



traralgon activity centre plan: background reports traffic impact & public transport assessment

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1 introduction

Cardno Grogan Richards have been engaged by hansen partnership to undertake a traffic study of the Traralgon Activity Centre (TAC) for the Latrobe City Council. The purpose of this report is to provide Latrobe City Council with the information and analysis required to inform the Key Directions report for the TAC which is part of Stage 2 of the study. It will provide an analysis of the current traffic volumes patterns and movements through and around the TAC, identifies local amenity, operation and safety issues relating to car parking, traffic, public transport, cycling and walking and explore a range of options for consideration during Stage 2 of the project.

This report also identifies existing public transport services currently operating within the Traralgon Activity Centre. In addition, it highlights areas for improvement following discussions with Latrobe Valley Bus Lines, Departments of Transport, V/Line, Traralgon City and Community Development Associations, Latrobe City staff and ratepayers.

Specific recommendations and solutions including the preparation of cost estimates will be considered in detail as part of Stage 2 of the project.

In the course of preparing this report, the subject site has been inspected, previous studies have been reviewed and traffic survey's undertaken and analysed.

2 background

Latrobe City Council's Traralgon Activity Centre Plan aims to build on previous studies that have been endorsed by the local community, which will provide a framework to ensure sustainable development of the Town Centre over the next 20 years. The purpose of this project is to establish Council's requirements for the conduct of the TAC Plan and to provide a consistent basis upon which to work.

At present, the TAC consists of a mix of business, retail, office and commercial land uses, with some residential land use on the fringe of the study area to the north, west and southeast. The retail core of the area is situated around Church Street, Franklin Street, Seymour Street and Hotham Street, and the Stockland Shopping Centre located at the northeast corner of the study area.

The TAC Plan intends to ensure that there is appropriate integration with areas around the edges of the town and the Traralgon Station Precinct, which is located at the southern edge of the site, and address any land use conflicts. In addition, the plan looks to improve pedestrian and bicycle access to the Town Centre.

3 study area

The study area is bound by Gordon Street to the north, Mabel and Byron Streets to the west and Princes Highway to the east. The study area extends south beyond the railway line to an area known as the Traralgon Inner South Precinct. The study area extends beyond the traditional town centre to ensure that future growth of the TAC can be investigated. The study area is outlined in Figure 1.

Figure 1: Traralgon Activity Centre (TAC) Study Area



4 scope of works

The study focuses on the following issues affecting the area:

- *Traffic congestion along Franklin Street during peak activity periods,*
- *The impact of the pedestrian crossings on Franklin Street and Post Office Place on traffic congestion,*
- *Proposed bus movements between the town bus route interchange and the railway station,*
- *Proposed bus route changes within the TAC resulting from the Latrobe Valley Bus Service Review being undertaken by the Department of Transport,*
- *Improving traffic flow through the intersection of Princes Highway and Breed Street,*
- *A new east-west arterial link including a crossing of the Traralgon Creek.*



5 existing conditions

5.1 road network

Traralgon is located in the centre of the Latrobe Valley, approximately 160km east-southeast of Melbourne. The Princes Highway carries high through traffic volumes to Sale and beyond along the south side of the study area, whilst the road network within the TAC is of a grid pattern, with streets running north-south and east-west. Grey Street, which lies in the north of the study area, runs east-west and is the main road that carries through traffic to Tyers to the west, and also provides a link through to Morwell. Kay Street provides an additional east-west link that also connects to Morwell.

5.1.1 role and function

The prime purpose of the arterial road network is to provide for major regional and inter-regional traffic movement in a safe and efficient manner, whilst local roads serve to provide vehicular access to retail outlets, homes and other destinations within neighbourhoods, and to facilitate the movement of pedestrians and cyclists.

Over time the road network within Traralgon has developed from a rural road network providing connectivity to neighbouring towns such as Tyers and Morwell, to one that provides commercial and industrial access to businesses close to the Town Centre. One of the primary objectives of the TAC Plan is to “Promote new development in the Town Centre to create a compact retail core”, which suggests that road use in the future will continue this trend towards commercial uses, and is in line with suggestions drawn from the *Traralgon Town Summary Report* (2006) which called for, among other recommendation, higher density housing, the encouragement of transit oriented development and compact town centres.

Princes Highway which forms the southern boundary of the town centre is part of the national road network and provides an arterial connection to and from Melbourne. Princes Highway typically comprises a divided carriageway with 2 through lanes in each direction plus turn lanes. Given the nature of Princes Highway a large proportion of traffic volumes have their origins and destinations outside of Traralgon resulting in high levels of through traffic.

This is supported by the traffic volume surveys which indicate that 1,013 vehicles entered the TAC from the west during the Friday PM peak hour however only 484 vehicles were recorded turning off Princes

Highway at Franklin Street, Seymour Street and Grey Street. Similarly the surveys indicated 893 vehicles entered the TAC from the east with 531 vehicles turning off at the same intersections. These volumes indicate, albeit simplistically, that between 40% and 50% of PM peak hour volumes pass through the TAC and do not stop.

This generally accords with information provided by VicRoads which during 2003 estimated that approximately 30% of traffic on Princes Highway in the TAC was through traffic.

Breed Street forms the western boundary of the town centre and extends north from its intersection with Princes Highway providing a connection to residential areas in the north. In the vicinity of the town centre Breed Street performs a secondary arterial function and comprises a divided carriageway with 2 through lanes in each direction plus turn lanes. As Breed Street forms a strong north-south link the majority of volumes are local traffic with origins or destinations north of the town centre travelling to and from Princes Highway.

Similarly Grey Street also performs an arterial role and comprises a divided carriageway in part although the majority is a single carriageway with 1 through lane in each direction. Grey Street provides an east-west connection along the northern border of the town centre. As with Breed Street, Grey Street volumes are typically local in nature and are associated with vehicles accessing Princess Highway to travel to or return from destinations east of Traralgon.

5.2 traffic volumes

Traffic surveys were carried out on Friday 19th of February 2010 between 7.30AM and 9.30AM to determine morning peak volumes, and from 4.00PM to 6.00PM for the evening peak. An additional survey was undertaken on Saturday 20th of February from 11.00AM to 1.00PM to obtain weekend flow volumes.

5.2.1 turning movement surveys

Turning movement surveys were undertaken at the aforementioned times for the following intersections:

- Breed Street & Grey Street;
- Franklin Street & Grey Street;

- Franklin Street & Seymour Street;
- Shakespeare Street, Princes Highway & Breed Street;
- Princes Highway & Franklin Street;
- Princes Highway & Grey Street;
- Princess Highway, Seymour Street & Whittakers Road;

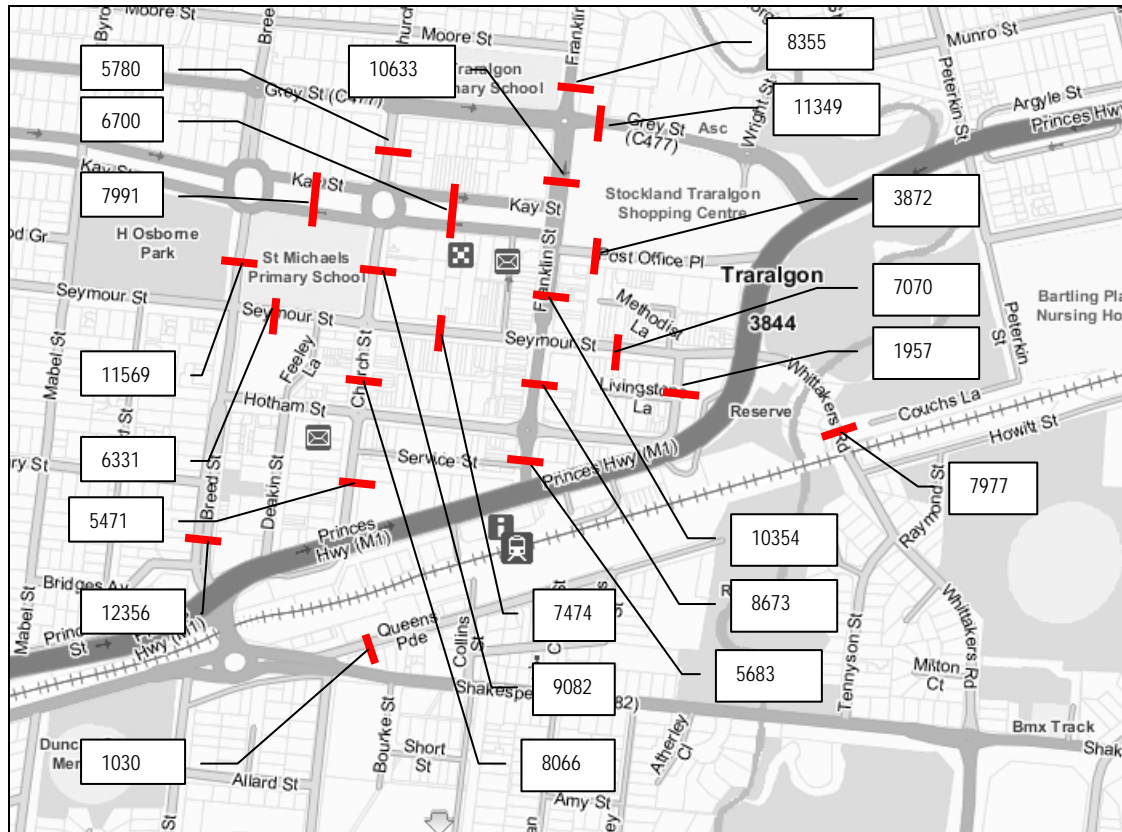
It was found that for these locations the weekday morning peak was between 8.15AM and 9.15AM, the weekday evening peak occurred between 4.00PM and 5.00PM and the Saturday peak occurred between 11.15AM and 12.15PM.

Details of the peak hour counts recorded at the above intersections are summarised in Appendix A.

5.2.2 automatic traffic counts

Automatic traffic counts were undertaken by Latrobe City over a period from February 2010 to May 2010 on a number of streets within the Traralgon Activity Centre. Details of the average two way weekday volumes are shown in Figure 2.

Figure 2: Weekday Average 2- way Volumes, February 2010 – May 2010



5.3 school traffic

St Michaels Primary School and Grey Street Primary School are located within the study area and generate periods of peak traffic activity during the morning and afternoon pick up and drop off periods. During these times a short period of congestion immediately around the schools occurs. The surveyed AM peak period coincides with a typical school drop off period however the typical pick up period occurs prior to the surveyed PM peak hour.

5.4 through residential traffic

As noted in Section 5.1.1 both Grey Street and Breed Street perform important roles in providing connections from the northern residential areas to Princes Highway. This is evidenced by the high turning volumes at the Grey Street / Princes Highway intersection and the large through volumes on

Breed Street. The *Traralgon Structure Plan* dated August 2007 prepared by Beca Pty. Ltd. Indicated that residential development had expanded predominantly to the north, east and south west of the Traralgon Activity Centre. The report also noted that many residents are not located within walking distance to an activity cluster.

As both Breed Street and Grey Street from the western and northern borders of the town centre respectively, the additional traffic generated by residential developments is likely to impact on town centre road operation.

To cater for the additional traffic generated by expansion outside the town centre the creation of an additional east-west traffic link crossing Traralgon Creek has previously been suggested. The link was first considered in a report by Arup in 2002 and later in the August 2007 Structure Plan report. Council records also indicate that the matter was considered before Council in June 2005 and a motion was carried to undertake appropriate planning for the link.

The link was proposed as an extension of Bradman Boulevard to Franklin Street providing a connection to the east of Traralgon diverting traffic away from the TAC. The link would draw its catchment from the immediate area and future growth areas to the north and west.

Although the link has been considered at various stages of planning for Traralgon an in depth assessment is yet to be made. It is suggested that a budgetary cost assessment be undertaken for the east-west link to determine whether the capital expenditure for a bridge and road connections is acceptable to Council and would deliver sufficient benefit.

5.5 pedestrian crossings

5.5.1 franklin street / post office place

Existing pedestrian crossings on Franklin Street and Post Office Place carry high volumes of pedestrians travelling between Stockland Plaza and the bus interchange to land uses on the west side of Franklin Street. This high volume of pedestrians at the Franklin Street / Post Office Place zebra crossing requires motorists to give way resulting in extended queues and delays.

An option to improve traffic flow whilst maintaining pedestrian safety would be to signalise the intersection of Franklin Street and Post Office Place. The current arrangement requires that vehicles travelling west on Post Office Place and then south on Franklin Street give way to pedestrians at two locations within 20m creating congestion. This potentially results in vehicles becoming trapped between the two crossings creating driver frustration.

Driver frustration can lead to drivers taking unnecessary risks such as forcing their way through traffic or gaps within the pedestrian flows potentially putting other motorists and pedestrians at risk. This is especially evident when a large number of pedestrians are arriving or departing the bus interchange immediately north of Post Office Place.

The installation of a signalised intersection also provides the opportunity to introduce a bus head start phase allowing buses into the traffic stream without being hindered by private vehicles. As buses then have reduced delays, overall operational efficiency is increased in line with state wide sustainability and public transport objectives.

It is understood that preliminary discussions are being held between the Department of Transport (DoT) and the bus operators regarding the relocation of the existing bus interchange from Franklin Street to around the corner on Post Office Place. Although these discussions are preliminary at this stage it is understood that the intent is to relocate the interchange to the northern kerb of Post Office Place. The signalisation of the Franklin Street and Post Office Place intersection would be unlikely to have any material impact on this scheme however should be given due consideration.

5.5.2 breed street

As noted previously Breed Street forms the western boundary of the TAC and carries in the order of 12,000 vehicles per day. Land use to the west of Breed Street is residential in nature, therefore generating pedestrian desire lines from the west to the TAC in the east. Anecdotal evidence suggests that pedestrians are crossing Breed Street between Seymour Street and Henry Street.

In this location the road geometry comprises a crest in Breed Street which restricts driver sight lines to vehicles and pedestrians on the roadway. The provision of a formal and visible pedestrian crossing along Breed Street may be beneficial to residents west of Breed Street.

It is recommended that pedestrian volume surveys be undertaken along Breed Street at various locations to determine the quantum of pedestrians crossing the road. Based on these surveys and the already known traffic volumes an appropriate crossing location and design can be prepared based on the prescribed VicRoads warrants for pedestrian crossings.

5.5.3 crossings at roundabouts

Within the TAC a series of roundabout s are provided along Grey Street, Church Street and Franklin Street. Whilst roundabouts are excellent devices for improving vehicle capacity at intersections they are problematic for crossing pedestrians as roundabouts facilitate constant vehicles flows thus reducing the ability for pedestrians to cross the road.

The strategic conversion of some of these roundabouts to signalised intersections would create platooning or gaps in the traffic downstream which would improve pedestrian crossing ability. In addition the introduction of traffic signals would provide controlled pedestrian crossings further improving pedestrian amenity.

Alternatively a lower cost solution would be to introduce zebra crossings on the approaches to the roundabouts giving pedestrians priority. The location of the zebra crossings should be carefully considered at each site and is subject to detailed design to ensure sufficient sight distance is provided from circulating traffic on the roundabout to crossing pedestrians to prevent injury. In conjunction with this wide central medians could be provided to protect pedestrians and allow them to stage their crossing.

Furthermore the zebra crossings should be located such that there is sufficient storage space between the crossing and the circulating lane of the roundabout to store at least 1 vehicle. This ensures that if a vehicle is required to give way to pedestrians crossing the road it does not overhang the circulating lane of the roundabout and obstruct circulating traffic.

It is noted that the introduction of these zebra crossings would be subject to VicRoads approval.

5.5.4 shared zones

It is understood that the concept of a shared zone in the vicinity of Franklin Street and Post Office Place has been suggested. Although the area currently experiences high pedestrian volumes (as discussed in

Section 5.5.1) it also experiences significant traffic activity with the bus interchange, taxi rank, Traralgon Plaza loading and general traffic using the area. It is considered that the level and mixture of traffic activity is detrimental to pedestrian amenity and is unsuitable for a shared zone.

5.6 accident statistics

VicRoads CrashStats database was accessed for the period between 1/1/2005 and 31/12/2009 for main roads in the TAC area. The CrashStats database contains records of fatal or casualty accidents that have occurred, but property damage only accidents are not recorded as not all are reported. In the aforementioned timeframe, there were a total of 58 accidents recorded in the study area, 14 of which classified as "serious".

Accidents are classified based on the severity and are defined as fatal, serious injury or other injury. Details of the CrashStats data is provided in Appendix B.

5.6.1 accident blackspot candidates

The definition of a blackspot (intersection) or a black stretch (section of road) is that "an intersection can become eligible for blackspot funding if there are 3 crashes within five years" and a blacklength is eligible "if there have been 0.2 crashes per kilometre per year or (1 crash per kilometre per five years)".

By this measure there are 4 intersections within the area that qualify as blackspot candidates. The Princes Highway – Post Office Place intersection recorded 3 accidents in the 5 year period resulting in 3 serious injuries and 3 other injuries. The 3 accidents involved 2 bicycles and 7 cars. The fact that all recorded accidents occurred during daylight hours and in dry weather rule out poor light or weather conditions as potential causes, pointing more towards intersection geometry and layout. Records show that all accidents involved vehicles turning right from Princes Highway into Post Office Place.

Other intersections that qualify for blackspot funding include the Princes Highway – Franklin Street intersection with 1 serious injury and 4 other injuries recorded at 5 accidents over the same period. It is worth noting that the majority of these accidents were classified as rear end accidents occurring during the day under dry conditions. Signalised intersections typically have a propensity for rear end accidents given their stop-go nature however the number of accidents may also be a result of poor sight lines or a worn road surface.

During the same 5 year period the Breed Street – Moore Street and Grey Street – Franklin Street intersections both recorded 3 accidents. All accidents were other injuries occurring during the day.

The intersection at the Breed Street – Moore Street intersection was subject to 3 accidents. One of these involved a pedestrian being struck by a car on approach to the intersection, and the remaining two were cross traffic incidents on the intersection itself. Similar statistics apply to the Grey Street – Franklin Street roundabout where there were again 3 recorded accidents; one involving a pedestrian, one on the roundabout involving a right turner and the other being a rear end collision on the western approach. These accidents all occurred in day light, although one of the Breed Street – Moore street accidents occurred in wet weather.

The Princes Highway – Post Office Place intersection was listed on the Victorian BlackSpot Projects in April 2009, with \$450,000 of funding allocated to construct a left turn lane and larger left turn island on the south approach of Princes Highway, ban the right turn movement from Post Office Place and to replace the power poles with slip based or impact absorbing poles. Improved street lighting and pedestrian access are also being investigated. These intersection improvement works have recently been completed.

5.7 traralgon bypass route

In January 2008 the Planning Minister approved the route for the future bypass of Traralgon. At the time of the announcement it was indicated that work on the construction of the bypass was expected to commence in around 20 years.

The proposed route known as (VicRoads option WIC) is shown in Appendix 3 and is to the south of the Traralgon Activity Centre.

Latrobe Planning Scheme Amendment C42 was approved on the 2nd July 2009 providing for public acquisition overlays and design and development overlay to facilitate the construction of the bypass.



6 bicycle considerations

The Latrobe City Bicycle Plan 2007-2010 identifies several actions for improving bicycle usage and facilities within Traralgon such as:

- Develop and implement a regional bicycle strategy;
- Line mark a shared bicycle/parking lane along Shakespeare Street, Traralgon as listed in the VicRoads Operational Management Plan;
- Delineate, mark and sign the existing bicycle path on Kay Street, west of Breed Street;
- Provide a bicycle lane along Kay Street, east of Breed Street;
- Design and construct changes to the design of Franklin Street to encourage cyclists through the town centre;
- Install additional cycle racks in the town centre;
- Explore the potential for promoting cycle/walking based tourism within the region;
- Review the need to improve cycle and pedestrian related infrastructure and signage within the region to support Tourism;
- Explore the potential to implement a Travel SMART travel behaviour change project within the region.

It is considered that the above actions will likely improve bicycle use within Traralgon and are generally able to be implemented, subject to detailed review, with the exception of the creation of a dedicated bicycle lane along Franklin Street which would require significant works and alteration of the streetscape.

Franklin Street currently experiences a high level of parking activity and considering that parking along Franklin Street is provided in the form of angled parking the number of reversing vehicles out of spaces poses a safety hazard to pedestrians and cyclists. It is understood that it is desirable to retain parking along Franklin Street for the activity it generates within the town centre. While Franklin Street is recommended in the report it is suggested that further investigations be undertaken to assess areas along this corridor for suitability of bicycle activity.

Given that the introduction of dedicated bicycle lanes within the TAC is likely to result in the loss of on street parking Council need to consider if the loss of parking is offset by the upgrading of bicycle facilities.

On the face of it the loss of on street parking for the creation of bicycle infrastructure is in line with sustainability principals however the creation of dedicated bicycle lanes must be supported with associated infrastructure otherwise they will become underutilised. Such facilities as undercover bicycle parking in key locations throughout the TAC and connection to existing paths should be adopted.

Without adequate promotion residents may not be aware of the new facilities and a campaign of public education would be required. The campaign would need to be run in conjunction with the construction of the facilities as it is of little benefit to promote a facility that is not yet operational. It is considered that bicycle agencies such as Bicycle Victoria be involved in the campaign promotion. In 2003 Bicycle Victoria ran the Cycle Instead campaign in Shepparton resulting in a 3.35% decrease in short car trips with 35.9% of respondents identified as having been encouraged to ride more often.



7 traffic considerations

7.1 intersection analysis

The operation of the intersections identified in Section 5.2.1 were analysed using aaSIDRA Intersection version 4.1. This computer package, originally developed by the Australian Road Research Board, provides information about the capacity of an intersection in terms of a range of parameters, as described below:

Degree of Saturation (D.O.S.) is the ratio of the volume of traffic observed making a particular movement compared to the maximum capacity for that movement. Various values of degree of saturation and their rating are shown in Table 1:

Table 1: Rating of Degrees of Saturation

D.O.S.	Rating
Up to 0.6	Excellent
0.6 to 0.7	Very Good
0.7 to 0.8	Good
0.8 to 0.9	Acceptable
0.9 to 1.0	Poor
Above 1.0	Very Poor

It is considered acceptable for some critical movements in an intersection to operate in the range of 0.9 to 1.0 during the high peak periods, reflecting actual conditions in a significant proportion of suburban signalised intersections.

The **95th Percentile (95thile) Queue** represents the maximum queue length, in metres, that can be expected in 95% of observed queue lengths in the peak hour; and



Average Delay is the delay time, in seconds, which can be expected over all vehicles making a particular movement in the peak hour.

The results of the SIDRA Intersection analysis are summarised in Tables 2, 3 and 4 for the weekday AM, PM and weekend peak hours respectively. Detailed output data provided in Appendix 4.

Table 2: Friday AM Peak Hour SIDRA Intersection Analysis Summary

Intersection	Degree of Saturation	95 th ile Queue (m)	Average Delay (sec)
Grey Street / Breed Street	0.62	56	13.1
Grey Street / Franklin Street	0.63	57	13.6
Seymour Street / Franklin Street	0.36	38	15.3
Princes Highway / Breed Street / Shakespeare Street	0.72	126	33.3
Princes Highway / Franklin Street	0.63	79	18.3
Princes Highway / Grey Street	0.84	108	23.0
Seymour Street / Princes Highway / Whittaker Road	0.62	94	33.6



Table 3: Friday PM Peak Hour SIDRA Intersection Analysis Summary

Intersection	Degree of Saturation	95 th ile Queue (m)	Average Delay (sec)
Grey Street / Breed Street	0.78	104	16.7
Grey Street / Franklin Street	0.79	97	20.6
Seymour Street / Franklin Street	0.51	43	15.9
Princes Highway / Breed Street / Shakespeare Street	1.00+	276	70.2
Princes Highway / Franklin Street	0.70	148	18.7
Princes Highway / Grey Street	1.00+	349	48.8
Seymour Street / Princes Highway / Whittaker Road	0.85	197	44.0

Table 4: Saturday Peak Hour SIDRA Intersection Analysis Summary

Intersection	Degree of Saturation	95 th ile Queue (m)	Average Delay (sec)
Grey Street / Breed Street	0.62	54	11.4
Grey Street / Franklin Street	0.75	85	19.2
Seymour Street / Franklin Street	0.51	40	16.3
Princes Highway / Breed Street / Shakespeare Street	0.64	129	32.4
Princes Highway / Franklin Street	0.64	108	19.9
Princes Highway / Grey Street	1.00+	165	30.4
Seymour Street / Princes Highway / Whittaker Road	0.69	121	37.9

Review of Tables 2, 3 and 4 indicates that generally there is capacity within the existing road network to accommodate some growth in existing traffic volumes. Some intersections do currently experience some queuing during the peak periods however the average delay times suggest that the queues keep clearing.

Notwithstanding the above the Princes Highway and Grey Street intersection is essentially at capacity and is unable to accommodate additional traffic. During the Friday AM period there is some additional capacity however during the Friday PM and Saturday peak periods the intersection operates at or above capacity (DOS 1.00+) with extensive queues being generated. These queues extend beyond the intersection and impact on the operation of other intersections such as the Princes Highway and Post Office Place intersection.

Also of note is the intersection of Princes Highway and Breed Street. During the Friday PM peak hour the intersection is at capacity (DOS 1.00+) however operates well within capacity outside this period although extensive queuing occurs on the southern approach disrupting the operation of the Shakespeare Street and Bank Street roundabout.

During each peak period aaSIDRA results indicates queues on the southern approach extend past the Shakespeare Street and Bank Street roundabout and therefore prevents this intersection operating appropriately.

