

Transportation

for the next Generation **2025**



City of West Torrens Transport Strategy Report, September 2009

City of West Torrens

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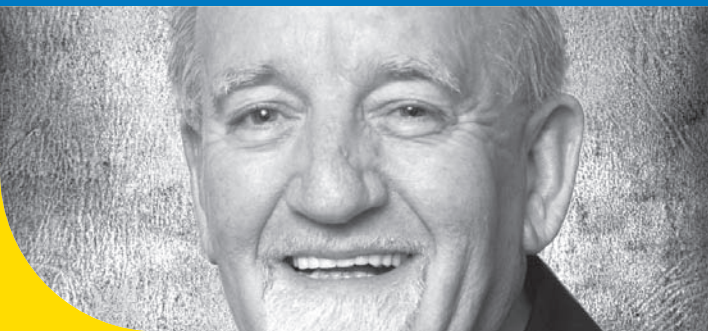
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'This strategy will
guide us on how we
can best meet our
city's needs during
the next 20 years.'

- Hon John Trainer, Mayor City of West Torrens



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Executive Summary

‘The Transport Strategy considers the future traffic and parking demands in the arterial and local road networks over the next 20 years.’

- General Manager, Urban Services, City of West Torrens

Executive Summary

The City of West Torrens is experiencing significant growth in traffic through a combination of new developments, its location in close proximity to the CBD, its proximity to the coast and major transport hubs. Increasing congestion in the arterial road network, due to capacity constraints at critical intersections and increasing use of local streets by through traffic to bypass these congested roads, require strategies to be put in place to address these issues.

Increasing urban consolidation through in-fill developments, regeneration of existing large industrial areas and current/future significant developments

at the Adelaide Airport have also contributed to concerns about parking availability issues on the road network. The Transport Strategy considers the future traffic and parking demands on the arterial and local road networks over the next 20 years and importantly, it identifies strategies that the City could implement to maintain good accessibility, provide a safe road network, maintain a high level of amenity for residents and a high level of parking opportunity throughout the City.

The Transport Strategy provides strategies in a number of key areas:

- DTEI Road Network

- Managing freight impacts
- Pedestrian and Cycling Plans
- Public Transport
- Travel Demand Management
- Local Road Network
- Crash identification and action
- Monitoring of traffic patterns
- Traffic management
- Parking management

The Transport Strategy is being developed in conjunction with the City's Section 30 Development Plan Review. The inclusion of relevant and appropriate policies in the Development Plan will help achieve some of the outcomes sought by the Transport Strategy.



Part One

Overview



1.0

Future Vision

The vision for the City of West Torrens is:

‘West Torrens –
Committed to being
the best place to live,
work and enjoy life.’

A grayscale photograph of a hand holding a silver pen, poised to write on a spiral-bound notebook. The notebook has a grid pattern. The background is a dark, textured surface.

2.0

The Transport Study

The City of West Torrens is a diverse Council located between the Central Business District (CBD) of Adelaide and the coast. Its proximity to the CBD and the coast results in a range of transport opportunities, in particular for commuting and recreation. This proximity to the CBD also means that the Council road network is subject to intrusion of through traffic and the significant merging of traffic flows from the south, north and west on the approaches to the CBD.

In addition to these road network issues, increasing developments and rejuvenation of existing residential and non-residential zones in the City have further added to the transport demands. One of the largest landowners in the City is Adelaide Airport. It occupies approximately 20% of the total land area in the City, but importantly, the significant developments that have occurred and continuing to occur within the Airport boundaries feed significant new volumes of traffic to the abutting road system.

'The study reviews the transport needs in the City, to develop strategies to assist the City in managing traffic movements and parking needs, to plan and implement transport strategies to meet the City's needs over the next 20 years.'

The objectives of the Transport Study are:

- **Review the existing transport conditions in the City, including traffic demands, parking demands and pedestrian/cycling demands.**
- **Review the future transport demands having regard to changes within the City from development opportunities, land use changes and other external transport demands that may have an influence in the City.**
- **Develop a road hierarchy that is appropriate to meet the needs of the City, having regard to the needs of residents, businesses and industries.**
- **Review the process of traffic management and develop an appropriate strategy to guide the City in addressing concerns regarding traffic flows, intrusion of through traffic, speeds and use of traffic control devices.**
- **Review the process of parking management and develop an appropriate strategy to guide the City in addressing the issues of parking supply and demand, having regard to the needs of residents, businesses and industries, the use of kerb space and the increasing parking demands generated by developments throughout the City.**

The primary objective of this report is to develop a series of policies that would guide the Administration on the implementation of traffic and parking actions.





3.0

The City Profile

The City of West Torrens is located immediately west of the Central Business District (CBD). It is bounded by the River Torrens, City of Charles Sturt to the north and Cities of Holdfast Bay, Marion and Unley along its southern boundary. The eastern boundary is the western edge of the City of Adelaide Parklands. The western boundary includes a strip of coastal land which abuts the Gulf of St Vincent.

The City covers an area of 36 square kilometres. It has a population of 50,416 (Census 2001). It is envisaged that the Census data will be updated in later versions of the report.

For more detailed analysis of the demographics of the City of West Torrens, refer to *The future of West Torrens Section 30 Development Plan Review Issues Paper*.

Figure 1 shows the location map of the City.

The major land uses as a percentage of the total land area in the City are as follows:

- Residential - 40%
- Commercial/Industrial - 22.5%
- Adelaide Airport – 20%
- Other uses – 17.5%

‘Overall there has been a general trend of increasing dwelling approvals. This highlights the potential for a significant increase in housing stock through in-fill development.’

The primary shopping centres are located in Kurralta Park, Torrensville and Hilton. Commercial developments are generally located along the main arterial roads.

The areas experiencing greatest changes are the Adelaide Airport, the industrial zones in particular around Thebarton and Mile End, and in-fill residential developments.

The West Torrens Community Profile identifies that overall there has been a general trend of increasing dwelling approvals rising from 214 in 1998-99 to 291 in 2004-2005. Approximately 64% of the City's housing stock is detached dwellings on individual allotments. This highlights the potential for a significant increase in housing stock through in-fill development, such as detached dwellings being replaced by two and sometimes three new dwellings.

*Source of the above Information:
The future of West Torrens Section 30
Development Plan Review Issues Paper.*

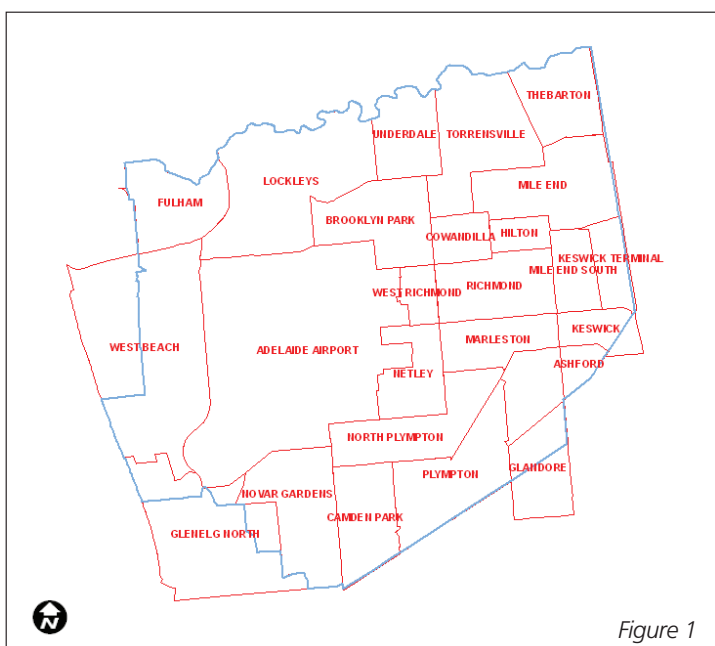


Figure 1





4.0

Transport Mode and Employment

In Adelaide, public transport carries an estimated 10% of passenger travel during peak hours and only 5% of all weekday travel (peak and off-peak). South Australia's Strategic Plan identifies a target to double the use of public transport to 10% of weekday travel by 2018*.

Within metropolitan Adelaide, approximately 3.5 million trips are made each day of which 2.7 million are made by car, 160,000 by public transport and the remainder by walking, cycling or other means. Travel on weekends has been rising with an average of 3.4 million trips*.

**Source of information: Adelaide Urban Corridors Strategy 2006 DTRS and DTEI.*

Table 1 summarises the employment destinations for residents of the City.

Top 10 Percentage LGA	Percentage
Adelaide	24.7
West Torrens	24.4
Charles Sturt	11.1
Port Adelaide Enfield	7.1
Marion	5.0
Unley	3.8
Holdfast Bay	3.1
Norwood Payneham St Peters	3.0
Mitcham	2.6
Burnside	1.9

Source: ABS Census 2001

Of the workforce within the City who reside outside of the City, the majority live within the City of Onkaparinga (13.3%), followed by the Cities of Marion and Charles Sturt (10.0%).

Table 2 shows the residence of the City's workforce.

Top 10 Percentage LGA	Percentage
West Torrens	14.9
Onkaparinga	13.3
Marion	10.0
Charles Sturt	10.0
Port Adelaide Enfield	6.9
Salisbury	6.5
Tea Tree Gully	6.2
Mitcham	5.8
Holdfast Bay	4.0
Unley	3.6

Source: ABS Census 2001

'In the City of West Torrens, 67 per cent of people use a car to travel to work, 8.1 per cent use public transport and 4.7 per cent walk or cycle.'

The ABS Census 2001 data shows that in the City of West Torrens, 67% of people use a car as their only means of travel to work, 8.1% use public transport and 4.7% walk or cycle.

The journey to work data for 2001 for the City of West Torrens shows that 24.4% of the employed residents of the City worked within the Council area.

Of those residents who worked outside of the Council area, the two major areas are within the City of Adelaide (24.7% of the employed residents) and within the City of Charles Sturt (11.1%).



The Census data shows an influx of approximately 29,000 workers to the City from other LGAs, compared to approximately 16,000 residents of the City who leave the area to work elsewhere.

Note: The above information is based on the Census 2001 data. This information would be updated in later stages of this report following an analysis of Census 2006, recently made available by the Australian Bureau of Statistics.



5.0

Other Policy Framework

‘Transport is critically important to the social, cultural and economic success of every Australian community.’

There are a number of strategic plans and policies developed by the State Government with reference to the transport issues.

Some of the key points of these strategies are summarised below.

5.1 Federal Framework

5.1.1 Local Government Roads and Transport Strategy 2006-2016 ALGA

The Strategy acknowledges that transport is critically important to the social, cultural and economic success of every Australian community. The Strategy calls for forging transport partnerships between Federal and Local Governments to deliver efficient, effective and equitable transport services and infrastructure, through the following key areas:

- local road funding and management
- urban transport solutions
- mobility and access for regional Australians
- freight management
- long-term sustainability of local government.

5.2 State Framework

5.2.1 Draft Planning Strategy for Metropolitan Adelaide

Growing Prosperity

Land use and transport integration – character of transport routes;

access to public transport; equitable access to employment opportunities, service and facilities; a sustainable transport system that is integrated, coordinated, affordable, efficient and safe; *importance of airports.*

Employment and business

focus areas – planned employment areas across a range of industries with supporting infrastructure; export growth an important driver of economic prosperity; access routes; opportunities for education and training; benefit of cluster.

Industry – focus on export growth; ensure the appropriate supply of serviced industrial land; industry clusters to warrant improved physical infrastructure and facilitate move towards more sustainable production processes; minimise interface issues.

Commercial uses – preferably located within designated activity centres; functional and attractive commercial uses; safe traffic access.

Tourism facilities – enhance tourism appeal; enhance connections between tourism assets, ready access for all; key gateway points eg Adelaide Airport and passenger routes; preserve history and heritage.

Energy efficiency – energy-efficient design and layout of land and buildings; reducing the amount of energy used for transport, eg promote walking and cycling.

Building communities

Activity centres – contain retail and commercial uses traditionally found in centres as well as a diverse

range of other uses, including community facilities, offices and residential development; play a key role in providing goods and services, employment and a cultural focus for the community; encouraging a mix of uses; encouraging walking, cycling and the use of public transport; creating attractive, functional and vibrant activity centres.

5.2.2 Strategic Infrastructure Plan for South Australia

Invest in transport infrastructure

- Develop and deepen Outer Harbour and substantially improve infrastructure at the port of Adelaide.
- Improve the north-south transport corridor.
- Develop and maintain regional freight networks.
- Increase use of public transport.
- Other major infrastructure works announced by the Government include the creation of a non-stop north-south corridor between the Southern Expressway and the Port River Expressway, public transport upgrades and the extension of the tram service from North Terrace to the Entertainment Centre and beyond.

5.2.3 Adelaide Airport Limited Master Plan

See Section 6.6

5.2.4 Metropolitan Local Government Transport Strategy August 2005

The Metropolitan Local Government Group (MLGG) provides a forum for metropolitan councils to develop decisions and progress actions through

the Local Government Association on public policy matters of importance to them. All 18 metropolitan councils are members of the MLGG.

‘Whilst much of the strategic transport planning focus has been directed towards road networks, a new balance in the strategic transport focus must extend well beyond the road system alone.’

– MLGTS study

The Metropolitan Transport Strategy was developed in 2005. The Strategy is an area plan for the Metropolitan Local Government area with a particular focus on the local road network under the control of local councils and takes into account all modes of public and private transport.

Some of the issues covered in the Strategy include:

- role for local government
- transport principles, strategic directions and policy options
- integrate transport and land use and increase choices
- good urban design and transport
- integrated corridor planning
- Travel Demand Management and Travel Behaviour Change
- TravelSmart
- review of road network classification framework
- strategic directions for the Adelaide road network
- future road network and performance

- industry and freight transport
- safety
- public transport
- bicycles.

The Strategy details a whole range of issues related to transport, including a comprehensive range of **integrated** transport planning options.

“Whilst much of the strategic transport planning focus has been directed towards road networks, a new balance in the strategic transport focus must extend well beyond the road system alone. The transport system as a whole must be safe and secure, economically efficient, environmentally sustainable, responsive to community needs, and socially equitable.”

MLGTS study August 2005

Integrated transport planning is largely about four things:

- changing the focus from vehicle-movement to moving people and goods with more choice of transport mode
- taking full account of social, environmental and economic costs and benefits in planning and decision-making
- making best use of finite resources for transport
- creating environments where transport supports broader socio-economic goals, but does not dominate cities, town centres and suburbs.

Source: City of Unley Integrated Transport Plan

The new integrated transport planning approach from the MLGTS is summarised below:

- commuting alternatives
- work alternatives
- parking management alternatives
- support programs.

5.3 Council Framework

5.3.1 City of West Torrens Community Plan 2004 - 2009

Development Plan – Ensure Council’s planning and development policies are relevant and up-to-date via regular reviews and amendments as appropriate.



Source: MLGTS study area

Road Network – Council will implement a Pavement Management System as part of Council's Corporate Asset Management System and develop an integrated 5-10 year Capital Works Program.

Traffic Management – Council will develop an integrated city-wide traffic management plan that takes into account matters including, but not limited to, traffic management in and around the Airport.

5.3.2 City of West Torrens Section 30 Development Plan Review

The September 2006 Issues Paper identifies future strategies that could be considered in relation to traffic and access issues.

- Prepare a strategic traffic management framework for the City which provides guidance on priority areas for traffic management.
- Identify the critical routes and nodes within the City, and fund and implement measures to support the travel demands evident.
- Identify, fund and implement innovative travel demand management approaches, such as transit lanes.
- Identify, fund and implement infrastructure measures that will improve public transport usage.
- Develop and implement a strategic framework for traffic management and the upgrading of main roads (DTEI responsibility), based on prioritising the areas requiring action.
- Seek external funding opportunities to implement its action programs.
- Seek protection for existing areas abutting the Airport, which may be impacted by new developments,

through traffic management measures and buffer protection.

Policy options identified include:

- Investigate transit-oriented development and activity centres.
- Promote the construction of pedestrian networks and cycle ways.
- Review Commercial (Arterial) Zones in relation to appropriate land uses.
- Protect residential areas from through traffic.
- Address impacts arising from future Adelaide Airport development.
- Review standards relating to bicycle and car parking.

5.3.3 City of West Torrens Asset Management Policy

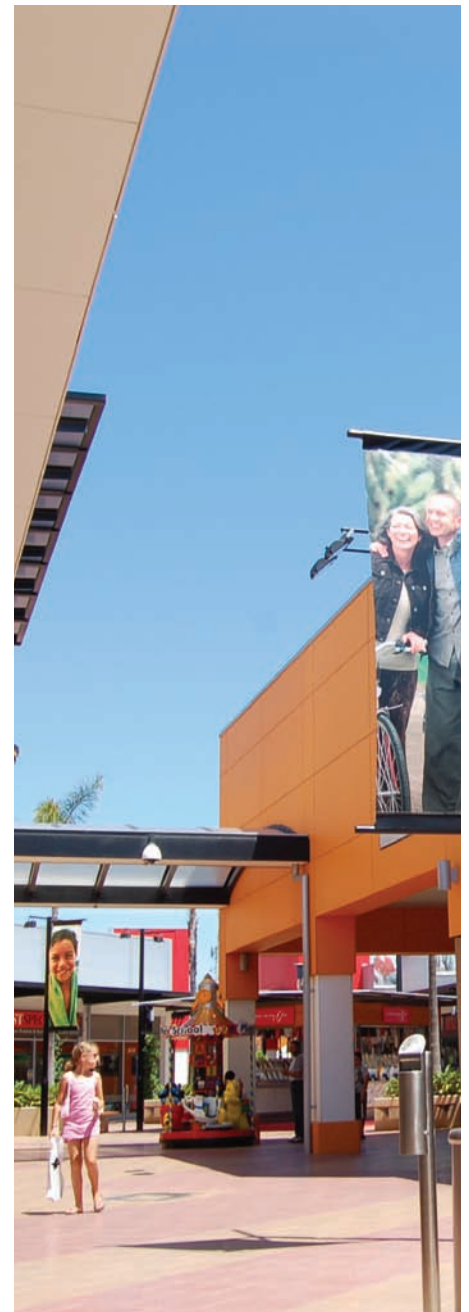
In November 2006, the City of West Torrens adopted an Asset Management Policy to guide how existing assets are managed, new assets acquired and an overall program for maintenance of these assets.

The assets include approximately 500 kilometres of footpaths, 24 kilometres of shared use paths, approximately 290 kilometres of local roads and 85 kilometres of State Government kerb and gutter.

The policy will enable the City to:

- Identify fit for purpose levels of service for each road asset.
- Deliver desired levels of service for users of Council's road assets.
- Introduce reasonable maintenance standards.
- Reduce the life cycle costs of maintaining its road assets.

- Provide users with best utilisation opportunities.
- Ensure that the current road asset holdings can be sustained in the future.
- Justify acquisition of new road assets to stakeholders.
- Reduce risks of road asset failures.





6.0

State of the Department for Transport, Energy
and Infrastructure (DTEI) Transport Network

Major routes traversing the City include South Road, Marion Road, Tapleys Hill Road, Anzac Highway, Henley Beach Road, Sir Donald Bradman Drive, Richmond Road and Cross Road. These roads are under the care and control of the Department for Transport, Energy and Infrastructure (DTEI).

The information on current congestion levels in this network is sourced from the *Adelaide Urban Corridors Strategy* report 2006 (DTRS and DTEI), DTEI major road projects and *Adelaide Airport Limited (AAL) Access Study* reports. Important parts of these reports are reproduced in this section.

Level of Service (LOS) is an indicator of road network performance based upon traffic congestion criteria outlined in the *Austroads Capacity Guide to Traffic Engineering Practice - Roadway Capacity*.

LOS ranges from (A) – free flow conditions to (F) where traffic demand exceeds the capacity of the road and serious congestion results.

DTEI’s general description of levels of service in relation to volume/capacity ratio is as follows.

LOS	Degree of saturation
A-B	0 to 0.5
C	0.5 to 0.7
D	0.7 to 0.85
E	0.85 to 1.0
F	Over 1.0

The degree of saturation is used to identify intersection performances in the following sections of the report. FIGURE 2 shows the key intersections and road corridors discussed in this section of the report.

