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Closure of Andrew Fairley Avenue
Traffic Assessment

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Contents

Appendices

No table of contents entries found.

Figures

Tables

1. Introduction

1.1 Overview

The City of Greater Shepparton has advertised a proposal to discontinue Andrew Fairley Avenue, Shepparton. Public consultation is currently underway with written submissions accepted until 5pm, Monday 5 May 2014. The following is an extract from Council's website:

"At its meeting on 18 March, 2014 the Greater Shepparton City Council, pursuant to Section 189, 206 and clause 3 of schedule 10 of the Local Government Act 1989, resolved to give public notice of its intention to close the road …. Upon closure of the road the surplus land (excluding VicTrack land) will be discontinued as a road and will be sold to SPC Ardmona who are the adjoining Landowner."

Aurecon have been commissioned by SPC-A to prepare a traffic assessment in relation to the proposal.

In particular this report will consider the following:

- A description of the existing situation;
- A description of the proposed development
- An assessment of existing traffic incl. SPC-A traffic generation; and

1.2 SPC Ardmona Business Transformation

SPC Ardmona (SPC-A) are currently undergoing a business transformation to create a sustainable business. A key focus of this transformation is improving the efficiency of operations at SPC-A's plant in Shepparton. As part of this the closure of Andrew Fairley Avenue to provide exclusive use to SPC-A has been identified as a significant efficiency gain for the business.

2. Existing Conditions

2.1 Site Location

Andrew Fairley Avenue runs south-east from the intersection of Knight Street/ Hawdon Street and Railway Parade to the intersection of Adams Avenue/ Old Dookie Road and Lockwood Road. Andrew Fairley Avenue splits the SPC-A site in two, inbound fruit and cold stores are located to the north of Andrew Fairley Avenue with processing and distribution located to the south of Andrew Fairley Avenue

2.2 Surrounding Road Network

The following roads are identified as significant are shown in Figure 1 below.