In the locations noted above it is recommended that further studies be undertaken to assess the ability to undertake mitigating works to improve intersection operation.

For example the extension of the right turn lane from Princes Highway into Grey Street and the extension of the left turn lane from Grey Street to Princes Highway would improve intersection performance however a detailed design review is required to ascertain if sufficient road space is available to accommodate these changes.

Similarly the creation of double right turns at the Princes Highway and Breed Street intersection would improve intersection operation however it is unclear if these alterations can be readily made without acquisition of land.

It is therefore recommended that detailed design reviews of the above intersections be undertaken to

consider mitigating works to improve intersection operation.

It is noted that these mitigating works must be considered in conjunction with the future construction of the Traralgon Bypass. It is understood that the bypass will likely be constructed in approximately 20 years diverting some 30% of traffic away from the TAC. The extent of any mitigating works will therefore need to be balanced against the future reduction in traffic volumes and the associated changes in intersection capacities.

7.2 princes highway upgrading of traffic signals

VicRoads have recently invited tenders for the upgrading of traffic signals on the Princes Highway which includes the four signalised intersections within the study area. The works will include the installation of LED lanterns and new controllers.

These works are proposed to allow for better coordination between intersections to provide improved traffic flow and intersection capacity along the Princes Highway.

8 public consultation process and other identified issues

As part of the public consultation process the public were invited to attend a public information session between 7.00pm – 8.30pm at the DSE offices on Hotham Street on Wednesday 17th March 2010 through advertisements placed in the public classifieds in the Latrobe Valley Express in three issues in February/March 2010. Public were also invited through community bulletins and poster displays throughout the town centre.

A number of issues relating to traffic volumes were brought up by the general public and others in this session and are summarised below.

- The alignment of the future Traralgon bypass has been fixed to the south of the activity centre however construction and delivery is not likely to occur for a number of years;
- Provision of an east-west connection between Breed Street and Franklin Street to the north of the activity centre to divert traffic from Tyres Road;
- Traffic congestion occurs at peak times at the following intersections:
 - Franklin Street / Post Office Place;
 - Princes Highway / Breed Street / Hyland Highway;
 - Hyland Highway / Bank Street roundabout;
 - Grey Street / Franklin Street;
- Traffic congestion at school pick up and drop off times in vicinity of St Michaels primary school and Grey Street primary school;
- Safety concerns regarding traffic turning into Breed Street from both Seymour Street and Hotham Street due to vertical alignment (crest) of Breed Street;
- Princes Highway forms a barrier for pedestrian connection to Victory Park;
- Realignment of Princes Highway to allow better connection between the commercial precinct and Victory Park;
- Pedestrian safety;
 - Lack of mid road crossing points and size of existing medians;
 - Difficulties with crossing at roundabout;
 - Speed of traffic through the Traralgon CBD;



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- Bicycle safety;
 - No real safe paths through the CBD;
 - Need to link key recreational and open spaces;
 - Angle parking within the CBD makes bicycle parking dangerous.



9 public transport

There are a number of public transport options available for travelling within Traralgon, travelling to and from Traralgon in South Gippsland, and travelling between Traralgon and Melbourne. These services include a bus service from Sale railway station to Traralgon railway station operated by Dyson's, local bus services for the Traralgon Activity Centre operated by Latrobe Valley Buslines, South Gippsland & Bass Coast bus & V/Line coach services and Eastern Victoria train and coach V/Line services.

9.1 dyson's bus service

Dyson's operates a bus service which travels along a route from Sale to Heyfield to Traralgon on Mondays and Fridays only. In the morning a service departs from Sale railways station and arrives at Traralgon railway station at 10.20am. In the afternoon a service departs Traralgon railway station at 1.43pm and travels to Sale arriving at the railway station at 3.10pm.

The service does not run on public holidays. However, if a public holiday happens to fall on a Monday the service is then moved to Tuesday and if the public holiday falls on the Friday, the service is then moved to Thursday. A full timetable can be found at the end of this report in Appendix 4.

9.2 latrobe valley buslines services

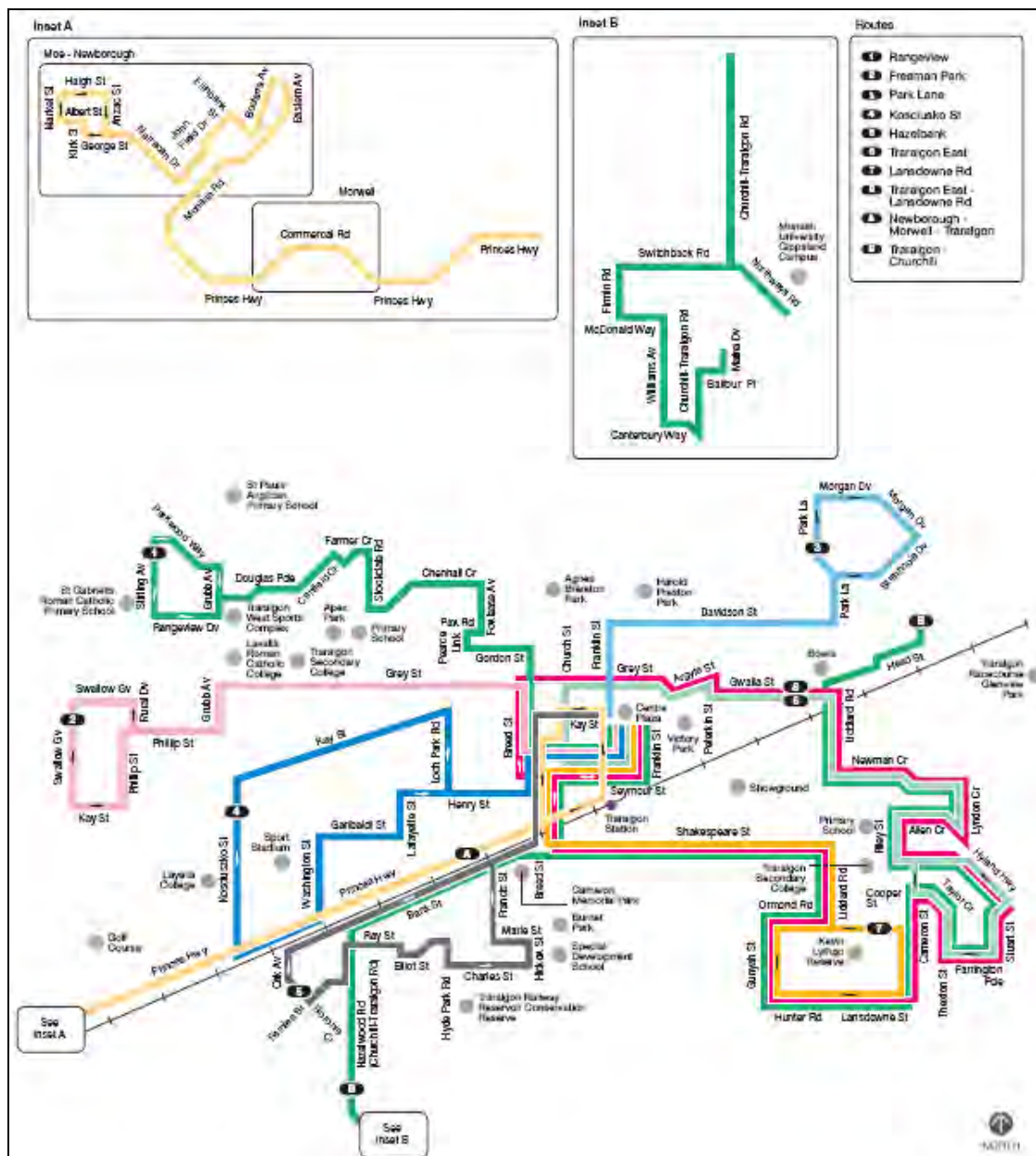
The Traralgon Activity Centre is well serviced by 8 inner city bus services that are provided in the Traralgon central activity district run by Latrobe Valley Buslines (LVBL). Services include Rangeview, Freeman Park, Park Lane, Kosciuszko Street, Hazelbank, Traralgon East Lansdowne Road, Traralgon East Lansdowne Road routes as well as Newborough-Morewell-Traralgon and Traralgon-Churchill services that run from the Traralgon city centre along Princes Highway towards their respective destinations. A summary of these services can be seen in

Figure 3, below.

Services generally begin at approximately 8:30am and run through to 5:00pm, Monday to Friday at approximately hourly intervals, with the exception of Route 3 and 5 which provide less frequent services.

Scheduled low floor bus services are also provided on each route at various times throughout the day. A more extensive and detailed review of the LVBL services can be found at the end of this report in Appendix 4. Limited services operate on Routes 1,2,4,6 and 7 on Saturdays only with no services running after early afternoon. There are no services at all on any of the routes on a Sunday.

Figure 3 Map of LVBL Bus Services



9.3 south gippsland and bass coast bus & v/line coach services

A range of bus and V/Line coach services operate in South Gippsland and Bass Coast as shown below in Figure 4. A closer look at Figure 4 indicates that there are two services in particular operating to and from Traralgon being the Yarram-Traralgon and Wonthaggi-Traralgon routes.

Figure 4 Map of South Gippsland and Bass Coast Bus & V/Line Coach Services





On the Traralgon-Yarram route, Mondays to Fridays, services include:

- One morning service which departs from Yarram at 7.45am and arrives at Traralgon station at 8.45m (arrives at Traralgon Plaza at 8:50am);
- One morning service which departs from Traralgon station at 9.15am heading back to Yarram at 10.20am;
- Two afternoon services departing from Traralgon at 2.00pm and 4.45pm and arriving at Yarram at 3.05pm and 5.50pm, respectively
- Two afternoon services departing from Yarram at 12.55pm and 3.35pm and arriving at Traralgon at 2.00pm and 4.00pm, respectively

On the Traralgon-Wonthaggi route, Mondays to Fridays, services include:

- Two morning services departing from Wonthaggi Bus Interchange at 6.35am and 9.40am and arriving at Traralgon station at 8.35am and 11:40am, respectively.
- One morning service which departs from Traralgon station at 9.30am and arrives at Wonthaggi Bus Interchange at 11:25am.
- One afternoon service which departs Wonthaggi Bus Interchange at 1.30pm and arrives at Traralgon station at 3.30pm.
- Two afternoon services departing from Traralgon at 12.24pm and 3.40pm and arriving at Wonthaggi Bus Interchange at 2.19pm and 5.35pm, respectively.

A more detailed review of these services can be found in Appendix 5 at the end of this report.

9.4 eastern victoria train and coach services

V/Line operates trains with passengers being able to connect with coach services at many points along the main train line to travel to destinations not directly accessible by rail. Train and coach services operate from Melbourne to Gippsland with coach services being accessible at Traralgon. A summary of the network map is provided in Figure 5 and 6.

Figure 5 V/Line Rail Network Map

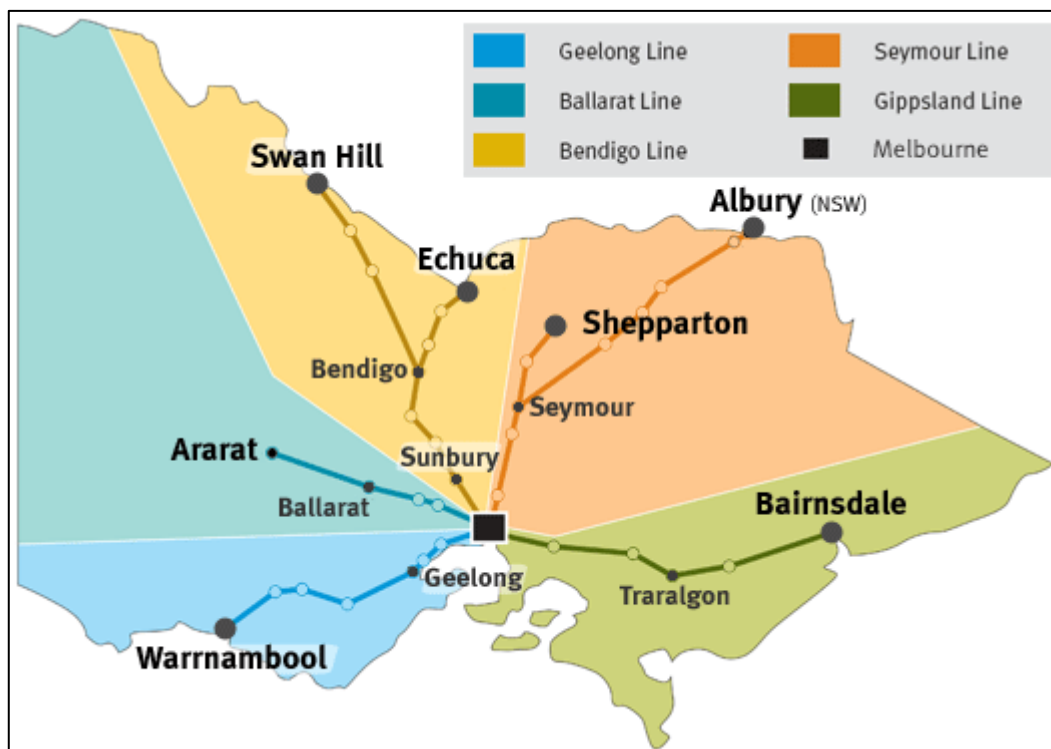


Figure 6 Map of Eastern Victoria Train and Coach Services



Services generally depart from Traralgon heading towards Melbourne commencing at 4:50am and running once per hour until 7:12pm in the evening. Services travelling from Melbourne to Traralgon commence at 6.44am and run until 11:30pm in approximately hourly intervals. The first train from Melbourne arrives in Traralgon at 9.00am. For a more detailed review of times, please refer to the timetables that can be found in Appendix 5 at the end of this report.



10 issues

Consultation that has taken place with a number of parties regarding public transport in and around the Traralgon Activity Centre with following issues being identified:

- *First train into Traralgon does not arrive until 9.00am which does not suit most office workers and students.*

This issue was raised by both Council staff and the general public during the consultation process. The matter was discussed with Tim Pianta who is the Regional Manager East for V/Line passenger services who indicated he has referred this onto their Timetable Manager for future consideration;

- *Latrobe Valley Buslines in discussions with the Department of Transport have requested an upgraded bus terminal on the north side of Post Office Place east of Franklin Street on the south side of Stockland Plaza to replace the existing terminal on Franklin Street.*

It is understood that discussions are still progressing between Latrobe Valley Bus Lines and the Department of Transport in relation to this matter;

- *Inadequacy of bus services generally both in terms of span and frequency of services.*

The issue of the limited bus services for Traralgon was raised by Latrobe Valley Bus Lines, Council staff and the general public during the consultation process. Information supplied by Latrobe Valley Bus Lines which is included in Appendix 5 indicates that bus services in the Latrobe Valley are lower than those of other regional centres in Victoria.

In the Victorian Transport Plan released by the Victorian Government in December 2008, an allocation of \$50 million in 2010 was announced to improve regional bus services. The document particularly highlighted bus services in Latrobe Valley to be targeted as a priority.

A review of bus operations within Latrobe Valley was completed for the Department of Transport by GHD in late 2009. To date despite a number of approaches to the Department of Transport details of the findings/recommendations of this study and funding arrangement have yet to be released.

The findings/recommendations of this study will have a major impact on the Traralgon Activity Centre in terms of new bus routes, stops, etc;

- *Load limit on Franklin Street crossing of Traralgon Creek is 8 tonnes which limits bus services*

operating in this area.

The Latrobe City is seeking to upgrade this bridge and subject to funding being available works on this will commence late in the 2010/2011 financial year with the balance of the works funded in the 2011/2012 financial year;

- *Latrobe Valley Buses have requested provision of right turn arrow at Franklin Street/Seymour Street signalled intersection.*

It is understood that this issue is being addressed in the current review of bus operations for the Latrobe Valley;

- *Provision of a late night bus "nightrider" service. It is understood that this was successfully trialled sometime ago but ceased as funds were not available to continue its operation.*

This issue was raised by Council staff, residents and Latrobe Valley Bus Lines and it is understood that this is also being addressed in the current review.

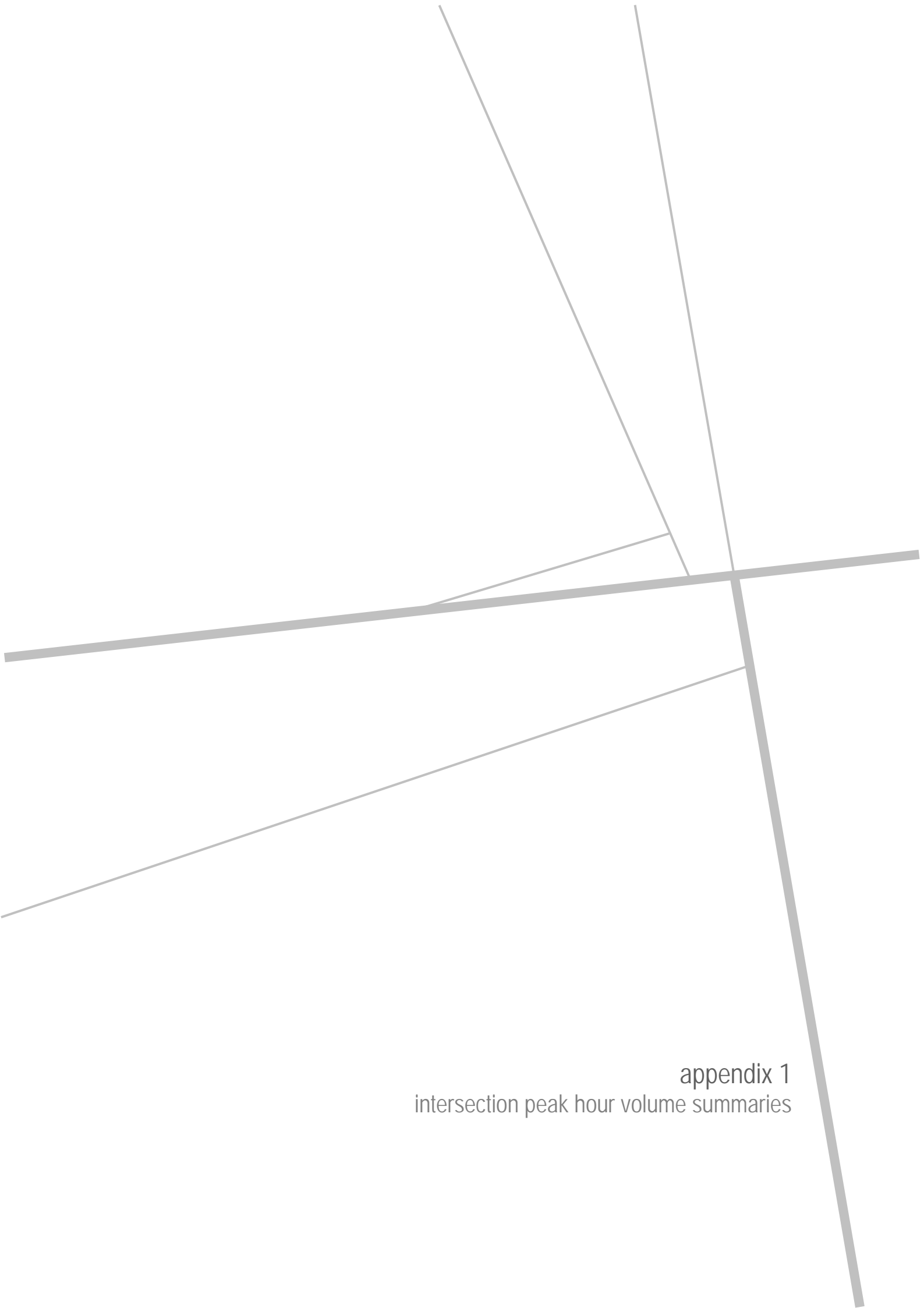
11 conclusions

Based on the foregoing analysis and summary of information in this report, suggested options for consideration include;

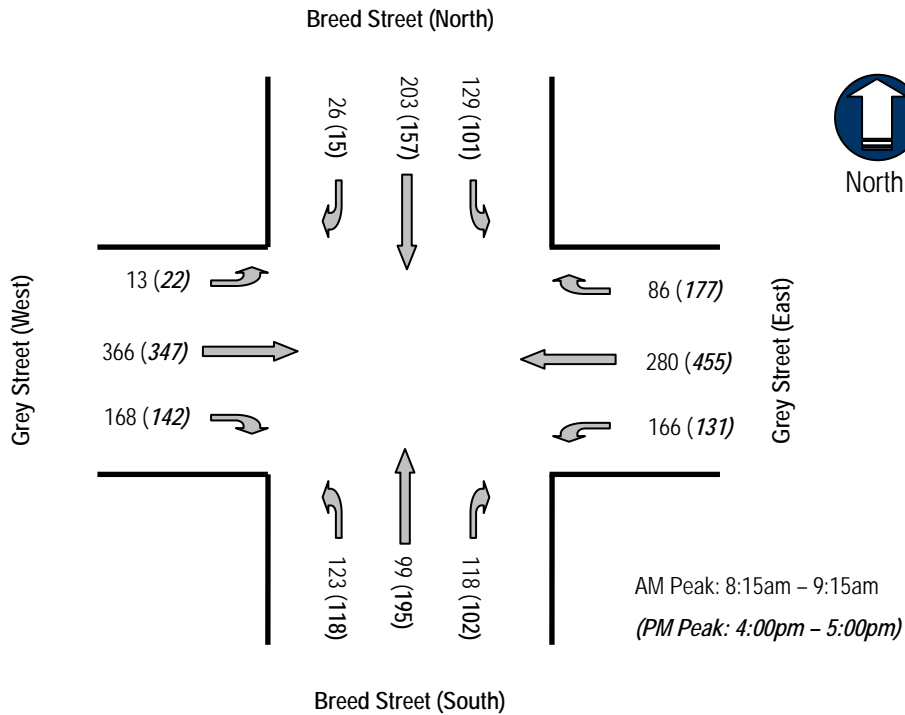
- The possibility of the intersection of Franklin Street and Post Office Place being signalised to reduce traffic congestion at this intersection caused by the high volume of pedestrian traffic;
- That the following intersections operate at or near capacity with significant delays and queues during peak times. Mitigating works to cater for any major increases in traffic volumes will be required at:
 - Princes Highway / Breed Street / Shakespeare Street;
 - Princes Highway / Grey Street;
- The proposal for a future east-west connection between Breed Street and Franklin Street to the north of the activity centre requires further investigation with regard to alignment, capacity and costs;
- Existing vertical alignment (crest) of Breed Street provides limited sight lines at both Seymour Street and Hotham Street intersections and modifications are required at these intersections to improve safety;
- The requirement for further investigation to assess improvements that can be made to pedestrian safety in the study area particularly at existing roundabout locations ;
- There is a requirement to improve bicycle facilities within the activity centre as discussed in the Latrobe City Bicycle Plan 2001-2010 and undertake further investigations as to the suitability of bicycle routes within the activity centre;
- Introduction of lower speed limit to be applied within the activity centre.
- Limited bus services are provided to service the Traralgon Activity Centre and there is a need to improve services both in terms of span and frequency of services.
- A recent review has been undertaken of bus operations in the Latrobe Valley, however at this stage Department of Transport have not released the findings/recommendations of this study. The

findings/recommendations of this review are seen as critical in terms of what changes are proposed to existing routes, the provision of new routes, stops and infrastructure to support the recommendations.

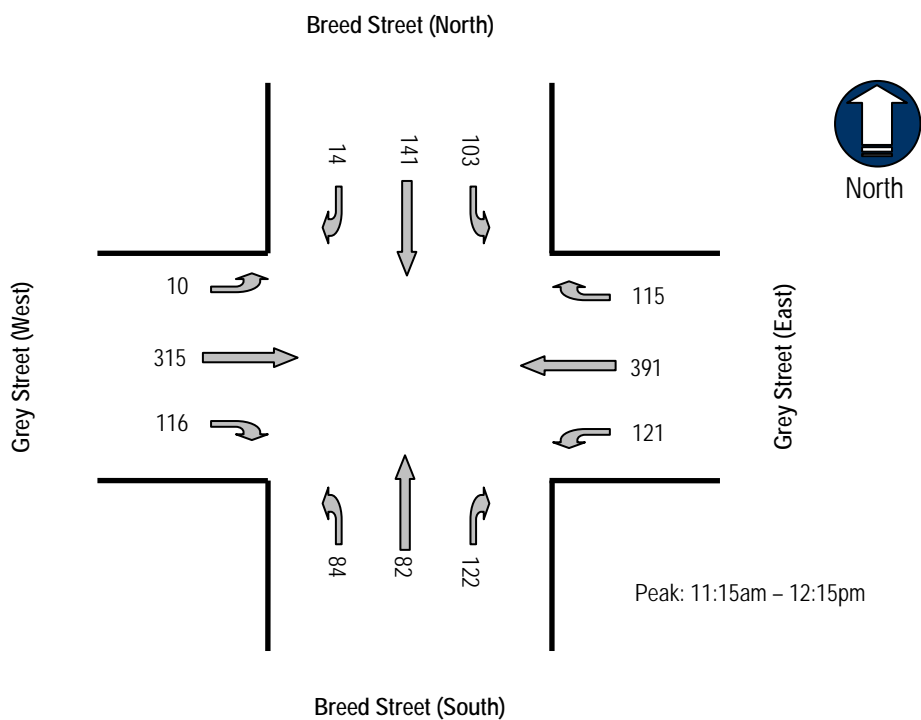
- Provision of an earlier train service to arrive in Traralgon at approximately 8:30am (currently a service arrives at 9:00am) to provide transport opportunities for workers, students, etc who have to arrive at a destination within Traralgon before 9:00am.



