

The District Council of Mount Barker



Transport Master Plan



Prepared by





In conjunction with



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Mayor's Foreword



The District Council of Mount Barker is one of the fastest growing councils in Australia. With significant population growth, the District Council of Mount Barker still offers an outstanding lifestyle with a diverse and progressive community, as well as great business opportunities. It is critical that we carefully plan for our future to achieve a positive, safe and sustainable future, whilst ensuring the lifestyle and business advantages of the District continue.

Transport and traffic management is an essential element of planning for growth and the development of our District. This Transport Master Plan informs the future direction for building successful, sustainable and efficient transport networks for the District. Council is preparing for the future by planning for infrastructure projects and implementing a series of actions and strategies for the District.

During the development of the Transport Master Plan there has been extensive consultation with both community and State Government, to ensure this is a robust Plan that is reflective of the needs of our community. This Plan deals with the transport investment and planning necessary in this time of population growth, and offers integrated and efficient transport solutions that meet future and current needs.

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Transport Master Plan

The *Transport Master Plan* is a comprehensive plan for the current and future transport needs of the District Council of Mount Barker. The Plan includes a focus on social, economic and environmental outcomes of transport decisions, as well as directing the future structure of the road network of the District.

The recent rapid growth and development of Mount Barker has highlighted the need for a plan to address the key transport challenges facing the District both now and over the next 20 years. This Transport Master Plan takes a strategic and multi-modal approach to these challenges (this means all modes of travel including private vehicles, heavy vehicles, public transport, cycling and walking). It also focuses on a higher level of integration taking into account land use planning and travel demand, the environment, social priorities and the accessibility needs of residents and businesses.

The Transport Master Plan has also been informed and guided by Council's 'Draft Community Strategic Plan', which includes Four Pillars and Five Goal Areas. The Four Pillars of the Community Strategic Plan are:

- Protecting and enhancing our natural environment
- Creating a vibrant and resilient community
- Respecting and promoting culture and heritage; and
- Facilitating growth of local business, economic and employment opportunities

The Five Goal Areas of the Community Strategic Plan are:

- People and Communities
- The Natural Environment
- Enterprise, Business and Industry
- Infrastructure and Human Settlements; and
- Council Leadership

Community Consultation

A community engagement program provided several opportunities for residents, businesses and community groups across the District Council of Mount Barker to have input into the Plan.

This process confirmed an overall project objective which is to ***develop a safe, integrated and efficient transport network that meets future and current needs.***

An aim of the process was to gain community views on:

- Key transport challenges facing the district as a whole
- Current and emerging issues and priority actions for inclusion in the Transport Master Plan.

The opportunities for community involvement were promoted through:

- A media release placed in *The Courier*
- Letters to district wide community groups, residents and traders associations outlining the project objectives, community workshop dates and a copy of the questionnaire
- Posters placed in township post offices at Mount Barker, Nairne, Hahndorf, Littlehampton and Meadows, advertising community workshop dates
- Two advertisements placed in *The Courier* in the weeks prior to the workshops being held
- Council's website – project information, community workshop dates and link to download and complete a questionnaire
- Questionnaires available at Council's Customer Service Desk during this period.

Two stakeholder workshops (government, business and local interest groups) were also conducted as part of the development of the district wide Mount Barker Transport Master Plan.

The workshops were designed by the consultancy team to collate ideas and information from the community, Council, businesses and stakeholders for the development of the Transport Master Plan.

Two full reports from the stakeholder workshops and the community consultation have been prepared and presented to Council and a summary report was available on Council's website. These reports contain all recorded comments as well as the consolidation of emerging strategies and solutions.

Key issues identified at the Community Workshops were:

- Lack of public transport services in and out of the District i.e. numbers of services, night and weekend services and connections between townships were a concern across the District. The need for a more flexible fleet of small feeder buses and greater Council leadership in advocating for improved public transport services in the district were suggested.
- Traffic congestion through townships and major intersections were a major concern across the district. 'Through' traffic, including freight traffic in the Main Street of Hahndorf, was identified as a priority issue by Meadows and Hahndorf workshop participants. Furthermore, the need for bypass roads to reduce the amount of 'through' traffic to preserve the "township feel" and amenity. The need for additional connectivity between the Freeway, Nairne and the eastern side of Mt Barker (i.e. Bald Hills Road) was also identified as a key initiative.
- Improvements to pedestrian, cyclist and disability access as well as safety were identified within the district as key objectives. More cycle paths linking townships and public facilities, more pedestrian crossings at major intersections, footpath improvements and extensions and the creation of a pedestrian mall in Mount Barker were suggested.

'Live' Document and Review

It is important to note that this Transport Master Plan is to be considered a 'Live' document that will be reviewed and updated as the need arises. The actions and strategies within this document have been developed within the context of information that was available at the time of publication. Although every effort was made to ensure the actions and strategies are robust, government policy, community opinion, key drivers and external influences are continuously evolving. The Transport Master Plan must also evolve to ensure it remains relevant and robust.

The focus of the Transport Master Plan

The Transport Master Plan identifies the key transport challenges predicted to occur by the region's growth and development and sets out a new direction and initiatives to meet these challenges over the next 20 years. There is a particular focus on strategies and actions for the next 1-3 years. The figure below illustrates the future vision of the Districts Transport network over the next 20 years.

Proposed Transport Network Plan for 2020

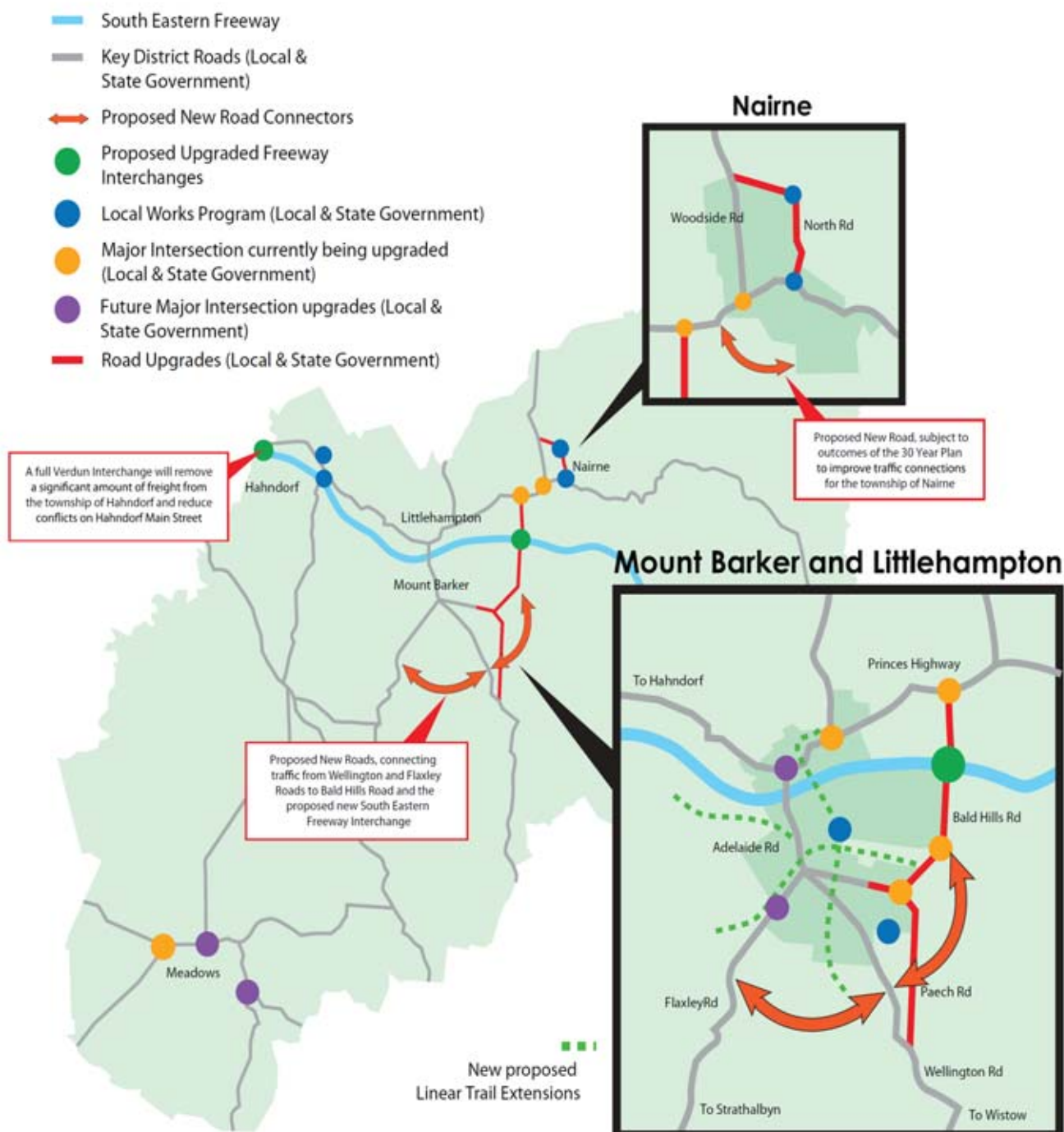


Figure 1 District Council of Mount Barker transport network 2020: Visualisation of actions and strategies contained within the Transport Master Plan



The Transport Master Plan has been developed for two practical reasons: to guide the activities of the District council of Mount Barker in transport network management, investment and program development, and to provide a clear policy statement reflecting the community's aspirations in advocating for funding and other assistance at all levels of government and the private sector.

The Transport Master Plan provides:

- Outcomes, strategies and actions that reflect the community's and council's aspirations and broad direction over the next 20 years. These have been tested against other State, Council and regional objectives to ensure consistency in direction.
- A one-to-five year action plan that reflects an immediate set of actions, initiatives and investments to progress this Plan. This will be updated on a regular basis.

The philosophical basis behind the Transport Master Plan is to apply a new way of thinking, away from just solving "hot spots", through the usual application of traffic based / geometric standards (short term outlook), to a transport system that takes account of these "hot spots" within the context of an integrated transport system within a changing and evolving growth context, national, state and local objectives and global shocks (energy, environmental and price changes) and opportunities.

The processes adopted by this Transport Master Plan focus on:

- uncovering key issues in the transport system, both current and future, that will constrain the social, environmental and economic development of the District;
- driving a collaborative approach between organisations, business, the community and the different levels of government to achieve ownership of the objectives and strategies of this Transport Master Plan.

Actions will potentially be more difficult to implement over time if there is no shared ownership of the key strategies and outcomes that underpin this strategy.

Objectives will also be viewed by different public and private sector groups in ways that reflect each group's primary interests, such as the achievement of particular environmental, economic or social outcomes. A requirement of this Transport Master Plan is for local, state, regional and national objectives to accord with the District's community vision (and vice versa)

As there are various external and internal drivers that can impact route and network planning, these drivers need to be identified at the start of the planning process so that the context within which subsequent analysis is undertaken and decisions are made is understood by technical staff, policy makers and stakeholders. Drivers can be high level (top down) or local/operational (bottom up). They include, but are not limited to:

- External drivers and patterns of demand; such as patterns of economic activity,

regional and global impacts and changes in the market place.

- Trends in vehicle technologies that may impact physical route requirements.
- Policy and other boundaries set by federal, state and local governments.



Key Drivers

The Draft Transport Master Plan has been established within the context of supportive research and information gathered during consultation. Community groups, residents, State Government agencies, council representatives and elected members have provided information through a series of consultation opportunities to ensure the content of this plan is robust, collaborative and encompasses all transport challenges.

Perhaps the biggest influence on future transport in the District is the expected rate of development and population increase in Mount Barker, Littlehampton and Nairne.

Census population figures for the District illustrate an annual population growth rate of approximately 3%. This has resulted in an average 300 extra dwellings per annum over the past eight years. Assuming this level of development will continue in the coming years, this is expected to generate an extra 35,000 vehicle trips per day, from and within the District, by 2026.

Of importance to population growth in the district is the draft *30 year Plan for Greater Adelaide For Greater Adelaide*, which will develop detailed Regional Plans for all areas of the State. This 30 year Plan for Greater Adelaide, coupled with the State Government's Growth Investigation Areas project to identify a 25 year supply of broad-acre land, may have implications for the future population of the District. The State government recognises the importance of this to "*occur hand in hand with transport and infrastructure planning*".¹ The 30 year Plan for Greater Adelaide is further discussed on page 14.

Inter-governmental Co-operation

Co-operation with adjoining councils, state and federal governments is essential to ensure appropriate network outcomes are reached. The importance of 'information-sharing' between the levels of government has been emphasized in the formation of the Transport Master Plan, and has influenced the strategies, network scenarios and the actions it contains. Alignment with state and federal policies and the recognition of possible funding opportunities are also important elements of inter-governmental co-operation.

Land Use Planning

Clearly defining the location of potential residential, commercial, industrial and agricultural land development is an important aspect of planning a future transport network. By estimating the potential traffic impact that specific land uses will have on the immediate and wider transport network, one is able to plan the supply of infrastructure and services to effectively respond to future demand.

However there is a degree of uncertainty for future potential land uses that create difficulties for transport infrastructure decisions, such as:

- Land use changes outside of the district relating to growing residential, industrial, agricultural, horticultural and viticultural activities will increase local and 'through' traffic on the District's road network.
- Future capacity for commercial activity in the CBD ('Central Business District' or Mount Barker town centre) is unclear, as it is likely to grow at an accelerated rate above residential growth levels due to its increasing regional importance. This will have an impact on 'radial' traffic routes leading into the CBD, car parking, as well as the configuration of roads within the CBD itself.
- Traditional population projection models cannot always take account of unforeseeable changes in market demand, migration patterns or environmental factors. However, strategic planning can prepare for various scenarios that account for these varying elements.
- The potential for industrial activity at Monarto or Murray Bridge may have an impact on transport through and to/from the District (see Figure 2).

An investment into road upgrades, ring-routes and interchanges will have a significant influence on future land development patterns.

¹ Planning SA website for the 25 year broadacre land supply:
<http://www.planning.sa.gov.au/go/overview/planning-reforms-2008/new-regional-plans-for-sa/new-30-year-plan-for-adelaide/25-year-broadacre-land-supply>

Global Shocks and External Influences

Global Shocks, such as oil price increases and climate change will have a direct effect on the transport decisions people make on a daily basis (where to travel to and how often). Preparing for these external shocks through building a robust Transport Master Plan will ensure that sound investment decisions are made. Recent indications both in Australia and overseas are that petrol pricing can lead to significantly altered travel behaviour and housing location choice.

Transport Mode Balance

The safety of all road users (including pedestrians, cyclists, buses, private vehicles and freight transport) is an ongoing concern for the community. A challenge is finding the right balance between speed, size and access to adjacent land uses for all road users that often compete for the same road space. The trade-off between efficiency (speed and congestion) and safety for the different road users and surrounding community has been carefully considered in the development of this plan.

Transport Disadvantage

Transport disadvantage is a situation where individuals/communities have difficulty accessing private transport or key public transport systems to be able to meet their daily needs or opportunities. It is often suggested that areas located at the urban fringe (such as Mount Barker) suffer from a higher degree of transport disadvantage due to limited access to public transport services or poor provision of local services and infrastructure. While the local residents of Mount Barker exhibit a high degree of private vehicle ownership (which partially offsets the impacts of transport disadvantage), their choice in the selection of transport mode or the service provided is low in some pockets of the District and/or some members of the community cannot drive a car (children, the elderly etc.). Therefore, a focus of the Transport Master Plan is on improving public transport, increasing participation in walking and cycling and implementing Travel

Demand Management programs (that reduce the need for wasteful travel). The supporting strategies and actions aim to reduce vehicle dependence and improve transport disadvantage.

The current Transport System

The current transport system of the District Council of Mount Barker is primarily based on a road network that caters for the transport needs of private vehicles, trucks, cyclists, pedestrians and buses. Like most areas of outer metropolitan Adelaide, the road network is the most significant aspect of the transport system. It supports 'a complex, multi-modal transport network runs throughout the outer metropolitan Adelaide region supporting a vast range of diverse activities including agriculture, industry, tourism, commuting, leisure and local travel. The network comprises unsealed local access roads, local authority roads, State Government-maintained roads, national freeways, *passenger (not in the case of this District)* and freight railway lines and a public transport network'² (see also Strategy 1.5).

The District of Mount Barker currently has 324 km of sealed and 439 km of unsealed roads.

The District has footpath networks within each township to service the needs of pedestrians, and a number of recreational trails for walking and cycling. This is underpinned by a strong Development Plan requiring all new development to meet a number of minimum standards.

The current Adelaide Metro provider operates in the District. The Hills Community Passenger Network provides information on transport options in the region and community transport (in the form of volunteer transport) as for the transport disadvantaged who do not have access to many transport options. These are the current forms of public transport, and although there is a rail line through the District there are no rail passenger services other than the infrequent operation of the Steam Ranger. Rail is however used to transport freight

² Extract from the Outer Metropolitan Transport Strategy (2007)

through the region (as part of the national network). Freight rail routes through the Adelaide Hills are currently under review by the State Government.

At present there is limited or no capacity for significant or widely accessible rail passenger options.



Policy Context

The Transport Master Plan accounts for federal, state and regional policy. This ensures that the strategies and actions contained within the Plan are aligned with these governing bodies assisting inter-governmental collaboration. Although alignment is important, the needs of the District's residents are first and foremost in Council policy. This process illustrates potential opportunities for funding or assistance from all levels of government. A 'stock-take' of influential government and regional documents was undertaken to assist this process.

LOCAL POLICY ALIGNMENT

Draft Community Strategic Plan: Strategic Directions 2008-2018

Links between the Community Strategic Plan and the Transport Master Plan are illustrated in Figure 4. It is important to reiterate the influence that the Community Strategic Plan's four 'pillars' and five goal areas have had on the Transport Master Plan, and to form links between Council documents so that continuity and confirmation of strategic direction is emphasised.

Southern and Hills Local Government Association 2010 Transport Plan (2001) and Addendum (2004, 2007)

The S&HLGA 2010 Transport Plan establishes recommendations and sets a strategic direction for the development of a transport network across the southern Adelaide and Hills region, as well as outlining achievable outcomes for the short to medium term. DC Mount Barker was involved in the formation of the S&HLGA Transport Plan, as were the other seven rural, regional and district councils of the region and the strategic contexts, goals and outcomes of the Plan have been considered in the formation of the DC Mt Barker Transport Master Plan. A number of actions were recommended and will be referred to in this document where necessary. Four strategic regional goals were developed as part of the plan that underpin regional transport planning"

1. "Economic Development" – A transport system that supports the economic, industry and trade development of the S&HLGA.
2. "Access" – An Equitable and accessible transport network that allows for consistent and reliable travel
3. "Road Safety" – A safe transport network where the severity and risk of accidents are minimised

4. "Environment" – A Transport network that minimises the impacts on the environment and communities.

The Southern and Hills LGA is currently undertaking a review of this plan and developing a 2020 plan for the region. As a member of the S&HLGA, The District Council of Mount Barker will ensure that any new actions will be consistent with this Transport Master Plan.

STATE POLICY ALIGNMENT

South Australian Strategic Plan

The SA Strategic Plan, 2007 is a state-wide action plan comprising 84 measurable targets: a 10 year plan with a planning horizon to 2050. There are six interrelated objectives: growing prosperity; improving wellbeing; attaining sustainability; fostering creativity; building communities; expanding opportunity. All key transport, infrastructure and land use strategies must accord with the South Australian Strategic Plan. There are a number of targets in the plan that directly or indirectly influence transport in the District.

- **Target 1.21 Strategic infrastructure:** match the national average in terms of investment in key economic and social infrastructure.
- **Target 1.22 Total population:** increase South Australia's population to 2 million by 2050, with an interim target of 1.64 million by 2014.
- **Target 2.9 Road safety:** by 2010, reduce road fatalities to less than 90 persons per year. And Target 2.10: by 2010 reduce serious injuries to less than 1000 per year.
- **Target 3.5 Greenhouse gas emissions reduction:** achieve the Kyoto target by limiting the state's greenhouse gas emissions to 108% of 1990 levels during 2008-2012, as a first step towards reducing emissions by 60% (to 40% of 1990 levels) by 2050.
- **Target 3.6 Public transport:** increase the use of public transport to 10% of

metropolitan weekday passenger vehicles kilometres travelled by 2018.

Strategic Infrastructure Plan for South Australia (2005)

The Strategic Infrastructure Plan for South Australia represents a major step forward in developing a more coordinated long-term approach to infrastructure provision throughout the State. It provides an overarching state framework for the planning and delivery of infrastructure by all government and private sector infrastructure providers. Strategic priorities for the next five and ten years are identified for 14 infrastructure sectors. The plan also presents opportunities for the improved management and use of the state's existing infrastructure assets as well as options for managing demand better so as to defer costly capital expenditure.

Although none of the Road, Rail, Aviation or People Movement projects in the Strategic Infrastructure Plan relate directly to the District, there are a number of Strategic Priorities that may influence state-made decisions for the region and District. These include:

- Coordinate public transport networks and facilities to maximize access to social services.
- Coordinate the development of urban planning and transport systems to maximise the economic, social and environmental benefits.
- Ensure South Australia receives a fair share of Australian Government funding commensurate with our population and transport network responsibilities, and
- Minimise the impact of freight vehicle movement on the community and environment by appropriately locating and protecting freight routes.

Strategic Infrastructure Plan for South Australia Regional Overview

The Regional Overview also includes a project to “*undertake an analysis for the development of a new access to the South Eastern Freeway near Mount Barker* (lead by Local Government)”. This Transport Master Plan forms part of this analysis, as it; incorporates previous studies on the Bald Hills interchange, provides additional information on the need for the interchange and reiterates its importance in the District-wide network.

Planning Strategy for the Outer Metropolitan Adelaide Region (December 2007)

The Strategy presents the South Australian Government's broad policy directions for the physical development of the state. This includes the Government's vision for sustainable land use and built development. It is a framework for guiding future development and assisting strategic planning and coordinated action on a statewide, regional and local level including the District Council of Mount Barker.

Key outcomes include:

- ‘Mount Barker will continue to function as the main regional township in the Central Hills Region. The town has an increasingly strong retailing and service sector; public and private schooling choices; continued accessibility to metropolitan Adelaide; and likely increased job opportunities associated with expanding food and value-adding industries’.
- An equitable transport system can reduce locational disadvantage and enable people to participate in a range of social, economic, recreation and other activities.

Key strategies include:

- Integrate transport and land use planning decisions to facilitate a safe, sustainable, efficient and effective transport network.
- Ensure transport infrastructure supports regional economic growth.

- Facilitate an effective freight transport network which provides for more efficient freight logistics, channels heavy vehicle traffic onto designated routes, shifts more freight from road to rail, and is protected from encroachment by incompatible activities.
- Recognise the strategic importance of intermodal facilities in facilitating efficient freight movement, particularly linking road, rail and sea transport. Maximise accessibility to and use of the public transport system through greater integration with land use to reduce the need for private vehicles.
- Ensure integrated transport and land use supports quality of life outcomes.
- Give priority to the safe movement of people and goods on transport networks.
- Provide for safe travel by sustainable transport modes, such as walking and cycling, in the management of transport routes and destinations.
- Ensure transport infrastructure supports conservation of the natural environment.

FEDERAL AND NATIONAL POLICY ALIGNMENT

Roads to Recovery and 'Blackspot' Programs

The Federal Governments 'Roads to Recovery and Blackspot' programs have provided funding opportunities to improve the condition and safety of the Districts road network. The programs provide local governments with additional funding to upgrade local road infrastructure, and Council is committed to seeking potential funding through these programs (as illustrated by Strategy 4.3). This needs to be reviewed in light of the funding implications of this Transport Master Plan.

Carbon Pollution Reduction Scheme: Green Paper 2008

As outlined in the Federal Government Green Paper (July, 2008) road transport accounts for 12-13% of Australia's carbon emissions. The

Paper illustrates current and potential trends that will have an effect on transport emissions without intervention, and include shifts in the size of vehicles, influence of fuel prices and the proportionate shift to public transport. These issues are accounted for in the Transport Master Plan.

National Guidelines for Transport System Management, 2006

The federal government has prepared guidelines for the appraisal of infrastructure and non-infrastructure initiatives. These guidelines provide a very comprehensive assessment, appraisal and evaluation tools with an economics focus and therefore should be followed by the District Council when establishing a case for infrastructure improvements.

Auslink Corridor Strategies (2007)

These strategies identify the shortcomings in each national transport corridor³ (including the Melbourne - Adelaide corridor) and options for dealing with them as well as with expected growth consistent with a set of corridor objectives. They do not recommend specific projects, but provide a basis on which specific projects can be put forward.

The development of a second interchange to cater for growth in the region has been raised with both State and Federal Level of Government. While this is notionally supported as a key component of the District's future transport networks the funding and timing of this investment is still being determined.

'Areas close to Melbourne and Adelaide are influenced by the growth of the two cities and it is likely that additional road capacity, on and off ramps and further provision for access to the major approach routes will be needed' (Auslink, 2007 Adelaide to Melbourne Corridor Strategy)

³ A 'major transport corridor' is defined in this context as being a long-distance link between two major centres (such as Melbourne or Adelaide) predominantly by road or rail.

The estimated future growth suggests existing interchanges should operate at a satisfactory level of service until at least 2011. This is based on previous forecasts where the population in the Adelaide Hills region was forecast to continue to grow over the next two decades and by 2021 there would be some 7,700 (12 per cent) more people residing in the region compared with 2003. Analysis undertaken for this Transport Master Plan indicates this to be an underestimate by 30-50%.

Infrastructure Australia (IA) funding

The Australian Government announced a new, national approach to planning, funding and implementing the nation's future infrastructure needs.

The *Infrastructure Australia Act 2008* came into effect on 9 April 2008 paving the way to establish Infrastructure Australia.

Infrastructure Australia will develop a strategic blueprint for our nation's future infrastructure needs and - in partnership with the states, territories, local government and the private sector - facilitate its implementation.

Council is currently exploring opportunities for funding of the second interchange at Bald Hills Road⁴.

The 30 year Plan for Greater Adelaide

Adelaide faces major development challenges. Planning settings need to accommodate higher than anticipated rates of growth in infill and sensitively planned new release areas. Continual economic restructuring is transforming the industry base and further economic opportunities are required to support growth and underpin the city's way of life. Infrastructure is ageing and under pressure. Water resources are stretched and natural systems are threatened. And of course

unchecked climate change looks like it could hit the city harder than most.

The State Government has responded to these challenges with a series of reforms, including a State Strategic Plan and changes to the planning system. The Department of Planning and Local Government has been charged with responsibility for a significant further initiative - the development of a Draft 30 year Plan for Greater Adelaide. The Draft 30-Year Plan was released in July, 2009, and its key elements include:

- a planning context for Greater Adelaide—wide population, housing and employment targets, appropriate targets for environment conservation, climate change adaptation, wellbeing and community building;
- Sub-plans for the seven regional areas across Greater Adelaide (including Mount Barker) that link regional targets to economic growth, social infrastructure, natural resources availability and climate change adaptation;
- Guidance for state and local development planning policies and instruments;
- Spatial directions based on community engagement with Local Government, State Agencies, the private sector and general community.

The District Council of Mount Barker has reviewed the Draft 30-year Plan for Greater Adelaide, and has prepared a response to the Plan. Council does not oppose population growth but will only support managed growth which is financially, socially and ecologically sustainable, and clearly resolves several critical issues, all of which are detailed in Chapter 5 of the District Council response. Several of the key items that relate to the Transport Master Plan contained in this chapter are:

- Transit Oriented Development: Given the Adelaide Hills Regions has been targeted for population growth including a doubling of the population of the town of Mount Barker, it would be desirable to use this growth as an opportunity to obtain the

⁴ Being prepared by InfraPlan (Aust) Pty Ltd
<http://www.infrastructureaustralia.gov.au/>

ecologically sustainable built form espoused by the Plan

- **Funding for Infrastructure:** The draft 30 Year Plan outlines two key pieces of infrastructure associated with urban expansion within Mount Barker. These include: the Bald Hills Road/ South Eastern Freeway Interchange and the Mount Barker ring route or 'east-west connector'. Council has commissioned design and construction costs for these projects which are \$43 million and \$53 - \$70 million respectively
- **Transport:** The car dependant nature of the Council's urban areas already disenfranchises large sections of the community including the aged, youth, infirmed and those who do not drive. This is exacerbated by inadequate public transport services to meet intra-town, inter-town and intra-regional needs and a built form which is not conducive to walking and cycling. Given the intention of the draft Plan is to integrate infrastructure and service provision with planning, a resolution of the region's transport issues is imperative to the effective implementation of the Plan. This includes clear articulation of infrastructure and service funding and timing
- **Staging growth:** Map D7 within the draft 30 Year Plan identifies areas of urban expansion and proposes timeframes for their development. This is supported by policy which states structure plans should clearly designate the land requirements for infrastructure

The release of the final 30 year Plan for Greater Adelaide may have significant impacts on this Transport Master Plan, especially if land rezoning for the District is recommended by the State Government to occur over and above the current Development Plan. Given the uncertainties surrounding the outcomes from the 30 year Plan for Greater Adelaide, and the influence it will have on population growth

in the District, certain elements that have been explored, but are not concluded in this version of the TMP they are:

- 1. New Southern connector road (from Flaxley Road to Wellington Road);**
- 2. New local collector road (from Wellington Road to Sims Road/Paech Road junction);**
- 3. New Eastern connector road (from Sims Road/Paech Road junction to Springs Road/Bald Hills road intersection);**
- 4. Sims Road – external infrastructure arising from the proposed residential developments each side of the Mount Barker Waldorf School;**
- 5. The vicinity of St Francis De Sales College and adjacent Council land. This includes the potential to implement a pedestrian crossing across Dutton Road as well as improvements to lane and turning configurations.**

Rather than delay community engagement on a Transport Master Plan until the implications of these related processes are known, it was considered preferable to provide information to the community earlier in the form of this Plan. It is for this reason, amongst others, that the Transport Master Plan has been developed as a 'live document' subject to reviews and updates to ensure the Plan is robust and remains relevant.

Council has also stated to the State Government that any agreement with the outcomes of the 30 year Plan for Greater Adelaide be subject to:

- Council consideration for future population growth is conditional on the achievement of a sustainable urban form and community with ready access to living, working and social opportunities

- Commitment of State Government funding and support in advocating for Federal Government funding for the construction of the additional freeway interchange at Bald Hills Road, Mount Barker
- The staging of any population growth occur with provisions for infrastructure including road and trail networks
- The pre-condition of further growth requiring significant funding of infrastructure by the State, Local Government and the private sector.
- Future growth of the urban areas must be accompanied by a review of the Regional Town Centre
- A comprehensive improvement of public transport services is required to be aligned with future growth options
- Designing urban environments supportive for pedestrians and cyclists movements including identification and funding of a system of trails
- Provision of opportunities for localised employment and services must be considered and the structure, size, design and location of services in the Mount Barker CBD will need to be reviewed together with the feasibility of establishing satellite commercial centres
- Protection of iconic vistas and rural character is imperative

Other land use or transport planning projects currently or soon to be undertaken by Council that may also be impacted upon by the finalisation of the 30 year Plan for Greater Adelaide include:

- Stephenson Land – Concept Planning
- Mann Street Precinct Study (council owned sites) including CBD car parking considerations
- St Francis De Sales College Master Plan and adjacent Council Land – Concept Planning
- Bald Hills Road Upgrade, and Additional freeway Interchange at Bald Hills Road - Concept Design
- Transport implications of potential future and current residential development sites.

In the absence of a 'Department for Transport, Energy and Infrastructure' traffic model to predict the impact of a 30 year growth impact the consultants have developed a proxy transport analysis tool based on growth and traffic movements between a number of zones. A short précis of this tool is presented in Appendix B as well as growth assumptions of which an overview is presented in Section 01.

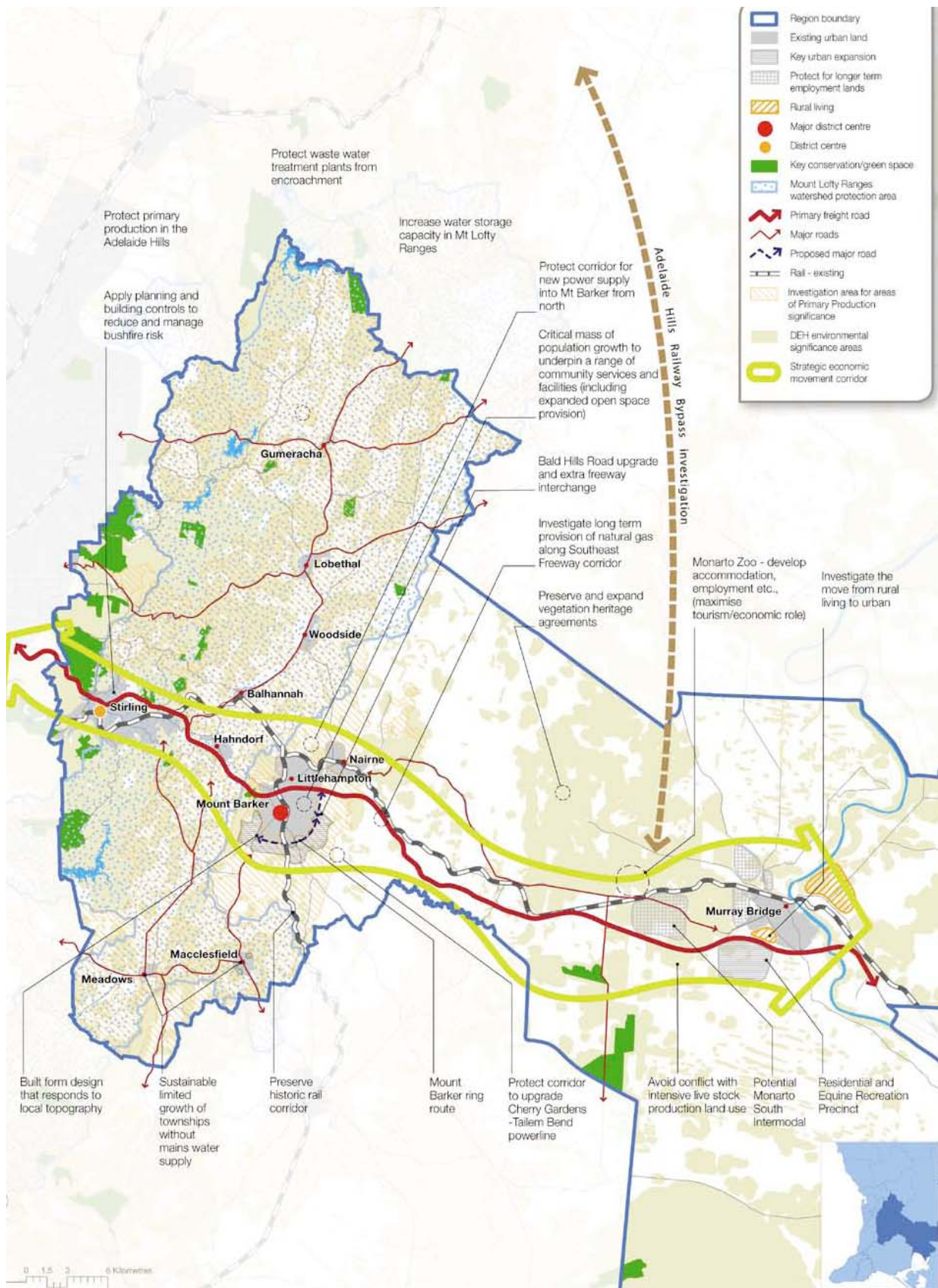


Figure 2: Map extract from the Draft 30 Year Plan (Map F7, Greater Adelaide Area).

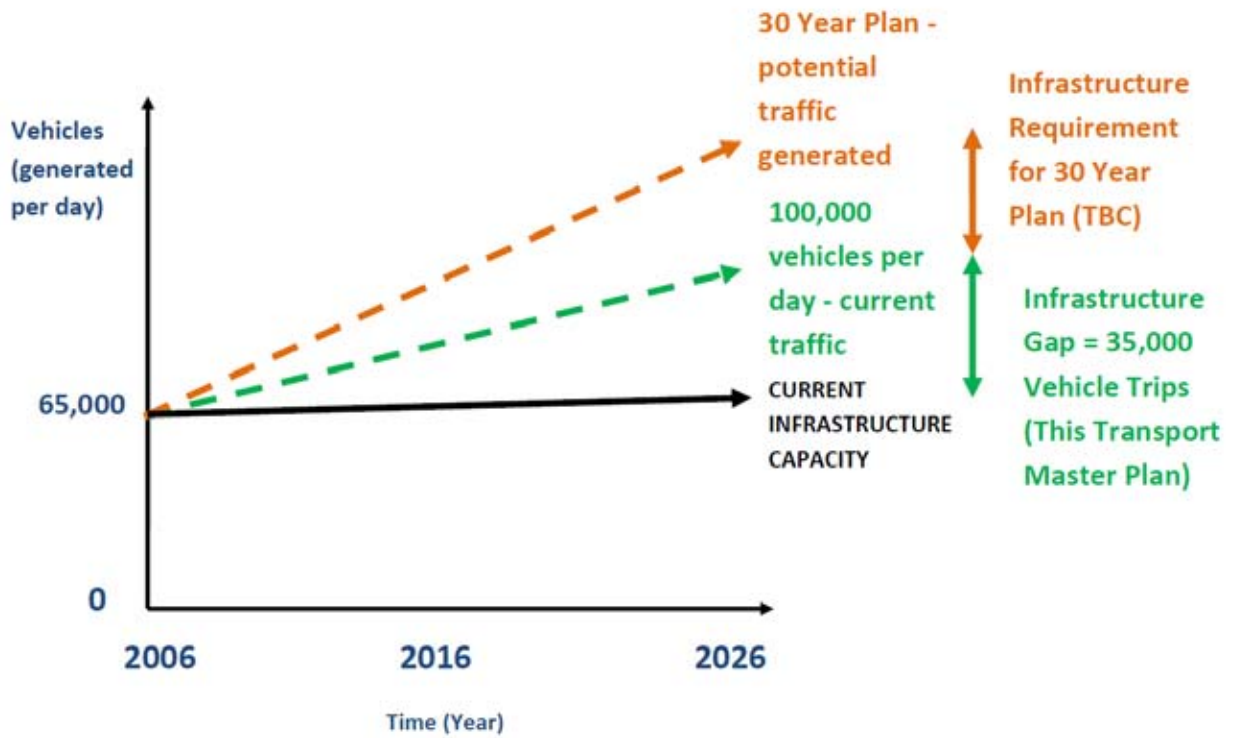


Figure 3 Vehicle trips per day and infrastructure implications (illustrative) of future growth and the 30 year Plan for Greater Adelaide

How to apply the Strategy and Actions

The Transport Master Plan establishes a 1-20 year scope, which consists of Outcomes and Strategies for the future of our District Council. The development of these Outcomes and Strategies was informed by community and stakeholder consultation as well as Council and Elected Member workshops. This process has led to a set of 5 Goal Areas for the Plan. These include:

- **Goal Area 01: Future Growth**
- **Goal Area 02: Public Transport**
- **Goal Area 03: Walking and Cycling**
- **Goal Area 04: Safety**
- **Goal Area 05: Travel Demand Management**

Each of these areas has an associated Outcome (see Figure 4: Goal Areas and Outcomes of the Transport Master Plan), which is intended to be achieved with in the next 1-20 years. As defined in the Draft

Community Strategic Plan, **Outcomes** are aims we want to achieve for our district at present and in the future, where as **Strategies** are the methods we intend to utilise in order to achieve these Outcomes.

Responsibility of Actions and Strategies

As well as clarifying how the actions and strategies are addressed, it will be important to define by whom they are to be addressed. Although this is a Council document, the District Council cannot be expected to directly implement all of its actions and strategies. The Council will however state its position and is able to adopt an advocacy role where it does not have any jurisdiction over the implementation of the strategy or action. Therefore, there are differing levels of responsibility expressed by the document:

Each of the Actions in the Transport Master Plan has been attributed one or more "Our Role" indicators which illustrate how the Council is to implement the actions. The following is a description of each of these council roles.

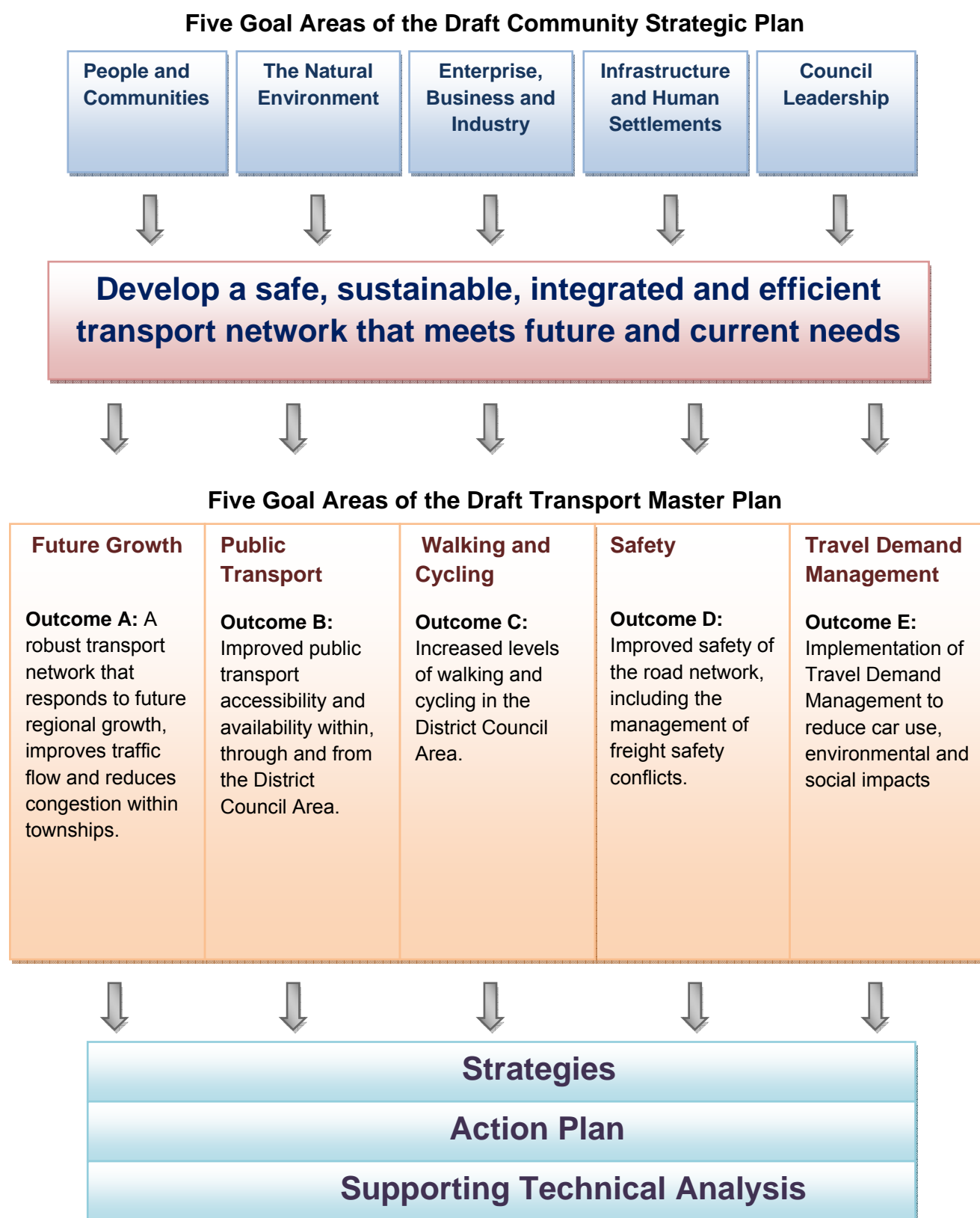


Figure 4: Goal Areas and Outcomes of the Transport Master Plan

OUR ROLE

Leadership	⇒ Council leading the community or local government sector by example
	⇒ Council setting directions to meet current and future needs, usually through policy, strategies, plans or reviews
Owner/custodian	⇒ Council fulfilling its obligations to manage the community's assets including buildings, facilities, public space, reserves and those of the natural environment
Regulatory	⇒ Council undertaking a particular role in response to legislation which may either be direct and specific or be general in nature such as 'duty of care'
Information provider	⇒ Council distributing or displaying community information produced by other agencies
	⇒ Council providing information to the public that Council has commissioned through Council reports and studies, website etc
	⇒ Council developing resources to promote a common understanding of key characteristics and trends relating to the City
Advocate	⇒ Council making representations on behalf of the community to one or more parties that has a direct role or influence with regard to the matter under consideration
Initiator/facilitator	⇒ Council bringing together stakeholders, or joining with other stakeholders, to collectively pursue a shared interest or service or to resolve an issue
Agent	⇒ Council providing a service on behalf of another party that funds the service, when the associated funding conditions accord with Council's own directions
Part Funder	⇒ Council contributing funds or resources, as one of a number of parties that contribute funds (or resources), towards an initiative or service
Direct service provider	⇒ Council fully funding and providing a service

"Our Role" definitions from *City of Onkaparinga Community Plan 2028: Strategic Directions for our Communities*, May 2008. (Reproduced with the permission from the City of Onkaparinga)



Future Growth

Outcome: A robust transport network that responds to future regional growth, improves traffic flow and reduces congestion within townships.

