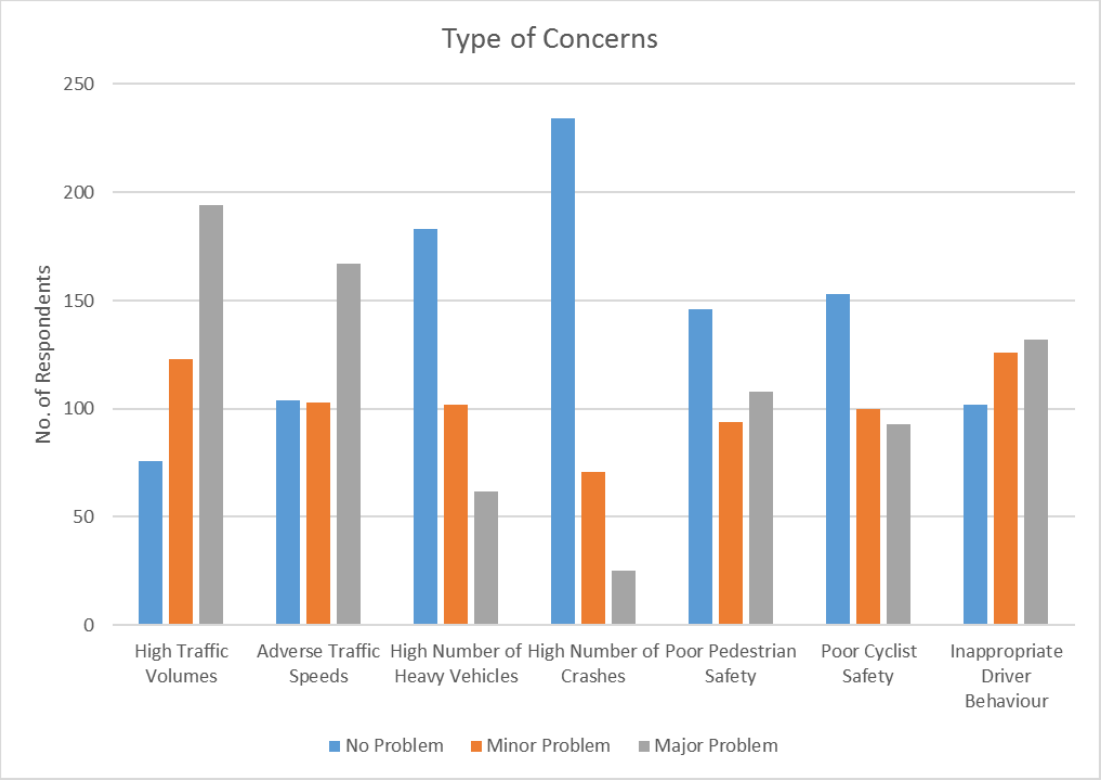


Figure 5.1 Perceived magnitude of traffic management concerns

Figure 4.1 shows the time of day during which these traffic management issues are of greatest concern. Respondents identified that high traffic volumes and adverse traffic speeds were of particular concern during peak morning and afternoon periods.

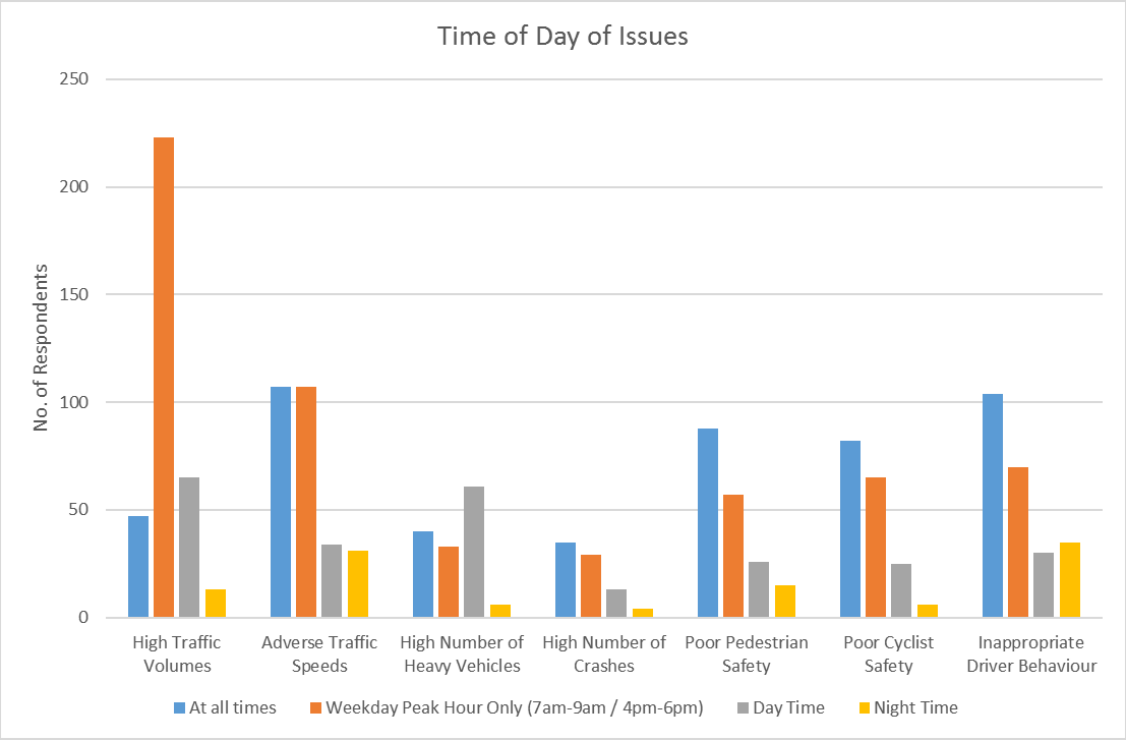


Figure 5.2 Time of day during which issues are occurring

Issues related to traffic volumes and speeds appeared to be widespread, as they were raised for a number of streets throughout the Study Area. In addressing issues of this nature, resolutions (such as speed humps) will often have an impact on adjacent side streets. Consequently, in addressing volumes and speeds, a "Precinct-wide" approach was undertaken and explored in Section 6.

In addition to these two (2) general issues, respondents raised traffic management concerns at specific locations. These were explored and recommendations made separately in Section 6.

5.1.2 Ann Street

A number of respondent concerns regarding Ann Street were associated with the existing parking arrangement. Whilst parking has been excluded from the LATM Study, it was considered prudent to include it in the considerations for Ann Street (explored in Section 6), given the number of concerns raised the association between parking layout and traffic congestion along this street.

5.1.3 Cycling Issues

In some instances, respondents raised concerns regarding the provision of cycling infrastructure. The Council has a City-Wide Cycling Plan where upgrades are allocated as part of an Infrastructure Action Plan, and reviewed periodically. These issues have been noted, however not directly addressed in this LATMP. It is expected that issues regarding provision of cycling infrastructure will be addressed during the review of the City-Wide Cycling Plan.

The City-Wide Cycling Plan was reviewed in the context of this LATM Study and its recommendations. Planned bicycle boulevards (most notably along Henry Street) within this Study Area have already been allocated and will be addressed as part of the City-Wide Cycling Plan and its reviews.

5.1.4 Turning Movements to Arterial Roads

A number of residents raised concerns regarding the inability to perform right hand turns from internal local streets within the Study Area onto the surrounding arterials roads, namely Portrush Road, Magill Road and Payneham Road, due to excessive traffic volumes.

Concerns were also raised regarding signal phasing at the Portrush Road and Magill Road intersection, which created inequity in permissible turning movements at the intersection.

These concerns regarding arterial roads were raised with DPTI, the body responsible for the management of these roads, for their consideration and review. Feedback to be received from DPTI regarding these matters will be incorporated into the Final Report.

5.1.5 Parking Issues

As noted previously in Section 1, the Council will be undertaking a City-Wide Car Parking Review separate from this LATMP. As such, issues related to parking have been excluded from the LATM Study, except as described above for Ann Street.

5.1.6 Other Issues

Respondents also raised a number 'other' issues, largely concerning;

- Footpath degradation.
- Insufficient lighting.

Following discussions with the Council, these issues will be addressed through asset review and upgrade processes in line with the Council Asset Management Plans and associated processes.

It is also understood that the Council are addressing line marking issues this financial year; there is an opportunity to include relevant line marking refreshing as part of this program.

5.2 Stage 2 Draft Recommendations

Council endorsed draft recommendations for community consultation on 2nd July 2018.

Stage 2 community consultation phase commenced on 12th July 2018, with all properties again receiving a letter box drop (~ 3500) with responses enabled via reply paid envelope, email or via a survey monkey. A copy of the cover letter and Feedback Form inviting comments is attached in the Appendices.

Residents and the wider community were invited to comment of the Draft recommendations as endorsed by Council.

The consultation asked respondents to rate their support/disagreement for each recommendation as:

- Strongly Disagree
- Disagree
- Agree
- Strongly Disagree

In response for the invitation to provide feedback, 340 written submissions were received, representing a response rate of approximately 10%. Comments were obtained via:

- Feedback Form reply paid envelopes (~290).
- Online survey (~40).
- Emails (~10).

6 Key Issues and Recommendations

The following key issues present the draft recommendations that went to community consultation, together with feedback received, and adjusted recommendations for Council approval……

6.1 Precinct Traffic Volumes

6.1.1 Background

Traffic volumes throughout the Study Area ranged from 116 vehicles per day in Battams Street to 2017 vehicles per day in Phillis Street and were largely in the range of 1000-1500 vehicles per day (all references are 2-way weekday movements). Whilst higher in the South Eastern Quadrant of the Study Area and along Henry Street and Olive Street, they are generally representative of local roads.

The percentage of commercial vehicles throughout the Study Area are generally less than 3% and are considered to be representative of other similar local roads. The higher average number of commercial vehicles seen in the South Western Quadrant of the Study Area is as expected, given the surrounding commercial land use. The higher percentage of commercial vehicles seen the South Eastern Quadrant of the Study Area marginally exceeds the expected percentage of commercial vehicles however is not considered to be unacceptable.

6.1.2 Peak Hour Volumes

In the afternoon, traffic data and community feedback indicate that 'through traffic' is a concern throughout the Study Area, particularly in the South Eastern Quadrant of the Study Area. It was noted that drivers utilised these streets as a through-route to avoid the Magill Road and Portrush Road intersection. This was supported by site inspections undertaken and traffic data, which indicated that traffic in the afternoon peak was largely northbound (headed away from the Adelaide CBD).