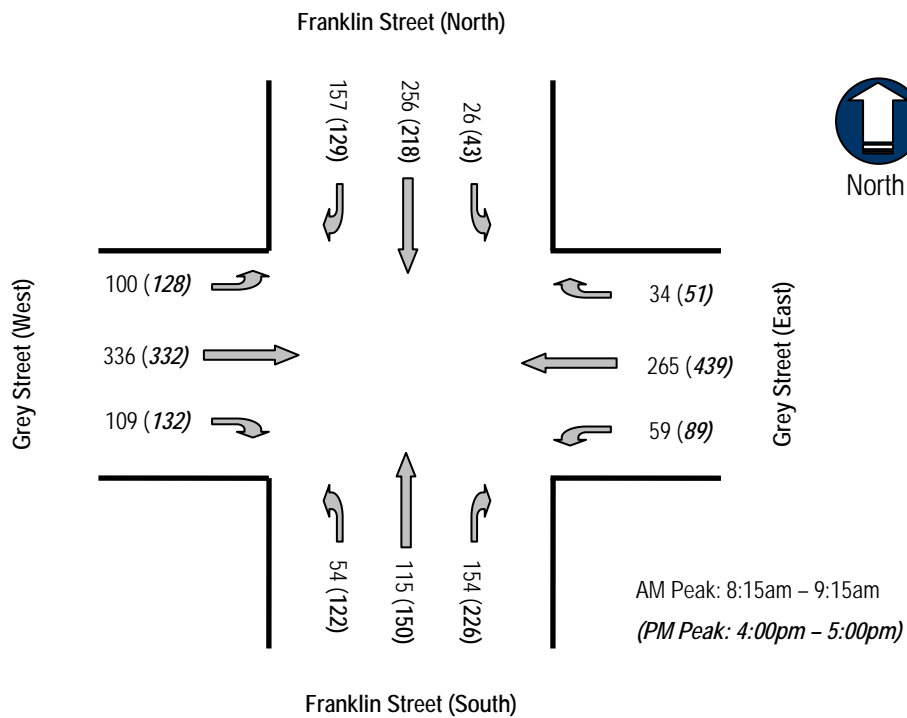
appendix 1
intersection peak hour volume summaries



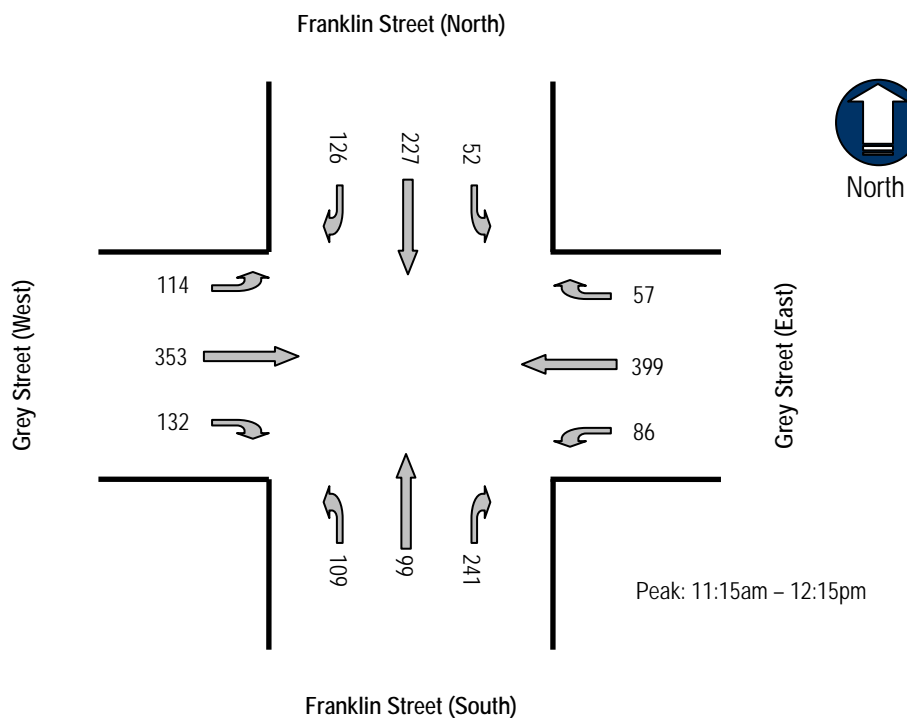
Grey Street and Breed Street Intersection – Friday 19/02/2010



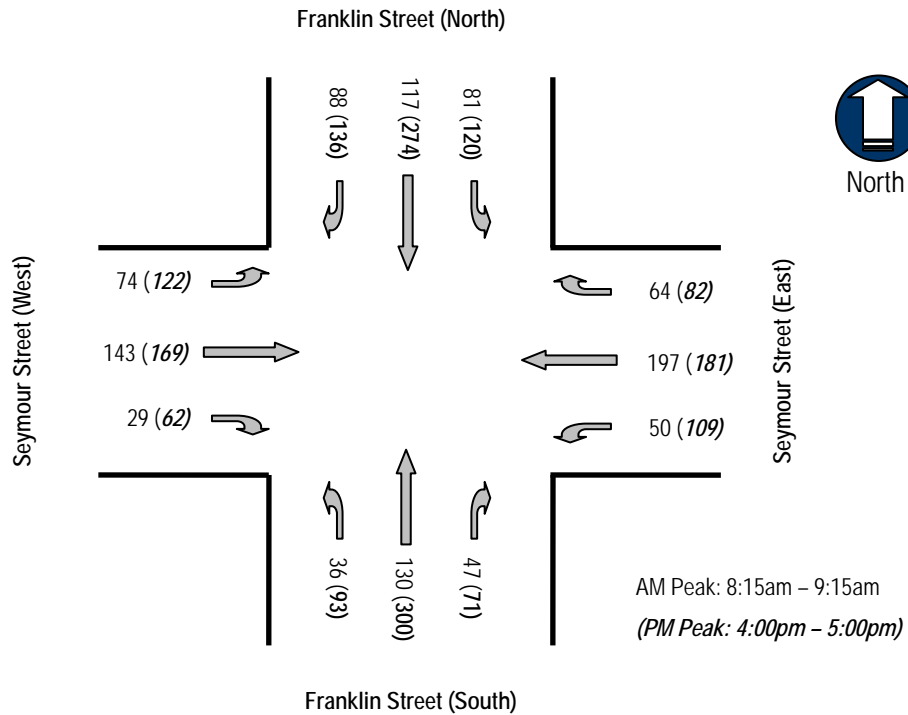
Grey Street and Breed Street Intersection – Saturday 20/02/2010



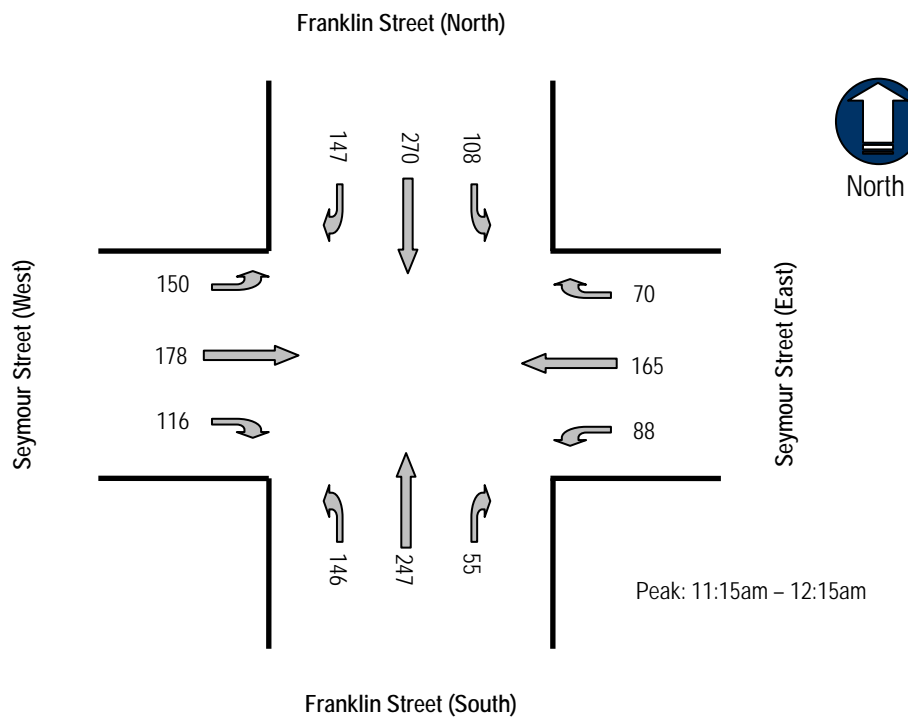
Grey Street and Franklin Street Intersection – Friday 19/02/2010



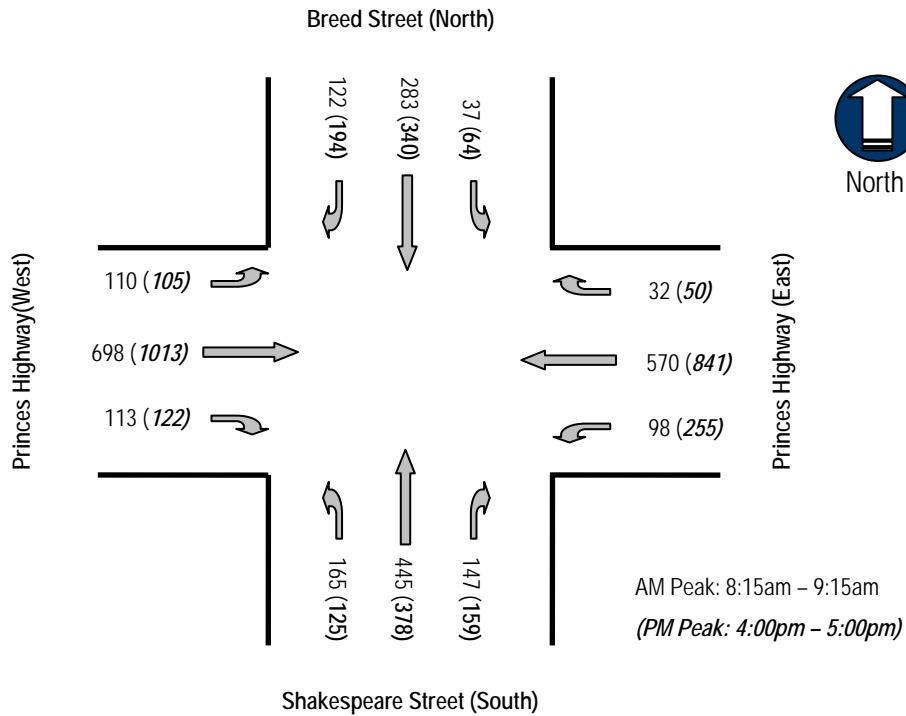
Grey Street and Franklin Street Intersection – Saturday 20/02/2010



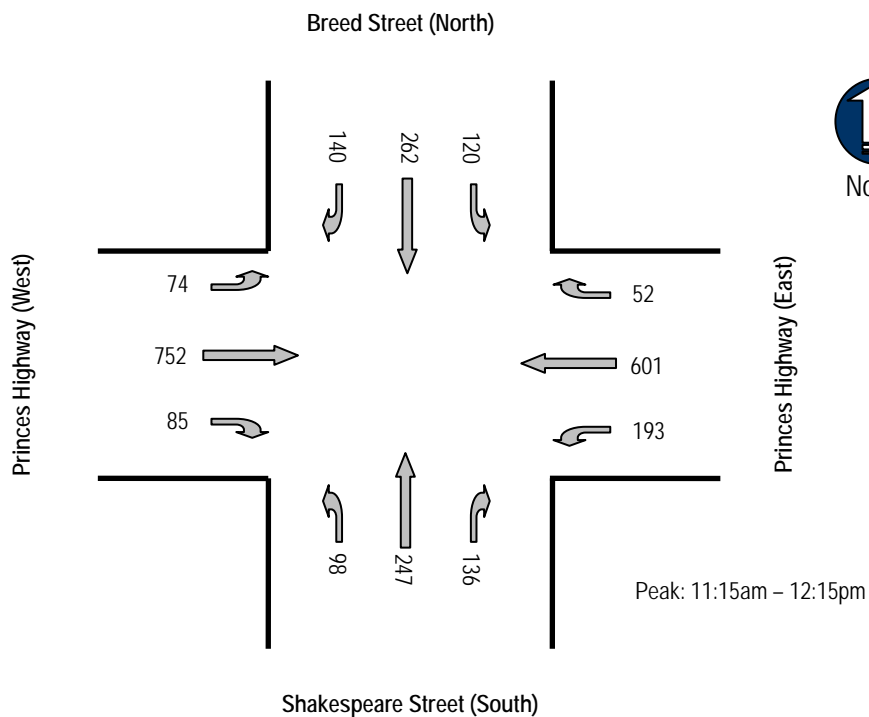
Seymour Street and Franklin Street Intersection – Friday 19/02/2010



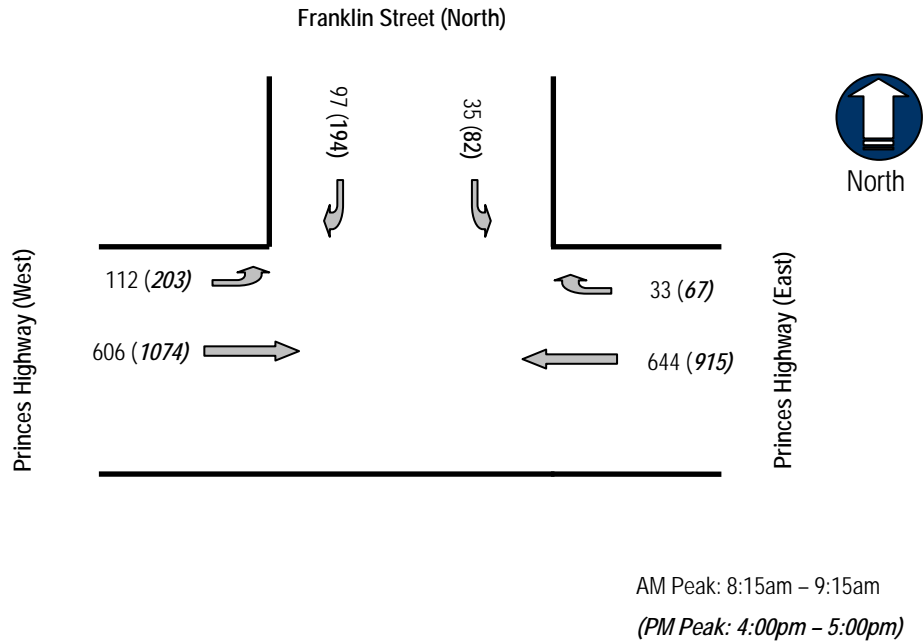
Seymour Street and Franklin Street Intersection – Saturday 20/02/2010



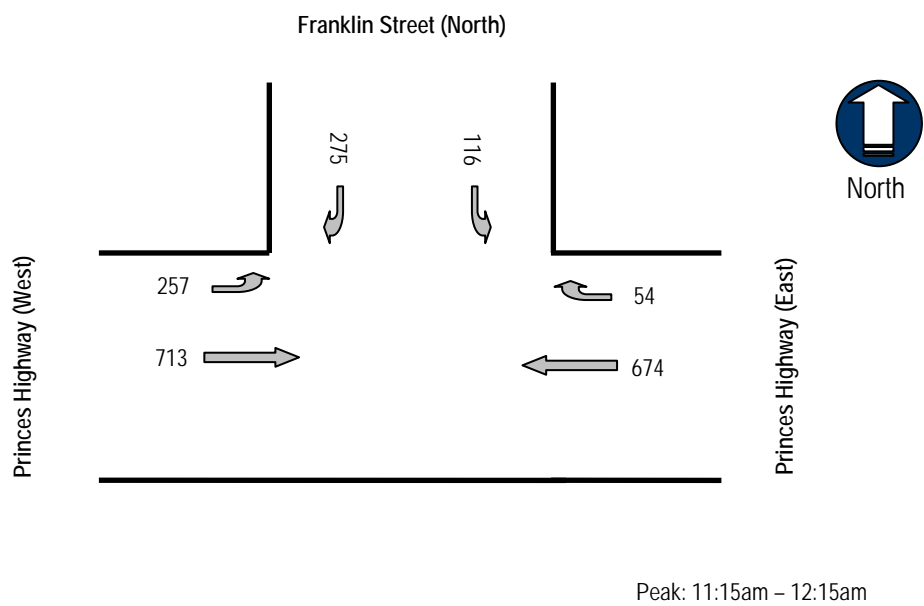
Princes Highway and Breed Street Intersection – Friday 19/02/2010



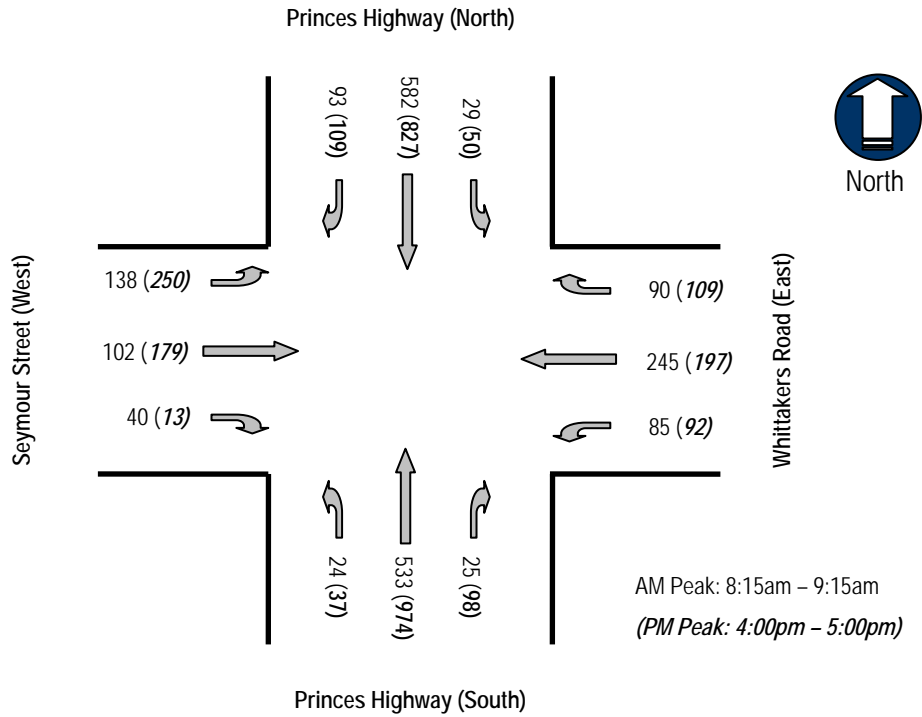
Princes Highway and Breed Street Intersection – Saturday 20/02/2010



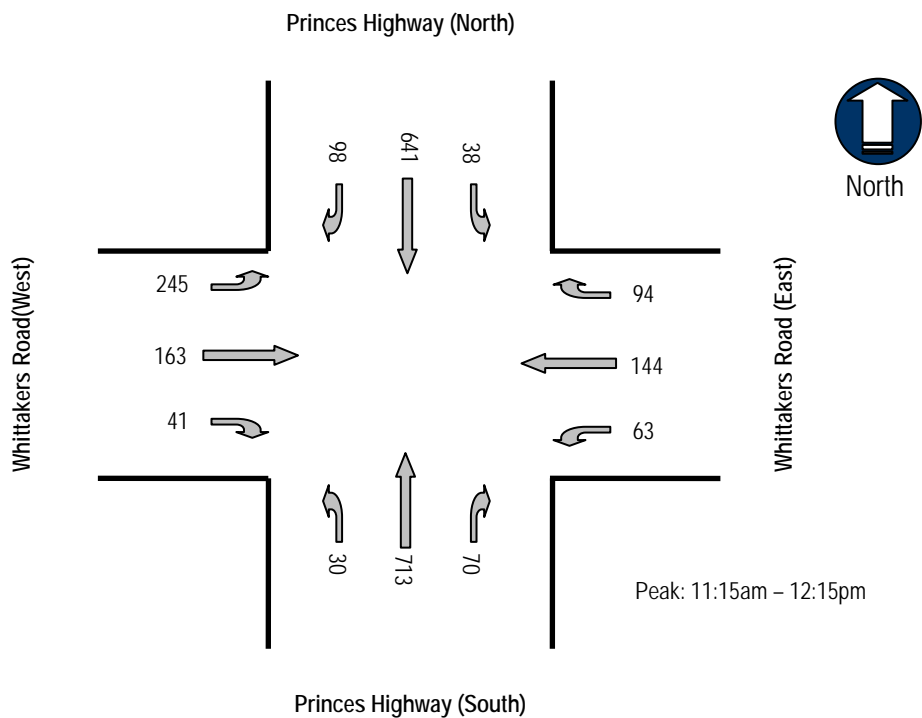
Princes Highway and Franklin Street Intersection – Friday 19/02/2010



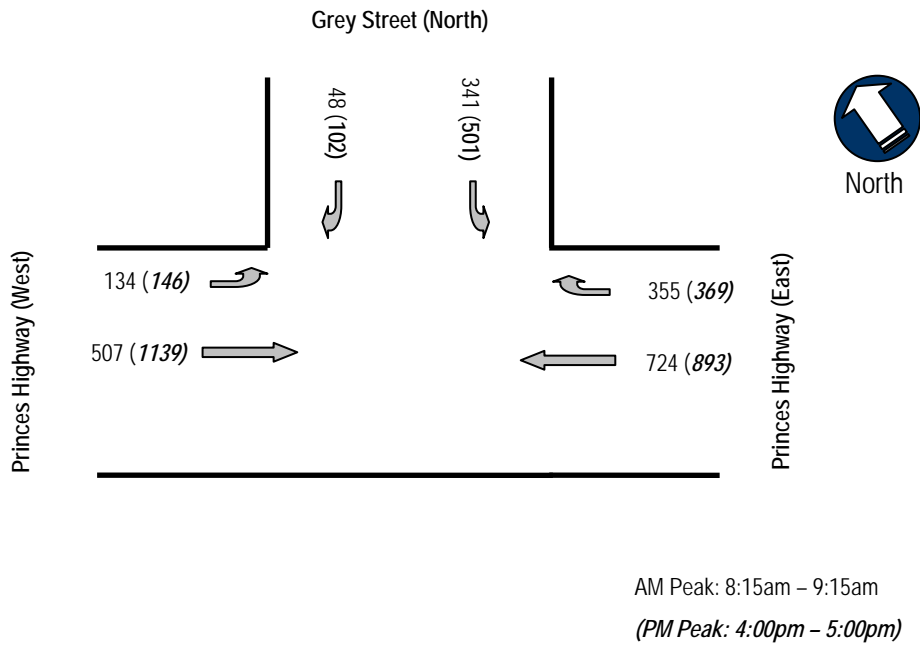
Princes Highway and Franklin Street Intersection – Saturday 20/02/2010



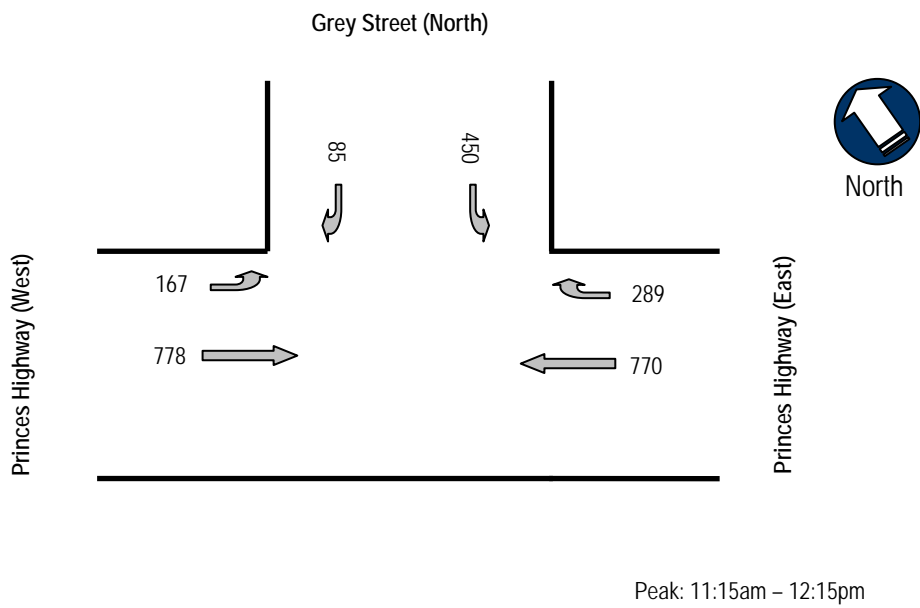
Princes Highway and Whittaker Road Intersection – Friday 19/02/2010