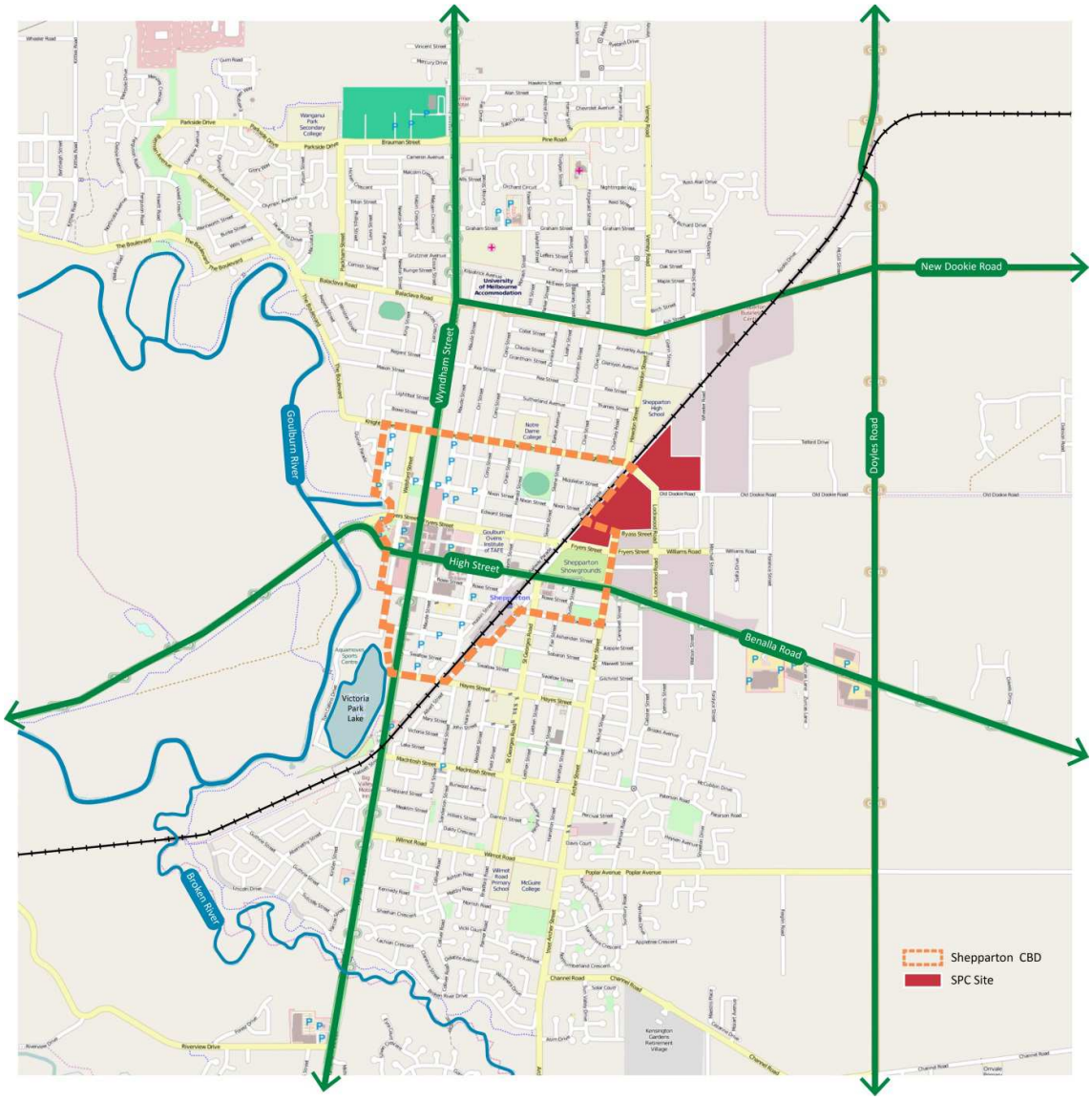

Figure 1 Local Road Network

2.2.1 Andrew Fairley Avenue

Andrew Fairley Avenue is a collector street controlled by the City of Greater Shepparton. Andrew Fairley Avenue runs in a south-east orientation from the intersection of Knight St/ Hawdon Street/ Railway Parade to the intersection of Adams Avenue/ Old Dookie Road/ Lockwood Road. The roadway consists of a single carriageway with one traffic lane in each direction.

A traffic signal operates where the roadway intersects with the SPC-A site. When a fruit tractor approaches this intersection, inductive loops detect the vehicle and call a north – south green phase, this stops pedestrian and vehicular traffic on Andrew Fairley Avenue.

A railway line abuts the eastern extent of the roundabout intersection of Knight Street/ Hawdon Street/ Railway Parade. When the railway is active conflict with road users is managed through level crossing control.

2.2.2 Knight Street

Knight Street is a collector street controlled by the City of Greater Shepparton. The roadway runs east –west providing a connection from the Goulburn Valley Highway to the residential and communities uses abutting Knight Street and industrial uses east of the railway line.

Anecdotal evidence suggests Knight Street provides an informal route for traffic from north and west of Shepparton to avoid High Street and access industrial and commercial areas in east Shepparton. Welsford Street provides a connection for traffic from the west on the Midland Highway to access Knight Street.

2.2.3 Old Dookie Road

In the vicinity of the site Old Dookie Road runs east – west from Doyles Road to Lockwood Road. The roadway consists of a single carriageway with one traffic lane in each direction. The intersection of Old Dookie Road and Mitchell Street has recently been signalised.

This roadway provides access to the industrial area surrounding the roadway as well as an east – west route for traffic wishing to cross Shepparton CBD.

2.2.4 Midland Highway/ Benalla Road/ High Street

The Midland Highway is a VicRoads arterial roadway which runs east – west through Shepparton. The Midland Highway is of regional significance connecting Benalla in the east and Bendigo in the west. Through Shepparton the roadway is divided with a central median separating two lanes of traffic in each direction. Major intersections are controlled by traffic signals.

2.2.5 New Dookie Road

New Dookie Road runs east – west through Shepparton and provides a connection to Dookie. In Shepparton the roadway consists of a single carriageway with one lane in each direction. Dedicated turning lanes are provided at key intersections such as New Dookie Road and Mitchell Street

2.3 B-Double Access

B-Double access is documented on the VicRoads website; an extract is included in Figure 2 below. Doyles Road forms a strategic alternative link for freight travelling north – south through Shepparton. B-Double access to the industrial precinct is provided via Old Dookie Road, Mitchell Street, Florence Street and Drummond Road. It is worth noting that B-Doubles currently operate at the SPC-A national distribution centre (NDC) with access provided via Archer Street and Thompson Street.

