Devonport City Council

The City with Spirit

Road Network Strategy 2016

Next Date of Review:	*April 2019*
Document Controller:	*Infrastructure and Works Manager*
Date Adopted by Council:	*April 2015* *(Updated April 2016 to include Local Government Road Hierarchy)*

Contents

Figure Index

Table Index

1. Introduction

The Devonport Road Network Strategy is aimed at providing and maintaining a road network suitable for the Devonport municipality and its road users. In particular, the strategy addresses a series of key issues identified through analysis of the existing road network and consultation with key stakeholders, Council, and the general public.

The Strategy provides a long-term vision for the use of Devonport's road network to meet the needs of the community, business, tourism and industry. Coupled with this is the shorter term Action Plan that sets the 3 to 5 year goals that assist in meeting the longer term aims of the Strategy. The Strategy is a 'high level' document that assists in long-term planning and prioritisation of land use and transportation needs for the community. Implementation of the Strategy is undertaken with the associated Action Plan. The Action Plan provides the short-term focus that is linked directly to Council's Strategic Plan and annual budget.

The Strategy aims to assist Council with the following:

- Asset management planning;
- Tool to assist land use development;
- Making traffic management decisions – road safety, transport efficiency, and amenity;
- Deciding traffic calming priorities in residential streets; and
- Providing direction for road network planning within Devonport and the surrounding region.

2014 Update

In 2009, Devonport City Council (DCC) engaged GHD to prepare a Road Network Strategy (RNS) for Devonport. The Strategy document and associated Action Plan 2010-2013 was adopted by Council in September 2009.

A recommended action was to review both the Strategy and Action Plan after 3 years (late 2012). DCC commenced this review in 2012, but deferred any changes during the early development of the LIVING CITY plan which will have significant impact on future traffic volumes.

The review document will retain the text from the 2009 document where relevant. New or updated information will be shown below the relevant section in green, italic font and marked with '2014 Update'

1.1 Overview of Devonport City Council

Devonport is a city with a population in excess of 25,000 people and is situated in the centre of Tasmania's North Coast. Population projections prepared by Essential Economics indicate that the population of Devonport is forecast to continue to experience modest growth of 0.4% per annum between 2006 and 2021. Devonport is the central hub of northern Tasmania, providing services for residents of the immediate area and surrounding regions. Devonport is a focus of tourist activity, with the Spirit of Tasmania ferries linking the city to Melbourne. Devonport airport also has services to and from the mainland.

Devonport's industry is focussed on a number of key sectors comprising retail trade, manufacturing, health & community services, property & business services and education. Given Devonport's geographical location and natural resources, other important sectors are agriculture, transport & logistics and tourism. The Port is Devonport's most important economic asset as it provides one of Tasmania's key gateways for imports, exports and tourism. This leads to the need for a strong transport system that will allow Devonport to continue to prosper into the future.

2014 Update

Since 2009, there has been a downturn in local manufacturing including closure of factories in Brooke Street and Tasman Street

Devonport City Council's Vision is to develop as the professional, industrial, social and cultural hub of the North Coast of Tasmania; a

predominately residential City set in parklands, with a broad commercial and industrial base where residents can enjoy a balanced family lifestyle with appropriate and fulfilling employment together with educational, sporting, recreational and cultural opportunities.

The key goals of the Devonport City Council include:

- Initiate and maintain programs and services which will meet the aspirations of its residents;
- Ensure that the programs and services are provided in an effective, efficient and equitable manner;
- Provide sufficient and appropriate financial and human resources to enable the programs and services to be undertaken;
- Promote the physical, economic, social and political well being of the city and its residents; and
- Improve communications with, and encourage the participation of the community in Council activities.

1.2 Key Objective of the Road Network Strategy

Recently, Council prepared a *Draft Strategic Plan 2009 – 2030* for the City of Devonport. The third strategic outcome of this document provides the basis for the key objective of the Road Network Strategy as follows:

> ***Access in to, out of and around the city is well planned and managed***

The implementation of the Road Network Strategy should be assessed at periodic intervals against key performance indicators and the progress of this objective.

1.3 Acknowledgements

Council acknowledges and appreciates all those community members and stakeholders who have participated and contributed to the development of this Road Network Strategy *(2009)*, including:

- Community members who participated in the consultation workshop.
- Devonport City Council Councillors.
  - Ald Lynn Laycock – Mayor
  - Ald Maurice Hill – Deputy Mayor
  - Ald Brian Cole – Alderman
  - Ald Gabrielle Gavralas – Alderman
  - Ald Grant Goodwin – Alderman
  - Ald Peter Hollister – Alderman
  - Ald Graham Kent – Alderman
  - Ald Fred Konetschnik – Alderman
  - Ald Jeff Matthews – Alderman
  - Ald Jarrod Nasiukiewicz – Alderman
  - Ald Annette Rockliff – Alderman
  - Ald Bill Wilson – Alderman
- Devonport City Council Officers.
- Stakeholder groups involved in consultation.
  - Mark Williams – Tasmania Police
  - Kay Kidd – RACT
  - Ian Day – RACT
  - Ian Garth – Phoenix Coaches
  - David Mahoney - Phoenix Coaches
  - Helen Plaister – NW Recreational Cycling
  - Kevin Maynard – Spirit of Tasmania
  - Mary-Ann Edwards – TasPorts
  - Devonport Chamber of Commerce and Industry
- GHD Pty Ltd

2014 Update

GHD Pty Ltd is to be acknowledged for providing various formats of the original document to enable this review.

2. Background

2.1 Overview of Devonport's Transport Network

Devonport consists of a series of key activity areas that require efficient and safe transport through and around them. Identifying Activity Areas is a first step in determining the associated transport needs within and through these areas. The key Activity Areas in Devonport are as follows:

- The CBD;
- Bluff;
- West Devonport Fringe;
- East Devonport;
- Stony Rise; and
- Spreyton.

Each of these key activity areas have different transport requirements. These are summarised as follows:

- ***CBD Activity Area.*** Customer and commuter traffic into and out of the CBD area, as well as a need for freight traffic associated with the CBD and neighbouring port areas. Traffic within the CBD Activity Area is typically associated with the Centre (i.e., searching for a parking space, etc). Unnecessary through traffic should be minimised, and traffic management and control should be consistent and kept as simple as possible.
- ***Bluff Activity Area.*** This area has a strong residential traffic requirement, as well as tourist and recreational traffic. Through traffic can be promoted through the Bluff Activity Area as recreational or tourist traffic to enjoy the scenic qualities of the area.

  2014 Update

  Major recreational and tourism facility redevelopment projects have been completed in the Bluff Area. The Mersey Bluff redevelopment proejct was completed in 2010 and the Bass Strait Maritime Centre redevelopment was completed in 2013.
- ***West Devonport Fringe Activity Area.*** This area, situated to the west of the CBD and Bluff areas, is predominantly residential in nature. Traffic management in this area should encourage low vehicle speeds and clearly specified traffic priority.

  2014 Update

  The Devonport Aquatic Centre redevelopment project was completed in 2013.
- ***East Devonport Activity Area.*** This area is dominated by freight and tourist traffic (Spirit of Tasmania) associated with the Port. Industrial and commercial traffic also has a key role in this area.
- ***Stony Rise Activity Area.*** This area is predominantly residential in nature however some future commercial development is proposed.

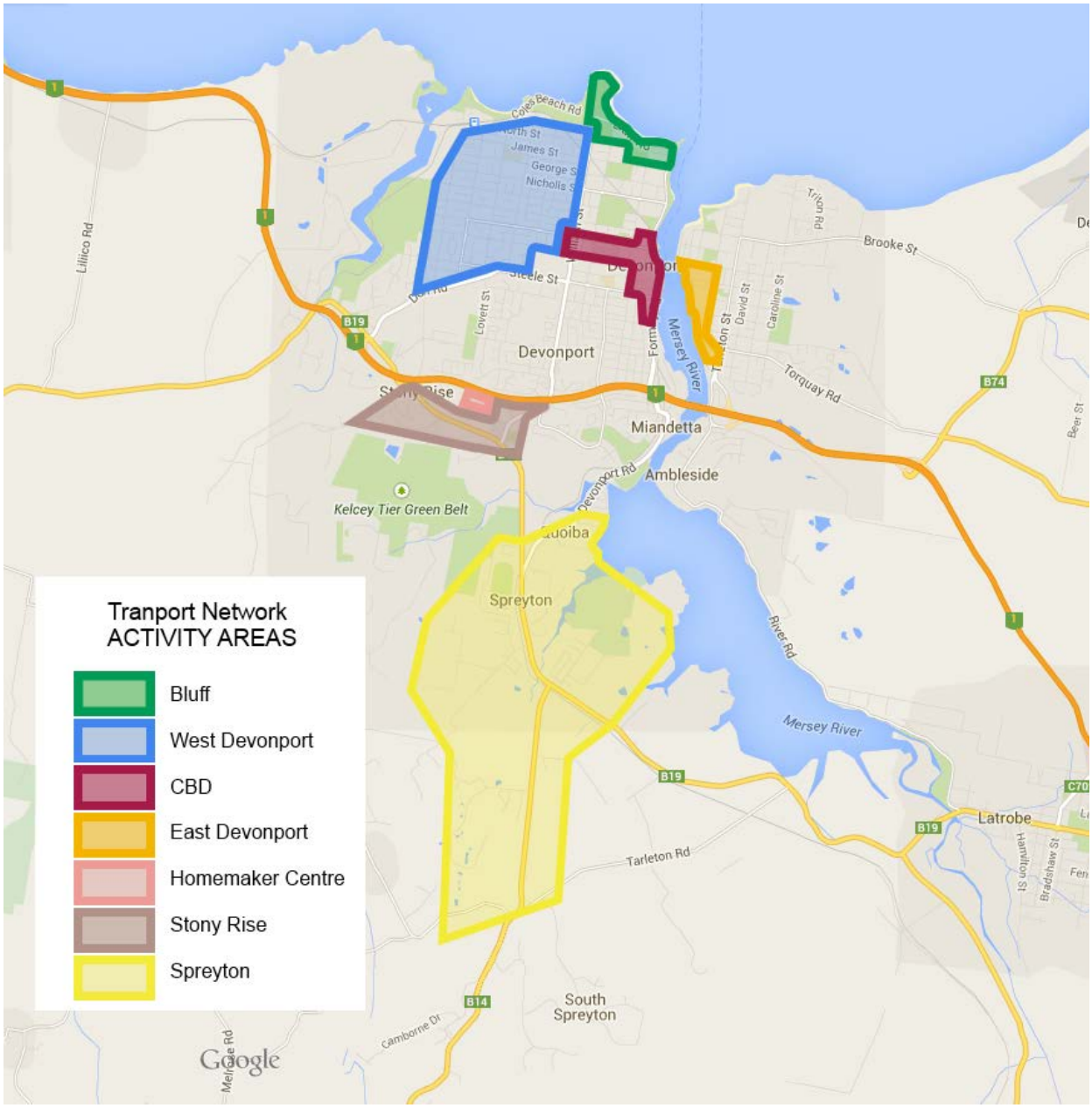
  2014 Update

  A major commercial development – Devonport Homemaker Centre is being undertaken in stages. Stage 1 was completed in 2013 and is operational. Stage 2 is underway. The area is no longer predominantly residential.

  Traffic management in this area should encourage low vehicle speeds and clear traffic priority.
- ***Spreyton.*** This area is predominantly residential in nature. Traffic management in this area should encourage low vehicle speeds and clearly specified traffic priority

.

Figure 1 Key Activity Areas



2.2 Previous Traffic Studies

It is important to recognise previous studies that have investigated traffic and transport issues in and around the Devonport local government area.

The following relevant studies have been undertaken, with key issues that relate to this Road Network Strategy:

- Draft Road Network Strategy, DCC, 2007. This internal draft document investigated many of the traffic issues and potential methods of overcoming them.
- Quoiba Spreyton Land Use Strategy, GHD, 2006. This document investigated future land use needs of the Quoiba Spreyton area and was incorporated into Devonport's Planning Scheme.
- Stony Rise Road Strategic Road Network Plan. This document was prepared as part of the Devonport and Environs Planning Scheme to integrate road and land use planning for Stony Rise Road and the adjacent land so as to balance transport requirements with land use and development. The Strategy provided high-level guidance on the location of property access to Stony Rise Road in order to preserve the arterial and freight functions of Stony Rise Road.

2014 Update

The Devonport and Environs Planning Scheme 1984 has been replaced by the Devonport Interim Planning Scheme 2013. Within this planning instrument, the F3.0 Stony Rise Road Network Plan replaces the Stony Rise Road Strategic Road network plan. The objectives of the current plan are similar to those of its predecessor.

- Devonport Eastern Shore Traffic Management Study, Pitt and Sherry, 2006. This study investigated various traffic management options to ensure efficient traffic arrangements for the Eastern Shore Port area.
- Devonport CBD Traffic Study – Analysis of One Way Street Options, 2002. The analysis of one-way street options, undertaken as an extension to the 2001 Devonport CBD Traffic Study, identified that all of the 10 options tested created significant adverse impacts on traffic access and permeability within the CBD. The options tested either generated network difficulties either by the production of unacceptable levels of service, or the introduction of unwanted through traffic into the King Street or Rooke Street road links.
- Devonport CBD Traffic Study, GHD, 2001. This study investigated various traffic management options for Devonport's CBD area to improve efficiency and safety for the area. Some of the recommendations from this report have been implemented.

A detailed overview of the work undertaken in these studies can be found in the Road Network Strategy Background Paper.

2014 Update

Since 2009, the following studies have been completed and are used to inform the review process:

- *Traffic Study of 'LIVING CITY' Proposal, Pitt & Sherry, 2013 – A high-level assessment of the traffic impacts for the Devonport CBD area under the development proposed by the Devonport CBD Investment and Development Strategy.*
- *Devonport Aquatic Centre TIA, Milan Prodanovic, 2013 – This study investigated, assessed and addressed the existing and future road and traffic conditions as well as safety record along the streets and key intersections that will be affected by traffic to and from the Aquatic Centre.*
- *Devonport Traffic Model Network Assessment, GHD, 2010 – This study assessed suitable options to confirm the most appropriate traffic arrangement for the intersection of Steele Street and Formby Road and nearby streets including Wenvoe*

Street between Elizabeth Street and MacFie Street.

- *DCC Internal Reports, various investigations into traffic management issues across Devonport.*
- *LIVING CITY Master Plan (September 2014)*
- *Public Lighting Strategy (2014);*

2.3 Related Council Documents

The following Council documents have been referred to in this Road Network Strategy:

- City of Devonport Draft Strategic Plan 2009 – 2030; *Revised 2014*
- Footpaths Policy (1997);
- "Did You Know" Fact Sheet – Footpaths (2004);
- Draft Roads and Stormwater Service Level Agreement; *Superseded by Roads and Stormwater 2014-15 (SLD T&F CI C 01v6) and reviewed annually;*
- City of Devonport – Devonport and Environs Planning Scheme 1984; *Superseded by Devonport Interim Planning Scheme 2013*
- Stony Rise Road Strategic Road Network Plan; *Superseded by Stony Rise Road Network Plan*
- City of Devonport Future Planning Zones;
- Devonport City Council Cycleway Master Plan, March 2009;
- Devonport CBD Parking Survey Data, March 2009;
- CBD Redevelopment Plans, December 2008; and
- Fourways Shopping Precinct Redevelopment Plans, February 2009

2014 Update

- *Cycling Network Strategy (2010-2013);*
- *Parking Strategy (2010-2013);*
- *Pedestrian Network Strategy (2012-2015);*
- *LGAT - IPWEA (Tas) Tasmanian Standard Drawings (2013);*
- *LGAT - Tasmanian Subdivision Guidelines (2013);*

3. Key Issues

The key issues relating to the operation of Devonport's road network were identified through review of relevant previous documentation; analysis of existing traffic and crash data; existing and future land use and consultation with the Devonport City Council, key stakeholders and the general public. A summary of the key access, traffic capacity, safety, economic and regional development, mobility and parking issues are provided below.