Due to queuing occurring at this intersection, drivers elected to make a left turn into the Study Area from Magill Road. Due to the length of the queue extending beyond Adelaide Street during peak times, drivers were observed to be largely turning into Phillis Street, Augusta Street or Frederick Street. The volume of afternoon 'through traffic' within the Study Area is reasonably high, however not unexpected and not dissimilar to other areas within the City.

In the morning, traffic data and community feedback indicate that through traffic was also a concern for Edward Street, Nora Street, Henry Street, Laura Street, Ann Street and Olive Road within the central quadrant of the Study Area. This was supported by site inspections and traffic data, indicating that a proportion of this consists of morning cut-through traffic, potentially turning off Portrush Road via Edward Street or Nora Street and heading towards Nelson Street to avoid the intersection of Magill Road and Portrush Road.

It should be noted, however, that limited access to Nelson Street is available from within the Study Area and that the identified roads provide key east-west connectivity towards these access points. Consequently, it is possible that some of the perceived 'through traffic' observed on these routes is internally generated traffic simply accessing Nelson Street. Residents within the Study Area wishing to head in a south west direction, towards The Avenues Shopping Centre or towards the Adelaide CBD, would utilise these roads due to the limited number of direct routes available. This appeared to be in line with site observations and possible, given the number of residents within the Study Area.

6.1.3 Through Traffic

As previously indicated (refer Section 2.1.2), there is a high percentage of traffic volumes occurring in several streets within the Study Area during the peak hours. This is likely to be influenced by the amount of traffic generated locally from within the Study Area, as well as external traffic passing through the residential streets.

AM Peak

The following table summarises the percentage and actual traffic volumes in selected streets.

Road	% in AM Peak	Actual vehicles per hour
Edward Street	41%	250
Nora Street	22%	180
Henry Street	32%	174

PM Peak

The following table summarises the percentage and actual traffic volumes in selected streets.

Road	% in PM Peak	Actual vehicles per hour
Augusta Street	24%	218
Frederick Street	31%	148
Dover Street	26%	95

The evidence is clear that there is a high degree of through traffic using the local street network during the peak hours. However, the high percentages of traffic in some streets cannot be attributed solely to external through traffic. The overall Study Area is quite large and some traffic using key routes in the peak hours will be locally generated from within the Study Area.

With this in mind, care must be taken in developing treatment options, as any treatments designed to discourage or prevent through traffic will almost certainly also impact local residents from within the Study Area.

6.1.4 Arterial Road Network Capacity

Underlying this issue is the capacity of the arterial road network and key intersections, particularly the intersection of Portrush Road and Magill Road, and Portrush Road and Payneham Road.

At face value, there may be limited scope to improve the capacity of the network to encourage traffic to stay on the arterial roads. Nonetheless it is important for the Council to formally raise this issue with DPTI. A formal review of the signalised intersection of Portrush Road and Magill Road will be requested from DPTI and the results will be outlined in the Final Report.

6.1.5 Peak Hour Turning Bans ('NO LEFT TURN' and 'NO RIGHT TURN' Signage)

Consideration could be given to restricting 'through traffic' movement through the Study Area during the morning and afternoon peak by implementing the following turning restrictions:

- Install 'NO RIGHT TURN' between 7.30am and 9am (Monday to Friday) signs where right hand turns from Portrush Road are currently permitted, to prevent drivers turning into Edward Street, Nora Street and Clifton Street.

- Install 'NO LEFT TURN' between 4pm and 6pm (Monday to Friday) signs at the intersection of Magill Road with Adelaide Street, Phillis Street, Augusta Street and Frederick Street.

Restricting access to local streets from arterial roads requires formal approval from DPTI. However, there are significant challenges and impacts associated with these restrictions.

In the afternoon, implementing 'NO LEFT TURN' on some streets near the Magill Road and Portrush Road intersection (eg Adelaide Street and Phillis Street) may shift 'through traffic' onto the adjacent Augusta Street and Frederick Street. Alternatively, 'NO LEFT TURN' could be implemented on all local streets from Portrush Road to Frederick Street, however this may inappropriately restrict access to local residents and may shift this traffic onto Henry Street. Ultimately access needs to be retained somewhere for local residents, and the implementation of turning bans at only a few streets will simply result in traffic moving to the permitted streets.

In the morning, implementing 'NO RIGHT TURN' also presents challenges. This movement is already restricted at Bakewell Road, Janet Street and Dover Street. Should turning movements onto Clifton Street be implemented, they would also need to be implemented on the smaller side streets, Nora Street and Edward Street, to prevent excessive traffic volumes shifting onto these streets. Maintaining access to Nora Street from Portrush Road, however, is critical to enable parking for the adjacent Trinity Gardens Primary School. From previous studies undertaken by the Council and Tonkin Consulting (City-Wide Schools Traffic, Parking & Safety Review), it is understood that parking demand is high and Nora Street facilitates overflow. Consequently, given access to Nora Street must be provided and a 'NO RIGHT TURN' should not be implemented as a preventative measure for restricting 'through traffic' in the morning.

A suggestion was also made specifically to close off the eastern side of Henry Street during peak times only. This is not supported, however, as Henry Street is a key access route into a significant portion of the Study Area for many local residents during peak times. Enforcement of a part-time closure within the local streets would also be difficult to enforce by SAPOL.

The implementation of peak hour turning bans from the arterial network into the local streets not fully supported by Council as it was felt these would be too restrictive to local resident's access.

6.1.6 Road Closures

Full road closures could assist with reducing some 'through traffic' movements through the Study Area, however, these are generally not supported or favoured by residents. If road closures were installed on the western side of Frederick Street (refer Figure 6.1), this would prevent through movements along Olive Street, Laura Street and Henry Street, and in particular during the morning peak.

It should be emphasised that these roads provide key east-west connectivity to the local shopping centre. They are also key in providing access to Nelson Street.

Given the key role these streets play in providing connectivity, it is anticipated that the proposed road closures will have a negative impact on the residents within the Study Area in that it will disrupt local accessibility, particularly for residents east of Frederick Street.

Additionally, the consequence of a local road closure will be the redirection of traffic onto adjacent streets, likely Bakewell Street and Frederick Street in this instance, leading to an increase in traffic volumes. Given there is no formalised local road hierarchy adopted by the Council, road closures are not supported.

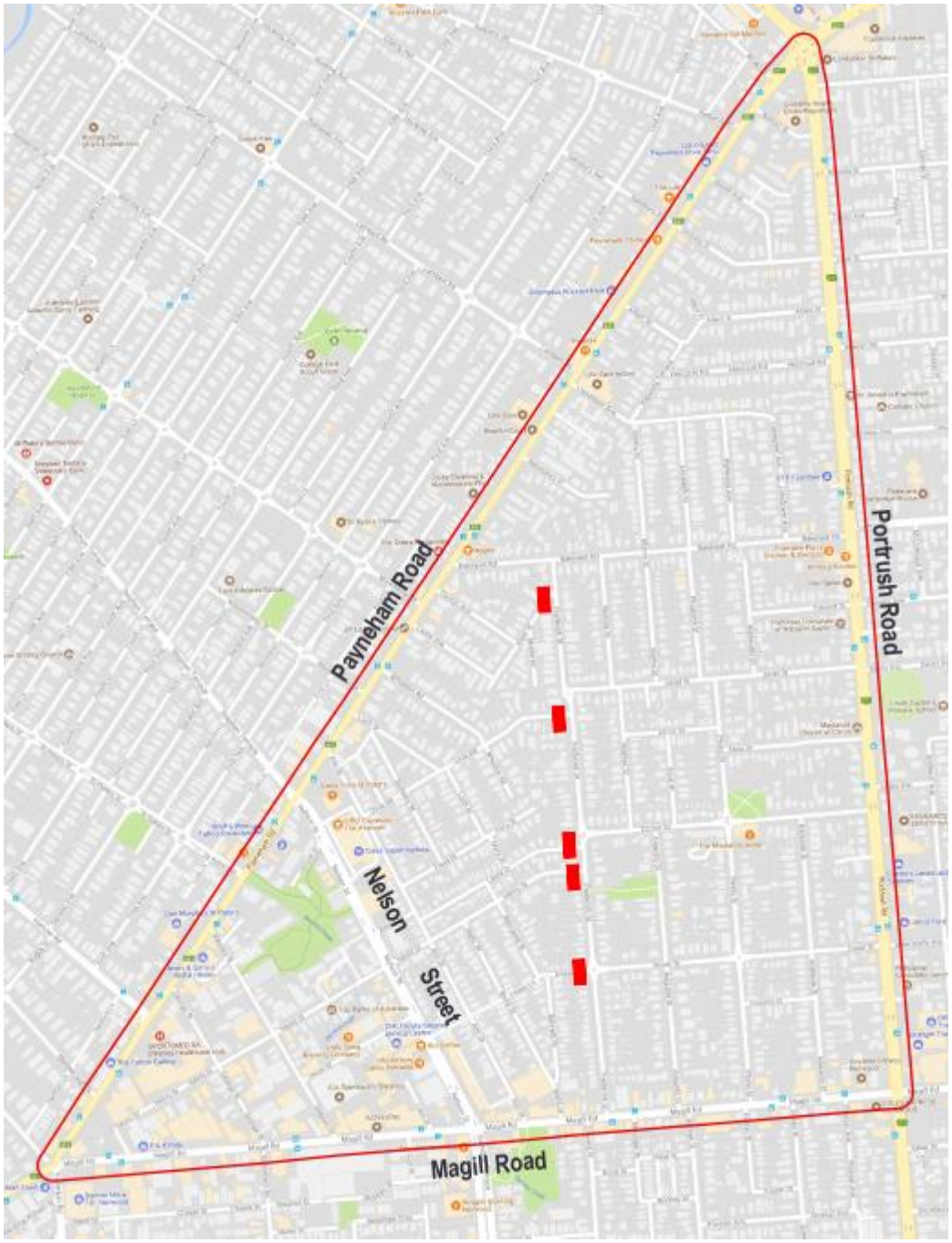


Figure 6.1 Road Closures Considered Along Frederick Street

6.1.7 Additional Traffic Control Devices

An alternative means of discouraging 'through traffic' within the Study Area is to increase the number of traffic control devices on those streets without them.