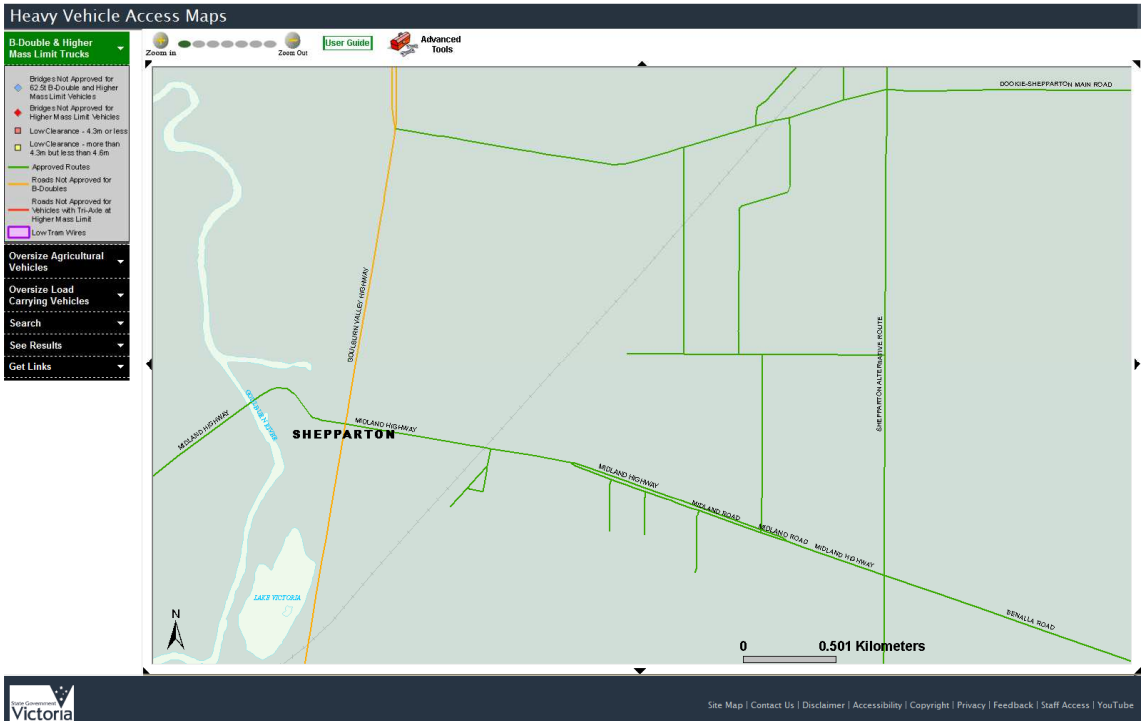

Figure 2 Approved B-Double Access

2.4 Public Transport Facilities

A review of route information on Public Transport Victoria's website indicates that no public transport services currently operate on Andrew Fairley Avenue.

2.5 Pedestrian and Cyclist Facilities

Andrew Fairley Avenue provides a footpath which facilitates pedestrian access between the residential area to the west of the railway line and the industrial precinct east of the railway line.

A shared use path is provided along the east side of Hawdon Street and Railway Parade. On road bicycle lanes are provided on Knight Street.

No data on pedestrian and cyclist use in the area was available at the time of writing.

Figure 3 Municipal Bicycle Network Shepparton

2.6 Crash Statistics

Crash data for the last five available calendar years (Jan 1st 2007 to December 31st 2012) has been sourced from the VicRoads CrashStats database.

The data search covered the following areas:

- Railway Parade;
- Hawdon Street;
- New Dookie Road;
- Mitchell Street;
- Old Dookie Road;
- Andrew Fairley Avenue;
- Lockwood Road;
- Byass Street;
- Archer Street; and
- Thompson Street.

A total of twenty one crashes have occurred as indicated in Table 1. The most notable trend is five rear end accidents on Hawdon Street between Knight Street and Thames Street.