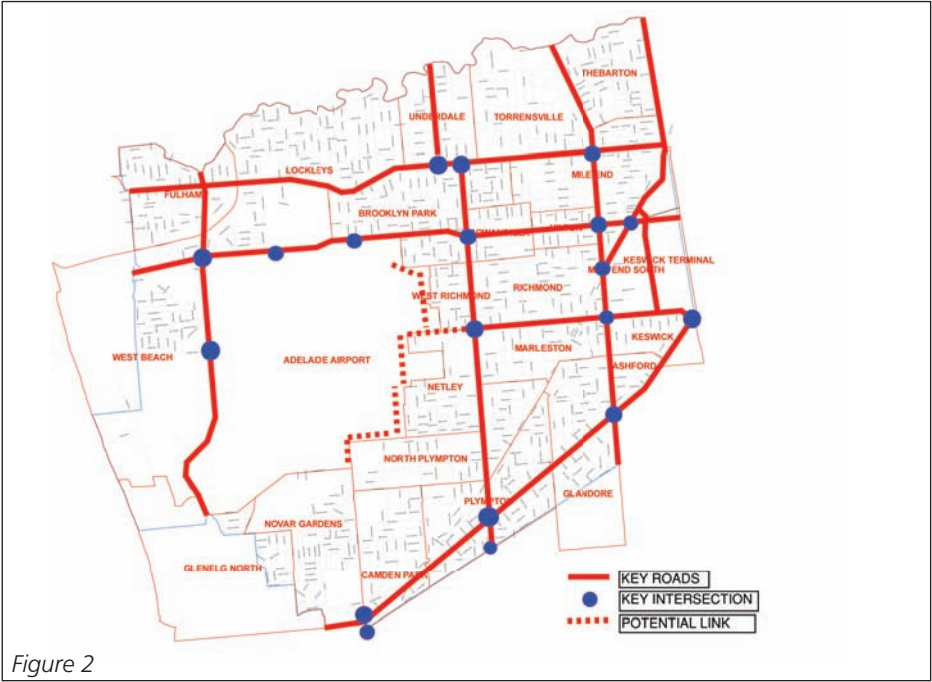


Figure 2

‘The number of trips made during non-peak times is growing faster than peak travel and traffic congestion is becoming more common outside of the traditional peak periods across the entire road network.’

6.1 National Transport Network and the Adelaide Urban Corridors Strategy

National Transport Network is a major Australian Government initiative designed to improve planning, decision-making and funding for the national land transport infrastructure. A key component of the National Transport Network process is the development of a strategy for each corridor of the National Transport Network.

The Adelaide Urban Corridors Strategy is based on the National Transport Network objectives:

- Increase its infrastructure capacity and efficiency.
- Improve its safety and security.
- Improve transport productivity on its nationally strategic and export-oriented freight corridors.
- Improve the reliability of travel on interstate and inter-regional corridors.
- Are consistent with viable, long-term economic and social outcomes, and with obligation to current and future generations to sustain the environment.

The Adelaide Urban Corridors routes in the City include:

- South Road, between Grand Junction Road and Sir Donald Bradman Drive - part of National Transport Network corridor.
- Sir Donald Bradman Drive, between South Road and Sir Richard Williams Avenue (Adelaide Airport entrance) - part of National Transport Network corridor.
- South Road, between Sir Donald Bradman Drive and the Southern Expressway.

- Planning policy – better land use and transport planning to reduce travel demands.

The projects identified by Government to address some of the above issues include:

- South Road Underpass.
- Bakewell Bridge replacement.
- 600m tunnel on South Road under Port Road, Grange Road and rail line.
- Widening of South Road, between Port Road and Torrens Road.
- TravelSmart and Green Travel Plans.
- Expansion of walking and cycling facilities.

Priorities of the Adelaide Urban Corridors Strategy

The National Transport Network priorities applicable to the City of West Torrens are:

- Short term priorities (to 2015).
- Make better use of existing road and rail infrastructure through a combination of targeted infrastructure enhancements (grade separation and road widening), improved traffic control, extended clearways and Intelligent Transport Systems.
- Implement the long term development strategy for South Road given that it will fundamentally shape the traffic patterns and dictate investment patterns in central Adelaide.
- Improve the efficiency of Sir Donald Bradman Drive in providing access to Adelaide Airport by way of targeted investment at key intersections.
- Develop and implement a freight network strategy for the efficient movement of freight by road and rail.
- Manage demand for travel by private car by a range of travel demand measures such as involving public transport, land use planning and parking controls.

Long-term priorities (2015-2025)

- Implement the South Road development strategy.

- Improve transport connections to intermodal terminals.
- Upgrade alternative road transport routes.
- Effectively integrate land use and transport planning.

Recommendations

- Seek DTEI and State Government to implement upgrades of critical intersection nodes in the DTEI transport network to ease congestion in the western region.
- Support the State Government's South Road development strategy.
- Seek DTEI and State Government to upgrade alternative road transport routes to ease pressure and provide performance benefits for the National Transport Network, such as the upgrade of the Marion Road-Holbrooks Road alternative to South Road.
- Support statewide measures that would impact on car use such as alternative modes of transport and increased use of public transport.
- Amend land use planning policies, where appropriate, to manage travel demand through the Section 30 Review Process and Plan Amendment review Process with Development Plan Amendment process.

6.2 City West Bypass

This project has recently been completed and links Port Road with South Road. It forms part of the extension of the inner ring route around the CBD.

See fig 4

The Home Maker centre adjacent to the City West Bypass is one of the largest bulky goods developments in the City. Increasing developments for large retail/showroom uses are also occurring in the area south of the



Figure 4 City Ring Route

Source: DTEI

Home Maker centre. The City West Bypass provides good access to this major retail area of the City.

The Adelaide Urban Corridors Strategy has identified that the at-grade intersection of South Road/City West bypass is currently at or approaching capacity levels.

6.3 Bakewell Bridge replacement

The road underpass on Henley Beach Road has on-road bicycle lanes included on both sides. Two bridges span the underpass, one of which will carry traffic along James Congdon Drive and East Terrace and the other bridge is for the railway line. The underpass was opened in January 2008.

Immediately downstream of the underpass is the at-grade intersection of South Road/Henley Beach Road. The Adelaide Urban Corridors Strategy has identified that this intersection is currently at or approaching capacity levels.

6.4 South Road underpass

South Road is a key road in the metropolitan network and a key part of the Outer DTEI City Ring Route network.

The South Road underpass would provide improved traffic flows at one of the key intersections in Adelaide. The South Road underpass project is expected to be completed in 2009.

Capacity calculations provided by Adelaide Connect (Project manager for the underpass) show the following degree of saturation of the intersection:

2006 AM peak performance (existing)	1.05*
2008 AM peak performance (on opening)	0.75
2026 AM peak performance (forecast)	0.98*
* >0.85 denotes at or approaching capacity levels	

2006 PM peak performance (existing)	0.98*
2008 PM peak performance (on opening)	0.57
2026 PM peak performance (forecast)	0.77
* >0.85 denotes at or approaching capacity levels	

The improvements to intersection performance at one of the critical intersections in the City will be significant, as a result of the underpass. As a result of the underpass. North and south of this intersection on South Road, the Adelaide Urban Corridors Strategy identified that the current at-grade intersections are operating at below the 0.85 levels.

6.5 Other DTEI projects

Marion Road – Holbrooks Road

The link between Marion Road and Holbrooks Road will assist in improving

the north-south traffic flows through the City. It is also an alternative transport route to South Road.

However, it is understood that this DTEI project is of a lower priority due to the South Road project commitments.

The key intersections that would benefit from this upgrade would be Henley Beach Road/Marion Road and Marion Road/Sir Donald Bradman Drive.

Upgrade of tram crossings

Recent changes to the tram signal operation in Morphett Road, south of Anzac Highway, have appeared to exacerbate congestion on the approaches to the adjacent intersection of Anzac Highway/Morphett Road.

The issue of the tram crossing and delays to adjacent intersections is also applicable to Anzac Highway/Marion Road.

Grade separation of the tram crossing at South Road is currently in progress. This would significantly improve traffic flows at the South Road corridor. The tram overpass project is expected to be completed in 2010.

‘Some of the developments around Adelaide Airport would generate significant amounts of new traffic to the main roads.’

Recommendations

- Seek DTEI and State Government to upgrade alternative road transport routes to ease pressure and provide performance benefits for the

National Transport Network, such as the upgrade of the Marion Road-Holbrooks Road alternative to South Road.

- Support the upgrade of the tram crossing at South Road by the State Government.

6.6 Adelaide Airport 2004 Master Plan

The Master Plan forecasts the passenger growth at the Adelaide Airport.

Average growth p.a.	Forecast
International passengers	4.5%
Domestic	3.5%
Regional	3.8%

Recent information by AAL shows that for 2006, the passenger growth rates were well in excess of the forecast.

Total passengers	Forecast
2008	5.33 million
2010	5.65 million
2015	6.63 million
2020	7.68 million
2025	8.87 million

Recent information by AAL shows that for 2005/06, the passenger number was 5.8 million and well ahead of forecast.

In a recent announcement by AAL, further expansion of the terminal is being planned in view of the better than expected increase in air travel demand and the entry of new airlines to South Australia.

An assessment by Council of the key right turn movement from the Airport to the City of Adelaide direction showed that the afternoon peak hour

traffic flow in 2006 was already close to the 2016 forecast in the Master Plan. An approximate breakdown of current trips to the Airport is as follows:

Taxis	25%*
Passenger vehicles	73%
Commercial vehicles	2%**

* source: Adelaide Airport Access Study Stages One, Two and Three

** source: DTEI Nov 2006 data

A further breakdown of the trips at the terminal is as follows:

Terminal related	85%
Commercial vehicles	2%
Other land uses	13%

The traffic volumes on the main transport routes would increase with the growth in passenger numbers.

In addition, the Master Plan envisages significant development opportunities around the Airport. Some of the developments would generate significant amounts of new traffic to the main roads in the area including:

Additional peak traffic (vehicles per hour)	
Burbridge Business Park	1900 vph
Airport East/Morphett precinct	850 vph
Tapleys precincts	2600 vph

General descriptions of the use of these precincts are as follows.

Runways - predominantly a precinct for aircraft operations including aircraft landing, take off and taxiing; infrastructure for navigation, radar and communications; air traffic control, aviation rescue services, fire fighting

and meteorological services.

Terminal – an area for the safe, efficient and economic handling of aircraft, passengers and freight; in addition to retailing, business and hospitality activities that support the operation of the airport.

Morphett – a mix of industrial, recreational and aviation related support industries.

Burbridge – an area accommodating business, education, technology and research facilities in an office park-like setting; also allowing warehousing and storage activities.

Tapleys – large scale retailing facilities including bulky goods, Brand Outlet Centre and associated smaller shops and support retailing.

Airport East – an area for future aircraft maintenance facilities, aircraft hangars and ancillary aviation support services; also industrial, warehouse and distribution land uses.

Recreation – a precinct comprising aged persons accommodation, open space and recreation.

Some of the large scale developments that have taken place and those that are currently being planned for the near future are described below.

‘A number of options were discussed ... they included widening Sir Donald Bradman Drive to three lanes in the westbound direction.’

These developments have and would significantly add to the traffic volumes on the main transport routes. FIGURE



Figure 5 Adelaide Airport Policy Areas
Source: AAL Master Plan

5 identifies the Airport Master plan and the various policy areas for future developments.

The information on intersection performances in this section is based on the AAL Access Study reports. The capacity analysis of the key intersections are summarised below. The capacity analysis is based on the existing layout of the affected intersection, the additional of new traffic from the Airport development and the progressive upgrade of each of the intersection (options) until Year 2021.

New terminal and IKEA

The IKEA store at the corner of Sir Donald Bradman Drive/Airport Road provides approximately 24,000m² of retail floor area and over 900 car parks.

The Airport Terminal and internal road upgrades have resulted in changes to the road patterns within the Airport.

A number of options were discussed in the AAL Access Study report to cater for the increased traffic volumes generated by the Airport site. They include widening of Sir Donald Bradman Drive to 3 lanes in the westbound direction, signal phasing alteration to a diamond overlap and a right turn overpass from Sir Richard Williams Avenue into Sir Donald Bradman Drive.

'The information on intersection performances in this section is based on the AAL Access Study reports.'

Sir Donald Bradman Drive/Airport Road/Sir Richard Williams Avenue Intersection performance – degree of saturation

Weekday capacity analysis	Year	AM peak	PM peak
Existing layout	Present	0.737	0.927
3 westbound lanes provided	Present	0.792	0.875
3 westbound lanes provided	2011	0.909	0.936
3 lanes both directions & phase change	2016	0.920	0.897
Add 2 more right turn lanes	2021	0.902	0.920
Sir Donald Bradman Dr overpass option	2021	0.918	0.825
Right turn overpass option from Airport	2021	0.868	0.947

IKEA/Sir Donald Bradman Drive Intersection performance – degree of saturation

Weekday capacity analysis	Year	PM peak
Existing layout	Present	0.676
Extend northbound lane	2011	0.825
3 lanes both directions	2021	0.932

*>0.85 denotes at or approaching capacity levels

Adelaide Airport Tapleys North and South Precincts

The development of the Tapleys North and South Precincts includes the retail hub of Harbour Town and further developments of other retail and fast food outlets. Traffic patterns have changed along Tapleys Hill Road, in particular with the signalisation of West Beach Road/Tapleys Hill Road.

Tapleys Hill Road/West Beach Road Intersection performance – degree of saturation

Weekday capacity analysis	Year	AM peak	PM peak
Existing layout	Present	0.896	0.738
Extend northbound lane	2011	0.859	0.845
3 lanes both directions	2021	0.843	0.874

*>0.85 denotes at or approaching capacity levels

‘Adelaide Airport’s Master Plan envisages a link between Morphett Road with Richmond Road.’

Adelaide Airport Tapleys West Precinct

AAL has advised of the future potential to develop this precinct into a recreational type use.

Adelaide Airport Burbridge Precinct

Development of the Burbridge Business Park precinct has commenced with warehouse/office type uses along the Sir Donald Bradman Drive frontage. The Business Park, when completed, would cater for over 100,000m² of floor area for such uses. Traffic signals have been installed at the main access point to the Business Park on Sir Donald Bradman Drive. An additional left in left out access point has also been provided to service the site.

As a result of the above development, DTEI has reduced the previous speed limit of 70 kph to 60 kph. In addition, DTEI has advised that there is a proposal to implement on-road bicycle lanes along Sir Donald Bradman Drive, between Tapleys Hill Road and the IKEA traffic signals, in response to AAL developments along this road.

Burbridge Business Park/Sir Donald Bradman Drive **Intersection performance – degree of saturation**

Weekday capacity analysis	Year	AM peak	PM peak
Existing layout	Present	0.498	0.706
Existing layout	2011	0.578	0.838
3 westbound lanes	2021	0.676	0.889

*>0.85 denotes at or approaching capacity levels

Adelaide Airport East Precinct

The Airport East precinct has been earmarked for large scale developments of office/warehouse type uses. The Airport East precinct is the area abutting Transport Avenue, Morley Street and Richmond Road. The types of land uses envisaged would generate significant volumes of large vehicles, including semi trailers and potentially B Doubles.

AAL is currently reviewing access options for the development of the Airport East and Morphett precincts.

Marion Road/Richmond Road **Intersection performance – degree of saturation**

Weekday capacity analysis	Year	PM peak
Existing layout	Present	NA
Existing layout	2011	1.083
Upgraded layout – existing traffic	2011	0.890
Upgraded layout + AAL new traffic	2011	0.913
Further upgrade + AAL new traffic	2021	0.910

*>0.85 denotes at or approaching capacity levels

The Master Plan also envisages the linking of Morphett Road with Richmond Road.

A road link between Richmond Road and the terminal, via Export Park, if feasible, would enable alternative access to the Airport from the south of Adelaide.

Marion Road/Mooringe Avenue **Intersection performance – degree of saturation**

Weekday capacity analysis	Year	AM peak	PM peak
Existing layout	Present	0.857	0.760
Upgrade extra lane + AAL new traffic	Present	0.836	0.891

*>0.85 denotes at or approaching capacity levels

Adelaide Airport Morphett Precinct

The Morphett Precinct has been earmarked for a recreation type development. This precinct extends a significant distance from the Tapleys Hill Road direction east towards the Airport East Precinct.

AAL is currently undertaking consultation on its 2009 Master Plan for Adelaide Airport.

Recommendations

- Seek DTEI and State Government to implement upgrades of critical intersection nodes in the DTEI transport network to ease congestion in the western region.
- Support the State Government's South Road development strategy.
- Seek DTEI and State Government to upgrade alternative road transport routes to ease pressure and provide performance benefits for the National Transport Network, such as the upgrade of the Marion Road-Holbrooks Road alternative to South Road.
- Support statewide measures that would impact on car use such as alternative modes of transport and increased use of public transport.
- Amend land use planning policies, where appropriate, to manage travel demand through the Section 30 Review Process and Plan Amendment Review Process with Development Plan Amendment process.
- Support the upgrade of the tram crossing at South Road by the State Government.
- Seek DTEI and State Government to undertake a comprehensive transport assessment of the road network within the western region of Council, taking into account the impacts from future Airport developments and the better than expected growth in passenger forecast compared to the original Master Plan.
- Seek DTEI and State Government to review Tapleys Hill Road in view of the capacity issues that would arise from continuing development at the Airport's Tapleys North and South Precincts.



7.0

Key Issues for the DTEI Transport Network

'Traffic congestion would remain to be of issues of concern well into the future.'

There are a number of factors that would influence the conditions of the main road network within the City of West Torrens. They include:

- Growth in travel demands from population increases including work trips, school trips and social trips, and freight demands.
- Growth and investment in industries.
- Developments within the City and from in-fill housing.
- Developments at the Adelaide Airport.

The information on capacity levels show that many of the major intersections within the City are operating at or approaching capacity. Even with major upgrades implemented, by 2021 and 2026, the forecast performance of major intersections would again be at or approaching capacity.

The Adelaide Urban Corridors Strategy has identified that road congestion is the predominant issue for metropolitan Adelaide's arterial road network. It noted that while a grid pattern of arterial roads has served Adelaide well in providing local access and connectivity, the quantity of signalised intersections within the grid is undermining the performance of the system.

This indicates that traffic congestion would remain to be of issues of concern well into the future.

The City of West Torrens supports the key strategies for the National Transport Network's Adelaide Urban Corridors.

The assessment highlights the need for short-term and long-term actions for the main road network, some of which have been identified in previous studies by DTEI, by the National Transport Network study and based on the traffic demand foreseen by the City, including:

- Continue to implement the South Road development strategy.

- Upgrade alternative road transport routes to ease pressure and provide performance benefits for the National Transport Network. The upgrade of the Marion Road-Holbrooks Road alternative to South Road warrant urgent consideration.
- Review of Tapleys Hill Road in view of the capacity issues that would arise from continuing development at the Airport's Tapleys North and South Precincts.
- Measures that would impact on car use such as alternative modes of transport and increased use of public transport.
- Land use planning policies to manage travel demand.

The capacity constraints on the DTEI's main road network would have implications on the Council's local road network. This is already evident from the issues of through traffic on many local streets in the City.

'Many of the major intersections within the city are operating at, or approaching, capacity.'



Recommendations

- Seek DTEI and State Government to undertake a comprehensive transport assessment of the road network within the western region of Council, taking into account the impacts from future Airport developments.
- Seek DTEI and State Government to implement upgrades of critical intersection nodes in the DTEI transport network to ease congestion in the western region.
- Support the State Government's South Road development strategy.
- Support the upgrade of the tram crossing at South Road by the State Government.
- Seek DTEI and State Government to upgrade alternative road transport routes to ease pressure and provide performance benefits for the National Transport Network, such as the upgrade of the Marion Road-Holbrooks Road alternative to South Road.
- Seek DTEI and State Government to review Tapleys Hill Road in view of the capacity issues that would arise from continuing development at the Airport's Tapleys North and South Precincts.
- Support statewide measures that would impact on car use such as alternative modes of transport and increased use of public transport.
- Amend land use planning policies, where appropriate, to manage travel demand through the Section 30 Review Process and Development Plan Amendment process.



8.0

Freight

‘Communities are increasingly aware of the potential impacts of freight operations, freight terminals, freight corridor traffic and inter-modal facilities. This reflects increased community involvement in issues concerning quality of life, health, environment, amenity and safety.’

MLGTS study August 2005

Communities are increasingly aware of the potential impacts of freight operations, freight terminals, freight corridor traffic and inter-modal facilities. This reflects increased community involvement in issues concerning quality of life, health, environment, amenity and safety.

As a consequence, the State Government’s approach to freight transport planning seeks to:

- continue industrial development in designated regions close to major freight routes
- discourage industrial development in residential areas and areas away from freight routes
- encourage industry to relocate to industrial precincts to reduce land use conflicts
- continue the partnership with local government and the freight transport industry to achieve an acceptable balance between community concerns and industry needs
- develop a heavy vehicle restricted access plan to protect areas against truck access

- upgrade arterial roads in major freight corridors to attract trucks from less suitable roads by developing inner and outer ring-roads, and upgrading roads to facilitate north south freight movement.

Source: MLGTS study area

Freight movements comprise the following:

- Freight servicing local industries in the City.
- Freight movements on a regional basis utilising some of the main roads in the City.
- B Double access routes.
- Controlled access buses.
- Over-dimensional vehicles.

The key freight routes comprise the DTEI main road network and local roads that service large industry zones with the City, including:

- Ashwin Parade
- Ashley Street (Ashwin Parade to Holbrooks Road)
- Phillips Street
- West Thebarton Road
- Grove Avenue
- Galway Avenue
- Mooringe Avenue
- James Melrose Road
- Morphet Road
- London Road
- Manchester Street
- Scotland Road
- Richmond Road

In addition to the above freight-generating land uses, the Adelaide Airport is also a major freight generating site, particularly with the Burbidge Business Park development, which would house large industries,

and the terminal itself with major fuel deliveries.