3.1 Key Access Points into the Municipality

The main accesses to the Devonport, Spreyton and Quoiba areas via the Bass Highway are from interchanges at Don Road, Stony Rise Road, Middle Road and Formby Road. The main access to East Devonport is via the Tarleton Street interchange. Figure 2 illustrates the Formby Road westbound off-ramp.

Figure 2 Formby Road Off-Ramp

2014 Update

An additional westbound off-ramp was constructed in 2013 providing direct access to the Homemaker Centre. Traffic must re-join the Bass Highway via Friend Street, Stony Rise Road and Middle Road.

3.1.1 Role and Current Operation of Existing Interchanges

The role and current operation of the existing interchanges is briefly discussed below:

- Victoria Bridge (Tarleton Street) – This interchange is the key access into East Devonport to the north of the Highway and Ambleside to the south. The eastbound off-ramp and westbound on-ramp of the interchange are highly utilised but the eastbound on-ramp and westbound off-ramp are operating at only around 10% of the other off/on ramp traffic volumes. While there have been no significant concerns raised regarding the operation of this interchange in previous reports or through consultation undertaken as part of the development of this Strategy, it is recognised that future changes in terms of traffic volumes and vehicle types may impact on the current operation. Therefore, given the proposed industrial area in East Devonport; the promotion of tourism and use of the Spirit of Tasmania; and the encouragement of higher density residential development, a review of the operation and adequacy of the interchange is likely to be required in the future.
- Formby Road – This interchange provides the key access into the Devonport CBD and the areas of Quoiba and Spreyton to the south of the Highway. It was identified that this was the most heavily utilised access point, with an average of 918 vehicles per hour during the AM peak. This interchange will always be highly utilised due to its close proximity to East Devonport residential, port and ferry activities, as well as the access it provides between the Devonport CBD and port area to the areas south of the Highway. The key issue identified for the interchange relates to the delays and queuing on the Bass Highway westbound off-ramp onto Formby Road.

  Formby Road itself provides the most direct route to the Devonport CBD, however a number of issues have been identified:

- Poor signage and delineation for vehicles travelling along Formby Road wishing to access the CBD;
- Access issues to and from various sites along Formby Road due to poor turning traffic separation and high traffic volumes; and
- Capacity issues observed at the Stewart Street and Steele Street intersections with Formby Road.

Formby Road between Elizabeth and Steele Streets is in the process of being upgraded and this is seen as critical to improve access to the CBD. However, the interchange also requires review to ensure efficient and safe access at this point, as this will complement and add value to the Formby Road upgrade.

2014 Update

Formby Road redevelopment between Elizabeth and Steele Streets was completed in 2011, introducing a second northbound lane, banning right turns for all southbound traffic and provision of a shared pathway on the railway/river side.

A signals phase modification at Formby Road interchange was also completed in 2013 to improve efficiency of this unique interchange.

Figure 3 Formby Road Redevelopment

- Middle Road – This interchange is not as highly utilised as Formby Road, despite also providing an alternative access point to the CBD. Importantly though, it is a convenient access point from the south (off Stony Rise Road) and as such it is also likely to attract traffic from future developments such as the proposed Northwest Homemaker Centre. Hence, while the interchange is not operating at capacity throughout the day, there are known peak hour capacity issues on some ramps as well as future traffic generation impacts that need to be considered.

  North of the interchange, there is an accumulation of traffic on Middle Road from Stony Rise Road, the Miandetta residential area and the interchange itself. This traffic is currently directed to William Street, which leads to the very busy 'Fourways' shopping hub. It is also very close to the supermarkets on Best Street in Devonport CBD and hence is likely to be a popular route to these key destinations for many people. Steele Street (connecting to the

Don Road interchange and commercial area) adds to this traffic only one block to the south of the 'Fourways'.

The key issue is the current traffic management arrangement whereby all traffic is directed onto William Street (regardless of intended destination) causing a range of congestion, efficiency and safety issues along the length of this road and within the immediate vicinity of the 'Fourways'.

- Stony Rise Road – This interchange consists of one westbound off-ramp, which provides access to the area of Stony Rise, as well as Don Road (north of the Highway) and Mersey Main Road (south of the Highway) via Stony Rise Road. It is not highly utilised, which may relate to the concerns regarding the sub-standard design of the interchange. It currently provides limited connectivity with the rest of the road network due to the simple interchange arrangement.

  2014 Update

  A new roundabout was constructed in 2013, to consolidate the intersections of the Bass Highway westbound off ramp and Tugrah Road with Stony Rise Road to improve efficiency of the terminating roads, and safety for all approaches.

Figure 4 Bass Highway Off Ramp, Stony Rise Road, Tugrah Road New Roundabout

- Don Road – This interchange connects with the Don Road / Stony Rise Road roundabout. Eastbound traffic along Bass Highway would most likely use this interchange to access Devonport and this is supported by a much higher traffic volume on the eastbound off-ramp than the other eastbound off-ramps located this side of Victoria Bridge. The key issues associated with this interchange include the poor delineation for traffic travelling towards the CBD and sub-standard design. A further issue relates to the safety concerns associated with interaction with commercial properties along this road.

In summary, all five interchanges play key roles in providing access to Devonport's local road network and subsequently a broad range of destinations across the municipality. However, it is clear from the above discussion that there are issues with the potential sub-standard design of most interchanges, including both ramps and intersections. It is also clear that while the interchanges are not operating at capacity throughout the day for existing traffic volumes, there are current peak hour capacity issues and future development traffic generation impacts where infrastructure improvements to the design are likely to improve traffic efficiency and safety.

A number of issues are also present on the local road network that connect to the interchanges, that will require an innovative approach to alleviate congestion and improve traffic efficiency and safety for all road network users.

The Strategic Directions outlined in Sections 6.1 through to 6.5 unite to contribute strategies to address these issues in a multi-faceted approach.

3.2 Intersection and Road Link Capacity

Through consultation and site investigations, various intersections were identified, which, due to high traffic volumes, experienced capacity issues with entering traffic or right hand manoeuvres.

These intersections included:

- William Street/ Best Street;
- William Street/ Oldaker Street;
- Steele Street/ William Street;
- Formby Road/ Stewart Street;
- Formby Road/ Steele Street;
- Victoria Bridge Off-Ramp/ Formby Road;
- Steele Street/ Fenton Street;
- Griffith Street/ Best Street; and
- Mersey Main Road/ Kelcey Tier Road.

Figure 5 Steele Street / William Street Intersection

Several commercial properties such as Coles, Woolworths, and various service stations experience access difficulties during peak times into and out of the property. Generally the larger developments are located on busy roads, which reduce capacity of their accesses. Key roads identified with access issues due to high volumes were:

- Best Street;
- Steele Street;
- Oldaker Street;
- King Street;
- Don Road; and
- Formby Road.

Figure 6 Fourways on William Street

The central element to the intersection and road link capacity issues in the West Devonport urban network is the lack of dedicated roads to provide a predominantly traffic carrying function between Bass Highway and key areas such as the CBD, commercial precincts and residential zones. For example:

- The William Street Fourways shopping zone is clearly an attractive destination for the local community. However, its location is problematic due to the key distribution function that William Street plays in the transport network.
- Don Road is a key access from Bass Highway into various parts of Devonport including the CBD, however it provides access to commercial properties as well as functioning as a local collector and distributor road.

A further consideration relates to future development in the Stony Rise area and the Don Road commercial precinct. Without targeted road network strategies, the issues on William and Steele Streets will be exacerbated.

Sections 6.4 and 6.5 consider strategies for these issues.

2014 Update

Traffic volumes on major roads in Devonport have decreased modestly since 2009. This is in line with data collected by Department of State Growth on the Victoria Bridge, Bass Highway. Most recent traffic counts are shown in Appendix A

SIDRA Intersection analysis has been undertaken on several intersections to model current and future traffic flows against the

capacity of the intersection. The resultant 'level of service' (LOS) is categorised as A-F. LOS definitions are shown in Appendix B. The summary of Intersections and LOS on the worst approach is shown in Table 1.

Table 1 SIDRA Intersection summary

Intersection	Treatment	Current LOS	Future LOS
Fenton-Steele	Give Way	C (2013)	F (2023)
Fenton-Stewart	Give Way	B (2013)	D (2033)
Oldaker-Rooke-Formby-Victoria Parade	RAB	B (2013)	B (2033)
Steele-Macfie-Rooke	Signals	C (2013)	C (2023)
Don-Hillcrest	Give Way	*	C (2023)
Don-Watkinson	Give Way	*	D (2023)
Don-Nixon	Give Way	*	C (2023)
Don-Sorell	Signals	C (2011)	D (2023)
Don-Steele	Give Way	*	B (2023)
Steele-Sorell	Give Way	*	B (2023)
Williams/Charles	Give Way	C (2010)	F (2030)
Charles/Gunn	Give Way	A (2010)	B (2030)
William-Oldaker	Signals	B (2013)	*
William-Best	Signals	C (2013)	*
William-Steele	RAB	B (2013)	*
Middle/Forbes	Give Way	B (2010)	C (2030)
Formby/Elizabeth	Give Way	*	D (2020)
Formby/Stewart	Signals	E (2009)	*
Stewart/Rooke	Signals	B (2009)	*
Formby/Steele	Signals	D (2010)	E (2020)
Steele/Wenvoe	Give Way	*	D (2020)
Elizabeth/Wenvoe	Give Way	*	A (2020)

**No data available at time of publication*

3.3 Road Safety

3.3.1 Crash Data

Analysis of crash data for the 5 years 2003 to 2008 has highlighted several sections of road that have a high density of crashes reported to Police. These areas of the road network include:

- William Street between Steele Street and Oldaker Street, including
  - The intersection of William Street and Steele Street which recorded the highest number of crashes (33 crashes over 5 years), including 5 casualty crashes. Rear end and cross traffic crashes comprised nearly 90% of the crashes.
  - The intersection of William Street and Best Street recorded the second highest number of crashes, with a total of 29 crashes over 5 years, including 4 casualty crashes; and
  - The Oldaker Street to Best Street link recorded 16 crashes, with 50% involving parking movements.
- The Gunn Street and Steele Street intersection recorded 15 crashes in the five year period, including five casualty crashes. Two of these were serious injuries, both involving a bicycle and light vehicle.
- Eight of the 11 crashes recorded on the Gunn Street to Oldaker Street link of Formby Road were between through traffic and traffic turning right. The locations of all eight crashes were in close proximity to the right turn lane provided for southbound traffic entering the McDonalds car park. Stakeholder and public consultation feedback also identified this turning movement as an issue.

2014 Update

Analysis of crash data has shown a reduction in total number of crashes of 8.1% between 2009 and 2014. A comparison of current data with data from the 2009 can be seen in Table 2.

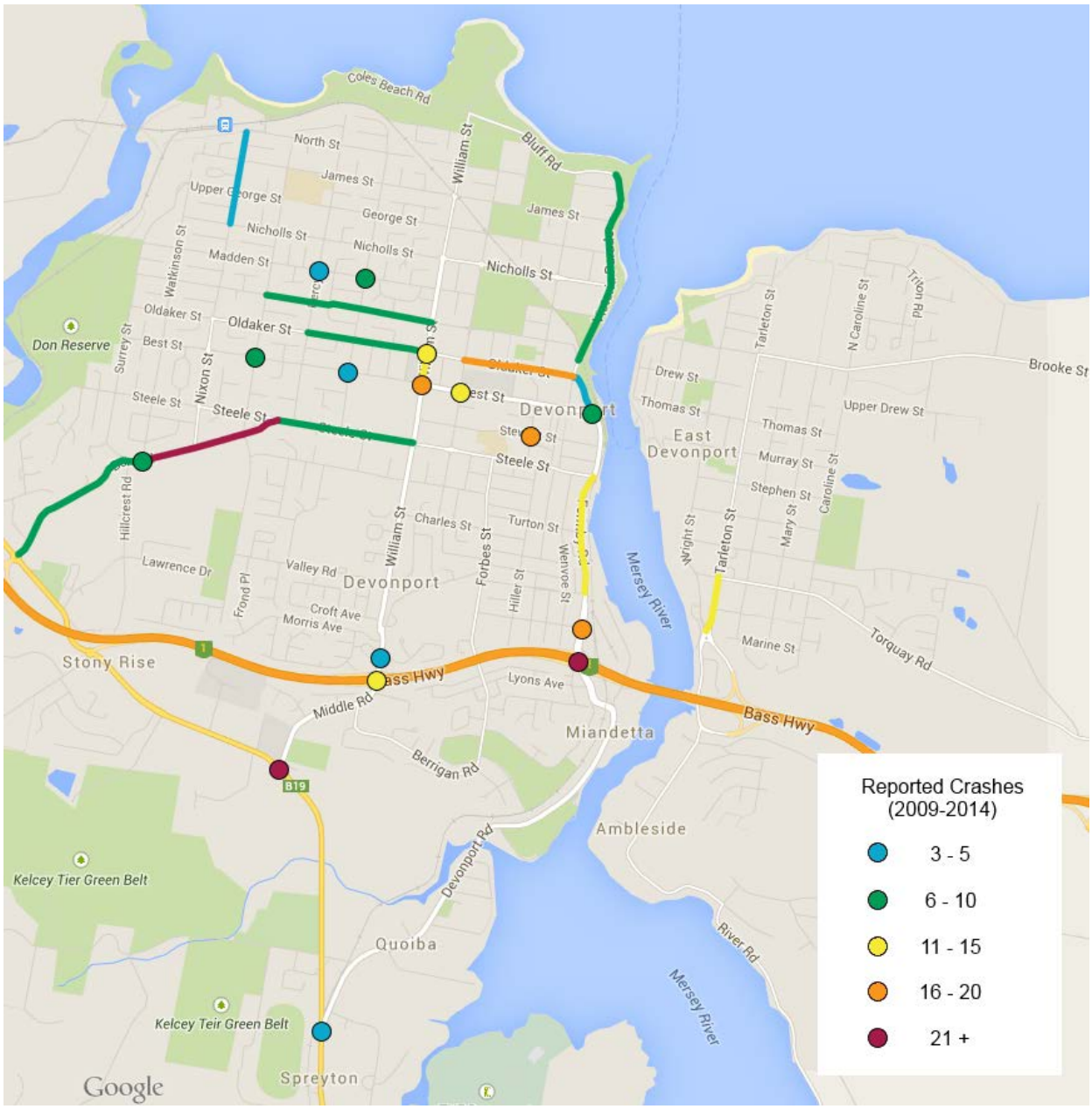
There are still 13 intersections and 14 links that have had at least 3 casualty crashes in the last five years. These can be seen in figure 7. For details, refer to Appendix C.

.

Table 2: Crash Data Summary

	Intersection crashes	***Link Crashes***	***Total Crashes***
2004-2009 (5 years up to RNS release)	*674*	*1186*	*1860*
2009-2014 (5 years up to RNS review)	*592*	*1117*	*1709*
Change	*-82*	*-69*	*-151*
% Change	*-12.1%*	*-5.8%*	*-8.1%*

Figure 7 High Frequency Crash Locations



3.3.2 Community Concerns

The following road safety issues were identified through consultation with the community and Devonport City Council:

- Speeding issues identified by Police along Lovett Street, Steele Street and near schools;
- Spreyton Primary School area and Kelcey Tier Road access difficulties;
- Ramp access to the Bass Highway at Don Road is a concern; and
- Numerous railway crossings throughout Devonport with uneven or damaged surface.

Section 6.6 considers strategies for these road safety issues.

2014 Update

During consultation for this review, the following road safety issues were identified by respondents:

- *Don Rd and Watkinson St intersection*
- *Don Rd and Hillcrest Rd intersection*
- *Stony Rise Rd and Tugrah Rd intersection (prior to roundabout construction in 2013)*
- *Steele St – lack of pedestrian facilities near Devonport Primary School*

Safety of the Stony Rise Road and Middle Road intersection has been raised by several members of the public and had media coverage. This was after the formal consultation period and after the opening of the Homemaker centre.