01

The expected future growth of the District Council will have a direct impact on the transport network. This creates the challenge of dealing with the associated traffic increase. It will be important to preserve the District's quality of life, whilst maintaining a safe, integrated and effective transport network for all users.

Transport Network Implications of Residential Growth and the '30 year Plan for Greater Adelaide'

Due to significant rate of residential growth there will be a proportionate increase in vehicle trips per day on the local road network. The transport system must cater for this future growth.

A quantitative assessment of residential growth and transport demand is provided in Appendix B.

In the absence of enough land to cater for current growth trends to 2026 the consultants have made various assumptions about where residential growth will occur beyond the recommendations of current Council Development Plan and proposed amendments to this Plan. These growth areas are shown in Appendix B, and distributed to 18 internal and 5 external growth/ traffic demand zones. It should be noted that the current draft 30 year Plan for Greater Adelaide may propose additional land development zones that are either different to the consultant's assumptions and/or over and above land highlighted for the Master Plan. Growth rates for the Master Plan are based on a combination of historic market trends in the region and the State Government's previous 2 million by 2050 forecast. This population forecast has now been significantly upgraded to a new 'high scenario' (underpinning the 30 Year Plan) based on current trends that show South Australia to be tracking to 2 million by 2027-2034. Therefore, the growth projections for DC Mount Barker may be significantly increased depending on where the State Government sees the growth allocation for the Greater Adelaide Metropolitan area is best

directed. This has certainly been reflected in the latest Draft 30 Year Plan.

Under this plan, Mount Barker will become a significant growth area in Adelaide's Outer Metropolitan area away from the Adelaide Hills watershed area for its reservoirs. Based on the population projections in the plan, Mt Barker and the adjacent towns of Littlehampton and Nairne are expected to more than double from 16,100 in 2009 to 36,400 in 2024, representing a growth rate of 5.6% per annum.

Agricultural Land as a constraint

The District consists of much agricultural land, with large areas being used for crops, dairy production, horse keeping and poultry. Viticulture and mixed horticultural enterprises are also of significance. Transport decisions must account for the current and future importance of these primary industries for the District. The Agricultural Significance Assessment for Mt Barker (PIRSA, 2003) indicates lands with high production potential, whilst development decisions may or may not necessarily constrain future growth to the west, east and south of Mount Barker the District must take account of the infrastructure impact of these decisions.

Industry and employment growth

While there are no significant employment clusters that are growing within the District the commercial centre of Mount Barker is expected to generate additional journey to work trips. Furthermore, as population in townships increase employment in service industries also expected to increase and the employment base is expected to widen due to this expansion, which may imply increased travel by residents to opportunities outside of the District.

Location of Trip Generation (private vehicle travel)

As indicated in the Draft Community Strategic Plan most of the expected residential growth will occur adjacent to Mount Barker, Littlehampton and Nairne, however the townships of Meadows and Macclesfield also

have the potential for future growth. Therefore, the network must be robust enough to accommodate township and regional growth in the District. As well as growth from and within the District, the network must also account for development within neighbouring council areas and the potential impact this may have on the District's transport network.

The location of additional vehicles trips expected to be generated by 2026⁵ is as follows:

- Mount Barker Township: 23,000
- Meadows: 2,500
- Nairne 3,500
- Other District locations: 6,000

If the population rate in the District and surrounding areas accelerated by double the current rate, the traffic impacts would be reached much sooner, perhaps by 2016.

Whilst planning for vehicle trips it will be important to understand the implications of, and to cater for, all trips by purpose and mode. As mentioned previously of the total 60,000 additional trips per day by 2026 (currently 100,000 trips) approximately 35,000 will be by car. However, some 15,000 trips will be as passengers in cars while 7,000 are expected to be by walking and 2,200 by public transport. The above table (based on more general data applied to Mount Barker as an approximation) indicates that home based work trips (Journey to Work) only account for about 8,500 trips per day and that social and recreation, shopping and school based trips will be just as critical in planning the transport system. **See Appendix B for assumptions.**

Regional Development

Growth outside the District in places such as Strathalbyn and Goolwa will lead to approximately 5,000 additional households⁶ (to 2026), of which approximately 25,000 car trips

will be generated⁷, some of which will use DC Mount Barker as a through route or final destination. If one third of all Journey to Work (JTW) and shopping trips utilise the Mount Barker road network then some 2,500 additional trips per day are estimated to impact on the District. These figures are conservative given they only take into consideration traffic generation assumptions for JTW and Shopping purpose trips, however it is useful to illustrate the impact that growth within surrounding regions will have on the District's road network.

Sensitivity Testing of Travel Demand Scenarios

The figures generated for the modes of transport of walking, cycling and public transport were based on 2006 Census data as well as mode splits from the Metropolitan Adelaide Household Travel Survey (1999).

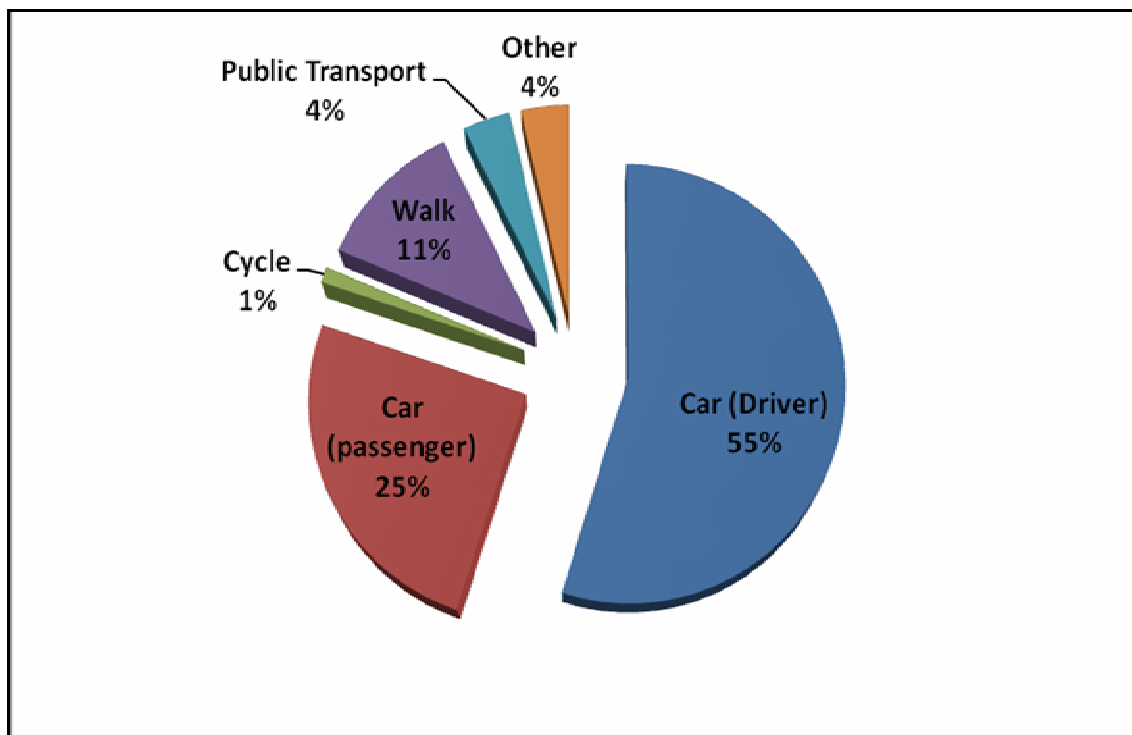
Sensitivity and robustness is not only useful for testing the effect of external drivers it can also help to predict the potential impact of 'Travel Demand Management' initiatives (see Section 05) and how this may impact on total trips. For example, by doubling all trips made by public transport and cycling (for all purposes) it was calculated that there would be a reduction in total vehicle trips in 2006 of 4138, a reduction in total vehicle trips in 2026 of 6596 and a reduction in total vehicle trip increase between 2006 - 2026 of only 2458.

While this represents an impressive reduction in travel demand underpinning the usefulness of *Travel Demand* strategies as outlined in *Section 05* the reduction is not enough to substantially reduce traffic (still creates an extra 30,658 vehicle trips to cater for by 2026) to a point where traffic congestion will not have a bearing on the transport system in the short and medium term. Nevertheless, it is essential that local government works towards reducing greenhouse gas emissions and reducing the social impact of private travel.

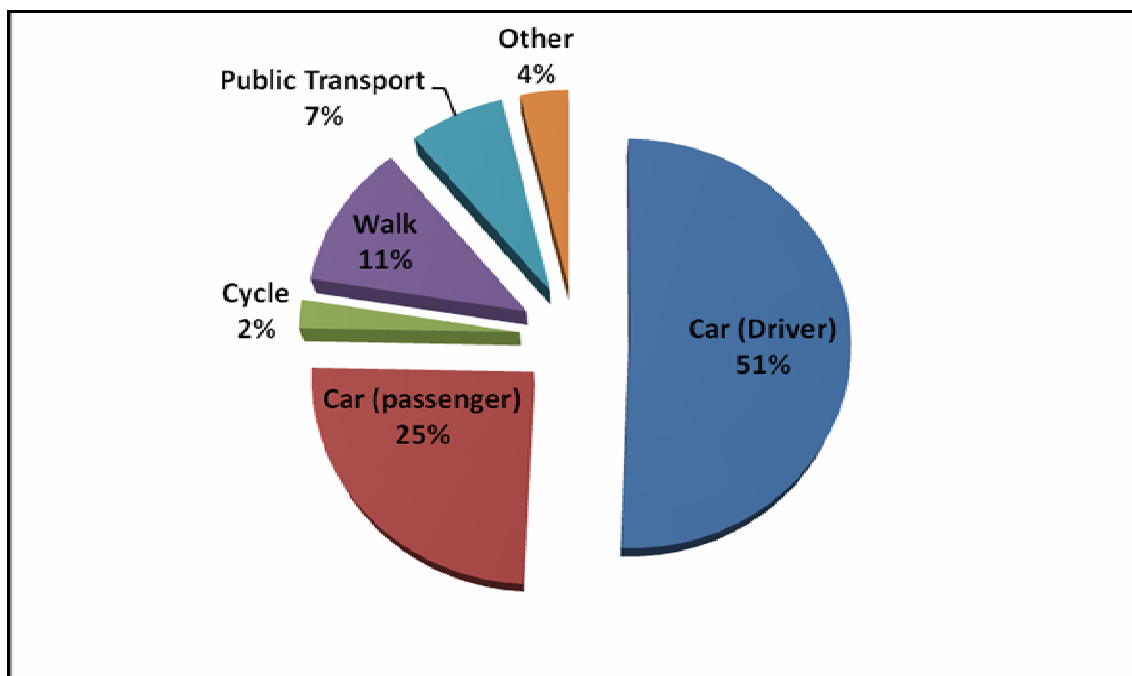
⁵ 2026 is the analysis horizon of this strategy

⁶ Based on an average annual growth rate of 1.75% from the Planning SA Population projections for the Outer Adelaide Metropolitan Area.

⁷ Based on a conservative rate of 5 car trips per dwelling per day.



Predicted DC Mount Barker mode share of trips with no change in travel habits.



Predicted DC Mount Barker mode share outcome of a doubling of public transport and cycling.

Mount Barker delivery traffic

Many of the challenges within Mount Barker directly relate to traffic congestion and impacts on the Central Business District. Separate supportive technical analysis assesses current and future options that indicate that parking and traffic congestion issues will increase as commercial activity increases in line with population and regional demands. Studies have shown that existing demand of consumables (food deliveries to supermarkets etc.) are at a rate of approximately 7,200 tonnes per thousand people originating from either Adelaide or Monarto (major distribution centres). Given the predicted increase in population by 2026 an additional 70,000 tonnes of deliveries are expected per annum (currently estimated at 190,000 tonnes per annum). This translates to approximately 14,000 additional truck movements per annum, which will only add to the conflicts between delivery trucks and other modes within the Mount Barker CBD⁸.

Land Use Planning and Transport Integration

Land use planning has a direct impact on transport decisions, and vice versa. The integration of transport and land use in decision making is an important aspect of achieving successful outcomes. Some of the key land use transport integration issues in the District include⁹:

- The need for development plans to adequately provide protection from incompatible developments
- The availability and location of land for industrial / commercial purposes in the rural areas should take into consideration all of the impacts on the transport system
- Arterial and other main roads pass through towns, and speed restrictions together with conflicts with town use has led to a number of operational and

planning issues that need to be addressed in the medium to long term

- On-farm developments are occurring throughout South Australia at an increased rate, and there associated issues with access and impacts on the road network.

Road Network Hierarchy

Rural arterial roads maintained by DTEI connect each of the town centres (see map in Strategy 1.5). These roads also provide connectivity with the adjacent land uses and within township “main streets”. These “main streets” provide access for inter and intra-regional traffic, while also providing for parking and pedestrian activities to the shop frontages in the main streets. This is no where more apparent than within the main street of Hahndorf.

Local road networks within the existing townships are generally informal. New subdivisions are typically developed with a clear road hierarchy including collector routes providing access to the arterial roads. The road hierarchy within the Mt Barker CBD has evolved over time but there is a lack of a clear definition of the primary function of each route. Most roads within the CBD appear to share the growing demand for access to shops, pedestrian activity, and ‘through’ traffic between residential areas. Ongoing development within the CBD continues to add traffic pressure across the CBD road network.

Previous transport plans for the District have sought to clearly define a road network through the application of ‘classical’ (freeway, primary arterial, secondary arterial, distributor, collector roads/streets etc.) and ‘functional’ (freight routes, public transport, commuter bicycle etc.) hierarchies, at the ‘route’ planning level, as mentioned previously. The process used by previous plans to derive actions is based on a set of operational guidelines (cross-section standards, parking, access, speed etc) applied against these routes; a ‘yes’ or ‘no’ warrant based logic meeting a number of traffic standards/criteria that subsequently lead to a set of actions at the route level. This style of

⁸ Assuming an average 5 tonne truck delivery.

⁹ As highlighted in the S&HLGA 2010 Transport Plan Addendum QED

planning has merit in testing the performance of a route within a set of road user expectations however it often fails to adequately test the robustness of a network within the context of community, government and business views and aspirations and the changing systemic context within which these views are formed. Furthermore, the process does not offer flexibility for specific social, environmental or economic situations and locations.

Moving towards a ‘Network Operating Strategy’

The District Council is ready to move towards a ‘Network Operating Strategy’ approach to ensure that higher level objectives drive the operation of individual routes so as to optimise the efficiency of movement and improve the safety of road users and the adjacent community. That is, network management applied at a ‘system’ wide level whereby the equitable distribution of road space and the performance needs of road users are achieved in a more global sense (accounting for social, environmental and economic drivers) through the application of desired standards. These are recommended to be applied to the Functional Road Use Hierarchy as outlined in Strategy 1.5.

Tourist traffic and Scenic Routes

Tourism within the region is significant over the summer months with Hahndorf being one of the State’s premier destinations for overseas and interstate tourists. While day trips to the district are common the increase in visitation to wineries and eco-tourism activities are also significant. One of the key challenges will be how to deal with the increasing freight/tourist traffic conflicts, which also includes pedestrians in key tourism precincts such as Hahndorf.

The Outer Metropolitan Strategy places emphasis on protecting and enhancing open space that has valued scenic qualities and/or cultural value to:

- Protect and enhance areas of high landscape and amenity value that form an attractive background to urban areas and tourist development, from inappropriate

development and through landscape screening where appropriate.

- Maintain and enhance the rural character of gateways to towns in the outer metropolitan Adelaide region.

Current Traffic Volumes (See Figure 5)

Current traffic volumes reflect locally and regionally generated demand for all trip purposes including journey to work, shopping trips, school and recreational based trips. Traffic movements between townships generally reflect current network connections and travel distances rather than any congestion constraints.

Northern DC Mount Barker network

Traffic from Balhannah, Oakbank, Woodside, Lobethal generally accesses the freeway via the Birdwood- Verdun Road with volumes that reflect the size of this catchment (7300 vpd). Traffic volumes within Handorf (7000 to 9500 vpd) reflect both locally generated traffic (from the east) as well as a ‘through’ traffic component (from the west) estimated to be approximately 2000 vpd, from locations to the north-west of the District to and from the Hahndorf – Echunga Road. This leads to relatively high daily volumes on Hahndorf’s Main Street given the capacity and speed environment of this tourist street, compromising the amenity of the street and the safety of local residents and tourists.

Traffic on the Main Street to the east of the Hahndorf-Echunga Road intersection is generally locally generated with a small ‘through’ component of traffic having a strong role in connecting the township to Mount Barker (some 5600 vpd use this road). Additional connections to the Verdun interchange may assist easterly movements and reduce traffic volumes on the Hahndorf Main Street (east of the Hahndorf Echunga Road). Commercial volumes within the Hahndorf township and to the east of Hahndorf – Echunga Road (480 cvpd – 5%) are comparable to commercial volumes through Woodside and Oakbank (500 and 420 cvpd respectively). This equates to approximately 150,000 commercial vehicles per annum (vans

to truck sizes). However, high seasonal movements relating to grape and timber movements push these volumes and truck sizes to unacceptable levels at certain times of the year because of the tendency for these trips to be undertaken over a short and intense period (see 'Seasonal freight movements' below)

Commercial volumes on the Aldgate-Whitehill Road (300 cvpd) reflect local commercial/industrial activity along this corridor. Traffic volumes on Littlehampton Main Street (Aldgate-White Hill Road) grow significantly from 6400 to 13800 vpd at the freeway interchange end however commercial volumes are relatively low (280 cvpd) on this road.

Traffic volumes and commercial vehicle counts on the short section of the Nairne Main Street between Woodside Road and Bald Hills Road are high pushing this section to its capacity for a two lane road (10100 vpd and 430 cvp)

Southern DC Mount Barker network

Traffic volumes on both Echunga and Battunga Roads are moderate (4100 and 2700 vpd) mainly catering for inter-regional movements. Flaxley and Wellington Roads also have relatively low traffic and commercial volumes outside the urbanised area of Mount Barker. Battunga Road commercial volumes (370 cvpd or 9% of the traffic volume) are relatively high compared to other surrounding roads.

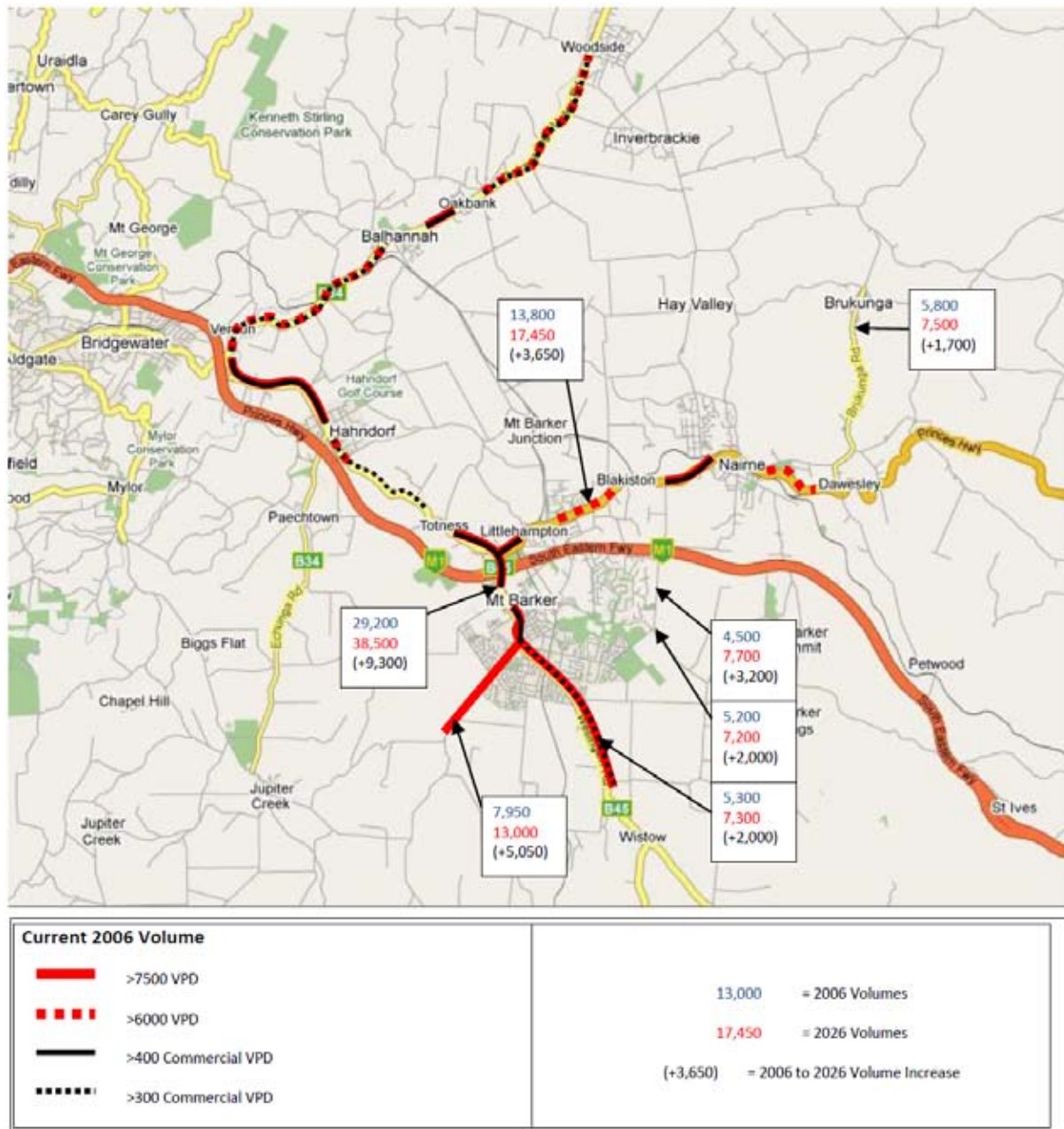


Figure 5: Traffic volumes, current and predicted (note these could be significantly higher with new development to the south, west or east of Mount Barker under the 30 Year plan – see Adelaide Road Interchange Analysis below).

Adelaide Road Interchange under a high growth Scenario

Together with the parallel rail link, the Adelaide – Melbourne road corridor is the principal link between the two cities. It provides a vital link in the freight flows between the eastern and central Australia and serves regions with a mix of urban and regional communities. As highlighted in the 2007 AusLink Melbourne – Adelaide Corridor Strategy, the corridor also plays a significant role in linking capital cities beyond the boundaries of South Australia and Victoria. Apart from the major inter-capital city freight movements, parts of the Adelaide –

Melbourne Corridor are used to transport significant volumes of freight between the capital cities and regional areas of production and consumption in South Australia, Victoria and New South Wales.

The road and rail corridor acts as a land bridge to the key sea ports and, to a lesser degree, airports. The corridor supports the movement of a number of important exports for both Victoria and South Australia, including grain and other agricultural products, timber and wine (see below).

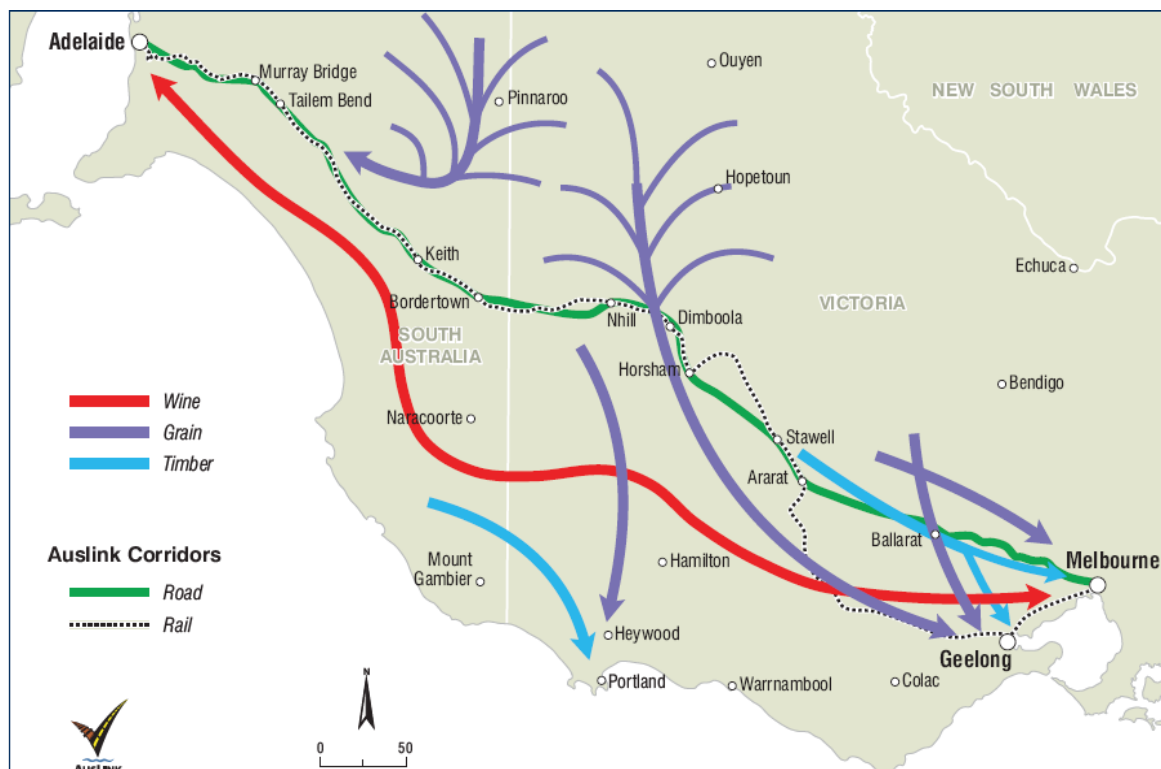


Figure 6 Timber, Wine and Grain movements between South Australia and Victoria

Current traffic counts indicate the relatively high volumes entering and exiting the freeway to and from the Adelaide direction (9400

vehicles per day entering and 8600 vehicles per day exiting). See Figure 7 below

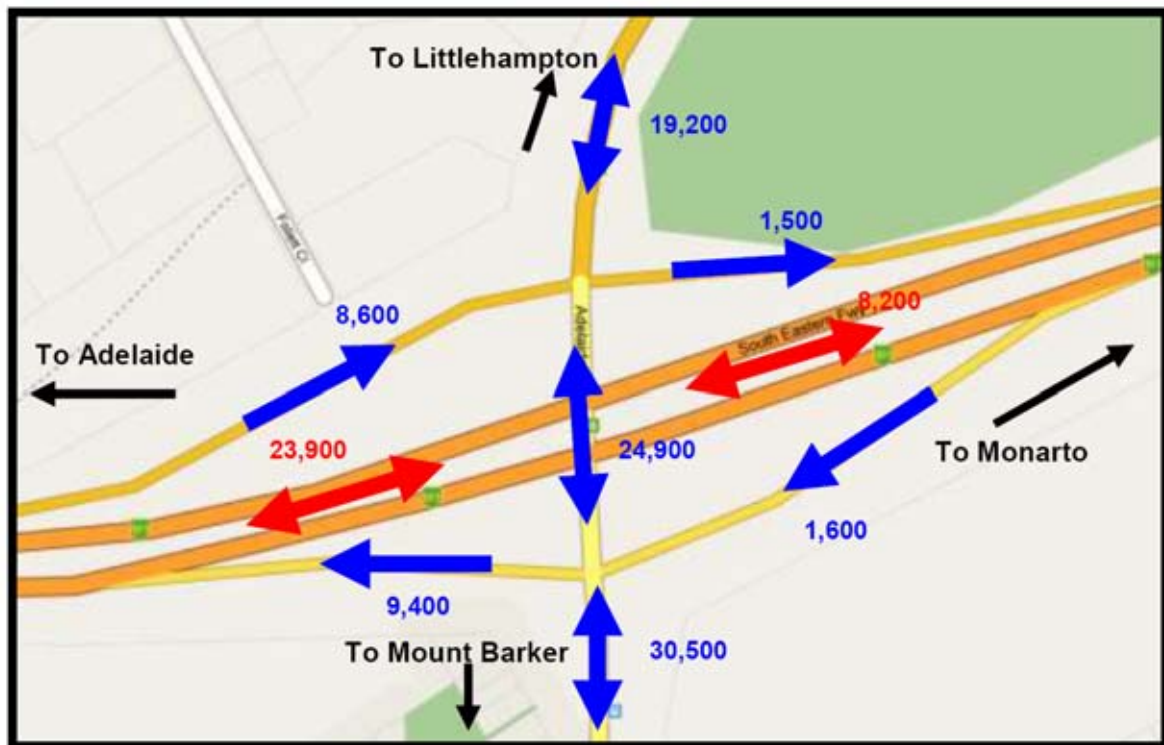


Figure 7 Current Traffic figures for South Eastern Freeway / Adelaide Road Interchange

Analysis¹⁰ shows that under these current volumes, the southern freeway ramp intersection with Adelaide Road is operating at a very low level of service in the pm peak, considered to be 'beyond acceptable limits' (Level of Service E- F as defined by Austroads). The consultant's analysis also shows that the northern freeway ramp intersection with Adelaide Road will also reach its capacity within six years.

Based on this analysis the consultants have indicated the following main problems as traffic continues to grow:

- Long traffic queues on the western exit ramp extending back towards the freeway due to the capacity limitations at the intersection with Adelaide Road. This is a significant safety concern with the potential for traffic at the end of the queue to conflict with the high speed traffic on the freeway;

- Long queues and delays for other traffic movements at the interchange intersections with Adelaide Road

Based on the South Australian Government's draft *30 Year Greater Adelaide Plan*, even greater increases are planned in the future. Table 6 shows the consultants estimated traffic volumes for 2026 compared with the 2009 estimates at the interchange. This analysis shows traffic volumes on the Adelaide Road entry to Mount Barker increasing from 30,500 to 56,400.

¹⁰ Wallbridge and Gilbert, 2009, Bald Hills Road Interchange, Concept Planning Study

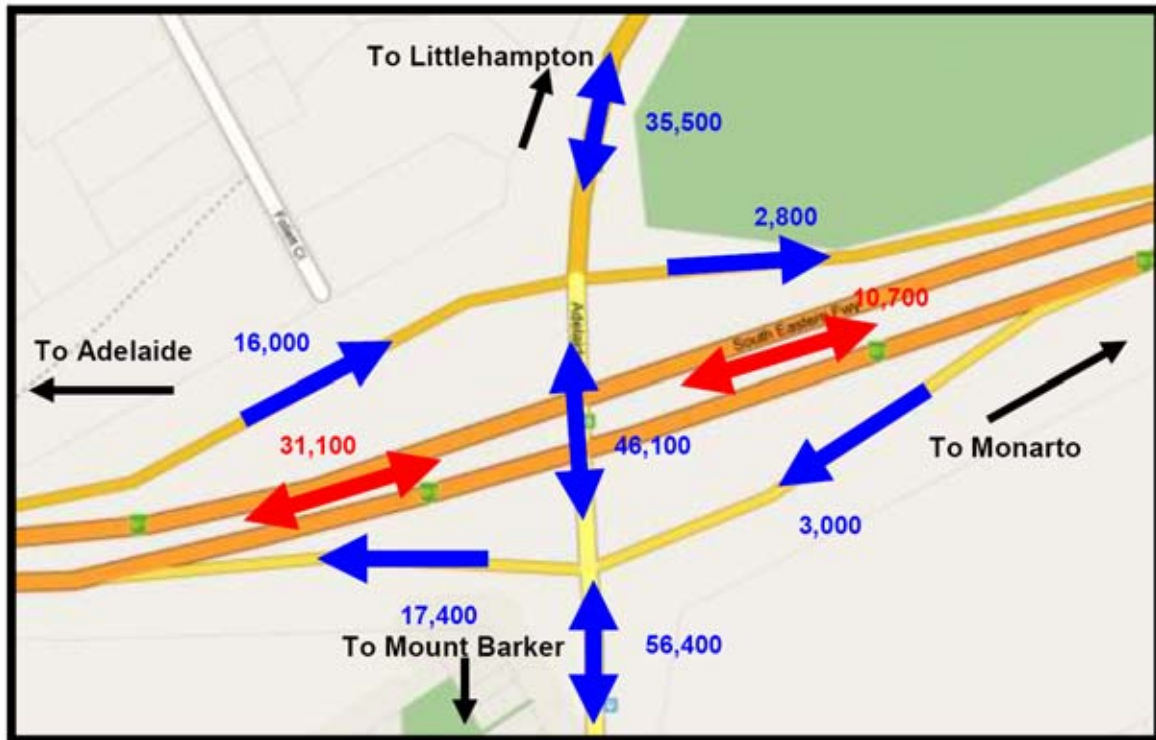


Figure 8 Future Traffic figures on Adelaide Road Interchange as a result of the 30-Year Plan growth, without a Bald Hills Road Interchange

With traffic volumes increasing at this rate, the consultants estimate that the northern and interchange intersection will also reach its capacity within 6 years, i.e. in 2015.

The provision of a second interchange at Bald Hills Road would serve much of this future population growth and reduce future congestion issues at the existing Adelaide Road interchange (see Strategy 1.1).

CBD Network

The District Council of Mount Barker has recently commenced a review of the Mount Barker Town Centre. The review process includes the consideration of issues like the possible expansion of the Town Centre, the use of key sites in Council ownership and car parking.

It is anticipated that this will culminate in a development strategy for the Town Centre which will be informed by the Transport Master Plan and other processes. In turn the Town Centre Review outcomes can be used to update (as may be required) the Transport Master Plan which is intended to be a 'living' document.

Timing for the expected completion of the Town Centre Review is mid 2010.

Future traffic volumes within the Mt Barker CBD are difficult to estimate with a high level of confidence. Variables that may influence the estimated volumes include the growth of residences around Mount Barker, growth of townships outside of the District (e.g. Strathalbyn) and any supporting commercial facilities within these other centres which compete with the "market pull" of Mt Barker as a District Centre.

Data collected by Council indicates that between 2001-2007, traffic volumes on some CBD roads significantly increased while other traffic volumes remained reasonably static. For example, traffic volumes in Druids Avenue increased from 3600 to 8400 vpd during this

period, mainly attributed to the installation of traffic signals at the corner of Adelaide Road. Traffic volumes also increased in Gawler Street by around 2000 vpd. During the same period, volumes in Mann Street only increased by 300-500 vpd, while volumes in Morphett Street actually reduced by 500 vpd

Based on the future residential growth scenario and trip matrices (described previously) analysis of the additional vehicle trips that would be made to/from the Mt Barker CBD was undertaken by consultants. This estimate was established on the basis of additional trips entering/exiting the primary routes around the CBD (viz, Adelaide Road, Wellington Road, Flaxley Road, Dumas Street, Alexandrina Road and Dutton Road).

Total trips to/from the Mt Barker CBD were estimated to potentially increase by 40% above the current total trips to/from the CBD.

In preparing future network scenario for the CBD this 40% increase was applied equally across the internal CBD road network, to provide an indication of traffic volume growth on particular streets. However, as already seen in recent years, it can not be guaranteed that the increase in volumes will occur evenly across the CBD.

The data is therefore presented as a broad indication of the levels of traffic volumes that might be expected in the future, and on this basis, what implications and options there will be for the CBD road network. These levels will be substantially higher under the 30 Year Plan.

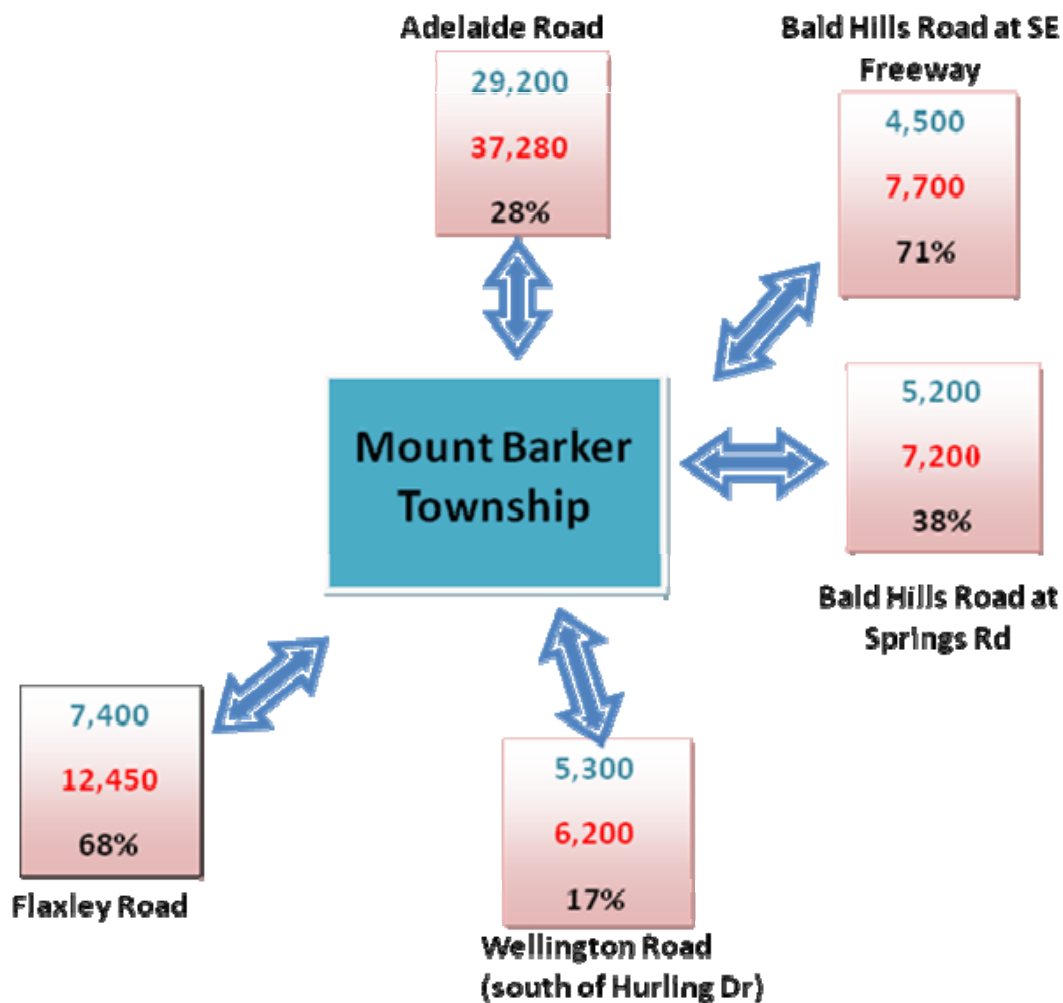


Figure 9: Projected daily traffic volume increases on roads surrounding Mount Barker (2006 figures shown in blue text, 2026 figures are shown in red text, and % change shown in black text).

Gawler and CBD Streets and Dutton Road¹¹

Traffic volumes on Gawler Street, other CBD streets and Dutton Road have increased significantly over recent years as a result of rapid and substantial development both within the town centre and to the east of the township.

Traffic growth on Dutton Road has also resulted from the new bulky goods retail centre, the park n ride' and bus depot facility, and to St. Francis De Sales College on Springs Road. These developments have changed current

traffic and pedestrian patterns along and across the road.

The change to bus routes and increased traffic along Gawler Street, Morphett Street as a result of these developments will add to current congestion and traffic management issues.

Pedestrian and cyclist movements are a key consideration along some of these routes. The absence of formal facilities for cycling and the need for improved footpaths along Dutton Road will be exacerbated by increased traffic volumes.

Council had proposed to extend a shared path (pedestrian and cyclist) along Mount Barker Creek to link the townships of Mount Barker and Littlehampton and this could also be used to link with the 'park n ride' facility (see also strategies 1.3 and 1.7).

¹¹ Text extracted from Gawler Street & Dutton Road Traffic Management Study – Stage 1 Report produced for the District Council of Mount Barker by QED Pty Ltd and Greenhill Engineers.

Traffic implications for the road network

Implications of the traffic increases on the road network will have an impact on community amenity (noise and social severance), environmental damage and pollution, greenhouse gas emissions and stifle the local economy.

Key issues arising from the potential future traffic volumes include (by 2026) :

- Current volumes along Adelaide Road (Druids Ave to S.E. Freeway) will potentially increase from 29,200 to 37,280. This will require the potential upgrading of Adelaide Road to cater for the additional traffic volumes, as well as works to increase the capacity of the S.E. Freeway 'on- ramp' (to Adelaide).

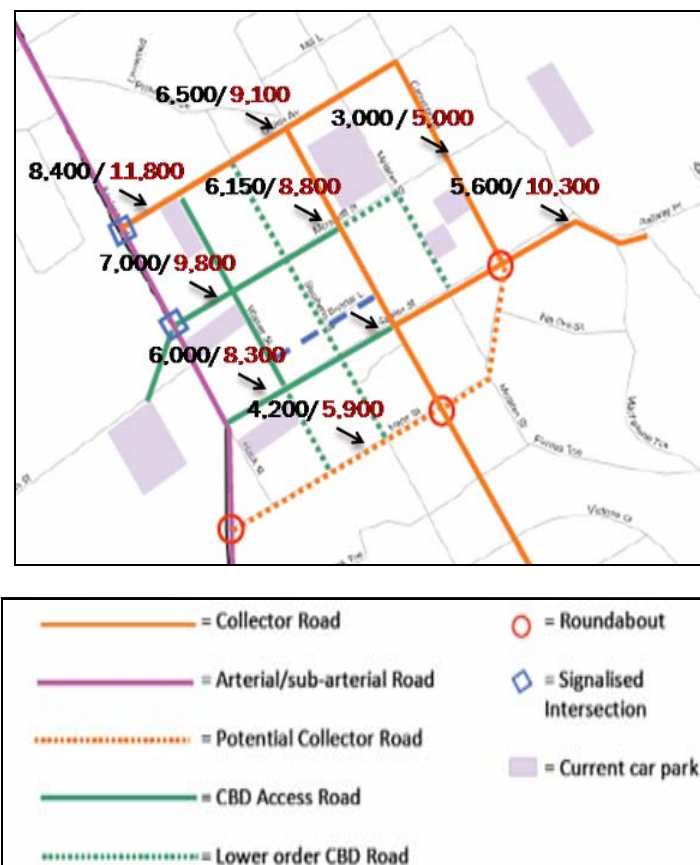


Figure 10: Expected traffic volumes without intervention (existing volumes shown in black, volumes by 2026 shown in red).