Regulatory Overview

The South Australian Road Traffic Act and Regulations recognise the significant differences across the road network in standard and use. It therefore accommodates the operational requirements of the various vehicle types and supports the role of Government in providing the most appropriate road system possible within its existing and long-term financial strategies.

Heavy vehicle operations are divided into three categories. These are:

- General Access
- Restricted Access by Gazette Notice
- Restricted Access by Permit

General Access

Heavy vehicles in this category are permitted access to all roads in South Australia subject to any local road or bridge restriction.

Maximum limits for General Access are:

Gross Mass	42.5 tonne
Width	2.5 metre
Height	wz 4.3 metre
Length	19.0 metre

The common six-axle articulated vehicle (semi-trailer) equates to the above limits.

Council’s Previous B Double Working Party Recommendations

Following a detailed assessment of potential B Double routes in the City by a Working Party of Council, which also included representatives of DTEI

and the South Australia Police, 6 Council roads were nominated and approved for DTEI for B Double gazetted:

- Ashwin Parade
- Richmond Road
- London Road
- Scotland Road (part)
- Manchester Road (part)
- Smith Street (part)

The above roads have been incorporated for a number of years by DTEI into the gazetted B Double network which does not require permits to operate on by B Doubles (refer to FIGURE 6).

The City has also approved B Double access on a number of other local roads by annual permit. Each application for B Double access is assessed on merit before approval is given.

DTEI's Heavy Vehicle Access Framework

The source of the following information on restricted access vehicles is from the report, *Heavy Vehicle Access Framework (HVAF) Version 1* report July 2006 by DTEI.

The HVAF has been developed to provide industry with the necessary guidelines for sustainable long-term planning and transport operations. The HVAF provides the policy and direction for meeting the main objectives of South Australia's Strategic Plan for heavy vehicle operation.

Restricted Access by Gazette Notice
Restricted Access Vehicles (RAVs) can only operate on approved routes due to their large size and mass. It is recognised that transport efficiency

can be improved by the use of larger vehicles with greater carrying capacity. South Australia has adopted the Restricted Access Vehicle concept within State legislation to make the most efficient use of the existing road network infrastructure.

As some RAV types, such as Road Trains and B-Doubles, are built to a common design and configuration, their construction specifications and general rules of operation are specified in the Road Traffic Act and related Regulations.

Due to their size and mass, these RAVs are only permitted to travel on routes approved as safe and suitable in accordance with nationally consistent road assessment standards.

Controlled Access Buses for carrying passengers are also included in this category.

RAVs can only operate legally in South Australia in accordance with specified conditions and on approved routes either by Gazette Notice or Permit.

Another category of RAV is Special Purpose Vehicles (SPVs). These vehicles are designed and built to undertake specific tasks and functions generally as machines on wheels not as freight carrying vehicles. Typical SPVs are front-end loaders, fork-lifts, mobile cranes and grain-harvesting machines.

Due to their unique design, SPVs, in many cases, do not comply with vehicle standards or the general access width, height, length or axle mass limits. Consequently, they operate

under strict conditions such as daylight travel only and no travel during peak periods in urban areas.

In recent times, the Government has also allowed by regulation the use of 14.4m long buses on the main road network. The current regulation for rigid vehicles specifies a maximum length of 12.5m for such a vehicle. However, in view of disabled access requirements, many passenger buses now have to increase in length from 12.5m to 14.4m to accommodate the disabled access requirements. As a consequence, the Government has had to gazette the use of 14.4m buses as a matter of urgency.

At this stage, the City has not authorised the use of 14.4m buses on local roads controlled by the Council and which form part of a regular bus route. This is due to concern about existing traffic control devices and local intersections not being able to accommodate the longer-length buses and the changes that may be required for bus stops and bus bay locations. A few specific routes (to bus company depots) have been supported and approved by the City and these were based on merit and detailed assessment by DTEI, which demonstrated that the local roads used for access did not require alterations.

Strategic Approach to classify freight networks

A detailed response from the City of West Torrens on the HVAF report was prepared in September 2005. This Council Agenda report and the minutes adopted have been

reproduced in this section of the report.

The strategic approach classifies the road freight network into 3 categories: Key Freight Routes (primarily arterial roads and national highways), Local Freight Routes (eg Ashwin Parade) and Commodity Freight Routes (usually seasonal transport eg wine and grain, which is not relevant for the City of West Torrens).

The HVAF also refers to Higher Mass Limits, which are vehicles that could exceed the general mass limit, provided these vehicles are fitted with road friendly suspension. However, the current authorised routes for Higher Mass Limits vehicles do not include any Council-controlled roads and Council has no plans to authorise such routes.

'The concept of a user-pay system for upgrade of routes to accommodate certain types of freight vehicles is supported.'

The HVAF refers to a new Performance Based Standards (PBS) system for assessing freight networks. However, as the PBS system is still being developed by the National Transport Commission, details of this system and its implications are sketchy at this stage. The PBS system is supposed to be a more innovative approach to improve transport efficiency and productivity.

The HVAF states that "it is not uncommon for private industry to contribute towards the funding and development of specific roads where

there is an economic benefit". An example in the City of West Torrens was Cochrane Transport contributing towards the widening of the Ashwin Parade/Jervois Street intersection. This principle, ie a user-pay system, is supported, although the long-term maintenance cost is not usually factored in by Council at present.

The HVAF refers to voluntary compliance, pro-active approach to compliance and on-road enforcement to ensure compliance with the laws, rules and regulations. In the City of West Torrens experience, police enforcement is regularly sought to address this problem. The voluntary and pro-active approach is therefore considered to be of limited value.

Restricted Access by Permit

Permits are also issued by DTEI for transport operators using local Council roads, subject to approval from the Local Government Authority. These permits are usually of a yearly renewal basis.

A number of these permits have been approved by the City of West Torrens over the past few years.

Refer to Figure 6 and 7.

The following resolutions were previously adopted by the City of West Torrens in response to the HVAF:

- There have been previous errors noted in the current B Double map for Manchester Street and London Road. Both roads have a bridge load limit located near the South Road end. The DTEI map does not clearly identify this constraint. The map should be corrected accordingly.

- Currently, for B Double access for roads that are not gazetted in the DTEI map, specific approval has to be obtained from Council. Before any permits are issued to the transport operator by DTEI Permits Section, a concurrence letter has to be obtained from Council, with specified conditions for the B Double access. There have been instances where DTEI has issued more permits than what Council had agreed to. This non-compliance with Council's requirement should be addressed

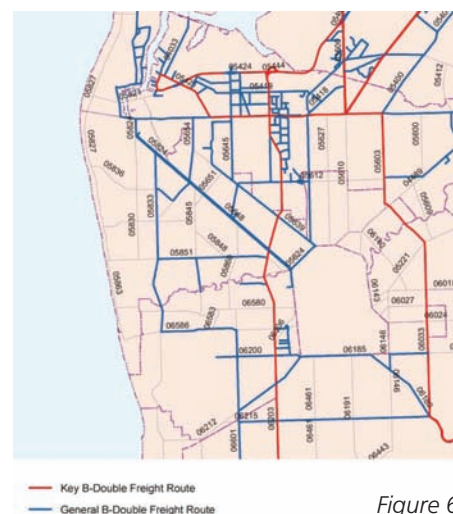


Figure 6



Figure 7

by implementing a better checklist process. In addition, the HVAF refers to the Minister for Transport having the authority to approve routes for the operation of Restricted Access Vehicles (B Doubles and road trains). However, it does not make reference to the requirement for Council concurrence for B Doubles to use roads that are controlled by Council and which do not form part of the gazetted route. The requirement for Council concurrence should be retained and a separate procedure for application of the yearly permits should be documented in the HVAF report.

- Council should be consulted with respect to the future designation of freight routes, whether under the current system or the future PBS system. While Council has in the past authorised 6 specific routes to be included in the gazette for B Double access, ie London Road, Manchester Street and Scotland Road (between Railway Terrace and the bridges), Ashwin Parade, Smith Street (between Port Road and Cawthorne Street) and Richmond Road, Council may in the future request these routes to be deleted from the B Double network. Therefore, while these routes have been included in the gazetted B Double network, it does not necessarily follow that Council would agree for these routes to be classified in a different manner under the new PBS system.
- Council does not support Higher Mass Limits in the City of West Torrens, therefore proposals for such freight movements on Council-

controlled roads would not be considered by Council.

- Within the arterial road network in the City of West Torrens, Railway Terrace has very poor verge conditions. There are also constraints at the various junctions where B Double turns are permitted under the current gazette. In the maps contained in the HVAF report, Railway Terrace is designated as a "Regional Freight Route", as part of the gazetted B Double network and also as a "Higher Mass Limits" route. The current verge and junction conditions do not appear to be conducive to its designation as the nominated freight routes.
- Council would also wish to provide input into the proposed designation of James Congdon Drive for freight access. The current B Double map shows the section of James Congdon Drive, between Sir Donald Bradman Drive and Railway Terrace as part of the gazetted B Double route. Currently, north of Railway Terrace, James Congdon Drive is not a gazetted B Double route but it is designated as a Higher Mass Limits route. Council should be consulted if it is proposed that the freight route designation is to be amended for this section of James Congdon Drive.
- The issue of B Doubles illegally using roads within the City of West Torrens is of concern. There have been many instances of this illegal use, as reported by residents. While the HVAF report refers to voluntary and pro-active approach to the enforcement issue, Council's view is

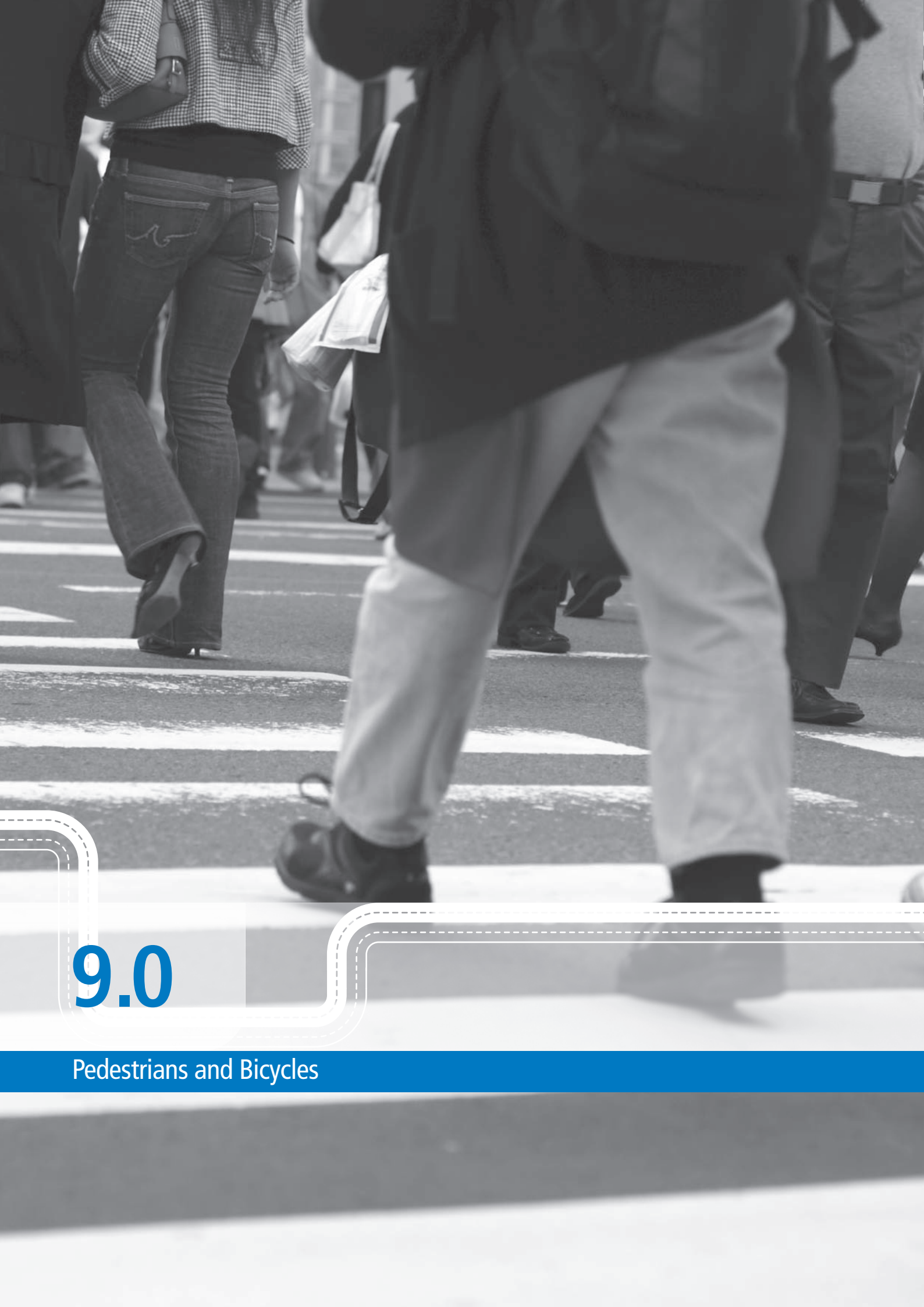
that there should be an enforcement regime in place that would firstly increase the penalty for illegal access, secondly ensure that documentation for approved B Double vehicles should be carried at all times on the vehicle, and thirdly to simplify the enforcement process in terms of reporting offences. This issue does not appear to have been adequately addressed in the HVAF report.

- The concept of a user-pay system for upgrade of routes to accommodate certain types of freight vehicles, as suggested in the HVAF report, is supported. In many instances, allowing B Double access on a council road is to the economic benefit of the particular industry or activity. While Council has in the past required the upgrade of junctions of intersections to be paid for by the Applicant for B Double access, the issue of the long-term maintenance cost to the Council from allowing such vehicles to use the road has not been factored into the "cost" to Council. As many other councils would have experienced this same issue, the HVAF report should include a "cost matrix" structure that could be used by metropolitan councils and which would more easily allow such costs to be identified and passed on to the Applicants seeking B Double access.
- Given the impacts that freight access would have for other road users and residents of the City of West Torrens, Council would expect that it will be consulted regarding the adoption of any new PBS system or even where freight routes are proposed to be amended within the City.



Recommendations

- Support the designation of freight routes in a strategic manner as proposed by DTEI.
- Work with DTEI to address the issues and concerns raised by the City of West Torrens on freight access.
- Work with industries in the City of West Torrens to facilitate freight access and to minimise the impacts of freight on residential areas.
- Assess the appropriateness of allowing 14.4m long buses onto the local road network.



9.0

Pedestrians and Bicycles

9.1 Pedestrians

“With respect to the planning and delivery of pedestrian facilities, Local Government has a major (perhaps the most significant) role to play with regard to all levels of government. Land use planning, land use density, land use mixing, management of limited street space, pedestrian links and nodes, landscaping, personal safety and the general quality of the urban environment are all key aspects of a local area that is (or is not) a high-quality pedestrian environment.”

MLGTS study August 2005

Many of the current planning and transport strategies advocate the reduction in dependence on vehicle usage, for example the Draft Planning Strategy for Metropolitan Adelaide.

In 2002, the City of West Torrens demonstrated a commitment to reducing greenhouse gas emissions by signing up to participate in the Cities for Climate Protection program. Promotion and encouragement of walking and cycling would be part of such a process and this mode of transport would make a positive contribution towards reducing greenhouse gas emissions.

DTEI has established the Office of Walking and Cycling to promote, encourage and facilitate walking and cycling programs in South Australia.

One of the encouragement measures for walking is the provision of good quality and convenient footpaths throughout the City, linking to main

pedestrian generators, public transport routes etc. Other facility provision includes bus shelters, real-time bus information at bus stops etc.

The City of West Torrens has compiled an asset database including the location and condition of all footpaths in the City. The GIS database of this network would allow the assessment, construction and upgrade of footpaths to occur in a programmed manner.

In 2006, an Asset Management Policy was adopted by the City with the objective of managing, maintaining and disposing of assets. The subsequent development of asset management plans would enable assets to be efficiently and effectively managed.

The City's footpath plan has been developed based on the following key objectives:

- To proactively reduce trip steps by prioritising a patching program based on a risk profile.
- To responsibly renew existing footpaths commencing with replacing bitumen footpaths with concrete or block pavers.
- To ensure that all developed road reserves have a paved or concrete footpath on one side of the road.

One of the key pedestrian facilities in the City is the 3 major shared use paths:

- River Torrens Linear Park
- Westside Bikeway
- Reece Jennings Bikeway

Additions to this major network include the Sturt Creek shared use path, the tram line linear park and the new shared use path alongside

the Airport boundary on Sir Donald Bradman Drive.

Together, these shared use paths provide a significant recreational network for the community.

Significant upgrade works of these shared use paths have occurred over many years and would continue to occur in future years to enhance this asset.

‘Promotion and encouragement of walking and cycling would be part of Council’s commitment to reducing greenhouse gas emissions.’

Recommendations

- Implement the footpath plan to guide the installation of pedestrian facilities, including footpaths, shared use paths and support facilities.
- Extend and maintain the condition of the current major shared use paths in the City.

9.2 Bicycles

In March 2007, the report on the review of the City of West Torrens Strategic Bicycle Plan was adopted by Council. This Bicycle Plan is an integral part of this Transport Study and is part of this report under separate cover.

Implementation of relevant strategies and works are recommended in this report.

Recommendations

- Adopt the proposed measures in the Strategic Bicycle Plan Review report.



Recommendations

- Implement the footpath plan to guide the installation of pedestrian facilities, including footpaths, shared use paths and support facilities.
- Extend and maintain the condition of the current major shared use paths in the City.
- Adopt the proposed measures in the Strategic Bicycle Plan Review report.



10.0

Public Transport

Being located in close proximity to the City of Adelaide, there are many convenient public transport routes between the City of West Torrens and the City of Adelaide and the beachside suburbs.

In Adelaide, public transport carries an estimated 10% of passenger travel during peak hours and only 5% of all weekday travel (peak and off-peak). South Australia's Strategic Plan identifies a target to double the use of public transport to 10% of weekday travel by 2018*.

**Source of information: Adelaide Urban Corridors Strategy 2006 DTRS and DTEI.*

The ABS Census 2001 data shows that in the City of West Torrens, 8.1% use public transport.

Figure 8 shows the public transport routes located within the City.

On the main east-west routes, there are Go Zones for peak hour travel along Henley Beach Road, Sir Donald Bradman Drive and Anzac Highway.

The Adelaide-Glenelg tram also provides a convenient public transport service between the City of Adelaide and the beachside suburb of Glenelg.

In recent years, the public transport routes have extended into the Adelaide Airport.

Public Transport Routes

The above map shows that the City of West Torrens is well served by public transport.

Travel Demand Management measures to encourage more public transport usage includes transit lanes, real time bus information, Go Zones and improvements to intersection operations.

The role of the City includes providing supporting infrastructure to assist in increasing usage of public transport, for example, by providing a good network of footpaths (compliant with DDA requirements), a convenient network of bus stops and bus shelters.

Increasing the public transport usage is consistent with the Infrastructure Plan for South Australia and the need to reduce greenhouse gas emissions by reducing car usage.

Where public transport routes utilise local streets, a number of issues have arisen in recent years, in particular the need to design traffic control devices to accommodate the infrequent articulated bus and the increasing use of 14.4m long controlled access rigid buses.

The design of traffic control devices on local streets which form part of a regular bus route need to have regard to the type of buses that would traverse the device. The frequent constrained width of local intersections means that articulated buses are often not possible to be accommodated. If mounting of the central island were possible, the design of a roundabout would be much easier. However, DTEI has, in the past, not accepted such an approach.

The increasing use of the 14.4m long controlled access bus means that it would become even more difficult to accommodate such a bus in the design of roundabouts, given the longer wheel base and turning space requirements. For existing roundabouts, it would be likely that

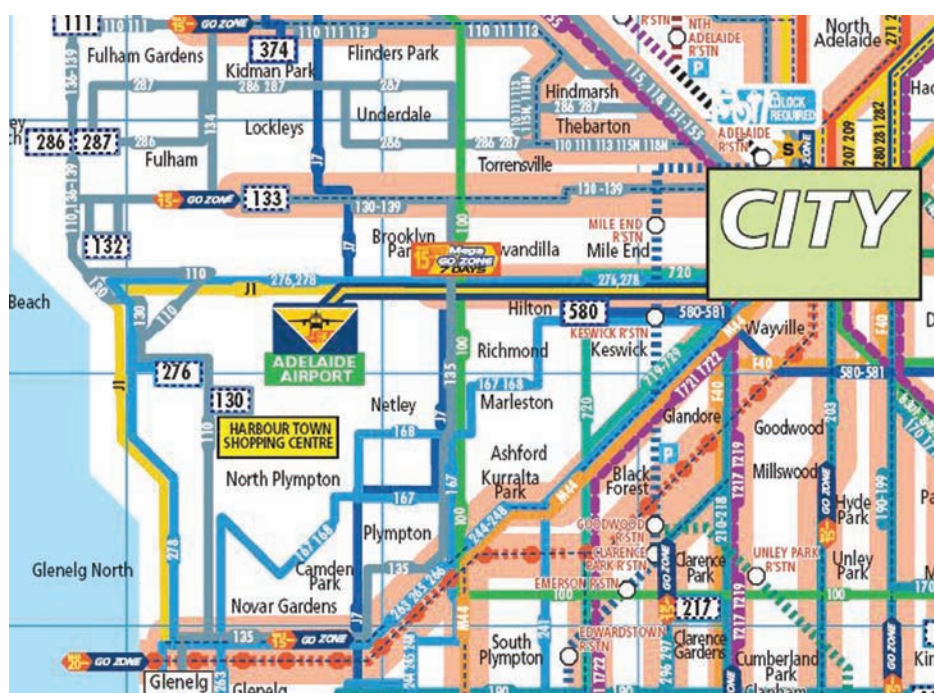


Figure 8
Public transport routes: source DTEI

many of these devices would not be able to accommodate this type of bus and therefore would require alteration in order to do so. Currently, the City of West Torrens has not agreed to allow controlled access buses on the local street network.

