STATEMENT TO PLANNING PANEL VICTORIA BY HENRY HUME TURNBULL, TRAFFIC ENGINEER

1. Introduction

I have been retained by Lascorp Development Group (Aust) Pty Ltd in to prepare traffic evidence in relation to Amendment C193 of the Greater Shepparton Planning Scheme, in particular in relation to the impacts of the proposed Shepparton North Shopping Centre.

I was previously retained by Lascorp Development Group (Aust) Pty Ltd to undertaken site inspections and various traffic engineering assessments and prepare traffic engineering report for the proposed Shepparton North Shopping Centre at the town planning application stage.

In preparing this report, I have relied upon the facts, matters and assumptions detailed in Appendix A. In particular, I have reviewed my report dated 25th January, 2017 which accompanied the application for the planning permit consequent on the Planning Scheme Amendment (copy attached at Appendix C).

Since the time of my report, the amendment has gone on exhibition and a number of 3rd party submissions were received. Those with traffic engineering comments are addressed in this report.
addition, I have had discussions with VicRoads officers in relation to draft permit condition 9a and understand that this is no longer a VicRoads requirement.

I understand that there has been no material change to the development plans since the time of my report dated 25th January 2017 that would change my opinions or conclusions and accordingly, the report reflects my current views regarding the development.

2. Qualifications & Experience

Appendix A contains a statement setting out my qualifications and experience, and the other matters raised by “Planning Panels Victoria - Planning Panels - Expert Evidence”.

Appendix B contains my CV.

3. Combined Amendment C193 and Planning Permit Application 2016-269

Amendment C193 proposes the following:

- Rezone land at 221-229 Numurkah Road and 10 Ford Road, Shepparton from the Commercial 2 Zone to Commercial 1 Zone.
- Apply the Public Acquisition Overlay to part of 221-229 Numurkah Road, Shepparton, part of 38-50 Ford Road, Shepparton and part of 25 Hawkins Road, Shepparton.

The purpose of the amendment is to facilitate the proposed Neighbourhood Shopping Centre, as per Planning Permit Application No. 2016-269, which consists of a supermarket (3,960m²) with associated speciality shops (2,030m²), medical centre, community centre and 446 car parking spaces.
4. Third Party Submissions

Following advertising of Amendment C193 a number of third parties made submissions. The traffic engineering related issues are summarised in Table 1 below.

Table 1: Third Party Submissions

<table>
<thead>
<tr>
<th>Submitter</th>
<th>Traffic Engineering Related Grounds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Matt Aylett</td>
<td>Changes to the exit from the Numurkah Road service lane to Goulburn Valley Highway.</td>
</tr>
<tr>
<td>Clayton Sinclair</td>
<td>Removal of right turn movement between Goulburn Valley Highway and the property on the west side of the road and the reduced access that this provides.</td>
</tr>
<tr>
<td>Sam Sabri</td>
<td>Reduced access to property from northbound traffic and desire for a right turn lane in the median to facilitate entry movements.</td>
</tr>
<tr>
<td>Lascorp Development Group (Aust) Pty Ltd</td>
<td>The construction of traffic signals and lighting at Numurkah Road/Ford Road/Wanganui Road intersection is not warranted on the basis of the proposed development.</td>
</tr>
<tr>
<td>Robert Jolly of CIRR on behalf of Ms. Jayme Thomas</td>
<td>The existing bus route along Hawkins Street is a major factor for recommending that corner for the activity centre.</td>
</tr>
<tr>
<td>Vincenzo Conte</td>
<td>Impact of increased traffic flow on Ford Road for owners along Ford Road</td>
</tr>
<tr>
<td>Raph Krelle (Centrum Town Planning) on behalf of Fairleys IGA</td>
<td>The site is remote from public transport system – no bus services on Numurkah Road or this part of Ford Road.</td>
</tr>
<tr>
<td>Raph Krelle (Centrum Town Planning) on behalf of 18 Pty Ltd</td>
<td>The site is remote from public transport system – no bus services on Numurkah Road or this part of Ford Road.</td>
</tr>
</tbody>
</table>
5. **Response to Issues Raised in Third Party Submissions**

My responses to issues raised by third parties are outlined below.