3.4 Economic and Regional Development

Economic and regional development is important to the future prosperity of Devonport, particularly as the City is well placed to build on its existing reputation as a tourist and regional services hub with port and industrial facilities.

The proposed future developments within and/or adjacent to the Devonport local government area that have been identified as likely to impact the operation of the road network are:

- Proposed rezoning of land north of Brooke Street between Teatree Lane and the Airport for industrial use;
- Proposed development of a commercial Homemaker centre;
- Residential development adjacent to the Devonport City Council boundary in Kentish, near Sheffield Road; and
- Potential for future residential development in Latrobe and Central Coast areas that may utilise the services provided within Devonport.

These future developments and other relevant points are considered below in context of a road network that supports industry and freight transport, tourism and regional links.

2014 Update

The statuses of current and future areas of development in and around Devonport are:

- *Redevelopment of Devonport CBD through the LIVING CITY project is in the early planning phase*
- *Rezoning of land north of Brooke Street between Teatree Lane and the Airport for industrial use was refused by the Tasmanian Planning Commission. However individual industrial use applications can be dealt with on a case by case basis.*
- *Stage 1 of the Homemaker centre is operational, with development of stage 2 underway.*
- *Residential development within Devonport, Latrobe and Kentish near Sheffield Road is ongoing.*
- *Residential development in the Tugrah area is ongoing.*
- *Substantial growth within the Shearwater/Port Sorell region is ongoing.*

3.4.1 Industry and Freight Transport

The Devonport Port handles approximately 20% of Tasmania's total freight import and export (TasPort, 2008) and generally specialises in the export of wheat grain, cement, fertilizers and fuels. The Port facilities are split across both sides of the Mersey River. The Spirit of Tasmania terminal and freight terminal are located on the eastern side of the river, with vehicular access gained through East Devonport. The Port facilities that are located on the western side of the river include:

- Australian Cement Terminal;
- Tas Grain Elevators;
- LPG Terminal; and
- TasPorts workshops.

Specific routes have been designated for access to the facilities on the eastern and western side of the river. Separate routes are sign-posted for heavy vehicle and Spirit of Tasmania passenger vehicle access to the eastern Port area.

The existing port operations and proposed industrial areas in East Devonport and Spreyton offer additional economic development opportunities. However, heavy vehicle and rail movements must be managed appropriately to ensure safety and amenity are not compromised. For example, while access to the proposed East Devonport industrial area will be largely from the Latrobe municipality, there is likely to be an increase in heavy vehicle movements that will need consideration through actions associated with this strategy.

2014 Update

The development of a Freight and Heavy Vehicle Plan is underway. The plan will identify the current and future heavy vehicle demand on the road network between key sites including:

- *Port – East side of Mersey River*
- *Port – West Side of Mersey River*
- *Bass Highway (National Highway)*
- *Industrial, commercial and primary production sites that generate heavy vehicle movements on the DCC Road network. These sites may or may not be located within Devonport.*

The objectives of the plan will be:

- *To provide safe and efficient access for heavy vehicles, balanced with the needs of other road users*
- *To adequately maintain the road network for all users, recognising the accelerated deterioration caused by heavy vehicles.*

Actions from the plan may include:

- *Separation of heavy vehicles from general traffic where possible*
- *Pavement design and road geometry to cater for heavy vehicle movements on designated routes*
- *Prohibition of specific routes due to geometric constraints, known geotechnical issues, inadequate bridge design loading etc.*

3.4.2 Tourism

The operation of the Spirit of Tasmania ferries from Devonport places the city in an excellent position for expanding tourism in the State and benefiting locally from directing visitors to key areas of Devonport. This requires a well-defined road hierarchy to support the use of the road network and clear access points that function in a safe manner. There are currently two key issues that need to be addressed:

- Queuing for the Spirit of Tasmania ferries in East Devonport; and
- Improving the Formby Road access to the CBD to encourage more visitors.

Visitors also come to the area via other means of transport such as driving from other regions, public transport, cycling and use of the local airport. Regardless of transport mode, the road network and key access points need to provide a positive and safe experience for visitors to encourage return visits.

2014 Update

The road hierarchy is now well defined and a key input for asset management decision making.

Queuing for the Spirit of Tasmania has been improved through provision of traffic management advice by Council to TT Line and subsequent works by TT Line.

The Formby Road redevelopment was completed in 2011. Signal work at the Bass Highway Formby Road interchange was completed in 2013. These works were designed to alleviate capacity and safety issues on Formby Road and improve access to the CBD.

Devonport Airport Terminal was upgraded in 2012, although air services have not changed significantly.

Cycling and pedestrian facilities have been improved through renewal and upgrade projects including:

- *Construction of the Formby Road shared path*
- *Construction of the Horsehead Creek footbridge as part of the Spreyton Cycleway Link*
- *Installation of dedicated bike lanes on River Road*

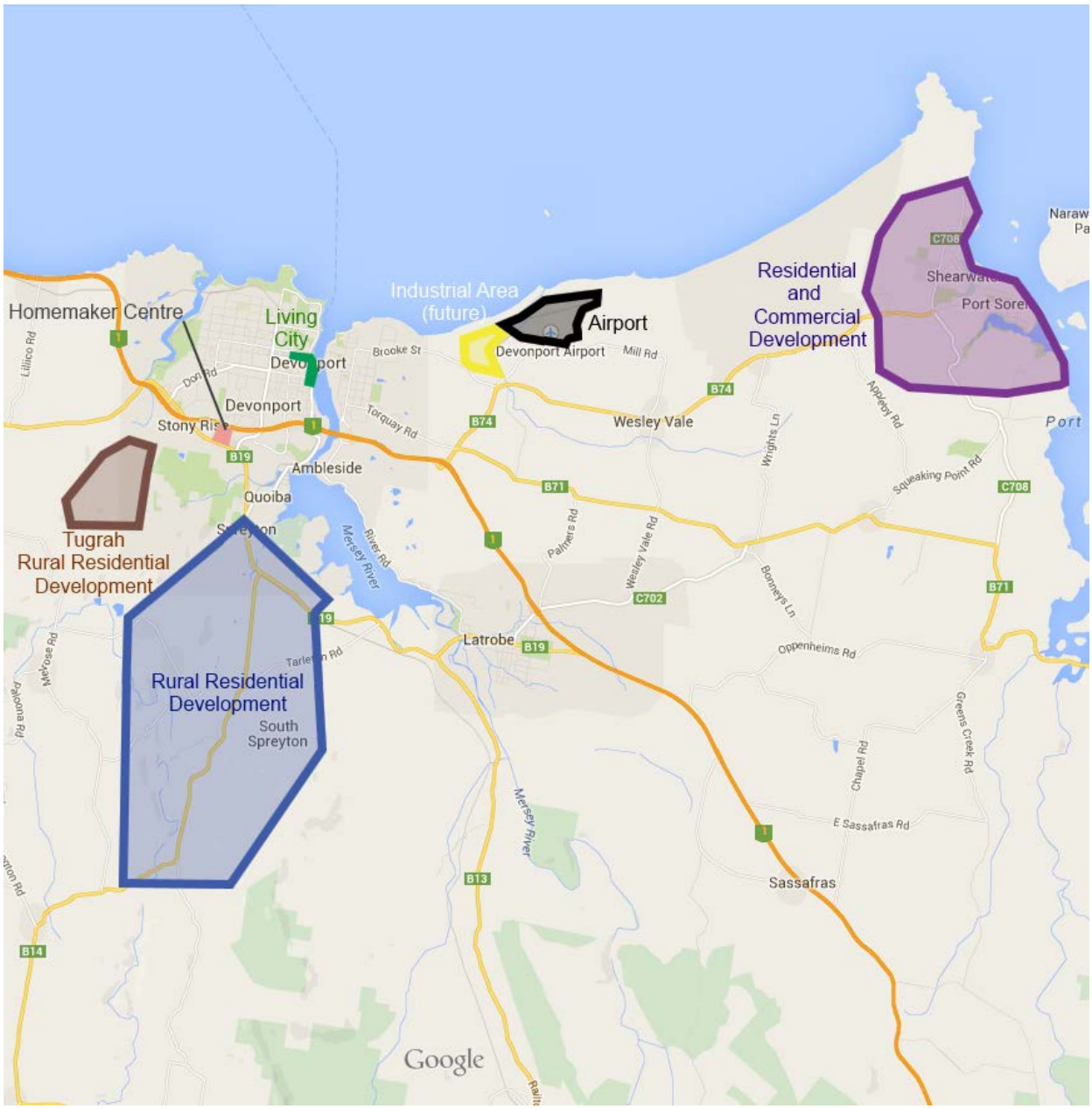
It is predicted that LIVING CITY will attract more visitors to Devonport from regional and interstate.

3.4.3 Regional Links

The convergence of the Bass Highway and other strategic access roads at Devonport act to promote the city as the regional services hub for the north coast. The road network strategy needs to consider shared industrial and rural living zones and proposed developments such as the homemaker centre.

Section 6.7 considers strategies for these issues.

Figure 8 Regional and Economic Development Map



3.5 Mobility and Sustainable Transport

Various modes of transport are used in Devonport, including car, bus, bicycle, walking and local ferry, however private vehicles remains the dominant mode. The key characteristics of various transport modes are provided below.

3.5.1 Bus Transport

2014 Update

Council's Public Transport Plan is to be developed

3.5.2 Cycling Facilities

2014 Update

Refer to Council's Cycling Network Strategy 2010-2013

3.5.3 Pedestrian Facilities

2014 Update

Refer to Council's Pedestrian Network Strategy 2012

3.5.4 Local Ferry

The Torquay Ferry provides a small-scale ferry service from the Devonport Port. The service provides a link between East Devonport with the Devonport CBD throughout the day, and has the capacity to carry passengers and bikes.

2014 Update

The local ferry service ceased in June 2014, resulting in reduced pedestrian and cyclist access between East Devonport and the CBD.

The following issues have been identified relating to the mobility and movement of pedestrians/cyclists/people with disabilities throughout Devonport:

- There is no combined bus terminal facility near the city centre to service existing Merseylink, Redline and Tassielink coach services and expanding Phoenix coach services commencing in 2009;

  2014 Update

  This issue will be addressed in Council's Public Transport Plan and by the LIVING CITY project.

- No cycle link between East Devonport and the CBD;

  2014 Update

  This issue has been addressed in Council's Cycling Network Strategy 2010-2013.

- Lack of on-road cycling facilities within the CBD;

  2014 Update

  This issue has been addressed in Council's Cycling Network Strategy 2010-2013. There will also be opportunities for improvement as part of the LIVING CITY project.

- No cycling facilities to connect to regional areas, such as Latrobe and Port Sorell;

  2014 Update

  This issue has been addressed in Council's Cycling Network Strategy 2010-2013.

- Potential to improve the utilisation of the local ferry service across the Mersey River; and

  2014 Update

  Although the local ferry service is not currently operating, this will be addressed in future Council's Public Transport Plan.

- Pedestrian crossing opportunities/ facilities lacking in the Fourways shopping precinct.

  2014 Update

  A mid-block crossing facility was installed in late 2008 to provide an additional crossing point for pedestrians between the signalised crossings at either end of the block.

Improving facilities and services for all modes of transport ensures mobility opportunities exist to accommodate diverse individual travel patterns and varied user needs. Furthermore, promotion of alternative modes of transport to the private vehicle obviously provides the Devonport

community with the opportunity to embrace the principles of sustainable transport.

Section 6.8 considers strategies for these issues.

3.6 Parking

2014 Update

Refer to Council's Parking Strategy 2010

3.7 Road Standards and Maintenance

3.7.1 Community Concerns and Standards

The Road Network Strategy consultation workshop identified a range of largely safety-related features that the community considered to be important aspects of urban roads. These features included:

- Provision and maintenance of line-marking;
- Standard of pavement construction;
- Safer intersections; and
- Number and condition of rail level crossings.

Addressing these concerns can involve relatively low-cost programs that may achieve major safety benefits and community satisfaction. Furthermore, establishment of and adherence to standards for roads and traffic management will enhance driver safety and assist in more efficient and effective asset management.

2014 Update

During consultation for this review, the following concerns related to design, construction and maintenance standards were identified by respondents:

- *Maintenance of footpaths*
- *Manoeuvrability of buses and trucks in areas including Stewart Street and Formby Road*
- *Improved signage in and around the CBD*

3.7.2 Maintenance

Roads and bridges must be maintained in a condition that allows safe travel. Trucks have a major impact on the condition of road surfaces and bridges, while poor drainage or other environmental factors such as high groundwater can cause damage to roads and thus add to maintenance costs.

Poorly maintained roads can have a variety of adverse consequences including damaging goods being transported, being potentially unsafe and simply providing an uncomfortable journey.

Section 6.10 considers strategies for these issues.

4. Community Engagement

Consultation with the community and key stakeholders during the development of the road network strategy was identified as an important aspect for development of a successful strategy. Therefore input and feedback obtained from the community and key stakeholders formed an integral part of the process of identifying the key issues and forming the strategic directions for the road network.

A consultation workshop was held in December 2008 with key stakeholders and the general public were also invited to attend. The workshop provided the attendees with an introduction to the development of the road network strategy and a summary of the existing issues identified within the road network. The workshop was used to obtain feedback on a range of issues from the community and key stakeholders.

The feedback obtained from the community covered a wide range of topics including road safety, the performance of the road network, mobility issues and parking issues. Some of the main issues and comments obtained from the consultation process are summarised below:

- Insufficient parking, in particular near the Fourways commercial area and the CBD;
- Recommendation of speed limit reduction in the CBD to 40 km/h;
- Safety issues associated with rail level crossings including uneven and damaged road surface at some crossings;
- Consideration of on-road cycle paths;
- Incorporate cycling on arterial roads around the CBD more effectively;
- Support for a cycle link across Victoria Bridge, and regional links to Latrobe and Port Sorell;
- No formal bus interchange. There was support for an interchange from Phoenix Coaches;
- Support for a regional park and ride facility; and
- Larger trucks will be operational for the Spirit of Tasmania in future, with reduced demand for rail.

Since the consultation workshop in December, there have been on-going meetings/ feedback from Council regarding the Strategy and two workshops with Council Aldermen.

A 28-day public comment period was initiated prior to final endorsement by Council, to provide the community and key stakeholders with an opportunity to comment on the final Strategy document.

2014 Update

As part of the strategy review process, a 28 day public comment period was conducted in November/December 2012.

The consultation sought to get public opinion on the implementation of the strategy to date, and to get updated feedback on what transport related issues are important to the community and key stakeholders.

Responses to specific question on the implementation of the road network strategy since 2009 were 75% positive.

Other issues raised included:

- *Safety concerns at the Don Road and Watkinson Street junction*
- *Provision and maintenance of footpaths*
- *Traffic flow on Formby Road*

As with the original document, a 28 day public comment period will be held prior to final endorsement of the revised strategy.

5. Road Network Hierarchy

5.1 Importance of a Road Hierarchy

Roadways serve a variety of functions, with many roads serving more than one function and to varying degrees. Many roads carry high volumes of traffic through an evolutionary process rather than through design. That is, they have a direct route between key destinations and have been progressively upgraded to cater for the needs of high traffic demands. However, it is clear that mixing of incompatible functions can lead to problems.

A road hierarchy is the classification of roads according to increasing or decreasing importance of their traffic carrying and/or access function. Once defined, it enables appropriate objectives for these roads to be set and appropriate design criteria to be implemented.

Council has undertaken some work to define and formalise a road hierarchy for Devonport, however further work is required to finalise the configuration to enable it to form the basis of ongoing planning and system management. For example, some local roads may be carrying a substantial amount of unnecessary through traffic, while other roads may be carefully redesigned to cater for increased traffic demands. A well-formed road hierarchy will provide the framework by which road authorities can plan and implement construction, maintenance and management projects to reduce the overall impact of traffic.

However, it is important to also note that gradual changes in population and industry can have significant impacts on road use and road function. Therefore, a road hierarchy should not be considered permanent, as there is a need to allow for periodic review to ensure the hierarchy adequately reflects the changes in land use, population trends and community concerns.