While most streets throughout the Study Area have some level of traffic control in place (including roundabouts and speed humps which were installed prior to the 2001 LATM Study) as well as minor controls (including pavement bar medians which were installed following the 2001 LATM Study), there is a notable lack of traffic control devices in the South Eastern Quadrant of the Study Area, particularly along the following streets:

- Phillis Street
- Adelaide Street
- Augusta Street
- Frederick Street
- Dover Street

Installation of speed humps along these streets, for example, could assist in deterring 'through movement', particularly during the afternoon peak. This would likely have a negative impact on residents within this Quadrant of the Study Area, however, and will result in a minimal volume reduction due to the existing permeability of the overall road network with the Study Area.

6.1.8 Draft Recommendations

1. That the Council formally approach DPTI to discuss and address the capacity of the arterial road network, and development of corridor management plans for the main roads and key intersections.
2. That the Council formally request DPTI undertake a review of the signalised intersection of Portrush Road and Magill Road.
3. Cautious consideration could be given to the implementation of peak hour turning restrictions as outlined in 6.2.4, noting the concerns outlined, however this will not be pursued at this stage.

6.1.9 Stage 2 Consultation Feedback

There was strong favour for the recommendations, with a high proportion either agreeing or strongly agreeing. There were only a low numbers of residents in disagreement or strong disagreement

Total Responses	SD	D	A	SA	A+SA
307	3%	6%	38%	53%	91%

However, the issue of through traffic volumes in the peak hours remains a contentious issue in some streets, most notably Henry Street. Significant concerns have been raised around how Council manages the needs of the local residents verses the traffic pressures being placed on the road from through traffic external to the precinct (refer section 0).

There remain no simple solutions to this dilemma. While there is clear evidence that several roads are being used as through routes by traffic external to the precinct, there is also no one solution that can prevent these movements without a significant impact on accessibility to residents local to the precinct.

Following Stage 1 Consultation, Council has already written to DPTI concerning the capacity of the arterial road network. DPTI has advised that improving the efficiency and safety of the multi-modal network is the key objective of arterial road traffic management. DPTI is currently investigating the potential clearway time extension on Payneham Rd during peak periods to improve mid-block traffic flow under the DPTIs Keep Metro Traffic Moving (KMTM) initiative.

Further, DPTI indicated that it welcomes the opportunity to work with the City of Norwood, Payneham and St Peters to develop a Network Operating Plan (NOP), formerly referred to as Moving Traffic Plan, for the broader Council area.

6.1.10 Final Recommendation

Final Recommendation:

1. That the Council continue to work with DPTI to address the capacity of the arterial road network, and development of Network Operating Plans for the main roads and key intersections.

2. As part of this ongoing consultation, cautious consideration be given to the implementation of peak hour turning restrictions off the main roads at key roads within the study precinct, noting council concerns over reduced accessibility for local residents.

6.2 Study Area Speeds

6.2.1 Background

A number of residents identified excessive speed as an issue during the Stage 1 community consultation phase. Traffic data indicates that average speeds throughout the Study Area vary significantly, from 15.5 km/h in Lindas Lane to 44.7 km/h on Phillis Street. Most speeds are typically in the range of 30 km/h to 40 km/h.

The 85th percentile speeds range from 20.7 km/h in Lindas Lane to 51.5 km/h in Phillis Street and are typically in the range of 40 km/h to 50 km/h.

The average speed is less than 50 km/hr in all streets throughout the Study Area and generally slightly greater in the southern half of the south eastern quadrant of the Study Area.

In general, these speeds are not reasonably typical of what would be expected for local roads of this nature.

While on a technical level speeds might be considered 'acceptable' and in line with many other areas throughout the City, the community's perception of speeds was one of the highest concerns identified from consultation. Of (~420) written submissions received:

- 291 referenced speeding / speed control; and
- 36 suggested speed limit reduction (even though the question was not asked).

6.2.2 Traffic Control Devices

A range of options can be considered to address 'speeds' in local streets, including the installation of additional traffic control devices such as speed humps, chicanes, slow points, roundabouts, and the like. However, these treatments are considered costly, and are not considered warranted based on the actual data collected.

6.2.3 40 km/h Speed Limit

Many residents (36 in total) suggested in the Stage 1 community consultation phase a reduction in speed limit to 40 km/h such that this speed is applied throughout the entire Study Area.

It should be noted that in August 2017, DPTI's Guidelines outlining the implementation of 40 km/h speed zones changed. Details regarding the procedure are presented in the document "Speed Limit Guideline for South Australia".

A key change in the update is the removal of the prescriptive criteria requiring a two thirds (ie 66%) support from the community for the reduction in the speed limit. Instead, Councils are now responsible for ascertaining the required level of support as they see fit, and who it may be appropriate to consult with be it all affected residents or a 'representative sample' of residents.

The State Member of Parliament and SAPOL are also required to indicate support, or otherwise, for the proposal. Once these parameters are established to the satisfaction of the Council, the Council is then required to seek formal approval for the implementation of a 40 km/h speed limit from the relevant Minister prior to it coming into effect.

In assessing the suitability of a speed limit reduction in the Study Area, an assessment of the average of mean speeds on 'relevant streets' is required. A definition of relevant streets is provided in the document. For a new speed limit of 40 km/h, the average of mean speeds should be less than 50 km/h.

Importantly the DPTI Guidelines do not propose a minimum warrant for the application of a 40 km/h speed limit (other than community consultation). The DPTI Guidelines prescribe when a 40 km/h speed limit cannot be used (ie average speed > 50 km/h) rather than when the lower limit can be used.

The Council therefore proposed a reduction in the default speed limit from 50 km/h to 40 km/h in the area bound by Payneham Road, Nelson Street, Magill Road and Portrush Road (as the remaining part of the Study Area is already a 40 km/hr). This would be subject to obtaining sufficient community support for the proposal.

As part of the Stage 2 community consultation phase, the Council assessed the level of community support or otherwise for the implementation of a 40 km/hr speed limit in the area bound by Portrush Road, Magill Road, Payneham Road and Nelson Street (given that the remaining part of the Study Area already has a 40 km/hr speed limit).

6.2.4 Potential Benefits

The potential benefits of a 40 km/hr speed limit within the Study Area would be:

- Expect average speeds to reduce in those streets with average speeds currently greater than 40 km/h. Speeds in those streets with speeds already lower than 40 km/h are unlikely to change.
- There would be road safety benefits to all road users, particularly pedestrians and cyclists.
- The lower limit would serve to reinforce the local residential precinct and improve the residential amenity.
- The lower limit would serve to complement existing traffic controls currently in place, rather than replace them. The existing traffic controls including roundabouts and speed humps, are considered to be functioning appropriately and their removal would be considered retrograde.

6.2.5 Draft Recommendations

1. That as part of the Stage 2 community consultation phase, the Council assess the level of community support or otherwise for the implementation of a 40 km/h speed limit in the area bounded by Portrush Road, Magill Road, Payneham Road and Nelson Street.
2. Subject to receiving a majority level of community support, the Council will seek approval from the Minister to implement a 40 kph speed limit in the part of the Study Area which is bound by Portrush Road, Magill Road, Nelson Street and Payneham Road.

6.2.6 Stage 2 Consultation Feedback

There was general support for a reduced speed limit, with 68% either agreeing or strongly agreeing to the recommendation. This was also reflected in the comments provided by residents, where 33 comments indicated a speed reduction to 40km/h. The recommendation was not fully supported by everyone and 21 comments were also received not in preference for a speed reduction.

DPTI advised that it is not opposed to the introduction of 40km/h precinct speed limit and offered to support Council with the application (subject to the outcomes of the consultation).

Total Responses	SD	D	A	SA	A+SA
321	22%	9%	21%	48%	68%

Council also Mr Marshall (Premier and Local Member) and SAPOL concerning this recommendation. While Mr Marshall has provided support for the Council's process and looks forward to being advised of the outcome, SAPOL are yet to provide a formal response and if received will be included in the Final Report.

In accordance with DPTI guidelines, the 40 km/h speed limit only needs to be signposted around the perimeter of the precinct, and it is no longer necessary to install repeater signs along the internal local roads. This treatment will therefore only require approximately 35 x 40 Area Speed limit signs and a similar number of "End 40" signs.

6.2.7 Final Recommendations

That Council formally seek approval from the Minister to implement a 40 kph speed limit in the part of the Study Area which is bound by Portrush Road, Magill Road, Nelson Street and Payneham Road, in accordance with the procedure outlined in 'Speed Limit Guidelines'.

6.3 Narrow Streets

6.3.1 Background

A number of residents raised concerns during the Stage 1 community consultation phase regarding the narrowness of various streets throughout the Study Area and the difficulties of on street parking and two-way traffic movements (eg Ann Street). While the Council have guidelines surrounding the implementation of line marking adjacent driveways, there is currently no formal policy or procedure in place to manage on street parking and traffic congestion along narrow streets.

The Council could consider developing a policy or procedure to manage narrow streets, similar to those implemented by other councils. This approach has the advantage of maintaining consistency for residents throughout the City. It is recommended that the Council consider the following aspects in developing this policy:

- Identify the minimum street pavement width for which the policy is relevant (eg 7.0 metres wide as a minimum to allow parking on both sides of the street and two way traffic movement).
- Develop a procedure for proposing and implementing "no stopping" restrictions:
  - Determine the warrant (or otherwise) for considering "no stopping" restrictions; (eg following community complaints received and/or unsuccessful reminders to residents).
  - Determine the process and level of support required for seeking feedback from the community regarding proposed changes.
- Determine an appropriate review process for considering further change to on street parking controls within the street.

6.3.2 Draft Recommendation

That the Council consider the development of a policy or procedure for the purpose of undertaking assessment to manage on street car parking on both sides of the street versus traffic congestion along streets with a narrow carriageway width that has a consistent approach throughout the City.

6.3.3 Stage 2 Consultation Feedback

Total Responses	SD	D	A	SA	A+SA
315	7%	10%	30%	53%	83%

There was generally support for the development of a policy to address on-street parking in those streets deemed narrow. Comments raised suggested that parking could be banned on one of the road for those 'narrow' streets.

6.3.4 Final Recommendation

That the Council develop a policy or procedure for the purpose of undertaking assessment to manage on street car parking on both sides of the street versus traffic congestion along streets with a narrow carriageway width that has a consistent approach throughout the City.