- Traffic volumes on Princes Highway between the Freeway and Littlehampton will increase from 13,800 to 17,500
 - Traffic volumes on Bald Hills Road will increase from 4-5000 to 7,700.
 - Traffic volumes on Flaxley Road will increase from 7,950 to 13,000.
 - Increased pressure for additional connectivity between the Mt Barker (east), Nairne-Littlehampton and the S.E. Freeway (i.e. an additional freeway interchange).
- Limited access to the South East Freeway exacerbates this demand and commuter traffic problems by concentrating traffic through Mount Barker and Hahndorf. Analysis for this project indicates that the "Do Minimum"

scenario would be unacceptable both in social and economic terms and in community acceptance especially reflecting the consultation process. The “Do Minimum” option would require:

- A substantial upgrade of Adelaide Road (widening and lane duplication). Without significant property acquisition there is limited scope to widen the road to increase the capacity of this road section. Localised road widening adjacent side roads (to provide turning lanes) could be considered to improve the traffic flow along Adelaide Road. Alternatively, the median strip along Adelaide Road could be extended to prevent right turns in/out of side roads, although this will have an obvious impact on local accessibility.
- Upgrading of Flaxley and Wellington Roads.
- Mount Barker interchange capacity improvement/ works. There will also be increasing pressure on the capacity of the intersection between Adelaide Road and the ‘on-ramp’.
- Additional capacity of Springs/Dutton Road corridor.
- Potentially cater for an increasing freight task.
- Lead to social and environmental costs. The route would continue to provide a secondary freight route within the District leading to the impacts and disruption described previously. The impact on adjacent township main streets would continue.

Even with the possible inclusion of the Bald Hills Road interchange actual traffic volumes along Adelaide Road will still increase (albeit not at the same rate) to over 30-32,000vpd. Localised improvements along the road will ultimately be required regardless of whether the Bald Hills Road interchange is provided. More importantly seasonal and daily freight vehicles will continue to use this road.

‘Do Minimum Scenario’: Retention of the existing road network / hierarchy

Under a “Do Minimum Scenario” the existing road network and informal road hierarchy would be retained. There is little clarity between the future functions of each road, and traffic volumes are essentially shared across the network. Site specific improvements will be required as intersections reach capacity.

SIDRA modelling indicates that most intersections will operate acceptably (albeit with lower levels of service to present), with the following exceptions.

- The capacity of Gawler Street / Hutchinson Street is likely to be exceeded, as is the intersection of Morphett Street / Hutchinson Street. Options for these locations are outlined in the following section.

Other issues including those directly raised by local business include:

- Mann Street/Adelaide Road Roundabout: does not properly accommodate large trucks and lacks the capacity to cater for an increased role of Mann Street in the future.
- Right turn delays into Gawler Street from Adelaide Road especially where right and left turners are in conflict.
- Gawler Street bus movements are hampered given the size of the buses (14.5m) and the number of conflicts along this route, especially parking and the Hutchinson Street/Gawler Street intersection.
- 45 degree parking along Gawler Street does not meet the Australian Standard between Hutchinson and Cameron Street.
- Morphett Street/Adelaide Road intersection: has a limited capacity for improvement.

- Walker Street/Morphett Street intersection: will require improvement in the longer term given sight distances for north bound vehicles are restricted (by Mc Donald's site).
- Stephens Street/Morphett Street intersection: The demand for parking (multideck or at grade) along this street will place pressure on this intersection and the street itself.
- Stephens Street north of Gawler Street: Semi-trailer and car movements are in conflict with pedestrians. The street does not adequately link pedestrians within the precinct.
- Hutchinson and Morphett Street: The intersection is deemed unsafe with a misalignment of east to west movements and delays are experienced by some drivers. Car parking access is a problem with new merging with the adjacent shopping centre.
- Midblock locations: Hutchinson Street between Gawler Street and Druids has limited pedestrian access points, bus stops in the right places (to minimise conflicts), inefficient egress and ingress points and lacks an active street frontage.
- Gawler/Cameron and Mann Street intersection: Mann Street is not currently promoted as a collector road.
- Hutchinson / Druids intersection: poor right turning opportunities and safety.
- Walker and Druids intersection: poor right turning opportunities and safety.
- Druids and Cameron Street intersection: Is not configured for the major movement between Druids and Cameron and an inefficient intersection.
- Bonnar Lane: Confused directional use of the lane and its role as an east to west pedestrian link is not delineated. Parking access to the lane compromises its safety.

- Parking policies: no current parking policies in place other than requirements driven by the Development Plan. The desired locations for private parking (traders and staff) and retail public parking are unclear. A current perceived shortfall in parking on Gawler Street. Funding of parking is unclear: who pays for its provision?
- No integrated pedestrian network plan for the CBD and cyclist/pedestrian linkages to the new Homemaker Centre and the Foodland Supermarket need to be clearer.
- The existing interchange at Mount Barker would need to be upgraded to cater for growth under this scenario. The preferred option however is for a Bald Hills Interchange to cater for this growth, therefore reducing traffic volumes at the existing interchange and Adelaide Road.

In the short term (1-2 years) the existing road network should be able to accommodate expected increases in traffic volumes. From the perspective of intersection capacity there are no immediate capacity deficiencies that need upgrading. Notwithstanding this there are various 'hot-spots' that will be more susceptible to traffic volume increases beyond a 2-3 year horizon. These have been assessed and recommendations for 'immediate action' are contained within this strategy.

Matching Infrastructure to Growth Trends

An important aspect of planning for future growth is to ensure that transport infrastructure is sufficient to support expected increases in traffic. The current and future capacity of roads, freeway interchanges and the recognition of potential infrastructure opportunities are an important aspect of this Transport Master Plan. Network scenarios have been analysed as a part of the background work behind this Plan with transport infrastructure investment underpinned by projections for residential growth and the origin, destination and location of trip generators (shops, schools, industry, horticulture etc).

The analysis indicates that car traffic generated on local roads could become a critical part of the planning process with some roads increasing significantly in traffic volume while others such as Adelaide Road approaching their network capacity. Traffic analysis undertaken as part of this study indicates that whilst the traffic capacity of the network is able to respond with minor changes the impact of a 60% increase in trip numbers will necessitate additional works at mid block locations.

As well as this, Council has entered into legal agreements with the developers of several large residential development parcels. A requirement of these agreements is that the developers provide specified infrastructure that is external to the actual development site including road and footpath upgrading. The infrastructure is to be provided to the standards specified by Council, and take into consideration the location of future and existing residential growth. The value of this infrastructure is reasonably substantial. An example is a requirement for the construction of a roundabout at the intersection of Wellington Road/Hurling Drive/Sims Road at the developers cost.

Freight traffic

Other than general freight significant growth is expected in the entire Southern and Hills region with overall grape production expected to increase by 12.5% per year (cumulative) while timber and livestock are also significant growth sectors. The blue gum industry in the Adelaide Hills is expected to increase significantly over the next decade. Timber and wine demands vary between 10 and 18% of the total demand on the arterial and major local roads over the Adelaide Hills region. However, during grape harvest the daily volumes increase significantly. The future wine/timber demands were predicted to increase by between 30% and 80% between 2001 and 2006, which is significantly greater than the average rate for traffic growth on rural arterial roads typically 3% per annum or 16% over the same period (QED, 2004). These growths have not been confirmed. The main observations from previous demand studies have been:

- Significant south to north demands in the vicinity of Mount Barker due to grape product traffic from Langhorne Creek and McLaren vale to the Barossa valley.
- Significant north to south and south to north demands for heavy traffic movement (timber and grapes respectively) west of Mount Barker.
- Change in demand patterns within the livestock industry that could increase the volume of longer distance travel.

Appendix A is an analysis of the freight movements based on a 2001 survey of tonnages for a number of industries that formed part of the S&HLGA 2010 Transport Plan (2004 Addendum).

It was concluded in the 2004 addendum that two routes best serve freight movements through the region in a north – south direction (see Appendix A for maps showing routes):

- **Langhorne Creek to the Barossa:** (Route 3) a route that travels via Wellington Road, Adelaide Road, the Mt Barker Interchange and Woodside-Nairne would best meet the existing and future freight demand. However, the main deficiency captured in the report for Route 3 is the lack of a connection through Paech Road and interchange at Bald Hills Rd. These deficiencies are addressed in Strategies 1.1 and 1.2 which recommends and upgrade and better connections to and on Paech Road. Route 4, is also highly ranked in the evaluation, and is recommended as the continuous B-double route between Langhorne Creek and the Barossa (via Callington)
- **McLaren Vale to Barossa:** Of the McLaren Vale (also Fleurieu Peninsula/Kangaroo Island) to Barossa routes, Route 1 through Adelaide (Main South Road/ Sturt highway) was the preferred route as a high quality, mainly divided arterial road with high capacity, under the care and control of DTEI. It was previously discounted as a preferred north-south corridor for a number of reasons including capacity. Route 3 then became

the previously preferred route via Flaxley Road, Adelaide Road, Littlehampton and Nairne Main Streets and Woodside Road.

It should also be noted that the S&HLGA 2010 Transport Plan was undertaken before the State Government's intention to create a non-stop north-south corridor between the Southern Expressway and Port River Expressway, which will redirect long distance freight movements. The State Government's position is for a non-stop North-South Corridor that underpins the preferred SH&LGA freight route to the west of the District and the Monarto-Sedan freight route to the east of the District, as was outlined in the 2007 Addendum.

The District Council of Mount Barker is of the opinion (based on local knowledge of freight attractors/ generators) that the fore-mentioned routes will not attract all freight movements, and until such time that this can be further analysed it will support a Verdun interchange and other associated works proposed by this strategy.

District-wide Network Scenarios

Through discussion with Council and as an outcome of the community and stakeholder consultation, various network route options have been developed for this plan. Two network Scenarios (1 and 2) and three sub options (2a, 2b and 2c) were assessed. The options address the desire to establish additional road network connections and bypasses around key townships including Mt Barker, Hahndorf and Nairne.

Irrespective of the benefits of maintaining a minimum level of safety and satisfactory congestion standards (called 'level of service') through an effective 'network operating' management framework (see also strategy 1.5), there is also a need to augment or even alter the current functional (and road hierarchy) definition of the road network. These options are outlined in Appendix D.

Preferred Network Strategy

Network Scenario 1 combined with 2C is the preferred option albeit that further analysis

is required to shore up the case for the additional investment for the Verdun interchange as outlined above.

The development of the Bald Hills Road interchange is considered to offer significant social and freight benefits and should be further developed to a conceptual planning stage.

In the interim, it would be appropriate (necessary) to undertake improvements along Bald Hills Road (see also Strategy 1.1) and Adelaide Road to maximise the capacity, safety and level of service associated with these road sections as north to south commuter and District freight routes.

The development of the local connector between Wellington Road and Flaxley Road is unlikely to provide a significant freight network benefit however as a strategic commuter network it is worthwhile, particularly if development expands south of Martins Road.

While there could be significant social benefits gained through developing a fully accessible interchange at Verdun, further investigations are needed to establish the actual extent of through and commercial traffic using the main street of Hahndorf, and the practicalities, issues and costs associated with developing the Verdun interchange.

Bald Hills Road Interchange Project Infrastructure Australia Submission

The need for a connection to a Bald Hills Road interchange has been brought about for a number of critical reasons including: increasing north to south demand due to unprecedented residential and commercial growth in the region, unsuitability of some parts of the current network to carry high numbers of large commercial vehicles, geometric and road asset constraints; environmental and social impacts on townships; limited access onto the South Eastern Freeway (National Highway between Adelaide and the Eastern States) and no defined role and function for commuter, freight and tourist traffic. Furthermore, the high levels of maintenance required on major local roads

and arterial roads leading into townships (Wellington Road, Adelaide Road, Nairne and Hahndorf main streets) due to both heavy and commercial traffic and commuter traffic volumes will require Government resources in maintaining an adequate level of service.

The proposed interchange and upgrade of Bald Hills Road between Princes Hwy (Nairne) and Paech Road (connecting to Wellington Road) is an integral part of a total network solution. The solution will have a significant impact on the Adelaide Interchange ie. The estimated transfer of traffic represents a 32 percent decrease in traffic at the Adelaide Road Interchange.

Consultants have been engaged to develop a concept plan for the interchange¹² and a submission for funding has been prepared¹³.

Summary of the benefits of a Bald Hills Road Interchange

The benefits of developing the Bald Hills Road interchange would be significant.

Benefits include:

- Creates a direct connection to the east of Mt Barker catering for growth in the Sothern and Eastern areas of Mt Barker, Nairne and Littlehampton.
- Reduces the need to upgrade the Mount Barker interchange on this important National Highway Connector Adelaide and Melbourne.
- Reduces 'through traffic' component from Strathalbyn / Goolwa Catchment along Mt Barker / Adelaide Road.
- Directs up to 3000 additional seasonal truck movements from Strathalbyn Road to the SE Freeway.
- Reduces traffic volume growth through Littlehampton.
- Improved local access and town amenity within Littlehampton.
- Greater regional connectivity between townships.

- Caters for significant residential growth in the Mt Barker region.
- Travel time savings created due to a quicker travel route for traffic to access the South Eastern Freeway.
- Travel time savings created by the improved access from Mount Barker East and Nairne.
- Road safety improvements generated by upgrading the Bald Hills Road/Springs Road intersection.
- Improve town amenity within Mount Barker through reduction in vehicles though the town centre, and particularly heavy vehicles generated by regional development, which would use Adelaide Road and local roads in lieu of a Bald Hills Road interchange.
- Provides an access alternative to the existing interchange should Adelaide Road requiring closing.
- Offset of upgrade costs associated with any capacity improvements to Adelaide Road and the Mount Barker interchange.

Dis-benefits of the Bald Hills Interchange may include:

- Increased traffic noise for residential properties within close proximity to the interchange unless measures are applied (subject to the option).
- Potential land use pressures for areas to the east and south of the interchange
- Removal of some native vegetation within the immediate vicinity to accommodate the interchange

Analysis (today's traffic volumes) indicates that a Bald Hills Road and Paech Road connector and an interchange with the South Eastern Freeway could decrease traffic on the Adelaide Road/ Wellington Road Corridor by 3000 vehicles per day and as much as 1000 vpd through the township of Nairne. A Mount Barker Southern Connector would further decrease volumes by 2000 vpd on the Adelaide Road/ Wellington Road Corridor (overall 5000 vpd reduction) by shifting residential growth to the Bald Hills Road interchange however freight traffic diversion from south western Hills locations (McLaren Vale) would be limited.

¹² Wallbridge and Gilbert, 2009, Bald Hills Road Interchange, Concept Planning Study

¹³ InfraPlan Pty Ltd, October 2009.



Figure 11: Estimated traffic volume changes resulting from a Bald Hills Road interchange (2009 volumes).

Results of Benefit/cost analysis (Infrastructure Australia Submission)

A benefit/cost analysis was undertaken¹⁴ as part of a submission in support of the Bald Hills Road interchange and the associated corridor infrastructure. The results over the next 30 years were as follows (note; figures in 2009 AUS\$):

Capital Costs - Commonwealth contribution sought = \$43.7 million (includes escalation costs and contingencies).

BCR = 2.0; discount rate = 7% per annum

¹⁴ By InfraPlan (Aust) Pty Ltd, 2008.

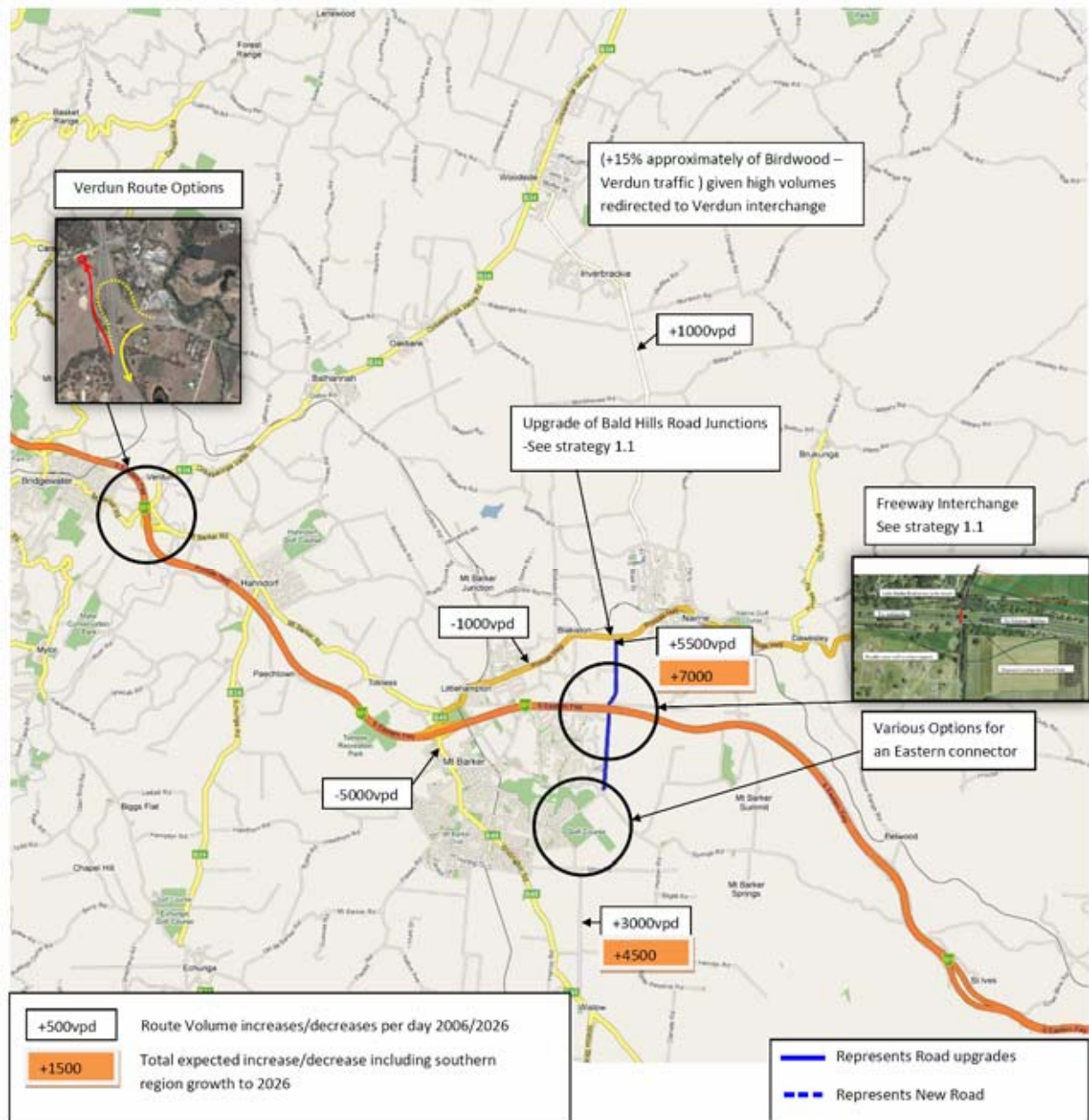


Figure 12: Preferred Network Strategy for Mount Barker District (see Strategies 1.1 and 1.2 that follow for details about the individual infrastructure improvements).

Strategy 1.1

Develop a network strategy for north to south intra-regional and short distance inter-regional movements to reduce the impact of increasing commuter and freight traffic.

Our Role: Leadership, Advocate, Initiator/facilitator, Agent.

Aim and Rationale

The rationale behind the development of a network strategy for north to south freight is to address existing freight movements within the District to minimise the conflicts between trucks and private vehicles/pedestrians. This network has not been developed to encourage additional freight; rather it aims to cater for existing freight generated within the District or from surrounding areas. Council is supportive of the Department of Transport Energy and Infrastructure preferred freight route for north-south movements either on the Monarto-Sedan Route, or the proposed North-South Corridor through metropolitan Adelaide, however it does not believe that these routes to the east and west of the District will attract, therefore sufficiently cater for, all intra-regional and short distance inter-regional movements.

Bald Hills Road Interchange

Development of the Bald Hills Road interchange is considered to offer significant social and freight benefits and is being further developed to a conceptual planning stage¹⁵.

In lieu of a Bald Hills Interchange it would be appropriate (necessary) to undertake improvements along Adelaide Road to maximise the capacity and level of service associated with this road section, the intersection with the Freeway on ramp, and the on ramp itself.

It would also be appropriate to undertake a more detailed concept plan to investigate options for the development of an extension of Bald Hills Road corridor to Wellington Road and south to Wistow along Paech Road¹⁶ (see Strategy 1.2).

¹⁵ Wallbridge and Gilbert, 2008

¹⁶ KBR analysis, (2005) Mount Barker, Linking the freeway to industry

In early 2007 further land was rezoned by Council for residential development and this will see the creation of a significant number of additional allotments with increased demands on transport infrastructure. The growth of Mt Barker's commercial/retail precinct as a regional centre has also contributed to increased traffic volumes.

Current projections show that the existing Freeway Interchange will reach its design capacity by 2011. An Additional Freeway Interchange is proposed at Bald Hills Rd to accommodate the resulting increase in traffic volumes. The upgrade would also provide an alternative route for traffic to access the Freeway.

Bald Hills Road upgrade

Benefits sought from the upgrade to Bald Hills Rd include:

- Provision of a B- Double compliant design providing freight access from Mount Barker's industrial area to the future Freeway Interchange and Princes Highway.
- Provide for the increased traffic volumes forecast to access the proposed Freeway Interchange.
- Provide improved access within the Mt Barker/Nairne district.
- Improve the safety and level of service along Bald Hills Road and at its major intersections.

Detailed design will be carried out when further funding is available, probably on a staged basis.

Key features of the upgrade design will include¹⁷:

- Widening the road from 8m to 10.4m to cater for heavy vehicle access and increased traffic volumes from the current 5,000 vehicles per day up to 13,000 vehicles per day.
- Increasing safety for cyclists.
- Upgrade junctions to provide right turn lanes.

- Staggered T (with offset side roads to improve safety) or roundabout options for the Springs Road junction.
- Seagull junction (includes a separate right turn lane from Bald Hills Rd on to Princes Highway) or roundabout options for the Princes Highway junction.
- Roundabout option for the Hartman Road junction (should future traffic volumes justify the need).
- Installation of safety barriers in high risk areas.

An estimate of the cost of the upgrade is \$10.8 million (signalisation of intersections or roundabouts will increase this cost – see 1 to 5 year Capital Works Program, also details of road widening, intersection treatment options, cost estimates and design criteria are contained in the W&G Report; Bald Hills Road Upgrade Between Hartman Road and The Princes Highway, Feb 2009)

Note: restricted sight distances at Springs Road and Hartman Road intersection suggests a roundabout as a better option, albeit this may reduce B-double accessibility.

Verdun Interchange option

Development of a fully accessible Freeway interchange at Verdun will require detailed consideration as the configuration of the existing bridge and interchange is not conducive to a 'simple modification' for the additional access.

The provision of an on ramp from Verdun and Hahndorf toward Mt Barker appears relatively straightforward (at face value).

However, the provision of the off ramp from Mt Barker to Verdun and Hahndorf is complicated due to the current bridge structure and need to establish another grade separation of the Freeway.

¹⁷ Wallbridge and Gilbert, 2008



One option would be to establish the off ramp under the existing bridge, and then create an additional bridge over the Freeway to connect with the off ramp from Adelaide.

No consideration has been given to the relative grades required to establish the grade separation, nor to property acquisition requirements or environmental constraints (noting the close proximity of the Onkaparinga River). This needs further investigation.

An alternative might be to align the off ramp directly through to the Verdun – Bridgewater Road and establish an additional roundabout connection at this junction, thereby avoiding the need for an extra grade separation of the interchange. Notwithstanding, there are again potentially significant topographic (requiring embankment cutting), environmental and land acquisition issues associated with this option (as shown by the alignment above and below in red).

Development of the Verdun interchange with full accessibility will have both social benefits as previously mentioned in Section 01 – Network Strategies and possibly some impacts on the broader regional network. For example, traffic volumes along the Verdun – Bridgewater Road may increase as the interchange would provide a eastern access point to the Bridgewater region. Another view is that this would provide increased accessibility to eastern locations for this community.



While there could be significant social benefits gained through developing a fully accessible interchange at Verdun, further investigations are needed to establish the actual extent of through and commercial traffic using the main street of Hahndorf, and the practicalities, issues and costs associated with developing the Verdun interchange.

Given this is not Council's jurisdiction a whole of Southern & Hills LGA approach is required.

Specific Actions

Action A1.1.1

Clarify the role of the network through the District Council of Mt Barker (specifically Flaxley, Wellington, Adelaide, Princes Highway and Nairne - Woodside Roads) and ensure that the S&HLGA 2020 Transport Plan for short distance inter-regional and intra-regional freight trips is consistent with this Transport Master Plan– See Appendix A. i.e. the position that the Monarto-Sedan route can cater for ALL current and future freight movements through the Hills region may lead to misdirected funding and effort away from the District in the future.

This will also require Council to revisit its position in the current S&HLGA 2020 Transport Plan¹⁸ and Addendums - See Appendix A

¹⁸ 2010 Transport Plan Addendum, Southern Hills and Local Government Association, QED, 2004

Action 1.1.1

The following actions have been previously recommended¹⁹ to bring the parts of the network up to a suitable standard for freight movements that will not be addressed by the Monarto-Sedan route or the North-South Corridor (these actions require further investigation to support this direction):

- 1) Woodchester to Mt. Barker - Minor road widening on one section to bring to a 7.4 Metre seal width, one minor bridge/culvert widening and pavement strengthening from DC Mount Barker boundary to Wistow.
- 2) Mt Barker to Nairne – road widening required also with a number of bridges/culvert to be widened. Junction with Nairne to Woodside Road requires minor improvement to allow for left hand turns.
- 3) Nairne to Woodside - road widening required on some sections including a number of tight bends. Also a few bridges need to be widened to 7.0 metre width.

Council Action Plan: Internal resources/study, 1-3 years

A1.1.2

Ensure that a new Master Plan for Adelaide Hills region investigates the suitability of local roads such as Ambleside Road and Old Mt Barker Road (between Echunga and Flaxley Rd) as freight routes as recommended by the S&HLGA 2010 Transport Plan - 2007 Addendum. Ambleside Road may not be supported by the community as a freight route alternative to a full Verdun interchange given the impact on Hahndorf's main street. Also develop interim options to a Verdun Interchange to reduce impacts of freight:

- 1) Confirm the role of Flaxely/Adelaide Road for northbound heavy vehicle traffic and the Woodside-Nairne link for south bound traffic through traffic management strategies (work with Adelaide Hills Council and S&HLGA)
- 2) Work with industry and DTEI to develop agreed seasonal truck movement

strategies (timber, wine grapes, dairy) including possible 'time of day' load limits.

Council Action Plan: Internal resources/study, 1-3 years

A1.1.3

Develop a new fully functional interchange with the Southern Eastern Freeway at Bald Hills Road i.e. on and off ramps in both directions (see 1-5 Year Works Program for detail).

A1.1.4

Upgrade Bald Hills Road to a standard that accommodates heavy vehicles/ B-Doubles (widen to 10.4 m carriageway) (see 1-5 Year Works Program for detail)

A1.1.5

Upgrade the Hartman/Alexandrina Road Junction. Upgrade options include a staggered T intersection or roundabout (see 1-5 Year Works Program for detail).

A1.1.6

Upgrade the Springs Road/Bald Hills Road (see 1-5 Year Works Program for detail).

A1.1.7

Upgrade link between the Princes Highway and the proposed interchange. Refer to the separate evaluation of options for junctions and intersection treatment (Princess Highway 'Seagull' intersection). (see 1-5 Year Works Program for detail).

A1.1.8

Advocate for a Full Verdun interchange to be constructed in the medium to long term (and consult with DTEI, Adelaide Hills Council, Federal Government).

Council Action Plan: Internal resources/study, 1-3 years

¹⁹ ibid



Figure 14 Bald Hills Road Concept Upgrading – Middle (Wallbridge and Gilbert)



Figure 15 Bald Hills Road Concept Upgrading – North (Wallbridge and Gilbert)

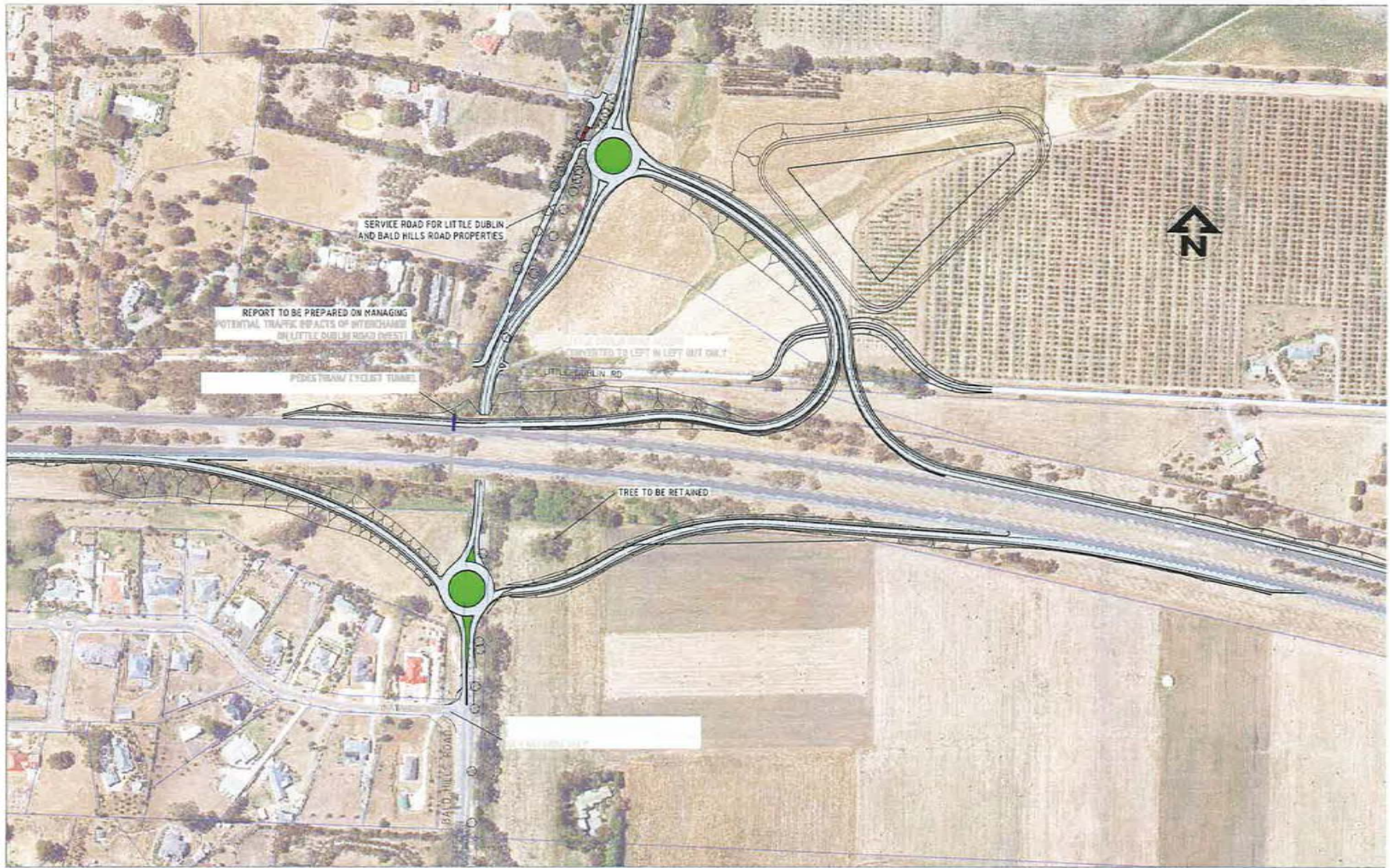


Figure 16 Bald Hills Interchange Concept Design: Option A

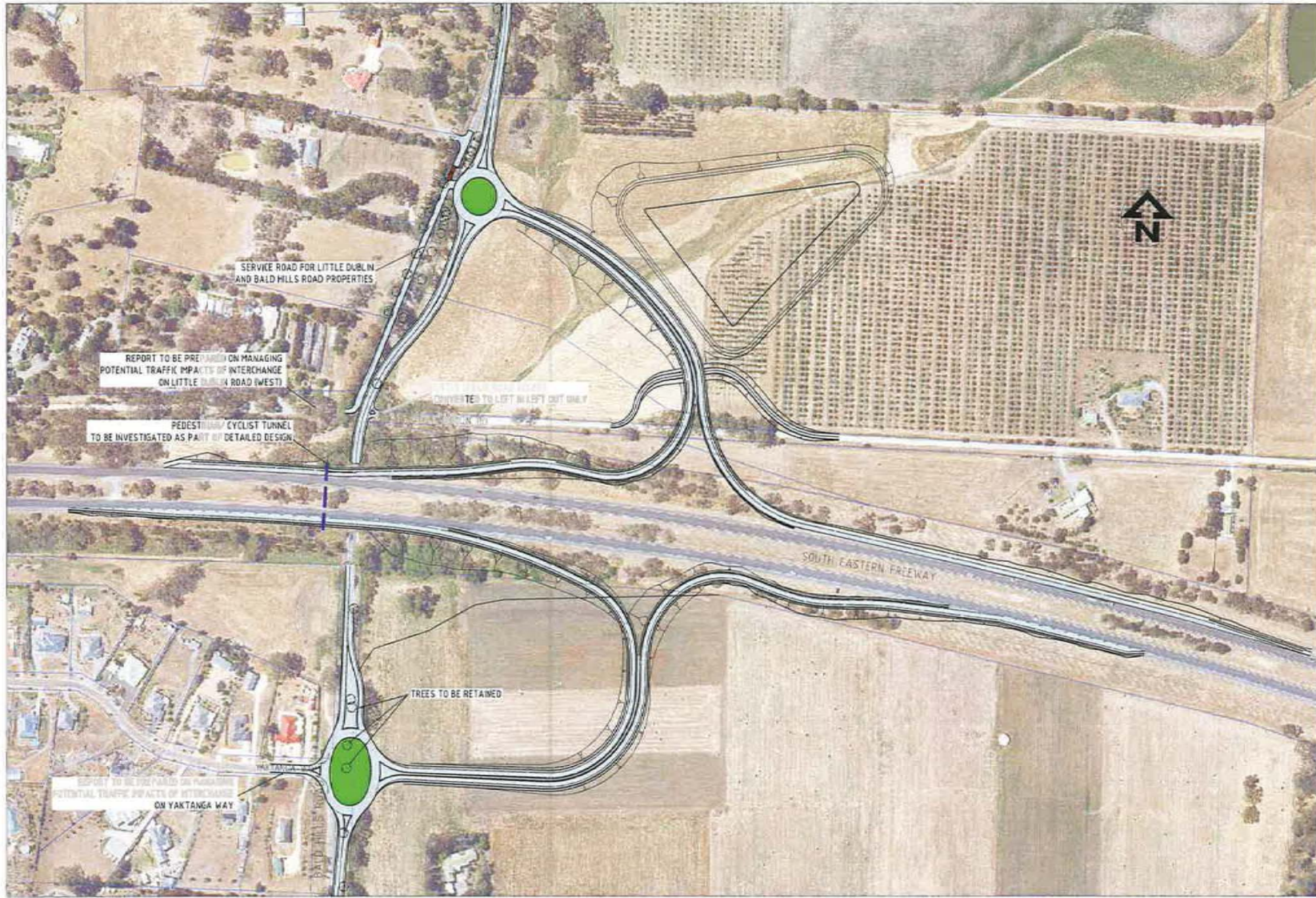


Figure 17 Bald Hills Interchange Concept Design: Option B

Strategy 1.2

Plan and develop a local connector to the east and south of Mount Barker connecting Wellington Road and Flaxley Road traffic to Bald Hills Road/ South East Freeway interchange.

Our Role: Leadership, Advocate, Initiator/facilitator, Agent.

Supportive technical analysis to this report indicates significant benefits will result from a Bald Hills Road interchange and north-south network improvements and investment. While the costs will be high so will the ensuing benefits. This investment would significantly delay investment on other north to south arterial roads and may negate the need to upgrade Mount Barker Road freeway ramps. The link would also provide good connectivity between Enterprise Park located on Alexandrina Road as well as development to the south. **As previously mentioned, this strategy is subject to the outcomes of the 30 year Plan for Greater Adelaide.**

Specific Actions

A1.2.1

Develop an 'eastern connector' to Mount Barker as part of the overall North to South network strategy for the provision of freight and commuter connectivity between the Alexandrina Road precinct and Paech Road. The route could also provide an eastern freight bypass for commercial traffic to/from

Strathalbyn region, reducing the traffic loads along Adelaide Road. (subject to the outcomes of the 30 Year Plan)

A1.2.2

Develop a 'southern connector' between Wellington Road and Flaxley Road as part of any further residential development of the area to the south of Hurling Drive (subject to the outcomes of the 30 year Plan for Greater Adelaide).

A1.2.3

Develop a local collector between Wellington Road and Paech/Hartman Road, to provide local connectivity to Bald Hills Road and future Freeway interchange (subject to the outcomes of the 30 year Plan for Greater Adelaide).

A1.2.4

Develop a strong business case with a "quadruple" bottom line (social, environmental, economic and financial) for the other elements of the preferred scenario.

Council Action Plan: Internal resources/study, 1-3 years

Strategy 1.3

Develop a staged Mount Barker CBD network strategy to deal with increasing demand and conflicts.

Our Role: Leadership, Owner/Custodian, Advocate, Initiator/facilitator, Part Funder.

Traffic projects within the CBD of Mount Barker have often responded to ad-hoc problems as they have arisen. Parking is dispersed and pedestrian environments are poor (other than Gawler Street). This will worsen as traffic volumes and activity intensifies. Figure 9 indicates the scale of traffic volumes that could be expected by 2026. It will be important to retain a sense of place and the township character within the township while catering for the large growth expected.

The District Council of Mount Barker has recently commenced a review of the Mount Barker Town Centre. The review process includes the consideration of issues like the possible expansion of the Town Centre, the use of key sites in Council ownership and car parking. It is anticipated that this will culminate in a development strategy for the Town Centre which will be informed by the Transport Master Plan and other processes. In turn the Town Centre Review outcomes can be used to update (as may be required) the Transport Master Plan which is intended to be a 'living' document. Timing for the expected completion

of the Town Centre Review is around late 2009 / early 2010.

Adopting a new philosophy for the CBD

To continue to maintain the 'sense of place' within the township CBD that its community has enjoyed for decades, in the face of growing traffic volumes, may require:

- the separation of some conflicting movements,
- the application of innovative responses to pedestrian demand, and
- divert 'through' traffic 'around' the edge of the centre.

Interstate and overseas initiatives can provide some fresh ideas and include:

- Creating a ring route or city centre loop to divert all 'through' traffic surrounding a:
- a public transport route/box that contains a pedestrian box to create a protected walking environment that supports access to public transport and links to car parks.

A recent Australian example of how a 'Pedestrian-box' style concept was

implemented is in Bendigo, Victoria. A plan to address the imbalance between vehicular and pedestrian environments was applied through the reduction of road speed and reducing vehicle access to certain areas of the town-core, whilst also improving the pedestrian environment to encourage walking and cycling. The similarities between Mount Barker and Bendigo, (in terms of population size, the towns' role as a regional centre for outer-lying townships and distance from the capital city) suggest a similar concept can be implemented with success in Mount Barker. .

Gawler Street²⁰

Gawler Street traverses east-west between Adelaide Road and Dutton Road.

The Gawler Street environment changes significantly from its western end at Adelaide Road and Hutchinson Street, the road is a single carriageway. There is a mixture of angle parking, parallel parking, kerb extensions and trees along its length. This section of road consists of commercial and retail land uses with strip shopping on both sides of the road. A high standard of streetscape with kerb extensions, footpaths, trees and signs, exists on the one-way section.

Gawler Street east of Hutchinson Street to Dutton Road operates two-way flows, with less intensity of commercial development. There is a mixture of angle parking, parallel parking and trees along this section. Hutchinson Street and Cameron Street/Mann Street create a four way intersection temporarily controlled by a roundabout (to be replaced in 09/10).

Council will ensure that measures or upgrades on public transport routes must be designed to ensure suitable and appropriate access for bus services. This includes (for example) turning paths at roundabouts, suitable road widths and sufficient ingress and egress points that are suitable for the 14.5m vehicles currently operating in the District.

Car Parks

As previously mentioned current car parking are driven by minimum requirements in the Development Plan. The current 'sea of bitumen' can be improved to create a sense of place and to provide pedestrian connectivity. Car Park standards within the Mt Barker CBD should be influenced by good urban design principles; in lieu of an 'Urban Design Framework' being developed for the CBD (*the following principles have been adapted from the UK Urban Design Compendium*).

Better managed parking levels

In considering parking levels, analyse the parking provision and use in the area around. If it can be shown that existing parking levels are lower than the minimum required it will be easier to justify the proposed provision. Look at the possibility of communal parking spaces. For instance, as people leave work at the end of the day their spaces can be taken by people coming to the shopping centre, or cinema.

Keep cars in view

A very careful balance has to be struck between the expectations of car owner, in particular the desire to park as near to their destination as possible, and the need to maintain the character of the overall setting. Where cars are parked in court or squares, the design should ensure that they are overlooked by adjoining buildings.

Divide up the commercial car park

In commercial developments the best way to alleviate the effect of large parking areas is to ensure that they are designed as an integral part of that landscape treatment and managed communally. This also ensures that pedestrian's movement is not determined and restricted by vehicular movement requirements. Parking layouts should be obvious and logical and avoid the creation of leftover space.

²⁰ Adapted from Gawler Street & Dutton Road Traffic Management Study – Stage 1 Report produced for the District Council of Mount Barker by QED Pty Ltd and Greenhill engineers.

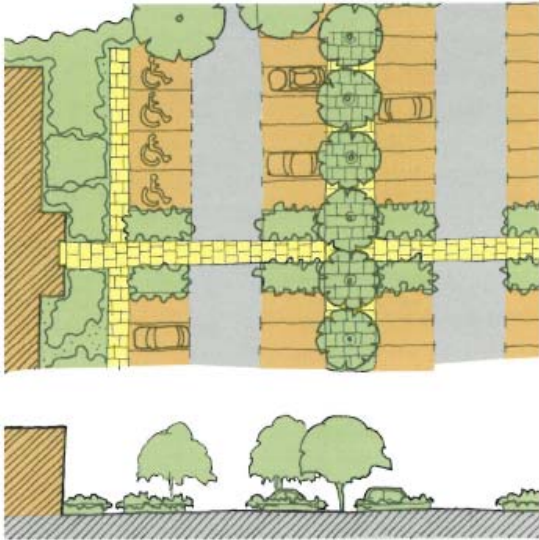


Figure 18. Landscaping of car parks should screen stationary vehicles and establish direct footways connecting with nearby areas.

Make car 'parks' just that

Shared surface treatments can be effective although it is important to ensure that pedestrian routes are clearly defined – particularly in teaching children about road safety and maintenance of the pavement as a 'safe' area. Adequate space should be allowed for tree planting to all parking area. They can be one of the most successful device for integrating parking to urban landscape.

Parking can enliven the street

On the street, a certain amount of parking has a beneficial calming effect, but the layout should be designed to accommodate it. Parking can be incorporated within a widened carriageway that also allows room for street trees and gives pedestrians greater freedom of movement.



Figure 19. An example of how landscaping and vegetation screen stationary vehicles,

but allow vision lines for moving cars pedestrians.

Multi-deck car parking

The Multi-deck car parking strategy for Mount Barker is currently being assessed based on four primary criteria:

- Proximity to Gawler Street precinct to genuinely add value to parking provision for retail and commercial users and traders
- Ability for Council to facilitate the car park on land under its care
- Ability for Council to control the long term provision of car parking to support strategic and sustainable growth.
- Ability for Council to maximise its commercial objectives utilising its land holdings to add value.