Table 1 CrashStats data

Location	Description	Injury	Details
Nixon Street and Railway Parade	Rear end – vehicle entering intersection	Injured, needed treatment	Day, dry
Fryers Street and Railway Parade	Cross traffic	Injured, needed treatment	Day, dry
Railway Parade between Fryers Street and Nixon Street	Rear end – mid-block	Hospital	Day, dry
Annerley Avenue between Clive Street and Hawdon Street	Pedestrian on footpath struck by vehicle entering/ leaving driveway	Injured, needed treatment	Day, dry
Hawdon Street between Annerley Avenue and Glenlyon Avenue	Other manoeuvre involving ped	Hospital	Dark, dry
Dookie – Shepparton Road and Hawdon Street	Out of control on carriageway	Hospital	Dark, dry
Dookie – Shepparton Road and Hawdon Street	Out of control on carriageway	Hospital	Dark, dry
Dookie – Shepparton Road and Hawdon Street	Cross traffic	Injured, needed treatment	Day, dry
Hawdon Street between Thames Street and Knight Street	Rear end – mid-block	Injured, needed treatment	Day, dry
Hawdon Street between Thames Street and Knight Street	Rear end – mid-block	Injured, needed treatment	Dusk, dry
Hawdon Street between Thames Street and Knight Street	Rear end – mid-block	Injured, needed treatment	Day, dry
Hawdon Street between Feshti Street and Rea Street	Rear end – mid-block	Injured, needed treatment	Day, dry
Hawdon Street between Glenlyon Avenue and Feshti Street	Rear end – mid-block	Injured, needed treatment	Dark, dry
Glenlyon Avenue and Hawdon Street	Rear end – vehicle entering intersection	Injured, needed treatment	Dark, dry
Andrew Fairley Avenues and Hawdon Street	Lane side swipe	Injured, needed treatment	Day, dry
Andrew Fairley Avenue between Hawdon Street and Adams Avenue	Out of control on carriageway	Injured, needed treatment	Day, dry
Old Dookie Road between Andrew Fairley Avenue and Clarke Street	Right rear – mid-block	Injured, needed treatment	Day, dry
Archer Street and Byass Street	Off end of road – hit fence	Hospital	Dark, dry
Archer Street and Byass Street	Other manoeuvre	Injured, needed treatment	Dark, dry
Byass Street and Lockwood Road	Left rear – vehicle leaving intersection	Injured, needed treatment	Day, dry
Byass Street and Lockwood Road	Cross traffic	Injured needed treatment	Day, dry

3. Proposed Development

3.1 Closure of Andrew Fairley Avenue

The City of Greater Shepparton has advertised a proposal to discontinue Andrew Fairley Avenue, Shepparton. Public consultation is currently underway with written submissions accepted until 5pm, Monday 5 May 2014. The following is an extract from Council's website:

"At its meeting on 18 March, 2014 the Greater Shepparton City Council, pursuant to Section 189, 206 and clause 3 of schedule 10 of the Local Government Act 1989, resolved to give public notice of its intention to close the road …. Upon closure of the road the surplus land (excluding VicTrack land) will be discontinued as a road and will be sold to SPC Ardmona who are the adjoining Landowner."

The closure of Andrew Fairley Avenue will require existing traffic to utilise alternatives route on the local road network.

3.2 SPC – Admona Business Transformation

3.2.1 Overview

As indicated in Section 1.2 SPC Ardmona (SPC-A) are currently undergoing a business transformation to create a sustainable business. A key focus of this transformation is improving the efficiency of operations at SPC-A's plant in Shepparton. SPC-A have identified a suite of key initiatives which will provide a platform to improve business performance. This is focussed around targeted investment at the plant to deliver products desired by consumers. In addition to upgrades within the existing plant, the following infrastructure needs have been identified:

- A warehouse extension to accommodate increased throughput; and
- Closure of Andrew Fairley Avenue to improve efficiency.

It should be noted that the warehouse extension will be subject to a separate planning process at a later date. However, it has an important relationship with the closure of Andrew Fairley Avenue. The warehouse has been sized to ensure efficiency at the plant to handle a desired increase in volume within the constraint of limited capital available. In turn the size and location of the warehouse requires both efficient vehicular access, hardstand and staging area. The proposal can be seen in Figure 4.