The benefits of a well designed road hierarchy to the community include improved transport efficiency, improved amenity, and improved accessibility.

5.2 State Road Hierarchy

Tasmania's total road network covers approximately 24,000 km. Of this, the ~~Department of Infrastructure, Energy and Resources (DIER)~~ *Department of State Growth* is responsible for a state-owned road network consisting of 3,650 km. This includes a number of different types of roads with a variety of functions.

The *Tasmanian State Road Hierarchy 2006* is based primarily on the need to provide connectivity at a State level for key corridors between cities, major towns, ports and rural catchments. The hierarchy defines five categories of state-owned roads, including:

Category 1 – Trunk Road

Category 2 – Regional Freight Road

Category 3 – Regional Access Road

Category 4 – Feeder Road

Category 5 – Other Road

Within the Devonport local government area, ~~DIER~~ *Department of State Growth* is responsible for the following roads:

- Bass Highway (Category 1);
- Stony Rise Road (Category 3);
- Mersey Road (Category 3); and
- Sheffield Road (Category 4).

The majority of all other roads are considered to be Council managed roads, with a small number of privately owned roads.

5.3 A Road Hierarchy Framework

Devonport's re-defined road hierarchy is developed from the application of a four level road hierarchy framework[1]. The functional objective of each element in the hierarchy is identified in the framework to allow consistent network planning and management. The four levels of the framework are as follows:

- Level 1 – Purpose. This relates to the primary objective of the element; to carry through traffic or to provide direct property access.
- Level 2 – Function. This relates to the relationship between the roadway and the land use it serves.
- Level 3 – Management. This relates to the emplacement of policies to achieve the envisaged function based upon the attributes of the element and of the adjacent land uses.
- Level 4 – Design. This relates to the specification of the form of the element in order to achieve its functional objectives.

The framework provides the objectives, performance criteria and acceptable solutions for each road element type within the hierarchy.

5.4 Devonport's Re-defined Road Hierarchy

2016 Update

In 2015, Council adopted the Tasmanian Local Government Road Hierarchy (LGRH). The LGRH is a six tier hierarchy that separates urban and rural roads. The functional criteria and guidance metrics from the LGRH are supplemented by geometry and feature information specific to Devonport.

The urban and rural road hierarchies are shown in Appendix E.

The LRGH is very similar to the previous Devonport Road Hierarchy, essentially involving name changes only.

Previous name	***New LGRH name***
Sub Arterial	*Arterial*
Major Collector	*Collector*
Minor Collector	*Link*
Local Street	*Local Access*
Local Access	*Minor Access*
N/A	*Unformed*

Table 3 New Hierarchy Levels

Note that some references to the old Devonport Road Hierarchy may remain in this document

[1] Ref: Eppell, V.A.T, Bunker, J.M. & McClurg, B.A. (2001) A four level road hierarchy for network planning and management. In Jaeger, Vicki, Eds. *Proceedings 20th ARRB Conference*, Melbourne.

Figure 9 CBD, Urban and Rural Roads Map

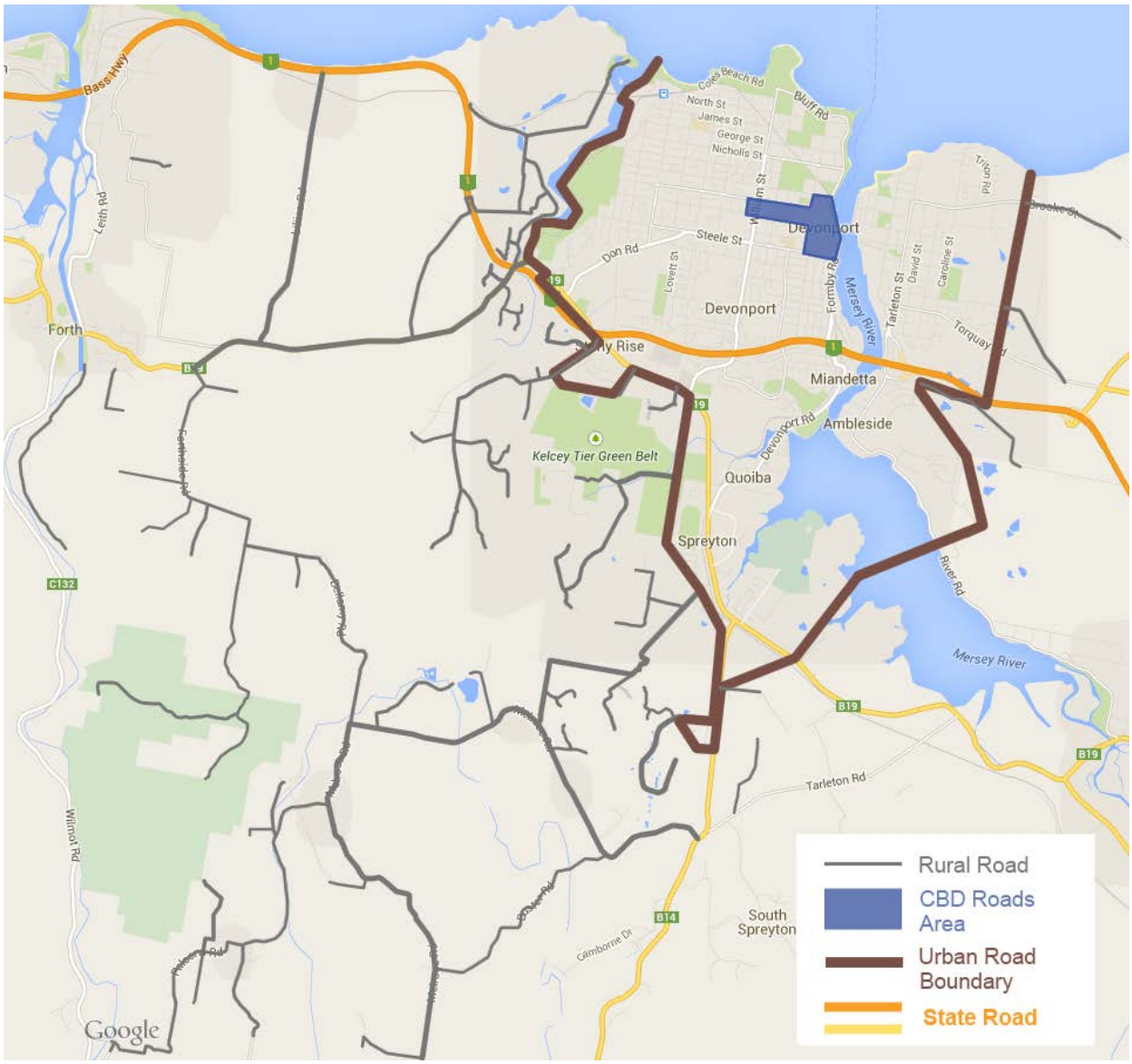


Figure 10 Devonport's Road Hierarchy Map

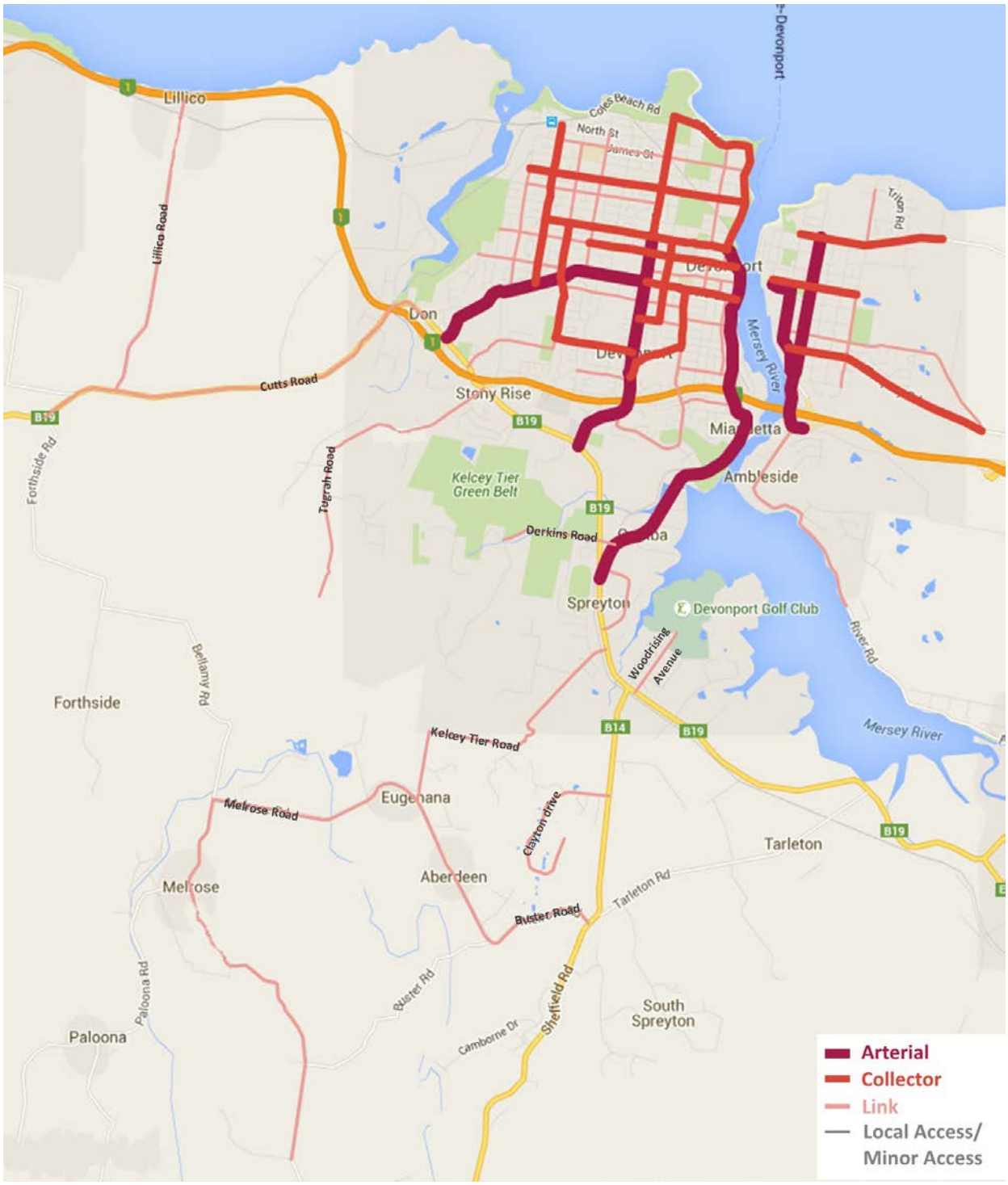
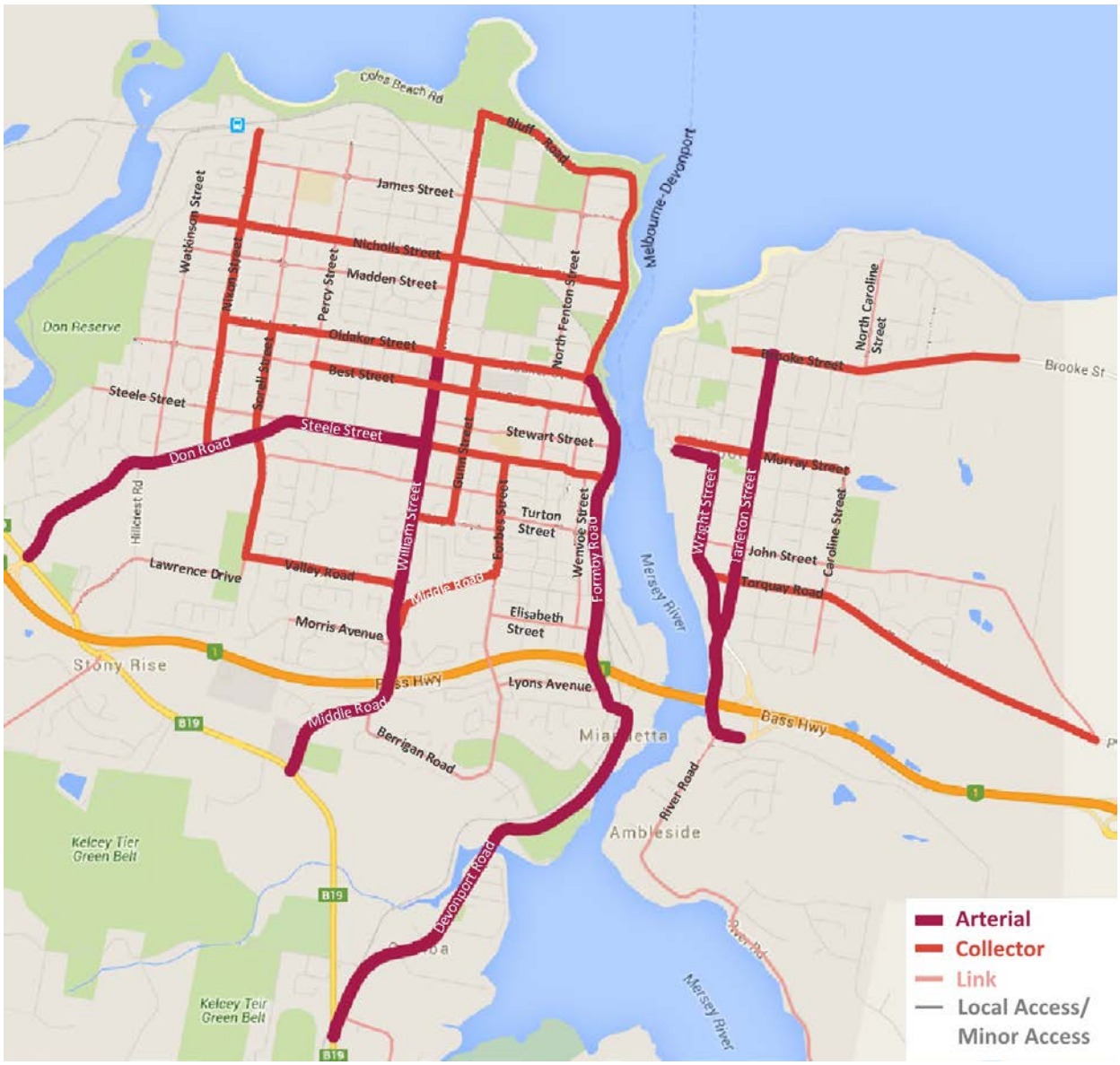


Figure 11 Devonport's Urban Road Hierarchy Map



6. The Strategy

This Road Network Strategy provides ten strategic directions to support the achievement of Devonport's Road Network Objective.

6.1 Bass Highway Access

As described in Sections 3.1 and 3.4, this Strategy investigated the potential future traffic demands for Bass Highway and adequacy of the existing access onto and off the Bass Highway within the Devonport Municipality. A number of specific concerns relating to potential design deficiencies and capacity issues at the Formby Road, Middle Road, Stony Rise Road and Don Road interchanges were raised in Section 3.1.

The forecast population growth, predicted future land use development, and potential traffic growth due to the promotion of Devonport as a regional and tourism hub are not considered to be so significant that major modifications to the existing Bass Highway access arrangements are warranted and indeed, able to be justified in the short to medium-term (i.e. 5-10 years).

However, potential design deficiencies and capacity issues have been identified with many of the existing interchanges, and it is considered these should be addressed first to ensure they are operating as efficiently and safely as possible. In particular, the Formby Road interchange requires attention in terms of a review of the signal operation and adequacy of ramp design to ensure efficient and safe access at this point, as this will complement and add value to the Formby Road upgrade.

Future development in the municipality, particularly south of the Bass Highway, has the potential to exacerbate the existing congestion, efficiency and safety issues on William Street. However, changes to existing Bass Highway access arrangements are unlikely to alleviate traffic issues on William Street and associated areas. It is for this reason that this Strategy recommends an innovative approach to alleviate congestion and improve traffic efficiency and safety for all road network users on the affected local road network. Changes to the road hierarchy and the Ring Road System to be implemented in the short-term to address the issues identified on William Street and within the Fourways area, are described in Section 6.2 and 6.4 respectively. These recommendations are cost-effective solutions and should be given the opportunity to make a positive impact on traffic issues before considering changes to or bypassing the existing Bass Highway access arrangements to improve connectivity.