The potential for additional car park development in the Mt Barker CBD is currently being analysed, and the suitability of several sites are being assessed separately to this Study. Given action 1.3.8, the consultant's preference for the car park is the Fassina Site (i.e. south of Gawler Street between Walker and Stephens Streets) or the Council Site (i.e. on the corner of the Stephens /Mann Streets Corner.).

CBD Bus Route

A public transport route through the CBD will also be investigated (action 1.3.5) to allow for direct public transport access to the centre of the CBD. The current bus route to the CBD is set as per obligations with the public transport bus operators, and any changes would require agreement with such groups. Options for the development of a new route will be revised in reference to the Town Centre Review currently being undertaken by the District Council of Mount Barker.

As an immediate response: 1-2 years

Specific Actions

A1.3.1

Immediate actions:

- Road works to facilitate the safe access of buses at Gawler/Hutchinson Street intersection
- Develop the Gawler / Cameron / Mann St roundabout into a permanent traffic feature.

(See 1-5 Year Works Program for detail).

A1.3.2

Ensure that the Town Centre Review preserves options for the Medium to long term actions contained within this Transport Master Plan to prevent costly re-working of traffic management strategy (This includes preventing non-compatible development and associated exit/entry points to be implemented)

Council Action Plan: Internal resources/study, 1-3 years

A1.3.3

Close Morphett Street on the eastern side of Hutchinson Street:

- reconfigure the intersection to a T-junction
- convert balance of McLaren St to additional parking or green space and reconfigure footpaths
- preserve the option for future installation of traffic signals (account for future intersection priority)

(See 1-5 Year Works Program for detail).

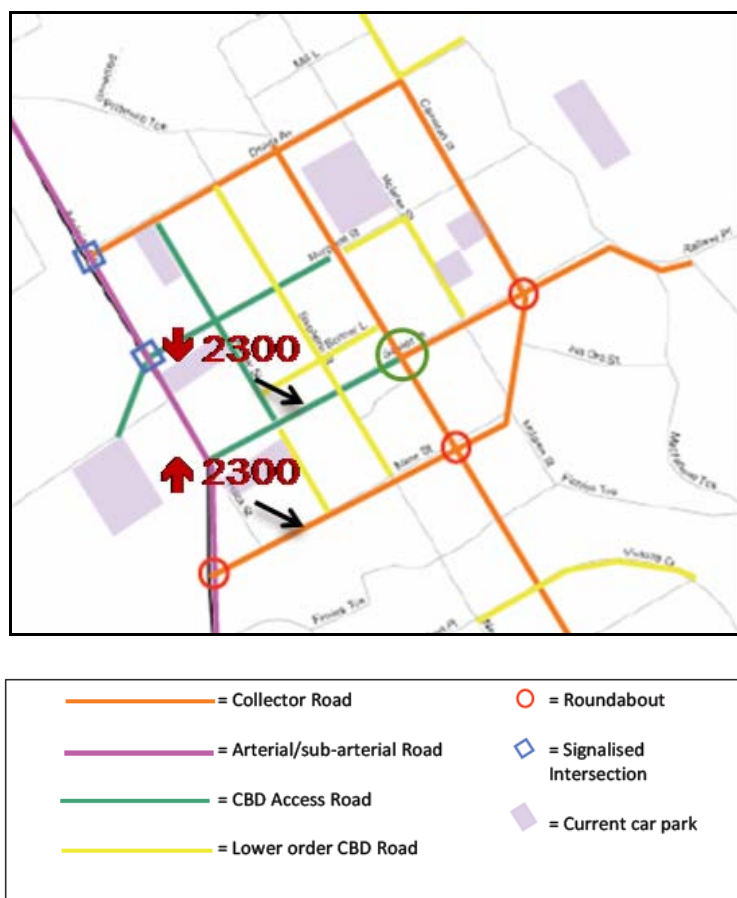


Figure 20. Expected traffic (vehicles per day) shift with increased capacity of Mann Street

In the short-medium term: 2 - 4 years

Some of the predicted increases in traffic volumes along Gawler Street would be distributed onto Mann Street. Mann Street and Druids Avenue would be identified as Collector Roads while Morphett Street, Walker Street and Gawler Street would be CBD access roads. The retail area to the south of the CBD in the vicinity of Foodland on Hutchinson Street and Exhibition Road will require close monitoring into the future. As such the Transport Master Plan should be updated in accordance with the Town Centre Review.

Specific Actions

A1.3.4

Upgrade of the Mann Street corridor with:

- a. Traffic controls that promote better traffic management (including the potential to develop a future bus route) and pedestrian crossing to the former Civic Centre site to the south
- b. Bend treatment between Hutchinson St and Mann St.
- c. Capacity for two lanes into and out of Mann St at the Adelaide Rd Roundabout
- d. Access to future car park opportunities along the route including Council's Stephen Street Car Park and Walker Street.
- e. Improved pedestrian facilities along and crossing of the road.

(See 1-5 Year Works Program for detail).

A1.3.5 (see Figure 25)

Upgrade Gawler Street between Hutchinson and Mann st and intersection of Gawler Street / Hutchinson Street including;

- a. Investigate Gawler Street as a one way extension to Cameron/Mann Street and assess the viability (and community acceptance) of a contra-flow bus lane between Mann St and Hutchinson St.

(See 1-5 Year Works Program for detail).

A1.3.6

Redesign Gawler Street/Adelaide Rd Intersection to provide left hand turn slip lane into Gawler St.

(See 1-5 Year Works Program for detail).

A1.3.7

Develop a Corridor plan for Hutchinson St between Gawler St and Druids Ave, as well as upgrading options between Hampton Road and Mann Street

Considerations include pedestrian crossings, bus stops, car parks access for shopping centres, and future plans for the intersection of Gawler St and Morphett St.

This includes provision of right turning lane into Druids Ave

(See 1-5 Year Works Program for detail).

A1.3.8

Develop a public parking policy (long term) that responds to this Transport Master Plan (by promoting stations only near Mann Street and Morphett Street (inside the box) and proper pedestrian links outside the box (Cameron Street etc.) Review this within the context of 2008 Public Transport Strategy investigations.

Council Action Plan: Internal resources/study, 1-3 years

In the medium to long term 4-5+ years (see Figures 23)

Whilst the development of the Bald Hills Road Freeway Interchange will alleviate some of the future traffic increases within the CBD, particularly along Adelaide Road amenity will continue to worsen without appropriate action. It is recommended that in an ultimate strategy a more overall approach to improving the amenity of the CBD (including car parking layout mentioned previously), encouraging public transport usage and pedestrian activity within the business and commercial precinct be pursued.

A key approach would be to develop an integrated pedestrian / public transport zone within the CBD (located between Morphett

Street and Mann Street and bordered by Walker Street to the west and Hutchinson Street to the east) by discouraging 'through' traffic movement within the core commercial precinct and encouraging this traffic movement onto routes outside of the pedestrian precinct. Future traffic growth can be better apportioned between Mann Street, Druids Avenue and Cameron Street, with a proportional reduction in traffic volumes along Gawler Street and Morphett Street. Morphett Street can be retained as a primary connector and bus corridor. Potentially significant car parking locations should be located as close as possible to the collector road (inner ring route) and/or connected to the outer perimeter of the pedestrian box near public transport services

(Morphett Street providing priority). Shared use zones would be applied. An urban design framework (as mentioned previously) over the entire CBD that supports this strategy is highly recommended **(see Figure 24)**

Also, a one way 'contra-flow' bus priority system would allow the successful Gawler Street precinct to be extended beyond Hutchinson Street but would nevertheless support this key bus corridor connecting to Hutchinson St/Morphett Street. The idea would be that traffic destined for the CBD would use Mann Street or Cameron Street to access several north-south streets connecting to the CBD and car parks. This strategy is predicted to have a significant in deterring 'though' traffic and revitalising the city core **(see Figure 25)**

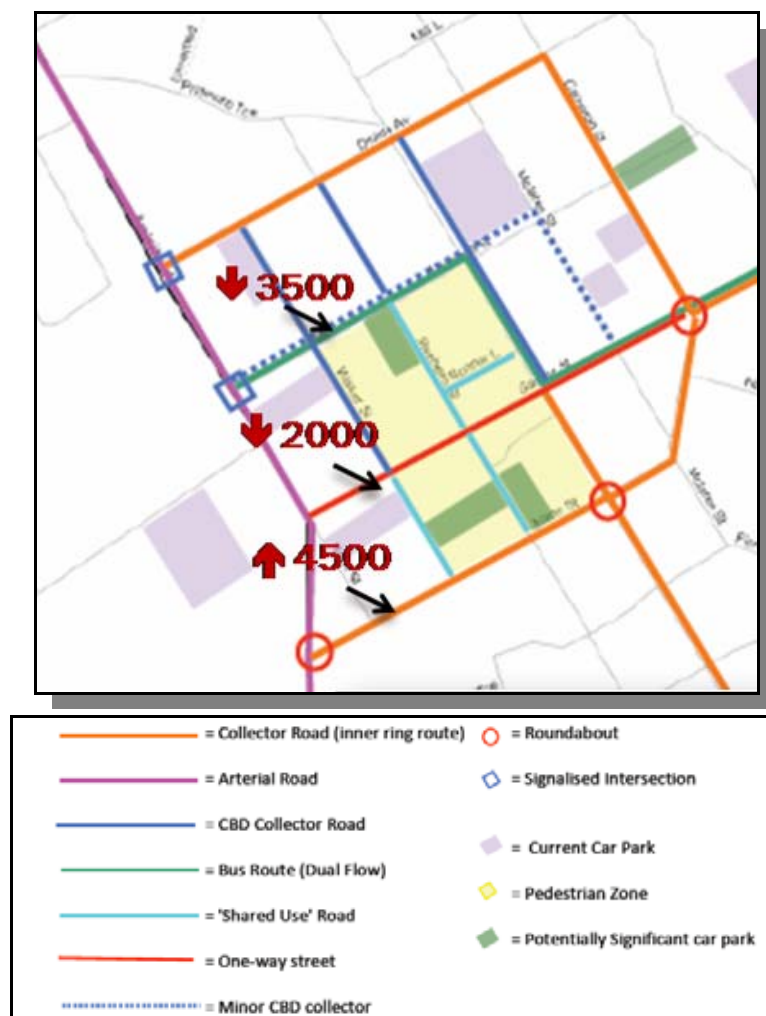


Figure 21. Expected traffic (vehicles per day) shift with medium and long term CBD actions implemented.

Specific Actions

A1.3.9

Develop a corridor management plan for Morphett Street between Adelaide Road and Hutchinson Street with consideration to:

- a. A focal public transport route
- b. Pedestrianisation connectivity across Morphett St
- c. Installation of a roundabout at Walker/Morphett Street.

(See 1-5 Year Works Program for detail).

A1.3.10

Develop a corridor management plan for Druids Avenue to support its function as a key access corridor to the CBD and as an alternative centre bypass route with consideration to:

- a. The rearrangement of the intersection of Druids Ave and Cameron Rd to close Druids Ave on the eastern side of Cameron and rearrange priority to Druids Ave and Cameron Rd East.
- b. Retaining significant trees and existing streetscape
- c. Possible provision of turning lanes into Hutchinson Street and Walker Street

(See 1-5 Year Works Program for detail).

A1.3.11

Revisit the Mount Barker Regional Town Centre Action Plan (Nov 2002) design framework so that any revisions reflect the strategies and actions contained within this Transport Master Plan.

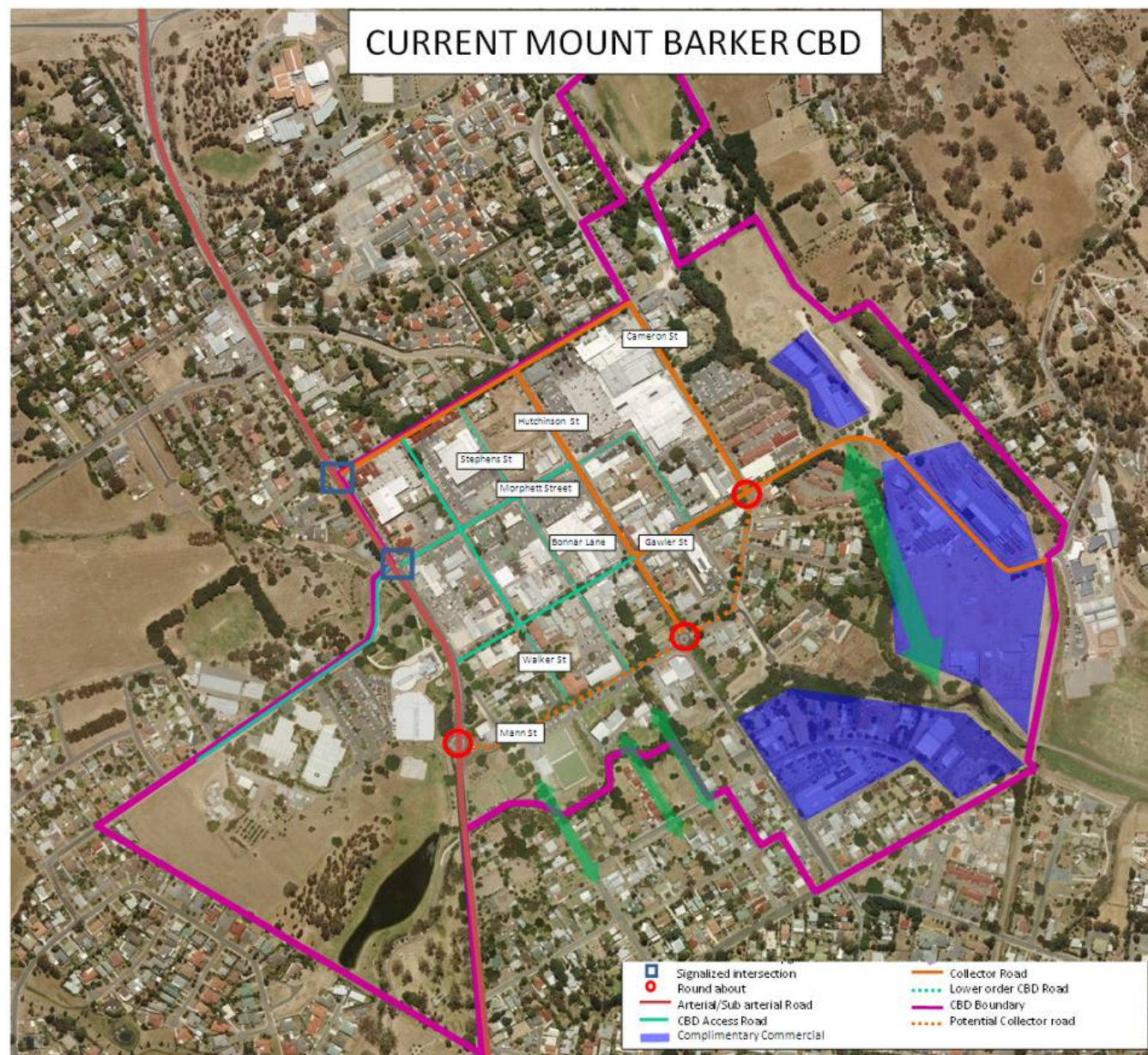


Figure 22 Current CBD transport network

Proposed Vision for the Mount Barker Central Business District

- Pedestrian Crossing
- Roundabout Improvements
- Traffic Lights
- Major Intersection Upgrades
- Road Upgrades (CBD Ring Route)
- Potential Carpark Development
- Public Transport Route (2 way)
- One Way Extension (Gawler St)
- Proposed Pedestrian Area / Box
- Town Centre Linkage
- Shared Use Zone (for pedestrians & vehicles)
- Linear Trail Network



Figure 23 Future Vision for Mount Barker CBD (See Actions 1.3.1 through 1.3.11)

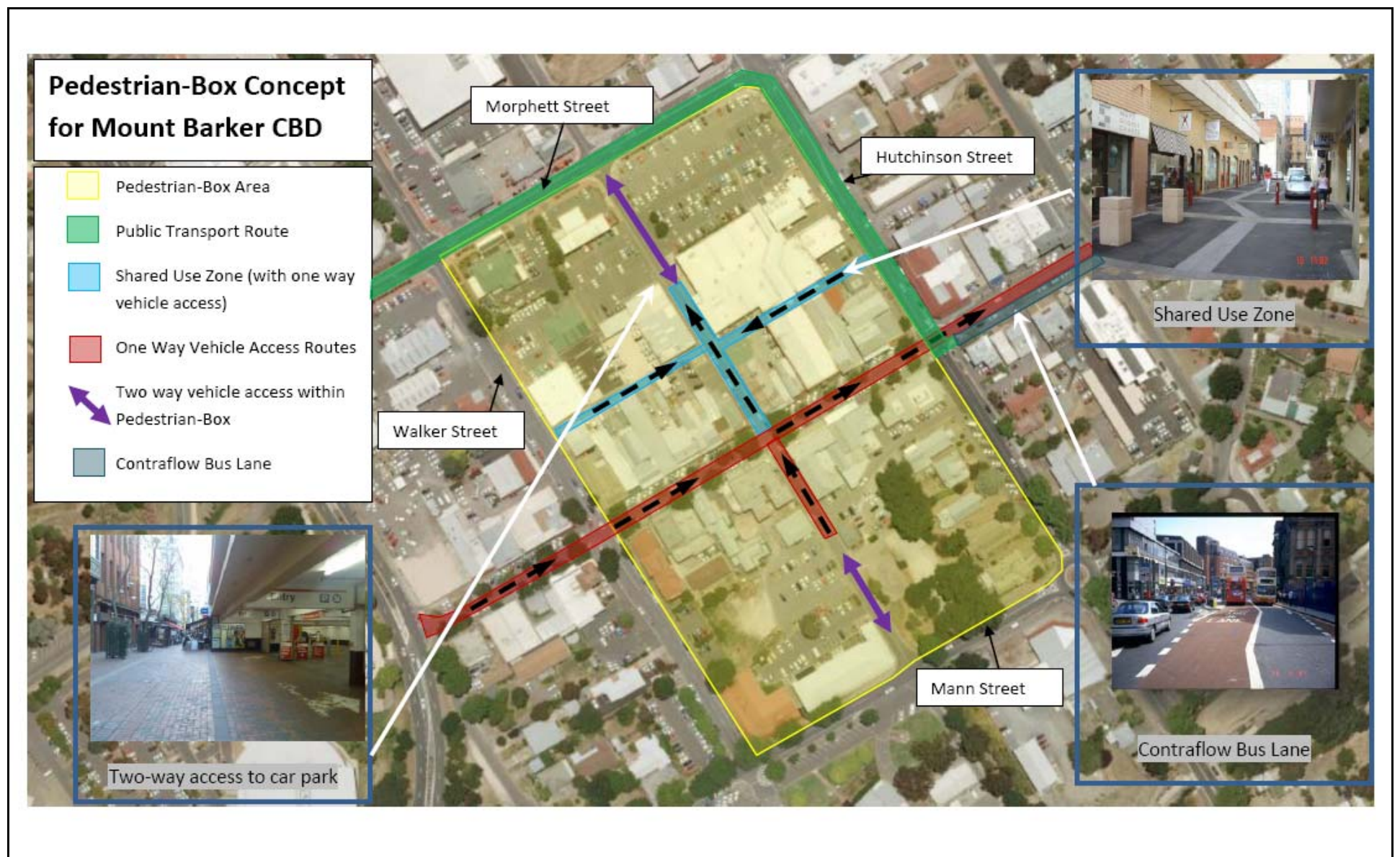


Figure 24. Mt Barker CBD Pedestrian-Box Concept

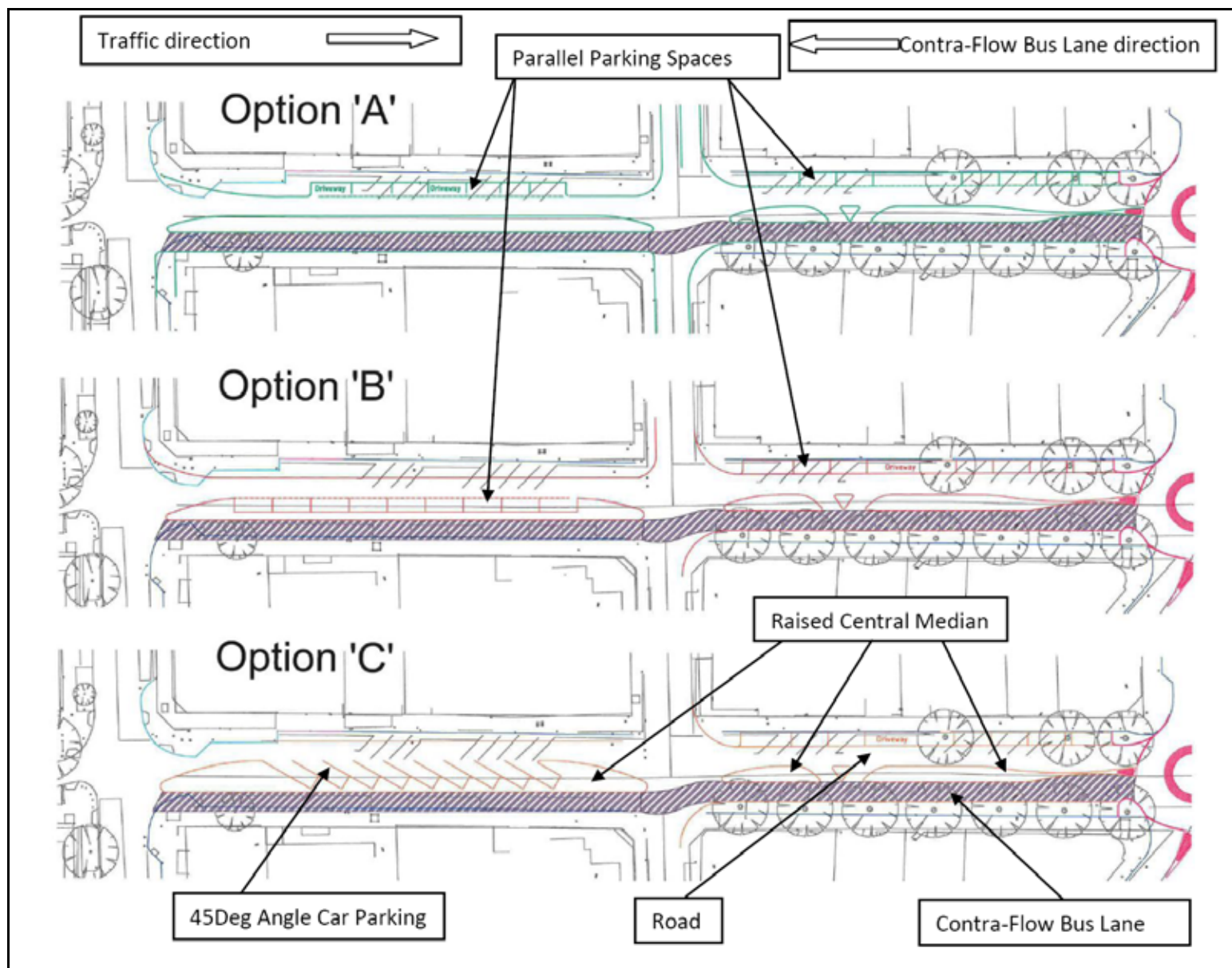
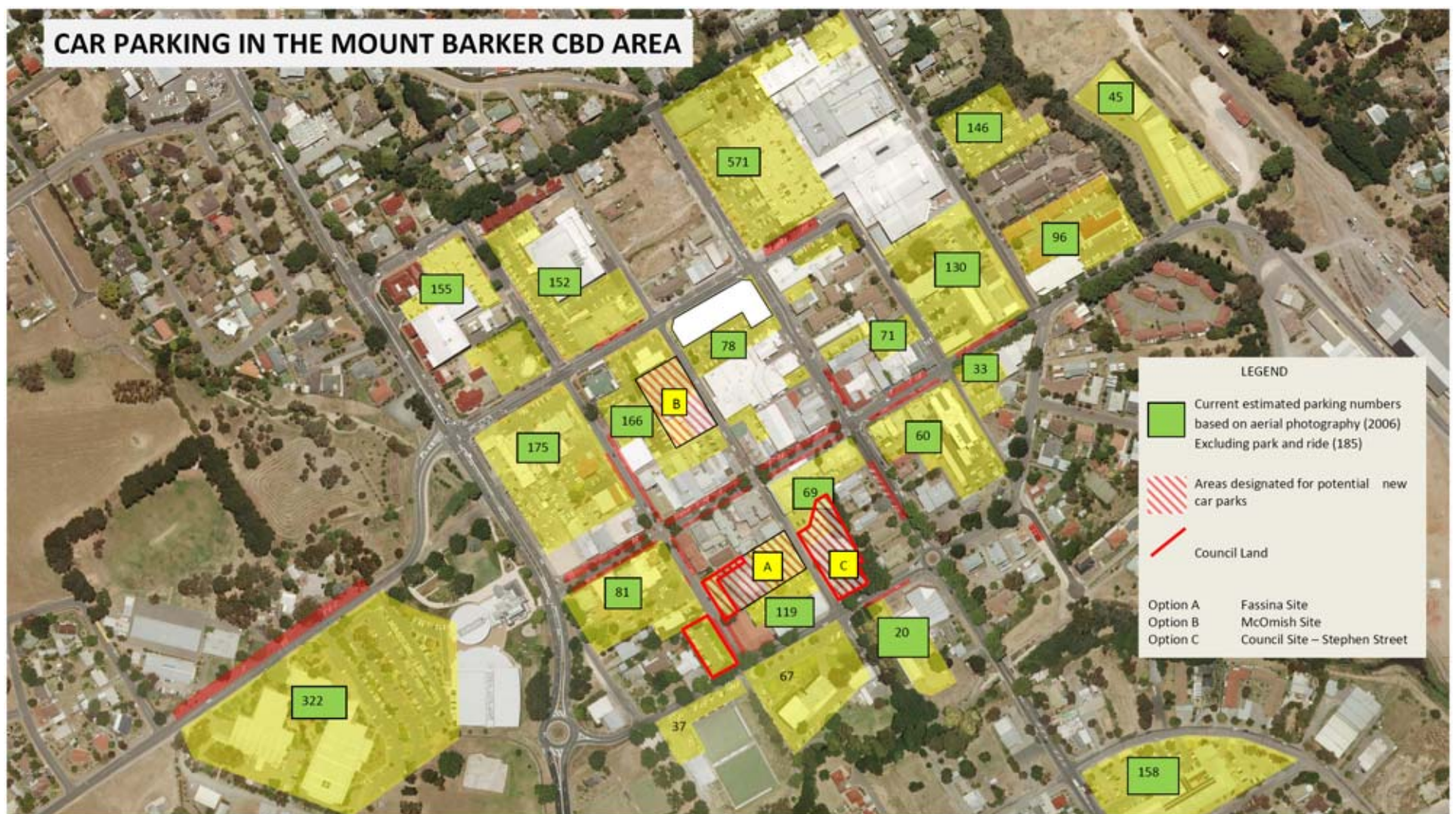


Figure 25. Gawler Street One way extension and contra-flow bus lane. Hutchinson Street to Cameron Street (indicative options only)



Strategy 1.4

Develop integrated transport and land use solutions that compliment the transport solutions contained in this report

Our Role: Leadership, Owner/Custodian, Initiator/facilitator, Part Funder.

It is important that transport related activities are not compromised by land development and likewise that local land uses are not impacted upon by traffic and in particular 'through' freight traffic. Land uses that compliment transport decisions increase accessibility, connectivity and support sustainable transport decisions.

This strategy aims to better coordinate land use with all transport infrastructure so as to maximise the efficiency of the network, and ensure that appropriate land use decisions are implemented. Transport investment will also be made in conjunction with the District's preferred sequence of growth.

Specific Actions

A1.4.1

Ensure that in the next revision of the Development Plan that a council Structure Plan include the preferred road and heavy vehicle routes around the major towns are protected by development controls.

A1.4.2

Support buffer and access protocols for all forms of land use key transport corridors.

[Council Action Plan: Internal resources/study, 1-3 years](#)

A1.4.3

Ensure all new development areas within Mount Barker including those outlined in Development Plan Amendments (PAR) be provided with strategic access points that support and are aligned with the network operating strategy.

[Council Action Plan: Internal resources/study, 1-3 years](#)

A1.4.4

Develop a concept plan for the provision of shared zones inside the Pedestrian box between Morphett Street and Mann Street, Walker and Hutchinson Streets – this includes paving and pedestrianisation of Stephens and Bonnar Lane. Entry and exit points to car parks to be traffic managed into a shared use zone requirement.

[\(See 1-5 Year Works Program for detail\).](#)

Strategy 1.5

Develop a ‘Network Operating Strategy’ that better defines the road hierarchy based on the passenger, commuter, tourist and the freight task.

Our Role: Leadership, Owner/Custodian, Advocate, Part Funder.

The defining of the road hierarchy through a ‘Network Operating Strategy’ ensures that the road network will be consistent with the function of users of the road network (as opposed to focussing on traffic volumes or the asset itself). It is proposed that Network Operating Strategy framework contained in this Transport Master Plan will be further developed to align with DTEI arterial road functions. This will ensure alignment between Council’s road hierarchy and that of the State’s road system.

Functional Road Use Hierarchy

Through discussion with Council, the function of the District road network was identified with regard to the following uses :

- **Transport Access Links** – that provide for significant commuter volumes and accessibility to community facilities. These routes provide an important connection between residential precincts and places of

work, education, business, shopping, and recreation.

- **Tourist Links** – that are used by commercial tourist bus operators or high levels of private tourist traffic. Tourist Drives also provide a defined tourist route.
- **Public Transport Links** – used by passenger transport and school bus services.
- **Freight Links** – ranging from Primary Routes (that provide inter-regional freight movements), Secondary Routes (intra regional freight corridors and supplementing freight movements through the District), Local Routes (connecting local industry to primary routes), and Minor Freight Routes (connectivity for standard freight/commercial vehicles to industrial and commercial development).

Broad principles behind the various functional routes are included in Appendix C.

Specific Actions

A1.5.1

Adopt the functional hierarchy proposed within the Network Operating Strategy – this includes freight, commuter, public transport etc.

Council Action Plan: Internal resources/study, 1-3 years

A1.5.2

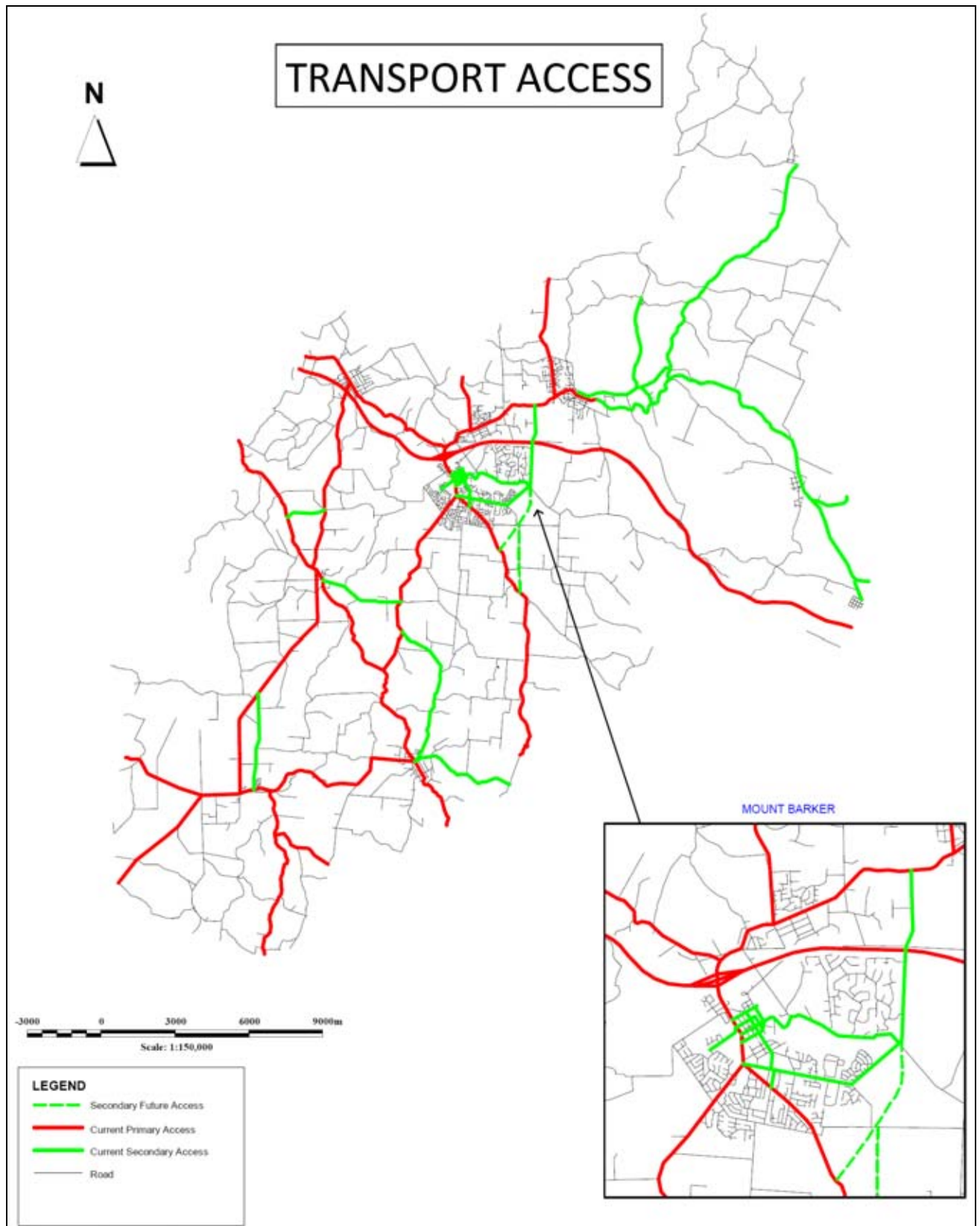
Audit the road network system on an annual basis using the recommended hierarchy in Appendix C.

Council Action Plan: Internal resources/study, 1-3 years

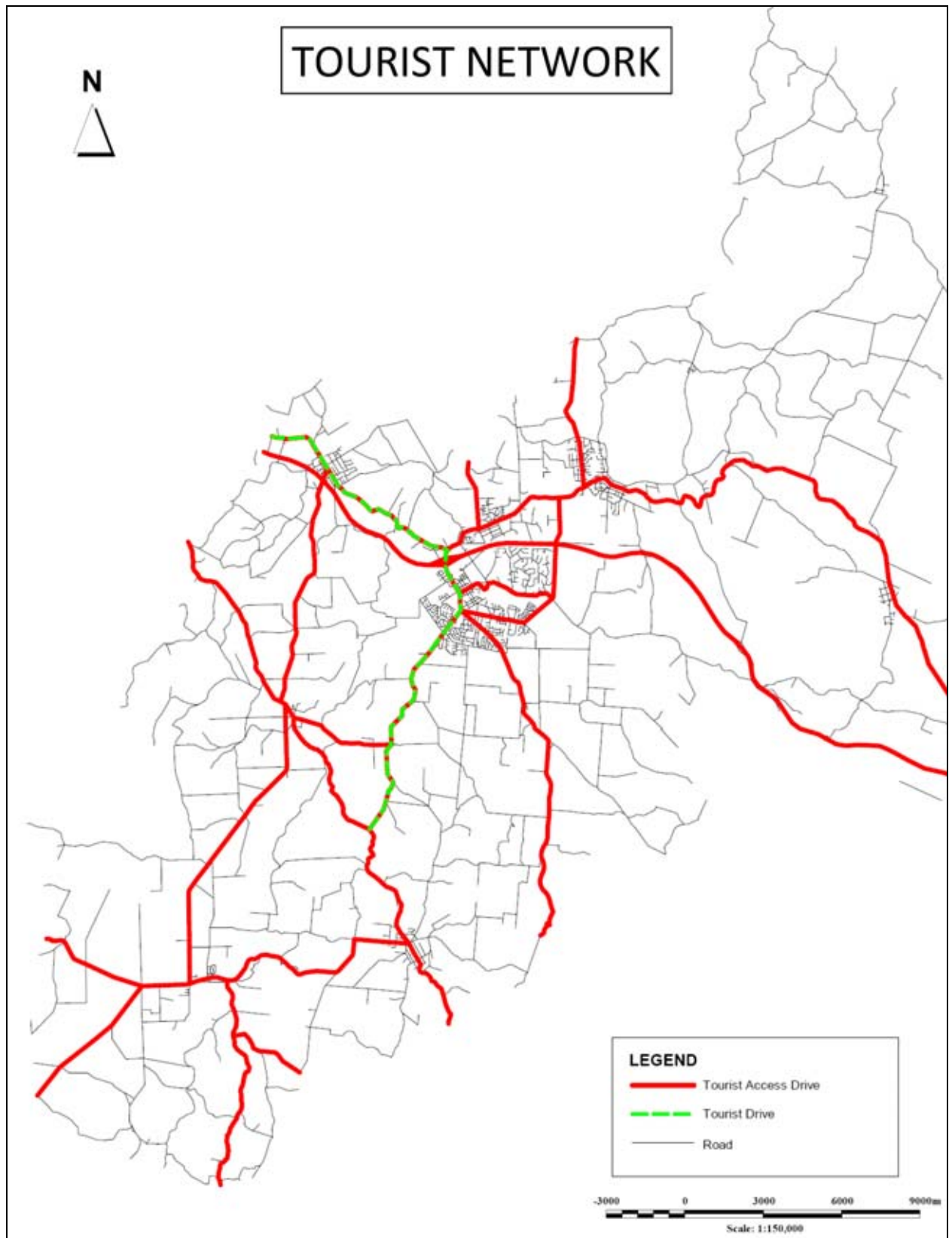
A1.5.3

Undertake a review (and expand) of the Network Operating Strategy contained in this document in consultation with DTEI and other interested bodies, business and the community to determine the asset management implications for Council.

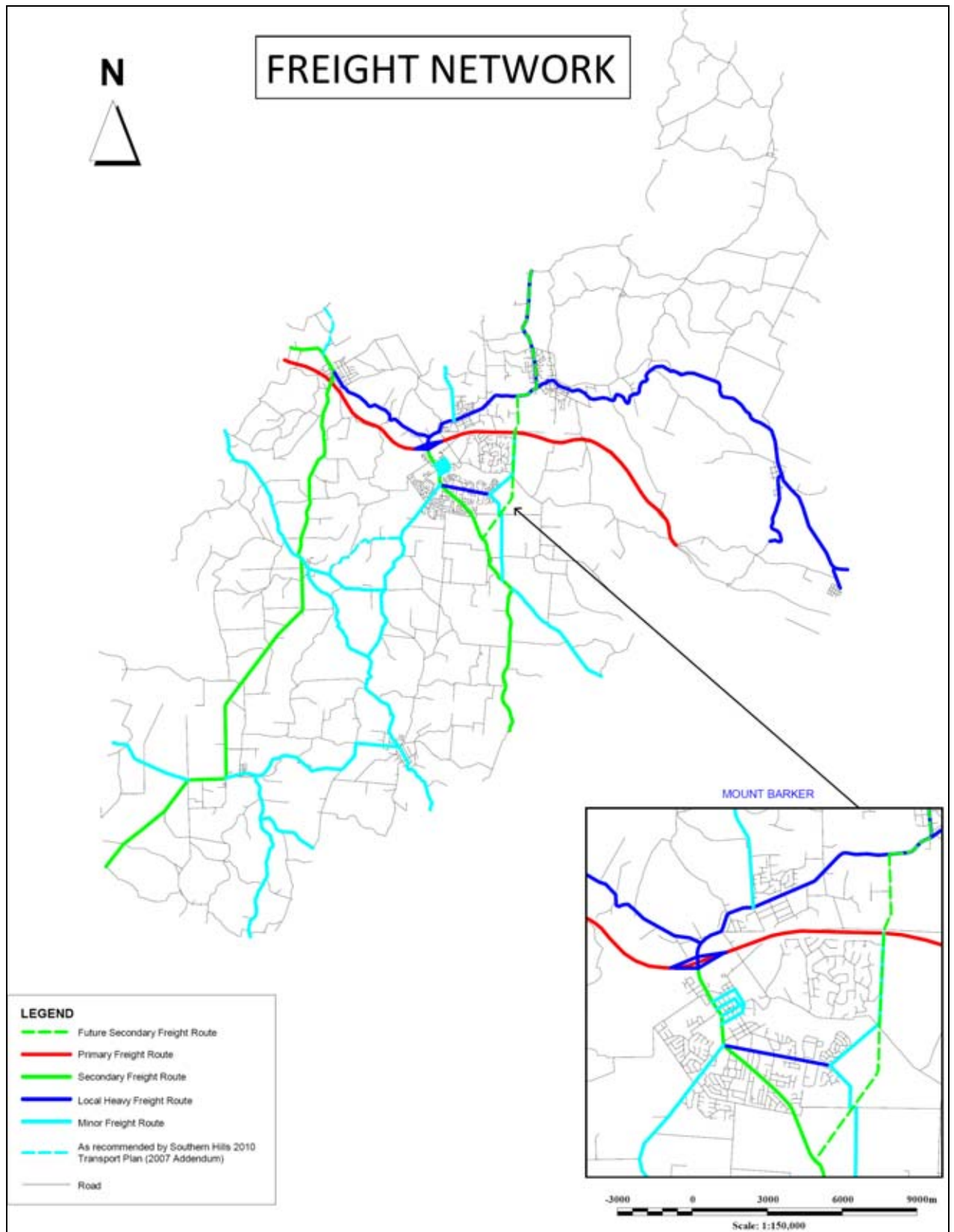
Council Action Plan: Internal resources/study, 1-3 years



Network Operating Strategy Map 1. Transport Access

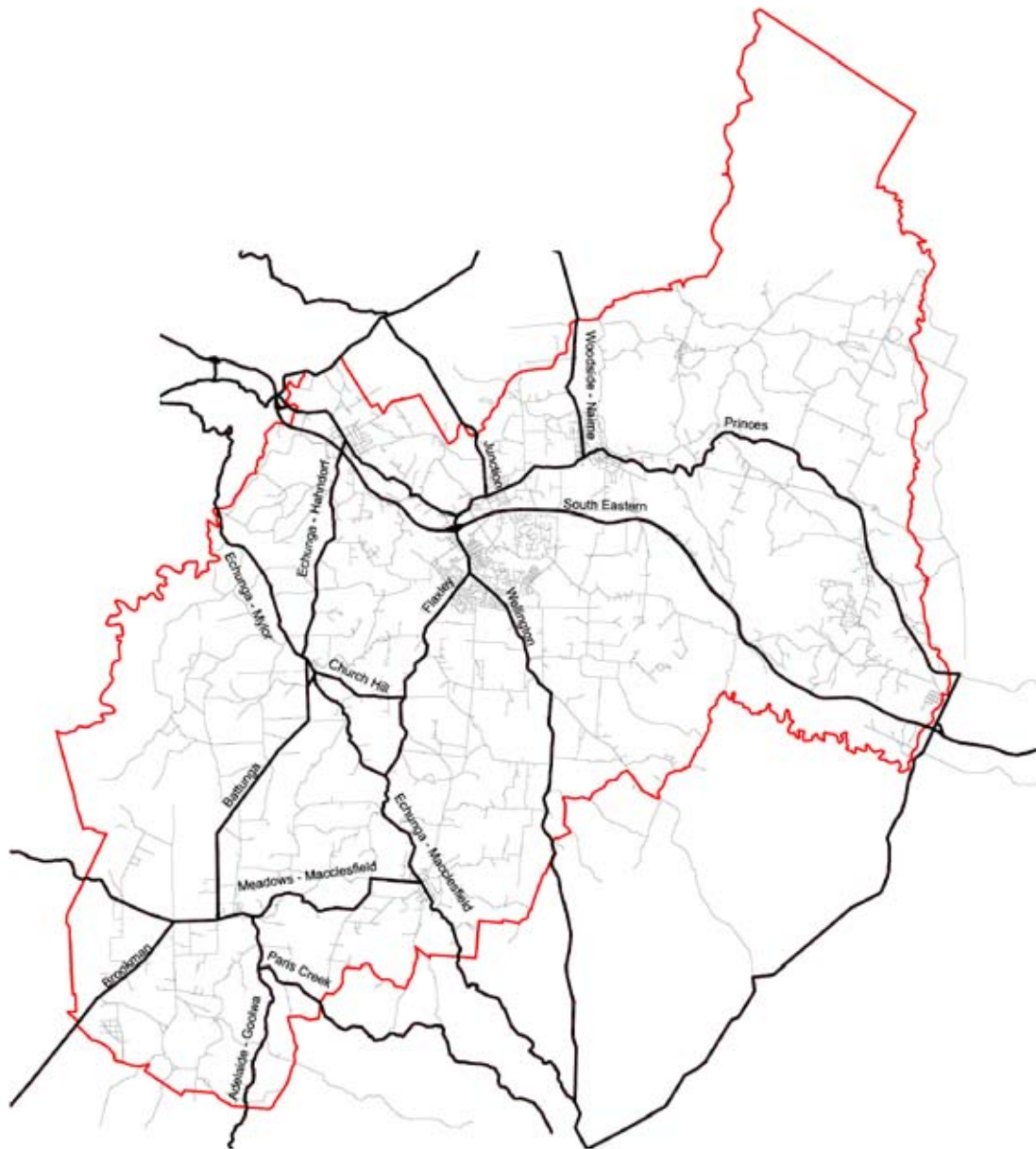


Network Operating Strategy Map 2. Tourist Routes



Network Operating Strategy Map 3. Transport Freight Routes

DTEI Maintained and Local Government Roads



— Local Roads
 — DTEI Roads
 — Mt Barker Council Boundary
 South Eastern Freeway is a National Highway



Network Operating Strategy Map 4 DTEI Maintained Roads

Strategy 1.6

Investigate B-Double route strategy

Our Role: Initiator/facilitator.