**Table 2: Response to Third Party Submissions**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Changes to the exit from the Numurkah Road service lane to Goulburn Valley Highway.</td>
<td>The entrance from Goulburn Valley Highway to the service road, just north of Grant Court is proposed to be closed at the request of VicRoads. Vehicles wishing to enter Grant Court will have to enter the service road further north. I do not believe that this will result in any significant change to the operation of the service road and it will continue to work well.</td>
</tr>
<tr>
<td>Removal of right turn movement between Goulburn Valley Highway and the property on the west side of the road and the reduced access that this provides.</td>
<td>The removal of this right turn was a VicRoads requirement and it results in a better design outcome for Goulburn Valley Highway.</td>
</tr>
<tr>
<td>Reduced access to property from northbound traffic and desire for a right turn lane in the median to facilitate entry movements.</td>
<td>The removal of this right turn results in a safer and better design outcome for Goulburn Valley Highway.</td>
</tr>
<tr>
<td>The construction of traffic signals and lighting at Numurkah Road/Ford Road/Wanganui Road intersection is not warranted on the basis of the proposed development.</td>
<td>The intersection of Numurkah Road/Ford Road/Wanganui Road is the subject of a Section 173 agreement between the applicant and Council. I understand VicRoads is satisfied with this arrangement and is no longer seeking the signalisation of the intersection as part of the permit application.</td>
</tr>
<tr>
<td>The existing bus route along Hawkins Street is a major factor for recommending that corner for the activity centre.</td>
<td>Public Transport Victoria allocates bus routes based on demand, and when the subject site is operating and generating demands, it will determine if a new or altered bus route should be provided.</td>
</tr>
<tr>
<td>Impact of increased traffic flow on Ford Road for owners along Ford Road</td>
<td>I accept that there will be increased traffic volumes along Ford Road however, Ford Road is to form part of the Shepparton Bypass and will be subject to increased traffic volumes in any event. As such, Ford Road is an appropriate location for the Neighbourhood Activity Centre.</td>
</tr>
<tr>
<td>The site is remote from public transport system – no bus services on Numurkah Road or this part of Ford Road.</td>
<td>Public Transport Victoria allocates bus routes based on demand, and when the subject site is operating and generating demands, it will determine if a new or altered bus route should be provided.</td>
</tr>
</tbody>
</table>
6. Conclusions/Recommendations

Having inspected the site, perused relevant documents and plans and undertaken traffic engineering assessments, I am of the opinion that:

a) the proposed development has a statutory car parking requirement for 309 spaces,
b) the provision of 446 spaces, exceeds the statutory parking requirement and accordingly, the application does not seek a permit to reduce the statutory parking requirement,
c) the proposed car parking layout is considered to be in accordance with both the relevant requirements of the Planning Scheme and Australian Standards and will operate in an appropriate and acceptable manner,
d) the new access via Goulburn Valley Highway has been designed in accordance with Austroads Guide to Road Design Part 4A and will operate in a safe and effective manner,
e) the treatments for the proposed access points on Ford Road have been designed in accordance with Austroads Guide to Road Design Part 4A and will work well as an interim treatment until the ultimate duplication of Ford Road,
f) the provision of bicycle parking and end of trip facilities is in accordance with Clause 52.34 of the Planning Scheme,
g) the provision of three loading bays meets the statutory loading requirement set out at Clause 52.07,
h) the proposed changes to Goulburn Valley Highway result in a safer and better design outcome,
i) I understand that the applicant and Council have entered into a Section 173 agreement and VicRoads no longer requires the intersection of Numurkah Road/Ford Road/Wanganui Road to be signalised as part of the Planning Permit application,
j) PTV may choose to add additional bus routes past the site if there is demand for these routes in the future, and
k) there are no traffic engineering related grounds why the proposed Planning Scheme Amendment C193 and Planning Permit Application for the land at 221-229 Goulburn Valley Highway and 10 Ford Road, Shepparton should not be granted.

I have made all the inquiries that I believe are desirable and appropriate and there are no matters of significance which I regard as relevant which, to the best of my knowledge, have been withheld from the Panel.