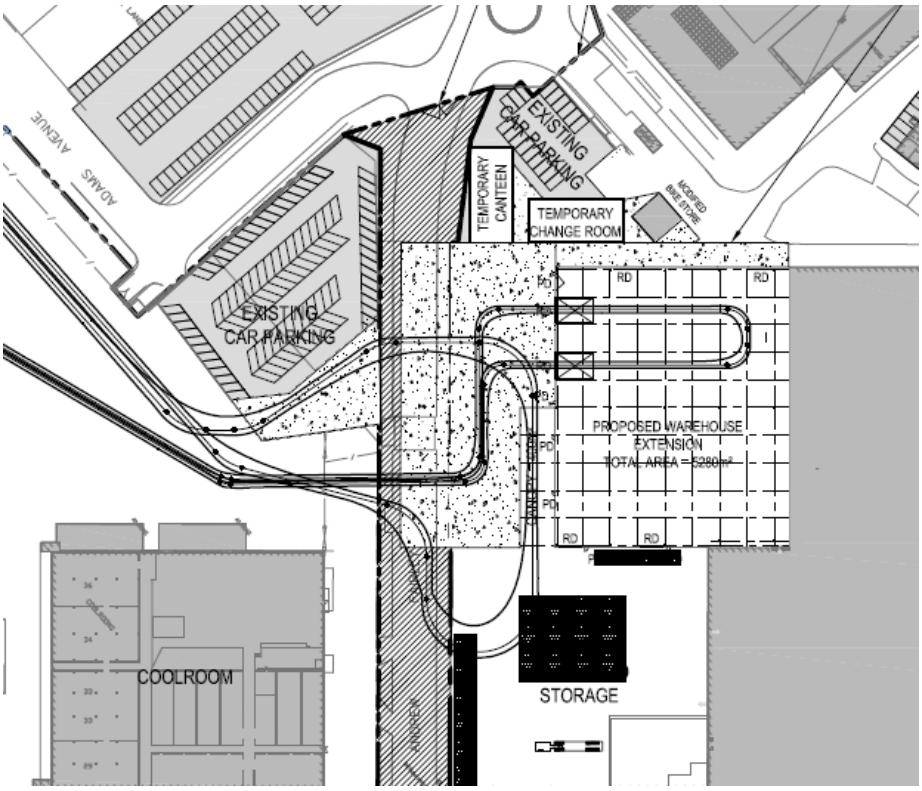

Figure 4 Proposed Andrew Fairley Avenue Closure and Warehouse Extension

3.2.2 Andrew Fairley Avenue

As part of a business transformation the closure of Andrew Fairley Avenue to provide exclusive use to SPC-A has been identified as a significant efficiency gain for the business.

The closure of Andrew Fairley Avenue would provide SPC-A with efficient and reliable access to the processing plant on the south from the inbound fruit area to the north. At present a tractor is used to transport fruit from north of Andrew Fairley Avenue to the south. This is facilitated by traffic signal control on Andrew Fairley Avenue. This creates inefficiency in re-handling the fruit and in the delay encountered in awaiting signal control to cross the site. It also has a safety implication with anecdotal evidence of near misses between the fruit tractor and pedestrians crossing against a red man signal.

As part of the business transformation it is proposed to move tomato production from Mooroopna to Shepparton. This product will be delivered in truck and due to quality degradation cannot be stored or re-handled; rather the product needs to be delivered direct to the processing plant. Increased traffic movements associated with tomato delivery as well as projected growth in production of other fruits will increase SPC-A movements across Andrew Fairley Avenue.

Table 2 SPC-A movements across Andrew Fairley Avenue

Product Type	Vehicle	Existing	Future
Fresh fruit (apples, peaches, pears etc.)	Tractor with fruit bins	100 per day	170 per day
Tomatoes	Up to19m Semi-trailer	N/A	32 per day
Fruit Juice	Up to19m Semi-trailer	N/A	4-12 per day

3.2.3 Road Alternatives

Public consultation has indicated an interest in understanding potential alternatives to the closure of Andrew Fairley Avenue. These suggestions have focussed on the provision of either a bridge over the road or a tunnel/ underpass beneath the road.

Key considerations for such structures are minimum vertical clearance over a roadway (4.7m) and gradient of approach ramps (5% or 1 in 20) for DDA compliance. Firstly, either a vertical clearance of 4.7m is required to allow access under a bridge for vehicles or within a tunnel structure. Assuming a 1.0m structure depth of either the bridge structure or the underside of the top of a tunnel structure to the finished ground level above requires a total separation of 5.7m.

Assuming a 5% gradient this requires ramping structures of 114m on either side of Andrew Fairley Avenue giving a total of 228m; this is approximately equal to the length of Andrew Fairley Avenue from the railway to the roundabout at Adams Avenue/ Old Dookie Road/ Lockwood Road. It should be noted that this does not included the section of structure (bridge or tunnel) which is separated from the SPC-A loading area. As such, this is not a feasible solution from a technical perspective. It is also worth noting that bridge or tunnel structures require significant capital investment. In addition, a number of utilities are located within the Andrew Fairley Avenue road reserved construction of either type of structure would require re-location of these services.