The strategy for The District Council of Mount Barker should be to maintain the status quo unless there is a commitment from the State Government for a new connection to the freeway to the east of Mount Barker as per Strategy 1.1. This would require the Bald Hills Road to Alexandrina Road/ Enterprise Park entrances to be widened and constructed to a B-Double standard. Furthermore, works are required to bring other links up to a B-Double Standard including minor road widening (to a 7.4m seal), bridge and culvert widening and pavement strengthening.

The unregulated movement of over dimensional freight movements should be discouraged without funding assistance and a new connection to the South Eastern Freeway at Bald Hills Road.

Specific Actions

A1.6.1

Review the 2020 Southern and Hills Local Government Association Transport Plan (soon to be released) to ensure that the outcomes are consistent with Council aspirations for freight routes.

Council Action Plan: Internal resources/study, 1-3 years

A1.6.2

Reconfigure the B-double network to allow for access from the proposed Bald Hills Road Interchange to Enterprise Park via Alexandrina Road.

Council Action Plan: Internal resources/study, 1-3 years

A 1.6.3

Develop an additional road connection between Alexandrina Road and Secker Road, suitable for heavy vehicle access from Bald Hills Road.

Develop Alexandrina Rd between Secker Rd and Bald Hills Rd to a B-Double standard.

Council Action Plan: Internal resources/study, 1-3 years

Strategy 1.7

Ensure traffic management issues to ensure local / site specific concerns are addressed

Our Role: Leadership, Owner/Custodian, Initiator/facilitator, Funder, Advocacy.

The day to day management of specific traffic problems is an ongoing role that Council must facilitate. In some situations the problems identified only involve Council roads, in which case it has complete control and responsibility for the investigation and implementation of treatments. In other instances, the roads are under the control of DTEI, and in these situations Council has a leadership / advocacy role to ensure that the concerns are properly addressed by the State.

The treatment of specific traffic locations must be undertaken in the context of the overall transport management plan, with particular regard to the functional use of the roads (as identified in the Network Operating System). Treatment options must be in accordance with the Code of Practice for the Legal Use of Traffic Control Devices in South Australia, and associated Australian Standards and Guidelines.

Specific Actions

A1.7.1

Develop the Princess Highway/ Woodside Road Junction and Princess Highway/Saleyard Road junction.

Implement recommendations identified by separate investigations to address traffic safety concerns associated with the Nairne Primary School, and nearby junction of Princes Highway and Woodside Road. Components include: new pedestrian activated crossing, several footpath upgrades, Princes Highway intersection upgrades with Saleyard Road and Woodside Road including turning lane reconfiguration.

(See 1-5 Year Program of Works)

A1.7.2

Develop Sims Road External Infrastructure in Response to Development

Subject to public consultation, implement Sims Road Concept Plan. .

A1.7.3

Resolve the Princes Highway / Junction Road, Littlehampton issues.

In the short term improve definition of the intersection and turning movements with the installation of kerb protuberances in Princes Highway (to define the parking lane and traffic lanes) and / or the installation of a raised median in both approaches. Consideration to also be given to the minor widening of Junction Road and provision of an additional turning lane. DTEI are currently investigating the options to install roundabouts at this location. Once project concepts have been developed to a more detailed level, DTEI will submit these sites for funding through the available funding sources. These projects will need to be prioritised against other network needs to ensure that the greatest benefit is offered to the community as a whole, therefore the implementation of this project is subject to this process and timing.

Advocate Council's position to DTEI

(See 1-5 Year Program of Works)

A1.7.4

Resolve the Mt Barker Road / Adelaide Road / North Terrace issues.

DTEI are currently investigating the options to install roundabouts at this location. Once project concepts have been developed to a more detailed level, DTEI will submit these sites for funding through the available funding sources. These projects will need to be prioritised against other network needs to ensure that the greatest benefit is offered to the community as a whole, therefore the implementation of this project is subject to this process and timing.

Consideration could be given to alternative lane arrangements, the installation of traffic signals (subject to warrant considerations), or the installation of a roundabout.

(See 1-5 Year Program of Works)

A1.7.5

Flaxley Road / Hurling Drive: Consider improved junction controls to cater for future traffic volumes pending the ongoing development of the area.

Council Action Plan: Internal resources, 1-3 years

A1.7.6

Resolve Hahndorf Main Street issues.

Approach the DTEI with a view to investigating the installation of kerb protuberances around the corner of Main Street and Pine Ave to enable minor realignment of Pine Ave and advance stop line to improve sight distances, and better define the parking lane along the western side of the road. Investigate opportunity to widen southbound lane to enable through traffic to pass right turners into Pine Ave.

Medium to Long term strategy:

Restrict Heavy vehicles from using the local road network connecting to Main Street including Ambelside Road (see Action A1.1.2)

Construct the Verdun interchange to remove east bound freight movements (see Action A.1.1.8)

(See 1-5 Year Program of Works)

A1.7.7

Resolve the Church Street Hahndorf issues.

Review extension of the existing peak school hour parking restrictions further east along Church Street, or the application of parking restrictions on one side of the road to reduce congestion along the road. Also review options for the implementation of a Kiss 'n' Ride for St Michael's Lutheran Primary or Hahndorf Primary as per Strategy 4.4.

(See 1-5 Year Program of Works)

A1.7.8

Resolve the Mawson Road / Battunga Road, Meadows issues.

Approach DTEI with a view to rationalising the intersection space with medians and corner kerbing to better define the intersection area and movements associated with the adjacent Hotel and Service Station. Improve definition of the give way requirement and sight distances.

(See 1-5 Year Program of Works)

discomfort to passengers. The impact of these measures on the adjoining road network would need to be assessed prior to implementation. In the longer term and subject to any future growth to the north and east on Nairne the road could be developed as a local collector corridor.

(See 1-5 Year Program of Works)

A1.7.9

Resolve the Adelaide – Goolwa Road / Paris Creek Road issues.

Approach DTEI to determine whether any further improvements can be initiated at the junction.

(See 1-5 Year Program of Works)

A1.7.12

Resolve Mawson Road / Brookman Road Meadows issues.

DTEI has submitted this location for funding consideration under the 2009-2010 Black Spot Program. This project includes the removal of several significant trees, upgrade of Brookman Rd approach signing and installation of guardrail.

(See 1-5 Year Program of Works)

A1.7.10

Resolve the Main Street Nairne issues (adjacent post boxes).

Introduce 15min parking limit adjacent the Post Office to ensure adequate turnover of kerbside spaces

(See 1-5 Year Program of Works)

A1.7.13

Improve pedestrian safety and traffic flow on Dutton Road at St Francis de Sale College.

Implement Dutton Road pedestrian treatments including a new emu crossing, and a possible Kiss 'n' Ride at St Francis de Sale. Further investigate restriction to right turning vehicles into the school, and the potential for round about works at Springs/Dutton intersection.

A1.7.11

Develop North Road Nairne to meet its role in the road network.

Traffic conditions should be monitored subject to the relocation of the school crossing as part of 1.7.1 and impact on delays at the Woodside Road / Princes Highway junction. If the bus route is to be retained along the road and traffic continues to use the route, consideration should be given to widening the road, retaining the 10 tonne load limit. Traffic calming measures should be considered to reduce the excessive speed problem. Devices need to be suitable for bus use, without creating adverse

A1.7.14

Develop and extend Saleyard Road to improve local access for the township of Nairne (in response to future growth).

Future Saleyard road connections would act as a collector for local residents to the south of Nairne, as well as reducing traffic on Main Road. Investigations should account for current residences, as well as road widening to cater for future redirected traffic.

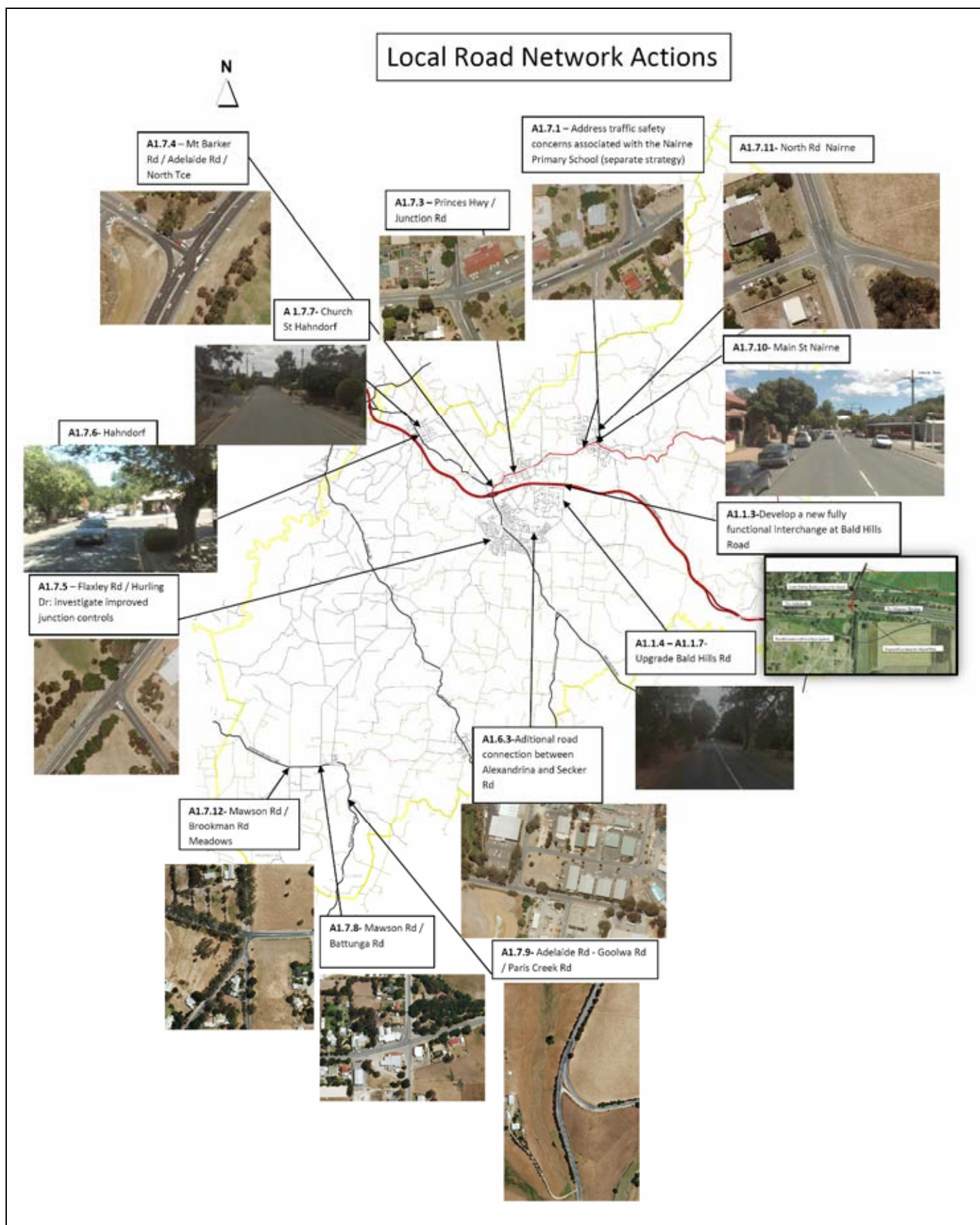


Figure 27. Indicating local road network actions in Strategy 1.7



Public Transport

Outcome B: Improved public transport accessibility and availability within, through and from the District Council Area.

02

The role of public transport in the District Council of Mount Barker is expected to become increasingly important. This was illustrated by the emphasis to increase public transport during the consultation process for additional services, access and coverage. Increasing and improving public transport accessibility and availability responds to the transport disadvantaged, and connects residents within, and between locations outside of, the District. The successful Park-and-Ride scheme demonstrates the significance of public transport for the region.

Journey to Work and School

According to the *Metropolitan Adelaide Household Travel Survey* (1999) trips for the purposes of Education and Work account for 20 percent of all trips. These trip purposes also contribute to much of the morning and evening peak, which often leads to traffic congestion. An increase in public transport use for these trip purposes can significantly relieve this stress on the road network during peak times. This can be achieved through a number of initiatives, dependent to some extent on a better understanding of trip generators such as educational institutions and places of work for the District's residents.

New Residential Developments

The District's increase in residential growth (as outlined in Goal Area 01) supports the need for new services that match this population growth. An important aspect of this is the incorporation of services to newly developed areas to ensure transport equality. Ensuring public transport provisions are established, and matching these accordingly with population growth, will improve the liveability of developing areas.

Impact of Global Influences

The role of public transport in the District of Mount Barker will become more important as petrol prices continue to rise and private vehicle travel impacts on climate change. Household travel behaviour is certain to

change as household budgets are eroded by rising costs.

Public transport can also reduce the District's reliance on petrol, reducing emissions that contribute to climate change. Public transport as a demand management initiative (see Goal 5) will become more critical over time.

Accessibility

From the perspective of passengers, access is about being able to easily get from their home to the services or opportunities they need. The mode of transport people use is only an issue when a journey is inconvenient because it is awkward or difficult to use more than another mode of travel. This could, for example be the result of timetabling where services do not properly link with one another thereby causing significant delays for its users. It also could be poorly designed or inadequately maintained pedestrian facilities that make it difficult to walk to a bus stop; push a pram or to use a wheelchair. Council has developed a 'DDA'²¹ Action Plan 2006 to address some of these issues.

Council will ensure that measures or upgrades on public transport routes be designed to warrant suitable and appropriate access for bus services. This includes (for example) turning paths at roundabouts, suitable road widths and sufficient ingress and egress points.

Public Transport Response to Demographic Shift

DC Mt Barker's age demographic must also be taken into consideration when planning for new services. The District has a much higher percentage of people between the age of 0-17 than the Adelaide Statistical Division (DC Mt Barker = 27.7%, while the ASD = 22%), ABS, 2006 as well as a fast growing demographic of people of retiring/retired age (60-84) than the ASD. These two age demographics are the most likely to suffer transport disadvantage.

²¹ Disability Discrimination Act, 1992.

This may be due to a number of factors including being under legal driving age or having limited income for private travel expenses. This again highlights the increasing importance of public transport to address the accessibility needs of the transport disadvantaged, particularly where there are gaps in public transport services (as per **Figure 28**).

Park and Ride success

The recent success of the 'Park and Ride' and Bus Depot on Dutton Road highlights the need to undertake 'controlled access route assessments' ahead of time to ensure intersection layouts and vehicle turning movements are adequate for the fleet of large buses (some over dimensional) that operate in the area.

Mass Transit for Mount Barker

A number of studies and pieces of work have been undertaken on the feasibility of a passenger rail service from Mount Barker to Adelaide. The general conclusion from these studies has been that the topographical issues are cost prohibitive to the development of such a route, however the Draft 30-year Plan for Greater Adelaide does highlight a 'potential mass transit route' from Mount Barker to a central location in metropolitan Adelaide. Council will continue to investigate the possibilities of this 'mass transit route' and will seek further information from the State Government on mass transit options.

Strategy 2.1

Develop a long term public transport network plan, with services, frequencies and coverage that is well matched to land use and community needs

Our Role: Leadership, Direct Service Provider, Initiator/facilitator, Advocate, Part Funder.

The aim of this Strategy is to improve the effectiveness and efficiency of the public transport network through-out the District.

Developing a public transport plan for the district illustrates the level of service expected for the District's residents. This will provide a basis for arguing for short term initiatives and priorities for funding. Throughout the consultation process it was suggested that the frequency of public transport services were insufficient. The setting of goals and desired levels of public transport frequency will enable the District Council to advocate for improved services.

The function of each bus-stop and route in the District can be measured by its location, the number of public transport services it provides, as well as the number of patrons it caters for. Minimum performance standards should be developed (including geometrical) to ensure infrastructure matches the needs of the location and its patrons, and to improve safety at stops. This can then either be used as a tool

to lobby the state government for infrastructure improvements or build a business case to remove impediments to travel/identify key design features.

Giving buses road network priority improves the appeal of using public transport. Council will investigate the benefits or impacts that bus-prioritisation can have on the road network, and report on the possibility of implementing such measures.

Due to the rural setting of the District, compounded by recent rapid residential expansion, certain areas have poor access to public transport. Areas that can now support more frequent public transport services need to be identified to reduce car dependency and reduce transport disadvantage.

A long term public transport plan will be developed in conjunction with DTEI, and needs to identify a future road network structure that can accommodate regular bus services operating on well connected routes within walking distance of all proposed residential parts of Mount Barker.

The 2008 State Budget included \$29 million to implement a new ticketing system. The District Council of Mount Barker should use this as an opportunity to integrate the non-metroticket services (specifically services 852 and 854) into the new ticketing system.

Specific Actions

A2.1.1

Improve the effectiveness of radial services from outer townships into Mount Barker.

Council Action Plan: Internal resources/study, 1-3 years

A2.1.2

Periodically audit bus stop locations to identify gaps in infrastructure and safety.

Council Action Plan: Internal resources/study, 1-3 years

A2.1.3

Investigate opportunities for buses to have priority at specific intersections or congestion areas on the network.

Council Action Plan: Internal resources/study, 1-3 years

A2.1.4

Identify gaps in current services to improve access and frequency – this action needs to be tied in with projected growth strategies

Council Action Plan: Internal resources/study, 1-3 years

A2.1.5

Advocate and liaise with State Government for a 'one-ticket system' as well as extensions to the existing metro-ticket network in the District.

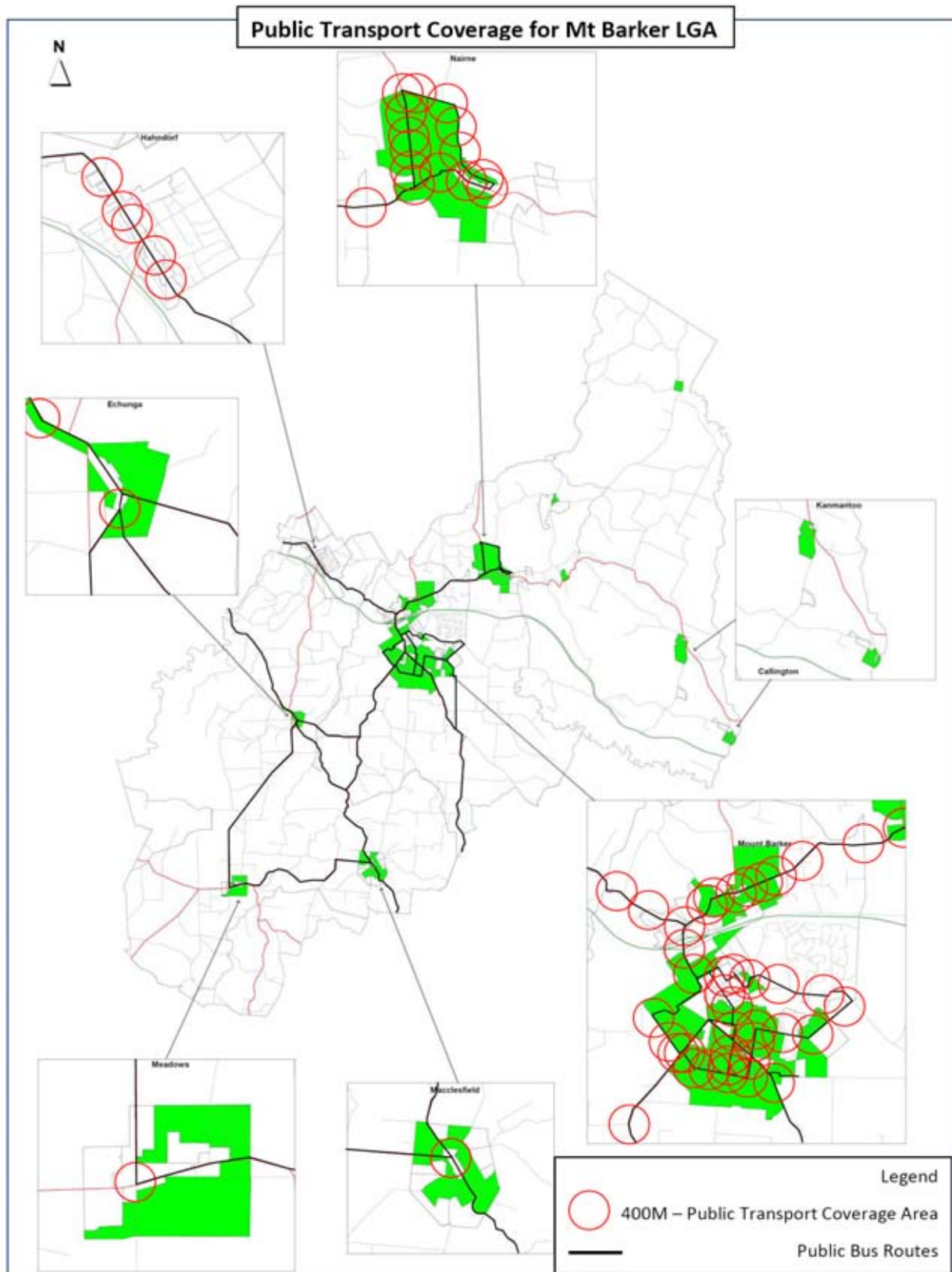


Figure 28. Public transport coverage along routes and around bus stops, and gaps between stops.

Strategy 2.2

Ensure integration of other transport modes to public transport infrastructure

Our Role: Leadership, Advocate, Initiator/facilitator.

Park-and-Ride facilities work well where there is a high frequency of bus services, and therefore Park-and-Rides in each township need to be well located. Such facilities are ideally located at a point where a number of bus services converge, eg Mt Barker Freeway Interchange

Walking and cycling infrastructure connected to public transport facilities will improve destination connectivity and increase access to public transport services. Integration of other travel modes, such as the existing Park-and-Ride in Mount Barker Township, will facilitate integration.

Specific Actions

A2.2.1

Provide a new park and ride facility in partnership with the Passenger Transport Board at Mount Barker Road, Littlehampton.. Provide park and rids

and feeder buses in every township, and consider other locations for Park-and-Ride schemes based on projected growth.

Council Action Plan: Internal resources/study, 1-3 years

A2.2.2

Lobby the Passenger Transport Board to provide secure bicycle parking at the existing and any future Park-and-Ride facilities.

Council Action Plan: Internal resources/study, 1-3 years

A2.2.3

Investigate locations for indented bus “pull out” areas along key and narrow roads (e.g. Main Street, Hahndorf).

Council Action Plan: Internal resources/study, 1-3 years

Strategy 2.3

Investigate the opportunity for flexible public transport /taxi services and timetabling.

Our Role: Leadership, Advocate, Initiator/facilitator.

Taxis play a key role in supplementing public transport while in small towns, taxis may be the only form of public transport available at certain times and in certain locations. The rural taxi industry has a combined phone, rank and hail market structure. The majority of business comes from the phone and rank elements of the market with a much smaller proportion coming from on-street hailing. This is due to the fact that a large proportion of the market is door-to-door trips as well as trips from high demand areas that have ranks conveniently located nearby. The location of these taxi ranks can be explored in the corridor plan development for Mann, Druids or Morphet Streets (see Strategy 1.3).

Taxi passengers reflect a broad cross-section of society and the reasons for using taxi services are varied. Older people and young people with disposable income tend to use taxi services relatively frequently in rural areas. It is also evident that people with disabilities are

an important user group and often depend on taxis for accessible transport in rural areas (the current Taxi Subsidy Scheme assists those with physical needs).

Mount Barker is outside the 'metropolitan' region for Adelaide taxi services and therefore is serviced by small passenger vehicles (hire cars). These vehicles are subject to minimum services standards however are not required to provide 24hr services or minimum response times. Negotiation regarding specific service requirements would need to be negotiated between the Council and each service provider.

Working with Tourism SA, community groups, the taxi industry and the local business groups can create a viable bus / taxi service that link to key destinations (also provide information on links to other public transport services). There is a need for objectivity, transparency, accountability and capacity/resources to ensure a quality service.

Specific Actions

A2.3.1

Initiate further discussions with DTEI (Public Transport Division) and the Hills Community Passenger Network to implement Strategies 2.1 and 2.2.

Council Action Plan: Internal resources/study, 1-3 years

A2.3.2

Explore potential partnerships with private bus companies and tourism operators

Council Action Plan: Internal resources/study, 1-3 years

A2.3.3

Continue to work with taxi service providers to reach agreed minimum service standards/ encourage the integrated provision of transport at local level.

Council Action Plan: Internal resources/study, 1-3 years

Strategy 2.4

Provide information on current public transport services to residents and visitors

Our Role: Leadership, Information Provider.

Information on public transport services available to the community is an important aspect of increasing familiarity and patronage. By providing information of when, how and where to utilise public transport Council is addressing issues of accessibility, isolation, and transport disadvantage and choice.

Real time information systems can also provide information on the arrival time of public transport improving certainty for passengers. This has been successfully applied in inner city locations and would be of great benefit to the District.

Specific Action

A2.4.1

Investigate how to best market/disseminate information on services to: 1) General Community 2) The transport disadvantaged

Council Action Plan: Internal resources/study, 1-3 years

Strategy 2.5

Improve accessibility to public transport for people with specific needs

Our Role: Initiator/facilitator, Agent, Part Funder.

Poor transport connectivity contributes to social exclusion by restricting access to essential or leisure activities, such as work, learning, health care, shopping and socialising. Furthermore, excluded communities or individuals may suffer disproportionately from pedestrian deaths, pollution, severance and isolation – all of which can be limited by effective public transport options. Those who merit specific consideration include:

- People with disabilities
- Older people (increasing as a proportion of the population of South Australia)
- The young (especially dependent on public transport)
- Other socially or economically disadvantaged groups such as the Indigenous population.

Access Cabs can provide services to My Barker residents however this is under 'country running' arrangements and therefore not subject to minimum response times. The Public Transport Division has approved operators in the region to accept SA Transport Subsidy Vouchers and

therefore the introduction of minimum service requirements could be undertaken by the Council directly with these approved operators.

Specific Actions

A2.5.1

Ensure DDA compliant bus stops and services.

[Council Action Plan: Internal resources/study, 1-3 years](#)

A2.5.2

Investigate access cabs/taxi services to provide better access and response times

[Council Action Plan: Internal resources/study, 1-3 year](#)

A2.5.3

Focus on an efficient and responsive system that meets the needs of the disadvantaged or vulnerable.

[Council Action Plan: Internal resources/study, 1-3 years](#)



Walking & Cycling

Outcome: Increased levels of walking and cycling in the District Council Area.

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Council has indicated its commitment to walking and cycling in its Draft Community Strategic Plan. One outcome in the Plan is for “*Towns and communities where cycling and walking is safe and accessible*”. The strategies within this Transport Master Plan aim to achieve this outcome in conjunction with increasing the levels of participation. Journey to Work figures (Australian Bureau of Statistics, 2006) indicate that DC Mount Barker has lower rates of people travelling to work by bicycle than the rest of the Adelaide Statistical Division, but a marginally higher rate of those who walked. This illustrates an opportunity to encourage higher participation in cycling, and to enhance the already good participation in walking.

Infrastructure

Infrastructure is an important aspect of encouraging people to consider walking and cycling as a viable transport option. It also plays an important role in connecting people to the places they need to access such as shops, residential areas and other services. Council is aware of the need to invest in the appropriate infrastructure for walking and cycling.

Recreation Trails

Recreation trails play an important role in encouraging participation in walking and cycling.

The Outer Metropolitan Planning Strategy also places an emphasis on ‘a network of integrated recreational trails throughout the region to enhance its recreation, sport and tourism opportunities’. Key directions include:

- Integrate existing and proposed trails with open space areas.
- Where new trails are being developed, ensure trail routes intersect with key towns, which can offer required services, including a range of accommodation.
- Plan appropriate development of linear parks and trails that ensures their long term viability and integrity.

The Laratinga Trails are an example of the dedication of the Council to invest in such infrastructure, and to encourage higher levels

of walking and cycling. Council will continue to seek opportunities for additional recreation trails along current and future corridors.

Health Benefits

Transport and lifestyle decisions are combining to produce health related problems, such as obesity. The impact of transport and urban planning decisions on health and wellbeing, identified during consultation, has been identified by the health profession and a number of studies.

In the case of obesity, a study by Adrian et al concluded that in 2000 its prevalence in both sexes (within the Australian population) was almost 60%. This rate was 2.5 times higher than in 1980. The American Journal of Health Promotion recently published a landmark study, *Relationship between Urban Sprawl and Physical Activity, Obesity, and Morbidity*. The study is the first to establish a direct link between urban form and an inhabitants' health, documenting that in spread-out, car-dependent areas people walk less, weigh more and often suffer higher blood pressure. The authors identified sedentary life style with limited physical activity as one of the key causes.

Economic Benefits

Walking and cycling also have associated economic benefits as it can lower transport costs and traffic congestion. It has been calculated that the cost of buying and maintaining a bicycle is around one percent of buying and maintaining a car (www.transport.qld.gov.au). An indirect outcome is less wear and tear of roads.

A study by Pucher & Dijkstra (2003), *Promoting Safe Walking and Cycling to Improve Public Health: Lessons from The Netherlands and Germany* found that American street and neighbourhood design a factor in a two- to six-times higher rate of death and injury from hits by cars among American pedestrians and cyclists than among Germans and Dutch, even though the latter walk and bike more. The report advises communities to invest in sidewalk, bike lane and street safety improvements; make it safe for children to walk and bike to school; calm traffic; promote walking instead of driving; focus development around transit stations to facilitate walking; retrofit sprawling suburbs with sidewalks, pedestrian cut-throughs and small shops; and revitalise older walkable neighbourhoods

Environmental Benefits

Transportation is one of the leading causes of greenhouse gas emissions partly due to our dependence on private car travel, and the growing trend of multi-car households. Furthermore, the greatest producer of noise pollution in our cities is road traffic, which can be markedly reduced through increased walking and cycling.

Perception of Walking and Cycling

Walking and Cycling are often viewed only as recreational activities and often over-looked as legitimate transport modes to reach services, work and other opportunities. This is in part due to the convenience of private vehicle travel. If one could demonstrate the true cost and impact of private travel on health, the environment and the economy walking and cycling may become a more favourable choice.

Mount Barker, Littlehampton and Nairne Bicycle Plan

The Bicycle Master Plan²² represents the bicycling component of the previous Transport

Master Plan and is to be read in conjunction with that plan to form an integrated transport strategy.

It is suggested in the report that Council endorse the following vision:

“Create a safe, continuous and practical cycling environment in and between the townships of Mt Barker, Littlehampton and Nairne that makes cycling a viable choice for the various categories of cyclist, and therefore increases the number of cyclists in the district”.

The five strategies outlined in the Bicycle Plan are:

1. All roads within the district of Mt Barker accommodate the needs of cyclists
2. Implement the Mt Barker, Littlehampton and Nairne Bicycle Network in accordance with Austroads Pt 14: Bicycles
3. Develop an awareness and a sense of respect for cyclists in the community
4. Maintain and improve the quality, operation and integrity of the bicycle network
5. All new developments are accessible for cyclists and link into the existing bicycle network

Figure 29, Figure 30 and Figure 31 of the BMP illustrate the township and local links of the bicycle network, as well as the potential future bicycle network. The existing network is sectioned into ‘on-road’ and ‘off-road’ links, shared use paths (in road reserve), safe road, pedestrian and school crossings that constitute the cycling network. The utilisation of creek and rail corridors is highlighted within this network (see Strategy 3.5) and where possible existing pedestrian crossings have been utilised. The BMP also includes details pertaining to construction for each type of road classification to assist in the design and upgrade roads, and for clarification and guidance in planning the local bicycle network.

The Bicycle Master Plan (BMP) is currently subject to review, including an evaluation of the proposed networks, upgrades and treatments. It is also suggested that this review take into consideration the cycling network of the whole District and not only

²² Prepared by QED for Mount Barker, 2008.

the central townships of Mt Barker, Littlehampton and Nairne, as well as the continued investigations into the extension of the Laratinga Recreations Trail (see Action 3.5.3). Future extensions of the bicycle network should be reviewed in conjunction with the cycling links and paths illustrated in structure plans (contained in the Development Plan) for new residential areas. Many of the actions contained within this section will be addressed or incorporated as part of the Bicycle Master Plan review.

Existing Cycling Environment

The existing cycling environment for the District of Mt Barker and its townships is not, at present, ideal. There are very few facilities to cater for cyclists within the major townships, and little or no connection between the District's townships. A collection of shared-use (bicycle and pedestrian) paths, parking facilities and recreational facilities exist within some of these townships, however there is scope for significant improvement and additions to the network and facilities. Connection between townships is also of concern due to the lack of safety (high speed environments and unsealed shoulders) for cyclists on roads that connect townships.

Numbers of Cyclists

2006 Journey to Work census data indicates that only 0.4% of people (52 people) travelled to work by bicycle which is substantially lower than the 1.3% who travel to work by bike for the Adelaide Statistical Division. It should be noted that a majority of trips made by bicycle are for the purpose of education, recreation, shopping and personal business. Although there is no exact data the number of trips by bike for these purposes are significant. These trip purposes indicate the importance of establishing bike connections to education institutions, social or recreation facilities and local/shopping centres.

The BMP includes the outcome of a school questionnaire, which collected data on the number of students within the District who ride to school. The number of primary school cyclists varied from 2.5% to 16%, and the number of secondary school cyclists was around 1-2%. The survey indicated that high speed, high traffic volumes, crossing busy roads, lack of 'on and off-road' facilities and motorist behaviour were major deterrents for students riding to school.

Footways Construction

Pedestrian facilities are an important service provided by Council to ensure safety, linkages, access and a pleasant environment for pedestrians. Council is developing an asset management plan that will include the management of the existing footpath network, extension to future parts of the network as well as determination of costs. A list of criteria (with a percentage weighting) have been applied to determine priorities for developing a construction program within the District Council of Mount Barker.

1. Significantly enhances public safety (30%)
2. Provides linkage with other paths to create a network (20%)
3. Provides access to widely used public facilities (20%)
4. Close proximity to pedestrian generating facilities (20%)
5. High visual impact – Urban image (10%)

The actions and the network operating strategy contained within this Transport Master Plan, as well as public consultation and requests received by council, will inform the development of the footways asset management plan.

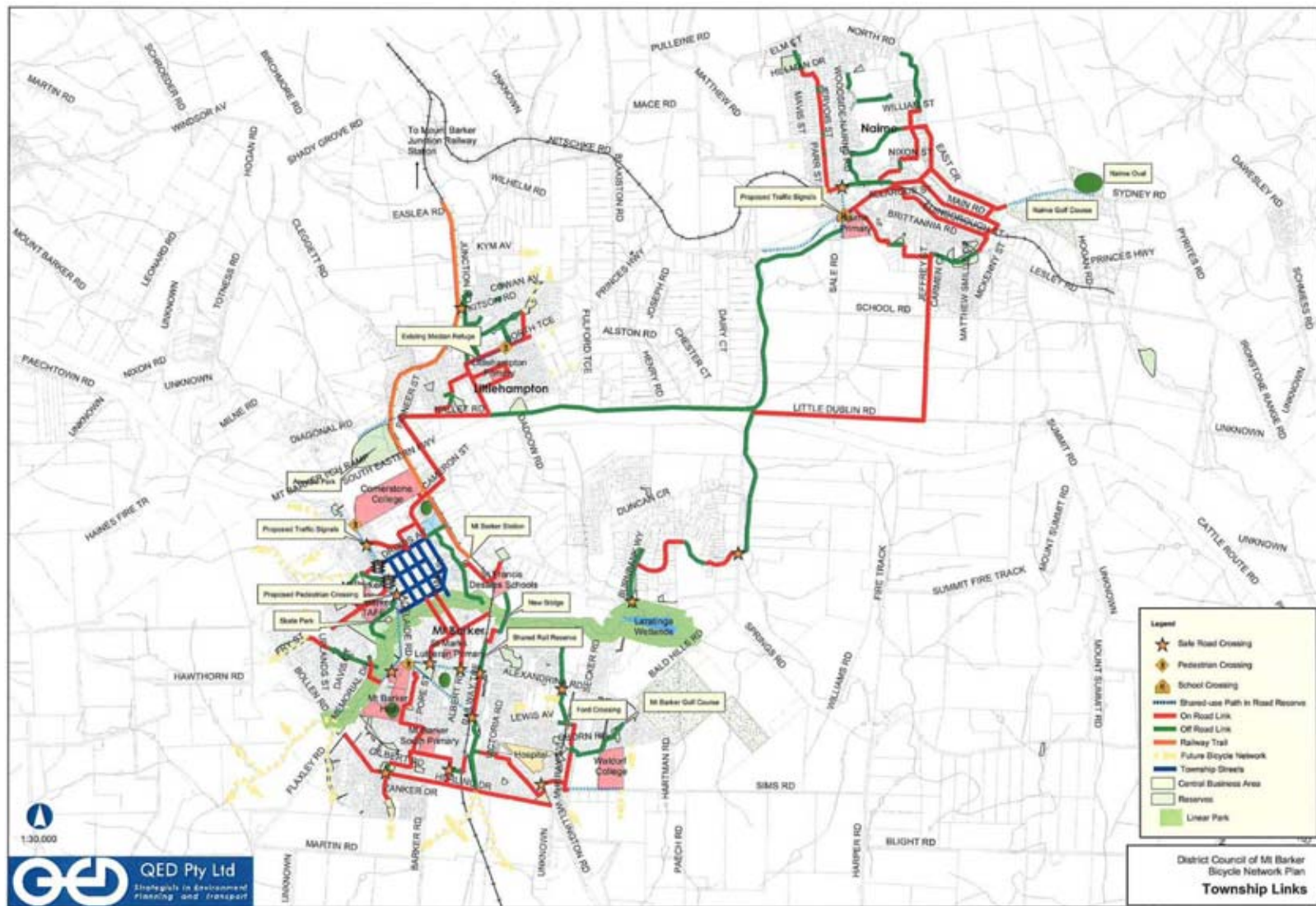


Figure 29: Recommended Township and local links of the bicycle network, Mount Barker (QED)

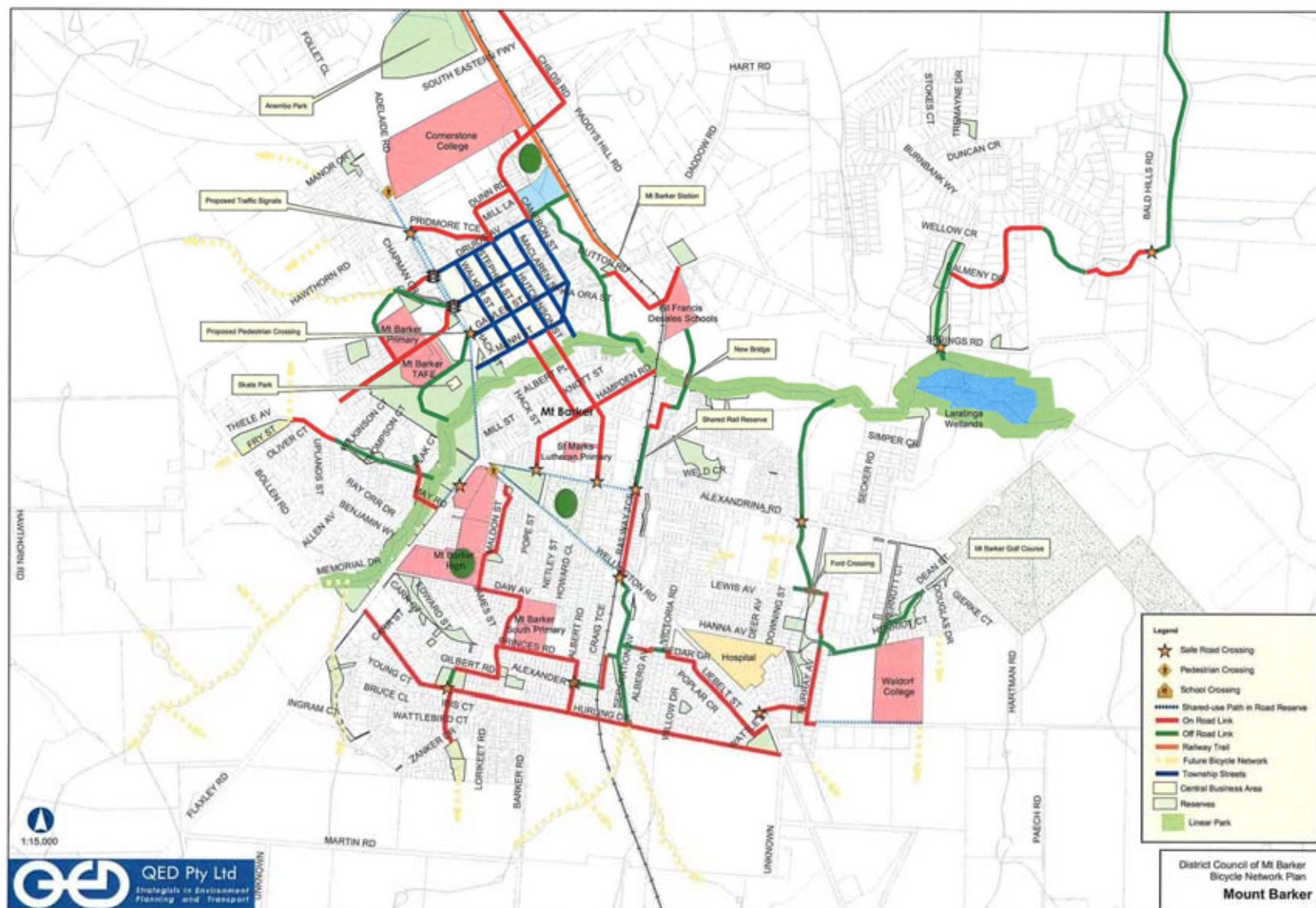


Figure 30: Recommended Township and local links of the bicycle network, Littlehampton (QED)

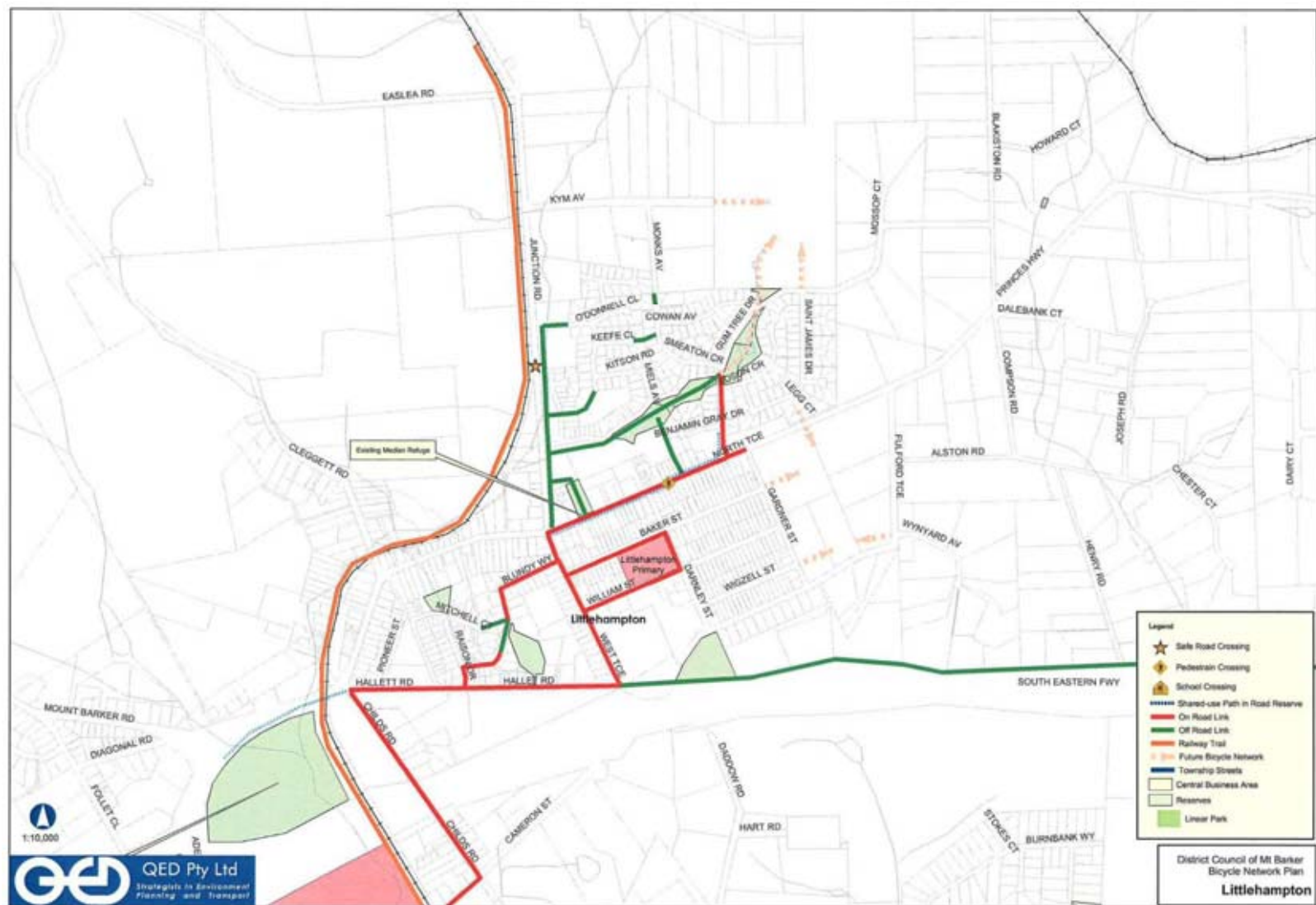


Figure 31: Recommended Township and local links of the bicycle network, Nairne (QED)

CBD Pedestrian-Box concept: Place Making and Creating Connections

Towns exist for interaction, which in turn depend upon movement systems: roads, streets, footpaths and public transport routes. None of these movement systems exist in isolation. As well as facilitating the means by which people travel, they are a crucial component of how areas are serviced. Whatever the function of the connection, thought needs to be given to how they contribute to the character of the urban area. The pedestrian-box concept has been successfully implemented in Bendigo, Victoria (refer to Strategy 1.3 and 3.7).