HENRY H TURNBULL, RFD
B.E.(Civil), M.I.E.Aust., M.I.T.E., F.V.P.E.L.A.
17th July, 2017
Appendix A:
Statement to Planning Panels Victoria
STATEMENT OF WITNESS

Name
Henry Hume Turnbull

Position
Principal Consultant, Traffix Group

Address
Suite 8, 431 Burke Road
GLEN IRIS
VICTORIA 3146

Qualifications
My qualifications and membership of professional associations are as follows:

- Bachelor of Civil Engineering, University of Melbourne
- Life Member, Institute of Transportation Engineers
- Member, Institution of Engineers, Australia
- Life Fellow, Victorian Planning & Environmental Law Association

Experience
I have approximately 38 years’ experience in Engineering including:

- ten years Country Roads Board of Victoria,
- two years with TTM Consulting, and
- twenty-six years with Turnbull Fenner Pty Ltd/Traffix Group Pty Ltd.
- Additional activities and appointments include:
  - Member, Planning Panels Victoria (since 1982)
  - Department of Planning & Community Development
  - Member, Priority Development Panel (2004 - 2010)
  - Councillor, Shire of Euroa (1980-1983)
  - Shire President (1982-1983)
  - President, Victorian Planning and Environmental Law Association (1999-2002)
  - Bail Justice (Victoria)

Area of Expertise
I have substantial experience and expertise in major road design and construction, contract administration, road construction material and construction methods, development impact assessment, including traffic generation and parking generation characteristics, traffic management and general traffic engineering, road safety and transportation planning.
I was a member of the former Ministers for Planning Advisory Committees making a review of Clause 52.06 (Car Parking) that led to changes being incorporated into the scheme on 5th June, 2012.

Disclosure of Interests

I disclose that I have no private relationship with the permit applicant. Traffix Group has worked with other companies involved in this application.

These relationships have not impacted on my ability to provide impartial Expert Evidence to the Tribunal.

Engagement and Scope of Report

I was retained by Lascorp Development (Aust) Pty Ltd to undertake traffic engineering assessments and to prepare an evidence statement for the proposed Planning Scheme Amendment C193 and Planning Permit Application for the land at 221-229 Goulburn Valley Highway, Shepparton.

Facts and Assumptions

As detailed in evidence.

Reference Documents

I have reviewed the following documents as part of my assessment:

- Application material including specialist and peer review reports,
- Application Plans dated 12th April, 2017,
- Draft Permit Conditions for permit 2016-269,
- Exhibited amendment,
- Amended plans for VCAT prepared by Atelier,
- Council officer’s report dated 13th January 2017,
- Third party submissions,
- Relevant sections of the Greater Shepparton Planning Scheme, and
- Relevant experience.

Summary of Opinions

See conclusions section of the evidence statement.

Provisional Opinions

Not applicable.

Identity of Persons Undertaking Work

Henry H Turnbull as per the evidence statement.

Daniel Milder (Traffic Engineer, Traffix Group) assisted with preparation of the evidence report.

Report Completeness

Final report.
Appendix B: Curriculum Vitae
HENRY TURNBULL

Qualifications: Bachelor of Civil Engineering (Melbourne University)

Professional Affiliations: Life Member, Institute of Transportation Engineers
Life Member, Institute of Engineers, Australia
Life Fellow, Victorian Planning and Environmental Law Association

Appointments: Sessional Member Planning Panels Victoria (Appointed 1982)

President, Victorian Planning and Environmental Law Association, 1999 - 2002
Member Priority Development Panel (2004-2010)
Bail Justice (Victoria)

1988 to 2002: Turnbull Fenner Pty Ltd
2002 to 2014: Traffix Group Pty Ltd
Since 2014: Principal Consultant – Traffix Group Pty Ltd

Founding Principal and Managing Director of Turnbull Fenner Pty Ltd, now Traffix Group Pty Ltd, until July 2014 and subsequently a consultant to the company, Henry has managed numerous traffic engineering assessments for major developments and other significant commissions including:

- Redevelopment of Freemasons Hospital
- National Bank Head Office at Victoria Harbour (Docklands)
- Construction advice and supervision for Euroa Bypass and the Yass Bypass on the Hume Freeway
- Co-ordination of a development contribution plan for the City of Maribyrnong including extensive traffic investigations and assessments
- TAC funding strategies and priority assessment for VicRoads - Northern Region
- Setting of speed limits for the Warrnambool Region of VicRoads
- Preparation of Parking Precinct Plans for Ocean Grove and Belmont (City of Greater Geelong)
HENRY TURNBULL (CONT.)