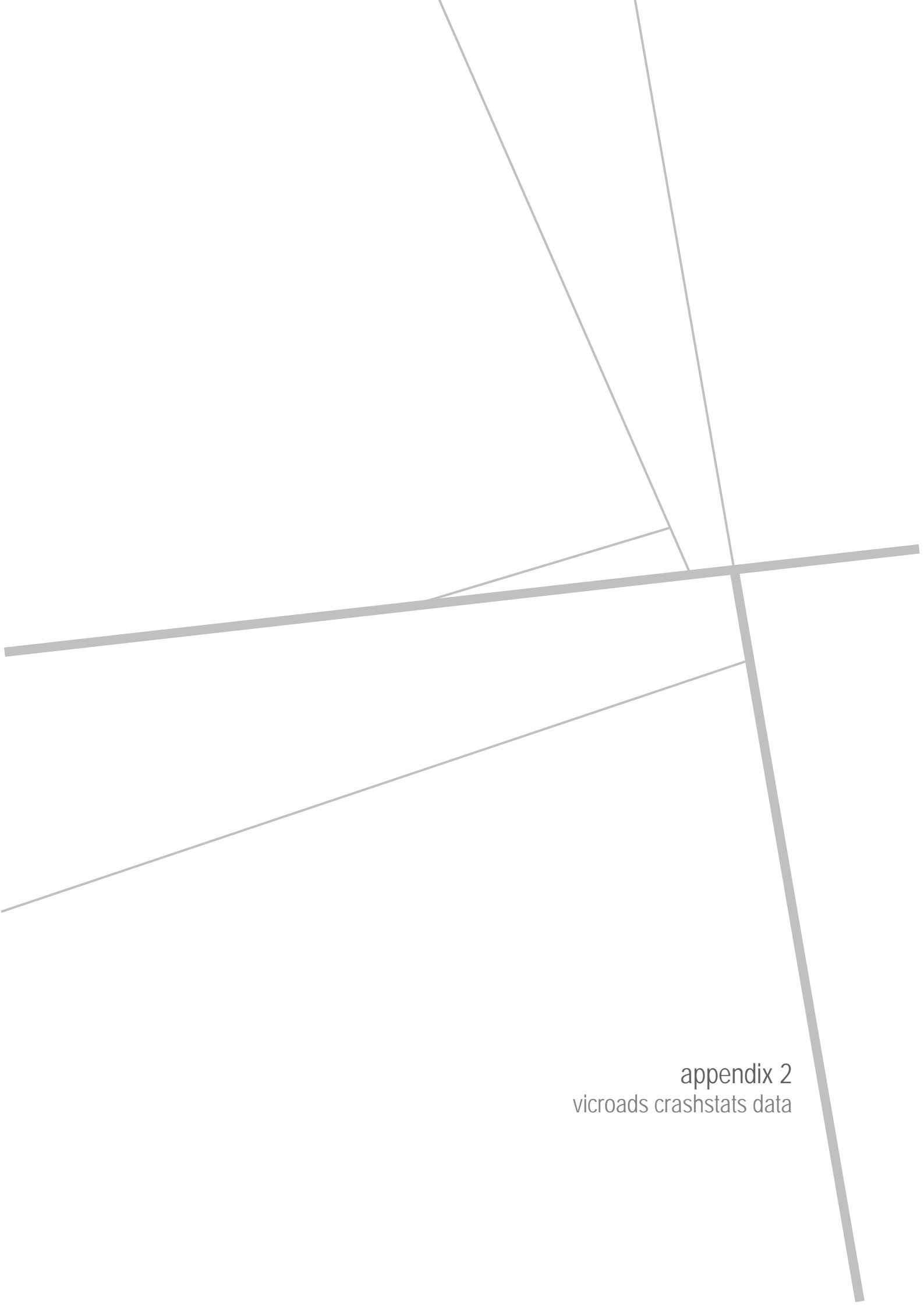
Princes Highway and Whittaker Road Intersection – Saturday 20/02/2010



Princes Highway and Grey Street Intersection – Friday 19/02/2010



Princes Highway and Grey Street Intersection – Saturday 20/02/2010



appendix 2
vicroads crashstats data

Road Crash Statistics: Victoria Accidents By Site

Page 1

Location is LGA(s): LATROBE; Query: Casualty accidents; Sites: On Princes Highway East (162.03 km) between Ethel Street and Mabel Street, On Breed Street (0.089 km) between Henry Street and , On Gordon Crescent (0.565 km) between Byron Street and Osborne Street, On Breed Street (0.684 km) between Tyers Road and Kay Street, On Post Office Place (0.179 km) between Franklin Street and Unnamed, On Seymour Street (0.782 km) between Franklin Street and , On Hotham Street (0.14 km) between Deakin Street and Church Street, On Kay Street (0.166 km) between Unnamed and Breed Street, On Princes Highway East (163.349 km) between Post Office Place and Tyers Road, On Seymour Street (0.882 km) between Franklin Street and , On Church Street (0.173 km) between Hotham Street and Service Street, On Hyland Hwy (0.592 km) between Curran Street and Morrison Street, On Franklin Street (0.338 km) between Post Office Place and Seymour Street, On Princes Highway East (162.202 km) between Mabel Street and Hyland Highway Inbound Cwy / Breed Street, On Tyers Road (0.834 km) between Byron Street and Breed Street, On Breed Street (0.016 km) between Bridges Avenue and Princes Highway East / Hyland Highway Inbound Cwy, On Breed Street (0.084 km) between Henry Street and , On Breed Street (0.019 km) between Breed Street and Bridges Avenue, On Church Street (0.222 km) between Seymour Street and Hotham Street, On Breed Street (0.066 km) between Henry Street and , On Seymour Street (0.777 km) between Franklin Street and , On Princes Highway East (162.287 km) between Mabel Street and Hyland Highway Inbound Cwy / Breed Street, On Churchill-Traralgon Road (17.343 km) between Francis Street and , On Tyers Road (0.309 km) between Franklin Street and Wright Street / Unnamed, On Kay Street (0.311 km) between Church Street and Franklin Street, On Seymour Street (0.823 km) between Franklin Street and , Intersection of Franklin Street and Seymour Street and Hotham Street, On Hotham Street (0.368 km) between Church Street and Franklin Street, Intersection of Princes Highway

Map Refs Road Number Km from start	Location (Road names)	SEVERITY				DCA GROUPS						OBJECT HIT Fence PoleTreeWall	ROAD		LIGHT		VEHICLE NUMBERS				YEARLY TREND				
		ALL Injury	Fatal	Serious	Other Injury	Pedes trian	Cross Traffic	Right Near	Right Against	Lost Control	Rear End		Dry	Wet	Day	Dark	Car	Truck	Motor Cycle	Bike	'05	'06	'07	'08	'09
VCD ED7 696 G5 5540 0.803 Km Latrobe	At Tyers Road & Breed Street	2			2		1	1					1	1	1		2		2		1		1		
VCD ED7 696 G5 5540 1.021 Km Latrobe	At Tyers Road & Byron Street	1		1										1		1		1				1			
VCD ED7 696 G5 114315 0.602 Km Latrobe	On Breed Street btw Tyers Road & Kay Street	2			2					1	1	1			2		1		3				2		
VCD ED7 696 G5 114315 0.807 Km Latrobe	At Breed Street & Moore Street	3			3	1	2						2	1	3		5				1	1			1
VCD ED7 696 G5 146298 0.565 Km Latrobe	On Gordon Crescent btw Byron Street & Osborne Street	1		1		1										1	1					1			
VCD ED7 696 G5 160975 0.146 Km Latrobe	On Kay Street btw Unnamed & Breed Street	1		1						1			1		1				1	1					
VCD ED7 696 G6 114315 0.082 Km Latrobe	On Breed Street btw Henry Street & Breed Street	1			1									1	1		4						1		
VCD ED7 696 G6 114315 0.133 Km Latrobe	At Breed Street & Henry Street	1			1						1		1	1			3					1			



Road Crash Statistics: Victoria Accidents By Site

Page 2

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Map Refs Road Number Km from start	Location (Road names)	SEVERITY				DCA GROUPS						OBJECT HIT PoleTreeWall	ROAD		LIGHT		VEHICLE NUMBERS				YEARLY TREND				
		ALL Injury	Fatal	Serious	Other Injury	Pedes trian	Cross Traffic	Right Near	Right Against	Lost Control	Rear End		Dry	Wet	Day	Dark	Car	Truck	Motor Cycle	Bike	'05	'06	'07	'08	'09
VCD ED7 696 G7 2170 0.007 Km Latrobe	At Hyland Highway Inbound Cwy & Princes Highway East	2		1	1					1	1			1	1	2		3				1	1		
VCD ED7 696 G7 2170 0.229 Km Latrobe	At Hyland Highway Auxiliary Rd & Churchill-Traralgon Road	1			1						1			1		1		2					1		
VCD ED7 696 G7 2510 162.030 Km Latrobe	On Princes Highway East btw Ethel Street & Mabel Street	1		1						1				1	1		2						1		
VCD ED7 696 H5 5540 0.393 Km Latrobe	At Tyers Road & Franklin Street	3			3		1		1		1			3		2		6				1		2	
VCD ED7 696 H5 114315 0.902 Km Latrobe	At Breed Street & Gordon Crescent	1			1			1						1		1		2				1			
VCD ED7 696 H5 114315 0.986 Km Latrobe	On Breed Street btw Anderson Street & Gordon Crescent	1			1					1			1		1		1						1		
VCD ED7 696 H5 142048 0.750 Km Latrobe	At Franklin Street & Gordon Crescent	1			1						1			1		1		2				1			
VCD ED7 696 H6 2510 162.788 Km Latrobe	At Princes Highway East & Franklin Street	4			4				1		3			3	1	3		7	2			2	1		1

Road Crash Statistics: Victoria Accidents By Site

Page 3

Location is LGA(s): LATROBE; Query: Casualty accidents; Sites: On Princes Highway East (162.03 km) between Ethel Street and Mabel Street, On Breed Street (0.089 km) between Henry Street and , On Gordon Crescent (0.565 km) between Byron Street and Osborne Street, On Breed Street (0.684 km) between Tyers Road and Kay Street, On Post Office Place (0.179 km) between Franklin Street and Unnamed, On Seymour Street (0.762 km) between Franklin Street and , On Hotham Street (0.14 km) between Deakin Street and Church Street, On Kay Street (0.166 km) between Unnamed and Breed Street, On Princes Highway East (163.349 km) between Post Office Place and Tyers Road, On Seymour Street (0.852 km) between Franklin Street and , On Church Street (0.173 km) between Hotham Street and Service Street, On Hyland Hwy (0.592 km) between Curran Street and Morrison Street, On Franklin Street (0.338 km) between Post Office Place and Seymour Street, On Princes Highway East (162.202 km) between Mabel Street and Hyland Highway Inbound Cwy / Breed Street, On Tyers Road (0.834 km) between Byron Street and Breed Street, On Breed Street (0.016 km) between Bridges Avenue and Princes Highway East / Hyland Highway Inbound Cwy, On Breed Street (0.084 km) between Henry Street and , On Breed Street (0.019 km) between Breed Street and Bridges Avenue, On Church Street (0.222 km) between Seymour Street and Hotham Street, On Breed Street (0.066 km) between Henry Street and , On Seymour Street (0.777 km) between Franklin Street and , On Princes Highway East (162.287 km) between Mabel Street and Hyland Highway Inbound Cwy / Breed Street, On Churchill-Traralgon Road (17.343 km) between Francis Street and , On Tyers Road (0.309 km) between Franklin Street and Wright Street / Unnamed, On Kay Street (0.311 km) between Church Street and Franklin Street, On Seymour Street (0.823 km) between Franklin Street and , Intersection of Franklin Street and Seymour Street and Hotham Street, On Hotham Street (0.368 km) between Church Street and Franklin Street, Intersection of Princes Highway

Map Refs Road Number Km from start	Location (Road names)	SEVERITY				DCA GROUPS					OBJECT HIT			ROAD		LIGHT		VEHICLE NUMBERS				YEARLY TREND				
		ALL	Fatal	Serious	Other	Pedes	Cross	Right	Right	Lost	Rear	Pole	Fence	Dry	Wet	Day	Dark	Car	Truck	Cycle	Bike	'05	'06	'07	'08	'09
VCD ED7 696 H6 2510 162.788 Km Latrobe	At Princes Highway East Inbound Cwy & Franklin Street	1		1		1								1		1		1						1		
VCD ED7 696 H6 122882 0.179 Km Latrobe	On Church Street btw Hotham Street & Service Street	1			1	1									1	1		1				1				
VCD ED7 696 H6 122882 0.203 Km Latrobe	At Church Street & Hotham Street	2			2	2								2		2		1				1	1			
VCD ED7 696 H6 130526 0.242 Km Latrobe	At Deakin Street & Hotham Street	1			1	1								1		1		1						1		
VCD ED7 696 H6 142048 0.098 Km Latrobe	At Franklin Street & Hotham Street	1			1					1				1		1		1				1				
VCD ED7 696 H6 142048 0.188 Km Latrobe	On Franklin Street btw Seymour Street & Hotham Street	1			1	1									1	1		1						1		
VCD ED7 696 H6 142048 0.229 Km Latrobe	At Franklin Street & Seymour Street	2			2	1				1				2		2		2	1				2			
VCD ED7 696 H6 142048 0.387 Km Latrobe	At Franklin Street & Kay Street	2			2					1	1	1		2		2		4				1			1	

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Road Crash Statistics: Victoria Accidents By Site

Page 4

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		ALL injury	Fatal	Serious	Other Injury	Pedes trian	Cross Traffic	Right Near	Right Against	Lost Control	Real End		Dry	Wet	Day	Dark	Car	Truck	Motor Cycle	Bike	'05	'06	'07	'08	'09
VCD ED7 696 H6 155265 0.140 Km Latrobe	On Hotham Street btw Deakin Street & Church Street	1			1								1		1		1		1						
VCD ED7 696 H6 155265 0.217 Km Latrobe	On Hotham Street btw Church Street & Franklin Street	1		1						1			1		1		2						1		
VCD ED7 696 J6 194242 0.101 Km Latrobe	On Post Office Place btw Franklin Street & Unnamed	1			1	1							1		1		1				1				
VCD ED7 696 H6 205597 0.804 Km Latrobe	On Seymour Street btw Franklin Street & Seymour Street	2		1	1	2							1	1	2		2			1	1				
VCD ED7 696 H7 2170 0.606 Km Latrobe	On Hyland Hwy btw Curran Street & Morrison Street	1			1				1				1		1		2			1					
VCD ED7 696 H7 2510 162.426 Km Latrobe	At Princes Highway East Inbound Cwy & Deakin Street	1		1									1		1		1		1				1		
VCD ED7 696 H7 2510 162.427 Km Latrobe	At Princes Highway East & Deakin Street	1		1									1		1		1	1			1				
VCD ED7 696 J5 5540 0.070 Km Latrobe	On Tyers Road btw Wright Street & Princes Highway East	1		1						1	1		1		1		1						1		



Road Crash Statistics: Victoria Accidents By Site

Page 5

Location is LGA(s): LATROBE; Query: Casualty accidents; Sites: On Princes Highway East (162.03 km) between Ethel Street and Mabel Street, On Breed Street (0.089 km) between Henry Street and , On Gordon Crescent (0.565 km) between Byron Street and Osborne Street, On Breed Street (0.684 km) between Tyers Road and Kay Street, On Post Office Place (0.179 km) between Franklin Street and Unnamed, On Seymour Street (0.782 km) between Franklin Street and , On Hotham Street (0.14 km) between Deakin Street and Church Street, On Kay Street (0.166 km) between Unnamed and Breed Street, On Princes Highway East (163.349 km) between Post Office Place and Tyers Road, On Seymour Street (0.882 km) between Franklin Street and , On Church Street (0.173 km) between Hotham Street and Service Street, On Hyland Hwy (0.592 km) between Curran Street and Morrison Street, On Franklin Street (0.338 km) between Post Office Place and Seymour Street, On Princes Highway East (162.202 km) between Mabel Street and Hyland Highway Inbound Cwy / Breed Street, On Tyers Road (0.834 km) between Byron Street and Breed Street, On Breed Street (0.016 km) between Bridges Avenue and Princes Highway East / Hyland Highway Inbound Cwy, On Breed Street (0.084 km) between Henry Street and , On Breed Street (0.019 km) between Breed Street and Bridges Avenue, On Church Street (0.222 km) between Seymour Street and Hotham Street, On Breed Street (0.066 km) between Henry Street and , On Seymour Street (0.777 km) between Franklin Street and , On Princes Highway East (162.287 km) between Mabel Street and Hyland Highway Inbound Cwy / Breed Street, On Churchill-Traralgon Road (17.343 km) between Francis Street and , On Tyers Road (0.309 km) between Franklin Street and Wright Street / Unnamed, On Kay Street (0.311 km) between Church Street and Franklin Street, On Seymour Street (0.823 km) between Franklin Street and , Intersection of Franklin Street and Seymour Street and Hotham Street, On Hotham Street (0.368 km) between Church Street and Franklin Street, Intersection of Princes Highway

Map Refs Road Number Km from start	Location (Road names)	SEVERITY			DCA GROUPS						OBJECT HIT		ROAD		LIGHT		VEHICLE NUMBERS				YEARLY TREND					
		ALL Injury	Fatal	Serious Other Injury	Pedes trian	Cross Traffic	Right Near	Right Against	Lost Control	Rear End	Pole	Tree	Fence Wall	Dry	Wet	Day	Dark	Car	Truck	Motor Cycle	Bike	'05	'06	'07	'08	'09
VCD ED7 696 J6 2510 163.162 Km Latrobe	At & Princes Highway East Seymour Street	1		1					1				1		1		2							1		
VCD ED7 696 J6 2510 163.162 Km Latrobe	At & Princes Highway East Seymour Street	1		1	1								1		1		3						1			
VCD ED7 696 J6 2510 163.312 Km Latrobe	At & Princes Highway East Post Office Place	5	2	3		2	1						5		4		7		2			3	2			
VCD ED7 696 J6 2510 163.349 Km Latrobe	On Princes Highway East btw Post Office Place & Tyers Road	1		1				1			1		1				1				1					
VCD ED7 696 J6 2510 163.414 Km Latrobe	At & Princes Highway East Tyers Road	1		1					1				1		1		2				1					
VCD ED7 696 J6 2510 163.415 Km Latrobe	At & Princes Highway East Inbound Cwy Tyers Road	2		1	1				2					1	2		2	2					2			
VCD ED7 696 J6 168858 0.125 Km Latrobe	At & Livingstone Street Seymour Street	1		1									1		1		3				1					
Totals:		58	14	44	12	5	4	4	10	15	2	2	1	40	16	41	11	86	5	3	6	14	19	16	8	1



Road Crash Statistics: Victoria Accidents By Site

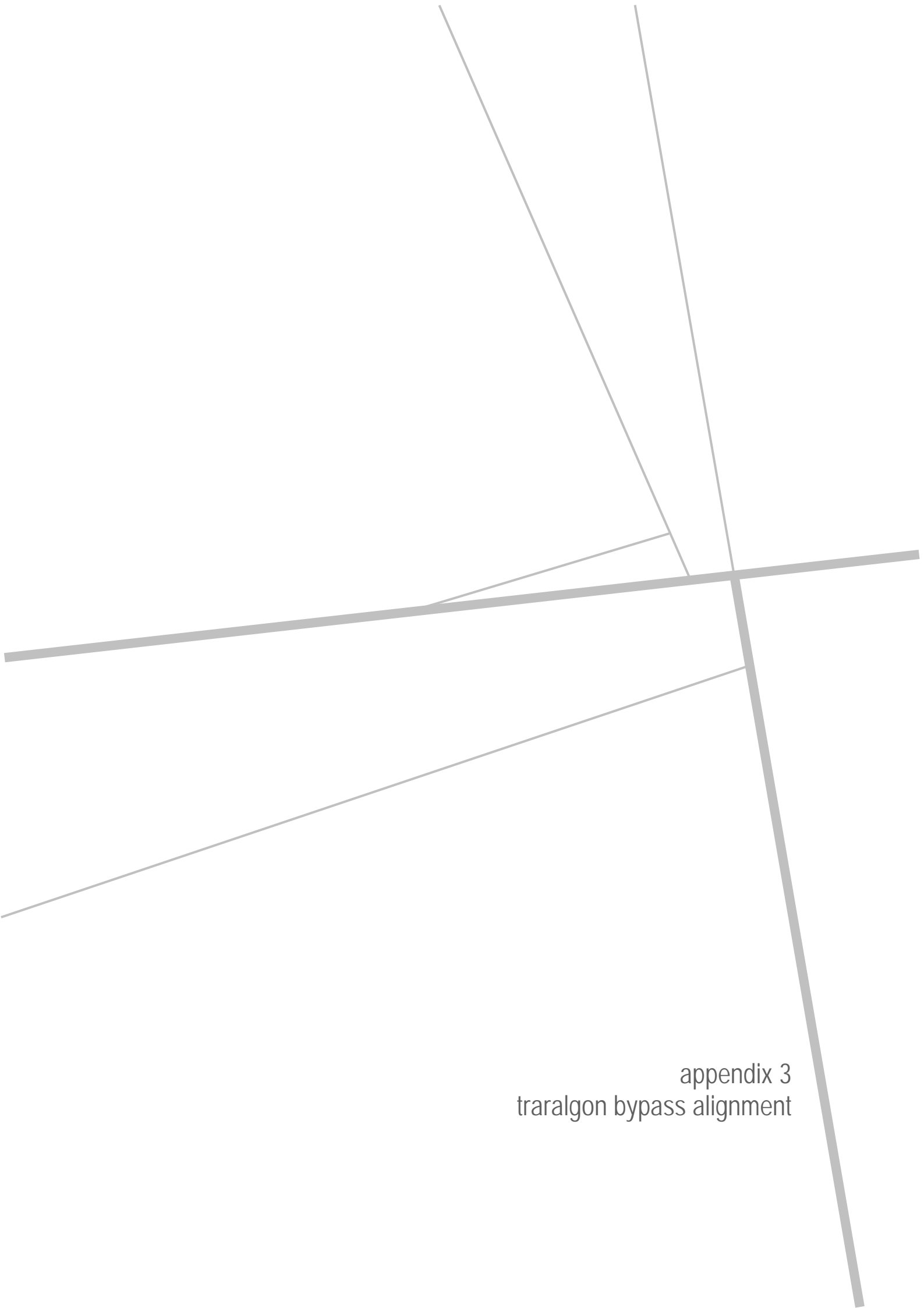
Location is LGA(s); LATROBE: Query: Casualty accidents: Sites: On Princes Highway East (162.03 km) between Ethel Street and Mabel Street, On Breed Street (0.089 km) between Henry Street and , On Gordon Crescent (0.565 km) between Byron Street and Osborne Street, On Breed Street (0.684 km) between Tyers Road and Kay Street, On Post Office Place (0.179 km) between Franklin Street and Unnamed, On Seymour Street (0.782 km) between Franklin Street and , On Hotham Street (0.14 km) between Deakin Street and Church Street, On Kay Street (0.166 km) between Unnamed and Breed Street, On Princes Highway East (163.349 km) between Post Office Place and Tyers Road, On Seymour Street (0.882 km) between Franklin Street and , On Church Street (0.173 km) between Hotham Street and Service Street, On Hyland Hwy (0.592 km) between Curran Street and Morrison Street, On Franklin Street (0.338 km) between Post Office Place and Seymour Street, On Princes Highway East (162.202 km) between Mabel Street and Hyland Highway Inbound Cwy / Breed Street, On Tyers Road (0.834 km) between Byron Street and Breed Street, On Breed Street (0.016 km) between Bridges Avenue and Princes Highway East / Hyland Highway Inbound Cwy, On Breed Street (0.084 km) between Henry Street and , On Breed Street (0.019 km) between Breed Street and Bridges Avenue, On Church Street (0.222 km) between Seymour Street and Hotham Street, On Breed Street (0.066 km) between Henry Street and , On Seymour Street (0.777 km) between Franklin Street and , On Princes Highway East (162.287 km) between Mabel Street and Hyland Highway Inbound Cwy / Breed Street, On Churchill-Traralgon Road (17.343 km) between Francis Street and , On Tyers Road (0.309 km) between Franklin Street and Wright Street / Unnamed, On Kay Street (0.311 km) between Church Street and Franklin Street, On Seymour Street (0.823 km) between Franklin Street and , Intersection of Franklin Street and Seymour Street and Hotham Street, On Hotham Street (0.368 km) between Church Street and Franklin Street, Intersection of Princes Highway

Map Refs Road Number Km from start	Location (Road names)	SEVERITY				DCA GROUPS					OBJECT HIT Fence PoleTreeWall	ROAD		LIGHT		VEHICLE NUMBERS				YEARLY TREND				
		ALL	Fatal	Serious	Other	Pedes	Cross	Right	Right	Lost	Rear	Dry	Wet	Day	Dark	Car	Truck	Cycle	Bike	'05	'06	'07	'08	'09