‘The design of traffic control devices on local streets which form part of a regular bus route need to have regard to the type of buses that would traverse the device.’

Community Bus Service

The City also operates a community transport service using a 28-seater bus, 11-seater bus and 10-seater bus. The community bus service is accessed by approximately 21,000 passengers per annum and is a very important community facility.

A range of transport options are provided including transport from residents homes to various programs, door-to-door service to a number of local shopping centre, outings and charters.

Supporting facilities

Encouraging the use of public transport would be enhanced by provision of supporting facilities such as bus shelters and conveniently located footpaths. There is also an obligation to ensure that disabled access requirements are compliant by 2010, including safe crossings points, tactile surface indicators etc.

Assessment of the supporting facilities would include compiling a network of current bus stops, bus stops with shelters, criteria to determine priority for bus shelter installation etc. This assessment would be greatly supported by more detailed information on bus patronage at

various bus routes or bus stops by OPT. In addition to encouraging the use of public transport as a “green” form of transport, public transport also meets the needs for social access.

The Asset Management Policy (see Section 8.1), in particular the footpath plan, would consider these issues on a strategic level.

Recommendation

- Support Travel Demand Management (TDM) measures in relation to public transport to increase the usage.
- Provide supporting facilities such as bus shelters and footpaths as measures to encourage greater use of public transport.
- Continue with discussions with DTEI on the design vehicle for use for traffic control devices on local streets.
- Maintain the community transport service for residents in the City.



Recommendations

- Support Travel Demand Management (TDM) measures in relation to public transport to increase the usage.
- Provide supporting facilities such as bus shelters and footpaths as measures to encourage greater use of public transport.
- Continue with discussions with DTEI on the design vehicle for use for traffic control devices on local streets.
- Maintain the community transport service for residents in the City.



11.0

Travel Demand Management

Travel Demand Management (TDM) is aimed at modifying travel behaviour to reduce or redistribute travel demand.

TDM aims to improve the utilisation of existing resources by encouraging more efficient use of existing transport infrastructure and services. One of the most significant aspects of travel behaviour to be targeted in TDM strategies is the continuing dependence on private vehicles for personal travel and the associated low average vehicle occupancies, particularly during peak times.

TDM initiatives include reducing single-occupant car use and encouraging more sustainable transport choices to meet personal travel needs.

Transport 2007 An Action Plan for South East Queensland identifies that TDM initiatives can be categorised into two broad categories:

Soft measures:

- education and awareness campaigns
- workplace travel plans
- teleworking opportunities
- flexible working hours to facilitate peak spreading
- car pooling
- destination travel plans (non workplace travel)
- school programs
- household travel (eg travel blending)
- Intelligent Transport Systems.

In recent years there has been a rapid expansion in the development and application of technology to transport. Intelligent Transport Systems (ITS) can reduce travel demands and make more efficient use of existing system

capacity. ITS provide people with better travel information to enable them to make informed decisions on their travel behaviour and patterns.

ITS includes:

- providing real-time information for travellers
- improving traffic management systems
- using advanced in-vehicle technologies
- improving systems to detect and respond to emergencies and major traffic incidents.

Hard measures:

- parking supply measures (restrict or control supply)
- parking pricing.

Many of the above initiatives are also identified for South Australia.

‘TravelSmart aims to achieve change in personal travel behaviour, from single-car occupant to sustainable modes of travel (public transport, walking and cycling), smarter car use (car pooling) and in some cases travel substitution (teleworking).’

TravelSmart

The TravelSmart program helps people to explore and assess their transport options. The program aims to achieve a sustainable change in personal travel behaviour from single-car occupant to sustainable modes of travel (public transport, walking and cycling), smarter

car use (car pooling) and in some cases, travel substitution (teleworking).

TravelSmart employs intensive, customised marketing campaigns conducted within local communities, schools, universities and workplaces, to ensure that people who might be swayed by the benefits of using alternative modes have full information about the choices available to them.

DTEI has a TravelSmart Coordinator who provides advice and assistance to organisations wishing to participate in TravelSmart programs, some of which are briefly described below.

Walking School Bus Program

A 12-month trial for 10 schools in South Australia has recently been completed.

The TravelSmart Coordinator of DTEI works with schools and parents to establish Walking Bus Programs, including providing advice on registration, publicity and volunteer training (parents). As part of identifying appropriate routes of travel, DTEI and Council would be involved in carrying an audit of these routes and implement improvements along the routes such as trimming overhanging vegetation, installing pedestrian ramps and providing crossing facilities over busy roads. DTEI has advised that it would provide insurance cover for the volunteers of the program.

Council is currently seeking expressions of interest from local schools to carry out a Walking School Bus program in the City.

'Bike Ed encourages cycling to school to reduce car trips.'

Bike Ed Program

Bike Ed has been provided to many primary schools in South Australia over the years. It educates primary school-aged children on cycling safety issues and instructs children on riding skills in a practical manner which would benefit them and encourage cycling to school to reduce car trips. In the City of West Torrens, most of the primary schools have in the past been provided with this program. The program is fully funded by DTEI.

Safe Routes to School Program

The Safe Routes to School Program is also a school safety program which involves schools, parents, DTEI and Council working together to develop appropriate routes for children to travel to and from school, including cyclists. The DTEI website indicates that as many as 24 councils and 98 schools are currently participating in this program. The City of West Torrens have participated in this program.

Cycling School Bus Program

DTEI plans to trial a "Cycle Train" program in two years time. The Cycling Train would have similar benefits to the Walking School Bus Program, particularly to address childhood obesity issues, to reduce the reliance on the motor vehicle etc.

Workplace Travel Program

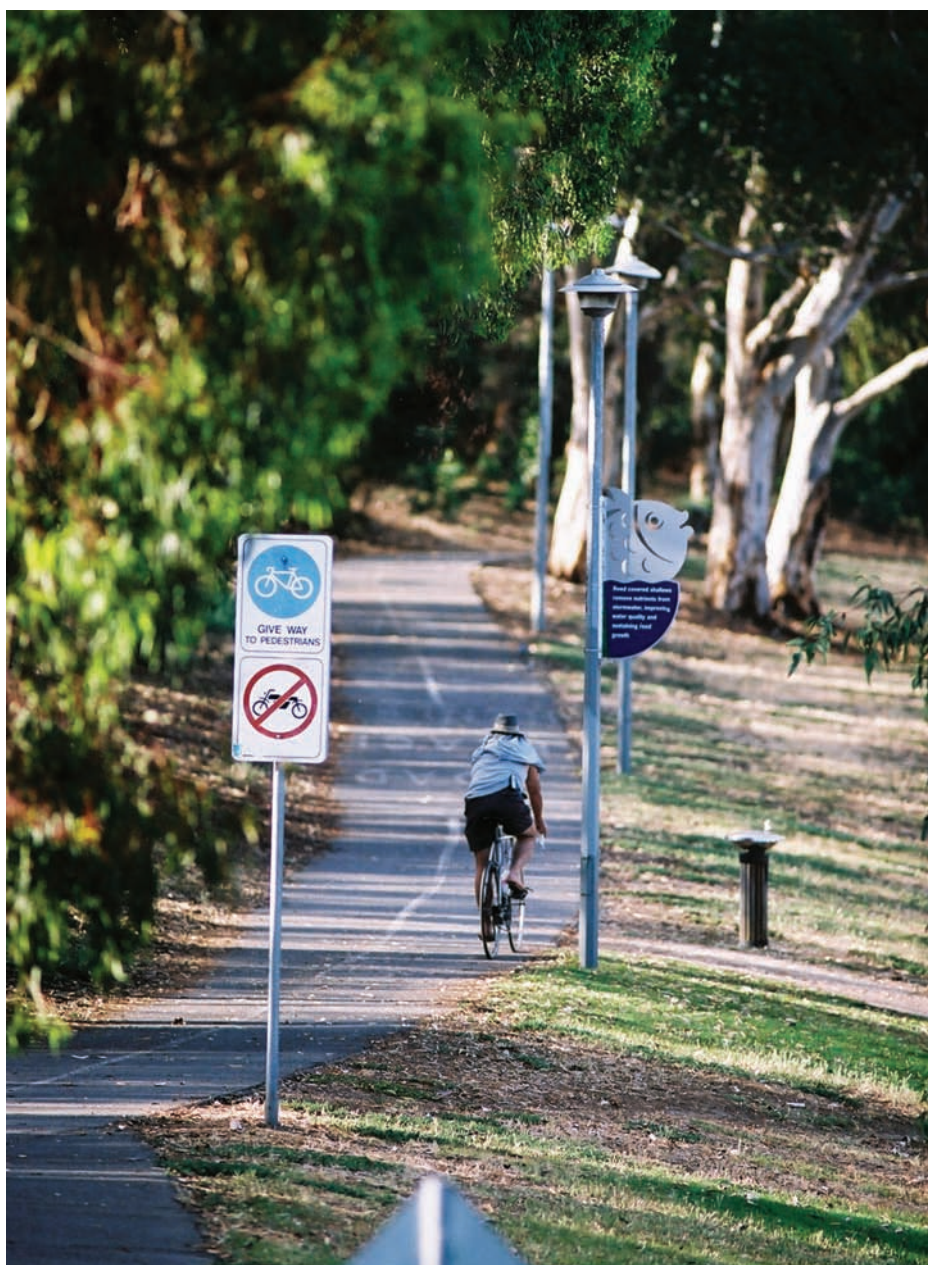
DTEI works with government

departments and private businesses to encourage alternative modes of travel (such as walking and cycling) to reduce greenhouse emissions and to encourage sustainable travel.

DTEI could assist Council in establishing such a program if Council and local businesses are interested.

Recommendation

- Support the statewide initiatives on travel demand management.
- Seek DTEI and other funding to participate in TravelSmart and Travel Demand Management initiatives, in partnership with other stakeholders.
- Trial the Walking School Bus program in the City.





Recommendations

- Support the statewide initiatives on travel demand management.
- Seek DTEI and other funding to participate in TravelSmart and Travel Demand Management initiatives, in partnership with other stakeholders.
- Trial the Walking School Bus program in the City.

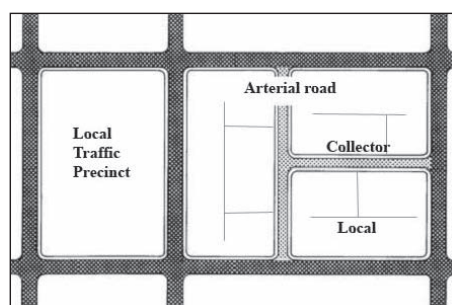


12.0

Local Road Network

12.1 Road Hierarchy

There are a number of ways that a road can be classified. The classical model uses descriptions such as freeways, arterials, distributors, collectors and local streets.



The City of West Torrens has previously adopted the following classification of roads.

Urban Local Road - Local streets - provide essentially local access or access to properties. Generally resident access tend to dominate the characteristics of these streets with lower speed and traffic volume being the desirable aim.

Urban Local Road - Local collector roads - these are higher order streets which “collect” traffic from local streets and distribute the traffic to other higher order streets such as arterial roads. By their nature and function, they are expected to carry higher volumes of traffic and speeds tend to be higher. They also frequently form part of a public transport route. The desirable aim is to limit traffic volume and speed, while still being able to provide relatively unhindered access. Some through traffic usage can be expected. The following local roads are proposed as local collector roads:

- Coral Sea Road (Fulham)
- Fulham Park Drive (Lockleys)

- Rutland Avenue (Lockleys)
- White Avenue (Lockleys)
- Lipsett Terrace (Brooklyn Park)
- Pine Avenue (Novar Gardens)
- Bonython Avenue (Novar Gardens)
- Whelan Avenue (Camden Park)
- Streeters Road (North Plympton)
- Harvey Avenue (North Plympton)
- Tennyson Street (Kurralta Park)
- Barwell Avenue (Marleston)
- Davenport Terrace (Hilton)
- Ashley Street (South Road to East Terrace) (Thebarton)
- Parker Street (Thebarton)
- Albert Street (Thebarton)
- Holland Street (Thebarton)
- Croydon Road (Keswick)
- Victoria Street (Mile End)
- Claremont Street (Mile End)

Figure 9 identifies the above Local Collector Roads.

‘The City of West Torrens has been very proactive in previous years addressing crash issues. Many Black Spot locations have already been investigated and/or addressed.’

Urban Local Road - Major collector roads - these are higher order streets which generally serves a sub-arterial function, carrying higher volumes than a local collector road but lesser traffic volumes than an arterial road. They generally provide convenient and more direct connection between arterial roads, area generally without traffic control devices and carry more significant volumes of commercial traffic and through traffic.

The following local roads are proposed as major collector roads:

- West Beach Road (West Beach)
- Military Road (West Beach)
- Africaine Road (Glenelg North)
- Warren Avenue (Tapleys Hill Road to James Melrose Road) (Novar Gardens)
- James Melrose Road (Novar Gardens)
- Morphett Road (Camden Park)
- Mooringe Avenue (Camden Park)
- Stonehouse Avenue (Camden Park)
- Beckman Street (Plympton)
- Gray Street (Kurralta Park)
- Daly Street (Kurralta Park)
- Galway Avenue (Marleston)
- Grove Avenue (Marleston)
- Brooker Terrace (Richmond)
- Bagot Avenue (Cowandilla)
- Hounslow Avenue (Cowandilla)
- May Terrace (Lockleys)
- Pierson Street (Lockleys)
- Garden Terrace (Underdale)
- Ashley Street (Holbrooks Road to Hardys Road) (Underdale)
- Hardys Road (Torrensville)
- Ashwin Parade (Torrensville)
- West Thebarton Road (Thebarton)
- Phillips Street (Thebarton)
- George Street (Thebarton)
- Deacon Avenue (Mile End South)
- Everard Avenue (Keswick)
- Richmond Road (West Richmond)

NOTE: Parts of West Beach Road and Military Road are in the City of Charles Sturt. Further discussions between councils will be undertaken to determine the acceptability of the road hierarchy and functional hierarchy definitions in this strategy.

FIGURE 9 identifies the above major collector roads.

Urban Local Road - Arterial roads - these are roads performing a regional type function, carry significant volumes of traffic and commercial vehicles.

Movement function predominate for such roads, with clearways sometimes provided to satisfy capacity requirements.

In recent years, functional classification of roads have been used. For example, DTEI's functional classification describes the predominant use of a particular road:

- strategic routes (all modes)
- freight routes
- car (commuter) access routes
- tourist routes
- passenger transport routes
- pedestrian zones
- cycling routes

The issue of road classification was considered in the Metropolitan Local Government Transport Strategy.

The Strategy notes that it would be desirable to have a uniform system in the metropolitan area and this is supported.

Without being overly prescriptive, it is desirable to have a uniform system for classifying roads throughout the metropolitan region.

Accordingly, the following three-tiered classification model is offered for consideration:

- road hierarchy (i.e. to determine road responsibility)
- road functionality (i.e. to identify how a road should operate)
- road land use relationship.

The value of this approach is that the transport and access/land use role of each road can be better described, which can lead to development of clearer road performance criteria. The interrelationship between the road environment and adjacent land

uses can also be better understood, along with the compromises that are often needed in managing the available road space.

MLGTS study August 2005

The SA Grants Commission has also used the functionality of a road (a three-tier classification of freight, tourism and social) as part of its Special Local Roads funding considerations.

The MLGTS has proposed the following functional hierarchy description:

Freight route - Facilitates industry development by linking key industries to major transport routes and contributes to efficient movement of large volumes of heavy freight vehicles. Primary Freight Routes link strategically important economic regions within and external to the State. Secondary Freight Routes link urban and regional freight generators and providing connections to primary freight routes –

See Figure 10.

Social access routes - Provides for community development and equitable access to community facilities whilst minimising the impact of heavy vehicles on the community. Routes that provide a high level of connectivity between areas (through routes), including those that supplement the arterial road network, or that provide immediate access to community spaces or recognised shopping precincts.

See Figure 11.

Tourist routes - provides access to tourism sites and locations and enables people to view scenic attractions in

a safe and enjoyable manner. Tourist routes can be described as either being part of the attraction (i.e. destination) or part of the route to/from the destination or attraction.

See Figure 12.

Passenger public transport routes

- routes that support the use of passenger transport including strategic bus routes as well as routes that provide access to associated facilities (e.g. park-n-ride areas) – See FIGURE 8 in Section 9.0.

Bicycle routes - key cycling routes – see bicycle routes in Strategic Bicycle Plan report

Pedestrian routes - key pedestrian routes – to be prepared under Pedestrian Footpath Plan (See Section 8.0). The functional road hierarchy is shown in FIGURES 10 to 12.

Recommendation

- Adopt the proposed classical and functional road hierarchy classification of roads as shown in Figures 9 to 12.

12.2 Local Network Issues

A number of improvements have previously been identified for some of the “collector roads”. For example, in a recent detailed traffic investigation for the Garden Terrace area in Underdale, upgrades to the Holbrooks Road junction and Garden Terrace/ White Avenue junction were identified for future implementation.

Table 3 provides a list of local intersections with arterial roads that have been considered in past traffic reviews or are known “problem” sites.