In the medium to long-term (10-20 years), it is recognised that traffic volumes may be such that the issues identified on William Street and within the Fourways area may persist and/or the development in the Stony Rise area (i.e. residential growth along Tugrah Road and the proposed Homemaker Centre) requires the review of alternative Bass Highway access /bypass options (such as an overpass or upgrade of an existing interchange) to provide greater connectivity, and more efficient and safe movement between suburbs north and south of the Highway.

In summary, a staged approach is recommended for the management of Bass Highway access within the Devonport municipality, as follows:

1. Review existing interchange design and where possible, implement required changes in the short to medium-term to improve capacity and safety issues. In the short-term implement the recommendations of this Strategy including the road hierarchy changes and proposed Ring Road system; and
2. In the medium-term, assess the performance of the Bass Highway interchanges and Devonport road network in conjunction with development that is occurring to determine the need to consider alternative Bass Highway access options (such as an overpass or upgrade of an existing interchange) to provide greater connectivity and improved efficiency on the road network. This should include a cost-

benefit analysis to enable a thorough investigation of whether changes to Bass Highway access and/or improved connectivity through a major infrastructure project such as an overpass can be financially justified for the likely benefits that will be achieved.

2014 Update:

Signals phase modification works at Formby Road interchange were completed in 2013 to enhance efficiency.

An additional Bass Highway westbound off-ramp was completed in 2013, as part of the Homemaker Centre development. This new access connects to Friend Street and then southward to intersect Stony Rise Road.

A new roundabout, to intersect with Stony Rise Road, Tugrah Road and Bass Highway westbound off-ramp, was completed in 2013, to improve traffic management and road safety.

An investigation into the operation of the Middle Road interchange was completed in 2013. It concluded there had been a significant increase in traffic volumes and although the interchange was not yet at capacity, continued increases in traffic were likely. Continued monitoring of traffic volumes and development of concepts to cater for increases were recommended.

6.2 Key Modifications to the Road Hierarchy

The existing road hierarchy provides a good starting point for providing safe and efficient transport in and around Devonport. In order to overcome some of the transport issues identified in previous sections of this report, it is necessary to modify the Road Hierarchy to provide the framework for which physical works to the network can be achieved, as well as longer term maintenance and land use planning can be prioritised.

The Hierarchy modifications will enable actions such as intersection priority changes, road design standards and the like to be prioritised.

The recommended Road Hierarchy changes also more accurately reflect the changing needs of transport in Devonport.

The main changes to the Road Hierarchy include the following:

- Upgrading Gunn Street to a Major Collector. This is aimed at relieving some congestion from areas of William Street, including Fourways and the Steele Street roundabout.

2014 Update:

Multiple projects have been completed to upgrade Gunn Street to appropriate standards for a Major Collector. Traffic increased by 500vpd since implementation.

- Upgrading Victoria Parade to a Major Collector. This reflects the changing function of this road as a tourist/ recreational route, which is likely to carry more traffic as changes to the Mersey Bluff area take effect. This also provides improved defined access into the northern end of Devonport.

2014 Update:

This classification has occurred. No Capital works have been undertaken as the existing geometry met Major Collector standard.

- Downgrading several roads from Minor Collector Roads to Local Streets in the residential area of Devonport to the west of William Street and north of Oldaker Street. This area currently has a poorly defined hierarchy that can be improved by provision of defined access corridors within and around the area.

2014 Update:

The following changes have been made to the road hierarchy

1. *Lillico Road is upgraded from local street to minor collector. Lillico Road is a gazetted B-double route and is the preferred link to the Bass Highway over Forth Road. Recent upgrade work has improved the road geometry to a standard suitable for this hierarchy level.*

2. *Lovett Street between Valley Road and Lawrence Drive is downgraded from major collector to minor collector. This short section of road is not part of the Fringe Ring Road system and should be more like the adjacent Lawrence Drive*
3. *Future Link Road has been included as a major collector. If constructed, this road would serve as the main North-South link across Don Road.*
4. *Steele Street between Sorell St and Don Road is upgraded from local street to minor collector. The 2009 Strategy proposed to close this link. However, the traffic study for the Devonport Aquatic Centre and recent crash data does not support this action. It is to be maintained as a minor collector to match the section of Steele Street immediately to the West.*
5. *Forbes Street between Middle Road and the Bass Highway overpass is downgraded from major collector to minor collector. This section of Forbes Street is consistent with Berrigan Road to the South rather than Forbes Street to the North. The priority of the Middle Road Forbes Street junction should be reviewed.*
6. *Fenton Street between Steele Street and Best Street is upgraded from local street to minor collector. This change recognises current traffic volumes and allows for likely increases due to LIVING CITY.*
7. *Wenvoe Street between Ashburner Street and Elizabeth Street is upgraded from local street to minor collector. This corrects an omission from the 2009 strategy and provides consistency in Wenvoe Street.*
8. *Lyons Avenue between Formby Road and Appeldore Street is upgraded from local street to minor collector. This corrects an omission from the 2009 strategy and provides consistency in Lyons Avenue.*
9. *North Caroline Street between Brooke St and Triton Road is upgraded from local street to minor collector. Part of the section is a gazetted B-double route, but also services a significant residential catchment that has scope for future growth.*
10. *North Caroline Street South of Brooke Street is downgraded from minor collector to local street. Current and predicted future use does not meet the criteria of a minor collector.*
11. *Caroline Street between Upper Drew Street and Thomas Street is downgraded from minor collector to local street. Current and predicted future use does not meet the criteria of a minor collector.*
12. *River Road from Bayview Avenue to Council Boundary is upgraded from local street to minor collector. This provided consistency with connecting sections on either end and recognises the function as a scenic link between Latrobe and Devonport.*
13. *Bay Drive is upgraded from local street to minor collector for the full length. This recognises the use as and access to various community facilities and allows for potential future junction upgrades at either end.*
14. *Tarleton Street section between Murray Street and Brooke Street is downgraded from sub-arterial to major collector road. Given the recent carpet factory closure, current and predicted future use does not meet the criteria of a sub-arterial road.*
15. *Ronald Street section between Oldaker Street and North Street is downgraded from minor collector to local street. This strengthens the function of parallel major roads. The existing geometry and intersection arrangements on Ronald*

Street are more suited to lower hierarchy level.

16. *North Fenton Street section between Oldaker Street to Parker Street is upgraded from local street to minor collector. This corrects an omission from the 2009 strategy and provides consistency in North Fenton Street.*
17. *Percy Street between Steele Street and North Street is downgraded from major collector to minor collector. The existing geometry arrangements on Percy Street are more suited to lower hierarchy level. Current traffic volumes are consistent with the range of a minor collector.*

Refer to Figures 10 and 11 for the updated road hierarchy.

Generally, these changes do not require major capital works. However, there may be maintenance and renewal works to be brought forward or that can be deferred based on the new classifications.

There have also been several changes to the urban / rural classification since 2009:

- *An additional classification of 'CBD' has been introduced to match the limits of the CBD that is defined by the Devonport Interim Planning Scheme and referred to in the Desired Performance Criteria and the Acceptable Design Solutions.*
- *Sections of Brooke Street, John Street, Torquay Road have been defined as rural to match planning zones.*
- *Wrenswood Drive, Blackwood Lane and part of Durkins Road have been defined as rural to match planning zones.*
- *Sections of Tugrah Road and Loone Lane have been defined as urban to match planning zones*
- *New subdivisions in Gibson Court and the Tiers are defined as urban to match planning zones.*

Refer to Figure 9 for the updated urban/rural/CBD classification.

6.3 Improved Access to CBD

Improved access to the CBD will provide the following key benefits:

- Improved mobility for all road users into and out of the CBD;
- Strengthen opportunities for economic development; and
- Enhance tourism opportunities.

Access to the CBD is primarily via Formby Road and Forbes Street from the south, and Steele Street and Best Street from the west.

Formby Road provides the primary access to the CBD from the Bass Highway. This road is currently in a poor state of repair, with badly defined delineation. The upgrade of this road should include improved delineation, improved property access (with defined turn lanes and appropriate median treatments), and improved pedestrian facilities. Signage from Bass Highway should be reviewed in consultation with ~~DIER~~ *Department of State Growth* to ensure that use of this route is maximised once these changes are in place.

2014 Update:

Formby Road upgrade was completed in 2011.

It is also considered important to encourage the use of Forbes Street to access the CBD via the Middle Road interchange rather than continuing down William Street. Although already currently used in this way, the promotion of this alternative CBD access route to more drivers will assist in alleviating the congestion, efficiency and safety issues on William Street, which flow onto the intersection with Steele Street. A thorough review of the requirements to upgrade the Middle Road /Forbes Street route to emphasise this as an alternative route will be undertaken and implemented.

2014 Update:

New guides signs were installed in 2011 to emphasise this alternative route.

The planned intersection works at Forbes Street and Middle Road were not able to cater for

heavy vehicle turning movements. Alternative designs are being considered.

Undertaking the various measures outlined in Section 6.2 of this Strategy will also enhance access to the CBD from other main roads.

2014 Update:

As discussed in Section 3.2, traffic volumes have decreased slightly since 2009. This, combined with the addition of a second 'inbound' lane on Formby Road, means for current traffic volumes access into the CBD is suitable.

Banning of right turns in the 'outbound' lane on Formby Road has also increased capacity leaving the CBD, albeit by a smaller amount. The next challenge will be faced when 'outbound' capacity is reached on Formby Road. Sub-arterial roads William Street and Don Road will be required to take some additional traffic volume as well as a number of alternative routes. Under these conditions, the traffic carrying function of the sub arterial roads must take priority of other functions, including amenity (parking and access to adjacent properties and minor side streets) and safety to a certain degree. A report on the operation of William Street was completed in 2014 which supports this view.

6.4 Devonport 'Ring Road' System

Ring Road definition: *"An approximately circumferential road around an area (often an urban shopping centre) that permits traffic to bypass that area."* Roads and Traffic Authority, NSW, December 1989.

In order to promote improved vehicle circulation and improved accessibility to key activity areas of Devonport, three 'Ring Road' routes are proposed. The Ring Road concept is designed to work in conjunction with the revised road hierarchy to provide improved access within and through key activity areas. The concept of a ring road is to promote specific outer roads around a key area, so that access and circulation is improved from all directions. It also helps to manage traffic around a key activity area that may wish to simply pass through. The ring roads are not advertised as such, but work through careful management of the road hierarchy, directional signage at key locations and traffic management control. When implemented successfully, the ring roads will assist in improving transport efficiency into and around the three key activity areas.

All three Ring Roads are connected and provide an outer loop around Devonport's main activity areas on the western shore of the Mersey River. In order to make the Ring Roads work effectively, physical modifications to the road network will be required, as well as installation of direction signage. The basic physical network modifications required are outlined in the following sections. The completion of an Urban Design study, which suggests innovative and creative design ideas, would further compliment the proposed changes to the road network.

The Fringe and CBD Ring Roads share Gunn Street as a common link. Gunn Street was selected to reduce the pressure on William Street (with delay points that include Fourways and the Steele Street roundabout). Whilst Gunn Street is promoted in the Ring Road system, William Street will continue to act as a Sub Arterial Road in the road hierarchy from Middle Road to ~~Best~~ *Oldaker* Street. The role of Gunn Street is to provide improved circulation around the Fringe and CBD activity areas for traffic that does not require the use of William Street. William Street remains as a Major Collector Street from Oldaker Street to Bluff Road, however traffic wishing to circulate around a key activity centre will be able to utilise a portion of Gunn Street to improve overall efficiency.

CBD Ring Road

The proposed CBD Ring Road provides improved access in and around the CBD activity area. The CBD Ring Road includes Formby Road, Oldaker Street, Gunn Street, and Steele Street. It has been previously recognised that unnecessary through traffic should be removed from the CBD to improve pedestrian road safety (CBD Redevelopment Traffic Study, GHD,

2001). The CBD Ring Road will also serve to improve vehicular circulation for those vehicles searching for a parking space around the CBD area. The CBD Ring Road can be defined to some extent by the use of carefully placed parking signage that provides information on the number of parking spaces available at each parking station, and the location of the next parking station around the Ring Road. This system could also be made to be dynamic, with the actual number of parking spaces remaining displayed within the signs.

The Ring Road system supports this by providing a defined through route around the perimeter of the CBD area. A one-way traffic system for the CBD was explored as a potential solution to reducing unnecessary through traffic in the CBD, but rejected, as it was difficult to devise a system that met the accessibility needs of road users in an efficient manner (GHD Analysis of One-way Street Options, 2002).

To achieve this, the following modifications to the road network are required:

- Physical upgrade works of Formby Road as the primary access to Devonport CBD from Bass Highway. Works should include improved delineation, improved property access, and improved pedestrian facilities; and
- Physical modifications to several intersections along Gunn Street to provide improved access along Gunn Street. These changes support the reclassification of Gunn Street from a Minor Collector Road to a Major Collector Road.

2014 Update:

The CBD ring road is well established, utilising major roads. The development of LIVING CITY will have a significant impact on operation of and demand for this ring road, with up to 25,000 additional trips per day generated within the CBD which will need to be considered. Key recommendations from the 2013 LIVING CITY traffic study that affect the CBD Ring Road include:

- *Intersection upgrade at Steele Street and Fenton Street*
- *Capacity upgrades for sections of Oldaker Street*

Bluff Ring Road

The Mersey Bluff area currently only has collector road access from William Street under the existing road hierarchy. The concept of providing a ring road around this area establishes a more formal system of providing access in and around the Bluff area. It also acknowledges the existing route taken by tourists and patrons of the recreation area along Victoria Parade as a main access to the area. To some extent, signage is currently in place that promotes the use of Victoria Parade however modifications are required at the William Street / Bluff Road intersection.

2014 Update:

This ring road is also well established, although traffic volumes on this ring road are generally lower than the CBD ring road. Asphalting of Bluff Road and Victoria Parade has reinforced the major collector status.

The safety and efficiency of the William Street / Bluff Road junction is being monitored since the redevelopment of the area in 2012. Any upgrades should consider the high pedestrian traffic, demand for parking and anti-hooning measures.

Fringe Ring Road

The area to the west of the CBD is a mix of residential, commercial and industrial property. The majority of the commercial and industrial area is accessed from Don Road/ Steele Street. Presently, access to the predominantly residential area west of the Devonport CBD is poorly defined by the existing road hierarchy. Several major collector roads also send traffic directly into built up areas such as Fourways, which may not be ideal for vehicles seeking to access the CBD or Bluff areas. The Fringe Ring Road will work in conjunction with the modified road hierarchy to improve access around this key activity area.

The proposed ring road includes:

- Oldaker Street. This road is already classified as a Major Collector Road in Devonport's Road Hierarchy. Oldaker Street will play a key role in providing this link around the CBD area (as identified in the Devonport CBD Redevelopment Traffic Study, GHD, 2001);
- Lovett Street. This road does not currently have access across Don Road. The junction of Don Road and Lovett Street will be required to be upgraded to a signalised intersection. This will provide continuous access across Don Road, as well as provide more defined breaks in traffic along Don Road and Steele Street that will improve accessibility for properties along its length;

2014 Update:

Installation of signals at the junction of Don Road, Lovett Street and Sorell Street was completed in 2012.

- William Street/ Gunn Street. The section of William Street between Valley Road and Charles Street, Charles Street between William Street and Gunn Street, and Gunn Street between Charles Street and Oldaker Street. As with the CBD Ring Road system, this requires Gunn Street to be upgraded to a Major Collector Road, as well as various intersection modifications along its length to provide connectivity; and

2014 Update:

Gunn Street has been upgraded though a number of projects between 2010 and 2013 and now meets major collector criteria with suitable intersection treatments.

- Valley Road between Lovett Street and William Street. This road is already classified as a Major Collector Road.