6.4 Ann Street

6.4.1 Background

A number of residents raised concerns during the Stage 1 community consultation phase regarding high volumes of parked cars, and several were also concerned with the volumes and traffic movements on Ann Street. As outlined in Section 4, given the number of complaints raised and the associated issues created with traffic congestion, parking along Ann Street was included as a specific investigation.

Ann Street measures approximately 7.0 metres to 7.5 metres in width and is considered a narrow road. It is therefore just wide enough to allow parking on both sides of the road and retain a 3m lane for traffic. In terms of traffic movements, it is carrying approximately 1500 two-way vehicle movements per weekday. This traffic volume is appropriate for a generally narrow street, requiring oncoming traffic to pass with care.

The parking arrangement in Ann Street is generally characterised by the following elements:

- Defined parking areas staggered on both sides of the road. 'No Parking' yellow edge line marking elsewhere.
- Time Restrictions of 2 hours between 7am and 7pm (Monday to Friday) and 7am to 12 midday (Saturday).
- Resulting one traffic lane provided, where opposing traffic passes opportunistically at locations where space permits.

It is noted that there is also a high parking demand along Ann Street, particularly on the northern end (between Payneham Road and Henry Street), associated with a mix of the Shopping Centre on the northern end and residential cottages.

On the southern end (between Henry Street and Magill Road), demand is more typical of a residential area due to residential cottages where off-street parking is available from Ann Street or rear laneways. Some commercial demand is associated with a timber and hardware store immediately adjacent Magill Road.

Similar issues were raised during the 2001 LATM Study, where a one-way traffic trial was proposed for the north-west direction, which permitted retention of parking on both sides of Ann Street. It is understood that the Council investigated this matter as part of adopting the 2001 LATM Study recommendations, including undertaking community consultation, but decided against its implementation due to not being able to reach consensus through the consultation process.

Three options have been considered as part of this current LATM study:

- No Entry into Ann Street from Payneham Road
- trialling a one-way street (as previously recommended), or
- parking restrictions to reduce the conflict between oncoming vehicles.

None of these options received overall strong support, now requiring further consideration to be given to other options.

6.4.2 One-Way Trial

Council could re-consider conducting a one-way trial, similar to that recommended in the 2001 LATM Study, to assess support for this treatment method.

A one-way trial in the north-west direction:

- Retains key connectivity routes with Nelson Street (from Henry Street to Nelson Street and Laura Street to Nelson Street).
- Prevents through movement from Olive Road to Alfred Street and Nelson Street.
- Prevents through movement from Payneham Road to Nelson Street (for traffic avoiding the intersection of Payneham Road and Nelson Street).

The trial would reduce through movement along Olive Road (travelling west toward Alfred Street and Nelson Street), and therefore increase through movement on Laura Street and Henry Street.

A one-way trial will also reduce connectivity between the Shopping Centre and internal residential area. Access to the rear shopping centre car park would be reduced for traffic in Payneham Road.

A one-way trial in the south-east direction would:

- Potentially encourage through movement from Payneham Road to Nelson Street (for traffic avoiding the intersection of Payneham Road and Nelson Street).
- Retain accessibility between Olive Road and Alfred Street.
- Retain access to the rear shopping centre car park from Payneham Road, but egress back to Payneham Road would be prevented.
- Access from Nelson Street to Olive Road in the easterly directly would be prevented with a resulting increase in traffic using Henry Street.

The one way trial (in either direction) will result in a reduction volumes using Ann Street, retain parking on both sides of the road, but will affect local accessibility on Olive Street in particular, with a resulting (likely) increase in traffic using Henry Street.

As with the 2001 LATM Study, if a one way trial is progressed, we recommend that a number of parameters are monitored during the trial period, including the following:

- Traffic volumes and speeds on Olive Road, Laura Street, Henry Street and Ann Street.
- Traffic volumes and speeds on adjacent side streets to assess whether there has been any impact on surrounding streets.

6.4.3 Parking Restrictions

Council could consider the implementation of parking restrictions along Ann Street to reduce congestion, through "No Stopping" yellow line marking to increase traffic lane width and permit two-way traffic. Any restrictions should be implemented such that impact on parking is minimised.

These options essentially favour traffic movements over parking arrangements, something that is not supported at a philosophical level. Ann Street is a local street and traffic management should accommodate the needs of residents (including parking) over traffic flow and congestion.

On the northern end of Ann Street (between Payneham Road and Henry Street), it is suggested that one-sided "No Stopping" be implemented on the north eastern side of Ann Street. This maximises parking and clearance to driveways (refer Figure 6.2). Restricting parking on this side will also improve visibility for traffic entering and exiting Olive Road, Laura Street and Henry Street.

On the southern end of Ann Street (between Henry Street and Magill Road), it is suggested that either one-sided or staggered "No Stopping" be implemented in the configurations shown in Figure 6.3 and Figure 6.4. Lower speeds are typically associated with staggered parking.

Figure 6.2 Northern end parking restrictions

Figure 6.3 Southern end parking restrictions – One-sided

Figure 6.4 Southern end parking restrictions – Staggered

6.4.4 No Entry Sign at Payneham Road

A third option would be the implementation of No Entry with a half road closure from Payneham Road into Ann Street. Ann Street would be retained for two-way traffic. This restriction would be subject to DPTI approval.

The traffic volume data indicates that traffic on Ann Street may be originating from internal generators within the Study Area, as well as from Payneham Road. As indicated on Figure 6.5, an average daily volume of 910 vehicles is seen between Payneham Road and Olive Road. This traffic must dissipate further along Ann Street, into Olive Road or into the Shopping Centre. It is likely this consists of vehicles accessing the Shopping Centre as well as Ann Street residents.

Figure 6.5 No Entry at entrance to Ann Street from Payneham Road

The introduction of 'NO ENTRY' from Payneham Road would likely markedly reduce traffic volumes on Ann Street, thereby reducing congestion on the street. Other impacts include:

- Accessibility into the Shopping Centre from Payneham Road would be reduced, however this impact is not expected to be significant, given access can be provided nearby via Nelson Street.
- Egress from the shopping centre to Payneham Road is retained.
- Internal traffic movements between Olive Street and Nelson Street are retained, so there should be no impact on Henry Street volumes.
- Access and egress to the shopping centre from the local precinct is retained.
- Accessibility to Ann Street for local residents would also be reduced as a result of the 'NO ENTRY' sign, where alternative access routes would have to be utilised, which may marginally increase traffic volumes on these streets.

6.4.5 Draft Recommendation

That, as part of the Stage 2 community consultation phase, Council ascertain community and DPTI support for the implementation of a No Entry sign and half road closure in Ann Street to prevent access from Payneham Road.

6.4.6 Stage 2 Consultation Feedback

There was generally positive support for the recommendation, as outlined below:

Total Responses	SD	D	A	SA	A+SA
307	21%	17%	29%	34%	62%

In general, more residents agreed with implementing the recommendation than those that disagreed.

However, concern was raised by the business property owner on the corner of Payneham Road and Ann Street (St Peters Village Shops) that the restriction would have a significant impact on access to on street parking in Ann Street adjacent the premises. These businesses rely on parking in Ann Street as parking along Payneham Road is often restricted due to the Clearway conditions. The proposed restriction would effectively prevent access to these on street parks for drivers in Payneham Road.

Some residents comment that the other options presented to reduce parking on one side of the road could result in higher vehicle speeds as the road would become more free flowing. This is considered a valid concern. Residents also commented on the reduced accessibility the closure would cause to the Avenues Shopping Centre.

Further, one resident also noted the need for pedestrian safety improvements on Ann Street adjacent the zebra crossing (within the Avenues Shopping Centre car park), just south of Olive Road. Pedestrians crossing Ann Street at this location do not have a formal crossing and there are parked cars on the opposite side of the road. (This issue was not raised as part of Stage 1 consultation and has been investigated further – refer comments below).

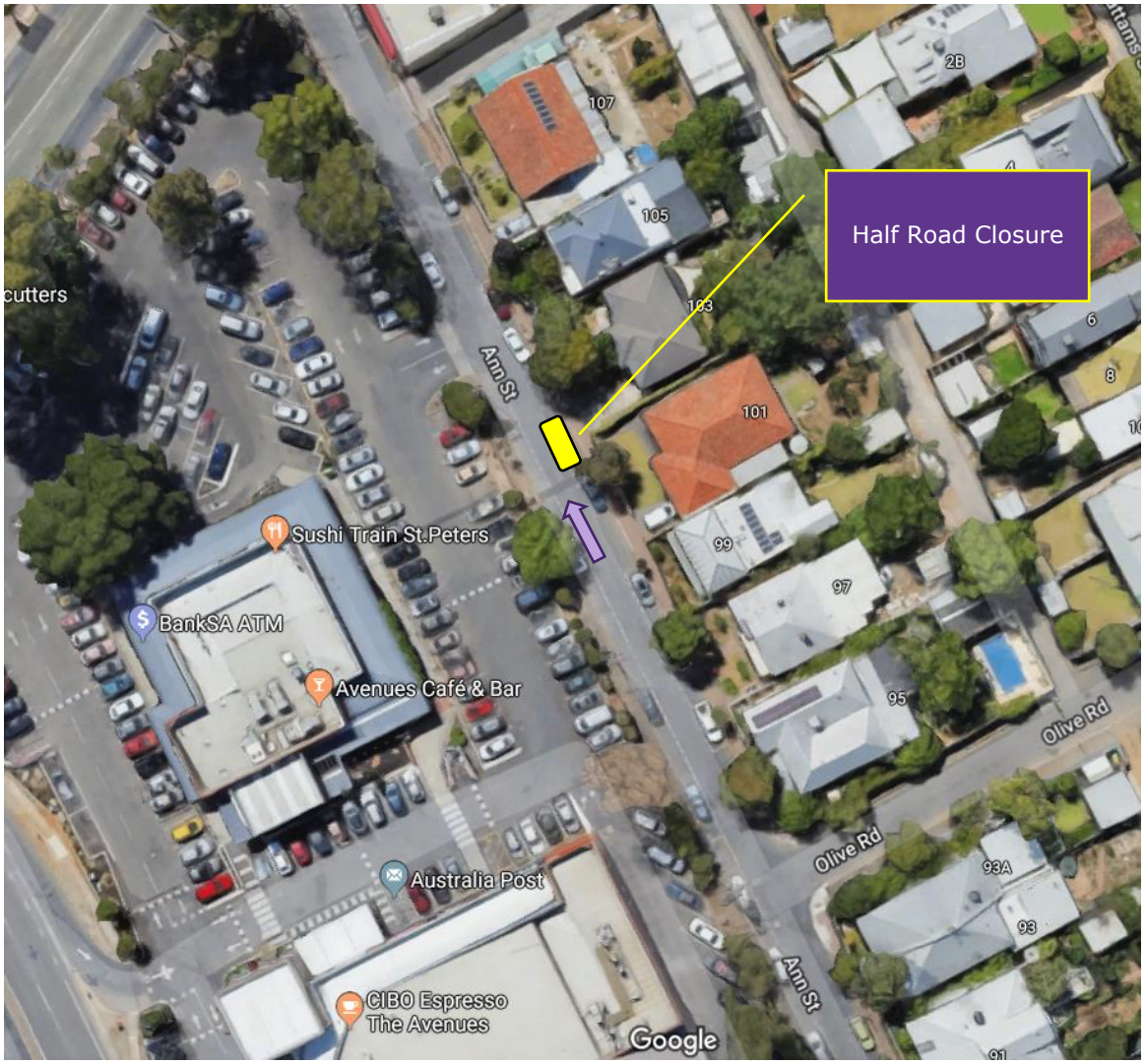
Council approached DPTI seeking their comments on the proposed half road closure. DPTI advised that the recommendation would adversely impact on both the Avenues Shopping Centre access and the Payneham Rd/Nelson St intersection operation. Therefore, DPTI would not support the recommended half road closure of Ann Street at Payneham Road, and suggest an appropriate parking restriction/management regime would be more effective.