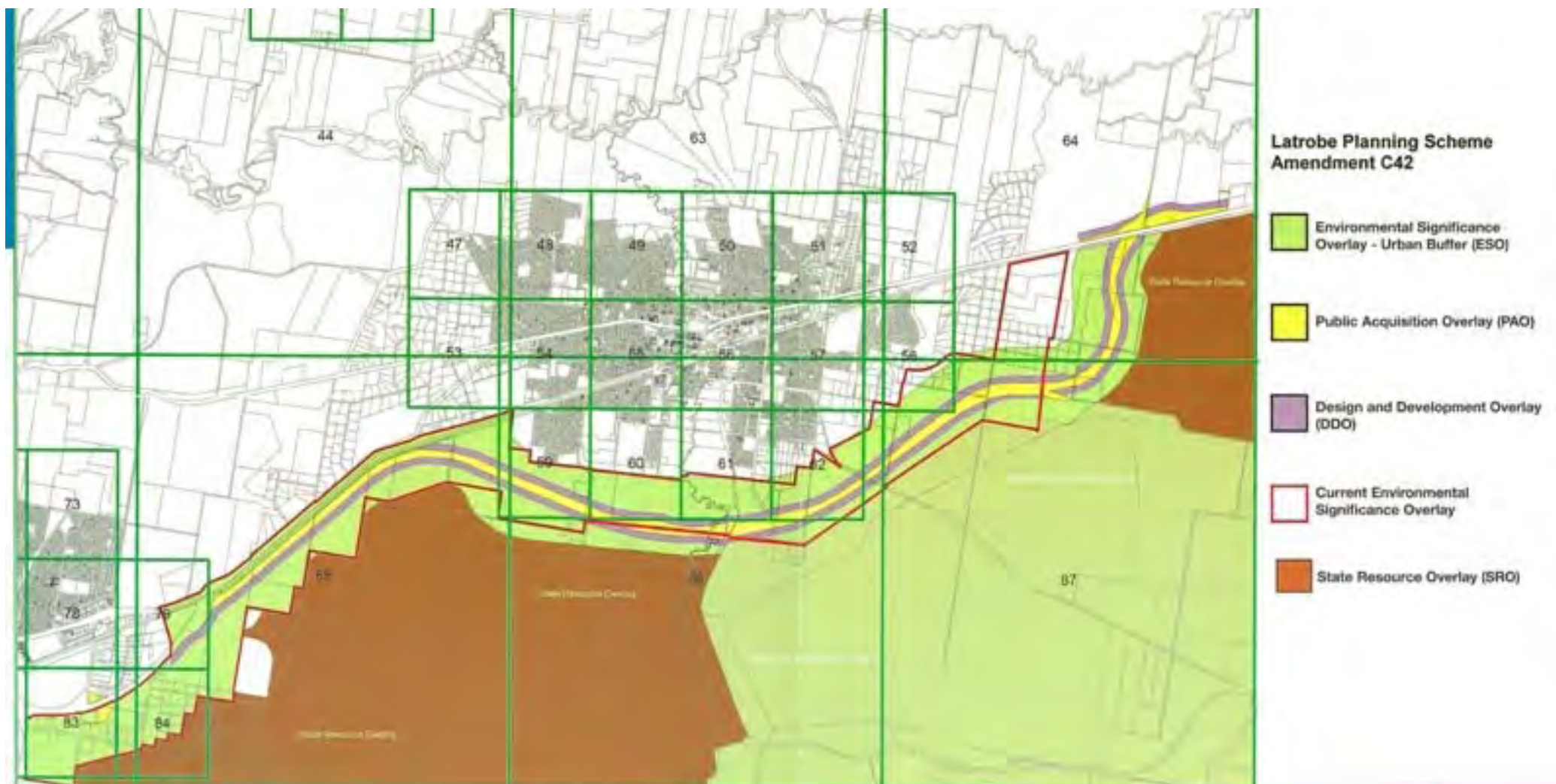
Note:

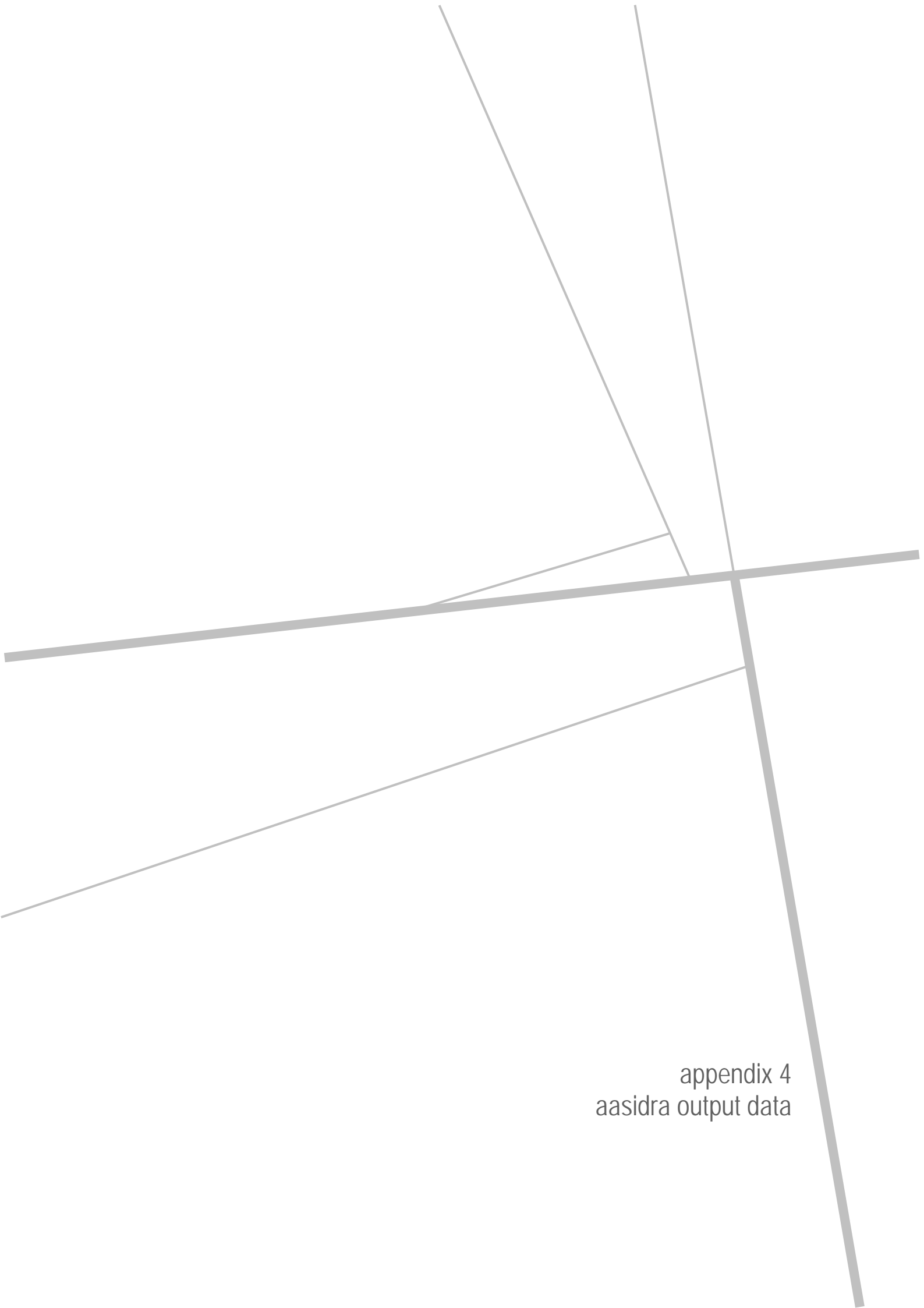
Object Hit: Only most common categories listed. An animal or object is not his in every crash.
Road Condition: Only dry and wet provided, other excluded.
Accident numbers are tallied within each category except for VEHICLE subsection where number and type of vehicles within the accident are tallied.

The crashes on roads that make up local government area (lga) borders are allocated to both lgas. Double counting only occurs when two or more lgas are queried separately (not together).



appendix 3
traralgon bypass alignment





appendix 4
aasidra output data

MOVEMENT SUMMARY

Site: AM FRI Breed Street - Grey Street

Breed Street / Grey Street Fri AM Peak Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Breed Street											
1	L	123	2.0	0.409	10.6	LOS B	3.8	27.0	0.75	0.77	32.0
2	T	99	2.0	0.409	9.8	LOS A	3.8	27.0	0.75	0.75	31.6
3	R	118	2.0	0.410	14.4	LOS B	3.8	27.0	0.75	0.78	29.5
Approach		340	2.0	0.409	11.7	LOS B	3.8	27.0	0.75	0.77	30.9
East Grey Street											
4	L	166	2.0	0.622	13.6	LOS B	7.9	55.9	0.86	0.90	32.4
5	T	280	2.0	0.621	12.5	LOS B	7.9	55.9	0.86	0.89	32.8
6	R	86	2.0	0.623	17.1	LOS B	7.9	55.9	0.86	0.88	30.4
Approach		532	2.0	0.621	13.6	LOS B	7.9	55.9	0.86	0.89	32.3
North Breed Street											
7	L	129	2.0	0.561	16.8	LOS B	6.4	45.6	0.93	1.03	41.4
8	T	203	2.0	0.562	15.7	LOS B	6.4	45.6	0.93	1.03	41.7
9	R	26	2.0	0.565	20.3	LOS C	6.4	45.6	0.93	0.95	39.7
Approach		358	2.0	0.562	16.4	LOS C	6.4	45.6	0.93	1.02	41.4
West Grey Street											
10	L	13	2.0	0.565	11.0	LOS B	6.3	45.2	0.76	0.77	46.3
11	T	366	2.0	0.569	9.9	LOS A	6.3	45.2	0.76	0.74	46.2
12	R	168	2.0	0.569	14.5	LOS B	6.3	45.2	0.76	0.78	43.9
Approach		547	2.0	0.569	11.4	LOS B	6.3	45.2	0.76	0.76	45.5
All Vehicles		1777	2.0	0.623	13.1	LOS B	7.9	55.9	0.82	0.85	39.6

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

Processed: Friday, 23 April 2010 9:38:22 AM

SIDRA INTERSECTION 4.0.12.1029

Project: N:\WINDOWS\2010\CG110032\SIDRA\CG110032SID001.sip

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SIDRA
INTERSECTION

MOVEMENT SUMMARY

Site: AM FRI Franklin Street - Grey Street

Franklin Street / Grey Street Fri AM Peak Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Franklin Street											
1	L	54	2.0	0.400	11.0	LOS B	3.6	25.3	0.76	0.79	46.0
2	T	115	2.0	0.399	10.3	LOS B	3.6	25.3	0.76	0.77	45.8
3	R	154	2.0	0.399	15.3	LOS B	3.6	25.3	0.76	0.79	43.1
Approach		323	2.0	0.399	12.8	LOS B	3.6	25.3	0.76	0.79	44.5
East Grey Street											
4	L	59	2.0	0.500	13.7	LOS B	5.2	37.1	0.87	0.92	44.0
5	T	265	2.0	0.500	12.6	LOS B	5.2	37.1	0.87	0.91	44.4
6	R	34	2.0	0.500	17.2	LOS B	5.2	37.1	0.87	0.88	42.0
Approach		358	2.0	0.500	13.2	LOS B	5.2	37.1	0.87	0.91	44.1
North Franklin Street											
7	L	26	2.0	0.634	17.2	LOS B	8.1	57.3	0.94	1.06	40.9
8	T	256	2.0	0.631	16.2	LOS B	8.1	57.3	0.94	1.05	41.1
9	R	157	2.0	0.631	20.9	LOS C	8.1	57.3	0.94	0.98	39.1
Approach		439	2.0	0.630	18.0	LOS C	8.1	57.3	0.94	1.03	40.3
West Grey Street											
10	L	100	2.0	0.565	10.8	LOS B	6.3	45.1	0.77	0.77	37.5
11	T	336	2.0	0.566	9.8	LOS A	6.3	45.1	0.77	0.74	37.2
12	R	109	2.0	0.565	14.4	LOS B	6.3	45.1	0.77	0.78	34.9
Approach		545	2.0	0.566	10.9	LOS B	6.3	45.1	0.77	0.75	36.8
All Vehicles		1665	2.0	0.634	13.6	LOS B	8.1	57.3	0.84	0.87	41.4

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

Processed: Friday, 23 April 2010 9:38:25 AM

SIDRA INTERSECTION 4.0.12.1029

Project: N:\WINDOWS\2010\CG110032\SIDRA\CG110032SID001.sip

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SIDRA
INTERSECTION

MOVEMENT SUMMARY

Site: AM FRI Franklin Street - Seymour Street

Franklin Street / Seymour Street Fri AM Peak
Signals - Fixed Time Cycle Time = 50 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Franklin Street											
1	L	36	2.0	0.123	16.3	LOS B	0.8	5.4	0.57	0.70	26.5
2	T	130	2.0	0.147	8.5	LOS A	2.7	19.5	0.61	0.49	29.3
3	R	47	2.0	0.156	17.9	LOS B	1.1	7.8	0.63	0.72	25.2
Approach		213	2.0	0.156	11.9	LOS B	2.7	19.5	0.61	0.58	27.6
East Seymour Street											
4	L	50	2.0	0.104	22.1	LOS C	1.4	9.8	0.75	0.73	29.0
5	T	197	2.0	0.341	15.2	LOS B	5.3	37.7	0.82	0.67	29.9
6	R	64	2.0	0.257	24.5	LOS C	1.9	13.7	0.81	0.75	27.6
Approach		311	2.0	0.341	18.2	LOS B	5.3	37.7	0.81	0.70	29.2
North Franklin Street											
7	L	81	2.0	0.357	16.6	LOS B	1.7	12.2	0.59	0.72	41.3
8	T	177	2.0	0.200	8.7	LOS A	3.7	26.5	0.63	0.51	45.2
9	R	88	2.0	0.174	17.5	LOS B	2.0	14.2	0.63	0.75	40.5
Approach		346	2.0	0.357	12.8	LOS B	3.7	26.5	0.62	0.62	42.9
West Seymour Street											
10	L	74	2.0	0.202	22.4	LOS C	2.0	14.5	0.76	0.74	37.2
11	T	143	2.0	0.248	14.7	LOS B	3.9	27.6	0.79	0.64	28.2
12	R	29	2.0	0.119	24.9	LOS C	0.9	6.4	0.81	0.72	35.7
Approach		246	2.0	0.248	18.2	LOS B	3.9	27.6	0.79	0.68	33.0
All Vehicles		1116	2.0	0.357	15.3	LOS B	5.3	37.7	0.71	0.65	35.1

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	11.6	LOS B	0.1	0.1	0.68	0.68
P3	Across E approach	53	6.8	LOS A	0.0	0.0	0.52	0.52
P5	Across N approach	53	11.6	LOS B	0.1	0.1	0.68	0.68
P7	Across W approach	53	6.8	LOS A	0.0	0.0	0.52	0.52
All Pedestrians		212	9.2				0.60	0.60

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS B. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: AM FRI Princes Highway -
Breed Street

Princes Highway / Breed Street Fri AM Peak
Signals - Fixed Time Cycle Time = 90 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Hyland Highway											
1	L	165	2.0	0.320	11.3	LOS B	3.0	21.5	0.37	0.68	31.4
2	T	445	2.0	0.709	34.6	LOS C	15.3	108.9	0.94	0.83	11.4
3	R	147	2.0	0.723	53.6	LOS D	8.5	60.4	1.00	0.87	10.9
Approach		757	2.0	0.723	33.2	LOS C	15.3	108.9	0.83	0.80	13.5
East Princes Highway											
4	L	98	2.0	0.116	11.0	LOS B	1.7	12.4	0.35	0.67	46.1
5	T	570	2.0	0.512	29.1	LOS C	12.2	86.7	0.89	0.75	30.6
6	R	32	2.0	0.197	51.1	LOS D	2.1	14.7	0.96	0.72	25.0
Approach		700	2.0	0.512	27.6	LOS C	12.2	86.7	0.81	0.74	31.9
North Breed Street											
7	L	37	2.0	0.108	12.9	LOS B	0.8	6.0	0.41	0.66	44.4
8	T	283	2.0	0.601	33.0	LOS C	12.8	91.0	0.94	0.79	28.8
9	R	122	2.0	0.600	51.6	LOS D	7.0	50.0	1.00	0.81	24.9
Approach		442	2.0	0.601	36.4	LOS D	12.8	91.0	0.91	0.78	28.4
West Princes Highway											
10	L	110	2.0	0.721	43.2	LOS D	17.7	125.8	0.95	0.90	29.2
11	T	698	2.0	0.722	32.0	LOS C	17.7	125.8	0.96	0.85	28.8
12	R	113	2.0	0.694	54.9	LOS D	6.9	48.8	1.00	0.85	24.0
Approach		921	2.0	0.722	36.1	LOS D	17.7	125.8	0.96	0.86	28.1
All Vehicles		2820	2.0	0.723	33.3	LOS C	17.7	125.8	0.88	0.80	26.3

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	22.1	LOS C	0.1	0.1	0.70	0.70
P3	Across E approach	53	24.9	LOS C	0.1	0.1	0.74	0.74
P5	Across N approach	53	22.1	LOS C	0.1	0.1	0.70	0.70
P7	Across W approach	53	24.9	LOS C	0.1	0.1	0.74	0.74
All Pedestrians		212	23.5				0.72	0.72

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: AM FRI Princes Highway -
Franklin Street

Princes Highway / Franklin Street Fri AM Peak
Signals - Fixed Time Cycle Time = 60 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East Princes Highway											
5	T	644	2.0	0.421	12.7	LOS B	9.3	66.1	0.71	0.60	41.1
6	R	33	2.0	0.421	33.3	LOS C	6.4	45.6	0.88	0.87	33.6
Approach		677	2.0	0.421	13.7	LOS B	9.3	66.1	0.72	0.61	40.6
North Franklin Street											
7	L	35	2.0	0.093	16.4	LOS B	0.8	5.8	0.53	0.70	41.3
9	R	97	2.0	0.177	25.3	LOS C	3.1	22.2	0.78	0.76	35.4
Approach		132	2.0	0.177	23.0	LOS C	3.1	22.2	0.71	0.75	36.8
West Princes Highway											
10	L	112	2.0	0.626	31.4	LOS C	10.9	77.9	0.92	0.87	34.2
11	T	606	2.0	0.627	20.1	LOS C	11.1	78.9	0.92	0.78	34.8
Approach		718	2.0	0.627	21.8	LOS C	11.1	78.9	0.92	0.79	34.7
All Vehicles		1527	2.0	0.627	18.3	LOS B	11.1	78.9	0.81	0.71	37.3

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	14.0	LOS B	0.1	0.1	0.68	0.68
P5	Across N approach	53	14.0	LOS B	0.1	0.1	0.68	0.68
All Pedestrians		106	14.0				0.68	0.68

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS B. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: AM FRI Princes Highway -
Grey Street

Princes Highway / Grey Street Fri AM Peak
Signals - Fixed Time Cycle Time = 90 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North East Princes Highway											
25	T	724	2.0	0.282	6.5	LOS A	8.1	57.7	0.44	0.38	48.3
26	R	355	2.0	0.836	38.7	LOS D	15.1	107.8	0.79	0.91	29.2
Approach		1079	2.0	0.836	17.1	LOS B	15.1	107.8	0.56	0.56	39.4
North West Grey Street											
27	L	341	2.0	0.708	13.8	LOS B	5.9	42.3	0.48	0.73	29.0
29	R	48	2.0	0.066	39.7	LOS D	1.3	9.5	0.84	0.71	14.4
Approach		389	2.0	0.708	17.0	LOS B	5.9	42.3	0.53	0.73	25.9
South West Princes Highway											
30	L	134	2.0	0.279	10.1	LOS B	2.0	14.4	0.31	0.67	39.8
31	T	507	2.0	0.790	43.5	LOS D	13.3	94.5	1.00	0.93	15.8
Approach		641	2.0	0.790	36.5	LOS D	13.3	94.5	0.86	0.88	18.4
All Vehicles		2109	2.0	0.836	23.0	LOS C	15.1	107.8	0.64	0.69	30.6

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P11	Across NE approach	53	28.0	LOS C	0.1	0.1	0.79	0.79
P13	Across NW approach	53	30.4	LOS D	0.1	0.1	0.82	0.82
All Pedestrians		106	29.2				0.81	0.81

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual pedestrian movements: Delay (HCM).

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INTERSECTION

MOVEMENT SUMMARY

Site: AM FRI Princes Highway -
Seymour Street

Princes Highway / Seymour Street Fri AM Peak
Signals - Fixed Time Cycle Time = 90 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Princes Highway											
1	L	24	2.0	0.044	9.2	LOS A	0.3	2.0	0.25	0.63	48.0
2	T	533	2.0	0.566	32.7	LOS C	12.1	85.9	0.93	0.78	29.0
3	R	25	2.0	0.154	50.8	LOS D	1.6	11.6	0.96	0.71	25.1
Approach		582	2.0	0.566	32.5	LOS C	12.1	85.9	0.90	0.77	29.3
East Whittakers Road											
4	L	85	2.0	0.183	9.9	LOS A	1.2	8.6	0.30	0.66	40.5
5	T	245	2.0	0.301	32.8	LOS C	6.1	43.7	0.89	0.71	19.6
6	R	90	2.0	0.621	43.3	LOS D	4.9	34.8	0.89	0.80	19.2
Approach		420	2.0	0.621	30.4	LOS C	6.1	43.7	0.77	0.72	22.0
North Princes Highway											
7	L	29	2.0	0.039	8.6	LOS A	0.2	1.8	0.20	0.63	41.2
8	T	582	2.0	0.618	33.2	LOS C	13.1	93.5	0.94	0.80	17.9
9	R	93	2.0	0.571	53.4	LOS D	5.7	40.3	1.00	0.79	15.5
Approach		704	2.0	0.618	34.8	LOS C	13.1	93.5	0.92	0.79	18.0
West Seymour Street											
10	L	138	2.0	0.357	41.6	LOS D	6.9	49.0	0.90	0.79	20.3
11	T	102	2.0	0.251	32.3	LOS C	6.9	49.0	0.87	0.69	20.6
12	R	13	2.0	0.142	40.2	LOS D	0.7	5.2	0.84	0.67	21.0
Approach		253	2.0	0.357	37.8	LOS D	6.9	49.0	0.89	0.75	20.5
All Vehicles		1959	2.0	0.621	33.6	LOS C	13.1	93.5	0.88	0.76	23.0

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	27.2	LOS C	0.1	0.1	0.78	0.78
P3	Across E approach	53	24.9	LOS C	0.1	0.1	0.74	0.74
P5	Across N approach	53	27.2	LOS C	0.1	0.1	0.78	0.78
P7	Across W approach	53	24.9	LOS C	0.1	0.1	0.74	0.74
All Pedestrians		212	26.1				0.76	0.76

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: AM SAT Breed Street - Grey Street

Breed Street / Grey Street Saturday Peak Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Breed Street											
1	L	84	2.0	0.398	11.7	LOS B	3.6	25.6	0.81	0.83	30.5
2	T	82	2.0	0.398	10.9	LOS B	3.6	25.6	0.81	0.82	30.9
3	R	122	2.0	0.397	15.5	LOS B	3.6	25.6	0.81	0.81	28.3
Approach		288	2.0	0.398	13.1	LOS B	3.6	25.6	0.81	0.82	29.6
East Grey Street											
4	L	121	2.0	0.617	11.1	LOS B	7.5	53.6	0.77	0.76	35.5
5	T	391	2.0	0.619	10.0	LOS A	7.5	53.6	0.77	0.74	35.5
6	R	115	2.0	0.618	14.6	LOS B	7.5	53.6	0.77	0.78	32.9
Approach		627	2.0	0.618	11.1	LOS B	7.5	53.6	0.77	0.75	34.9
North Breed Street											
7	L	103	2.0	0.358	12.3	LOS B	3.1	22.0	0.79	0.84	45.2
8	T	141	2.0	0.358	11.1	LOS B	3.1	22.0	0.79	0.81	45.7
9	R	14	2.0	0.359	15.7	LOS B	3.1	22.0	0.79	0.82	43.0
Approach		258	2.0	0.358	11.8	LOS B	3.1	22.0	0.79	0.82	45.3
West Grey Street											
10	L	10	2.0	0.476	10.5	LOS B	4.6	32.4	0.71	0.75	46.6
11	T	315	2.0	0.474	9.4	LOS A	4.6	32.4	0.71	0.72	46.6
12	R	116	2.0	0.475	14.0	LOS B	4.6	32.4	0.71	0.77	44.4
Approach		441	2.0	0.474	10.6	LOS B	4.6	32.4	0.71	0.73	46.0
All Vehicles		1614	2.0	0.619	11.4	LOS B	7.5	53.6	0.77	0.77	40.5

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS B. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

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INTERSECTION

MOVEMENT SUMMARY

Site: AM SAT Franklin Street -
Grey Street

Franklin Street / Grey Street Saturday Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Franklin Street											
1	L	109	2.0	0.657	17.3	LOS B	8.9	63.1	0.97	1.08	40.4
2	T	99	2.0	0.656	16.7	LOS B	8.9	63.1	0.97	1.08	40.4
3	R	241	2.0	0.658	21.8	LOS C	8.9	63.1	0.97	0.99	38.4
Approach		449	2.0	0.658	19.5	LOS C	8.9	63.1	0.97	1.03	39.3
East Grey Street											
4	L	86	2.0	0.748	20.4	LOS C	12.0	85.2	1.00	1.16	38.8
5	T	399	2.0	0.744	19.2	LOS B	12.0	85.2	1.00	1.16	39.1
6	R	57	1.8	0.740	24.0	LOS C	12.0	85.2	1.00	1.07	37.4
Approach		542	2.0	0.745	19.9	LOS C	12.0	85.2	1.00	1.15	38.9
North Franklin Street											
7	L	52	2.0	0.684	22.4	LOS C	9.6	68.0	1.00	1.19	37.2
8	T	227	2.0	0.688	21.5	LOS C	9.6	68.0	1.00	1.19	37.4
9	R	126	2.0	0.689	26.1	LOS C	9.6	68.0	1.00	1.08	35.9
Approach		405	2.0	0.688	23.0	LOS C	9.6	68.0	1.00	1.16	36.9
West Grey Street											
10	L	114	2.0	0.708	15.4	LOS B	10.8	77.1	0.95	0.98	32.4
11	T	353	2.0	0.706	14.4	LOS B	10.8	77.1	0.95	0.97	32.7
12	R	132	2.0	0.706	19.0	LOS B	10.8	77.1	0.95	0.92	30.7
Approach		599	2.0	0.707	15.6	LOS B	10.8	77.1	0.95	0.96	32.2
All Vehicles		1995	2.0	0.748	19.2	LOS B	12.0	85.2	0.98	1.07	37.2