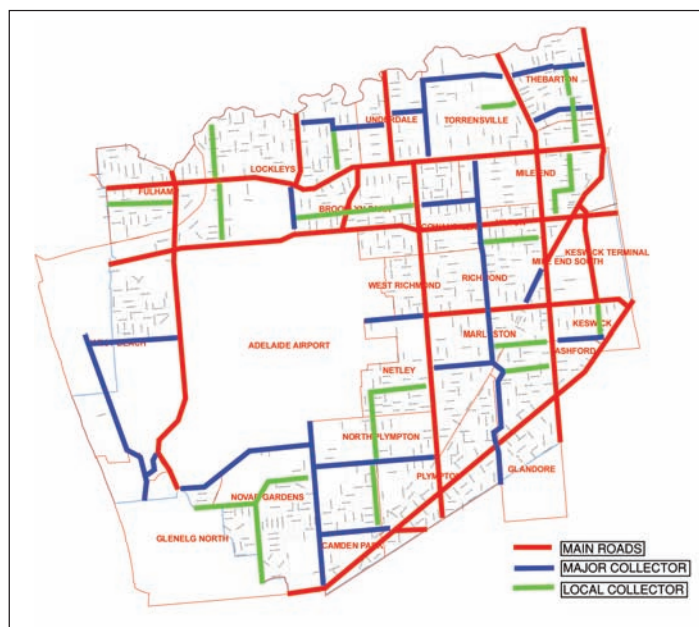


Figure 9
Classical Road Hierarchy

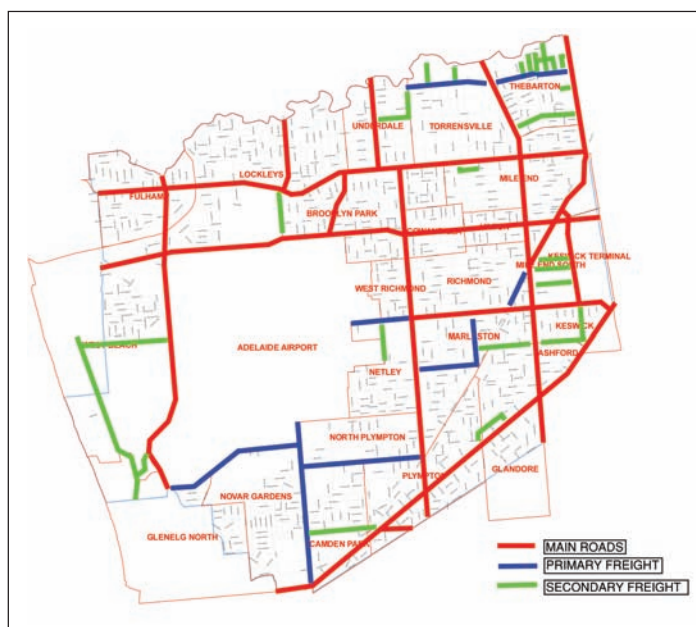


Figure 10
Freight routes

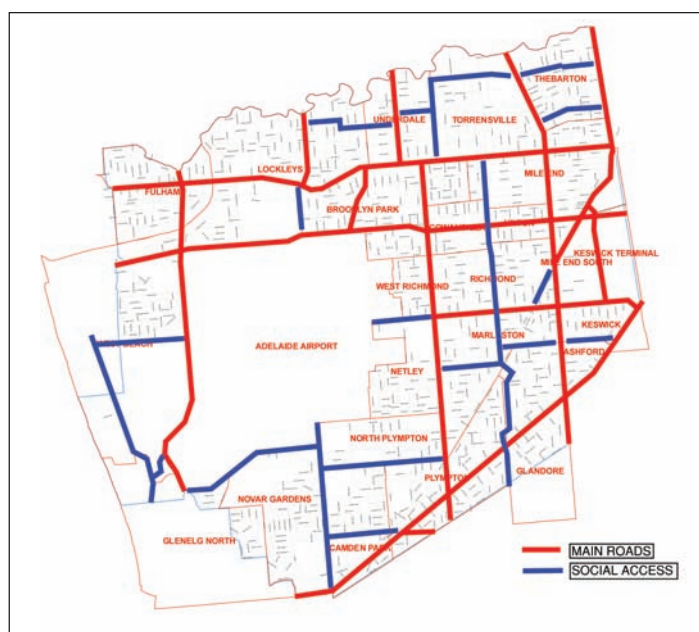


Figure 11
Social Access routes

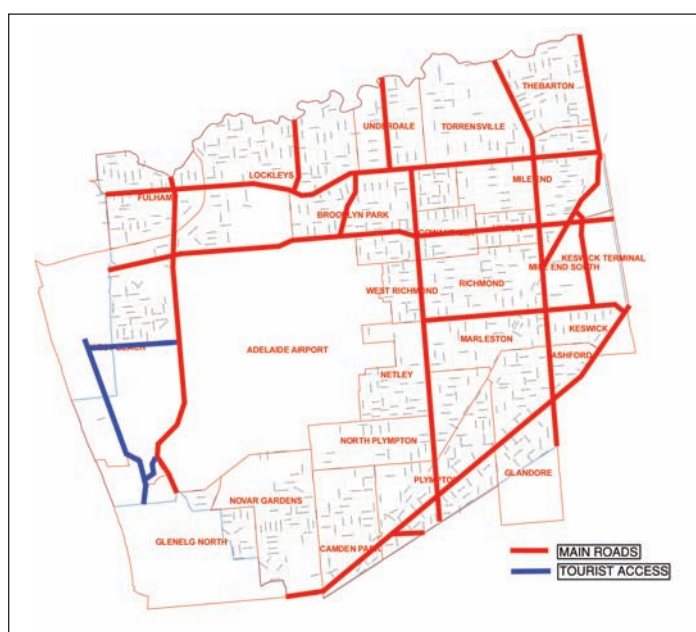


Figure 12
Tourist routes

Table 3 – Improvement options for collector roads

Road	Issue	Possible future action
Ashley St- Hardys Rd- Ashwin Pde	Congestion with only one exit lane present.	Consider improvement in Ashley St at Holbrooks Road to create two exit lanes.
Barwell Ave- Everard Ave	Barwell Ave, between Grove Ave and Moss Ave, is used by commercial traffic and the carriageway is very narrow.	Consider widening the narrow section of Barwell Ave or implement parking controls when traffic flows warrant improvements.
Bonython Avenue	A local collector road with a relatively long uncontrolled section.	Recently completed roundabout.
Garden Tce- Pierson St	Difficulty for bus turns at White Ave/ Garden Tce and minor widening of Pierson Street to create two exit lanes.	Review junction and priority improvements at White Ave and Garden Terrace. Review junction improvements in Pierson Street at Holbrooks Rd.
Gray St-Daly- Ave-Grove Ave- Brooker Tce- Bagot Ave	Through traffic issues along this north-south route.	Review the traffic movements in the area following completion of the South Road Underpass Project.
James Melrose Road	Appropriateness for B Double access.	Review B Double access as part of AAL development.
Mooringe Avenue	B Double access not possible to Marion Road at present due to intersection constraints.	Review Marion Rd signals for B-double access. Consider upgrade of Marion Rd intersection.
Morphett Road	The role of Morphett Rd has expanded to provide a regional-type route. Further AAL developments would significantly increase traffic volumes and commercial vehicle usage.	Review B-double access. Upgrade road to connect to Richmond Road as part of the AAL Master. Transfer Morphett Road to DTEI as part of the DTEI transport network.
Streeters Rd- Harvey Ave	Improve access for the Local collector roads.	Consider minor widening for left and right turn exit lanes at Streeters Rd/Mooringe Ave and Harvey Ave/Marion Rd.
Tennyson Street	The South Rd underpass, when completed, would have a significant impact on access from South Rd.	Review the traffic movements in the area following completion of the South Road Underpass Project.

A number of known congestion issues for some of the “collector roads” at the main road intersections are summarised in Table 4.

Table 4 – Congestion issues and improvement options

Main Road Location	Issue	Possible future action
Ashley Street/ Holbrooks Road	Significant queuing in Ashley St during peak hours.	Consider widening for additional exit lane in Ashley St in conjunction with signal phasing review.
Bagot Avenue/ Henley Beach Road	Potential queuing during peak hours.	Monitor queuing in Bagot Ave during peak hours.
Brooker Tce/ Sir Donald Bradman Dr	Significant queuing in Brooker Tce during peak hours due to commuter and shopping traffic.	Review signal phasing and lane arrangement.
Garden Terrace/ Holbrooks Road	Monitor queuing in Garden Tce during school dismissal and peak hours.	Review improvement at Holbrooks Rd.
Mooringe Avenue/ Marion Road	Significant queuing in Mooringe Avenue during peak hours.	Review phasing of signals for improvements. Review improvement at the Marion Road intersection.
Morphett Road	Immanuel College issue.	Monitor pedestrian and traffic access issue.
Pierson Street/ Rowells Road	Signals installed recently.	Monitor the effect of the traffic signals in the local street network.
West Beach Rd/ Tapleys Hill Rd	Signals installed recently as part of Harbour town development.	Monitor the effect of the traffic signals on the local street network.
Rutland Ave – Strathmore Ave	LATM and traffic diversion issue under investigation currently.	Monitor the effect of further traffic management on traffic flows on the local street network. Monitor the effect of further AAL development on the local street network.
May Terrace	Potential effect of AAL developments.	Monitor the effect of further AAL development on the local street network.

Recommendation

Undertake a review of the proposed actions listed in TABLE 3 and 4. Seek future budgets to implement the improvements measures arising from the review.

12.3 Crash data

DTEI has provided the City with a crash database and details of locations where the types and numbers of

crashes have satisfied the Black Spot Funding criteria (Federal and State Black Spot Program).

The City of West Torrens has been very pro-active in previous years in addressing the crash issues. Many of the locations identified as potential Black Spot sites have already been investigated and/or addressed by the City in previous years.

The improvements under these programs include:

- James Melrose Road – Federal program
- Mooringe Avenue – Federal program
- Mooringe Avenue/James Melrose Road – Federal program
- George Street/Dew Street – State program
- George Street/Albert Street – State program
- Davenport Terrace – State program

- Marleston Avenue/Farnham Road – State program
- Kinkaid Avenue/Deeds Road – State program
- Westside Bikeway – State program

Fatal crashes, when reported, are also investigated and reports prepared for Council consideration.

It is recommended that the DTEI crash database be reviewed on an annual basis and that funding be sought to implement improvement works where the criteria for funding has been met. The complete DTEI data for 2001 to 2005, in detailed form, has been collated and summarised into a format where screening by main roads, Council roads, road name and suburbs is now possible. This database would be used as part of the Assessment Procedure outlined in PART 2 when assessing concerns raised about traffic issues.

An example of the crash database for a mid-block crash along a local street is given below. See *table below*.

Community Road Safety Group

The continuation of the work of the Community Road Safety Group is supported.

The establishment of a Community Road Safety Group within the City of West Torrens has allowed the “big-picture” road safety issues to be discussed and considered specifically within the area. One of the major projects undertaken by the Group and funded by Council, DTEI and other stakeholders, was the mock crash staged at Thebarton Oval in 2006. Many other road safety initiatives have been considered and reviewed by the Group.

‘The establishment of a community road safety group has allowed the big picture road safety issues to be discussed and considered.’

Recommendation

- Review the DTEI crash database on an annual basis and seek funding from the Federal and State Black Spot program to address critical crash sites.
- Investigate fatal crash locations as they arise to consider improvement works, where appropriate.
- Support the activities of the

Community Road Safety Group on road safety initiatives in the City.

12.4 Monitoring of data

Traffic data forms the basis of most analysis undertaken in Traffic Engineering. The commonly used data includes:

- daily and peak hour traffic flows
- number of commercial vehicles
- types of commercial vehicles (based on axle lengths and number of axles)
- traffic speeds (mean speeds and 85th percentile speeds).
- In roads under the care and control of Council, Council is responsible for the collection of such data. The data covers all of the local streets and collector street network. Where roads are under the care and control of DTEI, data can be obtained from the Department. These are usually turning counts at major intersections undertaken over an 11-hour period.

Collection of traffic data is an important aspect of traffic management work. It allows traffic conditions to be identified for particular streets and, where available, it allows comparisons to be made with previous data so that an assessment of “traffic growth” can be made.

Table showing the crash details

Road	Road1	Road2	Date_time	Crash Type	Direction	Damage
Bickford St	Weaver Ave	Chambers Ave	14/10/2001 18:20	Hit Parked Vehicle	Unknown	2000
Bickford St	Weaver Ave	Chambers Ave	14/10/2001 18:20	Hit Parked Vehicle	Unknown	2000
Bignell St	Sanders St	Chambers Ave	20/01/2001 14:45	Hit Parked Vehicle	South	2000
Bignell St	Sanders St	Chambers Ave	20/01/2001 14:45	Hit Parked Vehicle	West	2000

The data also forms the basis of “before” and “after” comparisons of traffic schemes and major road projects such as the Bakewell Bridge Underpass and South Road Underpass. The responsibility for traffic data collection is summarised below.

Data	Responsible	What the data is used for
Traffic volumes - non arterial roads	Council	Collected as part of count programme. Provide information on daily and peak hour traffic flows and used for traffic assessment of problems requested by the public. Also enables Council to assess traffic growth in Council roads.
Traffic volumes - arterial roads	DTEI	Collected from 11-hour manual counts by DTEI staff. These counts are then factored up to provide the Annual Average Daily Traffic (AADT) from which analysis of traffic growths are undertaken for the metropolitan area. Peak hour flows counted also form the basis for intersection improvements, capacity analysis, performance of intersections, signal phasing assessment and projections for future growth.
Commercial vehicles - non arterial roads	Council	Collected as part of count programme. These counts are used to quantify commercial vehicles in Council roads so that amelioration measures could be implemented to minimise these problems.
Commercial vehicles - arterial roads	DTEI	From 11-hour manual counts. A summary of commercial vehicle volumes is provided which could then be used to assess future growths.
Traffic speeds	Council	Collected as part of count programme. Speeding is one of the most commonly cited problems by the community. Use of the 85th percentile speed forms the basis of quantification of the speeding problem.

“Collection of traffic data allows traffic conditions to be identified and, where previous data is available, it allows comparisons to be made. This gives Council an assessment of ‘traffic growth’.”



There is an extensive database of traffic information collected over many years. Currently this data is being incorporated into the Asset Management database and is available to view via the GIS plan.

A regular program of traffic counting has been undertaken within the City for many years. Despite this extensive program, there are many streets in the City where traffic data is not available, due primarily to the large number of streets which the City is responsible for.

As traffic counts are not normally undertaken during school holiday and Christmas/New Year holiday periods, there is generally a window of approximately 40 weeks available

for traffic counting. Traffic counts are usually undertaken over a full week period.

Given that there are approximately 10 traffic counters available, allowing for time to program, set-up, download and assess each of the count data, realistically a program of 200 to 300 sites per annum could be achieved using current resources.

Recommendation

- Maintain the current traffic count program in the City.
- Seek regular DTEI updates on new count information for the main road network.
- Complete the input the traffic count information into the Asset Management database and GIS plan.



Recommendations

- Adopt the proposed classical and functional road hierarchy classification of roads as shown in FIGURES 9 to 12.
- Undertake a review of the proposed actions listed in TABLE 3 and 4. Seek future budgets to implement the improvements measures arising from the review.
- Review the DTEI crash database on an annual basis and seek funding from the Federal and State Black Spot program to address critical crash sites.
- Investigate fatal crash locations as they arise to consider improvement works, where appropriate.
- Support the activities of the Community Road Safety Group on road safety initiatives in the City.
- Maintain the current traffic count program in the City.
- Seek regular DTEI updates on new count information for the main road network.
- Complete the input the traffic count information into the Asset Management database and GIS plan.



Part Two

Traffic Management



1.0

Introduction

'As traffic flows increase on the road network in the inner suburbs close to the City of Adelaide, congestion delays result in more drivers using the local roads to bypass congested intersections.'

Traffic management may be defined as the application of specific traffic control practices to achieve specified objectives.

Local Area Traffic Management (LATM) is concerned with the planning and management of the usage of road space within a local traffic area. LATM involves the use of physical devices, streetscaping treatments and other measures (including regulations and other non-physical measures) to influence vehicle operation, in order to create safer and more pleasant streets in local areas.

Source: Austroads

Traffic calming is another term that is commonly used. Traffic

calming generally embraces physical, educational and management approaches to reducing the impacts of vehicles on urban areas. LATM is therefore only one of the possible applications of traffic calming.

Traffic that does not have an origin or destination within a local area should, ideally, use the main road network, not local roads.

However, as the traffic flows increase on the road network in the inner suburbs close to the City of Adelaide, congestion delays result in more drivers using the local roads to bypass congested intersections. As mid-block road capacities reach saturation levels, local roads provide more convenient alternatives to the main road network. The issue of through traffic is more evident in suburbs closer to the City of Adelaide.

Other critical intersections in the outer areas also experience through traffic diversion, due to "localised" congestion.

These are two of the main sources of residents' concerns regarding traffic flows raised in the City.

Another common concern of residents is excessive speed and poor driver behaviour (burn-outs etc). In less frequent instances, resident concerns about the high level of commercial traffic have also been raised in the past.

These issues are commonly addressed on a reactive basis, based on complaints received. However, in recent years, a pro-active approach to traffic management has increasingly been used.

Where single issues are concerned, these complaints are investigated, assessed and recommendations developed for implementation.

Where area-wide issues are identified, it is commonly addressed via a LATM study involving a precinct-based approach. Issues are then investigated, assessed and recommendations developed for implementation on an area-wide basis.

Being located in an area which includes the inner suburbs of Adelaide, the City of West Torrens has had to deal with a variety of these traffic issues for many years.



2.0

Objectives and Setting Criteria

Setting objectives for LATM allows a scheme to be assessed, implemented and measured against the desired outcomes.

A possible approach to setting objectives is as follows:

Primary objectives:

- improve the safety of the street network
- reduce the environmental impact of traffic.

Specific objectives:

- reduce speed
- reduce volumes
- reduce through traffic
- reduce heavy vehicles.

Secondary objectives:

- maintain access through the City for residents
- avoid transferring traffic from one street to another.

In practice, the above approach has been used by the City of West Torrens over many years of LATM studies and traffic management.

Recommendation

- Adopt the above objectives for LATM studies.

2.1 The need for and the process for a LATM study

The need usually arises from:

- resident concerns about traffic conditions in an area
- known through traffic issues and increasing impact on the local area
- need to reduce traffic-related

problems on an area-wide basis

- traffic concerns arising from major new developments or new road projects in or abutting the area
- proactive approach to road safety in the local area.

While a LATM is intended to provide positive traffic outcomes to a local area, there are negative effects that would result, including:

- increased travel time for drivers
- increase in noise adjacent to devices
- impact on on-street parking
- impact on cyclists and pedestrians
- restricted access to properties
- effect on emergency service vehicles
- transfer of traffic from one street to another
- enforcement issues and difficulties
- costs to Council.

A LATM study area is usually bounded by arterial roads, other physical barriers such as creeks, railways or reserves, and in the case of the City of West Torrens, the Adelaide Airport boundaries.

The process involved in a LATM study is generally as follows:

- prepare LATM study
- define the objectives
- develop options and plan for the LATM
- design the approved LATM scheme
- implement the LATM scheme
- monitor and review.

The City of West Torrens has undertaken many such LATM studies in past years.

The above summary provides the background and the methodology

previously used in the City and such a process is recommended to be retained.

2.2 The need for a warrant-based priority system for LATM studies

The Austroads Guide to Traffic Engineering Practice Part 10 lists three possible warrant system to determine priority for LATM decision making, ie:

- “Qualifying conditions” to merit closer examination.
- Warrants expressed as acceptable thresholds of stated criteria.
- Warrants, usually expressed as points, to provide a basis for priority ranking.

The simplest approaches to indicators of the need for action comes in the form of a “checklist” or sieve of conditions, some of which may be qualitative, that must apply in order for a street to qualify for closer inspection. This approach is compatible with a one-off, street-by-street approach to traffic calming but is also useable in area-wide LATM.

Source: Austroads

This has been the approach of the City of West Torrens for many years. The “sieving” of conditions include:

- assessment of the current street conditions
- review of the traffic volumes, speeds and commercial traffic
- review of through traffic usage
- analysis of the crash data
- adjacent land uses
- road hierarchy.

An example of a priority rating system to determine which LATM area to investigate is shown on page 69.

Traffic Parameter	Value	Points per 500m of street or road		
		Local Street	Collector Street1	Distributor Road1
Traffic Speed	>55	1	0	0
85th Percentile Speed	>60	3	1	0
	>65	5	3	2
	>70	8	6	6
	>75	11	9	9
	>80	14	12	12
Traffic Volume	>1000	2	1	0
24 hour Volume	>1500	3	2	0
	>2000	4	3	0
	>3000	7	5	2
	>5000	10	8	4
	6000+	13+3 per 100	11+3 per 100	7+3 per 100
Traffic Volume	>150	1	0	0
Highest Hourly Volume (HHV)	>200	2	1	0
	>300	3	2	1
	>400	4	3	2
	>600	6	5	4
	700+	8+2 per 100	8+2 per 100	8+2 per 100
Through Traffic	>10%	1	0	0
Peak hour volume - % of 24 hour volume	>20%	2	1	0
	>30%	2	1	
	>50%	5	4	2
Crash Data (5year period)	Points	6	5	5
Per fatal crash	per	4	4	4
Per serious injury crash	crash	2	2	2
Per other injury crash				
Noise	>58 dBAL18h	5	5	3
	>63 dBAL18h	10	10	7
	>68 dBAL18h	15	15	12
Heavy Vehicles	Points per% of total traffic	2	2	2
Activity Generators	Low	1	1	1
	Medium	3	3	3
	High	5	5	5
	Primary School	10	15	20
	High School	10	15	15

Source: Austroads

The above rating system can be briefly described as follows.

For the same street category (example local streets) higher points are awarded for streets which have higher speeds, volumes, crashes and commercial traffic. It also takes into

account land uses with higher points awarded to say schools which are located in the street. A higher overall score would then give a higher priority to the street.

Across the 3 road categories, the points awarded have regard to the

impact on the street. For example, higher speeds would have a greater impact on a local street compared to a collector or distributor road. Similarly, higher volumes would have a greater impact on a local street compared to collector street.

The city of West Torrens will assess and develop an appropriate rating system for use in traffic management as part of this transport strategy.

Before developing a priority rating system for LATM in the City of West Torrens, it is worth reviewing the specific nature of the City's road network and the LATM work that has been completed in the past.

There are major boundaries that affect the flow of traffic in the City. The Adelaide Airport forms a very large land use in the City which breaks up the continuity of the road system. Along the northern boundary of the City is the River Torrens Linear Park which again limits the number of road connections into the City of Charles Sturt.

On the southern boundary is the Adelaide-Glenelg tram line, which

limits the number of road connections into the Cities of Marion and Unley.

To the west is the beach.

Based on these conditions, there are many local areas that are "protected" from the intrusion of through traffic. Notable examples include:

- Lockleys area north of Henley Beach
- Road and west of Rowells Road
- West Richmond area north of Richmond Road and east of the Airport
- West Beach area
- Fulham area
- Glandore area

In addition, the former Town of Thebarton completed LATM plans for most of its areas prior to amalgamation, with many traffic control devices implemented such as slow points, pavement thresholds, humps and roundabouts.

The City of West Torrens has also implemented many LATM plans over the years including in Lockleys, Richmond, Torrensville, Brooklyn Park and Underdale.

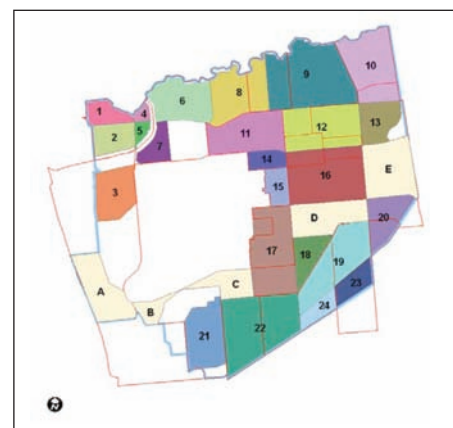


Figure 13 shows the LATM precincts for the City.