2014 Update:

The Fringe Ring Road has been implemented, but the change in traffic volumes on the road segments has yet to be measured so the function of this ring road cannot be evaluated at this time. It should be noted that directional signage has not been installed on this ring road, which could potentially increase its use. This should be considered once the initial evaluation process is complete.

Figure 12 shows the proposed ring road system.

2014 Update:

Future Fringe Ring Road

It is proposed to construct a new road to provide the major north south link across Don Road. The link would join Nixon Street to Valley Road and provide a better connection between West Devonport and the Bass Highway, avoiding both Steele Street and William Street and the intersection of those two streets.

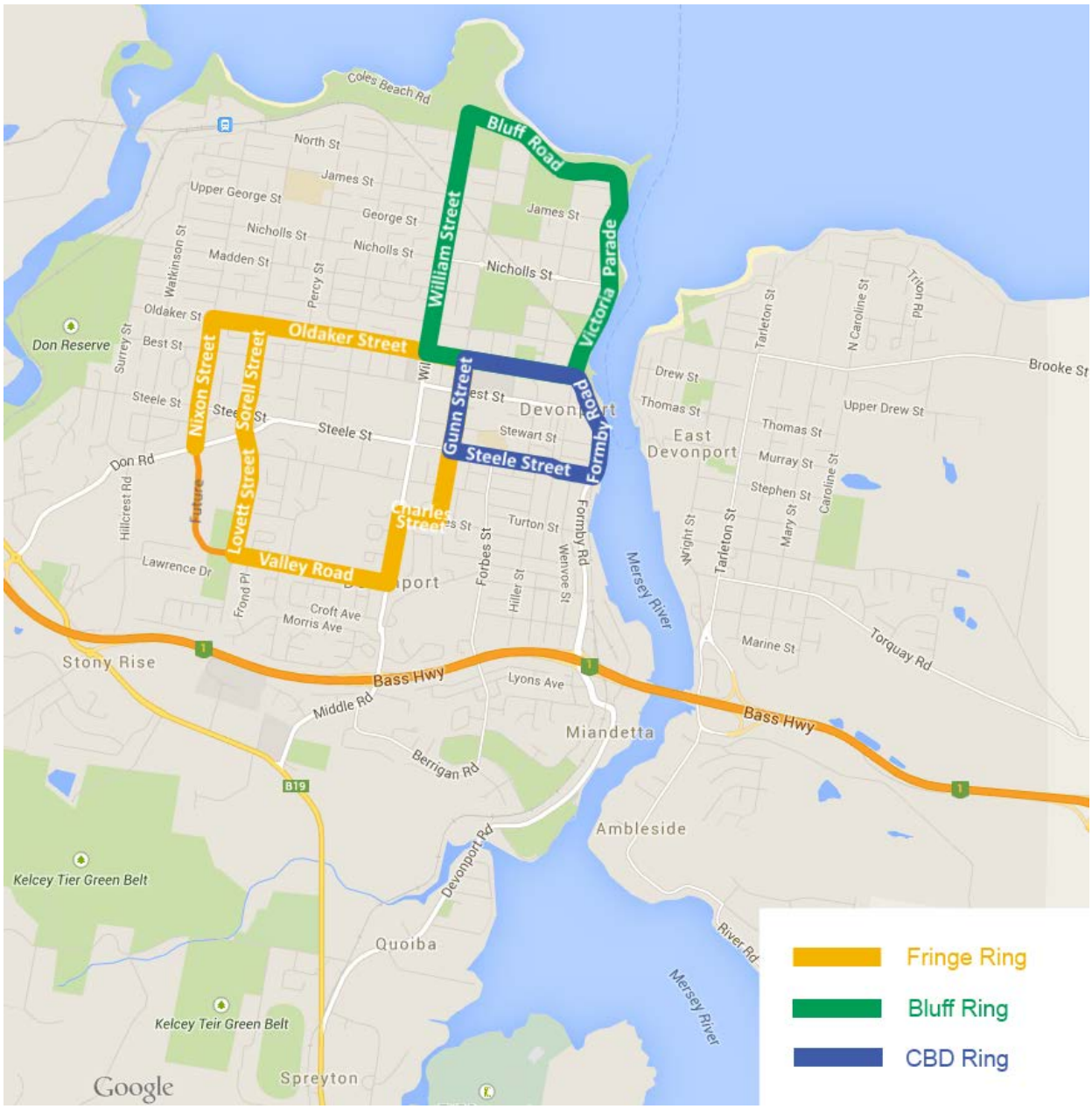
This link will require signals to be installed at the existing Don Road and Nixon Street Intersection and an intersection treatment at the Lovett Street and Valley Road intersection.

The Future Fringe Ring Road would generally replace the existing Fringe Ring Road, offering the following advantages:

- *Nixon St and the future link road become the main North South link, utilising roads with good vertical alignment and suitably wide road reserves.*
- *Providing a more inviting alternative route to the CBD than the current Fringe Ring Road*
- *Reinforcing the position of Nixon Street in the road hierarchy relative to Watkinson Street*

The construction of the future link road is strongly tied to a major commercial or industrial development in the Don Road area. At this time, there are no suitable developments likely in the short or medium term. However, the option should be kept available to Council, should an opportunity arise.

Figure 12 Ring Road System



6.5 Improve Traffic Management Arrangements

Several road safety, capacity and accessibility issues were raised throughout the development of the Strategy. There is an opportunity to improve traffic management measures along key routes of Devonport's road network to achieve the following key benefits:

- Reduce vehicle speeds/ 'calm' traffic in local streets to improve road safety and amenity;
- Provide improved mobility and accessibility at key intersections, where there may be delays for specific turning movements;
- Provide safety and crossing opportunities for pedestrians in high activity areas;
- Provide increased capacity at intersections that are operating at a poor level of service on collector roads;
- Improve accessibility for other road users such as bicyclists along identified routes; and
- Provide better definition for key routes through Devonport's road network that reinforce the road hierarchy.

This Strategy and associated Action Plan become the high level framework for prioritising identified traffic management changes to the road network. This may include traffic calming measures in identified local roads carrying too much traffic and modifying intersection priority to define Ring Road elements.

An example of how this strategic measure is currently being implemented in Devonport is demonstrated through Council's CBD and Fourways redevelopment projects. Council is currently exploring options to improve amenity and safety for pedestrians through improved crossings, add signage to define areas, and use paving, parking bays and road threshold treatments to slow traffic.

These projects demonstrate the importance of improving traffic management arrangements to contribute to the overall efficiency and safety of the road network.

2014 Update:

A recommendation of the Devonport Aquatic Centre TIA (2013) was for Council to reconsider its approach to intersection treatments, particularly when addressing safety issues. The report suggests that the road hierarchy, particularly in West Devonport which features a number of roundabouts, has become confused as the priority is unclear.

There are a number of sites where traffic management arrangements can be investigated for improvement opportunities, including:

- *Don Road, intersections with Watkinson Street and Hillcrest Road: Improve safety by increasing sight distances and adjusting approach alignments of the minor roads without impacting the operation of Don Road as a sub-arterial road*
- *Formby Road intersection with Elizabeth Street: Improve safety at the intersection, without restricting access, possibly by providing an alternative route via Wenvoe Street*
- *William Street intersection with Bluff Road: improve safety for all road users and promote use of ring road.*
- *Stony Rise Road intersection with Mersey Road and Devonport Road: Improve safety, allowing for predicted traffic volumes and considering the rail level crossing and traffic from the nearby school.*
- *Tarleton Street intersection with Wright Street: Improve efficiency for vehicles accessing the Port by modifying the intersection layout and signal phasing.*
- *Mersey Road intersection with Kelcey Tier Road: reduce peak period delays for vehicles on the terminating road.*

- *Mersey Road intersection with Sheffield Road: reduce peak period delays for vehicles on the terminating road.*
- *Watkinson Street outside Don College: improve safety and encourage use of Nixon Street over Watkinson Street for school traffic.*
- *Spreyton Primary School: Improve safety through co-operation with stakeholders.*
- *William Street intersection with Middle Road: consider alternative intersection treatment to improve safety and improve consistency of intersections on William Street (especially if Highway interchange is signalised). Also consider realignment of Morris Avenue into this intersection.*
- *Steele Street intersection with Forbes Street: Encourage use of Forbes St by signal upgrade.*
- *Wright Street intersection with Norton Way: Consider change of priority to match road hierarchy and discourage use of Wright Street as a through road.*
- *Stony Rise Road between the Lawn Cemetery and Tugrah Road: provision of facilities for all road users, requiring widening of the road in some areas.*

6.6 Address Road Safety Concerns

Devonport City Council will demonstrate leadership and commitment to improving road safety not only through infrastructure improvements but also through community involvement and an active program to educate drivers, passengers and pedestrians. Such an approach may also assist Council to strive toward and contribute to the objectives outlined in the *Tasmanian Road Safety Strategy 2007-2016*. To this end, road safety issues will be addressed through a number of approaches as described below.

6.6.1 Modifications to the Road Hierarchy

Modifications to the road hierarchy will guide actions such as intersection priority changes and road design standards. This will improve accessibility around high congestion areas such as Fourways, thus improving many of the current road safety issues.

2014 Update

Road hierarchy changes as described in Section 6.2 will be implemented and evaluated. Further road hierarchy changes will be considered for future strategy reviews.

6.6.2 Infrastructure Standards and Improvements

New roads and associated facilities will be made safe through application of appropriate design and construction standards. However, the use of infrastructure improvements at identified locations will also form an important approach to address road safety concerns, particularly in the following areas:

- Improved pedestrian crossing facilities in built up areas;
- Implementation of cycle paths into CBD linking key areas;
- Known ‘black spot’ sites;
- Intersection upgrades such as roundabout installations as part of the Ring Road system; and
- Applying uniform standards to road categories.

2014 Update:

These identified areas are still a focus but pedestrian crossing facilities and cycle paths are now covered in Council’s Pedestrian Network Strategy 2012 and Cycling Network Strategy 2010-2013 respectively.

Refer to Appendix C for sites that have been identified as having a significant number of crashes.

6.6.3 Safer Road Use Education

The role of driver behaviour, speed and alcohol in road crashes is significant. Hence, educating the community in safer road use is an important component in a road network strategy. A number of opportunities exist for Council to address road safety from this perspective:

- Allocate resources for a dedicated person in Council to undertake road safety initiatives to ensure they are implemented and provide the community with a contact to discuss road safety concerns.

2014 Update:

Council will continue to provide resources to support Department of State Growth, Tasmania Police and community groups to undertake road safety initiatives. Council officers will continue to seek information on road safety issues from the community.

- Ensure road safety continues to be a focus of the Devonport Community Safety Liaison Committee and the Traffic Management Committee. Continue developing new initiatives to improve road safety through Council's partnership with DIER's "Community Road Safety Partnerships" program (established August 2008).
- Ensure road safety is a priority focus in the development of the community safety strategy. This will clearly define objectives and actions to achieve positive road safety outcomes. This measure provides the means to investigate and adopt a number of road safety initiatives.

2014 Update:

The Devonport Community Safety Strategy 2012-2014 includes several actions related to Road Safety. Future revisions should continue to align with the Road Network Strategy.

- Develop a road safety section on the Council website. This provides the means to highlight local road safety issues and communicate initiatives to manage them.

2014 Update:

A review of Council's website is currently underway

6.6.4 Funding

Funding opportunities exist through both state and federal government that may be available to assist in addressing road safety issues. Programs such as the Auslink Black Spot Program are available to target problem areas within the road network and reduce road trauma. The Black Spot Program aims at low-cost high-return schemes, and councils are encouraged to jointly fund and nominate projects.

2014 Update:

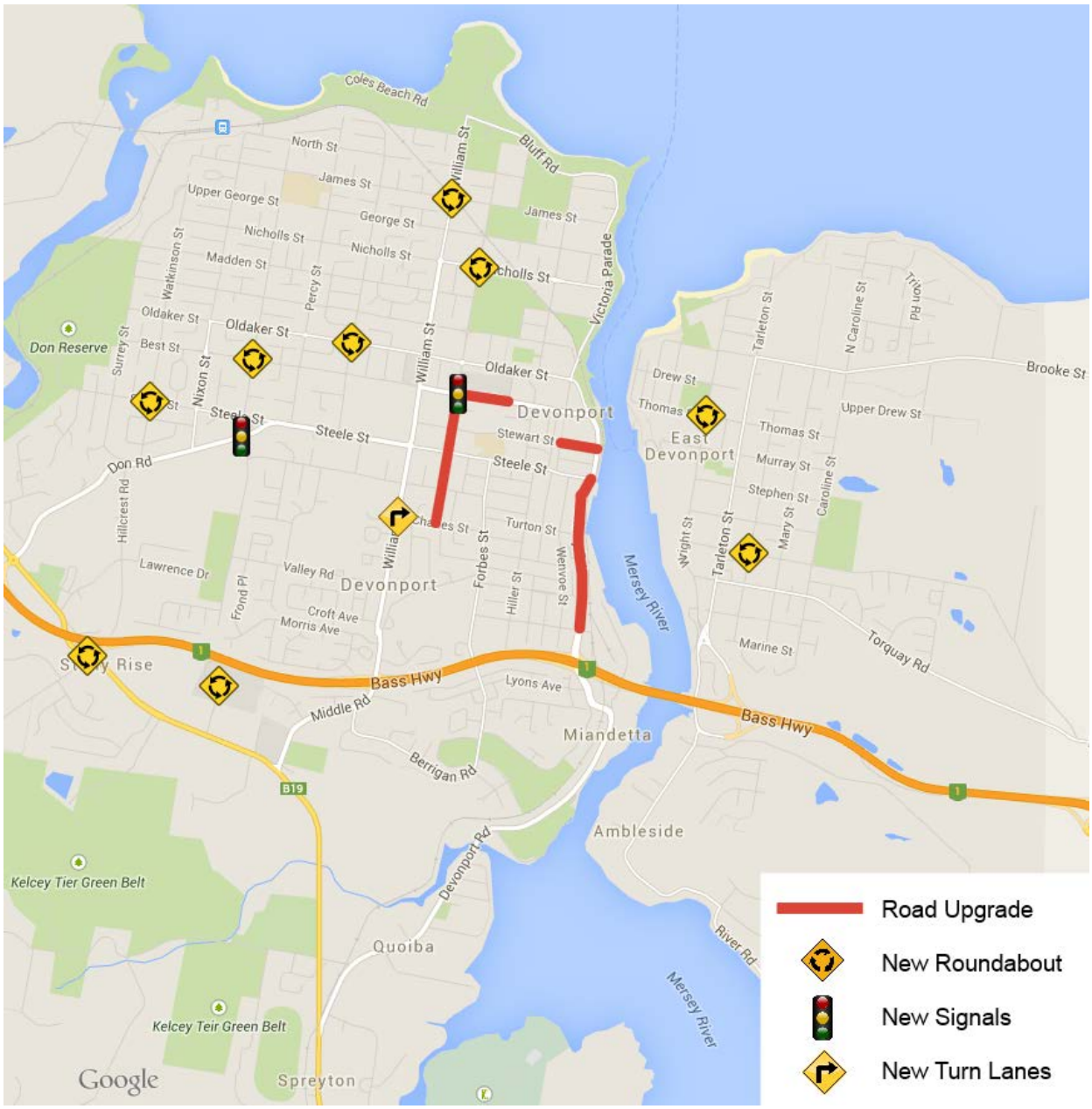
Since 2010, Council has obtained approximately $2M for 12 projects under the Black Spot Program. Refer to Appendix D for a list of Black Spot projects completed since 2010.

Council also successfully obtained funding from Department of State Growth's Safer Travel Speed in Shared Urban Spaces (STSISUS) and Safer Roads: Vulnerable Road User Program in 2011 and 2013 respectively.

Council's application for funding under the Federal Government's Heavy Vehicle Safety and Productivity Program in 2013 was unsuccessful.

Council will continue to pursue funding opportunities from State and Federal Government programs for projects aligned to this strategy.