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

Processed: Friday, 23 April 2010 9:38:27 AM

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INTERSECTION

MOVEMENT SUMMARY

Site: AM SAT Franklin Street -
Seymour Street

Franklin Street / Seymour Street Saturday Peak
Signals - Fixed Time Cycle Time = 50 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Franklin Street											
1	L	146	2.0	0.505	16.9	LOS B	3.1	22.0	0.62	0.75	26.0
2	T	247	2.0	0.279	9.1	LOS A	5.2	37.0	0.66	0.55	28.2
3	R	55	2.0	0.196	19.5	LOS B	1.4	9.9	0.68	0.73	23.9
Approach		448	2.0	0.505	12.9	LOS B	5.2	37.0	0.65	0.64	26.7
East Seymour Street											
4	L	88	2.0	0.183	22.5	LOS C	2.4	17.2	0.77	0.75	28.8
5	T	165	2.0	0.286	14.9	LOS B	4.5	31.7	0.81	0.65	30.2
6	R	70	2.0	0.291	25.6	LOS C	2.2	15.5	0.84	0.75	26.9
Approach		323	2.0	0.291	19.3	LOS B	4.5	31.7	0.80	0.70	28.9
North Franklin Street											
7	L	108	2.0	0.477	16.7	LOS B	2.3	16.3	0.60	0.73	41.1
8	T	270	2.0	0.305	9.3	LOS A	5.7	40.4	0.67	0.56	44.5
9	R	147	2.0	0.320	19.9	LOS B	3.7	26.4	0.73	0.78	38.8
Approach		525	2.0	0.477	13.8	LOS B	5.7	40.4	0.67	0.66	42.0
West Seymour Street											
10	L	150	2.0	0.412	23.1	LOS C	4.1	29.1	0.80	0.77	36.7
11	T	178	2.0	0.308	15.0	LOS B	4.8	34.1	0.81	0.66	27.9
12	R	116	2.0	0.478	26.2	LOS C	3.6	25.4	0.87	0.78	34.9
Approach		444	2.0	0.478	20.7	LOS C	4.8	34.1	0.82	0.73	33.7
All Vehicles		1740	2.0	0.505	16.3	LOS B	5.7	40.4	0.73	0.68	34.8

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	11.6	LOS B	0.1	0.1	0.68	0.68
P3	Across E approach	53	6.8	LOS A	0.0	0.0	0.52	0.52
P5	Across N approach	53	11.6	LOS B	0.1	0.1	0.68	0.68
P7	Across W approach	53	6.8	LOS A	0.0	0.0	0.52	0.52
All Pedestrians		212	9.2				0.60	0.60

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS B. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: AM SAT Princes Highway -
Breed Street

Princes Highway / Breed Street Saturday Peak
Signals - Fixed Time Cycle Time = 100 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Hyland Highway											
1	L	98	2.0	0.211	11.5	LOS B	2.0	14.1	0.35	0.67	31.1
2	T	247	2.0	0.439	36.1	LOS D	9.7	68.8	0.89	0.72	11.1
3	R	136	2.0	0.619	55.4	LOS E	8.3	59.3	1.00	0.81	10.7
Approach		481	2.0	0.619	36.5	LOS D	9.7	68.8	0.81	0.74	12.9
East Princes Highway											
4	L	193	2.0	0.229	10.9	LOS B	3.5	24.9	0.34	0.68	46.2
5	T	601	2.0	0.459	27.8	LOS C	13.0	92.8	0.83	0.71	31.3
6	R	52	2.0	0.355	57.7	LOS E	3.6	26.0	0.98	0.75	23.3
Approach		846	2.0	0.459	25.8	LOS C	13.0	92.8	0.73	0.71	33.2
North Breed Street											
7	L	120	2.0	0.375	13.5	LOS B	3.0	21.3	0.42	0.69	43.9
8	T	262	2.0	0.619	38.6	LOS D	13.3	94.6	0.96	0.80	26.7
9	R	140	2.0	0.637	55.7	LOS E	8.6	61.0	1.00	0.82	23.8
Approach		522	2.0	0.637	37.4	LOS D	13.3	94.6	0.85	0.78	28.4
West Princes Highway											
10	L	74	2.0	0.630	41.5	LOS D	18.0	128.3	0.89	0.91	30.0
11	T	752	2.0	0.630	29.6	LOS C	18.1	128.8	0.89	0.78	30.0
12	R	85	2.0	0.580	59.0	LOS E	5.8	41.0	1.00	0.79	23.0
Approach		911	2.0	0.630	33.4	LOS C	18.1	128.8	0.90	0.79	29.1
All Vehicles		2760	2.0	0.637	32.4	LOS C	18.1	128.8	0.82	0.75	28.0

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS E. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	21.1	LOS C	0.1	0.1	0.65	0.65
P3	Across E approach	53	29.6	LOS C	0.1	0.1	0.77	0.77
P5	Across N approach	53	21.1	LOS C	0.1	0.1	0.65	0.65
P7	Across W approach	53	29.6	LOS C	0.1	0.1	0.77	0.77
All Pedestrians		212	25.4				0.71	0.71

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: AM SAT Princes Highway -
Franklin Street

Princes Highway / Franklin Street Saturday Peak
Signals - Fixed Time Cycle Time = 70 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East Princes Highway											
5	T	674	2.0	0.479	10.7	LOS B	12.2	87.0	0.63	0.55	43.2
6	R	54	2.0	0.479	43.2	LOS D	4.6	32.6	0.98	0.78	28.4
Approach		728	2.0	0.479	13.1	LOS B	12.2	87.0	0.66	0.56	41.4
North Franklin Street											
7	L	116	2.0	0.393	21.4	LOS C	3.5	24.8	0.64	0.75	37.8
9	R	275	2.0	0.584	33.5	LOS C	10.2	72.4	0.93	0.83	31.2
Approach		391	2.0	0.584	29.9	LOS C	10.2	72.4	0.84	0.80	32.9
West Princes Highway											
10	L	257	2.0	0.639	28.4	LOS C	14.8	105.1	0.86	0.88	34.9
11	T	713	2.0	0.638	18.5	LOS B	15.1	107.5	0.86	0.75	35.9
Approach		970	2.0	0.638	21.1	LOS C	15.1	107.5	0.86	0.79	35.6
All Vehicles		2089	2.0	0.639	19.9	LOS B	15.1	107.5	0.79	0.71	36.8

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	18.6	LOS B	0.1	0.1	0.73	0.73
P5	Across N approach	53	12.0	LOS B	0.1	0.1	0.59	0.59
All Pedestrians		106	15.3				0.66	0.66

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS B. LOS Method for individual pedestrian movements: Delay (HCM).

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MOVEMENT SUMMARY

Site: AM SAT Princes Highway -
Grey Street

Princes Highway / Grey Street Saturday Peak
Signals - Fixed Time Cycle Time = 107 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North East Princes Highway											
25	T	770	2.0	0.340	12.0	LOS B	11.8	84.0	0.55	0.48	42.4
26	R	288	2.0	0.928	48.6	LOS D	15.1	107.8	0.90	0.88	25.8
Approach		1058	2.0	0.928	22.0	LOS C	15.1	107.8	0.65	0.59	35.7
North West Grey Street											
27	L	450	2.0	0.999	16.0	LOS B	7.1	50.8	0.66	0.75	26.7
29	R	85	2.0	0.226	33.3	LOS C	6.4	45.7	0.78	0.31	15.0
Approach		535	2.0	1.000	22.7	LOS C	7.1	50.8	0.71	0.58	23.0
South West Princes Highway											
30	L	167	2.0	0.354	10.0	LOS A	2.7	19.2	0.28	0.66	40.0
31	T	778	2.0	0.865	51.6	LOS D	23.1	164.4	1.00	1.02	14.0
Approach		945	2.0	0.865	44.3	LOS D	23.1	164.4	0.87	0.96	16.1
All Vehicles		2538	2.0	0.999	30.4	LOS C	23.1	164.4	0.74	0.73	25.6

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P11	Across NE approach	53	25.6	LOS C	0.1	0.1	0.69	0.69
P13	Across NW approach	53	30.7	LOS D	0.1	0.1	0.76	0.76
All Pedestrians		106	28.1				0.72	0.72

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: AM SAT Princes Highway -
Seymour Street

Princes Highway / Seymour Street Saturday Peak
Signals - Fixed Time Cycle Time = 100 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Princes Highway											
1	L	30	2.0	0.053	8.9	LOS A	0.3	2.3	0.21	0.63	48.3
2	T	713	2.0	0.686	35.7	LOS D	17.0	121.1	0.95	0.82	27.7
3	R	69	2.0	0.471	58.2	LOS E	4.7	33.8	1.00	0.76	23.2
Approach		812	2.0	0.686	36.6	LOS D	17.0	121.1	0.93	0.81	27.7
East Whittakers Road											
4	L	63	2.0	0.158	10.5	LOS B	1.1	7.7	0.31	0.65	39.7
5	T	144	2.0	0.187	36.2	LOS D	4.2	29.7	0.87	0.67	18.4
6	R	94	2.0	0.692	47.0	LOS D	5.6	39.6	0.87	0.83	18.2
Approach		301	2.0	0.692	34.2	LOS C	5.6	39.6	0.75	0.72	20.9
North Princes Highway											
7	L	38	2.0	0.067	9.4	LOS A	0.5	3.6	0.25	0.64	40.0
8	T	641	2.0	0.617	34.8	LOS C	15.2	108.4	0.93	0.79	17.4
9	R	99	2.0	0.676	60.4	LOS E	6.7	47.5	1.00	0.83	14.1
Approach		778	2.0	0.676	36.8	LOS D	15.2	108.4	0.91	0.79	17.4
West Seymour Street											
10	L	245	2.0	0.669	49.4	LOS D	13.0	92.3	0.98	0.84	18.1
11	T	163	2.0	0.423	38.3	LOS D	13.0	92.3	0.92	0.75	18.5
12	R	41	2.0	0.486	42.6	LOS D	2.4	17.3	0.84	0.72	20.2
Approach		449	2.0	0.669	44.8	LOS D	13.0	92.3	0.95	0.80	18.4
All Vehicles		2340	2.0	0.692	37.9	LOS D	17.0	121.1	0.90	0.79	22.1

Level of Service (Aver. Int. Delay): LOS D. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS E. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	31.2	LOS D	0.1	0.1	0.79	0.79
P3	Across E approach	53	25.9	LOS C	0.1	0.1	0.72	0.72
P5	Across N approach	53	31.2	LOS D	0.1	0.1	0.79	0.79
P7	Across W approach	53	25.9	LOS C	0.1	0.1	0.72	0.72
All Pedestrians		212	28.6				0.76	0.76

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: PM FRI Breed Street - Grey Street

Breed Street / Grey Street Fri PM Peak Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Breed Street											
1	L	118	2.0	0.698	20.9	LOS C	9.8	70.1	1.00	1.16	22.3
2	T	195	2.0	0.696	19.9	LOS B	9.8	70.1	1.00	1.16	22.5
3	R	102	2.0	0.699	24.5	LOS C	9.8	70.1	1.00	1.05	21.7
Approach		415	2.0	0.698	21.3	LOS C	9.8	70.1	1.00	1.13	22.3
East Grey Street											
4	L	131	2.0	0.784	16.0	LOS B	14.6	104.2	0.96	0.96	30.0
5	T	455	2.0	0.783	14.9	LOS B	14.6	104.2	0.96	0.96	30.2
6	R	177	2.0	0.783	19.5	LOS B	14.6	104.2	0.96	0.92	28.5
Approach		763	2.0	0.784	16.1	LOS B	14.6	104.2	0.96	0.95	29.7
North Breed Street											
7	L	101	2.0	0.411	12.9	LOS B	3.8	26.8	0.86	0.88	44.7
8	T	157	2.0	0.411	11.7	LOS B	3.8	26.8	0.86	0.86	45.1
9	R	15	2.0	0.417	16.3	LOS B	3.8	26.8	0.86	0.83	42.6
Approach		273	2.0	0.411	12.4	LOS B	3.8	26.8	0.86	0.87	44.8
West Grey Street											
10	L	22	2.0	0.667	15.9	LOS B	8.9	63.5	0.92	1.00	42.0
11	T	347	2.0	0.658	14.8	LOS B	8.9	63.5	0.92	1.00	42.3
12	R	142	2.0	0.657	19.4	LOS B	8.9	63.5	0.92	0.95	40.2
Approach		511	2.0	0.658	16.1	LOS B	8.9	63.5	0.92	0.98	41.7
All Vehicles		1962	2.0	0.784	16.7	LOS B	14.6	104.2	0.95	0.98	35.0

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

Processed: Friday, 23 April 2010 9:38:26 AM

SIDRA INTERSECTION 4.0.12.1029

Project: N:\WINDOWS\2010\CG110032\SIDRA\CG110032SID001.sip

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INTERSECTION

MOVEMENT SUMMARY

Site: PM FRI Franklin Street - Grey Street

Franklin Street / Grey Street Fri PM Peak
Roundabout

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Franklin Street											
1	L	122	2.0	0.763	22.9	LOS C	12.6	89.5	1.00	1.22	36.7
2	T	150	2.0	0.765	22.2	LOS C	12.6	89.5	1.00	1.22	36.7
3	R	226	2.0	0.764	27.2	LOS C	12.6	89.5	1.00	1.12	35.2
Approach		498	2.0	0.765	24.6	LOS C	12.6	89.5	1.00	1.18	36.0
East Grey Street											
4	L	89	2.0	0.781	21.7	LOS C	13.7	97.4	1.00	1.19	38.0
5	T	439	2.0	0.780	20.6	LOS C	13.7	97.4	1.00	1.19	38.2
6	R	51	1.8	0.785	25.3	LOS C	13.7	97.4	1.00	1.10	36.6
Approach		579	2.0	0.780	21.2	LOS C	13.7	97.4	1.00	1.18	38.0
North Franklin Street											
7	L	43	2.0	0.632	19.4	LOS B	8.2	58.1	0.98	1.12	39.3
8	T	218	2.0	0.637	18.5	LOS B	8.2	58.1	0.98	1.12	39.4
9	R	129	2.0	0.635	23.1	LOS C	8.2	58.1	0.98	1.02	37.7
Approach		390	2.0	0.637	20.1	LOS C	8.2	58.1	0.98	1.09	38.8
West Grey Street											
10	L	128	2.0	0.727	16.6	LOS B	11.6	82.6	0.98	1.03	31.2
11	T	332	2.0	0.728	15.6	LOS B	11.6	82.6	0.98	1.03	31.5
12	R	132	2.0	0.729	20.2	LOS C	11.6	82.6	0.98	0.96	29.7
Approach		592	2.0	0.728	16.9	LOS C	11.6	82.6	0.98	1.01	31.0
All Vehicles		2059	2.0	0.785	20.6	LOS C	13.7	97.4	0.99	1.11	36.2

Level of Service (Aver. Int. Delay): LOS C. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on the worst delay for any vehicle movement.

Roundabout LOS Method: Same as Signalised Intersections.

Roundabout Capacity Model: SIDRA Standard.

Processed: Friday, 23 April 2010 9:38:26 AM

SIDRA INTERSECTION 4.0.12.1029

Project: N:\WINDOWS\2010\CG110032\SIDRA\CG110032SID001.sip

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INTERSECTION

MOVEMENT SUMMARY

Site: PM FRI Franklin Street - Seymour Street

Franklin Street / Seymour Street Fri PM Peak
Signals - Fixed Time Cycle Time = 50 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Franklin Street											
1	L	93	2.0	0.310	16.0	LOS B	1.9	13.5	0.57	0.73	26.8
2	T	300	2.0	0.325	8.8	LOS A	6.1	43.4	0.65	0.55	28.7
3	R	71	2.0	0.249	18.9	LOS B	1.7	12.4	0.67	0.74	24.4
Approach		464	2.0	0.325	11.8	LOS B	6.1	43.4	0.64	0.62	27.4
East Seymour Street											
4	L	109	2.0	0.232	23.6	LOS C	3.1	21.9	0.80	0.76	28.1
5	T	181	2.0	0.336	16.0	LOS B	5.0	35.6	0.84	0.68	29.2
6	R	82	2.0	0.346	26.7	LOS C	2.6	18.5	0.87	0.76	26.3
Approach		372	2.0	0.346	20.6	LOS C	5.0	35.6	0.83	0.72	28.1
North Franklin Street											
7	L	120	2.0	0.512	16.2	LOS B	2.5	17.5	0.59	0.74	41.5
8	T	274	2.0	0.297	8.6	LOS A	5.6	39.6	0.64	0.54	45.3
9	R	136	2.0	0.294	19.7	LOS B	3.4	24.3	0.72	0.78	38.9
Approach		530	2.0	0.513	13.2	LOS B	5.6	39.6	0.65	0.65	42.5
West Seymour Street											
10	L	122	2.0	0.343	23.7	LOS C	3.4	24.4	0.81	0.77	36.3
11	T	169	2.0	0.314	15.8	LOS B	4.7	33.4	0.83	0.67	27.2
12	R	62	2.0	0.262	26.4	LOS C	2.0	14.1	0.85	0.75	34.8
Approach		353	2.0	0.343	20.4	LOS C	4.7	33.4	0.83	0.72	32.8
All Vehicles		1719	2.0	0.512	15.9	LOS B	6.1	43.4	0.72	0.67	34.5

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	12.3	LOS B	0.1	0.1	0.70	0.70
P3	Across E approach	53	6.3	LOS A	0.0	0.0	0.50	0.50
P5	Across N approach	53	12.3	LOS B	0.1	0.1	0.70	0.70
P7	Across W approach	53	6.3	LOS A	0.0	0.0	0.50	0.50
All Pedestrians		212	9.2				0.60	0.60

Level of Service (Aver. Int. Delay): LOS A. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS B. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: PM FRI Princes Highway -
Breed Street

Princes Highway / Breed Street Fri PM Peak
Signals - Fixed Time Cycle Time = 110 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Hyland Highway											
1	L	125	2.0	0.375	16.8	LOS B	4.0	28.3	0.49	0.70	25.5
2	T	378	2.0	0.837	54.7	LOS D	17.3	122.9	0.98	0.96	7.9
3	R	159	2.0	0.868	70.9	LOS E	11.3	80.6	1.00	0.99	8.7
Approach		662	2.0	0.868	51.4	LOS D	17.3	122.9	0.89	0.92	9.7
East Princes Highway											
4	L	255	2.0	0.339	13.8	LOS B	6.4	45.8	0.43	0.70	43.6
5	T	841	2.0	0.760	33.9	LOS C	26.0	185.1	0.94	0.85	27.8
6	R	350	2.0	1.000 ³	54.1	LOS D	8.6	61.0	0.95	0.79	24.2
Approach		1446	2.0	1.000	32.3	LOS C	26.0	185.1	0.85	0.82	29.4
North Breed Street											
7	L	64	2.0	0.241	18.0	LOS B	2.2	15.5	0.51	0.68	40.3
8	T	340	2.0	1.023	138.3	LOS F	34.0	242.3	1.00	1.59	11.5
9	R	194	2.0	1.060	198.9	LOS F	23.4	166.7	1.00	1.58	9.3
Approach		598	2.0	1.060	145.1	LOS F	34.0	242.3	0.95	1.49	11.5
West Princes Highway											
10	L	105	2.0	0.995	103.2	LOS F	38.7	275.7	1.00	1.39	16.6
11	T	1013	2.0	0.996	90.8	LOS F	38.7	275.7	1.00	1.39	15.6
12	R	122	2.0	0.458	55.6	LOS E	7.8	55.8	0.96	0.79	23.8
Approach		1240	2.0	0.996	88.4	LOS F	38.7	275.7	1.00	1.33	16.3
All Vehicles		3946	2.0	1.060	70.2	LOS E	38.7	275.7	0.92	1.10	17.6

Level of Service (Aver. Int. Delay): LOS E. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS F. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

³ x = 1.00 due to short lane

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	21.6	LOS C	0.1	0.1	0.63	0.63
P3	Across E approach	53	36.8	LOS D	0.1	0.1	0.82	0.82
P5	Across N approach	53	26.3	LOS C	0.1	0.1	0.69	0.69
P7	Across W approach	53	36.8	LOS D	0.1	0.1	0.82	0.82
All Pedestrians		212	30.4				0.74	0.74

Level of Service (Aver. Int. Delay): LOS D. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: PM FRI Princes Highway -
Franklin Street

Princes Highway / Franklin Street Fri PM Peak
Signals - Fixed Time Cycle Time = 80 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
East Princes Highway											
5	T	915	2.0	0.612	10.3	LOS B	18.5	131.4	0.63	0.56	43.6
6	R	67	2.0	0.612	50.4	LOS D	5.5	38.9	1.00	0.81	25.7
Approach		982	2.0	0.612	13.0	LOS B	18.5	131.4	0.66	0.58	41.4
North Franklin Street											
7	L	82	2.0	0.335	25.9	LOS C	3.1	21.8	0.69	0.74	35.1
9	R	194	2.0	0.471	38.0	LOS D	8.4	60.1	0.92	0.81	29.3
Approach		276	2.0	0.471	34.4	LOS C	8.4	60.1	0.85	0.79	30.8
West Princes Highway											
10	L	203	2.0	0.704	29.2	LOS C	20.5	145.9	0.85	0.92	35.2
11	T	1074	2.0	0.704	17.9	LOS B	20.8	147.9	0.85	0.76	36.4
Approach		1277	2.0	0.704	19.7	LOS B	20.8	147.9	0.85	0.79	36.2
All Vehicles		2535	2.0	0.704	18.7	LOS B	20.8	147.9	0.77	0.71	37.3

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P3	Across E approach	53	23.3	LOS C	0.1	0.1	0.76	0.76
P5	Across N approach	53	10.5	LOS B	0.1	0.1	0.51	0.51
All Pedestrians		106	16.9				0.64	0.64

Level of Service (Aver. Int. Delay): LOS B. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS C. LOS Method for individual pedestrian movements: Delay (HCM).

MOVEMENT SUMMARY

Site: PM FRI Princes Highway - Grey Street

Princes Highway / Grey Street Fri PM Peak
Signals - Fixed Time Cycle Time = 110 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
North East Princes Highway											
25	T	893	2.0	0.331	5.7	LOS A	10.4	74.3	0.39	0.34	49.5
26	R	367	2.0	1.000 ³	42.5	LOS D	15.1	107.8	0.99	0.85	27.8
Approach		1260	2.0	1.000	15.5	LOS B	15.1	107.8	0.55	0.48	40.5
North West Grey Street											
27	L	501	2.0	1.000 ³	19.2	LOS B	7.1	50.7	0.63	0.75	24.1
29	R	102	2.0	0.807	53.2	LOS D	15.1	107.3	0.98	0.23	11.5
Approach		603	2.0	1.000	38.6	LOS D	15.1	107.3	0.83	0.45	18.5
South West Princes Highway											
30	L	146	2.0	0.335	10.3	LOS B	2.6	18.2	0.29	0.66	39.6
31	T	1139	2.0	0.986	96.1	LOS F	49.0	349.1	1.00	1.45	8.6
Approach		1285	2.0	0.986	86.3	LOS F	49.0	349.1	0.92	1.36	9.6
All Vehicles		3148	2.0	1.000	48.8	LOS D	49.0	349.1	0.75	0.83	19.4

Level of Service (Aver. Int. Delay): LOS D. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS F. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

³ x = 1.00 due to short lane

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P11	Across NE approach	53	37.6	LOS D	0.1	0.1	0.83	0.83
P13	Across NW approach	53	26.3	LOS C	0.1	0.1	0.69	0.69
All Pedestrians		106	31.9				0.76	0.76

Level of Service (Aver. Int. Delay): LOS D. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual pedestrian movements: Delay (HCM).

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INTERSECTION

MOVEMENT SUMMARY

Site: PM FRI Princes Highway -
Seymour Street

Princes Highway / Seymour Street Fri PM Peak
Signals - Fixed Time Cycle Time = 110 seconds

Movement Performance - Vehicles											
Mov ID	Turn	Demand Flow veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Queue Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
South Princes Highway											
1	L	37	2.0	0.072	9.1	LOS A	0.5	3.3	0.21	0.63	48.1
2	T	974	2.0	0.843	45.3	LOS D	27.6	196.5	1.00	0.99	24.4
3	R	96	2.0	0.721	66.8	LOS E	7.1	50.7	1.00	0.85	21.2
Approach		1107	2.0	0.843	45.9	LOS D	27.6	196.5	0.97	0.96	24.5
East Whittakers Road											
4	L	92	2.0	0.279	11.9	LOS B	2.0	14.2	0.35	0.67	38.1
5	T	197	2.0	0.296	43.4	LOS D	6.2	44.3	0.91	0.72	16.3
6	R	109	2.0	0.845	58.2	LOS E	7.4	52.5	0.85	0.93	15.6
Approach		398	2.0	0.844	40.2	LOS D	7.4	52.5	0.77	0.77	18.7
North Princes Highway											
7	L	50	2.0	0.099	9.8	LOS A	0.8	5.5	0.25	0.64	39.4
8	T	827	2.0	0.716	37.3	LOS D	20.8	148.3	0.95	0.83	16.6
9	R	101	2.0	0.758	67.7	LOS E	7.5	53.3	1.00	0.87	12.9
Approach		978	2.0	0.758	39.0	LOS D	20.8	148.3	0.92	0.83	16.6
West Seymour Street											
10	L	250	2.0	0.790	60.0	LOS E	15.3	108.9	1.00	0.90	15.7
11	T	179	2.0	0.538	45.6	LOS D	15.3	108.9	0.96	0.79	16.5
12	R	40	2.0	0.498	43.4	LOS D	2.5	17.8	0.81	0.72	20.0
Approach		469	2.0	0.790	53.1	LOS D	15.3	108.9	0.97	0.84	16.3
All Vehicles		2952	2.0	0.845	44.0	LOS D	27.6	196.5	0.93	0.87	20.3

Level of Service (Aver. Int. Delay): LOS D. Based on average delay for all vehicle movements. LOS Method: Delay (HCM).