Given the concerns raised by DPTI and the community, it is not appropriate to progress with the draft recommendation.

Further consideration should therefore be given to the significance of the concerns raised verses the impacts of alternative treatment options. Council specifically requested consideration be given to:

- a half road closure in Ann Street between Olive Road and the access to the Avenues Shopping Centre car park
- pedestrian safety adjacent the pedestrian crossing south of Olive Street.

6.4.7 Half Road Closure of Ann Street (between Olive Street and Avenues Shopping Centre car park



The intent of this option is similar to that outlined in 6.4.4. (No Entry from Payneham Road) except it retains access to the shopping centre from Payneham Road and relocates the half road closure south of the car park access. This option overcomes the concerns outlined in response to the previous recommendation by retaining access to both the Avenues Shopping Centre and St Peters Village Shops.

However, access between the Avenues Shopping Centre and residential precinct would be prohibited. Whereas the previous recommendation affected arterial road traffic, this revised option limits egress from the rear of the shopping centre to the broader residential area.

Furthermore, Council should expect some level of disregard for the prohibition as enforcement will be limited (being within the local street network). It would reasonably simple (and attractive) for a southbound driver in Ann Street to quickly drive through the restriction.

We do not recommend this treatment be pursued.

6.4.8 Pedestrian crossing south of Olive Street.

Concern was raised that pedestrians directed to Ann Street at this location do not have a formal crossing and there are parked cars on the eastern side of the road.

There is an existing No Stopping zone signposted and painted on the west side of Ann Street at this location. However, there is an inconsistency between the location of the No Stopping sign and the yellow line marking (which is faded), as shown in the photo opposite.

The kerb ramp on this side of the road is non-standard and need of upgrading.

There is no kerb ramp on the eastern side of the road, and as reported, vehicles can park on this side of the road

While pedestrian demand is not sufficient to warrant a formal crossing (e.g. wombat or zebra crossing), it would be appropriate to:

- Restrict parking by one car space on the eastern side of the road
- Provide a kerb ramp on the eastern side of the road and upgrade the existing ramp on the western side
- Install pedestrian warning signs on either approach in Ann Street.

6.4.9 Final Recommendations

It is clear that none of the options explored can adequately address the concerns raised by the community, without introducing some other constraint on mobility for local residents in the study precinct, or restriction on parking for local residents adjacent their properties. It is also clear that none of the options considered will be met with overall strong support from the community.

- One way traffic – will significantly impact on local accessibility and change traffic volumes in nearby street
- Parking restriction – mostly considered unnecessary and favour traffic movements over the needs of residents, and may increase speeds with free flow conditions
- No Entry at Payneham Road – not supported by DPTI or traders
- No Entry in Ann Street (south of Olive) – reduced accessibility for local residents

On balance, and through consultation with Council Elected Members, the significance of the issue as originally reported does not warrant the significance of these traffic control measures and potential impacts.

That Council not implement traffic or parking restrictions along Ann Street to specifically address the concerns over traffic volumes, parked cars and narrow street.

In regard to pedestrians crossing Ann Street adjacent car park zebra crossing (south of Olive Street), we recommend:

- Relocate the No Stopping signs to match the end of the yellow no stopping lines

- Construct an appropriate kerb ramp on both sides of Ann Street, which will require removal of one car park on the eastern side of the road

- Install pedestrian ahead warning signs on each approach in Ann Street.

6.5 Ann Street and Olive Road Intersection

6.5.1 Background

Residents raised concerns during the Stage 1 community consultation phase regarding visibility at the Ann Street and Olive Road intersection. Visibility is impacted by adjacent parked cars and sight distances are inadequate.

Options to improve sight distances at this location were subject to other draft recommendations presented to the community including the proposed lower speed limit and traffic restrictions along Ann Street.

6.5.2 Draft Recommendation

1. That the Council undertake no changes to the Ann Street and Olive Road intersection provided that either a 40 km/hr speed limit is implemented within the Study Area and/or No Entry is implemented from Payneham Road into Ann Street.
2. That the Council, following the implementation of changes to speed limits or Ann Street, in the context of any reductions in speed limit, reassess the need for a Stop sign.

6.5.3 Stage 2 Consultation Feedback

Total Responses	SD	D	A	SA	A+SA
302	11%	11%	43%	35%	78%

There was strong support to improve sight distances at this junction. Concerns around sight lines were emphasised, with two comments suggesting it is the worst intersection in the area.

We note that parking is already prohibited on the east side of Ann Street for around 20m either side of Olive Street (i.e the standard 10m restriction has already been increased to address the sight distance issue). We do not believe that a further restriction is required.

6.5.4 Final Recommendation

No further action is required at this stage.

6.6 Ann Street and Flora Street Intersection

6.6.1 Background

Residents raised concerns during the Stage 1 community consultation phase regarding poor visibility at the Ann Street and Flora Street intersection. Again, while parked vehicles may cause some restriction, sight distances are generally considered adequate.

Options to improve sight distances at this location were subject to other draft recommendations presented to the community including the proposed lower speed limit and traffic restrictions along Ann Street.

6.6.2 Draft Recommendation

1. That the Council undertake no changes to the Ann Street and Flora Street intersection provided that either a 40 km/hr speed limit is implemented within the Study Area and/or No Entry is implemented from Payneham Road into Ann Street.
2. That the Council, following the implementation of changes to speed limits or Ann Street, in the context of any reductions in speed limit, reassess the need for a Stop sign.

6.6.3 Stage 2 Consultation Feedback

While there was strong support for the draft recommendation, we note that parking is already prohibited on the east side of Ann Street for around 20m either side of Flora Street (i.e the standard 10m restriction has already been increased to address the sight distance issue). We do not believe that a further restriction is required.

6.6.4 Final Recommendation

No further action is required at this stage.

6.7 Lindas Lane

6.7.1 Background

Cut-through traffic was identified as a 'precinct-wide' issue. For Lindas Lane specifically, approximately 90% of traffic is bound south west and this is exacerbated by the narrowness of the laneway. Though a two-way lane, there is only space for one lane of traffic. There are also a number of driveways accessed directly through Lindas Lane, as well as an internal local service lane.

Following concerns raised, and a petition signed by several residents, a traffic study was commissioned by the Council for Lindas Lane and this was undertaken by Complete Urban in 2012 during which the following recommendations were made:

- 'STOP' signs at the junctions of Lindas Lane with Wells Street and with Ann Street. This has been implemented by the Council.
- Replacement of footpath paving with asphalt at these locations, to provide increased awareness of the presence of the laneways. This has been implemented by the Council.

Additionally, whilst the report by Complete Urban noted that there was limited benefit associated with implementation of 'SLOW' pavement markings, Council resolved to implement this as a recommendation. It is understood that whilst the Council sought formal approval from DPTI for the 'SLOW' pavement markings, given the provisions of the Code of Practice, DPTI did not provide any response to the Council's request and as such, this has not been implemented.

Consideration was given to restricting Lindas Lane to a one-way heading north east. This option was discussed in the Lindas Lane report; however, it was not recommended due to the following:

- There may be an associated increase in speed along the laneway (which is noted as being shared by cyclists and pedestrians)
- A one-way movement restriction would decrease accessibility to multiple driveways, noting local movement in this area is already limited to select streets.
- Some residents had already indicated, through the petition, that they did not support making the lane one-way
- The introduction of a one-way movement may have the effect of shifting traffic onto Henry Street, which already experiences increased traffic volumes, and therefore there may be a perceived inequity created for road users and residents.

Given these disadvantages, a one way restriction is not supported in this LATM Study. However, it is recommended that a 'NO ENTRY' sign be installed at the eastern end of Lindas Lane instead. The associated impacts of this may include the following:

- Some 'through-traffic' volumes may be discouraged to enter Lindas Lanes and transfer to adjacent streets, including Henry Street. It is expected that the impact on these streets would be low given the low volumes currently utilising Lindas Lane.

- Local access to driveways along Lindas Lane and the service lane are still maintained via Wells Street and Ann Street.
- There may be an associated increase in speed in Lindas Lane between Wells Street and Morcomb Street. The average speed along this section is 21.3 km/h and the 85th percentile speed is 26 km/h. It is not expected that significant increases in speed would occur as a result of the 'NO ENTRY' sign however.

6.7.2 Morcomb Street and Lindas Lane Intersection

Residents raised concerns during the Stage 1 community consultation phase regarding a blind corner at the intersection of Morcomb Street and Lindas Lane, where drivers were cutting corners (refer Figure 6.6).

Lindas Lane meets Morcomb Street at its bend. Lane delineation and traffic priority is not clear at this junction.

Figure 6.6 Intersection Morcomb and Lindas Lane

6.7.3 Draft Recommendation

That the Council install a 'NO ENTRY' sign at the eastern end of Lindas Lane, at its Morcomb Street intersection.

6.7.4 Stage 2 Consultation Feedback

Total Responses	SD	D	A	SA	A+SA
280	19%	15%	39%	27%	66%

Generally, there was support for the recommendation, although there were still a portion of people that disagreed with the proposed restriction.