Known traffic issues based on previous investigations for the various areas are summarised as follows.



Precinct 1 (Part Fulham)

Background	Located in “outer” area of the City.
Land use	Predominantly residential. Some commercial/retail along the arterial roads.
Road network	Relatively isolated from excessive traffic movements. Through traffic usage not evident.
Traffic issues	None apparent.
Traffic options	None apparent.

Precinct 2 (Part Fulham)

Background	Located in “outer” area of the City.
Land use	Predominantly residential. Some commercial/retail along the arterial roads.
Road network	Through traffic usage not evident. Coral Sea Road is relatively long with no traffic controls.
Traffic issues	Speeding issue in Coral Sea Road.
Traffic options	Remember 50 km/hr advisory signs previously installed in Coral Sea Road. Seek police enforcement against speeding.

Precinct 3 (West Beach)

Background	Located in “outer” area of the City.
Land use	Predominantly residential. West Beach Primary School. Harbour town in close proximity.
Road network	Through traffic usage not evident. West Beach Road is a major road in the precinct.
Traffic issues	Speeding issue in West Beach Road. Previous concerns about poor driver behaviour in the area.
Traffic options	Remember 50 km/hr advisory signs previously installed in the area. Seek police enforcement against speeding and poor driver behaviour.

Precinct 4 (Fulham)

Background	Isolated from excessive traffic movements by the River Torrens.
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Land use	Predominantly residential.
Road network	Through traffic usage not evident.
Traffic issues	MackKirdy Street/Henley Beach Road intersection upgrade to protect existing trees in Henley Beach Road.
Traffic options	None apparent.

Precinct 5 (Fulham)

Background	Small residential area bounded by the River Torrens and main roads.
Land use	Predominantly residential. Hotel/retail land uses along the main road boundaries.
Road network	Limited access to the main roads from the residential area.
Traffic issues	Some short-cut traffic use Chippendale Avenue.
Traffic options	Investigations into the through traffic issue in Chippendale Avenue were completed recently with turn controls implemented at the main roads. Monitoring of the traffic management measures is to be undertaken.

Precinct 6 (Lockleys)

Background	Isolated from excessive traffic movements by the River Torrens.
Land use	Predominantly residential. Commercial/retail land uses along the main roads. St Francis Primary School.
Road network	No direct connection north to the City of Charles Sturt except via Rowells Road.
Traffic issues	Previous traffic study completed around the Fulham Park Drive area and around the school. Previous concerns about poor driver behaviour in the area.
Traffic options	Previous recommendation for minor works implemented. Previous recommendation for police enforcement against poor driver behaviour and speeding has been acted upon.

Precinct 7 (Lockleys)	
Background	The area was the subject of a detailed LATM study over the past few years.
Land use	Predominantly residential. Lockleys Oval.
Road network	Rutland Avenue is the main collector road in the area.
Traffic issues	Previous LATM investigations resulted in installation of speed cushions in Rutland Avenue. Continuing investigation occurring into traffic diversion to Strathmore Avenue and Southerly Avenue.
Traffic options	Recent Council recommendation to install turn prohibitions to address traffic diversion issue has been implemented. Monitoring of traffic impact of the turn prohibitions is to occur.
Precinct 8 (Lockleys and Underdale)	
Background	The area was the subject of a detailed LATM traffic study in previous years. The area was the subject of a detailed traffic investigation for Garden Terrace/Pierson Street in recent years.
Land use	Predominantly residential. EDS located in Pierson Street. Lockleys North Primary School and Underdale High School.
Road network	The previous LATM study resulted in angled slow points and driveway links installed in a number of streets, such as White Avenue and Autumn Avenue. Garden Terrace and Pierson Street are main collector roads in the area. DTEI recently installed traffic signals at Pierson Street/Rowells Road.
Traffic issues	Excessive traffic movements in the collector roads. Speeding and poor driver behaviour.
Traffic options	No further action on traffic control devices in the recent traffic study for Garden Terrace/Pierson Street. Minor improvements to intersections adopted by Council in the recent traffic study for Garden Terrace/Pierson Street which are currently being assessed.

Precinct 9 (Underdale and Torrensville)	
Background	The area was the subject of a detailed LATM traffic study by the previous Thebarton Council resulting in many traffic control devices being installed. Major reconstruction of Ashwin Parade was undertaken in recent years. The area was the subject of detailed traffic investigations for a number of streets and intersections in recent years arising from road safety concerns including Golden Glow Avenue and Wilford Avenue.
Land use	Mix of residential and industry land uses at the northern section. The District Centre zone is located on the southern section along Henley Beach Road. Torrensville Primary School and Thebarton College. Thebarton Oval.
Road network	The previous Thebarton Council installed road closures in Ashley Street, many roundabouts at local intersections and angled slow points in Hardys Road. Other more recent investigations resulted in turn prohibition in Wilford Avenue and driveway links in Sheriff Street and Norman Street. Ashwin Parade and Ashley Street (Hardys Road to Holbrooks Road) are main east-west collector roads in the area. Hardys Road is the main north-south collector road in the area. Many of the streets in the area provide good east-west and north-south connectivity and therefore are subject to through traffic movements.
Traffic issues	Speeding and poor driver behaviour. Excessive traffic volumes.
Traffic options	A major review of the traffic conditions would appear to be warranted, given the long period since an area-wide assessment was completed for the area.

Precinct 10 (Thebarton)	
Background	The area was the subject of a detailed LATM traffic study by the previous Thebarton Council which resulted in many traffic control devices being installed.
Land use	Mix of residential, commercial and industry land uses. Biotechnology industries located in the Murray Street precinct.
Road network	The previous Thebarton Council installed many traffic control devices in the area, including roundabouts and single lane slow points. West Thebarton Road-Phillips Street and George Street are the main east-west collector roads in the area. Parker Street, Albert Street and Holland Street are the main north-south collector roads in the area. Major roadworks including the Bakewell underpass and upgrade of East Terrace have recently been completed.
Traffic issues	Incidences of speeding and poor driver behaviour.
Traffic options	No further action at this stage. Monitor the traffic conditions in the area after the completion of the major roadworks.
Precinct 11 (Brooklyn Park)	
Background	The May Terrace area was the subject of a recent detailed traffic investigations. Previous investigations include Lipsett Terrace and Marshall Terrace in conjunction with the St John Bosco School. Recent investigations also included the potential impact of the IKEA traffic signals on the side streets such as Kopurlo Avenue and Tristania Avenue.
Land use	Predominantly residential. Commercial land uses along the main roads. Lockleys Primary School and St John Bosco School. Major Adelaide Airport developments in the vicinity of the area.

Road network	Lipsett Terrace provides the more direct east-west route in the area. May Terrace is the major north-south collector road.
Traffic issues	Incidences of speeding and poor driver behaviour. Concerns about short-cut traffic in some streets. Impact of Adelaide Airport developments in the area.
Traffic options	Recent investigations of May Terrace and surrounding streets were completed and endorsed by Council. Monitor the traffic conditions in the area as the Adelaide Airport developments progress.
Precinct 12 (Brooklyn, Cowandilla, Mile End and Hilton)	
Background	The area was the subject of a detailed LATM traffic study by the previous Thebarton Council which resulted in many traffic control devices being installed. The area was also the subject of a recent LATM study which resulted in speed cushions being installed in Bagot Avenue.
Land use	Predominantly residential. Commercial and retail land uses along the main roads. The District Centre zone is located on the northern section along Henley Beach Road.
Road network	Bagot Avenue and Hounslow Avenue provide the collector road function in the area.
Traffic issues	Incidences of speeding and poor driver behaviour. Concerns about short-cut traffic in some streets. Concerns about excessive traffic movements.
Traffic options	No further action at the present time, given the recent Council decision on traffic management in the area.

Precinct 13 (Mile End)

Background	The area was the subject of a detailed LATM traffic study by the previous Thebarton Council which resulted in many traffic control devices being installed. Major roadworks completed in the area include the Bakewell Underpass project and upgrade of East Terrace (Inner Ring Route).
Land use	Predominantly residential. Commercial and retail land uses along the main roads.
Road network	Victoria Street provides the north-south collector road in the area.
Traffic issues	Incidences of speeding and poor driver behaviour.
Traffic options	No further action at this stage. Monitor the traffic conditions in the area after the completion of the major roadworks.

Precinct 14 (Brooklyn Park)

Background	Relatively “enclosed” area bounded by main roads, Adelaide Airport and the Keswick drain.
Land use	Predominantly residential. Commercial land uses along the main roads.
Road network	Local streets in the area. Left turn prohibition implemented in previous years in Press Road to reduce short-cut traffic.
Traffic issues	Some complaints about short-cut traffic.
Traffic options	No further action at this stage. Monitor the traffic conditions in the area as the Adelaide Airport developments progress.

Precinct 15 (West Richmond)

Background	Relatively “enclosed” area bounded by Marion Road, Adelaide Airport and the Keswick drain. Previous LATM study resulted in road closures being implemented on the southern boundaries with Richmond Road to separate the residential land uses from the industry zone.
Land use	Predominantly residential. Commercial land uses along the main roads.

Road network	Local streets in the area.
Traffic issues	None apparent.
Traffic options	No further action at this stage. Monitor the traffic conditions in the area as the Adelaide Airport developments progress.

Precinct 16 (Cowandilla, Hilton and Richmond)

Background	Previous LATM study resulted in roundabouts being installed along Brooker Terrace. Other traffic investigations resulted in a median island being installed in Kingston Avenue and line marking in Davenport Terrace.
Land use	Predominantly residential. Commercial land uses along the main roads.
Road network	Brooker Terrace is the major collector road in the area.
Traffic issues	Incidences of speeding and poor driver behaviour. Concerns about short-cut traffic near congested main road intersections, eg Lucas Street.
Traffic options	No further action at this stage. Carry out an area-wide monitoring of traffic movements to assess current conditions in the area and to determine if a LATM study is warranted.

Precinct 17 (Netley and North Plympton)

Background	Previous LATM study resulted in roundabouts being installed along Harvey Avenue, Streeters Road. Other traffic investigations resulted in left turn prohibitions being implemented in side streets off Mooringe Avenue and turn prohibitions at Kinkaid Avenue.
Land use	Predominantly residential. Industry zone in the Richmond Road precinct (separated from the residential area to the south by a road closure). Commercial land uses along the main roads. Further development from the Adelaide Airport Morphett East precinct.
Road network	Harvey Avenue and Streeters Road are the collector roads in the area.
Traffic issues	Incidences of speeding and poor driver behaviour. Concerns about safety at a number of local intersections.

Objectives and Setting Criteria

Traffic options	No further action at this stage. Monitor the traffic conditions in the area as the Adelaide Airport developments progress.
Precinct 18 (Plympton)	
Background	Previous LATM study resulted in roundabouts being installed along Birdwood Terrace.
Land use	Predominantly residential.
Road network	Local streets in the area.
Traffic issues	Incidences of speeding and poor driver behaviour. Concerns about short-cut traffic to Marion Road using many of the local streets.
Traffic options	No further action at this stage. Carry out an area-wide monitoring of traffic movements to assess current conditions in the area and to determine if a LATM study is warranted.
Precinct 19 (Plympton and Kurrulta Park)	
Background	A recent LATM study resulted in left turn prohibitions being implemented in some of the side streets off Anzac Highway to reduce short-cut traffic in Gray Street. Major roadworks have commenced on the South Road underpass project.
Land use	Predominantly residential. Plympton Primary School.
Road network	Gray Street-Daly Street form the north-south collector route in the area. Galway Avenue-Tennyson Avenue and Barwell Avenue form the east-west collector route in the area.
Traffic issues	Incidences of speeding and poor driver behaviour. Concerns about short-cut traffic and excessive traffic volumes in Gray Street and Daly Street. The South Road underpass project would have major implications on traffic flows in the area during and after construction.
Traffic options	No further action at this stage. Monitor the traffic conditions in the area after the completion of the major roadworks.

Precinct 20 (Ashford and Keswick)	
Background	A major parking study was recently completed in the area with review of some of the traffic issues. Major roadworks have commenced on the South Road underpass project.
Land use	Mix of residential, commercial and retail land uses. Ashford Hospital and other medical related land uses. Richmond Primary School.
Road network	Everard Avenue and Croydon Road are the collector roads in the area. Many of the other streets provide good connectivity to the main roads.
Traffic issues	Incidences of speeding and poor driver behaviour. The South Road underpass project would have major implications on traffic flows in the area during and after construction.
Traffic options	No further action at this stage. Monitor the traffic conditions in the area after the completion of the major roadworks.
Precinct 21 (Novar Gardens)	
Background	Recent traffic investigations resulted in a new roundabout at Pine Avenue/Wongala Avenue to address speeding issues in the street. Two existing roundabouts in Pine Avenue have also been upgraded recently to current day standards.
Land use	Predominantly residential. Immanuel College.
Road network	Pine Avenue and Bonython Avenue are collector roads in the area. Morphett Road is a major collector road in the area and has recently been upgraded.
Traffic issues	Incidences of speeding and poor driver behaviour. Immanuel College issues with traffic flows and pedestrian safety.
Traffic options	No further action at this stage. Monitor the traffic conditions in the area after the completion of the roundabouts and recent safety improvement measures around Immanuel College.

Precinct 22 (Camden Park and Plympton)	
Background	Previous traffic investigations resulted in roundabouts being implemented in Whelan Avenue.
	Recent traffic investigations resulted in an area-wide load limit scheme being implemented in the Camden Park area to reduce commercial traffic intrusion into the residential area.
Land use	Predominantly residential.
	A significant industry land use adjacent to Mooringe Avenue. William Light School.
Road network	Mooringe Avenue and Stonehouse Avenue are major collector roads in the area.
	Whelan Avenue is a minor collector road in the area.
Traffic issues	Incidences of speeding and poor driver behaviour, particularly in Creslin Terrace and Birkalla Terrace.
	Immanuel College issues with traffic flows and pedestrian safety.
Traffic options	No further action at this stage.
	Seek police enforcement against speeding and poor driver behaviour.
Precinct 23 (Glandore)	
Background	Relatively “enclosed” area bounded by the main roads and the tram line.
	Major roadworks have commenced on the South Road underpass project.
Land use	Predominantly residential.
	Commercial land uses along the main roads.
Road network	Local streets in the area.
	The South Road underpass project would have major implications on traffic flows in the area during and after construction.
Traffic issues	None apparent.
Traffic options	No further action at this stage.
	Monitor the traffic conditions in the area after the completion of the major roadworks.

Precinct 24 (Plympton)	
Background	Relatively “enclosed” area bounded by the main roads and the tram line.
Land use	Predominantly residential.
	Commercial land uses along the main roads.
Road network	Local streets in the area.
Traffic issues	Previous complaints about short-cut traffic using Clayton Avenue and surrounding streets was investigated and not found to be significant.
Traffic options	No further action at this stage.
	No major previous investigations in the area.
Precinct A (Glenelg North)	
Background	Only a few streets in this precinct.
Land use	Recreational land use.
	Boat ramp at Barcoo Road
Road network	Military Road and Africaine Road are major collector roads in the area.
Traffic issues	Concerns about speeding and poor driver behaviour addressed by police enforcement and use of Remember 50 km/hr signs.
Traffic options	No further action at this stage.
	Low priority for a LATM type study.
Precinct B (Glenelg North and Novar Gardens)	
Background	Only a few streets in this precinct.
Land use	Predominantly residential.
	Further development from the Adelaide Airport Morphett precinct.
Road network	Warren Avenue and James Melrose Road are major collector roads in the area.
	Upgrade of James Melrose Road has recently been completed.
Traffic issues	Concerns about speeding and poor driver behaviour in James Melrose Road is addressed by police enforcement and use of Remember 50 km/hr signs.
Traffic options	No further action at this stage.
	Low priority for a LATM type study.
	Monitor the traffic conditions in the area as the Adelaide Airport developments progress.

Precinct C (North Plympton)	
Background	Major industry precinct.
Land use	Predominantly industry. Further development from the Adelaide Airport Morphett precinct.
Road network	Mooringe Avenue and Morphett Road are major collector roads in the area. Previous black spot funding has enabled the upgrade of James Melrose Road/ Morphett Road, Mooringe Avenue and Deeds Road/Kinkaid Avenue. B Double permitted to use James Melrose Road and part Mooringe Avenue and part Morphett Road.
Traffic issues	Future access for B Doubles to the industry zone.
Traffic options	Low priority for a LATM type study. Monitor the traffic conditions in the area as the Adelaide Airport developments progress and review B Double access as part of the Adelaide Airport development issue.
Precinct D (Marleston)	
Background	Large industry zone in the area.
Land use	Mix of residential, industry and commercial land uses. Further development from the Adelaide Airport Morphett precinct could impact on this area.

Road network	Galway Avenue and Grove Avenue are major collector roads in the area. Barwell Avenue is a local collector road in an east-west direction. Grove Avenue has been upgraded recently and can facilitate B Double access.
Traffic issues	Previous complaints about traffic issues not apparent.
Traffic options	Low priority for a LATM type study. Monitor the traffic conditions in the area as the Adelaide Airport developments progress.
Precinct E (Mile End South)	
Background	Major industry precinct.
Land use	Predominantly industry. Major new bulky goods development
Road network	London Road is a major collector road in the area. Railway Terrace is a DTEI arterial road. Many of the other streets in the area provide commercial vehicle access including B Double access.
Traffic issues	Commercial vehicle access.
Traffic options	Low priority for a LATM type study. Request DTEI to upgrade Railway Terrace. Monitor the traffic conditions in the area as major developments are completed in the area.



'Setting objectives for LATM allows a scheme to be assessed, implemented and measured against the desired outcomes.'

Recommendation

- Compile and consolidate all previous LATM studies and traffic investigations into a single database as a resource document for future traffic investigations.
- Establish a priority rating system for determining where LATMs should be undertaken.

2.3 How to address traffic issues raised

Many of the continuing complaints and resident concerns relate to single-street issues. Experience in the City have shown that despite the implementation of a LATM plan, such concerns would continue to occur.

To assist in addressing the single-street issue, a “template” has been prepared in Section 5.0 to provide a step-by-step methodology in investigating and responding to these concerns.

2.4 Setting a criteria to help address traffic issues

Traffic Management is not an exact science. In assessing traffic issues, consideration is normally given to traffic conditions (traffic volumes, speeds, commercial vehicles and crash statistics), resident concerns and external impacts.

What is an acceptable speed

The 85th percentile speed is the commonly used criteria in road design and in assessing speeding problems. It is the speed in which 85% of all

traffic in that street is would travel at or below.

Since the introduction of the 50 kph statewide speed limit in March 2003, it would appear that 85th percentile speeds have decreased in local streets. Information from other councils also indicates that such a reduction had occurred in many areas in metropolitan Adelaide.

Isolated incidence of speeding is commonly cited by residents to be of concern. Such speeding commonly occurs outside of peak hours, particularly in early morning and late night periods. Finding measures to address such site specific and infrequent occurring incidences are very difficult and police enforcement is usually an appropriate way of addressing the issue.

The setting of one “speed criteria” to be applied over the whole council area (for established streets) is difficult and is not recommended.

In practice, 85th percentile speeds of up to 55 kph would be considered as being “reasonable”.

Where speeds are significantly greater than this, it would trigger a process to identify measures to address the speed issue. In many instances, police enforcement would be the commonly adopted course of action. In other instances, use of signs or line marking to influence driver behaviour would be used, for example reducing the

perception of a wide street by line marking to reduce speeds. If additional and more aggressive measures are warranted, then traffic control devices would be considered, such as road humps, roundabouts or slow points.

What is an acceptable traffic volume

PART 1 Section 10 of this report recommends a road hierarchy for the City of West Torrens.

Based on road hierarchy, the following range of daily traffic volumes are normally adopted based on road classification.

Local street	up to 2,000 vpd
Minor collector	up to 3,000 vpd
Major collector	3,000-6,000 vpd

The above levels should not be considered as rigid standards. For example, major collector roads such as Beckman Street, Ashwin Parade, Morphett Road and Mooringe Avenue carry over 10,000 vehicles per day. Under the classical road hierarchy system for the Council’s road network, they would be classed as major collector roads. If they are DTEI roads, they would probably be classified as sub-arterial roads.

However, as a guide, the criteria below provide a checklist for assessing traffic issues.

‘Speeding commonly occurs outside of peak hours, particularly in early morning and late night periods.’

Table 5 – Traffic criteria

	Local Street	Local Collector	Major Collector
Daily volumes	<2000 vpd	Up to 3000 vpd	3000-6000vpd
85th percentile	<55 kph	<55 kph	<55 kph (or <60 kph for higher speed limit)
Commercial traffic	Up to 4%	Up to 4%	Up to 10%
Crashes (intersection) 5-year period	Less than 1 crash pa	See Black Spot criteria	See Black Spot criteria

A guide for considering road cross section is given below.