Figure 13 Major Projects Completed Since 2009 Impacting Traffic Management and Road Safety



6.7 Regional Connectivity

A good understanding of the issues and identifying the necessary improvements to the road network for transport associated with industry, freight, tourism and regional access will only add value to economic development in Devonport. Some measures to progress this element of the strategy are outlined below.

6.7.1 Industrial and Freight Transport

A series of steps is required to improve the road network for this important sector of the economy, including:

- Review the existing industrial and freight routes for adequacy in terms of safe and efficient movement and access within the region;
- As part of the development of the proposed industrial sites, formally designate the routes to be used by all industrial and freight traffic through consultation with relevant stakeholders. The designated routes will be included on the road hierarchy map;
- Audit the designated routes to identify any deficiencies associated with the intended purpose; and
- Implement a program of works to upgrade and maintain the routes as required. Improved travel conditions will ensure the traffic associated with this sector utilises the designated routes.

2014 Update:

These tasks will be undertaken during the development of Council's Freight and Heavy Vehicle Plan and the subsequent Action Plan.

In order to improve safety and productivity, minimise the compliance burden on the heavy vehicle transport industry and reduce duplication and inconsistencies across state and territory borders, the new Heavy Vehicle National Law was introduced in February 2014. The National Heavy Vehicle Regulator (NHVR) was also introduced to support local government in their role as road managers under the new legislation.

6.7.2 Tourism

Devonport City Council works with Devonport's tourism operators and local, regional and state tourism organisations to attract tourist business and visitors to Devonport through its tourism unit, Marketing Devonport. Furthermore, the Devonport Visitor Centre is owned and operated by the Devonport City Council thus highlighting strong commitment to this industry and the ability to influence growth in this market.

The road network should complement tourism strategies developed to draw visitors to Devonport CBD and recreational areas. This will require definition of tourist routes, auditing road elements such as signage, vehicle stopping areas and implementing a program of works to achieve road network outcomes that promote tourism.

2014 Update:

The LIVING CITY project aims to attract tourists and regional shoppers to the Devonport CBD. Future strategy implementation works must align with this aim.

6.7.3 Regional Access

The key measure associated with this element of the strategy is to define the key access points into the Devonport City Council area from the surrounding municipalities, and to ensure they are maintained at an appropriate standard with clear signage. This will encourage locals and visitors to use these roads thus promoting access of services and facilities in Devonport.

2014 Update:

Maintaining and enhancing partnerships with neighbouring councils and Department of State Growth will allow a coordinated response to this issue which will benefit all parties.

6.8 Provide Comprehensive Transport Facilities and Services

To manage the issues associated with mobility, a number of opportunities exist to provide improved facilities and services for a wider variety of transport modes. This facilitates a more comprehensive and sustainable approach to the transport network.

6.8.1 Cycleways

2014 Update:

Refer to Council's Cycling Network Strategy.

6.8.2 Public transport

Given the number of bus companies operating in the Devonport area and the proposed future expansion of regional services, the opportunity exists to develop an integrated approach to passenger transport services. This requires consultation between the key stakeholders and agreement on services, frequency, routes and facilities (such as a bus terminal) required to provide a comprehensive public transport service for the local community and visitors arriving by boat, plane or car.

The opportunity also exists to expand the local ferry service to provide a more comprehensive alternative transport service to cars travelling between east and west Devonport.

2014 Update:

Council's Public Transport Plan is to be developed and will address these issues.

6.8.3 Pedestrians

2014 Update:

Refer to Council's Pedestrian Network Strategy.

6.9 Develop and Implement a Parking Plan for Devonport

2014 Update:

Refer to Council's Parking Strategy.

6.10 Asset Management and Maintenance

The Organisation for Economic Cooperation and Development (OECD) defines asset management as:

"A systematic process of effectively maintaining, upgrading and operating assets, combining engineering principles with sound business practice and economic rationale, and providing the tools to facilitate a more organised and flexible approach to making decisions necessary to achieve the public's expectations."

Further to this, Austroads (2009) have defined the main streams in asset management as being:

- Identification of need for the asset, in the light of community requirements;
- Provision of the asset, including its ongoing maintenance and rehabilitation to suit continuing needs;
- Operation of the asset; and
- Disposal of the asset when the need no longer exists or it is no longer appropriate for the asset to be retained.

The preceding sub-sections of Section 6 have dealt with the identification of the need for assets, in light of Council, key stakeholder and community requirements. A prioritised action plan has been developed from this asset management strategic planning process. However, the importance of reviewing asset management performance and asset requirements on a periodic basis is emphasised, as these may change over time.

This sub-section addresses the provision and operational aspects of asset management. The primary focus in road asset management is on the purpose or function of the network and its components, more than on the administrative or legal classification. In broad terms, the Australian road system consists of National Highways, Arterial Roads (variously known as State Highways, State Roads, Main Roads, etc) and Local Roads. These administrative classifications indicate the level of government

with primary responsibility. In practice, the higher levels of government provide limited funding support for roads in the lower classifications.

Devonport City Council is responsible for the operation and management of the local road network and related assets, which include the road pavement and wearing course, kerb and channelling, footpaths, street furniture, road signage *(some are funded by Department of State Growth e.g. non-parking control regulatory signs)* and other associated infrastructure.

To improve the effectiveness of asset management decisions, Council have allocated their roads to categories. In this way, roads with similar functions are treated consistently with respect to decisions on standards and levels of service, regardless of legal or administrative classification. Roads are allocated to a category on the basis of indicators such as traffic volume, numbers of heavy vehicles, travel speed, and strategic significance. Section 5.4 of this Strategy described the road hierarchy categories associated with the City of Devonport road network and the performance and design criteria of each road category.

The community expects Council's infrastructure to be maintained at an acceptable and affordable level. Hence, asset management is a process focused on facilitating the delivery of community benefits such as accessibility, mobility, economic development and social justice. However, Council must also comply with relevant industry standards and guidelines to ensure its Statutory and Risk Management obligations are met.

To this end, Council is in the process of preparing a *Roads and Stormwater Service Level Agreement*. The current draft document sets out the manner in which Council will meet its various obligations and identifies a benchmark level of service to be provided. In summary, while this Strategy defines the road hierarchy categories and associated performance and design criteria, it is the *Roads and Stormwater Service Level Agreement* that will detail how the performance and design criteria will be met in context of economic and regulatory constraints.

With respect to disposal of the asset when the need no longer exists or it is no longer appropriate for the asset to be retained, this Strategy promotes a life cycle approach be taken to asset management. This approach will be integrated into Council's asset management and maintenance systems and processes over the long-term.

2014 Update:

Service Level Documents have been developed and are reviewed annually. Key future improvements of the document include:

- *Set intervention levels and response times by road hierarchy, and align to community expectation*
- *Integration of inspection data with asset data*
- *Continuous improvement and refinement of processes*

Council is committed to continuous improvement of asset management to achieve and maintain best practice.

7. Action Plan 2014-2017

In 2009, the action plan was developed and adopted as a separate document. In this review, the action plan is included in the strategy document in line with other Council strategies adopted recently. The action plan details the tasks that must be undertaken to achieve the outcomes of the strategy. The plan also ensures the identification of clear responsibilities for Council and staff, and specific timeframes for completing activities and identification of resources required.

Definitions;

IW&D – Infrastructure, Works and Development

Timeframes

OG Ongoing – day to day tasks which are budgeted for annually

ST Short Term – 1 to 2 years, MT Medium Term – 2 to 5 years, LT Long Term – 5 to 15 years

Resources required

A-OPEX -Annual Operational Expenditure – staffing or operational resource allocated as part of the annual plan

F-OPEX -Future Operational Expenditure – identified increased requirements for future consideration in annual allocation

F-CAPEX –Future Capital Expenditure – identified infrastructure requirements

No.	Action	Outcomes	Resources	Responsibility	Timeframe
1	Monitor crash data quarterly. Investigate and develop solutions for high crash locations	Safety improvements at high crash locations	A-OPEX	IW&D Engineering	OG
2	Collect and monitor traffic volumes and intersection turning counts. Investigate and develop solutions.	Appropriate LOS maintained	A-OPEX	IW&D Engineering	OG
3	Develop Council's Freight and Heavy Vehicle Plan	Plan developed. Safety, efficiency and asset management benefits	A-OPEX	IW&D Engineering	ST
4	Develop Council's Public Transport Plan	Plan Developed Community benefits	A-OPEX	IW&D Engineering (with Community Services)	ST
3	Review ring road signage and implement clear consistent signage scheme.	Clear consistent signage scheme on ring roads	F-CAPEX	IW&D Engineering	ST

4	*Facilitate construction works associated with future fringe ring road*	*Future ring road constructed*	*F-CAPEX*	*IW&D*	*LT*
5	*Continue to monitor traffic volumes at Middle Road interchange. Work with Department of State Growth to investigate and develop solutions*	*Appropriate capacity is provided and safety is maintained or improved*	*A-OPEX*	*IW&D Engineering*	*MT*
6.1	*Investigate and develop improved traffic management arrangement at the Don Road intersections with Watkinson Street and Hillcrest Road*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*ST*
6.2	*Investigate and develop improved traffic management arrangement at Wright Street and Norton Way*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*ST*
6.3	*Investigate and develop improved traffic management arrangement at the Formby Road intersection with Elizabeth Street*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*MT*
6.4	*Investigate and develop improved traffic management arrangement at William Street and Bluff Road*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*MT*
6.5	*Investigate and develop improved traffic management arrangement at the Stony Rise Road intersection with Mersey Road and Devonport Road*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*MT*
6.6	*Investigate and develop improved traffic management arrangement at the Tarleton Street intersection with Wright Street*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*MT*
6.7	*Investigate and develop improved traffic management arrangement at the Mersey Road intersection with Kelcey Tier Road*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*MT*
6.8	*Investigate and develop improved traffic management arrangement in Watkinson Street near Don College*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*MT*
6.9	*Investigate and develop improved traffic management arrangement at the Steele Street intersection with Forbes Street*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*MT*
6.10	*Investigate and develop improved traffic management arrangement at the Mersey Road intersection with Sheffield Road*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*LT*
6.11	*Investigate and develop improved traffic management arrangement at Spreyton Primary School*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*LT*
6.12	*Investigate and develop improved traffic management arrangement at the William Street intersection with Middle Road*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*LT*
6.13	*Investigate and develop improved traffic management arrangement on Stony Rise Road between the lawn cemetery and Tugrah Road*	*An appropriate balance of safety, efficiency and amenity is achieved*	*A-OPEX*	*IW&D Engineering*	*LT*

7	*Continue to undertake traffic management improvement projects as part of the capital works program, prioritizing projects in a consistent and transparent way in line with sound engineering principles*	*Outcomes of investigations are implemented*	*A-CAPEX*	*IW&D Engineering*	*OG*
8	*Identify and pursue grants and other external funding that may be available for projects that align with this strategy*	*Funding is obtained*	*A-OPEX*	*IW&D Engineering*	*OG*

Appendix A:

Urban traffic count data since 2009

Road Name	Road Section	Date of Count	2013 AADT (1% GF)*	%HV
Ashburner Street	Wenvoe St - Formby Rd	Feb-09	690	6
Berrigan Road	North of Wiena Crt	Feb-12	2626	4.4
Berrigan Road	Coomera Cres - Wiena Crt	Feb-12	1963	4.1
Berrigan Road	South of Lemana St	Feb-12	1416	6.1
Best Street	Gunn St - Griffiths St	Sep-11	8741	3.3
Charles Street	William St - Gunn St	Oct-12	2213	2.9
Charles Street	Gunn St - Forbes St	Oct-12	1483	6.9
Don Road	Just West of Hillcrest Rd	Oct-13	8676	6
Don Road	Lovett St - Steele St	Oct-13	8392	7.7
Don Road	Lovett St - Nixon St	Oct-13	9244	11
Don Road	East of Watkinson St	Jul-10	10711	6.3
Edward Street	Best St - Stewart St	Sep-13	2607	2.6
Elizabeth Street	West of Wenvoe St	Sep-11	1636	4.1
Elizabeth Street	East of Wenvoe St	Sep-11	2060	4.8
Elm Avenue	North of Carpark	Jul-11	819	4.8
Forbes Street	Charles St - Turton St	Jun-12	6673	3.7
Formby Road	Best St - Roundabout	Sep-13	8066	6.6
Formby Road	Ashburner St - Turton St	Jun-12	20766	4.4
Formby Road	Elizabeth St - Bass Hwy	Sep-13	17692	6.3
Formby Road	Steele St - Turton St	Sep-13	16464	6.1
Forth Road	East end of Don Bridge	Jun-09	3621	7.3
George Street	Percy St - Ronald St	Jul-12	266	4.6
George Street	North Fenton St - Victoria Pde	Aug-12	407	3.7
Gunn Street	Tasman St - Steele St	Sep-13	2120	1.9
Gunn Street	Charles St - Tasman St	Oct-12	1426	4.1
Gunn Street	Oldaker St - Best St	Jun-09	2631	3.3
Hillcrest Road	Don Rd - Lawrence Dr	Jul-10	2107	6.9
Hiller Street	Archer St - Steele St	Aug-10	1076	1.7
Hiller Street	Smith St - Turton St	Aug-10	873	4.6
Holyman Street	Percy St - Oldaker St	Jun-13	86	2.6
James Street	Girdlestone St - Ronald St	Oct-09	1064	1.7
Kempling Street	Best St - Oldaker St	Aug-10	2079	7.4
Lapthorne Close	Stony Rise Rd - Matthews Way	Jul-12	386	8.4
Lovett Street	Don Rd - Tasman St	Dec-12	2836	6
Madden Street	Watkinson St - Nixon St	Jul-12	306	10.6
Madden Street	Sorell St - Percy St	Jul-12	471	2.7
Middle Road	Morris Ave - Bass Hwy	Sep-13	14706	3.8

Road Name	Road Section	Date of Count	2013 AADT (1% GF)*	%HV
Middle Road	Gatenby Dr - Stoney Rise Rd	Sep-13	7903	4.6
Nicholls Street	Gunn St - North Fenton St	Jul-12	1040	4.8
Nicholls Street	Ronald St - William St	Aug-12	1768	4.8
Nixon Street	Don Rd - Steele St	Jul-10	2194	2.9
North Fenton Street	George St - Nicholls St	Nov-10	860	10.6
North Street	Gunn St - Clements St	Nov-11	267	7.8
Oldaker Street	Fenton Way - Griffiths St	Sep-13	6130	4.6
Oldaker Street	William St - Gunn St	Jul-11	7079	3.3
Ronald Street	Parker St - Oldaker St	Aug-13	1460	2.4
Ronald Street	James St - George St	Sep-09	604	1.1
Rooke Street	Stewart St - King St	Oct-09	3698	2.6
Sorell Street	Don Rd - Steele St	Dec-12	803	3
Sorell Street	Steele St - Best St	Sep-13	1468	2
Sorell Street	Parker St - Oldaker St	Jul-12	832	2.4
Steele Street	Forbes St - Fenton St	Oct-13	7683	2.1
Steele Street	William St - Broadhurst Ave	Oct-13	10278	6.2
Steele Street	Formby Rd - Wenvoe St	Sep-13	4489	3.6
Steele Street	Watkinson St - Nixon St	Nov-11	1492	3.9
Stewart Street	Rooke St - Formby Rd	Aug-13	3302	4.8
Stewart Street	Rooke St - Edward St	Oct-09	4866	2.7
Surrey Street	Oldaker St - Best St	May-09	102	2.9
Tasman Street	William St - Gunn St	Aug-13	1401	1.9
Tasman Street	William St - Broadhurst Ave	Feb-12	1877	2.8
Tugrah Road	Stony Rise Rd - Washington Dr	Aug-12	2206	3.1
Turton Street	Formby Rd - Wenvoe St	Feb-09	1314	4.1
Valley Road	East of Elm Ave	Jul-11	4343	3.2
Valley Road	West of Elm Ave	Jul-11	4441	4.8
Victoria Parade	Oldaker St - Parker St	Jul-13	4616	2.2
Victoria Parade	Nicholls St - George St	Jul-13	3268	4.6
Wakinson Street	Don Rd - Steele St	Jul-10	2316	6.7
Wakinson Street	Best St - Oldaker St	Jul-09	1378	6
Wenvoe Street	Ashburner St - Elizabeth St	Jan-13	807	6.8
Wenvoe Street	Steele St - Turton St	Apr-10	1611	4.8
Wenvoe Street	Turton St - Hilltop Ave	Apr-10	681	2.4
Wenvoe Street	Hilltop Ave - Franklin St	Apr-10	710	2.4
Wenvoe Street	Franklin St - Ashburner St	Apr-10	690	3.1
William Street	Steele St - Stewart St	Feb-13	12661	4.1
William Street	Steele St - Tasman St	Feb-13	11646	4.6
William Street	Best St - Oldaker St	Aug-13	7624	7.7
William Street	Charles St - Tasman St	Oct-12	11249	3.8