Alternatives such as a one way traffic restriction were again suggested, as was the installation of speed humps.

Overall, we believe the draft recommendation can be retained.

6.7.5 Final Recommendation

That the Council install a 'NO ENTRY' sign at the eastern end of Lindas Lane, at its Morcomb Street intersection.

6.8 Laura Street

6.8.1 Background

Residents raised concerns during the Stage 1 community consultation phase that drivers were cutting the corner on entering Laura Street from Frederick Street. Site observations confirmed this is occurring at this intersection.

To control corner cutting at the junction, the Council could consider installing a pavement bar median (refer Figure 6.7). There will be associated expected loss of on street parking of approximately three (3) spaces.

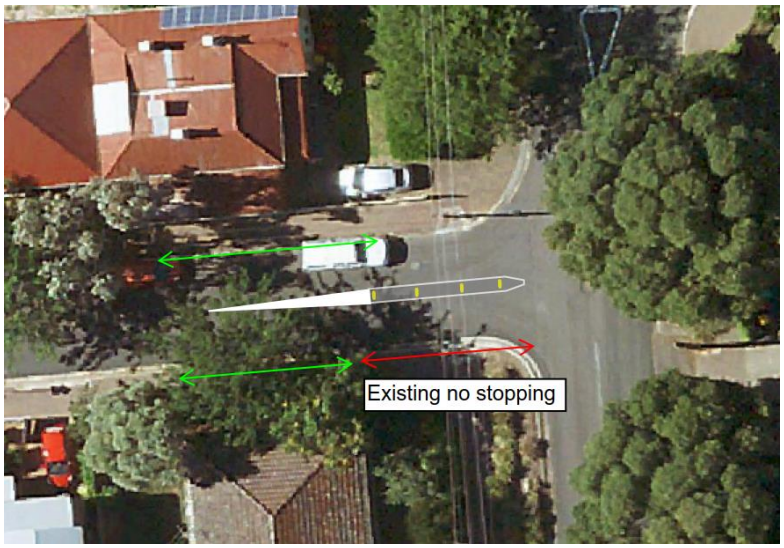


Figure 6.7 Laura Street pavement bar median

There exists 'No standing' on the southern side of Laura Street. The Council could consider an extension of this no standing to increase junction clearance, where there would be an expected loss of one (1) on street parking space (refer Figure 6.8).

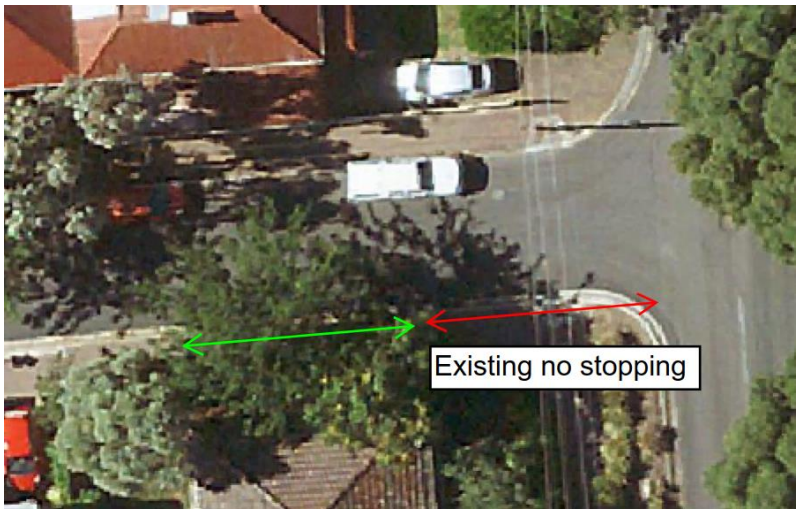


Figure 6.8 Laura Street pavement bar median

6.8.2 Recommendation:

That the Council implement a pavement bar median to maintain lane separation along Laura Street at its Frederick Street intersection. This will result in a loss of approximately three (3) on street parking spaces at this location.

6.8.3 Stage 2 Consultation Feedback

Total Responses	SD	D	A	SA	A+SA
294	8%	11%	46%	35%	81%

There was strong support for the installation of a pavement bar median at this location (with low disagreement).

Overall, we believe the draft recommendation can be retained.

6.8.4 Final Recommendation

That the Council implement a pavement bar median to maintain lane separation along Laura Street at its Frederick Street intersection.

6.9 Henry Street

6.9.1 Background

Henry Street provides a thoroughfare for traffic in both Maylands and Stepney. Outside of Study Area wide concerns regarding traffic speeds and volumes, the following two (2) primary concerns were raised through the Stage 1 community consultation phase.

6.9.2 Speed Adjacent Child Care Centres

Concerns were raised during the Stage 1 community consultation phase regarding the speed of vehicles along Henry Street adjacent the St Peters Child Care Centre & Preschool, as well as the Treetops Early Learning Centre (located in the Study Area west of Nelson Street). The speed limit in this part of the Study Area is 40 km/hr.

It should be noted that concerns, particularly regarding the St Peters Child Care Centre & Preschool, have previously been raised and investigated by the Council. The investigation, conducted in 2016, found that:

- Daily average speeds were less than 40 km/h and the daily 85th percentile speed was 44 km/h.
- During peak periods, the average speed was found to be between 30 km/h and 35 km/h and peak 85th percentile speeds were between 35 km/h and 40 km/h.

Based on this traffic data information, it was found that there was 'good compliance' with speed limits, where speeds were quite acceptable and reasonably typical of a 40 km/hr zone.

The speed data collated in this LATM Study indicates that for this section of Henry Street:

- The daily average speed is less than 40 km/h (36.1 km/h), and the 85th percentile speeds are 46.7 km/h and 42.9 km/h east and west bound, respectively.
- During peak periods, average speed was less than 40 km/h, and peak 85th percentile speeds was a maximum of 45.2 km/h.

This reflects data similar to that which was collected previously and indicates continued good compliance with prevailing speed limits.

In noting this, it is recognised that the average daily speed of 36.1 km/h, whilst less than 40 km/h, is marginally higher than the daily average speeds in surrounding streets.

A 25 km/h School Zone speed limit is not considered appropriate at this location, as this is associated with schools only not child care centre or preschools. As outlined in the Code of Technical Requirements and Speed Limit Guideline for South Australia, these zones are only to be used for schools and are not appropriate for child care centres. A 30 km/h speed limit can be implemented where there are very high pedestrian volumes (eg at retail/commercial precinct centres), as outlined in the Speed Limit Guideline for South Australia. Given the lower volumes at this location, however, a speed limit of 30 km/h would not be appropriate.

The Council could consider the implementation of a physical speed control device along this section of Henry Street. Given the spatial constraints associated with proposed treatments at the intersection of Henry Street and Stepney Street (outlined in Section 0) the Council could consider, instead, implementing speed humps along the section of Henry Street between Nelson Street and Stepney Road.

It should be noted that caution should be exercised in implementing physical speed controls as it may have the consequence of shifting traffic volumes onto adjacent streets. In this instance, some traffic would be expected to shift onto Union Street (south of Henry Street). Union Street is narrower in width. Traffic devices are not supported in this instance given the results of the data.

Concerns were also raised regarding the interface between vehicles and pedestrians, particularly for the St Peters Child Care Centre & Preschool. There are various constraints and factors here, including narrow footpaths, a narrow street, limited parking and spatially constrained access and egress movements to and from the child care centre. The building itself is also relatively inconspicuous, it is not immediately obvious that this is a child care centre for vehicles passing.

Parking restrictions are, however, in place adjacent and near the two (2) child care centres, which assists in improving visibility. Warning advisory signs have also been erected on the approaches to indicate the presence of children to passing traffic. Potential crossing options (such as kerb extensions or refuges) are also not considered warranted, given the narrow crossing width of the road.

It is unfortunate that there are several constraints along Henry Street adjacent the child care centres. Based on the results of the traffic data and the site conditions, whilst the Council could consider the implementation of speed humps, traffic will shift onto a narrower street. Consequently, the existing provisions are considered sufficient and there are no further recommendations for improvement.

6.9.3 Blind Bend

Residents have raised concerns during the Stage 1 community consultation phase regarding the blind bend on Henry Street (located in the Study Area east of Nelson Street). It should be noted that the pavement width along this section of Henry Street varies and is narrowest at its northern end, measuring approximately 5.3 metres wide.

Given the volume and speed of traffic utilising this route, the Council could consider implementing a continuous white dividing line to maintain lane separation. It should be noted that there will be an associated loss of on street parking (approximately four (4) spaces) with implementing this line marking, due to the requirement to maintain lane widths of 3 metres (refer Figure 6.9).

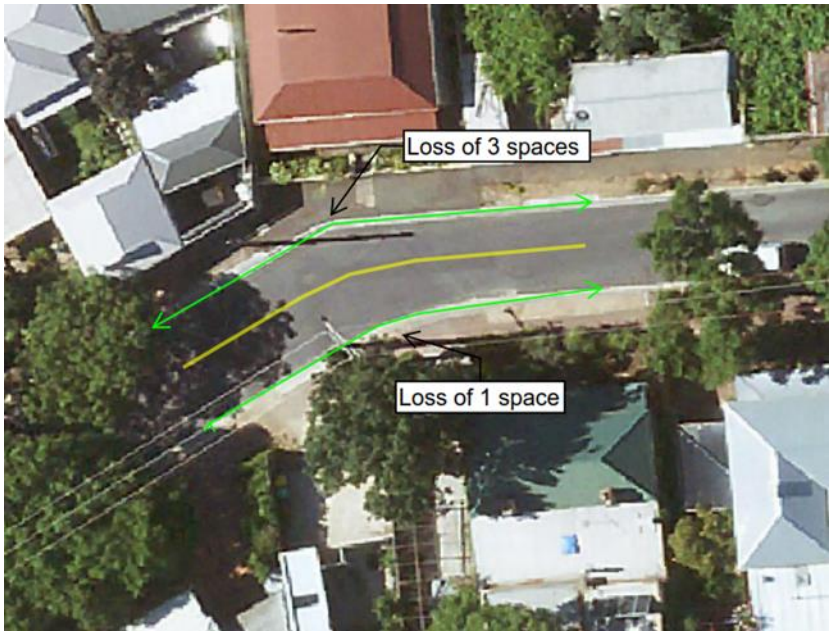


Figure 6.9 Henry Street continuous line marking

6.9.4 Draft Recommendation

That the Council mark a continuous white centreline to encourage lane separation.