The 'pedestrian-box' concept (an area bounded by Walker, Mann, Hutchinson and Morphet Streets) aims to make strong connections with an emphasis on creating a pedestrian and cyclist friendly environment. There are six principles behind this concept; to ensure connections create a safe and successful environment for pedestrians while promoting limited vehicle movement and a traffic calmed environment:

- **Linking up:** destinations (e.g. shops) and origins (e.g. bus stops) within a designated area need to be clearly linked. The more direct the links there are, the more successful the integration will be.
- **Movement choices:** given that movement choices in most metropolitan areas have given preference to vehicles, new connections should give people renewed transport choices in favour of walking, cycling and public transport.
- **A sense of place:** creating a sense of place for pedestrians and cyclists ensures it will be utilised by those it is intended to serve. This means that roads, streets, footpaths and the routes should be designed in response to the needs of pedestrians and cyclists, whilst allowing (but discouraging, restricting or calming) vehicle movements.
- **Safe routes for all:** Maximising choice in how people move around means creating routes that are safe. Segregated routes are not always the best solution, but structuring an environment where speed

and priority for all transport modes are equal may be explored.

- **The parking environment:** parking needs as much thought as the connections within and between them. Parking should be located at the periphery (outside edge) of a pedestrian box complex so as to limit the need for vehicle access, while still allowing for shorter and accessible connections for pedestrians.
- **Better traffic management:** the design the layout of buildings and spaces helps control the flow and density of traffic. Increasing the function of roads at the periphery of the pedestrian-box will reduce the need to travel through a given/ designated area. Signs and add-on traffic calming features are additional measures.

Accessibility essentially describes how easy it is for people to travel through and around a designated area. Mode choices that are widely accessible (such as cycling and walking) meet the needs of most people.

Layout is a major influence on how people choose to travel. Metropolitan areas in South Australia over the last 30 years have been dictated primarily by the geometry of road design, which has had the effect of encouraging car use, even for journeys which could be better suited to walking or cycling. To reverse this tendency means designing with all forms of movement in mind. The pedestrian-box concept makes movement by foot or bike as easy and convenient as using the car. This does not mean excluding the car: what is needed is an appropriate balance between traffic and other uses to create an accessible, attractive, lively, safe and interesting place.

Place Making

In any development the designer of streets should begin by asking "what will happen on this street?" The street should then be designed to suite the activities that are likely to be carried out on them. Specifically, the streets within the Mount Barker CBD pedestrian-box are predominantly lined with shops; therefore street should enable and indeed promote pedestrian access to these shops by crossing the roads unhindered.

The Pedestrian Environment

Design for pedestrian and cyclist friendly streets can be approached with the '5 C' principles in mind:

- **Connections:** Do good pedestrian routes connect the places where people need to access?
- **Convenience:** Are routes direct, and are crossings easy to use? Do pedestrians have to wait to cross roads, or do they have priority?
- **Convivial:** Are routes attractive, well lit, safe, and is there variety along the street?
- **Comfortable:** what is the quality of the connections, and do they minimise obstructions?
- **Conspicuousness:** Are routes clearly accessible, and are they easy to follow?

If the street is designed for low speeds, pedestrians, cyclists and vehicles can safely mix. Generally speaking conventional streets provide the most convenient, direct routes to destinations for cyclists and pedestrians. The philosophy behind the pedestrian-box concept for the Mt Barker CBD aims to convert existing vehicle-dominated routes, into pedestrian and cyclist friendly routes. A safe, attractive and well designed public space will encourage people to walk and cycle.

As stated previously, transport planning over the past 30 years has focused on cars often severing adjacent communities. Providing priority to pedestrians and cyclists minimises (or removes) severance and can 'stitch' communities back together (see Figure 32).

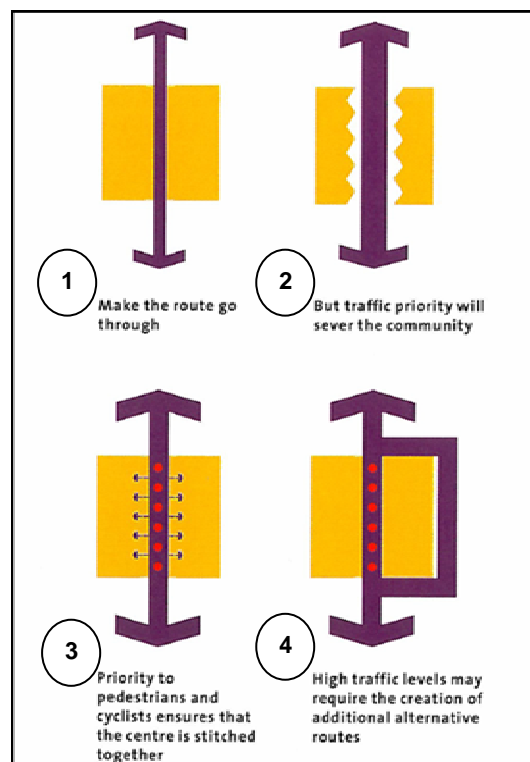


Figure 32. Transport progression in *The Urban Design Compendium, UK, English Partnerships*.

Shared use zones

The basic premise of a shared use zone is that pedestrians have equal rights with motor vehicles within a specified area. Motor vehicles can use the shared traffic zone but at a greatly reduced speed of 10 km/h, which does not present a safety hazard to pedestrians. Whilst providing vehicular access to properties and on-street parking, the street can be redesigned to be safer, quieter and more aesthetically attractive. Therefore, shared use zones can provide safer pedestrianised areas and a more attractive environment.

The successful implementation of shared use zones generally includes low vehicular speed, low vehicular volumes and an environment where pedestrians have equal rights with vehicles. A reduction of vehicular speed to 10km/h should be achieved. Consideration must be given to and requirements must be made to include:

- Servicing of abutting properties by deliveries of goods
- Street cleaning vehicles
- Refuse collection vehicles
- Access for emergency service vehicles.

Design elements of the Pedestrian-Box

Specific actions will include the restriction of vehicle movements on Bonnar Lane and Stephens Street between Morphett and Mann Streets, through the implementation of shared use zones and lowering of speeds. Upgrading of the function of Mann and Morphett Streets will ensure the free movement of vehicles within and 'through' the CBD, while protecting the pedestrian environment contained within the area bounded by these streets. The direction of traffic and creation of one-way streets is illustrated in **Figure 24**. It is important to ensure that car parks (and their access points) are restricted at the periphery of the pedestrian box (where possible and practicable).

The rationale for creating this pedestrianised environment includes:

- To provide a reasonably pleasant atmosphere to work and recreate.
- Architecture and transport provisions combine to form an attractive environment and a 'sense of place'.
- Streets are lined with trees and lighting to enhance the pleasant atmosphere.
- Attractive paved, well equipped open space (with street furniture) which offer continuous and accessible walkways.
- Street frontages that are dominated by specialty shops, cafes, meeting places, public art and open space.

By establishing grid-like north/south and east/west linkages (paths) within the pedestrian-box, connections can become easy to follow and accessibility to origin/destinations points will be enhanced.

Strategy 3.1

Continue to invest in walking and cycling infrastructure

Our Role: Owner/custodian, Initiator/facilitator, Part Funder, Information Provider.

Investment into footpaths, bike lanes and recreational trails are important to encourage people to either start or continue walking/cycling. Council is dedicated to develop a walking and cycling friendly environment within the District's townships, as well as in newly developing residential areas. Future investment should be proportionate to population growth. This strategy will be enacted by the following strategies and their associated actions.

A footways program is currently being implemented by Council.

Specific Actions

A3.1.1

Construct a bicycle network as part of the Bicycle Master Plan review

Council Action Plan: Internal resources/study, 1-3 years

A3.1.2

Audit, and develop the footways asset management plan (i.e. construction program).

Council Action Plan: Internal resources/study, 1-3 years

A3.1.3

Establish 'end -of -journey" infrastructure

The works program included in the Bicycle Master Plan has been designed to be implemented over a twenty-year period. The

works program only covers the townships of Mount Barker, Littlehampton and Nairne, however it establishes continuous networks that can be (in the future) connected to other townships. The works program must be audited to focus on priorities and a balanced commitment to funding in line with other road works. Work has already started on the footways construction program.

One advantage of bicycle travel is that it is a perfect 'door-to-door' mode of travel, as bike parking is usually readily available. The Metropolitan Adelaide Household Travel Survey (1999) illustrated that most home-based trips made by cyclists were for the purposes of education, recreation, shopping and personal business. This indicates that cyclists require parking at schools, universities, recreational facilities and local/shopping centres, just as is the case with private vehicle travel and public transport. The advantage of bicycle parking is that it is relatively cost-effective and does not put as much strain on space availability.

Ensure an adequate maintenance program is in place for bicycle and walking infrastructure. This includes the regular sweeping of bike lanes to encourage their use.

Council Action Plan: Internal resources/study, 1-3 years

Specific Actions

A3.1.4

Liaise with schools, managers of recreational facilities and shop owners to establish bike parking facilities.

Council Action Plan: Internal resources/study, 1-3 years

A3.1.5

Map out existing bike parking facilities to illustrate any gaps/opportunities.

Council Action Plan: Internal resources/study, 1-3 years

A3.1.6

Install parking rails at end-of-journey as per Bicycle Master Plan review

Council Action Plan: Internal resources/study, 1-3 years

A3.1.7

Strategy 3.2

Ensure walking and cycling infrastructure connections to centres and services

Our Role: Owner/custodian, Initiator/facilitator, Information Provider.

Connecting centres and services to walking and cycling infrastructure makes investment sense. The integration of continuous walking and cycling networks within the urban fabric, provides an environment not only conducive to sustainable modes of transport but also accessibility to local businesses.

Specific Actions

A3.2.1

Assessments of new developments should include bicycle and walking provisions, as per development plan. (This can include the provision of showers, change rooms and lockers in new developments and major refurbishments.)

Council Action Plan: Internal resources/study, 1-3 years

A3.2.2

Ensure that new commercial and retail developments have good access for cycling and walking

Council Action Plan: Internal resources/study, 1-3 years

Strategy 3.3

Ensure provisions for walking and cycling are implemented in new residential developments

Our Role: Owner/custodian, Initiator/facilitator, Part Funder.

The current Mount Barker (DC) Development Plan provides directions for effective implementation of walking and cycling provisions through several Principles of Development Control. These are to be reviewed in terms of effectiveness and produce a map outlining opportunities and constraints of the walking and cycling networks.

As well as this, the actions within the Bicycle Master Plan (as outlined in Part C, Action Table) provide the suitable actions required to enact this strategy.

Specific Actions

A3.3.1

Ensure that transport and land use planners incorporate provision for cycling and walking as part of all urban and public realm development.

Council Action Plan: Internal resources/study, 1-3 years

A3.3.2

Briefs for capital works projects include bicycle and walking provisions.

Council Action Plan: Internal resources/study, 1-3 years

A3.3.3

Assessments of developments include bicycle and walking provisions.

Council Action Plan: Internal resources/study, 1-3 years

A3.3.4

Provide cyclist and walking links to existing or proposed networks adjacent to new developments.

Strategy 3.4

Ensure a balance of integration between vehicles, pedestrians and cyclists

Our Role: Owner/custodian, Initiator/facilitator.

The current transport network (as with most Metropolitan Adelaide networks) generally favours private vehicle and truck movements, often at the detriment of pedestrian movements. By enhancing the priority for pedestrians over vehicles at strategic locations (specifically within townships and near centres/services) Council will ensure a greater balance between modes of transport.

Specific Actions

A3.4.1

Ensure safe crossing points where bicycle and walking routes interact with roads.

Council Action Plan: Internal resources/study, 1-3 years

A3.4.2

Prepare Traffic Impact Statements for new engineering works that include impacts on cyclists as a matter of course.

Council Action Plan: Internal resources/study, 1-3 years

Strategy 3.5

Investigate the potential utilisation of existing corridors to create a recreational and commuter network for walking and cycling

Our Role: Owner/custodian, Initiator/facilitator, Part Funder.

Sections of the Laratinga Recreational Trail utilise the corridor reserved for creeks. The use of these existing corridors, such as the rail-line, can provide further infrastructure opportunities and improve the walking and cycling networks of the District. Also, the Draft Mount Barker Recreational Trails Strategy 2006-2010 established 10 strategies for the development and management of recreational trails in the District, as well as listing the existing trails in the District.

The Mount Barker Linear Park is a shared-use (bicycle and pedestrian) path that when completed will connect with the Bollen Road Centenary Federation Trail on the east of Mount Barker creating a link from one side of Mount Barker to the other.

The path is ideally situated passing through Keith Stephenson Park and past the southern edge of

the central business area, providing a scenic and safe recreational route ending at the Laratinga Wetlands.

The Linear Park will, when completed will link important destinations such as schools, shops, businesses and places of employment.

Specific Actions

A3.5.1

Where possible, ensure all creek corridors are kept as open space areas with the potential to implement shared-use paths along at least one side of corridor.

Council Action Plan: Internal resources/study, 1-3 years

A3.5.2

Audit the safety of users along creeks and reserves.

Council Action Plan: Internal resources/study, 1-3 years

A3.5.3

Continue investigations to extend the Laratinga Recreational Trail, and implement stage 2 of the Trail Development Concept Plan

Council Action Plan: Internal resources/study, 1-3 years

A3.5.4

Review the Draft Mount Barker Recreational Trails Strategy (2006-2010) and implement the subsequent strategies and actions.

Council Action Plan: Internal resources/study, 1-3 years

Strategy 3.6

Liaise with State Government, advocacy bike groups and surrounding councils

Our Role: Advocate, Initiator/facilitator.

Liaising with other councils and the State Government allows for information sharing/gathering benefiting the development of successful walking and cycling networks. Intergovernmental correspondence assists in developing best practice networks across District boundaries ensuring appropriately directed responsibility for maintenance and renewal of walking and cycling assets.

Specific Actions

A3.6.1

Liaise with DTEI regarding maintenance and renewal for cycling facilities on their roads.

Council Action Plan: Internal resources/study, 1-3 years

A3.6.2

Liaise with surrounding councils to identify possible extensions of existing cycling networks across District boundaries.

Council Action Plan: Internal resources/study, 1-3 years

Strategy 3.7

Develop the pedestrian box concept for the Mount Barker CBD Centre to support walking and cycling as the key mode of access

A pedestrian box (sometimes also known as a 'Hypercentre') is an area designated to be predominantly used by pedestrians, i.e., pedestrian orientated hierarchy within that pedestrians can move freely within and unrestricted by cars and trucks. Although in most cases vehicles are allowed within the box, their movements are restricted to encourage only local traffic needing to access business car parking or loading areas. This can be through a variety of means, for example, slow speed limits, restrictive smaller streets and wide footpaths and retractable bollards restricting access at certain times of the day or week.

The main idea is to provide an area that is free from congestion, parking and pollution including smog and carbon emissions and heavy vehicle movements.

One aspect of the pedestrian box for Mount Barker CBD will be the introduction of shared-use zones. Shared-use zones still allow for vehicle access, however limits the speed at which vehicles can travel therefore providing a safer environment for pedestrians.

The concept of the Pedestrian/Public Transport Zone must ensure that appropriate measures are applied to ensure suitability and appropriateness for bus services. Redirecting services into the 'zone' must not impact on

service provision, appropriate distances between bus stops and increased service km's travelled.

A recent Australian example of how a 'Pedestrian-box' style concept was implemented is in Bendigo, Victoria. A plan to address the imbalance between vehicular and pedestrian environments was applied through the reduction of road speed and reducing vehicle access to certain areas of the town-core, whilst also improving the pedestrian environment to encourage walking and cycling. The similarities between Mount Barker and Bendigo, (in terms of population size, the towns' role as a regional centre for outer-lying townships and distance from the capital city) suggest a similar concept can be implemented with success in Mount Barker.



Above is an example of the widened pedestrian environment and footpath landscaping which has been implemented in Bendigo. In this example this had also allowed for 'al fresco' dining as well as pedestrian movements to create a more pedestrian dominated area, whilst still allowing for vehicle access.

Specific Actions

A3.7.1

Convert Stephens Street and Walker Street into "shared use zones" in conjunction with the staged development of the Mount Barker CBD in Strategy 1.3.

Council Action Plan: Internal resources/study, 1-3 years

A3.7.2

Develop a concept plan for Walker Street to be converted into a one-way street

Council Action Plan: Internal resources/study, 1-3 years.



Road Safety

Outcome: Improved safety of the road network, including the management of freight safety conflicts.

04

The safety of a road network consists of many factors, such as its function, structure, condition and road user behaviour. The District Council of Mount Barker recognises that continued and concerted efforts must be made to improve road safety; to ensure the current standards are upheld.

Residential Growth

Population growth results in an increased numbers of road users, hence increasing the number of potential conflicts on our roads. The challenge therefore is to decrease the number of possible incidents on our roads. This can be achieved through a number of avenues including Travel Demand Management, infrastructure upgrades, identification of potential 'hot spots' for funding, land use planning and developing an efficient road hierarchy.

Collision Data

Crash data for the latest five years (2003-2007) has been reviewed to identify common types of crashes and 'black-spot' locations (ie where there have been more than three crashes resulting in personal injury). Geo-coded crash data maintained by DTEI was used as the basis of the review. Maps showing the location and types of crashes are included in Appendix C.

Over the past five years (2003-2007) there were 1,737 reported collisions throughout the District. Fifteen collisions (0.9%) resulted in fatality and a further 596 (34%) resulted in personal injury requiring medical attention and/or hospitalisation. The most common types of collision were recorded as:

- Hit fixed object (n=445; 26%)
- Right angle (n=394; 23%)
- Rear end (n=339; 20%)

Hit fixed object crashes typically occurred throughout the rural areas of the District, while right angle and rear end collisions occurred

more predominantly within the urban areas and townships.

There has been a wide distribution of crashes throughout the whole District. Locations with multiple numbers of crashes are limited to the CBD area of Mt Barker, along the Princes Highway through Littlehampton and Nairne, the main street of Hahndorf, the main intersections within Echunga and Meadows, and the intersection of Mawson Road / Brookman Road (east of Meadows).

The State and Federal Governments define a 'black spot' as any site with three or more casualty crashes within a five year period. A plan showing locations with three or more personal injury collisions (or fatalities) is illustrated in the following diagrams. The vast majority of these 'black spots' occur along arterial roads under the control of DTEI. Most collisions are centred along Adelaide Road and Wellington Road through Mt Barker. Other sites with three or more injury collisions include the intersection of Mawson Road / Brookman Road (east of Meadows), the main intersection in Meadows, and on the Echunga – Hahndorf Road.

'Black spots on Council roads include the following locations:

- Morphett Street / Walker Street
- Morphett Street / Stephen Street
- Gawler Street / Hutchinson Street
- Alexandrina Road / Oborn Road

Freight Management

Freight transportation is an essential aspect of an effective economy and a modern functioning society.

While wine is the most prominent agricultural sector in the region, the Adelaide Hills is experiencing agriculturally based industrial growth on a number of fronts. It can be expected that the well-watered southern hills and Fleurieu Peninsula will become an increasingly important region for horticultural and forestry activities, creating potential for increases in freight movements.

However, conflicts can arise due to the necessity to share the road network with freight with impacts such as noise, visual and air pollution, as well as safety conflicts and effects on sensitive land uses. An aim of this Transport Master Plan is to manage the interaction of trucks within communities, townships, tourist and sensitive land uses, through the identification of a suitable road hierarchy and infrastructure investment opportunities.

Road User Behaviour

The physical aspects of a road network is only one aspect (albeit an important aspect) of road safety. Other factors must be considered, such as road user behaviour. The introduction of legislation and implementation of education programs are two examples of managing road user behaviour and improving road safety. Significant research has been undertaken over the past 10 years into road safety behaviour, which has led to more effective communication efforts and activities to market the road safety message (with success). However, the human aspect (as opposed to the physical aspect) of transport cannot be removed and is a variable that can sometimes be difficult to influence.

National Road Safety Action Plan 2007 and 2008 (extract)

Safe system principles outlined in the *Action Plan for 2005 and 2006* should be adopted where possible by the Council. A safe road system requires responsible road user behaviour, but human error is an inevitable factor in any transport system. A safe transport system makes allowance for human error, and minimises the consequences: in particular, the risk of death or debilitating injury.

Roads and vehicles should be designed to reduce the risk of crashes, and to reduce the harm to people if a crash does happen.

There are limits to the forces humans can withstand in a crash, and limits to the physical energy that can be absorbed by protective systems. Speed management is a critical factor in limiting the impact energy of crashes.

In managing road safety, the *safe system* approach requires:

- designing, constructing and maintaining a road system (roads, vehicles and

operating requirements) so that forces on the human body generated in crashes are generally less than those resulting in fatal or debilitating injury

- improving roads and roadsides to reduce the risk of crashes and minimise harm: measures for higher speed roads include dividing traffic, designing 'forgiving' roadsides, and providing clear driver guidance. In areas with large numbers of vulnerable road users or substantial collision risk, speed management supplemented by road and roadside treatments is a key strategy for limiting crash forces
- regulating or encouraging high quality active and passive safety systems in vehicles to reduce impact forces on occupants and on struck pedestrians and cyclists
- managing speeds, taking into account the risks on different parts of the road system
- advising, educating and encouraging road users to obey road rules and to be unimpaired, alert and responsive to potentially high-risk situations
- using enforcement and penalties to deter road users from breaking the rules, including removing the privilege of road use from those who do not comply
- programming research to identify the most cost-effective interventions for particular situations
- promoting public understanding and endorsement of the safe system approach, and public participation in achieving a safer road system.

Emergency Access

The capacity of the existing Mount Barker Freeway Interchange has never been tested in an emergency situation; however in the unfortunate occurrence of a natural disaster (such as bush fires) the townships of Mt Barker, Littlehampton and Nairne could be at risk.

The South Eastern Freeway has numerous emergency access points which can be opened in the event of an emergency, however the addition of a second freeway interchange may reduce risk to individuals by increasing accessibility to the Freeway. Although this is not the predominant reason for the establishment of a new interchange, it may be an associated benefit.

Road Infrastructure

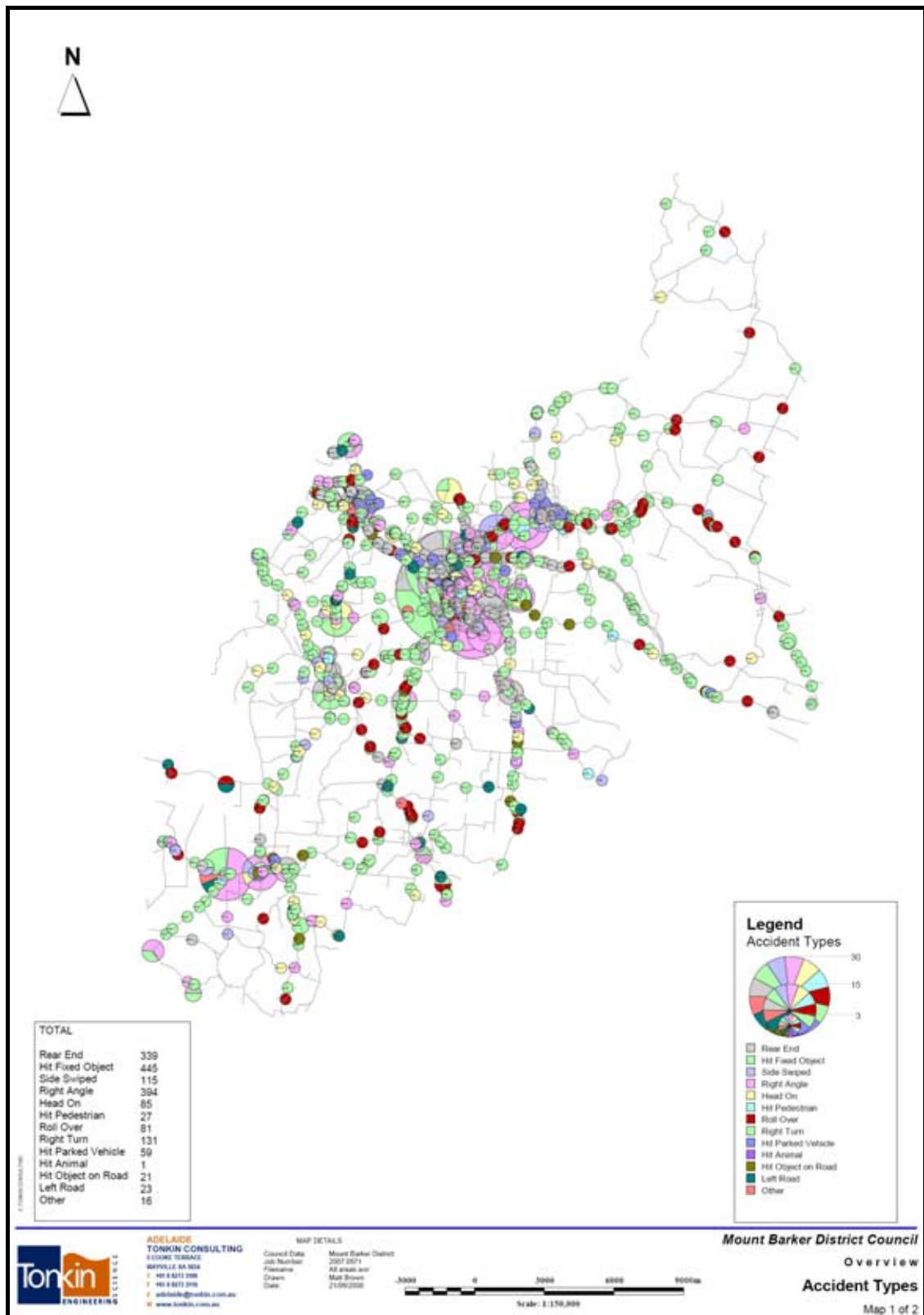
The current road network is generally constructed to a low standard reflecting the historic rural land uses and environment. Very little of the road network has been designed or constructed to a high standard (with the exception of the S.E. Freeway). Sealed roads in the rural areas typically meander and follow the nature contours of the topography. Rural road shoulders are generally narrow and informal. Sight distances and overtaking opportunities are often limited. The speed limit on many of the rural arterial roads is limited to 80 km/h. Rural roads provide for a wide range of road users including resident access to facilities throughout the District, tourist traffic, freight movements, and commuter traffic.

With the exception of subdivisions established in the last decade, roads and bridges within towns and urban neighbourhoods are also

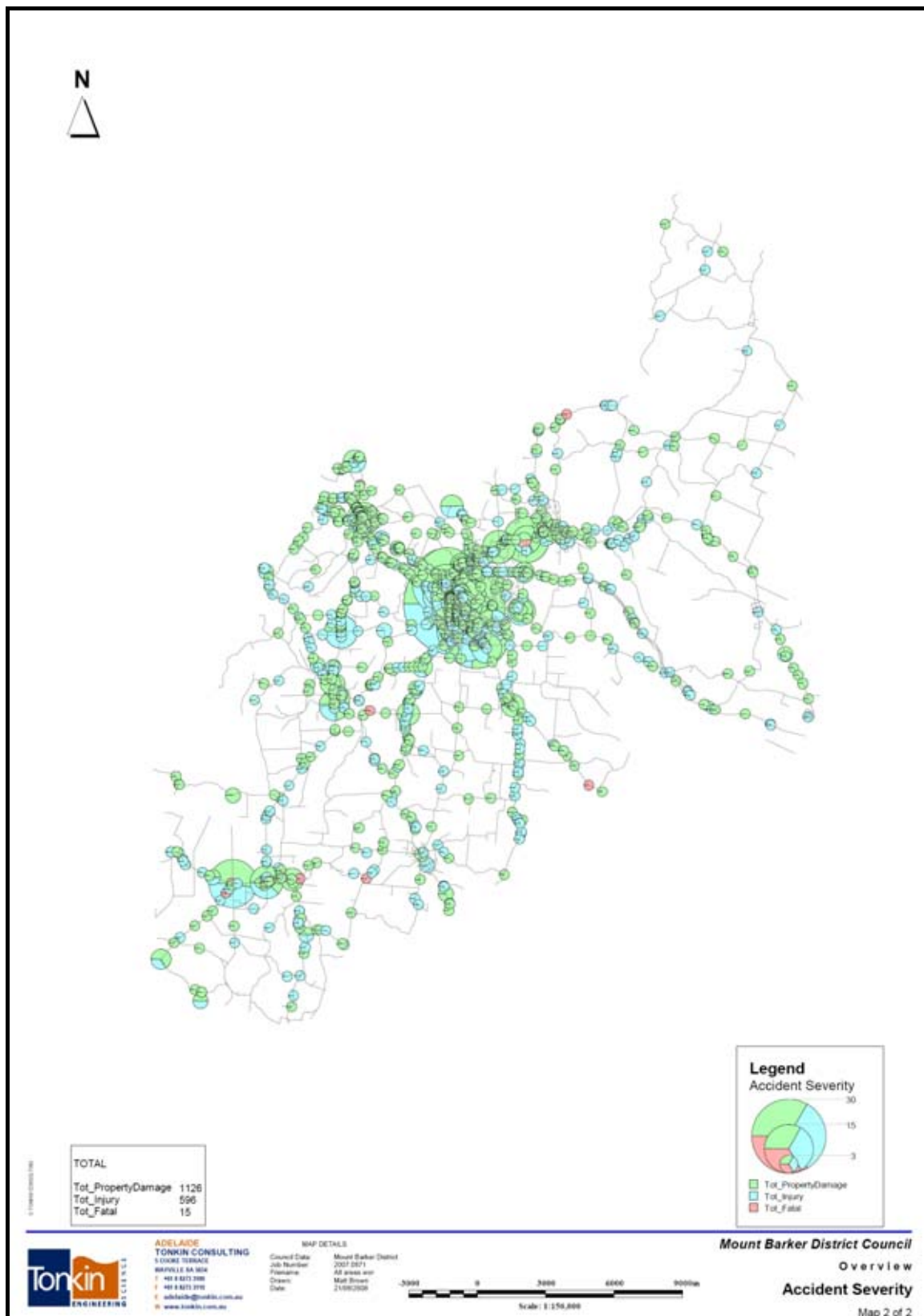
“remnants of a by-gone era”. Residential growth throughout the district has placed additional traffic loads and volumes on the road network, and in some instances, the network is no longer suited to the current functional demands. This growth is expected to continue bringing further pressure onto the lower standard road network and more reliance on Council to maintain these assets to a suitable and safe standard.

Rail Crossings

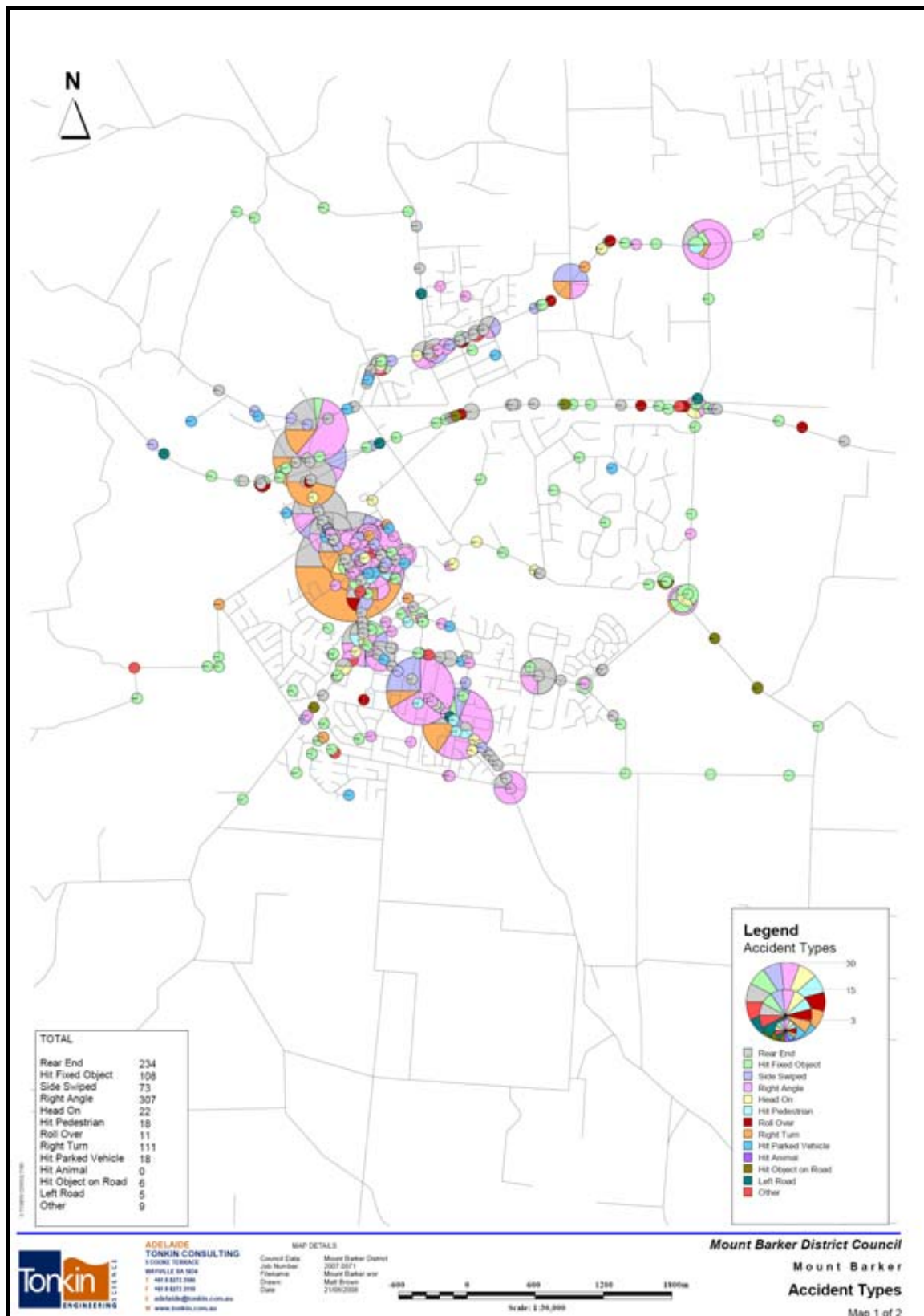
The District has a number of road-rail level crossings within its jurisdiction where local roads (for which Council is the responsible road authority) intersect with the Adelaide to Melbourne passenger/freight line, owned by the Australian Rail Track Corporation, and the Steam Ranger Line. Cooperation with Rail Track Corporation is essential when considering works at/near these locations.



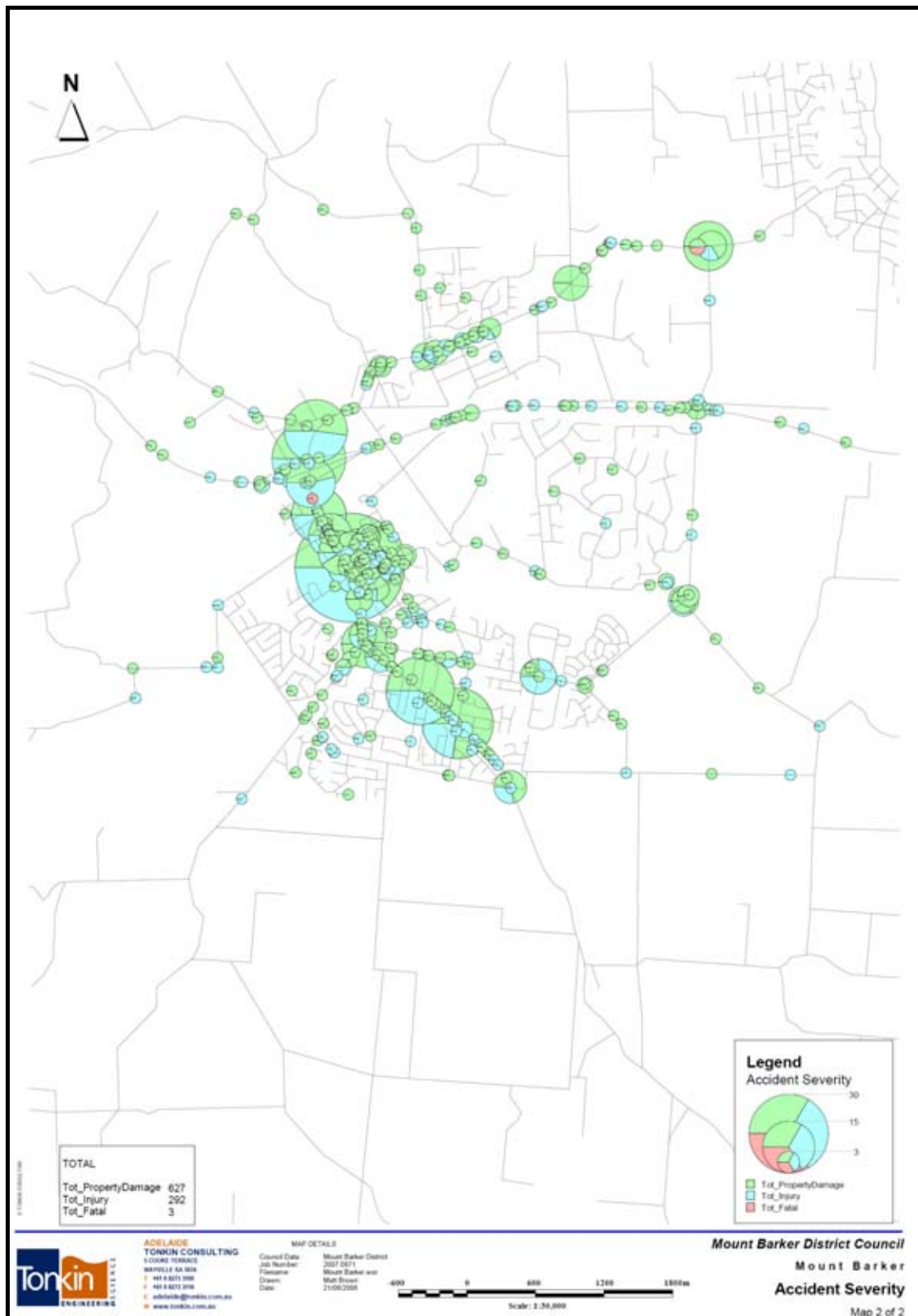
Road Safety Map 1 Accident History



Road Safety Map 2 Accident Severity



Road Safety Map 3 Accident Type, Mount Barker Township



Road Safety Map 4 Accident Severity, Mount Barker Township

Strategy 4.1

Develop a speed policy to undertake a review of speed limits

Our Role: Owner/custodian, Initiator/facilitator.

Road speed limits promote safe travel, and are implemented according to several factors such as the road's location, structure, purpose and environment. The District of Mount Barker is unique in terms of Metropolitan Adelaide as it has a combination of rural, peri-urban and urban environments, as well as a mix of sealed and unsealed roads. The speed limits must match the environment of these areas so as to ensure the safety of the road users. It should also be noted that DTEI is working with the S&HLGA to review the speed limits throughout the area.