4. Traffic Considerations

4.1 Existing Base Traffic Volumes

Traffic count information has been provided by the City of Greater Shepparton. This includes a collection of historic mid-block link counts as well as some intersection counts. Historic traffic data has been increased by 2% per annum to reflect annualised growth and create a 2014 base. A comparison of growth rates for links with counts over more than one year indicates this is a conservative estimate.

Adjusted 2014 traffic volumes are presented in Table 3.

Table 3 Adjusted 2014 Traffic Volumes

Road	AM Peak	PM Peak
Andrew Fairley Avenue	720	760
Hawdon Street	1053	1190
Knight Street	622	636
Railway Parade	772	917
Fryers Street (east of Thompson Street)	345	520
Lockwood Road	850	937
Old Dookie Road	659	935
Wheeler Street	731	808
New Dookie Road	1053	1083
Midland Highway	1894	2418

Traffic counts were undertaken on Andrew Fairley Avenue during school term (Wed 26/03/2014) and during school holidays (Wed 9/04/2014). These counts indicate that school traffic accounts for approximately 220 movements in the AM peak and 120 movements in the PM peak. A daily profile of these two datasets is shown in Figure 5. Outside of peak periods trips associated with school use have a limited impact on the road network.

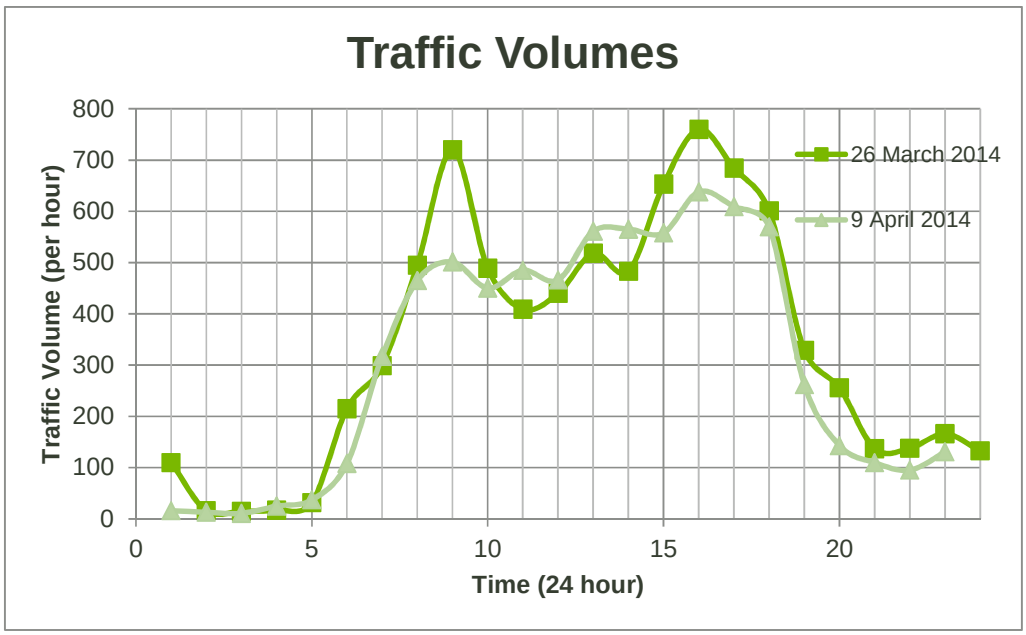

Figure 5 Comparison of school day versus non-school day

4.2 SPC-A – Traffic Generation

An assessment of daily traffic generation has been undertaken for the SPC-A Shepparton site. This assessment is based on a peak or fruit season day at site. For consistency the number of staff on-site on Wednesday 26/03/2014 has been used to ensure consistency with Council traffic count data.

902 employees were present on-site on 26/03/2014 reflecting peak season production. In contrast a season low of 313 staff was on-site on 4/11/2013. The 902 employees were made up of 60 office staff (9am – 5pm), 90 staff (day & evening shift, 7am – 3pm, 3pm – 11pm) and the remainder working evenly over three eight hour shifts (7am – 3pm, 3pm – 11pm & 11pm – 7am).

A staff travel survey was undertaken on-site on Friday 11/04/2014 to understand staffs travel habits. 92% of respondents indicated that they drive to site with a further 2% of passengers in motor vehicles. 65% of staff indicated that they travel from the west and cross Andrew Fairley Avenue.