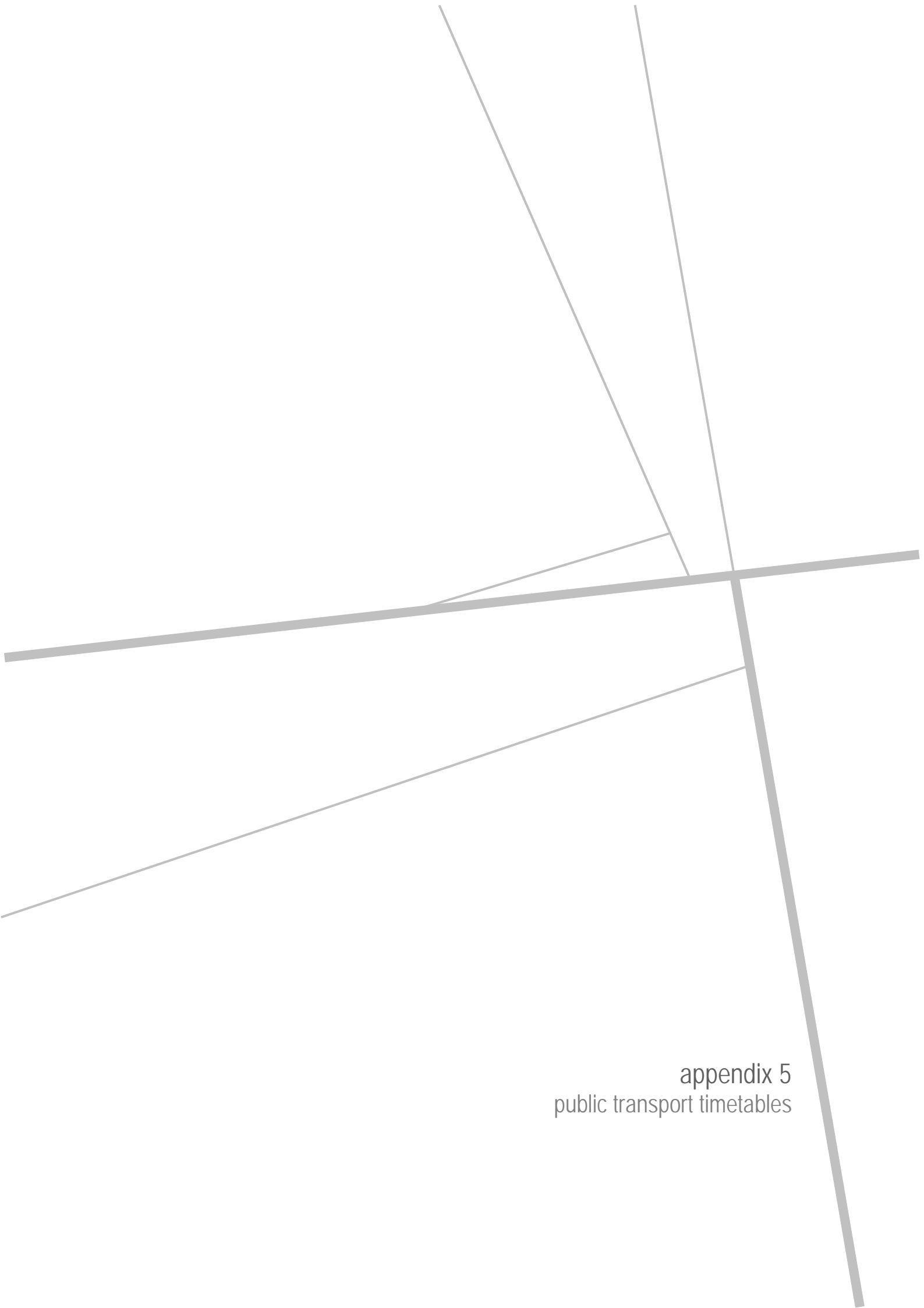
Level of Service (Worst Movement): LOS E. LOS Method for individual vehicle movements: Delay (HCM).

Approach LOS values are based on average delay for all vehicle movements.

Movement Performance - Pedestrians								
Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Queue Distance m	Prop. Queued	Effective Stop Rate per ped
P1	Across S approach	53	36.8	LOS D	0.1	0.1	0.82	0.82
P3	Across E approach	53	26.3	LOS C	0.1	0.1	0.69	0.69
P5	Across N approach	53	36.8	LOS D	0.1	0.1	0.82	0.82
P7	Across W approach	53	26.3	LOS C	0.1	0.1	0.69	0.69
All Pedestrians		212	31.5				0.75	0.75

Level of Service (Aver. Int. Delay): LOS D. Based on average delay for all pedestrian movements. LOS Method: Delay (HCM).

Level of Service (Worst Movement): LOS D. LOS Method for individual pedestrian movements: Delay (HCM).



appendix 5
public transport timetables

Dyson's Bus Service Timetable LVBL Bus Services Timetables

SALE - HEYFIELD - TRARALGON	SCHEDULED TIME	
	ARR.	DEPT.
Sale – Railway Station		8.35 AM
Sale - Shopping Centre		8.40 AM
Maffra (2)		8.55 AM
Maffra (1)		9.00 AM
Tinamba		9.05 AM
Heyfeild – V/Line Stop		9.12 AM
Heyfield		9.15 AM
Cowwarr		9.22 AM
Toongabbie		9.30 AM
Glengarry		9.38 AM
Tyers Primary School		9.45 AM
Traralgon – Centre Plaza		10.00 AM
Traralgon - Station	10.05 AM	10.20 AM

TRARALGON - HEYFIELD - SALE	SCHEDULED TIME	
	ARR.	DEPT.
Traralgon - Station	1.38 PM	1.43 PM
Traralgon – Centre Plaza		1.47 PM
Tyers Primary School		1.53 PM
Glengarry		1.57 PM
Toongabbie		2.05 PM
Cowwarr		2.13 PM
Heyfield		2.25 PM
Heyfeild – V/Line Stop		2.30 PM
Tinamba		2.40 PM
Maffra (1)		2.45 PM
Maffra (2)		2.50 PM
Sale - Shopping Centre		3.05 PM
Sale – Railway Station		3.10 PM

Traralgon Route 1 - Rangeview									
Weekdays	AM Service				PM Service				
Traralgon Plaza		9:30	10:30	11:30	12:30	1:30	2:30	3:20	4:30
Stirling Avenue	*8:35	9:39	10:39	11:39	12:39	1:39	2:39	3:29	4:39
Traralgon Plaza	8:50	9:55	10:55	11:55	12:55	1:55	2:55	3:45	4:55
Saturdays									
Traralgon Plaza		9:30	10:30	11:30	12:30				
Stirling Avenue		9:39	10:39	11:39	12:39				
Traralgon		9:55	10:55	11:55	12:55				

Plaza									
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*Commences corner of Grubb Avenue and Grey Street at 8.30am

Traralgon Route 2 - Freeman Park								
Weekdays	AM Service				PM Service			
Traralgon Plaza	8:40	10:00	11:00		12:00	1:00	2:00	3:00 4:55
Swallow Grove	8:48	10:08	11:08		12:08	1:08	2:08	3:08 5:03
Traralgon Plaza	9:00	10:20	11:20		12:20	1:20	2:20	3:20 5:15
Saturdays								
Traralgon Plaza		10:00	11:00		12:00			
Swallow Grove		10:08	11:08		12:08			
Traralgon Plaza		10:20	11:08		12:20			

Traralgon Route 3 - Park Lane						
Weekdays	AM Service			PM Service		
Traralgon Plaza	-					3:20
Park Lane & Strathcole Drive	8:40					3:35
Traralgon Plaza	8:55					3:40
Additional Service Thursdays Only						
Traralgon Plaza		-		12:10		
Park Lane & Strathcole Drive		9:40		12:20		
Traralgon Plaza		9:50		12:30		

Traralgon Route 4 - Kosciusko Street								
Weekdays	AM Service				PM Service			
Traralgon Plaza	8:35	9:30	10:30	11:30	12:30	1:30	2:30	4:35
Washington St	8:43	9:38	10:38	11:38	12:38	1:38	2:38	4:43
Traralgon Plaza	8:57	9:52	10:52	11:52	12:52	1:52	2:52	4:57
Saturdays								
Traralgon Plaza		9:45		11:00				
Washington St		9:53		11:08	12:38			
Traralgon Plaza		10:07		11:22	12:52			

Traralgon Route 5 - Hazelbank						
Weekdays	AM Service				PM Service	
Traralgon Plaza	-	9:30		11:30	1:30	3:25
Fernlea St	*8:35	9:38		11:38	1:38	3:33
Traralgon Plaza	8:50	9:50		11:50	1:50	3:50

Traralgon Route 6 - Traralgon East									
Weekdays	AM Service				PM Service				
Traralgon Plaza	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:30	5:35
Shakspeare St & Riley St	9:09	10:09	11:09	12:09	1:09	2:09	3:09	4:39	5:44
Traralgon Plaza	9:25	10:25	11:25	12:25	1:25	2:25	3:25	4:55	6:00
Saturdays									
Traralgon Plaza	8:25	9:15	10:35	12:00					
Shakspeare St & Riley St	8:34	9:24	10:44	12:09					
Traralgon Plaza	8:50	9:40	11:00	12:25					

Traralgon Route 7 - Lansdowne Road								
Weekdays	AM Service				PM Service			
Traralgon Plaza	9:00	10:00	11:00	12:00	1:00	2:00	3:00	5:00
Cameron St & Furlonger St	9:08	10:08	11:08	12:08	1:08	2:08	3:08	5:08
Traralgon Plaza	9:20	10:20	11:20	12:20	1:20	2:20	3:20	5:20
Saturdays								
Traralgon Plaza	8:50	10:15	11:30		1:00			
Cameron St & Furlonger St	8:58	10:23	11:38		1:08			
Traralgon Plaza	9:10	10:35	11:50		1:20			

Traralgon Route 8 - Traralgon East/Lansdowne Rd						
Weekdays	AM Service				PM Service	
Traralgon Plaza	8:30					
Shakspeare St & Riley St	8:39					
Traralgon Plaza	8:55					

Scheduled Low Floor Bus Service / Subject to operational requirements

AM Service / PM Service

Eastern Victoria Train and Coach Timetables

Traralgon - Melbourne

	MONDAY – FRIDAY																		
Service No.	8400	8402	8404	8406	8408	8410	8412	8414	8416	8418	8420	8422	8424	8426	8428	C404	8430	8434	8432
Train/ Coach	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	COACH	TRAIN	TRAIN	TRAIN
Seating/ Catering			★			★							★						★
						IC BD							IC BD						IC BD
TRARALGON dep	04:50	05:38	06:00	06:43	07:15	07:47R	08:15	09:10	10:20	11:15	12:15	13:15	14:07R	15:12	16:00		17:05	17:50	19:12R
Morwell Stn	05:00	05:46	06:11	06:52	07:24	07:58	08:24	09:20	10:29	11:24	12:24	13:24	14:18	15:21	16:10		17:13	17:59	19:23
Moe	05:11	05:56	06:22	07:02	07:34	08:09	08:34	09:31	10:43	11:34	12:39	13:35	14:30	15:36	16:27		17:28	18:14	19:34
Trafalgar	05:18		06:29		07:40		08:41	09:38	10:50	11:40	12:45	13:41	GL	15:43	16:34		17:35		19:41
Yarragon	05:24		06:35		07:45		08:46	09:44	10:55	11:45	12:50	13:46		15:49	16:40		17:41		19:47
WARRAGUL	05:33	06:11	06:45	07:17	07:53	08:28	08:54	09:53	11:03	11:53	12:58	13:54	14:49	15:57	16:48		17:49	18:31	19:57
Drouin	05:39	06:17	06:51	07:23	07:58	08:34	08:59	09:59	11:09	11:58	13:03	13:59	14:55	16:03	16:54		17:55	18:37	20:03
Longwarry	05:45		06:58		08:04		09:05	10:05		12:04		14:05		16:12	17:01		18:08		20:10
Bunyip	05:49		07:02		08:08		09:08	10:09		12:07		14:08		16:16	17:05		18:12		20:14
Garfield	05:53	06:27	07:06	07:33	08:12	08:47	09:11	10:13	11:19	12:10	13:12	14:12	15:08	16:20	17:09	18:03A	18:16	18:49	20:18
Tynong	05:57		07:10		08:16		09:15	10:17		12:14		14:16		16:24	17:13	18:06	18:20		22:22
Nar Nar Goon	06:01		07:14		08:20		09:19	10:21		12:18		14:20		16:28	17:17	18:12	18:24		20:26
PAKENHAM	06:08		07:24	07:44	08:26	09:00	09:26	10:29	11:30	12:26	13:25	14:28	15:25	16:37	17:26		18:31	19:05	20:35
Berwick					08:35d														
DANDENONG	06:26d	06:54d	07:41d	08:01d	08:44d	09:18d	09:43d	10:46d	11:47d	12:43d	13:42d	14:44d	15:42d	16:54d	17:43d		18:48d	19:22d	20:52d
Clayton	06:40d	07:08d	07:52d	08:15d	08:54d		09:53d	10:57d	11:58d	12:53d	13:56d	14:55d		17:05d	17:56d		19:00d	19:32d	
Caulfield	06:52d	07:16d	08:05d	08:28d	09:06d	09:35d	10:07d	11:07d	12:07d	13:07d	14:07d	15:06d	16:04d	17:18d	18:08d		19:12d	19:42d	21:12d
Richmond	07:01d	07:24d	08:14d	08:38d	09:15d	09:44d	10:15d	11:15d	12:15d										
MELBOURNE																			
(Flinders Street) arr	07:06d	07:29d	08:18d	08:42d	09:22d	09:48d	10:19d	11:19d	12:19d	13:19d	14:19d	15:19d	16:18d	17:31d	18:23d		19:24d	19:55d	21:25d
(Southern Cross) arr	07:12	07:34	08:24	08:51	09:28	09:54	10:26	11:26	12:26	13:24	14:24	15:26	16:26	17:38	18:28		19:29	20:00	21:31

	SATURDAY										SUNDAY									
Service No.	8404	8408	8410	8414	8418	8422	8424	8426	8430	8432	8434	8404	8408	8410	8418	8422	8424	8430	8432	8434
Train/Coach	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN
Seating/Catering			★				★			★				★					★	
			IC				IC			IC				IC				IC		IC
			BD				BD			BD				BD				BD		BD
TRARALGON dep	06:05	07:20	08:07R	09:20	10:57	12:55	13:52R	14:48	16:48	17:57R	18:45	06:05	08:03	09:17R	10:57	12:55	14:48R	16:48	17:57R	18:45
Morwell	06:14	07:29	08:18	09:29	11:06	13:04	14:03	14:57	16:57	18:08	18:54	06:14	08:12	09:28	11:06	13:04	14:57	16:57	18:08	18:54
Moe	06:23	07:38	08:29	09:42	11:15	13:13	14:21	15:06	17:06	18:20	19:03	06:23	08:21	09:39	11:15	13:13	15:06	17:06	18:20	19:03
Trafalgar	06:29	07:44		09:48	11:21	13:19	GL	15:13	17:13		19:10	06:29	08:27		11:21	13:19	15:13	17:13		19:10
Yarragon	06:34	07:49		09:53	11:26	13:24		15:19	17:19		19:16	06:34	08:32		11:26	13:24	15:19	17:19	GL	19:16
WARRAGUL	06:42	07:57	08:48	10:01	11:34	13:32	14:40	15:27	17:27	18:39	19:24	06:42	08:40	09:58	11:34	13:32	15:27	17:27	18:39	19:24
Drouin	06:47	08:02	08:54	10:06	11:39	13:37	14:46	15:33	17:33	18:45	19:30	06:47	08:45	10:04	11:39	13:37	15:33	17:33	18:45	19:30
Longwarry	06:53	08:08		10:12	11:45	13:43		15:40	17:40		19:37	06:53	08:51		11:46	13:43	15:40	17:40		19:37
Bunyip	06:56	08:11		10:15	11:48	13:46		15:44	17:44		19:41	06:56	08:54		11:49	13:46	15:44	17:44		19:41
Garfield	06:59	08:14	09:07	10:18	11:51	13:49	14:59	15:48	17:48	18:58	19:45	06:59	08:57	10:18	11:52	13:49	15:48	17:48	18:58	19:45
Tynong	07:03	08:18		10:22	11:55	13:53		15:52	17:52		19:49	07:03	09:01		11:56	13:53	15:52	17:52		19:49
Nar Nar Goon	07:07	08:22		10:26	11:59	13:57		15:56	17:56		19:53	07:07	09:05		12:00	13:57	15:56	17:56		19:53
PAKENHAM	07:13	08:29	09:23	10:33	12:05	14:04	15:12	16:04	18:04	19:12	20:02	07:13	09:12	10:32	12:05	14:04	16:04	18:04	19:12	20:02
DANDENONG	07:30d	08:46d	09:40d	10:50d	12:22d	14:21d	15:29d	16:21d	18:21d	19:29d	20:19d	07:30d	09:29d	10:49d	12:22d	14:21d	16:21d	18:21d	19:29d	20:19d
Clayton	07:40d	08:56d		11:00d	12:33d	14:32d		16:32d	18:32d		20:30d	07:40d	09:39d		12:33d	14:32d	16:32d	18:32d		20:30d
Caulfield	07:49d	09:05d	10:03d	11:09d	12:43d	14:43d	15:46d	16:43d	18:43d	19:46d	20:41d	07:50d	09:49d	11:06d	12:43d	14:43d	16:43d	18:43d	19:46d	20:41d
Richmond		09:14d	10:11d	11:17d	12:51d								09:57d	11:14d	12:51d					
MELBOURNE																				
(Flinders Street) arr	08:01d	09:19d	10:15d	11:21d	12:55d	14:55d	16:00d	16:55d	18:55d	20:00d	20:53d	08:03d	10:01d	11:20d	12:55d	14:55d	16:55d	18:55d	20:00d	20:53d
(Southern Cross) arr	08:07	09:25	10:21	11:27	13:01	15:01	16:05	17:01	19:01	20:07	20:59	08:09	10:07	11:25	13:01	15:01	17:01	19:01	20:07	20:59

Legend

★ – First Class available. ☞ – Catering available. arr – Arrive. dep – Depart. R – Reservation required. d – Stops to set down passengers only.
Red times represent coach services. Black times represent train services. IC – Inter-City. A – Connects with train from Melbourne. GL – The Gippslander.
BD – From Balmisale. █ – Peak services. █ – Reservation required on these services.

Coach stop locations

Bunyip – Primary School, Darnum – General Store, Princes Highway, Drouin – Corner Princes Way and Bank Place, Garfield – Opposite Toilet Block,
Nilma – Queens Street extension, corner Bloomfields Road, Warragul – Queen Street, opposite Railway Station.

Melbourne-Traralgon

		MONDAY – FRIDAY																				FRI	
Service No.		C401	C403	8401	8403	8405	8407	8409	8411	8415	8413	8417	8419	8421	4613	8423	C404	8425	8427	8429	8431	8433	
Train/Coach		COACH	COACH	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	★	TRAIN	TRAIN	TRAIN	METRO	TRAIN	COACH	TRAIN	★	TRAIN	TRAIN	TRAIN	TRAIN
Seating/ Catering					★						★							★	★				
				IC							IC								IC				
MELBOURNE																							
(Southern Cross)	dep			06:44	07:51R	08:32	09:25	10:25	11:25	12:25	13:25R	14:25	15:20	16:10	16:22L	16:47		17:35	18:25R	19:28	20:30	21:30	23:30
(Flinders Street)	dep			06:49u	07:56u	08:38u	09:31u	10:31u	11:31u	12:32u	13:32u	14:31u	15:26u	16:15u	16:19	16:59u		17:41u	18:30u	19:33u	20:35u	21:35u	23:35u
Richmond					08:41u						13:35u	14:34u	15:29u	16:18u	16:31	17:02u		17:45u	18:33u	19:36u	20:38u	21:38u	23:38u
Caulfield				07:01u	08:08u	08:51u	09:44u	10:43u	11:43u	12:43u	13:44u	14:43u	15:38u	16:27u	16:41	17:11u		17:56u	18:41u	19:46u	20:48u	21:48u	23:48u
Clayton				07:09u		09:04u	09:53u	10:51u	11:51u	12:51u		14:51u	15:46u	16:36u	16:50	17:21u		18:06u		19:55u	20:57u	21:57u	23:57u
DANDENONG				07:21u	08:26u	09:19u	10:08u	11:04u	12:04u	13:04u	14:04u	15:04u	15:59u	16:48u	17:04	17:35u		18:20u	19:01u	20:10u	21:08u	22:08u	00:08u
Berwick													16:07u		17:16								
PAKENHAM	arr														17:28								
Service No.																	C411						
CHANGE SERVICE																	COACH						
PAKENHAM	dep			07:38	08:43	09:36	10:26	11:21	12:21	13:21	14:21	15:21	16:17	17:05	17:35			18:40	19:18	20:27	21:25	22:25	00:25
Nar Nar Goon				07:43		09:41		11:26	12:26	13:26		15:26	16:22	17:10	17:45			18:46		20:32	21:30	22:30	00:30
Tynong				07:47		09:45		11:30	12:30	13:30		15:30	16:26	17:14	17:51			18:51		20:36	21:34	22:34	00:34
Garfield			06:45	07:50	08:54	09:48	10:36	11:33	12:33	13:33	14:32	15:33	16:29	17:17	18:03A	18:00	18:03A	18:55	19:29	20:39	21:37	22:37	00:37
Bunyip			06:50	07:55		09:53		11:38	12:38	13:38		15:37	16:33	17:21	18:08			19:00		20:43	21:41	22:42	00:41
Longwarry Stn			06:55	07:59		09:57		11:42	12:42	13:42		15:41	16:37	17:25	18:13			19:04		20:47	21:46	22:46	00:45
Drouin		05:45	07:06	08:05	09:08	10:03	10:49	11:48	12:48	13:48	14:46	15:47	16:43	17:31	18:24	18:10		19:11	19:41	20:53	21:51	22:52	00:51
WARRAGUL	arr			08:12						13:54	14:52							19:17	19:47			22:58	
Service No.																		C409					
CHANGE SERVICE																		COACH					
WARRAGUL	dep			08:17	09:16	10:10	10:55	11:54	12:54	13:55	14:53	15:53	16:49	17:37		18:16	18:17A	19:18	19:48	20:59	21:57	22:59	00:57
Warragul (1)		05:55	07:18												18:34								
Nilma		05:59	07:22															18:22					
Darnum		06:02	07:25															18:25					
Yarragon		06:07	07:31	08:24		10:17	11:02	12:01	13:01	14:02		16:00	16:56	17:44				18:30	19:27		21:06	22:04	23:07
Trafalgar		06:15	07:37	08:30		10:23	11:08	12:07	13:07	14:08		16:07	17:01	17:49				18:37	19:34		21:11	22:09	23:12
Moe		06:25	07:47	08:38	09:35	10:31	11:16	12:15	13:15	14:16	15:12	16:13	17:07	17:55		18:30	18:47	19:42	20:07	21:17	22:15	23:20	01:15
Newborough TAFE			07:55																				
Monwell		06:40	08:10	08:49	09:47	10:41	11:30	12:28	13:29	14:32	15:25	16:24	17:17	18:05				19:54	20:20	21:27	22:25	23:31	01:25
Monwell (1)		06:45																					
Monwell (2)			08:15																				
Latrobe Regional Hosp.		06:49	08:17																				
TRARALGON	arr	07:00	08:30	09:00	09:57	10:52	11:40	12:38	13:39	14:43	15:35	16:35	17:28	18:16		18:50		20:06	20:30	21:38	22:36	23:42	01:36
Traralgon Plaza			08:35		BD						BD								BD				

	SATURDAY												SUNDAY									
Service No.	8401	8403	8405	8409	8413	8417	8421	8425	8427	8429	8433	8435	8403	8413	8415	8417	8421	8425	8427	8429	8433	
Train/Coach	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	
Seating/Catering		★			★				★				★						★			
		IC			IC				IC				IC	IC					IC			
MELBOURNE																						
(Southern Cross)	dep	06:45	07:45R	08:25	10:25	12:25R	14:25	16:25	17:25	18:25R	19:30	21:30	23:30	08:30R	10:30R	12:25	14:25	16:25	17:25	18:25R	19:30	21:30
(Flinders Street)	dep	06:50u	07:50u	08:30u	10:30u	12:30u	14:30u	16:30u	17:30u	18:30u	19:35u	21:35u	23:35u	08:35u	10:35u	12:30u	14:30u	16:30u	17:30u	18:30u	19:35u	21:35u
Richmond								16:33u	17:33u	18:33u								16:33u	17:33u	18:33u		
Caulfield		07:01u	08:01u	08:41u	10:41u	12:41u	14:41u	16:41u	17:41u	18:41u	19:46u	21:46u	23:46u	08:46u	10:46u	12:41u	14:41u	16:41u	17:41u	18:41u	19:46u	21:46u
Clayton		07:09u		08:49u	10:49u		14:49u	16:49u	17:49u		19:54u	21:54u	23:54u		10:54u	12:49u	14:49u	16:49u	17:49u		19:54u	21:54u
DANDENONG		07:20u	08:20u	09:00u	11:00u	13:00u	15:00u	17:00u	18:00u	19:00u	20:05u	22:05u	00:05u	09:05u	11:05u	13:00u	15:00u	17:00u	18:00u	19:00u	20:05u	22:05u
PAKENHAM	dep	07:40	08:37	09:17	11:17	13:17	15:17	17:17	18:20	19:17	20:23	22:23	00:22	09:24	11:23	13:17	15:17	17:17	18:20	19:17	20:23	22:23
Nar Nar Goon		07:45	GL	09:22	11:22		15:22	17:22	18:25		20:28	22:28	00:27	GL	11:28	13:22	15:22	17:22	18:25		20:28	22:28
Tynong		07:49		09:26	11:26		15:26	17:26	18:29		20:32	22:32	00:31		11:32	13:26	15:26	17:26	18:29		20:32	22:32
Garfield		07:52	08:48	09:29	11:29	13:28	15:29	17:29	18:32	19:28	20:35	22:35	00:34	09:35	11:35	13:29	15:29	17:29	18:32	19:28	20:35	22:35
Bunyip		07:57		09:34	11:34		15:33	17:33	18:36		20:39	22:39	00:38		11:39	13:34	15:33	17:33	18:36		20:39	22:39
Longwarry Stn		08:01		09:38	11:38		15:37	17:37	18:40		20:43	22:43	00:42		11:43	13:38	15:37	17:37	18:40		20:43	22:43
Drouin		08:07	09:02	09:44	11:44	13:42	15:43	17:43	18:46	19:40	20:49	22:49	00:48	09:49	11:49	13:44	15:43	17:43	18:46	19:40	20:49	22:49
WARRAGUL	arr	08:13	09:08																			
Warragul	dep	08:17	09:09	09:50	11:50	13:49	15:49	17:49	18:52	19:47	20:55	22:55	00:54	09:56	11:55	13:51	15:49	17:49	18:52	19:47	20:55	22:55
Yarragon		08:24		09:57	11:57		15:56	17:56	18:59		21:02	23:02	01:01		12:04	13:58	15:56	17:56	18:59		21:02	23:02
Trafalgar		08:30		10:03	12:03		16:01	18:01	19:04		21:07	23:07	01:06		12:10	14:03	16:01	18:01	19:04		21:07	23:07
Moe		08:38	09:28	10:11	12:11	14:08	16:07	18:07	19:10	20:06	21:13	23:13	01:12	10:15	12:18	14:11	16:07	18:07	19:10	20:06	21:13	23:13
Monwell		08:48	09:43	10:21	12:21	14:21	16:17	18:21	19:20	20:19	21:23	23:23	01:22	10:28	12:28	14:21	16:17	18:21	19:20	20:19	21:23	23:23
TRARALGON	arr	08:59	09:53	10:32	12:32	14:31	16:28	18:32	19:31	20:29	21:34	23:34	01:33	10:38	12:36	14:32	16:28	18:32	19:31	20:29	21:34	23:34
		RD				RD				RD				RD	RD					RD		

Legend

★ – First Class available. ☐ – Catering available. arr – Arrive. dep – Depart. R – Reservation required. u – Stops to pick up passengers only.
Red times represent coach services. Black times represent train services. IC – Inter-City. A – Connects with train from Melbourne. GL – The 'Gippslander'.
L – Via City Loop. BD – To Bairnsdale. █ – Peak services. █ – Reservation required on these services.