Specific Actions

A4.1.1

Initiate discussions with DTEI with a view to developing a speed limit regime for the road network, including the more frequent use of 80 km/h speed limits on rural roads

Council Action Plan: Internal resources/study, 1-3 years

A4.1.2

As an adjunct to the development of a speed limit regime, undertake an audit of speed limit signage to ensure a consistent and appropriate level of signage is provided

Council Action Plan: Internal resources/study, 1-3 years

Strategy 4.2

Identify opportunities for funding through the *Black Spot* and *Roads to Recovery* programs

Our Role: Advocate, Initiator/facilitator.

The Federal Government, through the Nation Building Program, provides opportunities for local governments to apply for funding through several programs. When roads are reaching the end of their economic life and replacement is beyond the Council's means or when the physical condition of the road is hazardous with a history of crashes, The National Building Program offers funding assistance opportunities through the Road to Recovery and the Black Spot programs. There are also opportunities for funding assistance through the State Government Black Spot program. Council has already put applications for Black Spot Funding at the following intersections;

- Bald Hills Road / Springs Road Roundabout
- West Terrace / Junction Road / Princes Highway
- Adelaide Road / Mount Barker Road / North Terrace (Hahndorf Intersection)

Specific Actions

A4.2.1

Undertake a detailed review of crash data to identify locations with higher numbers of crashes; Identify approach treatments for locations and submit BlackSpot Applications; Consider undertaking independent road safety audits to support BlackSpot nominations where there is insufficient crash data

Council Action Plan: Internal resources/study, 1-3 years

Strategy 4.3

Continue to ensure on-going road maintenance and renewal

Our Role: Owner/Custodian, Initiator/facilitator, Part Funder.

The responsibility of the Council to manage and maintain the road network is of upmost importance. Not only must the Council cater for the future growth of the District, but it must also ensure that the measures and procedures that are currently in place to maintain the road network continue. Council is dedicated to ensuring that road maintenance and renewal creates a safer road network for all those who use it, including vehicles and cyclists, in line with the established service levels. Council is committed to long-term asset management planning to ensure it is financially sustainable to deliver these critical transport services.

Specific Actions

A4.3.1

Review road management principles to maximise asset condition in line with the role and importance of the road.

Council Action Plan: Internal resources/study, 1-3 years

A4.3.2

Review the policy/criteria relating to unsealed roads and create a robust operational management plan for sealing unsealed roads.

Council Action Plan: Internal resources/study, 1-3 years

Strategy 4.4

Initiate education safety programs (active) and 'kiss and ride' (passive) initiatives to improve road user behaviour

Our Role: Advocate, Initiator/facilitator.

Parking availability is often limited in the vicinity of a school. Kiss and Ride is a designated drop off and pick up area in front of a school. A Kiss and Ride is indicated by a section of road signposted as No Parking, with a Passenger Set Down or Pick Up Sign. The aim is to ease parent parking problems and increase child safety by adopting the Kiss and Ride No Parking area.

Typical Instructions to Parents for a 'Kiss and Ride Program'

"In the morning, you should drop off your child/children in the designated Kiss and Ride area. Stop your vehicle, leave your engine running, and ensure that your child/children safely exit on the kerb side of the car.

In the afternoon, when it is often more congested with traffic, you can pick up your child/children in the designated Kiss and Ride area. Stop your vehicle in the designated

area, leave your engine running & wait in the car for your child/children".

Implementation of a Kiss and Ride includes:

- Double parking being illegal as it will impact on the success of a Park and Ride
- Obeying road rules and speed limits as the safety of all children is paramount.
- Encourage children to enter and exit your car on the Kerb side of the road
- Bus zones – no stopping
- No Stopping area
- U-turns will create an unsafe environment
- Ensuring people leave their engine running and drivers stay in the vehicle.

Specific Actions

A4.4.1

Support the initiation and operation of a Community Road Safety Group within the District, through liaison with DTEI: Seek opportunities to support initiatives identified through the Community Road Safety Group Programs

Council Action Plan: Internal resources/study, 1-3 years

A4.4.2

Apply a 'Kiss and Ride' strategy to school sites as necessary.

Council Action Plan: Internal resources/study, 1-3 years

A4.4.3

Work with SA Police to ensure school children and other users are aware of road safety programs on a regular basis.



Figure 33. 'Kiss and Ride' signage



Figure 34. Typical directive signs at and around 'Kiss and Rides'

Strategy 4.5

Identification and promotion of freight networks, gazette roads and a road hierarchy (see also strategies 1.5 and 1.6)

Our Role: Advocate, Initiator/facilitator.

It will be vital to ensure that there is a common understanding and shared ownership of freight movements through the region without compromising both community and industry outcomes.

The Freight Network is proposed to be divided into four categories, being:

Primary Freight Routes: link strategically important economic regions within and external to South Australia, carry a significant volume of commercial freight and have a relatively high proportion of heavy freight vehicles within the traffic stream.

Secondary Freight Routes: provide links between urban and regional freight sources and provides connections to primary freight routes.

Local Heavy Freight Routes: provide connection between local freight generators, such as industrial estates and the secondary or primary freight network.

Minor Freight Routes provide connection for standard freight vehicles between local freight generators, such as industrial estates and the secondary or primary freight network. In rural streetscape traffic using these roads includes agriculture based machinery, such as tractors.

In conjunction with Strategy 1.4, Council will investigate opportunities to develop or maintain appropriate land use buffers to minimise the impact freight movements will have on the surrounding environments. To achieve adequate segregation of land uses, whilst maintaining access and continuous freight movements is an important aspect of obtaining community and freight balance.

The four goals of the S&HLGA align with the outcomes and overall goal of this Transport Master Plan. However, the recommendations and actions suggested to reach these goals may not align with the future development or interests of the District. To ensure that the land use, safety and transportation future of the district is not adversely affected, it is suggested that before these recommendations

are adopted, they are examined with the strategic context of transport in the District.

Specific Actions

A4.5.1

Implement appropriate land use buffers on freight routes.

Council Action Plan: Internal resources/study, 1-3 years

A4.5.2

Examine the recommendations, strategies and actions of the S&HLGA Transport Plan to ensure they align with the desired future outcomes of the Mount Barker Transport Master Plan.

Council Action Plan: Internal resources/study, 1-3 years

Strategy 4.6

Provide emergency access to all parts of the District

Our Role: Advocate, Initiator/facilitator, Agent.

The road network not only addresses transportation needs for the District, but also serves the purpose of access and egress in times of emergency. *The Adelaide Hills Council and District Council of Mount Barker Bushfire Mitigation Plan* recently released for public consultation (June 2008) illustrates the importance of maintaining and managing routes that offer the best safety, access and egress. Some of the actions of the Bushfire Mitigation Plan are reflected in this Transport Master Plan.

Access for fire fighting is an important element of fire management to enable fire fighters to either reach the fire directly or to use access such as a road or track as a control line.

The Bushfire Mitigation Plan also mentions that the South Eastern Freeway offers good traversing across the Plan Area for west to east movements, however movement onto and off the Freeway is limited. The development of a Bald Hills Interchange will

improve the access/egress for Nairne, Littlehampton and the eastern sections of Mount Barker Township. As well as this, other actions that reiterate the maintenance and renewal of the road network or improve access to the District have a direct impact on ensuring the safety of residence in times of emergency.

Specific Actions

A4.6.1

Develop and maintain roadside management plans to maintain the road surface, ensure roads remain safe for driving and to enhance bushfire mitigation on and adjacent to roadsides.

Council Action Plan: Internal resources/study, 1-3 years

A4.6.2

Liaise with SA Police and the CFS to endorse emergency access and egress routes and identify them as priority roads in the Zone Emergency Management Plan (ZEMP)

Council Action Plan: Internal resources/study,
1-3 years

A4.6.3

Ensure the Council roadside management plan reflects the priorities identified in the Zone Emergency Management Plan (includes audit of access routes and fire trails).

Council Action Plan: Internal resources/study,
1-3 years

A4.6.4

Clearly identify to the community (through several information providing techniques) the emergency access/egress points for the South Eastern Freeway to better equip residents of the District in event of an emergency.

Council Action Plan: Internal resources/study,
1-3 years



Travel Demand Management

Outcome: Implementation of Travel Demand Management to reduce car use, environmental and social impacts.

05

Travel Demand Management (TDM) is defined by the Institution of Engineers Australia as “intervention to modify travel decisions so that more desirable transport, social, economic and/or environmental objectives can be achieved, and the adverse impacts of travel can be reduced.” TDM seeks to influence the travel behaviour of individuals/communities through initiatives, education or programs, but not through infrastructure or ‘road-based solutions’. Put generally, the District Council of Mount Barker aims to encourage people to use public transport, walk or cycle rather than use their car.

Car Dependency

“Car dependent” is a term that can be used to describe most Australian towns and cities. It implies that automobiles are the predominant transport option, and that those without a car in these areas are at a disadvantage. Car dependant cities/towns tend to have a predominant road network that without, an area would seem to fail to function. Reducing car dependency has significant economic, social and environmental implications.

Car Ownership

Car ownership in the Mount Barker District area is high with 60.4% of households owning 2, 3 or more cars, as opposed to 46% for the Adelaide Statistical Division. This indicates that Mount Barker is a highly car dependent region, but also reflects the rural/peri-urban environment and the higher weekly household income of the District. This high car ownership also highlights the importance of implementing travel demand management to reduce the impact cars are having on the region.

TDM Benefits

The social, economic and environmental benefits of travel demand management are many and varied. There are obvious advantages in reducing car travel (i.e. reduced personal costs, reduction in carbon emissions etc), also, depending on the transport mode

shift, there may be associated health benefits if individuals choose to walk or cycle.

Residential Growth

Although the success of travel demand management can be measured by a reduction in car usage, even with highly successful implementation of TDM in the District, there will still be a marked increase in trips on the road network. This is due to the expected residential growth and the increase in trips this will create. This means that Council must plan for increased demand on the road network in conjunction with TDM to better equip the Districts communities.

Sensitivity testing of travel demand scenarios

The figures generated for the modes of transport of walking, cycling and public transport were based on 2006 Census data as well as mode splits from the Metropolitan Adelaide Household Travel Survey (1999). Therefore it is reasonable to suggest that there may be some changes in travel patterns, modes and behaviours over the time frame to 2026 either through environmental changes, climate change or global fuel prices.

To account for this potential change, sensitivity and robustness testing was carried out to assess the assumptions and effect of potential change. By doubling all trips made by public transport and cycling (for all purposes) there was a reduction in total vehicle trips in 2006 of 4138, a reduction in total vehicle trips in 2026 of 6596 and a reduction in total vehicle trip increase between 2006 - 2026 of only 2458. This represents an impressive reduction in travel demand underpinning the usefulness of Travel Demand initiatives as outline below. However, the reduction is not enough to reduce traffic (still creates an extra 30,658 vehicle trips to cater for by 2026) to a point where traffic congestion and safety will not have a bearing on the transport system in the District in the short and medium term.

The position that private vehicle travel has the most influential impact on our future road

networks is supported in the South Australian Infrastructure Plan which states, *“Cars are the primary mode of transport for people throughout South Australia, with 80% of CBD trips made by car, higher percentages in suburban areas and close to 100% in regional areas. The long-term forecast is for fuel prices to continue to rise, which will impact on people’s choice of transport mode, particularly in metropolitan Adelaide where alternatives exist. However, cars will continue to be the principle mode of transport for people in South Australia well past the life of this plan (i.e. the 2015 horizon of the SA Infrastructure Plan).*

TravelSmart

TravelSmart is a state government initiative that aims to achieve reductions in transport-related greenhouse gas emissions through travel behaviour change and a shift in societal values towards sustainable travel patterns. TravelSmart programs are essentially TDM’s that can be aimed at schools, workplaces or communities and can be implemented at a number of levels (i.e state government, local government or individual workplaces). The strategic partnership between state government (specifically DTEI) and Council is integral in implementing successful TravelSmart programs and initiatives.

Strategy 5.1

Develop and implement education programs that demonstrate the environmental, social and economic benefits of TDM

Our Role: Advocate, Initiator/facilitator, Part Funder.

The presentation of information to schools, workplaces and communities on the benefits of the programs associated with the **TravelSmart** initiative would illustrate their associated benefits. As well as this, they provide the opportunity for people to initiate or become involved in TDMs.

Specific Actions

A5.1.1

Promote established campaigns/initiatives that promote TDM (e.g. National Ride to Work Day) in an attempt to demonstrate alternative transport other than private motor vehicle.

Council Action Plan: Internal resources/study, 1-3 years

A5.1.2

All modes of transport that can help increase transport initiatives need advertising / marketing, including walking, cycling, public transport

Council Action Plan: Internal resources/study, 1-3 years

A5.1.3

Liaise with the Community Education and Programs Section of DTEI to establish and implement TravelSmart programs.

Council Action Plan: Internal resources/study, 1-3 years

Strategy 5.2

Investigate opportunities to encourage/initiate carpooling programs

Our Role: Initiator/facilitator, Part Funder.

Carpooling (or ridesharing) is a method of TDM where by those travelling from a similar origin to a similar destination share a car, therefore reducing the amount of traffic, and vehicle kilometres travelled (VKT). The District of Mount Barker has a good opportunity for significantly reducing its VKT due to many residents travelling to the city for work, as well as having 65% of people travelling to work as a driver and only 5.8% as passengers. Recording and information sharing of peoples travel patterns/ behaviours (e.g. origin and destination for education or journey to work) allows for organisation of carpooling, and is the first step in encouraging participation in such TDMs.

Specific Actions

A5.2.1

The creation of a Carpool index or website where interested parties can register their interest in participating in carpool activities

Council Action Plan: Internal resources/study, 1-3 years

A5.2.2

Promotion of carpooling and its associated benefits e.g. environmental and economic savings

Council Action Plan: Internal resources/study, 1-3 years

A5.2.3

Setup a car pooling access program, which can include post code lunches, car pool databases, and the provision of preferential car pooling or spaces

Council Action Plan: Internal resources/study, 1-3 years

A5.2.4

Implement a guaranteed ride home programme to ensure employees will receive a ride home if an emergency arises

Council Action Plan: Internal resources/study, 1-3 years

Strategy 5.3

Establish a Council and Community TDM Database for education and information sharing

Our Role: Initiator/facilitator, Information Provider, Part Funder.

Providing a medium for education and information sharing allows wider, more community based participation in TDM. The database could be used to advertise any community/council based initiatives which would increase people's ability to participate in TDMs such as car pooling for workplace, residential and education based trips. The database could also be used to post educational material to inform the community on the benefits of TDM's. This relies on participation from the community, as well as establishing what medium/media would be the most suitable, such as a dedicated internet link on the Council Website, or open community forums.

A5.3.1

Examine the most appropriate methods for a TDM database for education and information sharing. (e.g. internet, notice board, index or register)

Council Action Plan: Internal resources/study, 1-3 years

Specific Action

Strategy 5.4

Ensure new developments (residential, commercial and industrial) facilitate measures that support Travel Demand Management programs

Our Role: Initiator/facilitator, Part Funder.

Catering for walking and cycling infrastructure and public transport services in newly developed or re-developed land uses ensures TDM programs can be implemented with greater ease. Connections to activity centres, adequate infrastructure, safety provisions and service frequency should be considered in the planning stage of development.

A5.4.1

Adopt a regulatory approach by continuing to account for walking and cycling facilities in new developments.

Council Action Plan: Internal resources/study, 1-3 years

A5.4.2

Involve the participation of major trip generators as well as government strategies

Council Action Plan: Internal resources/study, 1-3 years


Specific Actions




One to Five Year Works Program

06

Action	Related Strategy	Comments and Scope	Cost	Implementation
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 = Planning and Land Acquisition

 = Implementation

Note; Each Action should be read in conjunction with the Strategy in which it is contained. Supportive or prerequisite actions may directly influence the implementation of these Actions contained within the 1-5 year works program.

Disclaimer: Where detailed investigations have not been undertaken the options are considered to be still evolving and the costs presented have been based on known site investigations and the cost of similar treatments drawn from recent studies. As the options are refined, more detailed cost estimates and benefits will be prepared to assist with accurately evaluating the options presented. Therefore the cost estimates are only a guide and due to this the consultants cannot accept any liability for actual costs varying from those estimated in this strategy. All estimates are at 2008 values.

A1.1.3 Develop a new fully functional interchange with the Southern Eastern Freeway at Bald Hills Road i.e. on and off ramps in both directions.	Strategy 1.1	<i>A new interchange is subject to Wallbridge and Gilbert Concept Designs –extent of their footprint/ ramp lengths etc will significantly affect this cost.</i> Lowering the underpass is an option but is not suitable for pedestrians and cyclists A new wider bridge is preferable to cater for pedestrians and cyclists Residential properties are in close proximity to the south west and should be protected with a noise wall.	ESTIMATED COST =\$43M Note: this cost is subject to a new design by Consultants (currently underway)	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> Implementation Timing; subject to funding either from Infrastructure Australia/ DTEI and or cost sharing arrangement and Conceptual Planning process underway.	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											

A1.1.4 Upgrade Bald Hills Road to a standard that accommodates heavy vehicles/ B-Doubles (widen to 10.4 m carriageway).	Strategy 1.1	Widen Bald Hills Road from 8m to 10.4m to cater for heavy vehicle access and increase from 5,000 to 13,000vpd. Includes improved safety for cyclists.	Cost excluding Princess Highway + Spring Road intersection = \$8m Subject to refinement of this cost	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> Special Local Road Funding with Council contributing \$1 for every \$2 from the program is being sought.	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											
A1.1.5 Upgrade the Hartman Road/Alexandrina Road Junction. Upgrade options include a staggered T intersection or roundabout	Strategy 1.1	Roundabout to cater for poor sight distances.	\$700,000 Recommend the roundabout option	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> Special Local Road Funding with Council contributing \$1 for every \$2 from the program is being sought.	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											
A1.1.6 Upgrade the Springs Road/Bald Hills Road intersection.	Strategy 1.1	A staggered T junction or roundabout have been reviewed. The existing arrangement is a four way intersection with a higher crash risk. Recommend the roundabout option	Staggered T Junction = \$500,000 or \$1.3m for roundabout	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> Special Local Road Funding with Council contributing \$1 for every \$2 from the program is being sought.	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											

A1.1.7 Upgraded link between the Princes Highway and the proposed interchange. Refer to separate evaluation of options for junctions and intersection treatment (Princes Highway 'Seagull' intersection)	Strategy 1.1	Princess Highway T Junction The existing Bald Hills/Princess Highway T Junction is predicted to operate satisfactorily for another 5 years (Pm peak right turns from Bald Hills Road) A 'Seagull' design would improve operational life to 2025 (this will be sooner if growth accelerates)	\$ 700,000 as per separate investigations Roundabout option \$1.1 million as per separate investigations	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											
A1.3.1 Immediate actions: a. Works to faciliate safe bus movements at Gawler/Hutchinson St b. Make the Gawler / Mann roundabout permanent.	Strategy 1.3	This would include new kerbing for the roundabout.	<ul style="list-style-type: none">\$5000 (signage and communication)\$270,000 to make roundabout permanent (\$90,000 Council funding) Planning will occur in 2008/09 financial year	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> Special Local Road Funding with Council contributing \$1 for every \$2 from the program is being sought.	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											

A1.3.3 Close Morphett Street on the eastern side of Hutchinson Street: a. convert the intersection to a T-junction b. convert balance of McLaren St to additional parking or green space c. monitor intersection	Strategy 1.3	<div>a) Safety audit of parking required with recommended line marking changes. it is critical that design of the intersection be discussed with adjoining landowners regarding the reconfiguration of parking if Morphett St were closed</div> <div>b) The intersection has been identified as being unsafe with (Morphett St East being</div>	<div>a) Conversion into T junction= \$50,000</div> <div>b) Additional parking on McLaren St& landscaping= \$50,000</div>	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table> <div>All Council funded</div> <table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years							2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years																							
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years																							

park opportunities along the route including Stephen Street and Walker Street		Streets.	e) \$250,000 Signalised crossing subject to warrants being met.						
e. Improved pedestrian facilities along and crossing of the road		e) Install a signalised pedestrian crossing near Stephens Tce in the medium term and if and when the commercial precinct develops south of Mann Street.							
A1.3.5 Upgrade Gawler Street between Hutchinson and Mann st and intersection of Gawler Street / Hutchinson Street including; a) Gawler Street one way extension to Cameron/Mann Street and develop contra-flow bus lane between Mann St and Hutchinson St	Strategy 1.3	a) Reconfigure section of road to include 5.3 meter trafficable lane with a 2.5 meter median. Options assessment should include options a, b and c (see strategy) which include either parallel or angled car parking solutions. Construct painted and delineated bus lane between Cameron and Hutchinson St	a) Detailed assessment= \$50,000 b) Gawler Street one-way extension (including streetscape & urban design)= \$200,000	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years
				2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years
A1.3.6 Redesign Gawler Street/Adelaide Rd Intersection to provide left hand turn slip lane into Gawler St	Strategy 1.3	Right turn delays and conflicts requires redesign to accommodate left and right turners simultaneously . Recommend high angle left turn slip lane to minimise footprint.	\$150,000 not including land acquisition.	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years
				Require cost sharing between DTEI and Council					

A1.3.7 Develop a Corridor plan for Hutchinson St between Gawler St and Druids Ave. Considerations include pedestrian crossings, bus stops, car parks access for shopping centres, and future plans for the intersection of Gawler St and Morphett St This includes Provision of right turning lane into Druids Ave	Strategy 1.3	Install pedestrian crossing. Installation of pedestrian crossing north off Morphett Street, and redesign of bus stop/egress and ingress points	Develop corridor plan for Hutchinson St (Stage1& 2)= \$750,000	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											
A1.3.9 Develop a corridor management plan for Morphett Street between Adelaide Road and Hutchinson Street with consideration to: a. A focal public transport route b. Pedestrian connectivity across Morphett St c. Installation of a roundabout at Walker/Morphett Street.	Strategy 1.3	Minimise egress/ingress point, retain function of Morphett St as corridor for Public Transport and pedestrian connectivity to pedestrian box.	Develop a corridor management plan for Morphett Street (Stage1& 2)= \$300,000	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											
A1.3.10 Develop a corridor management plan for Druids Avenue to support	Strategy 1.3	The current width of Druids and tree constraints limits what can be achieved on Druids. Large buses should be restricted from														

<p>its function as a key access corridor to the CBD and as an alternative centre bypass route with consideration to:</p> <p>a. The rearrangement of the intersection of Druids Ave and Cameron Rd to close Druids Ave on the eastern side of Cameron and rearrange priority to Druids Ave and Cameron Rd East.</p> <p>b. Possible provision of turning lanes into Walker Street</p>		<p>using route.</p> <p>a) The closure may involve simple median works and traffic controls (temporary measure/trial may precede permanent closure).</p> <p>b) Subject to further investigation and some land acquisition</p>	<p>a) \$50,000 rearrangement of Druids Ave intersection</p> <p>b) \$200,000 provision of turning lanes into walking street</p>	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years
				2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years

<p>A1.4.4 Develop a concept plan for the provision of shared zones inside the Pedestrian box between Morphett Street and Mann Street, Walker and Hutchinson Streets – this includes paving and pedestrianisation of Stephens and Bonnar Lane. Entry and exit points to car parks to be traffic managed into a shared use zone requirement</p>	<p>Strategy 1.4</p>	<p>This has been designed and costed in accordance with previous Adelaide City Council project</p> <p>a) Preliminaries</p> <p>b) Preparation of environment (demolition)</p> <p>c) Reworking of exiting stormwater systems</p> <p>d) Pre-cast concrete pavers on sand bed</p> <p>e) 200mm quarry rubble base</p> <p>f) Supply: bins, bollards, trees and grates</p> <p>g) Pedestrian lighting</p> <p>h) Street planting</p> <p>i) Trellis and wire cabling</p> <p>j) Temporary traffic controls</p> <p>k) Signs</p>	<ul style="list-style-type: none"> Total Cost = \$1.34m 	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years

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A1.6.3 Develop an additional road connection between Alexandrina Road and Secker Road, suitable for heavy vehicle access from Bald Hills Road Develop Alexandrina Rd between Secker Rd and Bald Hills Rd to a B-Double standard	Strategy 1.6	A new junction (B-Double ready in 60km/h zone) at the eastern end off Secker Road to link with Alexandrina Road (60m link plus left turn deceleration lane and widening of shoulders to allow passing traffic)	<ul style="list-style-type: none"> New junction - \$300k excluding acquisition and/or business relocation. \$400k for Alexandrina Rd upgrade between Secker Rd and Bald Hills Rd. 	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years

A1.7.1 Develop the Princess Highway/Woodside Road Junction and Princess Highway/Saleyad Road junction	Strategy 1.7	Implement actions to address traffic safety concerns associated with the Nairne Primary School, and nearby junction of Princes Highway and Woodside Rd.	Subject to Council recommendations (current consultancy) Subject to DTEI and Federal Government support Cost= \$1million	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years

A1.7.3 Resolve the Princes Highway / Junction Road, Littlehampton issues	Strategy 1.7	In the short term improve definition of the intersection and turning movements with the installation of kerb protuberances in Princes Highway (to define the parking lane and traffic lanes) and / or the installation of a raised median in both approaches. Consideration to also be given to	<ul style="list-style-type: none"> Although cost should be borne by DTEI, Council may need a co-contribution allowance of \$10,000 Primarily an advocacy role 	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years

		the minor widening of Junction Road and provision of an additional turning lane. In the longer term, undertake further investigations to consider the installation of a roundabout at the intersection, and improved delineation / protection of the outdoor seating in front of the Hotel		
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A1.7.4 Resolve Mt Barker Road / Adelaide Road / North Terrace issues	Strategy 1.7	Approach DTEI with a view of developing options to improve the capacity and safety of the junction. Consideration could be given to alternative lane arrangements, the installation of traffic signals (subject to warrant considerations), or the installation of a roundabout	<ul style="list-style-type: none"> Although cost should be borne by DTEI, Council may need a co-contribution allowance of \$10,000 Advocate Council's position to DTEI <p>Medium to Long term strategy:</p> <ul style="list-style-type: none"> Restrict Heavy vehicles from using the local road network connecting to Main Street including Ambelside Road (see Action A1.1.2) Construct the Verdun interchange to remove east bound freight movements (see Action A.1.1.8) 	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years

A1.7.6 Resolve Hahndorf Main Street issues	Strategy 1.7	Approach the DTEI with a view to Investigating the installation of kerb protuberances around the corner of Main Street and Pine Ave to enable minor realignment of Pine Ave and advance stop line to improve sight distances, and better define the parking lane along the western side of the road. Investigate opportunity to widen southbound lane to enable through traffic to pass right turners into Pine Ave.	<ul style="list-style-type: none">Although cost should be bourne by DTEI, Council may need a co-contribution allowance of \$20,000Advocate Council's position to DTEI	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											
A1.7.7 Resolve Church Street Hahndorf issues	Strategy 1.7	Review extension of the existing peak school hour parking restrictions further east along Church Street, or the application of parking restrictions on one side of the road to reduce congestion along the road.	<ul style="list-style-type: none">\$500 costs of parking signs	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											
A1.7.8 Resolve Mawson Road / Battunga Road, Meadows issues	Strategy 1.7	Approach DTEI with a view to rationalising the intersection space with medians and corner kerbing to better define the intersection area and movements associated with the adjacent Hotel and Service Station. Improve definition of the give way requirement and sight distances.	<ul style="list-style-type: none">Advocate Council's position to DTEILink to developer contribution agreement	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											

A1.7.9 Resolve Adelaide – Goolwa Road / Paris Creek Road issues	Strategy 1.7	Approach DTEI to determine whether any further improvements can be investigated / initiated at the junction	<ul style="list-style-type: none">Advocate Council’s position to DTEI	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											
A1.7.10 Resolve Main Street Nairne issues (adjacent post boxes)	Strategy 1.7	Introduce 15min parking limit adjacent the Post Office to ensure adequate turnover of kerbside spaces	\$500	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											
A1.7.11 Develop North Road Nairne to meet its role in the road network.	Strategy 1.7	Traffic conditions should be monitored subject to the relocation of the school crossing as part of 1.7.1 and impact on delays at the Woodside Road / Princes Highway junction. If the bus route is to be retained along the road and traffic continues to use the route, consideration should be given to widening the road, retaining the 10 tonne load limit. Traffic calming measures should be considered to reduce the excessive speed problem. Devices need to be suitable for bus use, without creating adverse discomfort to passengers. The impact of these	<ul style="list-style-type: none">\$500,000 - \$1 million widening road to cater for buses Subject to further investigation\$60k – 100k traffic management/calming implementation	<table><tr><td>2009-10</td><td>2010-11</td><td>2011-12</td><td>2012-13</td><td>2013-14</td><td>5-10 years</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years						
2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years											

		measures on the adjoining road network would need to be assessed prior to implementation. In the longer term and subject to any future growth to the north and east on Nairne the road could be developed as a local collector corridor.		
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A1.7.12 Resolve Mawson Road / Brookman Road Meadows issues	Strategy 1.7	Approach DTEI requesting a review of traffic arrangements at the intersection. Recent revision of speed limits may have improved the safety Safety Audit required	<ul style="list-style-type: none">Advocate Council's position to DTEI	2009-10	2010-11	2011-12	2012-13	2013-14	5-10 years

Appendix A

**Analysis of freight movements based on a 2001
survey of tonnages for a number of industries**

A 2001 survey of tonnages (Southern and Hills LGA, 2010 Transport plan Addendum, QED, 2004) relating to a number of industries that use the regional network uncovered significant seasonal truck movements through the region. Other than general freight significant growth is expected in the entire Southern and Hills region with overall grape production expected to increase by 12.5% per year (cumulative) while timber and livestock are also significant growth areas. The blue gum industry in the Adelaide Hills is expected to increase significantly over the next decade. The timber and wine demands vary between 10 and 18% of the total demand on the arterial and major local roads over the Adelaide Hills region. However, during grape harvest the daily volumes increase significantly. The future wine/timber demands were predicted to increase by between 30% and 80% between 2001 and 2006, which is significantly greater than the average rate for traffic growth on rural arterial roads typically 3% per annum) or 16% over the same period (QED, 2004). These growths have not been established. The main observations from previous demand studies have been:

- Significant south to north demands in the vicinity of Mount Barker due to grape product traffic from Langhorne Creek and McLaren vale to the Barossa valley.
- Significant north to south and south to north demands for heavy traffic movement (timber and grapes respectively) west of Mount Barker.
- Change in demand patterns within the livestock industry that could increase longer distance travel.

The tables and diagram below indicate the regional movements between regions including:

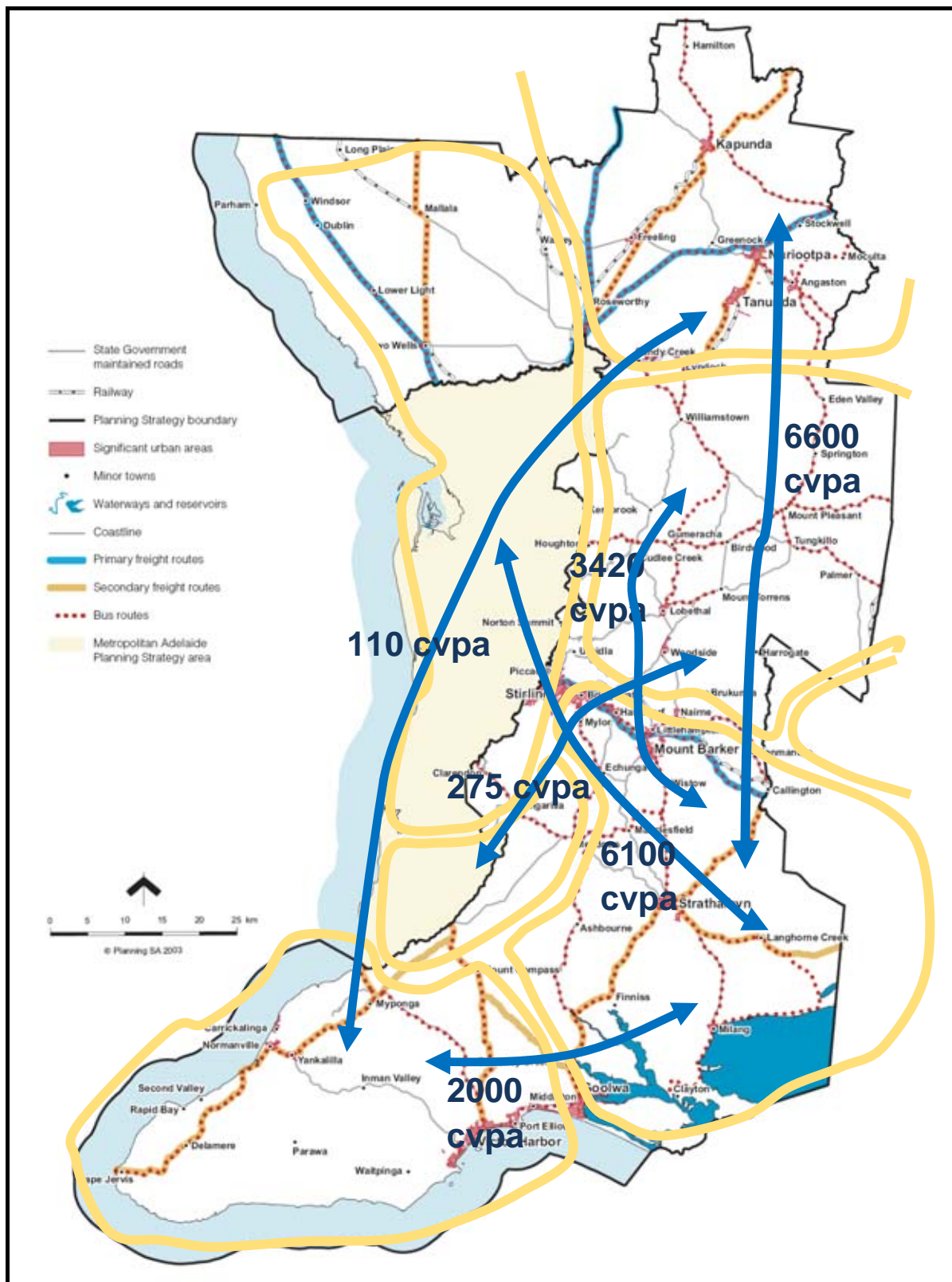
- Southern Hills (DC Mount Barker south of the freeway, Strathalbyn, Goolwa etc)
- Eastern Hills (Adelaide Hills region north of the freeway)
- Barossa Valley region
- McLaren Vale region
- Fleurieu Peninsula and Kangaroo Island
- Adelaide Metropolitan area.

Regional Movements (tonnes p.a.)	Grapes	Juice	Timber	Fruit and Veg	Grains
Southern Hills to Eastern hills	1200				
Southern Hills to Barossa Valley	48100	50900			
Fleurieu Peninsula to Barossa Valley	1600				
McLaren Vale to Eastern Hills	4100				
McLaren Vale to Barossa Valley	25700	20200			
McLaren Vale/Southern Hills		12700			
Fleurieu Peninsula to Southern Hills			30000		
Eastern Hills to Southern Hills			59000		
Southern Hills to Adelaide Metro			35000		
To and From Southern Hills*				42000	14000

While this is only an estimate the following analysis gives some indication of the volume of large truck traffic (assuming 15 tonne loads) that may be using key parts of the network on an annual basis (commercial vehicles per annum – cvpa).

Regional Movements (cvpa)	Grapes	Juice	Timber	Fruit and Veg	Grains
Southern Hills to Eastern hills (7 → 6)	80				
Southern Hills to Barossa Valley (7 → 2)	3207	3393			
Fleurieu Peninsula to Barossa Valley (5 → 2)	107				
McLaren Vale to Eastern Hills (3 → 6)	273				
McLaren Vale to Barossa Valley (3 → 2)	1713	1347			
McLaren Vale/Southern Hills (3 → 7)		847			
Fleurieu Peninsula to Southern Hills (5 → 7)			2000		
Eastern Hills to Southern Hills (6 → 7)			3933		
Southern Hills to Adelaide Metro (7 → 1)			2333		
To and From Southern Hills* (7)				2800	933

It is estimated approximately 10,500 trucks per annum (orange squares above) use the north to south road network through the Mount Barker District associated with grape, wine and timber industries. These trips probably use the Hahndorf – Echunga Road via Hahndorf township to the east and possibly (but less likely) use Adelaide and Bald Hills Roads to access the network to the north via Woodside. Approximately 6000 trucks (timber, fruit and vegetables and grain) use both Mount Barker and Verdun interchanges to access locations south of the freeway again impact further on Hahndorf and Mount Barker.



Conclusions of the Southern and Hills Local Government Association 2010 Transport Plan Addendum (2004)

It was illustrated in the S&HLGA 2010 Transport Plan Addendum (2004) that need for a freight corridor (or route) should be brought about by a number of reasons, including;

- Unsuitability in general of the road network in the Adelaide Hills and adjacent area to the east for carrying high numbers of large commercial vehicles, for example due to the adverse impact on road pavement structures and environmental impacts on towns and their communities. But also, specifically, use of local roads for a strategic through route functions rather than arterial roads. However, it is argued that the arterial road network east of Adelaide is also unsuitable in places for heavy commercial vehicles.
- Limited access to the South East Freeway which exacerbates these problems by concentrating traffic on roads through Mt Barker and Hahndorf, and to a lesser extent Murray Bridge. It is acknowledged that additional connections to/interchanges with the Freeway would facilitate east-west traffic more than north-south traffic and that a recent expansion of the interchange at Monarto has improved accessibility to the freeway.
- As a consequence of the second point above, there is a lack of general (gazetted) and specific (unregulated) movement by semi-trailers on all the main (including local) roads in the region;

Other objectives of identifying and establishing a north-south designated route for heavy commercial vehicles are;

- To facilitate efficient and safe transport movement through use of appropriate routes for different vehicle classes and trip function;
- Define the desired function and use of a route
- Articulate the preferred route for different categories of traffic
- Manage/control proactively the preferred routing for certain traffic, particularly heavy commercial vehicles
- Allow ready promotion and use of preferred designated route through signage regulation or information
- Send the right messages to driver through provision of consistent information on appropriate routes to use
- Protect certain routes and area from encroachment by unwanted through and heavy commercial traffic
- Minimize environmental impact on sensitive areas, particularly town, forest and heritage sites/areas
- Minimize maintenance effort on unsuitable roads, by concentration maintenance effort and funding to key route(s)

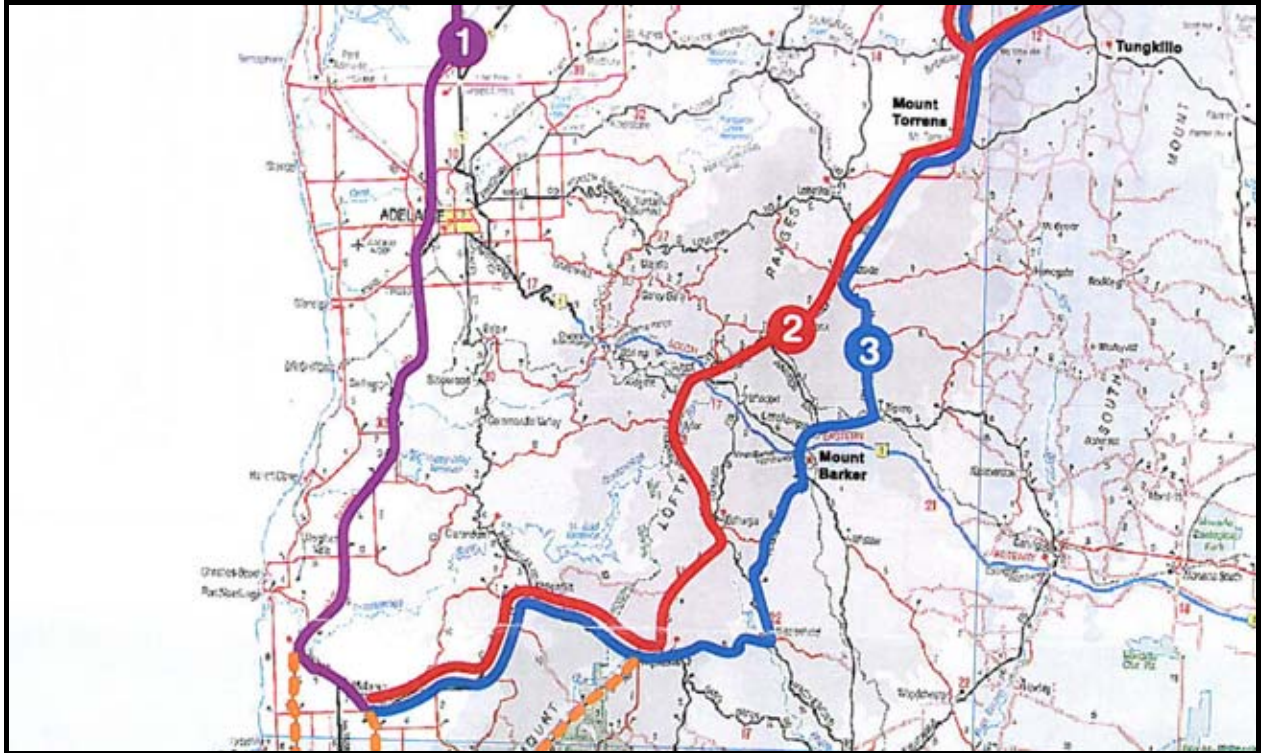
Selection of Preferred Corridor - McLaren Vale to Barossa Routes

With the preceding assessment as a base, the following additional considerations have been made to determine a preferred corridor.

Of the McLaren Vale (also Fleurieu Peninsula/Kangaroo Island) to Barossa routes, Route 1 through Adelaide (Main South Road/ Sturt highway) is perhaps at first sight attractive. It is a high quality, mainly divided arterial road with high capacity, under the care and control of Transport SA. It is also a strategic freight route in South Australia. However, this route is discounted as a preferred north-south corridor for a number of important reasons:

- It is generally congested for most of the day through Adelaide, although it is a priority of the Transport Planning Agency to improve this route to facilitate that movement of long distance heavy vehicles. Also it is the Department of Transport and Urban Planning's preferred B-double route between the Southern Fleurieu area and the Barossa Valley.
- The current route does not cater for all north-south regional freight traffic (for example timber), and it is known that it is not used for grapes to the Barossa. Therefore it does not fulfil the objectives of north-south route in the context of the Southern and Hill Transport Plan.

- The Measured travel time (by car) would not reflect the typical travel time for a truck or at congested peak times – this would be much slower than surveys, and the route would be therefore less attractive than indicated above.
- Therefore, Route 3 was the preferred route via Flaxley Road, Adelaide Road, Littlehampton and Nairne Main Streets, Woodside Road.