Fresh fruit accesses the site via Wheeler Street. Other inputs (cans, packaging etc.) enter the site via the entry west of the Old Dookie Road/ Lockwood road roundabout. B-double trucks enter the national distribution centre (NDC) west of the intersection of Byass Street and Archer Street and exit onto Thompson Street.

Future operations at Shepparton will see tomato production move across from Mooroopna and current inter-site trips (Mooroopna – Shepparton) removed.

A review of site access routes indicates that the following activities are considered to be impacted by the closure of Andrew Fairley Avenue and will need to re-route:

- Staff trips - Car;
- Fresh fruit inbound - HGV;
- Shepparton to Mooroopna - Car

A summary of daily traffic at Shepparton is provided in Table 4.

Table 4 SPC-A Shepparton Daily Traffic Generation

Hour	TOTAL	0:00 - 1:00	1:00 - 2:00	2:00 - 3:00	3:00 - 4:00	4:00 - 5:00	5:00 - 6:00	6:00 - 7:00	7:00 - 8:00	8:00 - 9:00	9:00 - 10:00	10:00 - 11:0	11:00 - 12:0	12:00noon	13:00 - 14:0	14:00 - 15:0	15:00 - 16:0	16:00 - 17:0	17:00 - 18:0	18:00 - 19:0	19:00 - 20:0	20:00 - 21:0	21:00 - 22:0	22:00 - 23:0	23:00 - 24:0
Fruit In - HGV	130	0	0	0	0	0	0	0	0	13	13	13	13	13	13	13	13	13	0	0	0	0	0	0
Other Inputs - HGV	80	0	0	0	0	0	0	0	0	8	8	8	8	8	8	8	8	8	0	0	0	0	0	0
Staff - Car	1745	0	0	0	0	0	0	289	241	58	0	0	0	0	0	280	289	0	58	0	0	0	0	241	289
Shepparton to Mooroopna - Car	20	0	0	0	0	0	0	0	0	2	2	2	2	2	2	2	2	2	0	0	0	0	0	0
Shepparton to Mooroopna - HGV	80	0	0	0	0	0	0	0	0	8	8	8	8	8	8	8	8	8	0	0	0	0	0	0
NDC - HGV	70	0	0	0	0	0	0	0	0	7	7	7	7	7	7	7	7	7	0	0	0	0	0	0
Subtotal - Car	1765	0	0	0	0	0	0	289	241	60	2	2	2	2	2	282	291	2	60	0	0	0	0	241	289
Subtotal - HGV	360	0	0	0	0	0	0	0	0	36	36	36	36	36	36	36	36	36	36	0	0	0	0	0	0
Existing Operations - TOTAL	2125	0	0	0	0	0	0	289	241	96	38	38	38	38	38	318	327	38	96	0	0	0	0	241	289

5. Summary and Conclusions

5.1 Summary

SPC Ardmona (SPC-A) are currently undergoing a business transformation to create a sustainable business. A key focus of this transformation is improving the efficiency of operations at SPC-A's plant in Shepparton. As part of this the closure of Andrew Fairley Avenue to provide exclusive use to SPC-A has been identified as a significant efficiency gain for the business.

The City of Greater Shepparton has advertised a proposal to discontinue Andrew Fairley Avenue, Shepparton. Public consultation is currently underway with written submissions accepted until 5pm, Monday 5 May 2014.

A review of existing traffic operations has been undertaken to understand existing demands. This included consideration of SPC-A traffic.

5.2 Conclusions

We expect the closing Andrew Fairley Avenue will have the following effects:

- Streets connecting with Andrew Fairley Avenue (Hawdon Street, Knight Street, Lockwood Road and Old Dookie Road) are likely to have a reduction in traffic as a result of the closure;
- Surrounding streets are anticipated to have a notable increase in traffic as vehicles seek a new route;

The Traffic Analysis Report commissioned by the Greater Shepparton City Council is expected to indicate the impact on the local traffic network.

Our review of SPC-A traffic generation indicates that staff movements are the major source of traffic to and from the site. Major staff movements occur during the peak periods on the road network. Consideration of adjusting staff shift times to avoid peak periods could benefit the local transport network. Where appropriate influencing SPC-A related heavy vehicle routing should be considered where it could benefit the local transport network.

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