Coach stop locations

Bunyip – Primary School, Darnum – General Store, Princes Hwy, Drouin – Corner Princes Way and Bank Place, Garfield – Opposite Toilet Block, Monwell 1 – Mid Valley Shopping Centre, Highway Stop, Monwell 2 – Mid Valley Shopping Centre, within Centre, Nilma – Queens Street extension, corner Bloomfields Road, Warragul – Queen Street, opposite Railway Station.



Bairnsdale to Melbourne via Sale, Traralgon, Warragul, Pakenham and Dandenong

	MONDAY – FRIDAY				SATURDAY				SUNDAY		
Service No.	8410	C418	8424	8432	8410	8424	C444	8432	8410	C428	8432
Train/Coach	TRAIN	COACH	TRAIN	TRAIN	TRAIN	TRAIN	COACH	TRAIN	TRAIN	COACH	TRAIN
Seating/Catering	★ ☹		★ ☹	★ ☹	★ ☹	★ ☹		★ ☹	★ ☹		★ ☹
BAIRNSDALE Stn	dep	06:20		12:40	17:45	06:40	12:25		16:30	07:50	12:40
Lindenow T/o											12:55
Stratford		06:54	13:14	18:19	07:14	12:59		17:04	08:24	13:20	17:04
SALE Stn	arr	07:08	13:28	18:33	07:28	13:13		17:18	08:38	13:40	17:18
Service No.										8424	
CHANGESERVICE										TRAIN	
										IC	
SALE Stn	dep	07:10	07:55	13:30	18:35	07:30	13:15		17:20	08:40	14:00
Sale (1)		08:00					16:00				
Rosedale		08:25					16:20				
Rosedale Stn											
Traralgon Plaza											
TRARALGON Stn	arr	07:45	08:50	14:05	19:10	08:05	13:50	16:40	17:55	09:15	14:38
Service No.		8414						8430			
CHANGESERVICE		TRAIN						TRAIN			
TRARALGON Stn	dep	07:47	09:10	14:07	19:12	08:07	13:52	16:48	17:57	09:17	14:48
Monwell		07:58	09:20	14:18	19:23	08:18	14:03	16:57	18:08	09:28	14:57
Moe		08:09	09:31	14:30	19:34	08:29	14:21	17:06	18:20	09:39	15:06
Warragul		08:28	09:53	14:49	19:57	08:48	14:40	17:27	18:39	09:58	15:27
Drouin		08:34	09:59	14:55	20:03	08:54	14:46	17:33	18:45	10:04	15:33
Garfield		08:47	10:13	15:08	20:18	09:07	14:59	17:48	18:58	10:18	15:48
Pakenham		09:00	10:29	15:25	20:35	09:23	15:12	18:04	19:12	10:32	16:04
Dandenong		09:18d	10:46d	15:42d	20:52d	09:40d	15:29d	18:21d	19:29d	10:49d	16:21d
Clayton								18:32d			16:32d
Caulfield		09:35d	11:07d	16:04d	21:12d	10:03d	15:46d	18:43d	19:46d	11:06d	16:43d
Richmond		9:44d	11:15d			10:11d				11:14d	
MELBOURNE (Flinders Street)	arr	09:48d	11:19d	16:18d	21:25d	10:15d	16:00d	18:55d	20:00d	11:20d	16:55d
(Southern Cross)	arr	09:54	11:26	16:26	21:31	10:21	16:05	19:01	20:07	11:25	17:01

Melbourne to Bairnsdale via Dandenong, Pakenham, Warragul, Traralgon and Sale

	MONDAY – FRIDAY					SATURDAY					SUNDAY			
Service No.	C441	C405	8403	8413	8419	8427	C445	8403	8413	8417	8427	8403	8413	8417
Train/Coach	COACH	COACH	TRAIN	TRAIN	TRAIN	TRAIN	COACH	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN	TRAIN
Seating/Catering			★ ☹	★ ☹		★ ☹		★ ☹	★ ☹		★ ☹	★ ☹		★ ☹
MELBOURNE (Southern Cross)			IC	IC		IC		IC	IC		IC	IC		IC
(Flinders Street)														
Richmond			07:51	13:25	15:20	18:25		07:45	12:25	14:25	18:25	08:30	10:30	14:25
Caulfield			07:56u	13:30u	15:26u	18:30u		07:50u	12:30u	14:30u	18:30u	08:35u	10:35u	14:30u
Clayton				13:35u	15:29u	18:33u					18:33u			18:33u
Dandenong			08:08u	13:44u	15:38u	18:41u		08:01u	12:41u	14:41u	18:41u	08:46u	10:46u	14:41u
Pakenham					15:46u					14:49u			10:54u	14:49u
Garfield			08:26u	14:04u	15:59u	19:01u		08:20u	13:00u	15:00u	19:00u	09:05u	11:05u	15:00u
Drouin			08:43	14:21	16:17	19:18		08:37	13:17	15:17	19:17	09:24	11:23	15:17
Warragul			08:54	14:32	16:29	19:29		08:48	13:28	15:29	19:28	09:35	11:35	15:29
Moe			09:08	14:46	16:43	19:41		09:02	13:42	15:43	19:40	09:49	11:49	15:43
Monwell			09:16	14:53	16:49	19:48		09:09	13:49	15:49	19:47	09:56	11:55	15:49
TRARALGON	arr		09:35	15:12	17:07	20:07		09:28	14:08	16:07	20:06	10:15	12:18	16:07
Service No.			09:47	15:25	17:17	20:20		09:43	14:21	16:17	20:19	10:28	12:28	16:17
CHANGESERVICE			09:57	15:35	17:28	20:30		09:53	14:31	16:28	20:29	10:38	12:36	16:28
					C419					C447				C447
TRARALGON	dep	06:00	07:10	10:00	15:37	17:35	20:33	06:02	09:56	14:34	16:45	20:32	10:41	12:41
Traralgon Plaza					17:30			06:07			16:48			16:48
Rosedale Stn														
Rosedale		06:20	07:30	10:16	15:53	17:55	20:49	10:12	14:50		17:05	20:48	10:57	12:57
SALE Stn	arr			10:34	16:11	18:20	21:07	07:20	10:30	15:08		21:06	11:15	13:18
Service No.		MA											C407	
CHANGESERVICE													COACH	
SALE Stn	dep	07:02	08:00	10:36	16:13		21:09		10:32	15:09		21:08	11:17	13:50
Sale (1)		07:07	07:55			18:15		07:25			17:25			17:25
Stratford				10:51	16:28		21:24		10:47	15:24		21:23	11:32	14:10
Lindenow T/o														14:30
BAIRNSDALE Stn				11:30	17:06		22:02		11:25	16:00		22:01	12:10	14:50

Legend

★ – First Class available. ☹ – Catering available. arr – Arrive. dep – Depart. u – Stops to pick up passengers only. d – Stops to set down passengers only.
Red times represent coach services. Black times represent train services. IC – Inter-City. MA – Via Maffra. GL – The Gippslander. ☹ – Reservation required on these services.

Coach Stop Locations

Lindenow T/o – Lindenow South T/o, Princes Highway. Rosedale – Corner Hood Street and Princes Highway. Sale 1 – Gippsland Centre, corner Cunningham and Desaily Streets.



South Gippsland and Bass Coast Bus and V/Line Coach Services

Traralgon-Wonthaggi (Wonthaggi via Mirboo Nth)

Monday to Friday								
Service Information	JK am	HJ am	JK pm	HJ pm	HJ pm			
Morning (am) / Afternoon (pm)								
Traralgon Railway Station/Princes St (Traralgon)	-	9:30	12:24	3:40	-			
Latrobe Regional Hospital/Princes Hwy (Traralgon)	-	09:37	12:31	03:47	-			
Mid Valley Shopping Centre/Mid Valley Dr (Morwell)	-	09:45	12:39	03:55	-			
Morwell Railway Station/Commercial Rd (Morwell)	-	09:55	12:49	04:05	-			
Peters St/Ridgeway St (Mirboo North)	-	10:20	1:14	4:30	-			
Leongatha Railway Station/Long St (Leongatha)	-	10:44	1:38	4:54	-			
Ramsey Bvd/The Esplanade (Inverloch)	9:15	11:07	2:01	5:17	5:55			
Bus Interchange/Biggs Dr (Wonthaggi)	9:30	11:25	2:19	5:35	6:10			

Saturday								
Service Information	HJ am	HJ pm	HJ pm					
Morning (am) / Afternoon (pm)								
Traralgon Railway Station/Princes St (Traralgon)	10:40	3:13	-					
Latrobe Regional Hospital/Princes Hwy (Traralgon)	10:45	03:18	-					
Mid Valley Shopping Centre/Mid Valley Dr (Morwell)	10:53	03:26	-					
Morwell Railway Station/Commercial Rd (Morwell)	11:03	03:36	-					
Peters St/Ridgeway St (Mirboo North)	11:28	4:01	-					
Leongatha Railway Station/Long St (Leongatha)	11:52	4:25	-					
Ramsey Bvd/The Esplanade (Inverloch)	12:15	4:48	7:00					
Bus Interchange/Biggs Dr (Wonthaggi)	12:33	5:06	7:15					

Sunday								
Service Information	HJ am	HJ pm	HJ pm					
Morning (am) / Afternoon (pm)								
Traralgon Railway Station/Princes St (Traralgon)	10:40	3:13	-					
Latrobe Regional Hospital/Princes Hwy (Traralgon)	10:45	03:18	-					
Mid Valley Shopping Centre/Mid Valley Dr (Morwell)	10:53	03:26	-					
Morwell Railway Station/Commercial Rd (Morwell)	11:03	03:36	-					
Peters St/Ridgeway St (Mirboo North)	11:28	4:01	-					
Leongatha Railway Station/Long St (Leongatha)	11:52	4:25	-					
Ramsey Bvd/The Esplanade (Inverloch)	12:15	4:48	7:00					
Bus Interchange/Biggs Dr (Wonthaggi)	12:33	5:06	7:15					



Traralgon-Wonthaggi (Traralgon via Mirboo Nth)

	Monday to Friday					
Service Information	HJ	JK	JK	HJ	HJ	
Morning (am) / Afternoon (pm)	am	am	am	pm	pm	
Bus Interchange/Biggs Dr (Wonthaggi)	6:35	8:55	9:40	1:30	5:40	
Ramsey Bvd/The Esplanade (Inverloch)	6:52	9:10	9:57	1:47	5:45	
Leongatha Railway Station/Long St (Leongatha)	7:15	-	10:20	2:10	-	
Peters St/Ridgeway St (Mirboo North)	7:40	-	10:45	2:35	-	
Morwell Railway Station/Commercial Rd (Morwell)	D8:10	-	D11:15	D3:05	-	
Mid Valley Shopping Centre/Mid Valley Dr (Morwell)	D8:18	-	D11:23	D3:13	-	
Latrobe Regional Hospital/Princes Hwy (Traralgon)	D8:24	-	D11:29	D3:19	-	
Plaza Shopping Centre/Franklin St (Traralgon)	8:30	-	11:35	3:25	-	
Traralgon Railway Station/Princes St (Traralgon)	8:35	-	11:40	3:30	-	

	Saturday					
Service Information	HJ	HJ	HJ			
Morning (am) / Afternoon (pm)	am	pm	pm			
Bus Interchange/Biggs Dr (Wonthaggi)	8:35	12:45	7:20			
Ramsey Bvd/The Esplanade (Inverloch)	8:52	1:02	7:35			
Leongatha Railway Station/Long St (Leongatha)	9:15	1:25	-			
Peters St/Ridgeway St (Mirboo North)	9:40	1:50	-			
Morwell Railway Station/Commercial Rd (Morwell)	D10:10	D2:20	-			
Mid Valley Shopping Centre/Mid Valley Dr (Morwell)	D10:18	D2:28	-			
Latrobe Regional Hospital/Princes Hwy (Traralgon)	D10:24	D2:34	-			
Plaza Shopping Centre/Franklin St (Traralgon)	10:30	2:40	-			
Traralgon Railway Station/Princes St (Traralgon)	10:35	2:45	-			

	Sunday					
Service Information	HJ	HJ	HJ			
Morning (am) / Afternoon (pm)	am	pm	pm			
Bus Interchange/Biggs Dr (Wonthaggi)	8:35	12:45	7:20			
Ramsey Bvd/The Esplanade (Inverloch)	8:52	1:02	7:35			
Leongatha Railway Station/Long St (Leongatha)	9:15	1:25	-			
Peters St/Ridgeway St (Mirboo North)	9:40	1:50	-			
Morwell Railway Station/Commercial Rd (Morwell)	D10:10	D2:20	-			
Mid Valley Shopping Centre/Mid Valley Dr (Morwell)	D10:18	D2:28	-			
Latrobe Regional Hospital/Princes Hwy (Traralgon)	D10:24	D2:34	-			
Plaza Shopping Centre/Franklin St (Traralgon)	10:30	2:40	-			
Traralgon Railway Station/Princes St (Traralgon)	10:35	2:45	-			



Yarram-Traralgon

Monday to Friday								
Morning (am) / Afternoon (pm)	am	pm	pm					
Memorial Park/Grant St (Yarram)	7:45	12:55	3:35					
Gormandale - Stradbroke Rd/Hyland Hwy (Gormandale)	8:20	1:30	4:10					
Traralgon Railway Station/Princes St (Traralgon)	8:45	1:55	4:35					
Plaza Shopping Centre/Franklin St (Traralgon)	8:50	2:00	4:40					
Saturday								
Morning (am) / Afternoon (pm)	am	pm						
Memorial Park/Grant St (Yarram)	8:05	12:40						
Gormandale - Stradbroke Rd/Hyland Hwy (Gormandale)	8:40	1:15						
Traralgon Railway Station/Princes St (Traralgon)	9:05	1:40						
Plaza Shopping Centre/Franklin St (Traralgon)	9:10	1:45						
Sunday								
Morning (am) / Afternoon (pm)	am	pm						
Memorial Park/Grant St (Yarram)	8:05	12:40						
Gormandale - Stradbroke Rd/Hyland Hwy (Gormandale)	8:40	1:15						
Traralgon Railway Station/Princes St (Traralgon)	9:05	1:40						
Plaza Shopping Centre/Franklin St (Traralgon)	9:10	1:45						

Traralgon-Yarram

Monday to Friday								
Morning (am) / Afternoon (pm)	am	pm	pm					
Traralgon Railway Station/Princes St (Traralgon)	9:15	2:00	4:45					
Plaza Shopping Centre/Franklin St (Traralgon)	9:20	2:05	4:50					
Gormandale - Stradbroke Rd/Hyland Hwy (Gormandale)	9:45	2:30	5:15					
Memorial Park/Grant St (Yarram)	10:20	3:05	5:50					
Saturday								
Morning (am) / Afternoon (pm)	am	pm						
Traralgon Railway Station/Princes St (Traralgon)	9:05	2:40						
Plaza Shopping Centre/Franklin St (Traralgon)	9:10	2:45						
Gormandale - Stradbroke Rd/Hyland Hwy (Gormandale)	9:35	3:10						
Memorial Park/Grant St (Yarram)	10:10	3:45						
Sunday								
Morning (am) / Afternoon (pm)	am	pm						
Traralgon Railway Station/Princes St (Traralgon)	9:05	2:40						
Plaza Shopping Centre/Franklin St (Traralgon)	9:10	2:45						
Gormandale - Stradbroke Rd/Hyland Hwy (Gormandale)	9:35	3:10						
Memorial Park/Grant St (Yarram)	10:10	3:45						



Latrobe Valley Bus Services – Frequency & Span

Department of Transport implemented a minimum standard of bus operation hours and frequency for metropolitan area bus services in 2006. These minimum service standards comprised of hourly services that operate as follows:

Monday to Friday	6am to 9pm
Saturdays and Public Holidays	8am to 9pm
Sunday, Good Friday, Xmas Day	9am to 9pm

This level of service is intended to minimise social exclusion and transport disadvantage by providing people with adequate bus public transport which allows them to participate in employment, education, social and recreational pursuits.

BusVic believe these standards of bus public transport should also be applied to regional centres, however the Department of Transport believe this is not warranted.

Latrobe City is an unique regional centre comprising of two major townships of 10,000+ people, Traralgon with a population of 21,000+ and smaller community of approximately 5,000 with a major university spread across a 30 km radius and surrounded by smaller satellite towns. The regional hospital is situated on the Princes Highway midway between the two major townships. Latrobe Valley is primarily an industrial regional, housing the state power generating industries and manufacturing industries that operate continuously and employee large numbers of shift workers.

Latrobe Valley Bus Lines have long recognised that public transport bus services don't adequately meet the needs of this community and this belief was confirmed by the 2003 'Latrobe Valley Access and Mobility Studies' (LVAMS) and the recent 'Latrobe Valley Bus Review'. LVAMS was a strategy initiated by the Bracks Government in 2001, in response to recommendations of the Latrobe Ministerial Taskforce report – 'Framework for the Future', which examined issues faced by people living in Latrobe Valley.

Our concerns about the inadequency of service, both span and frequency within our community is not unwarranted. The attached graph compiled by BusVic, mapping the frequency of services in major regional centres clearly indicates that services in Latrobe City are lower than other regional centres with smaller populations and without the obstacles such as distance between centres and the acknowledged social issues of Latrobe Valley.

Table 1. below provides an overview of random public transport bus services in four major regional centres, these services operate within 6 kilometres of the Central Business District. In the case of Latrobe City, the Traralgon route service cited in Table 1 is more frequent than majority of services within Latrobe Valley.



Table 1 - Route Bus services in Major Regional Centres

Regional Centre	Population	Weekdays	Services	Friday Nights	Services	Saturday	Services	Sunday	Services
Ballarat - Wendree West - Route 1	88,000	6am -8pm	26	9pm	2	7am -7pm	26	10am - 6pm	6
Bendigo - Eaglehawk - Route 5	100,000	6.11am - 7.11pm	27	7.41am- 9.41pm	3	8.11am- 8.11pm	13	9.41am- 6.41pm	9
Latrobe City -Traralgon East - Route 6	73,000	9am - 5.35pm	9	Nil		8.25am- 12pm	4	Nil	
Mildura -Route 400	60,000	7.45am- 5.45pm	7(14)	Nil		9.45am- 3pm	3	10am- 2pm	2
Warrnambool - Northwest - Route 3	32,000	8.30am- 5.40pm	10	7.15pm- 9.40pm	3	8.30am- 6pm	7	8.30am- 6pm	7

Table 1 clearly indicates the bus services in Latrobe City are less frequent and have a reduced timespan to services in most of other the regional centres. Whilst Mildura appears to have less frequency of services operating on Monday to Friday, Route 401 covers the same route so in reality there are 14 services operating this route Monday to Friday. Mildura like Latrobe City doesn't have Friday night services on town routes, and while there are less Saturday services the span of operation is much greater and Mildura has Sunday town services. Ballarat and Bendigo have substantially greater frequencies of service and much longer span of operation. What is most surprising is Warrnambool, a regional centre less than half the size of Latrobe City has significantly better weekend services than Latrobe City. The lack service frequency and span is not only obvious in Table 1 and the attached graph but has also been highlighted in the Latrobe Valley Access and Mobility Study 2003 (LVAMS) recommendations and again with the consultation process of the Latrobe Valley Bus Review in 2009. The recommendations of the LVAMS took several years to implement Stage 1 and other two stages have never been implemented, the Latrobe Valley Bus Review was completed in August 2009 and to date we have received no indication of it implementation or the span and frequency of services.

Since the privatisation of the power generation industries in the early 1990's Latrobe Valley has been regarded as an area of high socio-economic disadvantage and the lack of public transport bus services emerges as a major issue in many social research projects conducted in the region. The limitations of public transport bus services is clearly recognised by youth and welfare agencies as a impediment to peoples ability to participate in education, training and employment and social and recreational pursuit, thus perpetuating their disadvantage.

Department of Transport articulates the socio-economic and wellbeing costs of inadequate public transport in metropolitan areas and implemented minimum standards of service to redress a failing public transport service. However in Latrobe City where transport disadvantage is an obvious barrier to social inclusion and community participation, government has failed to act, and their policies and reports have become merely rhetoric.

Resources:

Population Statistics obtained from Local Government Websites – Ballarat,
Bendigo
Latrobe City
Mildura
Warrnambool

Timetable Information obtained from Viclink Website

Service Standard Guidelines – BusVic MOTC2 Estimation Guidelines – Regional Cities

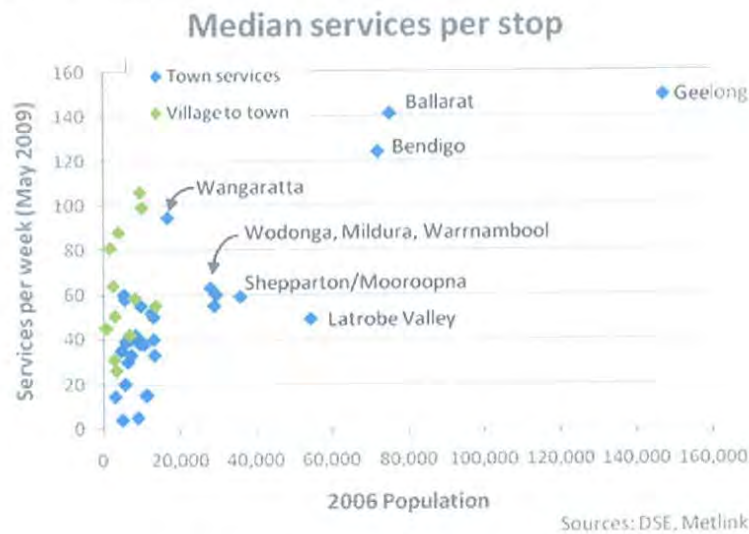


Leanne Blake

From: Chris Loader [cLoader@busvic.asn.au]
Sent: Tuesday, 9 February 2010 1:44 PM
To: leanne@lvbl.com.au
Subject: town service data

Hi Leanne,

I think this chart tells the story pretty well:



It shows the Latrobe Valley has slightly lower service levels than several smaller cities. But then Latrobe Valley is actually a string of smaller cities with inter-town services, so you can argue it both ways.

I think median services per stop is a reasonable measure of typical service provided in a centre (it's the most objective measure I've been able to come up with). Unfortunately it is harder to explain to people.

Hope this helps,

Chris

Chris Loader
Manager, Transport Planning and Policy
BusVic (Bus Association Victoria) - <http://www.busvic.asn.au>
cloader@busvic.asn.au mobile: 0412 209 017 office: (03) 9645 3300
Note: I now have a direct line: (03) 9914 7009
Please consider the environment before printing this email.

18/03/2010