6.9.5 Stage 2 Consultation Feedback

Total Responses	SD	D	A	SA	A+SA
294	9%	11%	41%	39%	80%

There was generally strong support in terms of numbers for the draft recommendation. However, residents that would be affected by the restriction raised specific concerns about the loss of parking adjacent their residences.

The draft recommendation highlighted a significant sensitivity over the function of Henry Street in the local precinct. As a narrow street it is not conducive to function as a connecting road, although it clearly does provide this role linking the areas east of Frederick Street to Nelson Road. It is also one of the key routes that bears the burden from external through traffic (discussed in 6.1).

The implementation of the parking restriction was seen by some residents as Council favouring the needs of through traffic drivers over the needs of local residents. However, Council is also obliged to manage road safety in narrow streets, and retention of parking on both sides of Henry Street through the bend does not address the fundamental concerns being raised by the majority of the community.

Through discussion with two of the affected residents, it was felt that a peak hour parking restriction (7-9am, 4-6pm weekdays) would be a reasonable compromise.

As a separate issue, concerns were also raised over driver cutting the corner when entering Ann Street from Frederick Street (a similar concern was also raised about driver behaviour at Olive Road). It is not possible to install pavement bars in Henry Street due to the narrow width of the road. However, pavement bars could be installed in the northern leg of Frederick Street to control the position of vehicles turning right into Henry Street.

6.9.6 Final Recommendation

1. That Council implement a No Stopping restriction around the bend in Henry Street between 7-9am and 4-6pm Monday to Friday.

2. That Council install pavement bars in Frederick Street (northern leg) to control vehicle turning movements into Henry Street.

6.10 Henry Street and Ann Street Intersection

6.10.1 Background

Several residents raised concerns during the Stage 1 community consultation phase regarding poor visibility at the Henry Street and Ann Street intersection. Priority is given to Henry Street. Visibility on the approach from both sides of Ann Street is restricted by adjacent property fencing.

Four (4) right-angle crashes have also occurred at this intersection between 2012 and 2016. Roundabouts and raised plateau may assist with reducing the likelihood of crashes at intersection where visibility is degraded.

6.10.2 Mini Roundabout

A mini roundabout was explored to improve right angle movements at this intersection (refer Figure 6.10). Mini roundabouts differ from standard roundabouts in that they are flush with the pavement and permit traversing by larger vehicles. Due to spatial constraints, a full roundabout would not fit at this location. It should be noted an assessment of available sight distance at this location will need to be undertaken.

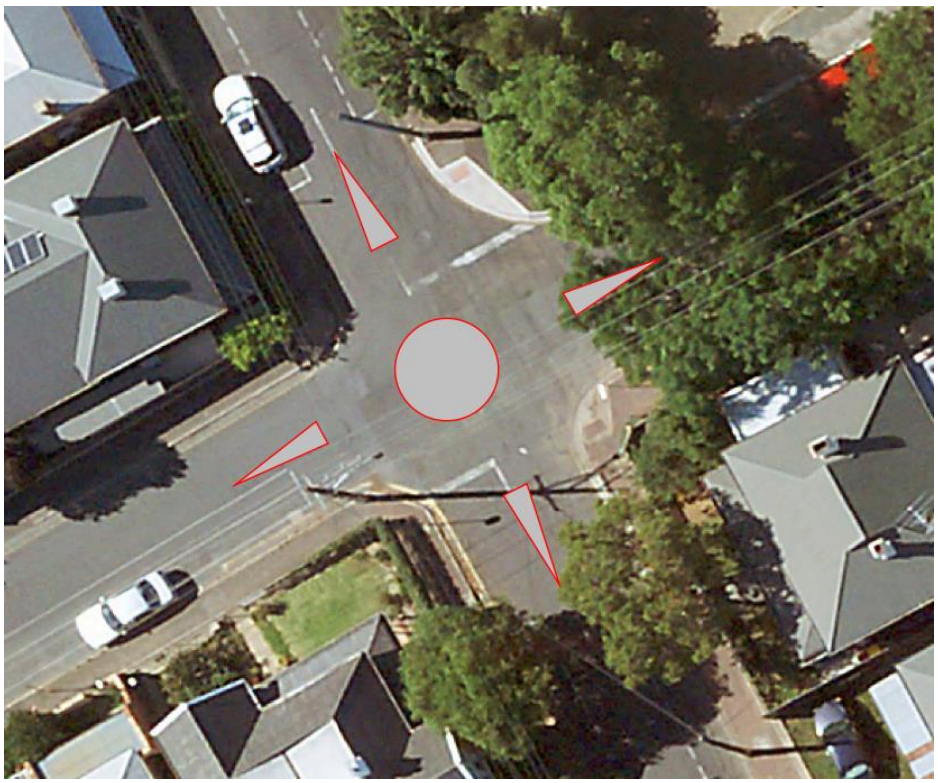


Figure 6.10 Mini roundabout option

6.10.3 Raised Plateau

A raised plateau was explored for this intersection, which would assist in slowing traffic on the approaches and may improve safety at

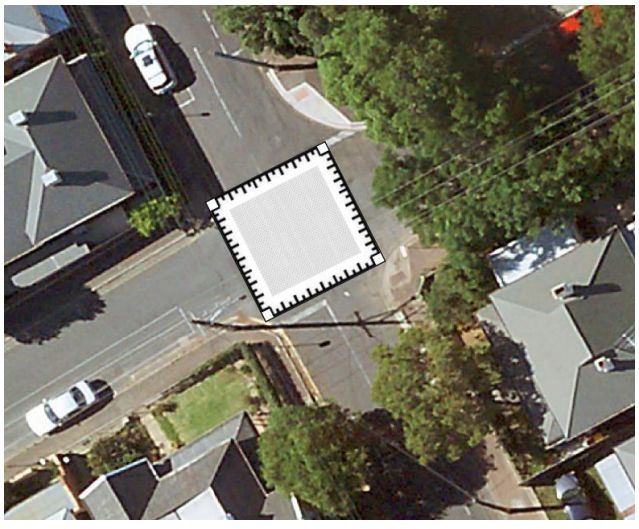


Figure 6.11 Raised plateau possible option 1

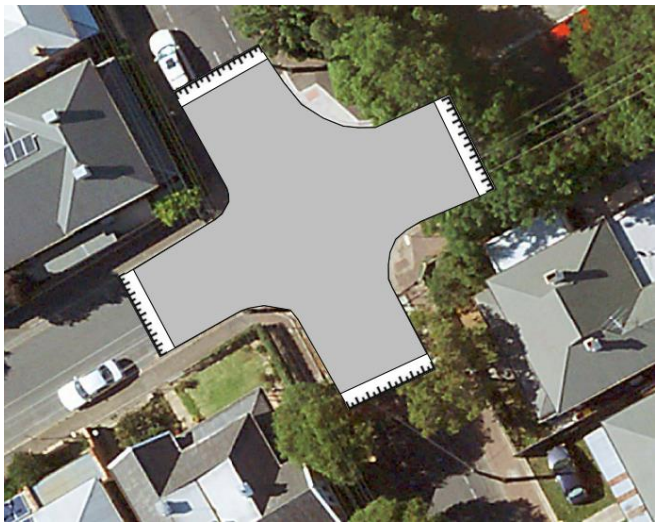


Figure 6.12 Raised plateau possible option 2

For a raised plateau confined to the intersection (refer Figure 6.11), some corner kerb adjustment may be required for the intersection of Henry and Ann Street.

For a raised plateau including the approaches (refer Figure 6.12), consideration must be given to drainage due to the interface of the plateau with the kerb and gutter.

6.10.4 Draft Recommendation

That the Council undertake a design feasibility for the installation of a mini-roundabout.

6.10.5 Stage 2 Consultation Feedback

There was strong support for the proposed recommendation, although some residents had reservations about the space available.

Total Responses	SD	D	A	SA	A+SA
297	12%	14%	40%	33%	73%

6.10.6 Final Recommendation

That the Council undertake a design feasibility for the installation of a mini-roundabout at the intersection of Henry Street and Ann Street.

6.11 Stepney Street and Henry Street Intersection

6.11.1 Background

Crash data indicates that there have been four (4) right angle crashes at the Stepney Street and Henry Street intersection.

6.11.2 Roundabout

A roundabout was investigated as a potential means of treatment for this intersection. This was not feasible spatially, however, due to the need to facilitate larger commercial vehicles as well is irregular road widths of Stepney Street and Henry Street on the approach to the intersection.

6.11.3 Raised Plateau

Alternatively, raised plateaus (bound by kerb prolongations, or utilising extended approaches) could also be implemented at this intersection (refer Figure 6.13 and Figure 6.14). Again, should a raised plateau with extended approaches be used, consideration must be given to stormwater.

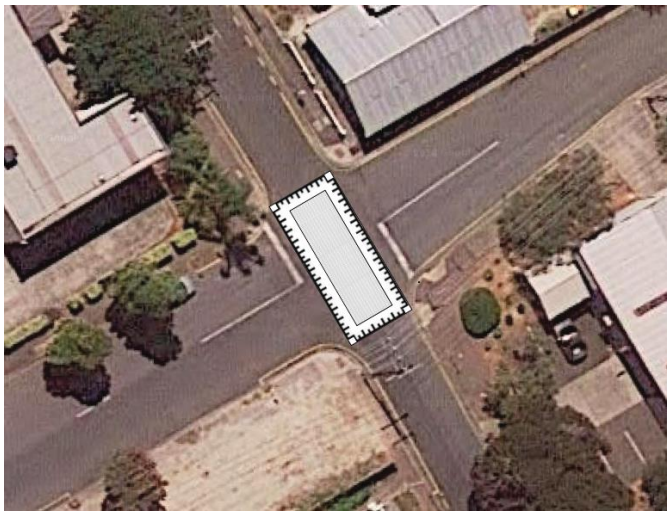


Figure 6.13 Raised plateau possible option 1

Figure 6.14 Raised plateau possible option 2

6.11.4 Re-prioritised Intersection

Consideration was also given to re-prioritising the intersection. Currently, Stepney Street has priority over Henry Street, despite Henry Street being wider and having a higher traffic volume on the approach.

6.11.5 Recommendation

That the Council re-prioritise the movement through the intersection with Stop signs being installed in Stepney Street.