Table 6 – Road criteria

Carriageway width	Local Street	Local Collector	Major Collector
Minimum width	7.6m**	11.0m	11.0m
Min width with bike lanes		13.5m*	13.7m*
Footpath	One side	Both sides	Both sides

* can be reduced if parking is prohibited

** compliance with Australian Road Rules

For a criteria on traffic management intervention based on crash data, refer to the DTEI Black Spot Funding Program.

Recommendations


- Adopt the criteria in TABLES 5 and 6 as a guide when addressing traffic issues.





Recommendations

- Adopt the objectives in Section 2.0 for LATM studies.
- Compile and consolidate all previous LATM studies and traffic investigations into a single database as a resource document for future traffic investigations.
- Establish a priority rating system for determining where LATMs should be undertaken.



3.0

LATM Experience

The City of West Torrens have a wealth of experience in the undertaking and successful implementation of LATM plans. It is not proposed to elaborate on this experience other than to refer to

many of the previous LATM reports that have been adopted by the Council.

As discussed in Section 2.0, major traffic investigations including LATM studies have already occurred in most of the areas within the City of West Torrens.

One of the recommendations of this strategy is the development of a priority rating system for determining future LATM studies. This would then allow LATM studies to be undertaken on a strategic manner.



Previous LATM Richmond Area – roundabout control



Previous LATM Underdale Area – angled slow points

A black and white photograph of a traffic light with three lenses, viewed from a low angle looking up. The background is a clear sky. A white dashed line graphic runs horizontally across the middle of the page, with a vertical segment on the left and a horizontal segment on the right, forming a sort of frame around the title.

4.0

Guidelines on use of Traffic Control Devices

The *Code of Technical Requirements for the legal use of traffic control devices* govern the use of traffic control devices in South Australia.

The Code lists the traffic control devices that are permitted for use, including:

- Channelisation measures (traffic islands, medians and kerb extensions).
- Roundabouts.
- Pavement markings and signs.
- Koala crossings and EMU crossings.
- WOMBAT crossings.
- Distinctive pavements.

- Perimeter thresholds.
- Road humps (Watts profile humps and flat top humps).
- Speed cushions.
- Road closures.
- Slow points.
- Driveway links.
- Centre blisters.

General approval has been given to Council to install many of the above traffic control devices.

A number of excluded devices that still require DTEI approval include:

- Centre blisters.

- Mini roundabouts.
- Shared zones.
- Speed cushions.
- T-junction rearrangements.
- Any other traffic control device not contained or referred to in the Code.

The *Austrroads Guide to Traffic Engineering Practice Part 10* provides a very detailed description of traffic control devices used in Australia. It also lists the advantages and disadvantages of each device and the impact on reducing volumes, speeds etc.

Measure	Description	Reduce Speeds	Reduce Traffic Volume	Increase Pedestrian Safety	Reduce Crash Risk
Vertical Deflection Devices	Raised Tables	✓	✓	-	✓
	Wombat Crossings	✓	✓	✓	✓
	Road Humps	✓	-	✓	
	Road Cushions	✓	✓	-	✓
	Raised	✓	✓	-	✓
Horizontal Deflection Devices	Lane narrowings/ Kerb extensions	✓	-	✓	-
	Slow points - One-lane and Two-lane	✓	✓	-	-

Measure			Reduce Speeds	Reduce Traffic Volume	Increase Pedestrian Safety	Reduce Crash Risk
Horizontal Deflection Devices	Blister Islands	A wide oval concrete island positioned at the centreline (median) of a street that narrows the lanes, diverts the angle of traffic flow, and can be used to provide pedestrians with a refuge.	✓	✓	✓	-
	Driveway links	An extended form of slow point stretching for two or more property frontages that provides a greater visual and physical impact on the street.	✓	✓	✓	✓
	Mid-block Median Treatments	A flush or raised island placed along the centreline of the street that narrows the carriageway and can provide pedestrians With a safe place to take refuge	✓	-	✓	✓
	Roundabouts	Small to large circular central island at intersections that simplifies the allocation of priority.	✓	✓	-	✓
Diversion Devices	Full road closure	Closing off streets to through vehicle traffic at intersections or mid-block	-	✓	✓	✓
	Half road Closure	Methods to restrict access to/from a local area and limit traffic flow at intersections	-	✓	✓	✓
	Diagonal road Closure	A kerb extension or vertical barrier extending diagonally across an intersection, effectively obstructing (prohibiting) traffic flow in a Particular direction(s).	-	✓	✓	✓
	Modified 'T' Intersection	A three-way intersection treatment using raised medians, signage and other delineation to modify the priority and to slow and physically direct traffic through an intersection.	✓	✓	✓	✓
	Left-in/ Left-out islands	A partial road closure that obstructs right turns, and through movements to and from the intersection.	-	✓	✓	✓
Signage, Linemarking And Other Treatments	Speed limit signs	Signs displaying reduced speed limits. May be implemented on an area-wide basis.	✓	-	✓	✓
	Prohibited Traffic Movement Signs	Signs indicating that particular traffic movements are not permitted to be undertaken. Signs are used to prevent undesirable traffic movements into And out of residential streets	-	✓	-	✓

Measure	Description	Reduce Speeds	Reduce Traffic Volume	Increase Pedestrian Safety	Reduce Crash Risk
Signage, Linemarking And Other Treatments	One-way signs		-	✓	✓
	Stop signs	✓	✓	✓	✓
	Give way signs	✓	✓	✓	✓
	Pedestrian Crossings	✓	-	✓	✓
	Perimeter Threshold Treatments	✓	✓	-	✓
	Tactile Surface Treatments	✓	-	-	-
	Bicycle lanes/ By-passes/ advisory Treatments and other facilities	-	-	-	✓
	Bus-only links/ Bus-modified Traffic control Devices/Bus by-passes of treatments	-	✓	-	-
	Shared zones	✓	✓	✓	-
Combination Devices	Integrated road Treatments	✓	✓	✓	✓

Source: Austroads

Guidelines on use of Traffic Control Devices

The document *Towards Traffic Calming Federal Office of Road Safety* also provides a comprehensive database of traffic control devices used throughout Australia.

The use of traffic control devices need to have regard to the road classification. TABLE 7 below provides a guide on the use of some of the commonly used devices, depending on the road category.

Table 7 – Guide on the use of traffic control devices

Device	Local Street	Local Collector	Major Collector
Channelisation	✓	✓	✓
Roundabouts	✓	✓	✓
Perimeter thresholds	✓	✓	✓
Road humps	✓	✓	
Speed cushions	✓	✓	
Road closures	✓		
Slow points	✓	✓	
Driveway links	✓		

Recommendation

- Adopt the guide in TABLE 7 when considering the use of traffic control devices for the relevant road classification.

Recommendations

- Adopt the guide in TABLE 7 when considering the use of traffic control devices for the relevant road classification.



5.0

Templates for Addressing Traffic Issues

The following templates have been prepared to assist in the review of traffic concerns. The templates document the process from receipt of the complaint to completion of investigations and implementation of the measures.

Three templates are proposed, two of which deal with the traffic concerns outlined in previous sections of this report.

The third template deals with the assessments of traffic impacts of developments (lodged under the Development Act).

Template 1 is used for responding to traffic concerns raised by residents.

Template 2 is used for responding to LATM type investigations.

Template 3 is used for responding to traffic concerns arising from developments.

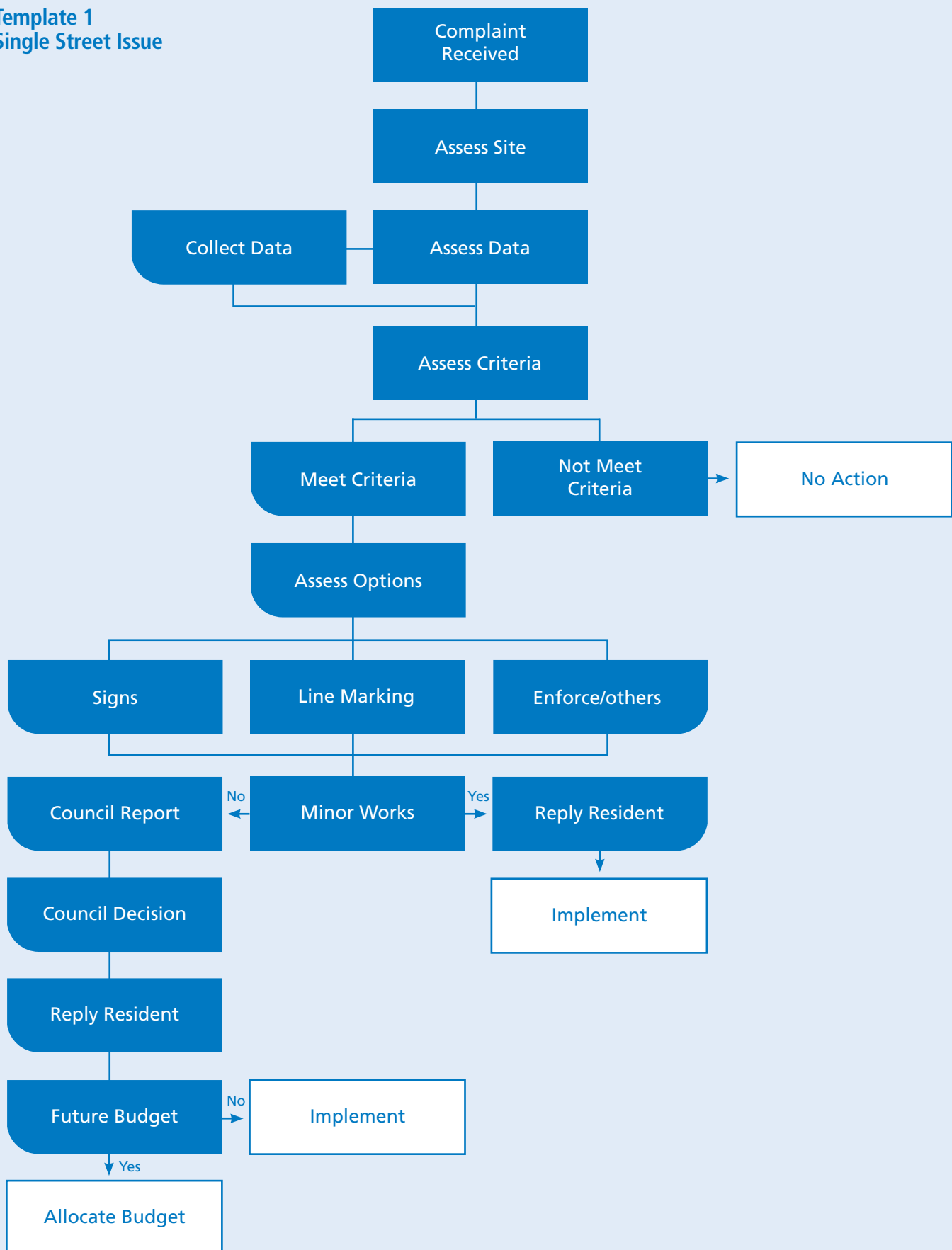
The above templates would provide the Administration with a common and simplified methodology in responding and reporting on traffic concerns.

Recommendation

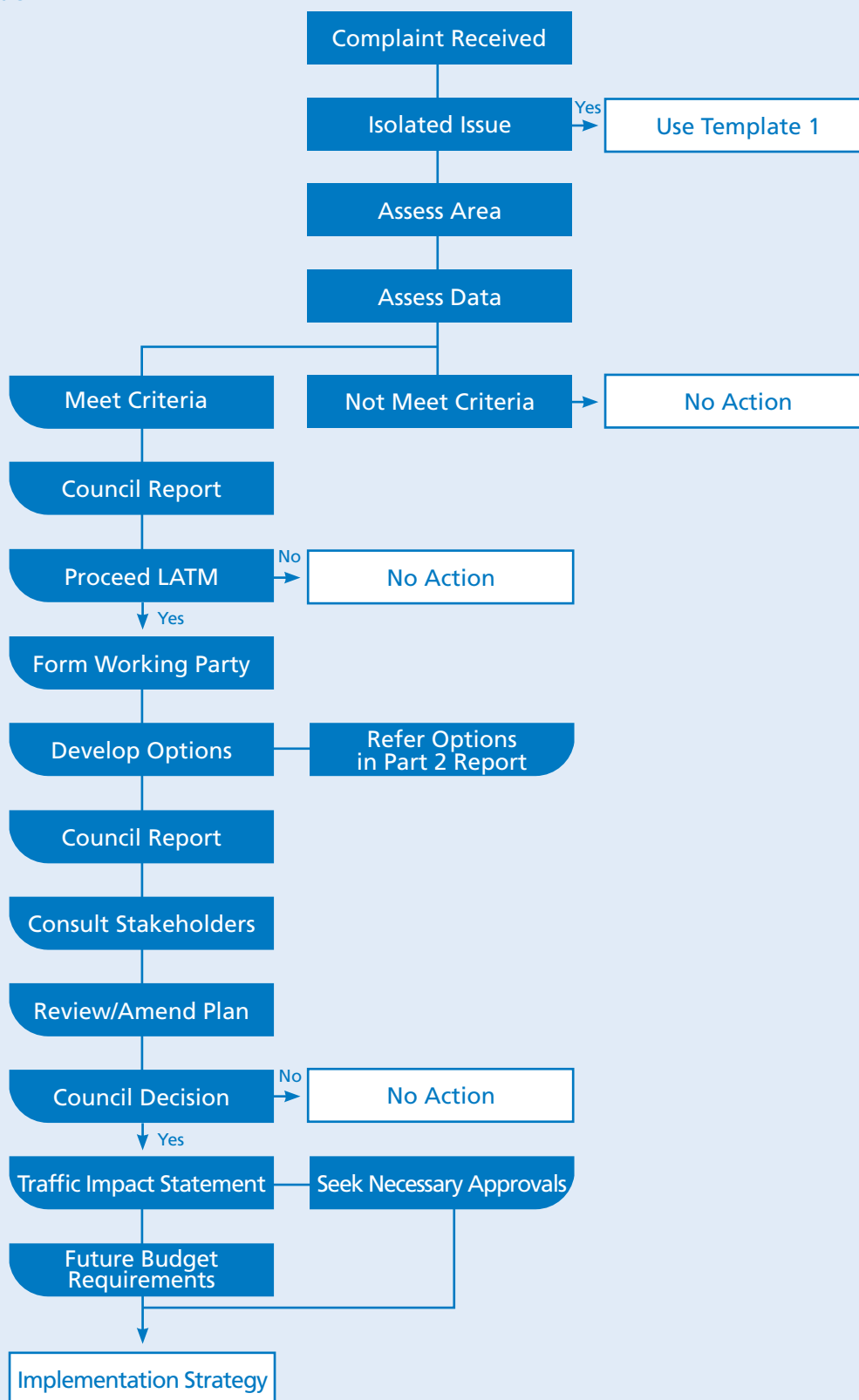
- Adopt the above templates for the assessment of traffic issues.
- Template 1 – Single street issue
Template 2 – LATM type issue
Template 3 – Development assessment procedure



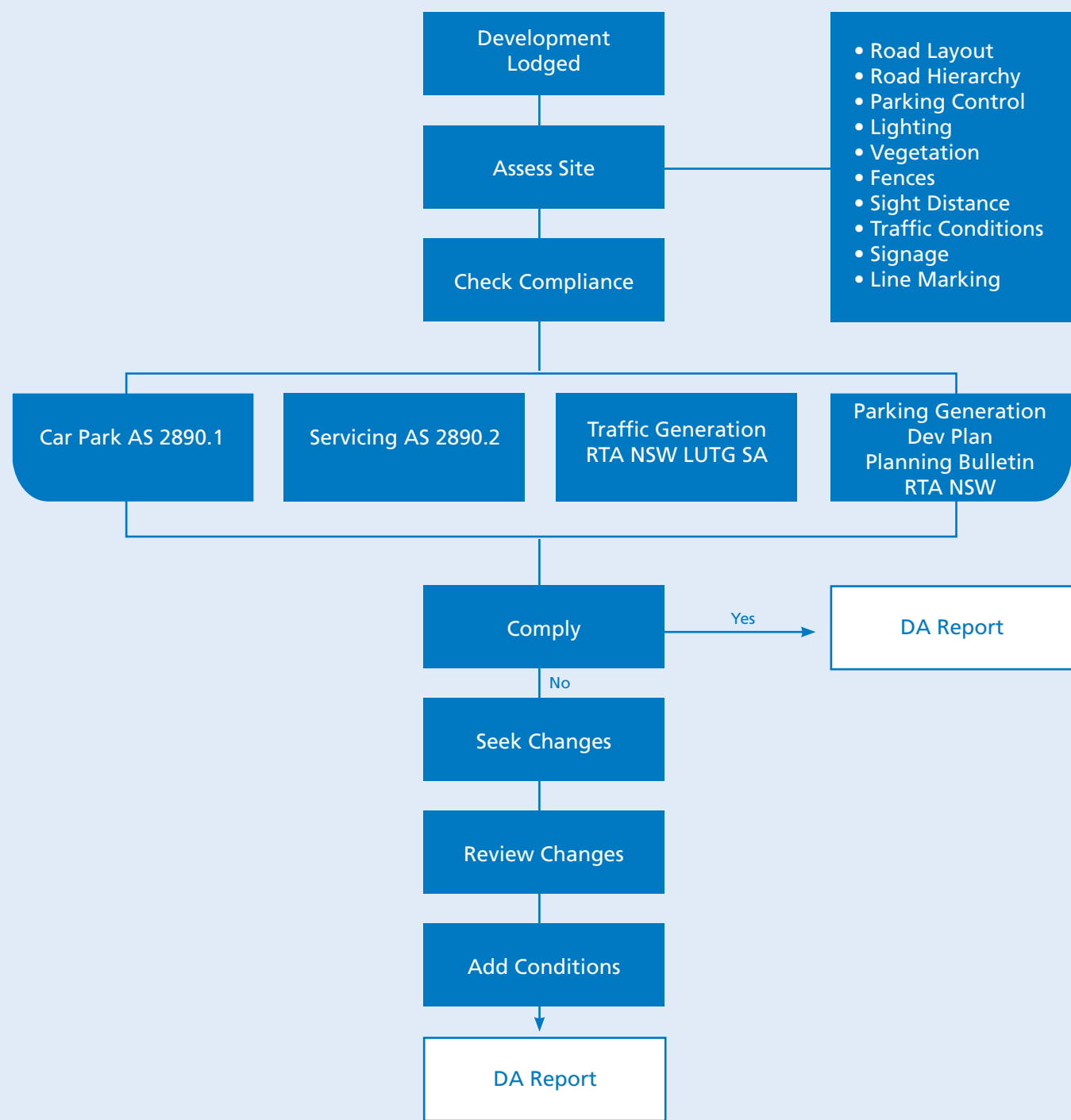
Template 1 Single Street Issue



Template 2 LATM Type Issue



Template 3 Development Assessment Procedure





Recommendations

- Adopt the above templates for the assessment of traffic issues.



Part Three

Parking Management



1.0

Introduction

Parking management is about making efficient use of parking resources. Parking resources include on-street parking (utilising the road network) and off-street parking.

Parking demand is generated by a variety of land uses such as commercial and retail lands uses, schools, recreational and residential land uses. Each of these land uses have their own distinctive parking characteristics, whether by time of day or day of the week.

The City of West Torrens is located in an urban area with a varied mix of land uses and increasingly higher urban residential densities. The road network is generally fixed by site constraints such as road reserve widths. As a consequence, the amount of kerbside parking is limited.

The regeneration of many areas within the City and increasing new developments have resulted in increasing parking demand, that, if

not met by off-street parking, would overflow onto the on-street parking in the road network.

This is one of the primary parking issues faced by the City.

'The regeneration of many areas within the city, and increasing new developments, have resulted in increasing parking demand.'





2.0

Objectives and Setting Criteria

Setting objectives for parking management allows the efficient management of this limited resource on a strategic level.

A possible approach to setting objectives is as follows:

Primary Objectives:

- Provide adequate parking for the various land uses in the City.
- Improve the efficiency of parking through effective management of parking spaces.

- Ensure that new developments provide adequate parking for the land uses proposed.

Secondary Objectives:

- Adopt a consistent approach to the setting of parking controls.
- Avoid transferring the parking problem from one street to another.

Recommendation

- Adopt the above Objectives for parking management.



Recommendations

- Adopt the Objectives in Section 2.0 for parking management.



3.0

Guidelines for Parking Management

Parking design is governed by a number of standards which allows consistency to be achieved Australia-wide.

National Standards

The design and management of on-street parking spaces is governed by **Australian Standard 22890.5 Part 5 On-Street Parking Facilities**. This standard sets dimensions for various forms of on-street parking including angled parking and parallel parking.

Design Standard, **Guide to Traffic Engineering Practice Part 11 Parking** provides guidelines on on-street and off-street parking. The standard sets dimensions for the various parking layouts in on-street and off-street car parks and also provides guidelines on methods to survey parking usage, setting parking policies and management of parking controls.

Australian Standard 1742.11 lists the complete range of parking control signage and pavement markings in the area of parking management.

Design standard, **Australian/New Zealand 2890.1 Part 1 Off-Street Parking Facilities** provides guidelines on the design of off-street car parks. This standard is used in particular for assessing car parks proposed in development applications.