Road Name	Road Section	Date of Count	2013 AADT (1% GF)*	%HV
William Street	Dhalia Crt - Charles St	Oct-12	12207	6.2
William Street	George St - James St	Dec-09	4679	2.7

*2013 AADT is determined by assuming a 1%PA growth rate since the date of the count

Rural traffic count data since 2009

Road Name	Road Section	Date of Count	2013 AADT (1% GF)*	%HV
Bellamy Road	101 Bellamy Rd	Nov-12	430	7
Devonport Road	Horsehead Creek - Crash Repairs	Jan-12	3393	6.2
Durkins Road	Stony Rise Rd - Railway	Jul-09	1667	12.4
Ferguson Drive	Stony Rise Rd - Massey Pl	Aug-13	488	20.6
Forthside Road	South of Bellamy Rd	Jul-13	47	22
Kelcey Tier Road	Near Ellis Hill Drive	Aug-12	896	2.8
Kelcey Tier Road	Mersey Main Rd - Railway Line	Mar-11	2616	11.9
Lillico Road	Just South of Railway	Aug-12	189	18.3
Loone Lane	South of Race course entry	Apr-12	162	4
Massey Place	Durkins Rd - Ferguson Dr	Aug-13	96	10.1
Melrose Road	Near 41 Melrose Rd	Feb-12	773	9.3
Mersey Main Road	South of Kelcey Tier Rd	Mar-11	11964	7.9
Mersey Main Road	North of Kelcey Tier Rd	Mar-11	13273	8.6
Pumping Station Road	Near picnic shelter	Dec-10	248	6.3
Tugrah Road	South of Nelsens Rd (gravel)	Feb-09	64	6.1
Wrenswood Drive	Near HN 70	Dec-09	319	4.4

*2013 AADT is determined by assuming a 1%PA growth rate since the date of the count

Appendix B:

Level of Service definitions from Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis, 2013

Level of service A	*A condition of free-flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is extremely high, and the general level of comfort and convenience provided is excellent.*
Level of service B	*In the zone of stable flow where drivers still have reasonable freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is a little less than with level of service A.*
Level of service C	*Also in the zone of stable flow, but most drivers are restricted to some extent in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience declines noticeably at this level.*
Level of service D	*Close to the limit of stable flow and approaching unstable flow. All drivers are severely restricted in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is poor, and small increases in traffic flow will generally cause operational problems.*
Level of service E	*Traffic volumes are at or close to capacity, and there is virtually no freedom to select desired speeds or to manoeuvre within the traffic stream. Flow is unstable and minor disturbances within the traffic stream will cause breakdown.*
Level of service F	*In the zone of forced flow, where the amount of traffic approaching the point under consideration exceeds that which can pass it. Flow breakdown occurs, and queuing and delays result.*

Appendix C:

Sites with 3 or more casualty crashes in the 5 years to June 2014:

Site	Existing treatment	Casualty Crashes	Total Crashes
Intersections			
Middle Road and Stony Rise Road	Give way	17	31
Best Street and Gunn Street	Signals (2011)	9	15
Formby Road and Elizabeth Street	Give way	7	16
William Street and Best Street	Signals	6	16
Fenton Street and Stewart Street	Give way	5	16
Formby Road and Bass Highway	Signalised interchange	5	24
William Street and Oldaker Street	Signals	5	14
Formby Road and Best Street	Signals	4	10
Best Street and Sorell Street	Roundabout (2013)	4	7
Middle Road and Bass Highway	Give way controlled interchange	4	12
Don Road and Watkinson Street	Give way	3	7
Madden Street and Ronald Street	Give way	3	7
Madden Street and Percy Street	Give way	3	4
Middle Road and Dana Drive	Give way	3	4
Best Street and Ronald Street	Roundabout	3	4
Devonport Road, Stony Rise Road and Mersey Road	Give way	3	5
Links			
William Street, between Oldaker Street and Best Street		4	15
Tarleton Street, between Torquay Road and Wright Street		4	13
Formby Road, between Oldaker Street and Best Street		3	3
Steel Street, between Don Road and William Street		5	10
Oldaker Street, between Victoria Parade and Gunn Street		4	20

Don Road, between Steele Street and Hillcrest Road	*6*	*22*
Nixon Street between Nicholls and North Street	*3*	*3*
Oldaker Street between Percy Street and William Street	*3*	*8*
Formby Road, between Ashburner Street and Steele Street	*3*	*14*
Parker Street, between Sorell St and William Street	*4*	*6*
Don Road, between Hillcrest Road and Stony Rise Road	*3*	*7*
Victoria Parade, between Bluff Road and Parker Street	*3*	*7*
Forth Road, between 238m from Cutts Road and 748m from Lillico Road	*3*	*4*
Bellamy Road, between 803m from Old Tramway Road and Melrose Road	*4*	*3*

Appendix D:

Black spot funded projects since 2009

Year	***Project***	***Black Spot Funding Obtained***
2009-10	*Oldaker and Ronald RAB*	*$160,000*
2009-10	*Steele and Gunn RAB*	*$160,000*
2009-10	*William and James RAB*	*$180,000*
2010-11	*Melrose and Kelcey Tier intersection realignment*	*$66,000*
2010-11	*Tarleton and Jowetts intersection realignment*	*$89,660*
2010-11	*Steele and Watkinson RAB*	*$160,000*
2010-11	*Best and Gunn Signals*	*$160,000*
2012-13	*Nicholls and Gunn RAB*	*$260,000*
2012-13	*Thomas and Wright RAB*	*$280,000*
2012-13	*David and John RAB*	*$220,000*
2012-13	*Best and Sorell RAB*	*$220,000*
2013-14	*Kelcey Tier Road*	*$140,000*
Total		***$2,044,660***

Appendix E:

The Tasmanian Local Government Road Hierarchy - Urban Roads

Classification	***1. Arterial***	***2. Collector***	***3. Link***	***4. Local access***	***5. Minor access***	***6. Unformed***
Functional Criteria						
Function/ predominant purpose	*Provide the principal links between urban centres, or between urban centres and rural regions.*	*Connect arterial roads to local areas and supplement arterial roads in providing for traffic movements between urban areas, or in some cases rural population centres.*	*Provide a link between the arterial or collector roads and local access roads.*	*Provide access to residential properties and in some cases commercial properties, at a local level.*	*Provide access to residential properties and irregular access to community facilities such as parks and reserves.*	*Roads not maintained by the council or non-constructed/maintained road reserves or roads that have a very low level of service.*
Connectivity description	*High connectivity - connecting precincts, localities, suburbs, and rural population centres.*	*High connectivity – supplements arterial roads in connecting suburbs, business districts and localised facilities.*	*Medium connectivity – connects traffic at a neighbourhood level with collector and arterial roads.*	*Low – connects individual properties within a neighbourhood to link roads.*	*Low – provides access to properties.*	*Future roads or roads that have a very low level of service.*
Guidance Metrics						
Average Annual Daily Traffic (AADT)	*>10 000 vehicles per day (vpd)*	*3 000 - 10 000 vpd*	*1 000 - 3 000 vpd*	*50 - 1 000 vpd*	*<50 vpd*	*N/A*
Heavy vehicles permitted	*Yes - thoroughfare*	*Yes - thoroughfare*	*Yes - some through traffic*	*No thoroughfare, local access only*	*No thoroughfare, local access only*	*N/A*
Average Annual Daily Truck Traffic or Equivalent Heavy Vehicles (AADTT / EHV)	*>1 000 AADTT or >10% EHV*	*250 - 1 000 AADTT or >10% EHV*	*<250 AADTT or >10% EHV*	*N/A*	*N/A*	*N/A*
Public transport route	*Yes*	*Yes*	*Yes*	*No*	*No*	*N/A*
Carriageway form	*2 or 4 lanes*	*2 lanes*	*2 lanes*	*1 or 2 lanes*	*Typically 1 lane*	*N/A*
Running surface	*Sealed*	*Sealed*	*Sealed*	*Sealed/unsealed*	*Sealed/unsealed*	*Unformed*
Geometry and Facilities Provided (DCC)						
Road reserve width	*20*	*20*	*18*	*15*	*15*	*15*
Lane or carriageway width	*3.5m lane width*	*12 m carriageway*	*10 m carriageway*	*8 m carriageway*	*6 m carriageway*	*N/A*
Speed environment	*60-80km/h*	*50-60km/h*	*50km/h*	*50km/h*		
Longitudinal grade	*6% (10% max)*	*10% (16% max)*	*16% max*	*16% max*	*16% max*	*N/A*
Median type	*Site specific*	*nil*	*nil*	*nil*	*nil*	*N/A*
Kerb type	*Barrier (KC)*	*Barrier (KC)*	*Barrier (KC)*	*Barrier (KCS) or Mountable (KCM2)*	*Barrier (KCS) or Mountable (KCM2)*	*N/A*
Line marking – holding line	*Required*	*Required*	*At intersections with arterials or collectors*	*At intersections with arterials or collectors*	*Not required*	*N/A*

Line marking – centre line	*Required*	*Required*	*Site specific*	*Not required*	*Not required*	*N/A*
Line marking - edge line	*Site specific*	*Site specific*	*Site specific*	*Not required*	*Not required*	*N/A*
Line marking - RRPMs	*Site specific*	*Site specific*	*Site specific*	*Not required*	*Not required*	*N/A*
Adjacent land use type	*Non-sensitive to traffic*	*As specified under zoning*	*As specified under zoning*	*As specified under zoning*	*As specified under zoning*	*As specified under zoning*
Access Provision	*Site specific*	*Site specific*	*Individual lots*	*Individual lots*	*Individual lots*	*N/A*
Noise attenuation	*Site specific*	*nil*	*nil*	*nil*	*nil*	*N/A*
Local Area Traffic Management	*Nil*	*Site specific*	*Site specific*	*Site specific*	*Site specific*	*Site specific*
Typical intersection treatment	*Signal, RAB or priority*	*RAB or priority*	*RAB or priority*	*Priority*	*Priority*	*N/A*
Intersection spacing	*300m*	*100m*	*60m*	*40m*	*nil*	*N/A*
Parking facilities	*Refer to DCC Parking Strategy*					
Pedestrian facilities	*Refer to DCC Pedestrian Strategy*					
Cycle facilities	*Refer to DCC Bike Strategy*					
Public transport facilities	*Refer to DCC Public Transport Plan*					
Public lighting	*Refer to DCC Public Lighting Strategy*					

The Tasmanian Local Government Road Hierarchy - Rural Roads

Classification	***1. Arterial***	***2. Collector***	***3. Link***	***4. Local access***	***5. Minor access***	***6. Unformed***
Functional Criteria						
Function/ predominant purpose	*Provide the principal links between rural population centres and regions.*	*Connect arterial roads to local areas and supplement arterial roads in providing for traffic movements between rural population centres.*	*Provide a link between the arterial or collector roads and local access roads.*	*Provide access to residential properties and in some cases commercial properties, at a local level.*	*Provide secondary access to residential properties and irregular access to community facilities such as parks and reserves.*	*Roads not maintained by the council or non-constructed/maintained road reserves or roads that have a very low level of service.*
Connectivity description	*High connectivity - connecting rural population centres.*	*High connectivity – supplements arterial roads in connecting towns, rural centres and localised facilities.*	*Medium connectivity – connects traffic at a neighbourhood level with collector and arterial roads.*	*Low – connects individual properties within a neighbourhood to link roads.*	*Low – provides access to properties.*	*Future roads or roads that have a very low level of service.*
Guidance Metrics						
Average Annual Daily Traffic (AADT)	*>2000 vehicles per day (vpd)*	*300 - 2000 vpd*	*100 - 300 vpd*	*30 - 100 vpd*	*<30 vpd*	*N/A*
Heavy vehicles permitted	*Yes - thoroughfare*	*Yes - thoroughfare*	*Yes - some through traffic*	*No thoroughfare, local access only*	*No thoroughfare, local access only*	*N/A*
Average Annual Daily Truck Traffic or Equivalent Heavy Vehicles (AADTT / EHV)	*>300 AADTT or >20% EHV*	*60 - 300 AADTT or >10% EHV*	*<60 AADTT or >10% EHV*	*N/A*	*N/A*	*N/A*
Public transport route	*Yes*	*Yes*	*Yes*	*No*	*No*	*N/A*
Carriageway form	*2 or 4 lanes*	*2 lanes*	*2 lanes*	*1 or 2 lanes*	*Typically 1 lane*	*N/A*
Running surface	*Sealed*	*Sealed*	*Sealed/unsealed*	*Sealed/unsealed*	*Sealed/unsealed*	*Unformed*
Geometry and Facilities Provided (DCC)						
Road reserve width	*30*	*25*	*20*	*20*	*20*	*20*
Seal width	*8m*	*6m*	*6m*	*3.5m or 6m*	*3.5m*	*N/A*
Speed environment	*80 - 100 km/h*	*70 - 80 km/h*	*50 - 60 km/h*	*50 km/h*	*50 km/h*	*N/A*
Longitudinal grade	*9% max*	*11% max*	*11% max*	*11% max*	*11% max*	*N/A*
Median type	*Site specific*	*nil*	*nil*	*nil*	*nil*	*N/A*
Shoulder width	*1 to 3m*	*1 to 2m*	*1 to 2m*	*1 to 2m*	*1 to 2m*	*N/A*
Shoulder seal	*1m*	*nil*	*nil*	*nil*	*nil*	*N/A*
Overtaking	*Site specific*	*nil*	*nil*	*nil*	*nil*	*N/A*
Line marking – holding line	*Required*	*Required*	*At intersections with arterials or collectors*	*At intersections with arterials or collectors*	*Not required*	*N/A*

Line marking – centre line	*Required*	*Required*	*Required*	*Not required*	*Not required*	*N/A*
Line marking - edge line	*Required*	*Not required*	*Not required*	*Not required*	*Not required*	*N/A*
Line marking – RRPMs and guide posts	*Required*	*Required*	*Required*	*Required*	*Not required*	*N/A*
Adjacent land use type	*As specified under zoning*	*As specified under zoning*	*As specified under zoning*	*As specified under zoning*	*As specified under zoning*	*As specified under zoning*
Access Provision	*Individual lots*	*Individual lots*	*Individual lots*	*Individual lots*	*Individual lots*	*N/A*
Noise attenuation	*Site specific*	*nil*	*nil*	*nil*	*nil*	*N/A*
Local Area Traffic Management	*Nil*	*Site specific*	*Site specific*	*Site specific*	*Site specific*	*Site specific*
Typical intersection treatment	*Signal, RAB or priority*	*RAB or priority*	*RAB or priority*	*Priority*	*Priority*	*N/A*
Intersection spacing	*300m*	*100m*	*60m*	*40m*	*nil*	*N/A*
Drainage design	*Refer to DCC Stormwater Strategy*					
Parking facilities	*Refer to DCC Parking Strategy*					
Pedestrian facilities	*Refer to DCC Pedestrian Strategy*					
Cycle facilities	*Refer to DCC Bike Strategy*					
Public transport facilities	*Refer to DCC Public Transport Plan*					
Public lighting	*Refer to DCC Public Lighting Strategy*					