6.11.6 Stage 2 Consultation Feedback

Total Responses	SD	D	A	SA	A+SA
282	10%	10%	53%	27%	80%

There was strong support for this recommendation with no concerns raised by the community.

6.11.7 Final Recommendation

That the Council re-prioritise the movement through the intersection with Stop signs being installed in Stepney Street.

6.12 Morris Street

6.12.1 Background

Residents raised concerns during the Stage 1 community consultation phase regarding drivers cutting corners when entering Morris Street from Bakewell Road.

The Council could consider implementing a pavement bar median at this junction (refer Figure 6.15), to maintain lane separation. Due to the width of the street there will also be a reduction of between two (2) and four (4) on street parking spaces at this location.

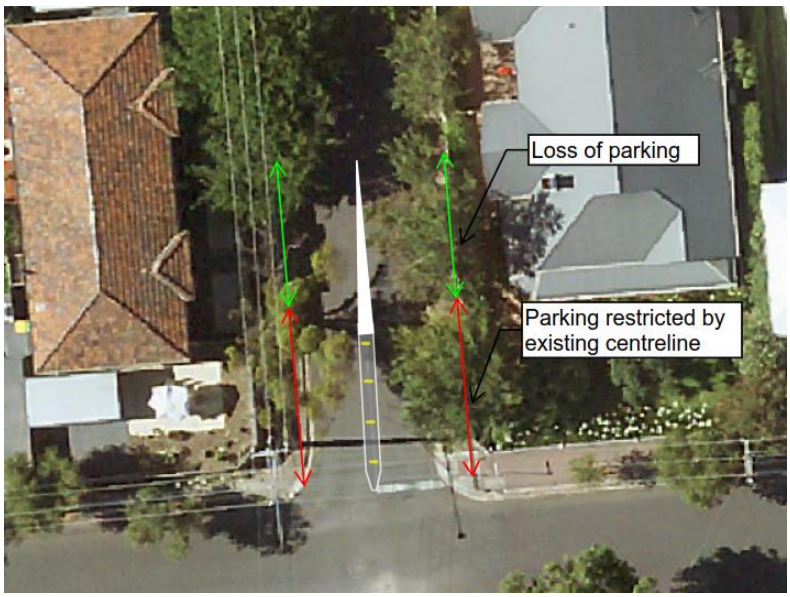


Figure 6.15 Pavement bar median on Morris Street

6.12.2 Draft Recommendation

That the Council install a pavement bar median on the centre line of Morris Street at this intersection to prevent corner cutting.

6.12.3 Stage 2 Consultation Feedback

Total Responses	SD	D	A	SA	A+SA
280	11%	14%	47%	27%	74%

There was general support for the recommendation.

6.12.4 Final Recommendation

That the Council install a pavement bar median on the centre line of Morris Street at this intersection to prevent corner cutting.

6.13 Adelaide Street and Dover Street Intersection

6.13.1 Background

Crash data indicates that between the period of 2012 and 2016, there have been two (2) right angle crashes at the Adelaide Street and Dover Street intersection. The Council have reported an additional crash that occurred at this location in late 2017.

A roundabout was explored for this intersection (refer Figure 6.16), where kerb extensions are included for parking lane delineation and road narrowing at the intersection. It is not expected that there will be a loss in parking associated with this roundabout, however this is subject to the design feasibility.

Figure 6.16 Roundabout option, with kerb extensions

6.13.2 Draft Recommendation

That the Council undertake a design feasibility for the installation of a roundabout and kerb extensions at this intersection.

6.13.3 Stage 2 Consultation Feedback

Total Responses	SD	D	A	SA	A+SA
293	9%	11%	48%	31%	80%

There was strong support for this recommendation with no adverse comments received.

6.13.4 Final Recommendation

That the Council undertake a design feasibility for the installation of a roundabout and kerb extensions at this intersection.

6.14 Other Locations Identified in Stage 2 Consultation

6.14.1 Payneham Road / Ann Street

Council raised concern over drivers turning right from Payneham Road into Ann Street, in close proximity to the intersection with Stephen Terrace and Nelson Street. Concern was raised over the risk of rear end collisions involving traffic heading out of Adelaide on Payneham Road being disrupted by a stationary right turner into Ann Street. There is not a right turn lane at this location. Council suggested consideration be given to an afternoon peak No Right Turn restriction.

Crash data for the 5 years 2013-2017 reveals the following:

Year	Total Crashes
2017	5
2016	4
2015	3
2014	1
2013	5
Total (5 years)	18

Of the 18 crashes that have been reported

- 3 involved a rear end collision with traffic travelling north-east in Payneham Road (the reported concern) – only 1 of which occurred between 4:30pm and 6:00pm
- 6 collisions involved a right turner out of Ann Street
- 5 collisions involved a right turner into Ann Street
- Several other crashes involved side swipe or rear end for city bound traffic in Payneham Road.

On this basis, there is not a strong justification for the introduction of a No Right Turn restriction from Payneham Road into Ann Street. Notwithstanding, these movements have the propensity of disrupting outbound traffic flows particularly in the peak conditions, due to the close proximity of Ann Street to Nelson Street.

We recommend the matter be raised with DPTI as part of ongoing discussion concerning the development of Network Operating Plans for the main roads and key intersections.

6.14.2 Magill Road - Anytime Fitness Centre

Concerns have been raised regarding the Anytime Fitness Centre located at 253 Magill Road, Maylands. The concern is the queuing which occurs when drivers are travelling west along Magill Road seek to do a right-turn into the centre, which then causes delays and queuing which even affects the traffic signals at the Portrush Road intersection. Council suggested that consideration be given to banning right turns from Magill Road into Anytime Fitness.

While it would be somewhat unusual to ban right turns into a private development, we recommend the matter be raised with DPTI as part of ongoing discussion concerning the development of Network Operating Plans for the main roads and key intersections.

7 Summary of Recommendations and Costings

Traffic Volumes (Refer Section 2.1 and Section 6.1)

Recommendations:

1. That the Council continue to work with DPTI to address the capacity of the arterial road network, and development of Network Operating Plans for the main roads and key intersections.
2. As part of this ongoing consultation, cautious consideration be given to the implementation of peak hour turning restrictions off the main roads at key roads within the study precinct, noting council concerns over reduced accessibility for local residents.

Priority: High / Ongoing advocacy role

Costing: No direct costs at this stage

Traffic Speeds (Refer Section 2.2 and Section 6.2)

Recommendation: That Council formally seek approval from the Minister to implement a 40 kph speed limit in the part of the Study Area which is bound by Portrush Road, Magill Road, Nelson Street and Payneham Road, in accordance with the procedure outlined in 'Speed Limit Guidelines'.

Priority: High

Costing: $50,000 for sign implementation, including preparation of a traffic control plan, traffic impact statement, application to DPTI and sign installation.

Narrow Street (Refer Section 6.3)

Recommendation: That the Council develop a policy or procedure for the purpose of undertaking assessment to manage on street car parking on both sides of the street versus traffic congestion along streets with a narrow carriageway width that has a consistent approach throughout the City.

Priority: Moderate / Subject to development of Strategic Parking Policy

Costing: No direct costs at this stage (budgeted separately by Council)

Ann Street (Refer Section 6.4)

Recommendation: That Council not implement traffic or parking restrictions along Ann Street to specifically address the concerns over traffic volumes, parked cars and narrow street.

In regard to pedestrians crossing Ann Street adjacent car park zebra crossing (south of Olive Street), we recommend:

- - Relocate the No Stopping signs to match the end of the yellow no stopping lines
- - Construct an appropriate kerb ramp on both sides of Ann Street, which will require removal of one car park on the eastern side of the road
- - Install pedestrian ahead warning signs on each approach in Ann Street

Priority: High

Costing: $15,000 allowing for signage, line marking and construction of two kerb ramps.

Ann Street and Olive Street Intersection (Refer Section 0)

Recommendation: No further action required at this stage.

Priority: -

Costing: Nil

Ann Street and Flora Street Intersection (Refer Section 6.6)

Recommendation: No further action required at this stage.

Priority: -

Costing: Nil

Lindas Lane (Refer Section 6.7)

Recommendation: That the Council install a 'NO ENTRY' sign at the eastern end of the Lane at the Lindas Lane and Morcomb Street intersection.

Priority: Moderate

Costing: $1,000

Laura Street (Refer Section 6.8)

Recommendation: That the Council implement a pavement bar median to maintain lane separation at the intersection. This will result in the loss of approximately three (3) on street car parking spaces at the intersection.

Priority: Moderate

Costing: $5-7,500 (including plan preparation and implementation)

Henry Street (Refer Section 6.9.3)

Recommendation:

1. That Council implement a No Stopping restriction around the bend in Henry Street between 7-9am and 4-6pm Monday to Friday.
2. That Council install pavement bars in Frederick Street (northern leg) to control vehicle turning movements into Henry Street.

Priority: High

Costing: $5-7,500 (including plan preparation and implementation)

Henry Street and Ann Street Intersection (Refer Section 6.10)

Recommendation: That the Council undertake a design feasibility for the installation of a mini-roundabout at the intersection.

Priority: High

Costing: $25,000 including survey and feasibility design

Stepney Street and Henry Street Intersection (Refer Section 0)

Recommendation: That the Council re-prioritise the intersection movements and install Stop signs in Stepney Street.

Priority: Moderate

Costing: $2,000

Morris Street (Refer Section 6.12)

Recommendation: That the Council install a pavement bar median on the centre line of Morris Street at the intersection.

Priority: High

Costing: $5-7,500 (including plan preparation and implementation)

Adelaide Street and Dover Street Intersection (Refer Section 6.13)

Recommendation: That the Council undertake a design feasibility for the installation of a roundabout and kerb extensions at the intersection.

Priority: Moderate

Costing: $25,000 including survey and feasibility design

Other Locations

Recommendation: That the Council discuss with DPTI the appropriateness of banning right turns at the following locations:

- Payneham Road / Ann Street – no right turn into Ann Street during peak hours
- Magill Road / Anytime Fitness – no right turn into ATF.

Priority: Moderate

Costing: No additional costs

Appendix A – Traffic Data Maps

Appendix B – Traffic Data Comparison to 2001 LATM Study

Appendix C - Crash Data Maps

Appendix D - Stage 1 Community Consultation Letter

Appendix E - Stage 1 Community Consultation Feedback Summarised

Appendix F - Stage 2 Community Consultation Letter/Survey

Appendix G - Stage 2 Community Consultation Feedback Summarised