Design standard, **Australian Standard 2890.2 Part 2 Off-Street Commercial Vehicle Facilities** provides guidelines on the design of servicing and loading areas of land uses. This standard is used particularly for assessing servicing requirements of loading areas proposed in development applications.

Australian Road Rules lists the legal requirements on traffic and parking matters. It clearly sets out the parking requirements for all situations in on-street areas.

State Standards

The *Code of Technical Requirements for the Legal Use of Traffic Control Devices* governs the use of parking controls in South Australia. Through Ministerial delegation, some of the parking controls can be installed by Council without DTEI or Ministerial approval.

Council Practices

The Development Plan sets parking requirements for various forms of land uses for new developments.

The City also has a number of policies in relation to parking management.



A grayscale photograph showing a close-up of a car's interior. The focus is on the rearview mirror and the dashboard area below it. The mirror is mounted on the windshield. The dashboard has a curved, modern design with a speaker grille. The image is used as a background for the slide.

4.0

Overview of Current Parking Issues

A brief summary of the known parking issues in the City of West Torrens is listed below.

Event-generated Parking Problems

Thebarton Oval

Background:

- SANFL matches
- restricted width streets
- driver resistance to pay for off-street parking.

Land use:

- predominantly residential
- Kings Reserve
- Thebarton Aquatic Centre.

Issues:

- within 10 metres of intersections
- obstructing / within 1 metre of fire plugs
- obstructing residential driveways
- parking in areas prohibited when oval in use.

Richmond Oval

Background:

- SANFL matches
- restricted width streets
- limited availability of off-street parking.

Land use:

- predominantly residential.

Issues:

- parking in areas prohibited when oval in use
- within 10 metres of intersections
- obstructing residential driveways.
- Star Theatre, Hilton

Background:

- restricted width streets
- no available off-street parking.

Land use:

- commercial on Sir Donald Bradman Drive
- predominantly residential.

Issues:

- obstructing residential driveways
- within 10 metres of intersections
- parking in prohibited areas.

Thebarton Theatre, Torrensville

Background:

- night activity
- limited availability of off-street parking
- parking prohibited on arterial roads adjacent to the theatre.

Land use:

- commercial on Henley Beach Road and South Road
- predominantly residential.

Issues:

- obstructing residential driveways
- within 10 metres of intersections
- parking in prohibited areas
- obstructing / within 1 metre of fire plugs.

Morphettville Racecourse

Background:

- major race meetings only
- restricted width streets
- driver resistance to pay for off-street parking.

Land use:

- predominantly residential.

Issues:

- obstructing residential driveways
- within 10 metres of intersections
- parking in prohibited areas
- parking on footpath, verge, nature strip.

Bonython Park

Background:

- major events (Skyshow, Schutzenfest, circuses etc)
- weekend and night activities
- variable availability of off-street parking (weather dependant)
- driver resistance to pay for off-street parking
- parking prohibited on arterial road adjoining the park lands
- restricted width streets.

Land use:

- commercial land uses on Port Road
- predominantly commercial, some residential in adjoining streets.

Issues:

- parking in bicycle lane on Port Road
- parking in other prohibited areas
- within 10 metres of intersections
- parking on footpath, verge, nature strip
- obstructing residential driveways
- obstructing business driveways and car parks.

Business/commercial generated intrusion into residential areas

Ashford

Background:

- adjacent to Ashford Hospital
- driver resistance to pay for off-street parking
- restricted width streets.

Overview of Current Parking Issues

Land use:

- mixed commercial and residential in adjoining streets.

Issues:

- parking in prohibited areas
- within 10 metres of intersections
- obstructing residential driveways
- parking in excess of time limits.

Lockleys EDS

Background:

- adjacent to EDS Centre
- off-street parking demand exceeds availability
- driver resistance to pay for off-street parking permits.

Land use:

- predominantly residential
- Lockleys North Primary School.

Issues:

- parking in prohibited areas
- within 10 metres of intersections
- parking in excess of time limits
- obstructing residential driveways.

Mile End

Background:

- streets adjacent/adjoining retail and commercial areas (Henley Beach Road, Sir Donald Bradman Drive, South Road)
- limited availability of off-street parking
- commuter parking.

Land use:

- predominantly residential
- Telstra, St George College, BEA Motors
- churches, medical centres.

Issues:

- parking in prohibited areas

- parking in excess of time limits
- obstructing residential driveways
- within 10 metres of intersections.

Torrensvile

Background:

- streets adjacent/adjoining commercial areas (Henley Beach Road, Ashwin Parade, Ashley Street, Stephens Avenue)
- limited availability of off-street parking.

Land use:

- mixed commercial and residential in some streets
- predominantly residential
- Thebarton Senior College, Thebarton Aquatic Centre.

Issues:

- parking in prohibited areas
- parking in excess of time limits
- within 10 metres of intersections
- obstructing residential driveways.

Hilton, Keswick, Thebarton

Background:

- streets adjacent/adjoining retail and commercial areas
- established older areas with insufficient off-street staff and customer parking.

Land use:

- predominantly residential
- mixed commercial and residential in some streets.

Issues:

- parking in prohibited areas
- parking in excess of time limits
- obstructing residential driveways
- within 10 metres of intersections.



5.0

Overview of Future Parking Characteristics

'Increasingly, higher density housing is becoming the norm in residential areas. As a consequence, parking demand may flow onto the road system, resulting in increasing competition for limited road space.'

The land use changes in the City is a significant source of increasing parking demands.

For land uses that have been in existence for many years, for example in the District Centre in Torrensville, the provision of off-street parking has in many instances not been a requirement in the past. As a consequence, the increase in business associated with these premises has resulted in increasing parking demands on the road network.

An example is an existing restaurant with no off-street parking. If there is no change of use proposed, the City has no enforcement power to require an existing restaurant to provide off-street parking. Therefore, as the restaurant becomes popular, customer parking generated would have to rely solely on on-street parking.

Other "trends" are summarised below.

Residential land uses

Increasingly, higher density is becoming the "norm" in residential areas. Where previously only one property was located in a relatively large allotment, sub-division or development results in two or sometimes three dwellings on

the same allotment. As a consequence, the parking demand generated by the same allotment would be more than doubled. If adequate off-street parking is not provided, the parking demand would flow onto the road system resulting in increasing competition for the limited road space.

The standard 2-vehicle household also appears to be changing. As adult children remain longer in the household, parking demand also increases per household if the adult children own cars.

Retail land uses

With the extension of trading hours for retail and 7-day trading now permitted, the peak parking of these users have reduced. In the past, most councils apply a parking rate of 7 spaces per 100m² to retail floor space. In recent years, this has reduced to 5.5 spaces per 100m².

In the case of the Torrensville District Centre, many of the shops and supermarkets have not provided adequate off-street parking and therefore on-street parking is very high in the side streets adjacent to this centre. As a result, residents are affected.

Monitoring of the parking conditions in these situations would assist in quantifying the increase in parking demand associated with retail land uses.

Schools

School parking is characterised by very high peaks during the starting and dismissal periods. As a rule of thumb, a 600-student primary school would be

expected to generate a parent pick up demand of 1 space per 6 students, ie 100 spaces.

Such a high parking demand of very short duration is difficult to manage, particularly with limited road space for on-street parking. In most instances, this short term parking demand is accommodated by the road system. The City has to, therefore, design parking controls, manage and enforce these controls to maximise the parking availability for the school.

Many private schools have provision for off-street parking for staff and student parking, bus parking and also some parent parking.

For public schools, it has been the policy of the State Government to not provide off-street parking for parents, due to liability concerns. As a consequence, total reliance on on-street parking is necessary.

Any proposed expansion of existing schools should therefore be assessed very carefully to ensure that adequate parking is provided off-street, or that the impact of on-street parking is not overly detrimental on adjacent land uses.

Other specific land uses

There are a number of "non-standard" land uses that are large parking generators. Examples include hospitals and call centres.

For instance, Ashford Hospital generates high staff parking demands, particularly during shift overlaps. As many staff do not wish to pay for parking in the off-street car park

nearby, the parking demand flows onto the road network, with consequent impact on adjacent land uses.

While new developments are reviewed comprehensively with respect to parking adequacy, the above land uses are existing land uses where it would not be possible to force additional off-street parking on these land uses. Therefore, increasing parking demands, for example with the employment of additional staff, would exacerbate the on-street parking situation in these areas.

Impact of Airport developments

The largest developments in the City are occurring within the Airport precinct. As State Planning regulations do not apply for the Airport precinct, there are significant concerns about the impact of parking from the proposed developments. Intrusion into the residential areas would result in increased complaints from residents.

While the City is able to provide comments on the adequacy of parking for various proposed developments within the Airport precinct, continuing monitoring of the parking impacts of the precinct is necessary and parking control action may need to be taken to protect residential amenity in these critical areas.

Summary

Future parking requirements can be set through the Development Plan for the City of West Torrens. The current review, *The future of West Torrens Section 30 Development Plan Review Issues Paper*, would include a review of the appropriateness of the previous parking requirement rates.





6.0

Overview of Possible Parking Actions

6.1 Use of relevant standards

The standards listed in Section 3.0 should be used to assess parking issues in on-street and off-street parking areas. In addition, the following design guidelines should also be used for assessing new developments:

- Guide to Traffic Generating Developments Road Traffic Authority New South Wales
- Planning Bulletin – parking for selected land uses (SA)
- Land use Parking Generation Guidelines (SA).

Recommendation

- Ensure that the relevant parking standards are used in the design and assessment of parking matters.

6.2 Development Plan

A review of the Development Plan is currently in progress. This review would also look at the appropriateness of the previous parking rates for various land uses. Parking rates should reflect the future trends in parking and the changing nature of various land uses.

Recommendation

- Review and update the parking rates in the Development Plan for assessing new developments.
- Ensure that the Development Plan requirements and other relevant standards are used to determine parking provision for new developments.

6.3 Key parking reviews

There have been few area-wide parking reviews undertaken in the City, the exception being the Ashford Parking Study completed in 2006.

An area-wide study would allow parking management strategies on an area-wide basis to be developed. Such an approach would consider the spread of the existing parking demands, the parking characteristics of the users and the impacts on surrounding land uses. From this assessment, strategies on parking controls, such as what time limit controls to use, can then be formulated. The implication of making parking control changes in one street and the impact on another street can be forecast.

Five key areas identified for such a review as follows:

Key Area 1 - District Centre Torrensville

This is a major District Centre in the City with a variety of land uses such as restaurants, shops, supermarket, offices and residential properties. Many of the streets are currently time limited. However, there has not been a major review undertaken of the usage of on-street parking, how long customers stay and also the occupancy of the many off-street car parks.

This major review would allow the City to amend and develop an improved parking management strategy for all users on a strategic level.

Key Area 2 - Kurralta Park Centre

Future expansion of the centre could result in increased parking in the adjacent residential streets. In the past, there have been concerns about truck servicing the centre parking in the nearby streets.

Overview of Possible Parking Issues

An area-wide review would allow the parking demand and parking characteristic to be quantified. Measures to manage the parking on-street can then be developed on a strategic level.

Key Area 3 - Schools

The high parking demands generated by schools should be reviewed to determine if improvements could be made to facilitate the short-term parking demands. The review for schools should also include an assessment of off-street parking opportunities. Even if it is a public school, off-street parking opportunities should be reviewed and recommended to State Government for action if the measure would improve parking and safety for schools.

A detailed review of parking for all schools is recommended.

Key Area 4 - EDS Lockleys

Parking issues associated with

the above land use are continuing to be experienced in the surrounding area. Intrusion of staff parking in streets quite remote from EDS, such as Autumn Avenue, is increasingly occurring. While in the past the City has taken action to implement parking controls to manage this issue on a street by street basis, an area-wide review of the parking conditions in the area around EDS would be beneficial, given that it has been many years since such an area-wide review was undertaken.

The findings from a major review of this nature would allow the City to develop parking management measures on a strategic level.

Ashford Hospital

A detailed area-wide review was completed in 2006 and recommendations adopted for implementation.

Key Area 5 – Review of narrow streets

Parking controls on narrow streets should be reviewed with respect to compliance with the Australia Road Rules and to facilitate access to properties. Under the Road Rules, a 3.0m wide lane must be available for traffic access. Streets which are generally narrower than 7.6m would not accommodate parking on both sides.

A review of these narrow streets should be undertaken in a structured manner and options considered on how to best manage the on-street parking whilst minimising the impact on affected land uses.

The suggested parking management for narrow streets is as follows.

Recommendation

Instigate area-wide parking reviews for the key areas identified in this report to formulate parking measures on a strategic level.

Street width	Option	Consideration
< 6.0m	Prohibit parking on one side	Assess - if parking is required. - Identify the side with the least impact.
< 6.0m	Prohibit parking on both sides	Assess - if accessibility is an issue. - compliance with ARR
< 7.6m	Prohibit parking on one side	Assess - Level of parking demand*. - Effect of traffic flow. - Identify the side with the least impact.
	Prohibit parking on both sides	Assess: - Effect on traffic flow, traffic volume, safety, vehicle composition.

* If the parking demand is high, the likelihood of parking on both sides would be higher, resulting in more instances of non-compliance with ARR. Criteria: peak occupancy >50% of street parking capacity (based on parking survey during a busy period).

Recommendations

- Ensure that the relevant parking standards are used in the design and assessment of parking matters.
- Review and update the parking rates in the Development Plan for assessing new developments.
- Ensure that the Development Plan requirements and other relevant standards are used to determine parking provision for new developments.
- Instigate area-wide parking reviews for the key areas identified in this report to formulate parking measures on a strategic level.

The background of the slide is a grayscale photograph of a parking sign. The sign is dark with a large white 'P' at the top and a white wheelchair symbol below it. The sign is slightly tilted. A blue horizontal bar is at the bottom of the slide. Overlaid on the sign is a white dashed-line graphic consisting of several nested rounded rectangles. The text '7.0' is in a bold blue font, and the text 'Other Possible Parking Considerations' is in a white sans-serif font on the blue bar.

7.0

Other Possible Parking Considerations

7.1 Parking meters

The concept of paid parking (parking meters) was previously considered in the Ashford Hospital area but was not found to be cost-effective or feasible.

It may be that as parking demands increase to a level where more significant control of parking is necessary, the use of meter parking may help alleviate parking conditions in a particular area. However, it is not apparent that there are any critical areas where such a measure would be appropriate at the present time.

However, the option of meter parking should not be discounted as a future possible parking measure.

7.2 Adelaide Airport developments

Monitoring of the potential impacts of parking overflow from the Airport development should be undertaken. Critical areas include Brooklyn Park opposite IKEA, Lockleys (Rutland Avenue area) opposite the Burbridge Business Park and West Beach opposite the Harbour Town development.

Enforcement of the parking controls within the Airport precinct is currently being undertaken by staff of AAL, by delegation from the City.

Recommendation

- Monitor the parking impact of Airport developments on the surrounding areas and take necessary action to minimise the impacts where appropriate.

7.3 Private Parking Areas Act

The City currently has a number of Private Parking Areas Act agreements with private owners, including:

- Torrensville Plaza shopping centre – Henley Beach Road Mile End.
- Designer Direct – Port Road Thebarton.
- Police Credit Union car park – Hampton Road Keswick.
- Australian National Building car park – Richmond Road Keswick.
- W heatsheaf Hotel – George Street Thebarton
- Centrelink – Henley Beach Road Torrensville.
- Ashford Hospital – Reid Street, vacant land and car parks Ashford.
- The enforcement of these private parking areas would assist in making these car parks more efficient by turning over parking. Some of the above agreements involve small car parks while the Torrensville Plaza shopping centre would be relatively large.

A criteria should be developed to assist in establishing the types of private parking areas that the City could undertake the enforcement function. The criteria may need to give consideration to the minimum size of the private car park involved, the parking conditions relevant to the particular area and the impact on administration/enforcement resources.

Recommendation

- Develop a criteria and procedure for enforcement of private parking areas.

7.4 Off-street car park consolidation

The City has previously assisted in identifying consolidation opportunities for private off-street car parks. Examples include the Henley Beach precinct in Torrensville and the private car parks for the furniture showrooms along Anzac Highway in Keswick.

Limited success resulted from these projects.

However, the consolidation of these private small car parks into a larger entity would have significant benefits in “strip shopping” situations where on-street parking is limited. The joining up of the small car parks would result in more efficient use of parking spaces, more effective and efficient access arrangements and increased parking spaces where mixed land uses are present.

Areas which warrant further consideration for car park consolidation opportunities include:

- Anzac Highway (continuing from the previous project in Keswick).
- Henley Beach Road Torrensville (reactivate this project).
- Henley Beach Road in general (where strip shopping is present).
- Marion Road (West Richmond and Richmond area where strip shopping is present and where DTEI has recently implemented peak period bicycle lanes).

Recommendation

- Facilitate and develop strategies to consolidate off-street parks in key areas identified in this report.

Recommendations

- Monitor the parking impact of Airport developments on the surrounding areas and take necessary action to minimise the impacts where appropriate.
- Develop a criteria and procedure for enforcement of private parking areas.
- Facilitate and develop strategies to consolidate off-street parks in key areas identified in this report.



8.0

How Parking Controls are Implemented

How Parking Controls are Implemented

8.1 Current Practice – single street issue

The process used in determining and implementing parking controls would look comprehensively at the underlying parking issue before parking controls are considered.

The process seeks to ensure that any parking control proposals implemented are able to address the targeted issue, complies with the relevant regulations and are able to be effectively enforced.

Factors used to determine types of parking control installed:

- identify the problem requiring attention (traffic hazard, traffic flow restriction, restricted access to premises, lack of available on-street parking, no valid problem, etc)
- determine the cause of the problem (limited visibility, limited road width, road design/layout, unrestricted parking, etc)
- identify the source/generator of the problem (commuter, business, resident, visitor, event, etc)
- determine the timing and duration of the problem (business hours, peak periods, all hours, week end, day, night, short term, long term, etc);
- classify the problem – is it a safety issue, an access issue or a convenience issue?
- will parking controls alone remedy the problem or are traffic or other controls required?

Based on the above, determine if parking can then legally/safely/conveniently be continued in the location:

- if no, prohibit stopping and/or parking

- if yes, control/limit the time / days / duration of parking and/or limit the type / class of vehicles which may be parked.

The type of control chosen is based on compliance with Australian Standards, Road Traffic Act, Australian Road Rules, Code of Technical Requirements for the Legal Use of Traffic Control Devices and consultation with affected parties and subject to:

- will the control effectively remedy the problem?
- is it appropriate to the circumstances (not unduly or unnecessarily restrictive)?
- is the control able to be effectively policed?

Recommendation

- Maintain the current approach to determine requests for parking controls in the City.

8.2 Strategic level consideration

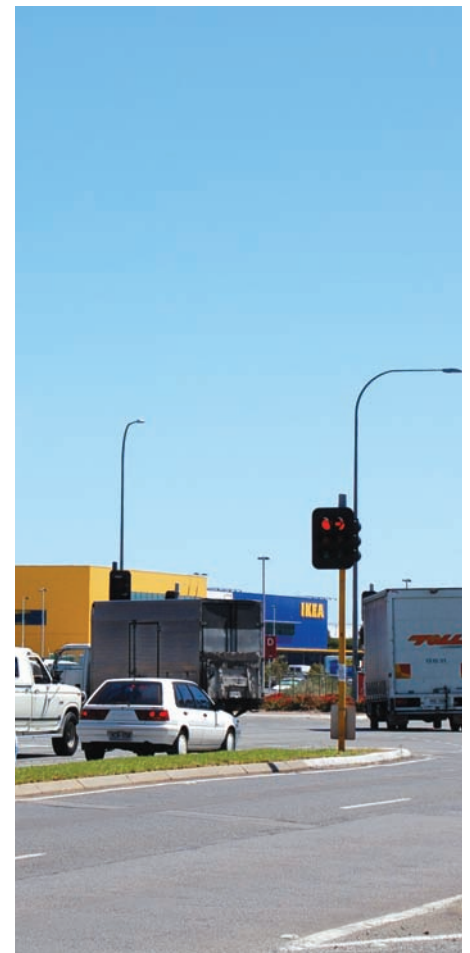
Four key areas (see Section 6.3) have been recommended for area-wide reviews and development of strategies. An additional key area which has been completed recently is the Ashford Parking Study.

Once the area-wide strategies have been adopted, any future single street parking assessment (the process documented in Section 8.1) would need to have further regard to the strategic level strategies for these key areas, if the street is located within these key areas. This would ensure that consideration of parking controls for a street is consistent with the strategy for the overall area.

An example would be, if removal of time limit controls in a particular street length appears feasible based on a “localised” assessment, it may not be appropriate from a strategic level if there is a large parking generator present in the area that in turn may create staff parking problems in the particular street if the time limit controls were to be removed.

Recommendation

- Where requests are received for parking controls located within the key areas identified in Section 6.3, the requests should be assessed against those on a strategic level for those key areas.





Recommendations

- Maintain the current approach to determine requests for parking controls in the City.
- Where requests are received for parking controls located within the key areas identified in Section 6.3, the requests should be assessed against those on a strategic level for those key areas.



List of References

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