Map 5.2: North South Route Options – McLaren Vale to Barossa

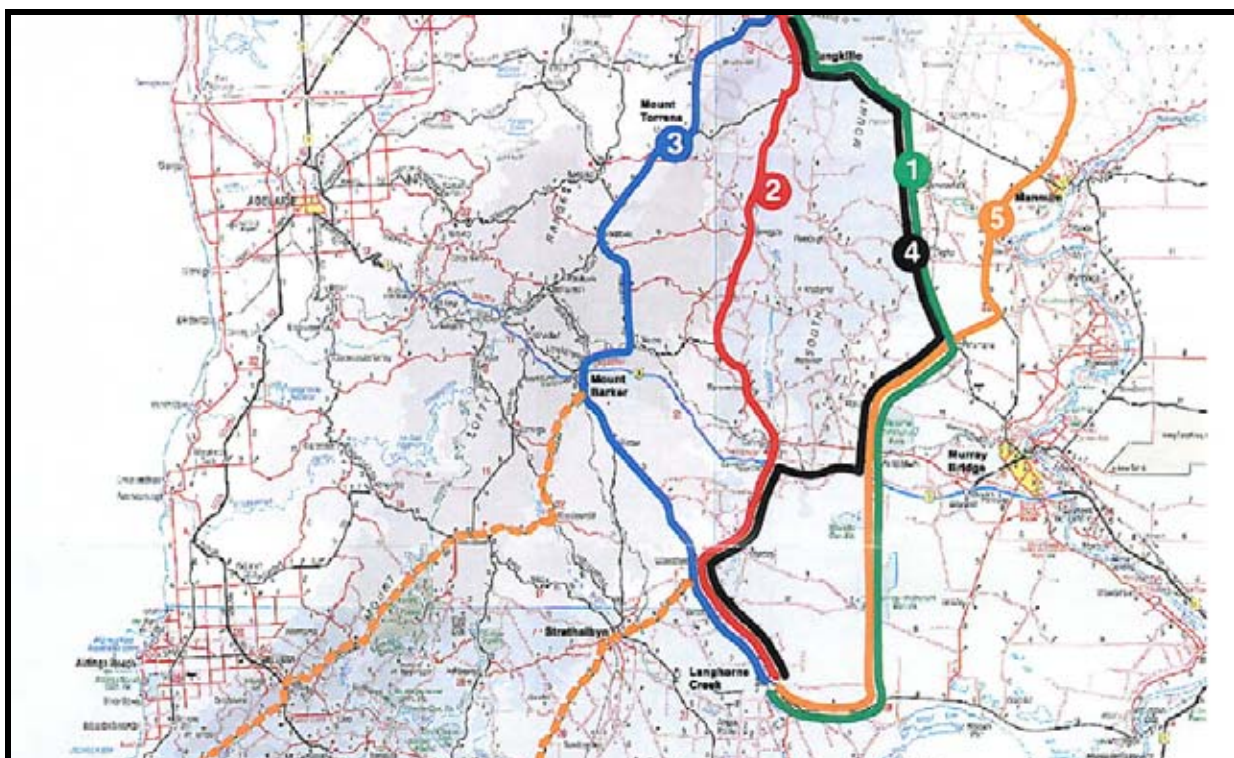
Selection of Preferred Corridor – Langhorne Creek to Barossa Valley Routes

Based on the broad level of assessment and the road appraisal audit carried out in the study and the need for further validation and more detailed assessment, route 3 is the recommended north-south corridor between Langhorne Creek / McLaren Vale and the Barossa for a general freight route, excluding B-double except for access purposes. Route 4, which is also highly ranked in the evaluation, is recommended as the continuous B-double route between Langhorne Creek and the Barossa.

The small difference in the priority ranking between Routes 3 and 4 highlight the need for further more detailed investigation and public consultation and acceptance of these routes and their relative benefits and impacts.

The Route 3 corridor proceeds from Langhorne Creek via Woodchester, Mt Barker, Nairne, Woodside, Springton, Eden Valley and Angaston, and for the Fleurieu Peninsula/Kangaroo Island/McLaren Vale origin, Route 4 would proceed through Myponga, Mount Compass, Currency Creek, Strathalbyn to Woodchester and then as above.

If these corridors are pursued, the use and upgrading of Peach Road / Bald Hills Road as an eastern bypass to Mt Barker to reduce the impact of freight on Mt. Barker and Littlehampton appears attractive from a traffic and environmental point of view, however, it is perhaps infeasible in financial terms.



Map 5.1: North South Route Options - Langhorne Creek to Barossa

Appendix B

Future Travel Demand Analysis

Future Travel Demand - All Modes and Trip Types (excluding freight)

Given there is no current State Government transport model as yet for the outer-metropolitan Adelaide a detailed trip matrix and traffic demand analysis tool was developed by InfraPlan using spatial information of the District, population projections, potential residential development locations (as per advice from Council), 2006 Census data and demographic information and assumptions on trip purpose and mode from the Metropolitan Adelaide Households Transport Survey (1999). *In the absence of enough land to cater for current growth trends to 2026 the consultants had to make assumptions about where residential growth will occur beyond the recommendations of current Council PAR's. These growth areas are shown in Appendix B, and distributed to 18 internal and 5 external growth/ traffic demand zones. It should be noted that the current 30 year Plan for Greater Adelaide may propose additional land development zones that are either different to the consultant's assumptions and/or over and above land highlighted for the Master Plan. Growth rates for the Master Plan are based on a combination of historic market trends in the area and the State Government's previous 2 million by 2050 forecast. This population forecast has now been significantly upgraded to a new 'high scenario' based on current trends that show South Australia to be tracking to 2 million by 2027-2034. Therefore, the growth projections for DC Mount Barker may be significantly increased depending on where the State Government sees the growth allocation for the Greater Adelaide Metropolitan area is best directed (verbatim Section 01)*

The assumptions for land development (shown below) essentially sit behind a first approximation traffic demand tool for the district. The tool estimates the potential traffic increase from and to sub-regions, townships or sub-townships of the District Council area. This tool was then used to estimate the potential future growth (over a 20 year period from a 2006 base) and the resulting impact on the transport network.

Residential Capacity (current and future) of Zones

		Current residents (2006) *	Average household size (persons) *	2006 number of households *	Future Additional PAR **	Future Additional Assumed ***	Comments/Assumptions on Future Residential Development
Zone No.	Mount Barker District Council	26,435	2.62	10090			
1	northern rural	3282	2.78	1181			
2	central rural	2,005	2.8	716			
3	southern rural	2,209	2.73	809			
4	Echunga	536	2.64	203			
5	Hahndorf	1,806	2.38	759			
6	Littlehampton 1	902	2.76	327	69		
7	Littlehampton 2	901	2.76	326	148		
8	Littlehampton 3					900	Based on approximate area, and possible residential densities that are similar to rural living in Mt Barker 1, this area could accommodate an approximate 900 dwellings once current PAR land is used.
9	Macclesfield	835	2.57	325		110	Two sites in the Macclesfield area have been indicated for future potential residential growth. Based on estimates of area and residential densities in Macclesfield, these areas could have a combined residential allotment total of 110
10	Meadows 1	376	2.69	140	97	150	An area of approximately 16 ha in the western part of the Meadows township has been indicated for future residential potential. Based on residential allotments of the Mills Street infill site, it could accommodate approximately 150 allotments
11	Meadows 2	376	2.69	140	174		
12	Mount Barker 1	1890	2.52	750		750	Currently Rural Living - policy changes would allow for further sub-division of lots currently between 1200m2 and 2500m2. Assume that the density could double.
13	Mount Barker 2	2520	2.52	1000	270		
14	Mount Barker 3	2520	2.52	1000	850	400	An area to the west of the current Hurling Drive PAR site has been indicated for future residential potential. The area is not currently zoned residential. This site is approximately 50-60ha, and based on residential densities for the adjoining Hurling Drive site, could accommodate an extra 400 allotments.
15	Mount Barker 4	1966	2.52	780	264	350	An area to the north of the current Hawthorne Rd PAR site has been indicated for future residential potential. The area is not currently zoned residential. This site is approximately 50-60ha, and based on residential densities for the adjoining Hawthorn Rd site, could accommodate an extra 350 allotments.
16	Mount Barker 5	706	2.52	280			
17	Nairne 1	1735	2.62	662	64	64	It has been indicated that an area to the south of the current Mathew Rd PAR site (and of similar size) has future residential potential. This site would accommodate a similar number of allotments as the Matthew Rd site.
18	Nairne 2	1735	2.62	662		430	An area to the east of the Nairne township has been indicated as having future (12-20 year) residential potential. Base on current residential densities for the township of Nairne, this area has the potential to accommodate an extra 430 allotments.

* based on District Council of Mount Barker: Community Profile, informed by ABS Census of Housing and Population, 2006

** based on information contained in "District Council of Mount Barker Community Profile" May 2008

*** figures have been based upon initial discussions with Council planners, as well as a number of assumptions for approximate areas and dwelling densities. These assumptions for each site are recorded under Comments / Assumptions on future residential potential

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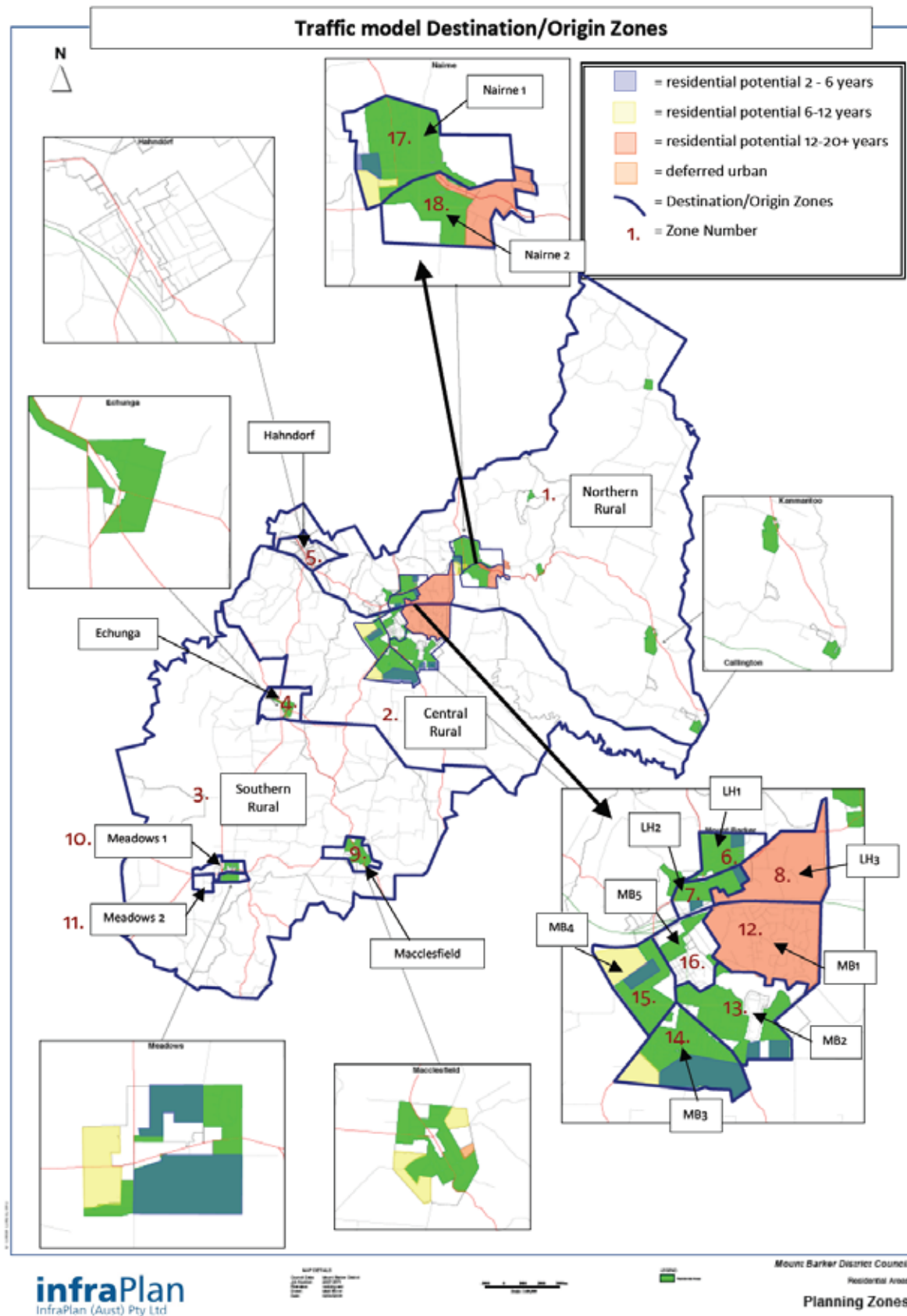
HIGH GROWTH SCENARIO

Population**		2006	2011	2016	2021	2026
Zone No.	Zones					
1	northern rural	3282	3466	3905	4328	4774
2	central rural	2005	1842	1557	1871	1899
3	southern rural	2209	2031	1998	1966	1950
4	Echunga	536	510	501	493	489
5	Hahndorf	1802	1905	1875	1844	1829
6	Littlehampton 1	902	970	954	942	931
7	Littlehampton 2	901	1161	1142	1128	1114
8	Littlehampton 3	0	0	0	1071	2115
9	Macclesfield	835	828	951	1081	1085
10	Meadows 1	376	581	933	921	909
11	Meadows 2	376	558	757	747	738
12	Mount Barker 1	1890	1838	2410	2975	3525
13	Mount Barker 2	2520	3112	3061	3033	2985
14	Mount Barker 3	2520	3553	4459	5355	5288
15	Mount Barker 4	1965	2234	2516	3318	3276
16	Mount Barker 5	705	686	675	666	658
17	Nairne 1	1735	1779	1904	1880	1857
18	Nairne 2	1735	1622	1595	1576	2566
	TOTAL	26294	28673	31493	35186	37986

Households		2006	2011	2016	2021	2026	Net Growth (2006-2026)	Capacity	Dwelling Surplus/Deficiency after 2026	Comments on Assumptions
Zone No.	Zones									
1	northern rural	1181	1381	1581	1781	1981	800	0	-800	dwelling growth between 2001 to 2006 was 200 dwellings. Due to the townships of Callington and Kanmantoo inside the Northern Rural area, and the potential for growth of the Monarto Industrial Area and Murray Bridge, it is assumed a similar growth rate will occur in all 5 year increments.
2	central rural	716	734	752	770	788	72	0	-72	dwelling growth between 2001 to 2006 was 18 dwellings. It is assumed a similar growth rate will occur in all 5 year increments.
3	southern rural	809	809	809	809	809	0	0	0	no capacity for residential growth has been indicated
4	Echunga	203	203	203	203	203	0	0	0	no capacity for residential growth has been indicated
5	Hahndorf	759	759	759	759	759	0	0	0	no scope for further residential development
6	Littlehampton 1	327	396	396	396	396	69	69	0	Gum Tree Drive PAR site to be complete by 2011
7	Littlehampton 2	326	474	474	474	474	148	148	0	Gardener Street and Hallett Road PAR sites to be complete by 2011
8	Littlehampton 3	0	0	0	450	900	900	900	0	assumed half the residential potential of the indicated site to be complete before 2021, and the rest thereafter
9	Macclesfield	325	330	385	445	450	125	125	0	two sites in the Macclesfield area have been indicated for future potential residential growth. Based on estimates of area and residential densities in Macclesfield, these areas could have a combined residential allotment total of 110. Half of this development is to be completed by 2016, and the further half before 2021. Further growth of 5 dwellings every 5 year increment.
10	Meadows 1	140	237	387	387	387	247	247	0	2011 figure accounts for the Mills Street (East) PAR site, and the 2016 figure includes the residential potential to the west of the township.
11	Meadows 2	140	227	314	314	314	174	174	0	the Mills Street (west) PAR site accounts for the residential growth between 2006 and 2016.
12	Mount Barker 1	750	750	1000	1250	1500	750	750	0	Currently Rural Living - policy changes would allow for further sub-division of lots currently between 1200m2 and 1500m2. The doubling of density through sub-division resulting in a further 750 dwellings is to occur between 2011 and 2021
13	Mount Barker 2	1000	1270	1270	1270	1270	270	270	0	Sims Road (East and West) PAR sits to be developed by 2011
14	Mount Barker 3	1000	1450	1850	2250	2250	1250	1250	0	It is assumed the development of the Hurling Drive Residential PAR site (the largest of all PAR sites) will occur between 2006 and 2016 due to the size and speed at which development can occur. The site to the west of the Hurling Drive PAR will come on-line between 2016 and 2021, with an additional 400 dwellings
15	Mount Barker 4	780	912	1044	1394	1394	614	614	0	the Hawthorn Rd PAR site will be developed between 2006 and 2016. The potential residential area to the north of the existing Hawthorn Rd PAR site will be developed between 2016 - 2021
16	Mount Barker 5	280	280	280	280	280	0	0	0	no residential growth for the CBD of Mount Barker has been suggested
17	Nairne 1	662	726	790	790	790	128	128	0	the Matthew Rd PAR site accounts for the residential growth between 2006 and 2011. The residential potential area to the south of the Matthew Rd PAR site being developed accounts for the residential growth between 2011-2016
18	Nairne 2	662	662	662	662	1092	430	430	0	future potential residential growth to occur in Nairne between 2021 and 2026
	TOTAL	10060	11600	12956	14684	16037	5977	5105	-872	***

NOTES

* Total dwellings approved averages 306 dwelling per annum over an 8 year period (between 1996 and 2006). This figure has been used in the assumption there will be 1500 new dwellings every 5 year increment.
** the figures used to generate the population data are created from the Planning SA 2Million Scenario population per dwelling figures
***The dwelling surplus after 2026 is in the negative because there is no assumed capacity for the northern rural and central rural zones, however, based on historical data, growth has been occurring. It is assumed this growth will continue without recognised capacity



The demand predicted by the traffic demand tool illustrates that the District currently generates nearly 58,000 vehicle trips per day.

This is predicted to increase to above 92,000 by the year 2026 based on the current policy position for land use development within the District. This is an increase of over 34,000 vehicle trips per day that need to be catered for on the District's road network over the next 20 years.

The analytical tool also accounted for the potential increase in other modes of transport, such as walking, cycling and public transport. The additional trips per day for each of the modes between 2006 to 2026 were: Walking (6,900), Cycling (700) and public transport (2,200).

The following tables are taken from the transport analytical tool and estimate the share of transport modes for the district, as well as the different travel purposes. These have been used to contribute to the understanding of the potential future transport network of the District.

Table 1: 2006 estimated total trips for transport mode and transport purpose

	Car (Driver)	Car (passenger)	Cycle	Walk	Public Transport	Other motorbike, truck, taxi) (inc	Purpose Share
Non-home-based Other	11871	3622	201	3722	604	101	20120
Non-home-based Employer's Business	2238	151	0	101	25	0	2515
Home-based Other	2666	1459	50	528	226	101	5030
Home-based Personal Business	6359	5191	65	1168	130	65	12977
Home-based Social and Recreation	11637	8001	364	3637	485	121	24245
Home-based Shopping	10447	2963	156	1247	702	78	15593
Home-based Education	700	3209	233	700	934	58	5835
Home-based Work	9271	786	57	429	543	3143	14285
Total	55190	25380	1127	11532	3648	3666	100600

Table 2: 2026 estimated total trips for transport mode and transport purpose

	Car (Driver)	Car (passenger)	Cycle	Walk	Public Transport	Other motorbike, truck, taxi) (inc	Purpose Share
Non-home-based Other	18924	5773	321	5934	962	160	32074
Non-home-based Employer's Business	3568	241	0	160	40	0	4009
Home-based Other	4250	2325	80	842	361	160	8019
Home-based Personal Business	10137	8275	103	1862	207	103	20688
Home-based Social and Recreation	18552	12754	580	5797	773	193	38649
Home-based Shopping	16654	4723	249	1989	1119	124	24857
Home-based Education	1116	5116	372	1116	1488	93	9301
Home-based Work	14779	1252	91	683	865	5010	22773
Total	87980	40460	1796	18383	5815	5845	160370

Table 3: Total Traffic Increase from 2006 – 2026 by transport mode and purpose share.

	Car (Driver)	Car (passenger)	Cycle	Walk	Public Transport	Other (inc motorbike, truck, taxi)	Purpose Share
Non-home-based Other	7053	2152	120	2211	359	60	11954
Non-home-based Employer's Business	1330	90	0	60	15	0	1494
Home-based Other	1584	867	30	314	134	60	2989
Home-based Personal Business	3778	3084	39	694	77	39	7710
Home-based Social and Recreation	6914	4754	216	2161	288	72	14405
Home-based Shopping	6207	1760	93	741	417	46	9264
Home-based Education	416	1907	139	416	555	35	3467
Home-based Work	5508	467	34	255	323	1867	8487
Total	32790	15079	669	6851	2167	2178	59770

The traffic generation analytical tool has been established so that inputs such as land use changes, demographic and household criteria can be altered to respond other future scenarios and influences as part of a sensitivity analysis of growth. This ensures the robustness of analytical tool in terms of future analysis.

The analytical tool used to generate these figures was based on a number of residential growth assumptions. A majority of the residential growth areas are accounted for in the Residential PAR areas of Mt Barker, Littlehampton, Nairne and Meadows, however, further assumptions (based on land availability and current residential growth patterns and potential market demands) were developed (assumptions made by the consultant) to accomodate population growth beyond the next 15 years. This population growth was based on current development trends These included:

- Growth to the east of Nairne Township
- A doubling of population for the current Springs Road rural living area (through subdivision of land)
- Growth to the east of Littlehampton Township

It is important to note that the areas analysed include growth that are not currently council policy, but were developed to indicate potential traffic impacts for the purpose of testing the robustness of the DC Mount Barker transport system. Therefore, it is recommended that Council officers undertake ongoing monitoring of actual traffic volumes against the assumed traffic growth.

Residential and business development in areas outside of Mt Barker District Council

Growth outside the District in places such as Strathalbyn and Goolwa will lead to approximately 5,000 additional households (to 2026), of which approximately 25,000²³ car trips will be generated car trips, some of which will use DC Mount Barker as a through route. If we assume that 5% use Mount Barker as a through route and a further 5% of these trips access the Distict centre then some 2,500 additional trips per day to those estimated will impact on the District road network by 2026.

Demand Analysis

The tables above indicate that growth in home based work trips (journey to work trips) is not a significant contributor to overall travel demand in the District (albeit significant in the peak hour). Home based shopping and recreation based trips are just as significant (although spread throughout the day) and therefore inter-peak trips are predicted to have an impact on future traffic flows.

Sensitivity Testing of Travel Demand Scenarios

The figures generated for the modes of transport of walking, cycling and public transport were based on 2006 Census data as well as mode splits from the Metropolitan Adelaide Household Travel Survey (1999). Therefore it is reasonable to suggest that there may be some additional changes in travel patterns, modes and behaviors over the time frame to 2026 either through environmental changes, climate change or gloabl fuel prices.

²³ Assuming half of the total trips generated are intra-regional

Sensitivity testing and travel demand

To account for this potential change, sensitivity and robustness testing was carried out to assess the assumptions and effect of potential change. For example, by doubling all trips made by public transport and cycling (for all purposes) there was a reduction in total vehicle trips in 2006 of 4138, a reduction in total vehicle trips in 2026 of 6596 and a reduction in total vehicle trip increase between 2006 - 2026 of only 2458.

While this represents an impressive reduction in travel demand underpinning the usefulness of Travel Demand initiatives as outline in Section 05. However, the reduction is not enough to substantially reduce traffic (still creates an extra 30,658 vehicle trips to cater for by 2026) to a point where traffic congestion and safety will not have a bearing on the transport system in the District in the short and medium term.

Future Potential Traffic Volumes – District Wide

On the basis of this analysis and the underlying assumptions, the consultants have prepared 2026 base-line traffic volume estimates for the road network throughout the District.

Appendix C

Network Operating Strategy

The District Council of Mount Barker Network Operating Strategy (NOS) provides guidelines for the operation and management of the road network. It stipulates a road hierarchy and specifies the role and functionality of route options. The NOS aims at meeting the demands of increasing traffic flows, while achieving operational solutions to guide and influence future growth and potential future land uses. It provides a tool for the planning, design and operation of the road network and the associated surrounding land uses. It also aims at reducing conflicts of the road hierarchy that may occur due to vehicle per day (vpd) growth, or between different modes of transport.

The NOS is intended as a guide of performance measures, to identify network deficiencies and guide investment. Council (coupled with State Government) should aim to provide all design and operational requirements, taking into account the specific practicalities of individual roads. Compromises (e.g. road widths) must infrequently be applied due to limitations, such as budgetary constraints.

Some routes are defined by two or more functional categories; however the key design and operational outcomes that inform the NOS are different for each functional category. To address this, a hierarchy of the different functional categories has been established to enable decision making – for example, when deciding on road design parameters and dimensions begin with Freight Routes (which may also cater for Public Transport Routes, Commuter Routes etc). If not a freight route then apply the requirements of Public Transport Routes and so on.

On the hand, from a community perspective the order is 1 – 4 with respect to importance from a social/environmental sensitivity point of view and when accessibility considerations are primary.

The hierarchy is as follows:

Dimensional /safety 4 to 1

Commuter/Car traffic 1 to 4

4. Freight Routes
3. Public Transport Routes
2. Commuter/Community Routes
1. Tourist Routes

Where a route is defined by two or more functional categories, the route that is higher in the hierarchy takes design precedence (e.g. when a route is defined as both a Freight Network and a Commuter/Community Network, the design and operational outcomes of the Freight Routes are applied). Additional to these four functional categories are Cycling Networks and Pedestrian Precincts. These can be included into other functional networks (where appropriate) as per their specific key design and operational outcomes.

It is important to note that some of the arterial road do not come under the jurisdiction of Council, as they are State operated roads. However, where there are deficiencies Council will lobby for improvements to address gaps in the network.

Descriptions of Networks

The Road Network for Freight

Freight Routes link strategically important economic regions within and external to the District of Mount Barker. They provide for the safe and efficient movement of freight, and the key design and operational outcomes reflect the higher needs of freight movements.

The Commuter and Community Route Network

Community access routes link regions or regional centres within or external to the District. Links between the townships are the predominant access routes of community and commuter functional network. The attributes for these routes are generally of a lower standard than freight routes, however, are adequate to ensure a safe, reliable access is provided.

The Road Network for Tourists

Direct tourist links provide a direct link from key regional centres to major tourist regions. The design and operational outcomes are similar to that of commuter access routes.

[See Networks in the attached Appendices](#)

Commuter/Community Routes - townships

General Theme

Commuter/Community Routes cater for the safe and efficient movement of people in cars travelling over longer distances (typically from home to employment/educational institutions, or between townships) within or through the District.

Broad Objectives

- Minimise delays during commuter peaks
- Providing the most direct route/access from origin to destination
- Maintain reasonable level of local area access
- Provide safe operation
- Provide good riding surface

Role and Function

A commuter route may be required to perform a number of roles within a transport network. It may form parts of other levels of the NOS hierarchy (such as freight routes or public transport routes).

Commuter should expect a high level of service with emphasis on minimum delay and safety.

Adequate clear lanes where commuting traffic should be unimpeded by right turning vehicles stopped buses or parked vehicles. This can be achieved by slip lanes, in-cut bus stops, parking restrictions or multiple lanes in both directions.

Capacity

One clear lane in both directions should be provided at all times (as a minimum) and two clear lanes for peak traffic flows exceeding 1000 vpd.

Lane Widths

Lanes must be of sufficient width to cater for passenger vehicles but also for larger vehicles where a commuter route also forms another part of the network.

- Kerb Lanes: Required = 4.2m, minimum = 3.5m
- Kerb Lane + parking: Required = 5.5m, minimum = 5.2m
- Exclusive turn lanes: Required = 3.0m, minimum = 2.6m
- Other lanes: Required = 3.3m, minimum = 3.0m

Turning Traffic

Turning vehicles can have an impact on traffic flow. Where appropriate, cross section design and access control should be implemented to minimise the impact of turning vehicles. Considerations should be made for right-turn slip lanes at appropriate locations with high dual-directional traffic, or where speed and safety may become an issue with turning vehicles.

Parking

Parking should not be encouraged along commuter/community routes so as to facilitate smoother traffic flows, and allow for bus or cycling lanes. Also due to the speeds on many of the rural roads parking would have negative safety implications.

Consideration for provisions for parking alternatives should be made where necessary, such as access to off-street public car parks, ensuring this does not present any safety issues and does not affect the flow of commuter traffic.

Speed limits

Speed limits should be 60km/h or greater for primary commuter routes facilitate smooth traffic flows. Generally (but not specifically) speed through townships should not exceed 60km/h, however higher speed environments are permitted between townships to facilitate more effective commuter traffic movements.

Pedestrian facilities

Pedestrian crossings are required on commuter routes at high pedestrian crossing demand locations; however they should not be located in areas where speed limits exceed 60km/h. Where pedestrian crossings need to be provided, they must be of a type that minimises impact on traffic flow; this excludes the use of facilities such as school zones, Koala crossings and wombat crossings, unless absolutely necessary (such as near Nairne Primary).

Traffic Signals

Attempts should be made to avoid closely spaced traffic signals within townships, and only in 50 or 60km/h environments, and signals should be coordinated to minimise delays and stops. Traffic signals should not be considered in higher speed environments.

Roundabouts

Roundabouts reduce the relative speed of conflicting vehicles and simplify the driving task by providing a clear 'right of way'. Roundabouts however should only be considered within townships or where the speed environment is 60km/h or less, and where primary or secondary commuter routes intersect.

Stop or Give Way Signs

Where movements across a commuter/community route are permitted, either "stop" or 'give way' sign control must be used to ensure priority for the commuter route. 'Stop' signs are more desirable in higher speed environments, or where sight distances are impeded.

Freight Routes

General Theme

The road networks for Freight facilitates the efficient and safe movement of goods within and through the District, whilst being mindful of the potential impacts upon residents.

Broad Objectives

- Minimum Delays – minimum stops
- Strategic connections to freeway, other areas outside the District
- High level of access to Industrial areas, or areas with freight reliance.
- Noise minimisation and separation
- Good riding surface

Freight Route Hierarchy

As is indicated on the Freight Network Map, there are several categories for freight routes. The Primary Freight route is limited to the South Eastern Freeway to strategically carry freight through the District. The secondary freight routes follow a north south direction, and feed freight into the South Eastern Freeway. Minor freight route act as feeders into the secondary/primary routes or as access to townships/commercial/industrial areas and are not encouraged for large or frequent freight volumes. The design and function requirements refer to secondary and minor freight routes only due to the primary freight route being solely the South Eastern Freeway.

Lane Widths

Freight routes require lanes suitable for use by larger vehicles.

- | | |
|---------------------------------|---------------------------------|
| ➤ Kerb Lanes: | Required = 4.2m, minimum = 3.5m |
| ➤ Kerb Lane + parking: | Required = 5.7m, minimum = 5.5m |
| ➤ Kerb Lane + parking + cycles: | Required = 7.3m, minimum = 7.0m |
| ➤ Freight travel lanes: | Required = 3.5m, minimum = 3.3m |

Roadway Capacity

Sufficient mid-block capacity to cater for high volumes of commuting traffic is important to ensure uninterrupted flow of traffic. Adequate clear lanes should be provided to ensure the efficient movement of all traffic. One Clear lane in each direction should be provided at all times.

Overtaking and Passing

Consideration needs to be given for passing opportunities mid-block. These could be provided by an additional lane, even if interrupted.

Parking

Parking should not be encouraged along freight routes so as to facilitate smoother traffic flows, and allow for other modes of transport to more easily share the route. Also due to the speeds on many of the rural roads parking would have negative safety implications.

Speed limits

Speed limits should be 60km/h or greater for primary commuter routes facilitate smooth traffic flows. Speed through townships should not exceed 60km/h, however higher speed environments are permitted between townships to facilitate more effective freight traffic movements.

Pedestrian Movements

Pedestrian crossings should only be considered where suitable pedestrian networks exist, and pedestrian fencing, adjacent footpaths and safe sight distances are provided. Signalised crossings are preferred options (behind less attainable over/underpasses).

Bicycles

Bicycle and freight movements are in conflict if they are expected to utilise the same road space. Separate space should be provided for bicycles, as cycles must not be expected to use space provided for the freight lane.

Buses

Where Freight networks are Public Transport networks, bus stops should be indented so as not to interfere with the movement of freight. This ensures the 3.5m freight lane width is maintained.

Traffic Signals

Green-times should be extended where ever possible for freight movements, and where freight is required to turn right, provisions for turn phases.

Attempts should be made to avoid closely spaced traffic signals within townships, and only in 50 or 60km/h environments, and signals should be coordinated to minimise delays and stops. Traffic signals should not be considered in higher speed environments.

Traffic signals should also be considered for strategic locations for pedestrian crossings.

Roundabouts

Roundabouts reduce the relative speed of conflicting vehicles and simplify the driving task by providing a clear 'right of way'. Roundabouts however should only be considered within townships or where the speed environment is 60km/h or less, and where primary or secondary commuter routes intersect.

Stop or Give Way Signs

Where movements cross a commuter/community route: either "stop" or 'give way' sign control must be used to ensure priority for the commuter route. 'Stop' signs are more desirable in higher speed environments, or where sight distances are impeded.

Appendix D

District-wide Network Scenarios

Through discussion with Council and as an outcome of the community and stakeholder consultation, various network route options have been developed for this plan. Two network Scenarios (1 and 2) and three sub options (2a, 2b and 2c) were assessed. The options address the desire to establish additional road network connections and bypasses around key townships including Mt Barker, Hahndorf and Nairne. Irrespective of the benefits of maintaining a minimum level of safety and satisfactory congestion standards (called 'level of service') through an effective 'network operating' management framework (see also strategy 1.5), there is also a need to augment or even alter the current functional (and road hierarchy) definition of the road network. This is represented by the two network scenarios outlined below.

Network Scenario 1: Improve accessibility for key residential growth areas to the south, east and north east of the Mount Barker Township (including parts of Nairne).

Analysis for this master-plan indicates that the current road network and the main thoroughfares through Mount Barker, connecting to the freeway (including Adelaide Road) and Littlehampton, will not adequately cope with the large increase in traffic volumes, predicted to occur in the near future. Adelaide Road and Littlehampton's main street will experience the most significant increases in traffic volumes (Adelaide Road is predicted to have volumes equal to a major urban arterial road, approaching 40,000 vehicles per day by 2026) as well as increases in local traffic accessing the civic and retail centres of these townships. The most obvious solution is to increase the capacity of the local network through the duplication of the Mount Barker interchange.

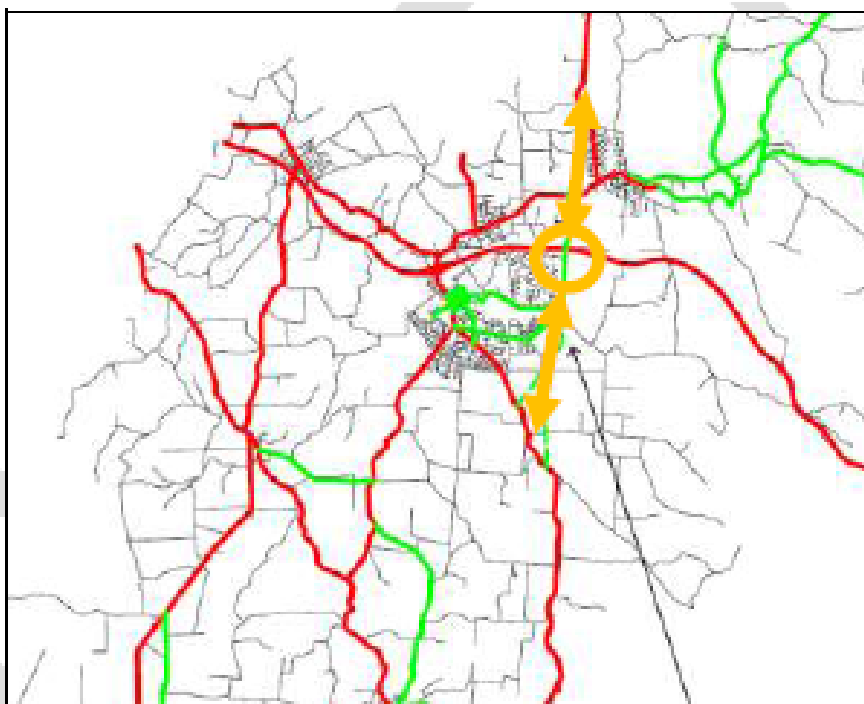


Figure 35: Network Strategy One: Bald Hills Road and Wellington Road connector (Paech Road) to cater for growing local and regional commuter traffic.

Network Scenario 2: Better manage north-south intra-regional and short distance inter-regional freight movements to reduce the impact on local communities.

Analysis provided in Appendix A and from previous studies²⁴ indicates that intra-regional freight movements including those that significantly impact on main streets are primarily associated with north to south movements across the district.

The District Council of Mount Barker supports the position held by the Department for Transport, Energy and Infrastructure that the intended non-stop North-South corridor between the Southern Expressway and the Port River Expressway (to the west of the District) and recommended Monarto-Sedan Route (to the east of the District) will cater for a majority of long distance inter-regional north-south freight movements. However the District Council of Mount Barker is of the opinion that locally generated freight, intra-regional freight and some shorter inter-regional freight movements will not be attracted as far west as the North-South Corridor or as far east as the Monarto-Sedan Route, therefore some freight movements must be catered for through the District. The District Council of Mount Barker would prefer not to have to cater for significant freight movements through the District, however freight from local attractors/generators must be accounted for so as to minimise the impact on the local communities.

Therefore, any network improvements for freight movements should be focussed on:

- providing for a south / south west movement to/from locations to the north/north west of the district using the Hahndorf - Echunga Road or Adelaide Road via Flaxley Road (see also 'Freight Routes' in Strategy 1.5). At present freight traffic must use the western section (west of Pine Avenue) of the Main Street of Hahndorf to travel to locations to the south of the freeway or use the Mount Barker freeway interchange to access locations east of the District.
- providing for freight generating activities from locations in the north to access the freeway as a primary freight route. At present traffic needing to travel to and from locations to the east of Hahndorf must use the township of Hahndorf and likewise use Nairne and Littlehampton as a local 'through' freight route (see 'Freight Routes' in Appendix B).

The traffic burden currently falls on roads inside townships resulting in social and economic impacts on the main streets/roads of Hahndorf, Mount Barker, Littlehampton and Nairne. Social impacts include noise, air pollution, safety implications of large vehicles mixing with local traffic and conflicts with a pedestrianised environment within a constrained built environment. Economic impacts include the affect on tourist activities and local retail/ business functions. All main streets are currently part of the 'Tourist Access Drive' or 'Tourist Drive' networks, a key part of the public transport network and are key primary access routes for commuters.

²⁴ S&HLGA 2010 Transport Plan (2004 Addendum)

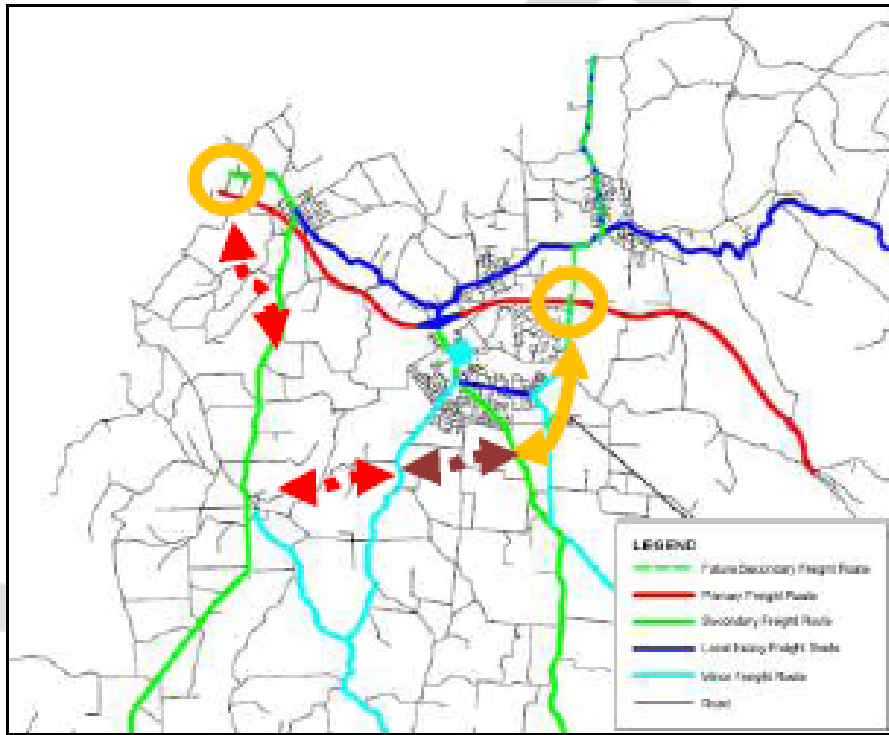


Figure 36: The various network scenarios assessed.

The most obvious network solution is to create fully accessible interchanges at both ends of this sensitive area: to completely remove the need for local main streets to perform a freight traffic role and to cater for significant seasonal truck movements. However, this may not be able to be achieved in the short term. Therefore, alternative network options need to be explored.

Network Scenario 2A – Pine Ave to River Road Bypass and Bald Hills Road - Paech Road extension.

Under this scenario north to south freight movements and vice versa between the Hahndorf – Echunga Road, and the Birdwood - Verdun Road / SE freeway to the west, are catered for via a Pine Avenue to River Road Bypass. The Bald Hills Road/ Paech Road connection effectively caters for freight movement to/from Langhorne Creek, Woodside Road and Princes Highway (with only an upgrade of Bald Hills Road – no interchange).



There is no obvious route choice for the Pine Avenue to River Road Bypass, which is significantly constrained due to the topography of the area.

The most likely option would be to ascend the range via Snelling Road and Kangaroo Reef Road, connecting to Fairview Road travelling across the top of the range to connect with River Road under the Freeway and to an upgraded Verdun interchange.

There would be a significant financial and environmental cost to establish a suitable bypass route in this area. Issues to be resolved include :

- The significant grades between Pine Avenue and Fairview Road, between the top of the range and River Road
- Management of the following junctions suitable for freight traffic
 - Snelling Road / Echunga Road
 - Snelling Road / Kangaroo Reef Road
 - Fairview Road / River Road
 - River Road / Main Road
- The suitability of River Road (adjacent residences) as a freight route.
- The poor vertical and horizontal geometry along Fairview Road.
- Native vegetation along the entire route (in particular across the top of the range along Fairview Road)

The cost could be in the vicinity of \$4-6m with only 150 trucks per day expected to use the route and only if a load limit were to be applied to the Hahndorf-Echunga Road at Pine Avenue.

For these reasons this option has been discounted at this stage in the Districts development.

Network Scenario 2B – Full Verdun interchange and Bald Hills Road upgrade/ Bald Hills Road interchange

Under this scenario north to south freight movement from/to the Hahndorf – Echunga Road to the Birdwood - Verdun Road is catered for via Adelaide Road, east/west along the SE Freeway and then north/south via a full Verdun Interchange. A Bald Hills Road upgrade and interchange would cater for freight movement to/from Langhorne Creek/Strathalbyn. The full interchange at Verdun also allows freight from regions to the south to enter the freeway via the Bald Hills Road interchange and exit via the Verdun interchange (and vice versa), therefore reducing the freight impact on Littlehampton, Handorf and Nairne.

Two 'off-ramp' options (red or broken yellow line and one on-ramp option have been assessed) – see figure below.

See also strategy 1.2 for current assessment of Bald Hills Road upgrade options.



Network Scenario 2C – Full Verdun interchange, Bald Hills Upgrade and Bald Hills Road Interchange/Wellington Road to Paech Road extension

Under this scenario north to south freight movements to the Hahndorf – Echunga Road to the Birdwood-Verdun Road is catered for via the Verdun interchange and then via the Mount Barker interchange / Adelaide Road connection. North bound freight traffic can use the Church Hill Road connection to Flaxley Road but is more likely to use the Hahndorf-Echunga Road for some trips.

Bald Hills to Wellington Road via Bald Hills Road interchange and Paech Road effectively caters for freight movement from Langhorne Creek. This still requires a full interchange at Verdun (to cater for movements from and to the freeway – east) and again allows freight from Langhorne Creek to enter the freeway via the Bald Hills Road interchange and exit via the Verdun interchange (and vice versa) for destinations to the north west. This may require the need to apply a load limit to the Hahndorf-Echunga Road to force trucks to use either one of the two interchanges.

One additional suggestion is for a southern local connector to remove freight traffic from Adelaide Road and the Hahndorf main street through: shifting north - south movements from the Hahndorf – Echunga Road via Flaxley Road across to Bald Hills Road via a connector however there is no evidence of a freight demand for an easterly movement. Also, a detour of freight may be considered impracticable or not be supported by Government. Therefore, ***a Southern local connector (See Strategy 1.2) is proposed to be developed for local commuter traffic only.***