- Oakleigh Modal Interchange
- Preston and Fairfield Parking and Access Strategy Studies including PPPs.
- Traffic studies for future residential development strategies at Echuca, Beaconsfield, Plenty Corridor, Pakenham, Toolern and Bendigo
- West Gate Bridge resurfacing traffic management strategy
- South Morang Retail Development for National Mutual
- Guidelines for the Redevelopment of the Austin and Repatriation Hospital site for Banyule City Council
- Assessment of the PANCH redevelopment for Darebin City Council, and
- Bicycle Plans for the Rural City of Mildura, Swan Hill and Warrnambool.

Henry has also managed numerous other projects including local and district traffic management studies, road pavement assessments for quarries and broiler farms in rural areas, pedestrian safety research, public transport passenger surveys and route studies, property rezoning, office and retail development impact assessment and health care projects.

A large part of his practice is providing a peer review of the traffic engineering work undertaken by other consultants.

Henry is the longest serving sessional Planning Panels Victoria Member with over thirty-four years’ service. He is regularly appointed as a Planning Panel (either as the Chairman or as a Member) by the Minister for Planning. In addition, he also often appears before Planning Panels and appeared before the Victorian Civil and Administrative Tribunal in excess of 300 times as an expert witness.

Significant Panels and EES Inquiries include:
- Major retail expansions for Chadstone, Forest Hill and Como,
- Webb Dock expansion,
- Melbourne Airport Rail Link,
- Geelong Bypass Section 3,
- Traralgon Bypass,
- Armstrong Creek Structure Planning,
- Barwon Heads Bridge refurbishment,
HENRY TURNBULL (CONT.)

- Frankston Bypass (Peninsula Link), and
- Kilmore Bypass.

Henry has served successive Governments on Advisory Committees to assist with policy development including:
- Steering committee on the development of Practice Notes for Parking Precinct Plans,
- Reference Group for Residential Code 2000,
- Armstrong Creek Precinct Structure Plans (Feb 10),
- Review of Clause 52.06 – Carparking (adopted Jun 12), and
- Punt Road Advisory Committee.

He is regularly retained to advise on major parking studies and the introduction of parking overlays into municipal planning schemes.

Land Compensation

During his career, Henry has provided expert evidence for both Government and private clients in relation to land acquisition and compensation matters. He regularly appears at compulsory conferences, at VCAT and has also appeared in the Supreme Court in relation to land acquisition compensation.
HENRY TURNBULL (CONT.)


As an engineer with the Country Roads Board, Henry gained experience in Traffic Engineering, Metropolitan, Plans and Surveys, and Major Project Divisions.

Main areas of work included major road/freeway contract administration and direct works construction, major road/freeway design (both detail and functional), drainage design, road planning and municipal development approval coordination. In addition, Henry (with Colin Horman) developed analysis methods for roundabouts and pioneered their use in Victoria (and Australia). Henry was instrumental in the development of current methodologies for roundabout intersection design, signalised and unsignalised intersection analysis, as well as gap acceptance and traffic volume and road capacity analysis.

Royal Australian Engineers (Army Reserve) (1974 – 2000)

As an engineer with the Royal Australian Engineers, Henry rose from the rank of Sapper to finish his military career with the rank of Major. The majority of his service was with 22 Construction Regiment including as Officer Commanding 105 Construction Squadron.

As part of his military engineering, Henry was involved with the design, construction and maintenance of both civilian and military roads and creek crossings.


Turnbull, H.H. & Cottrell, T.E., Parking and the Planning Scheme, 2nd Australian Parking Convention, 1990
Appendix C:
Previous Town Planning Report
Traffic Engineering Assessment

Proposed Shopping Centre
at
221-229 Goulburn Valley Highway and 10 Ford Road,
Shepparton

Prepared For
Lascoorp Development Group (Aust) Pty Ltd

January, 2017
G19863R-01E
Traffic Engineering Assessment

Proposed Shopping Centre
at
221-229 Goulburn Valley Highway and 10 Ford Road, Shepparton

Document Control

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<th>Approved By</th>
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<td>D. Milder</td>
<td>H. Turnbull</td>
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<td>H. Turnbull</td>
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<td>D. Milder</td>
<td>H. Turnbull</td>
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Our Reference: G19863R-01E

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Appendix F: Swept Path Diagrams
1 Introduction

Traffix Group has been engaged by Lascorp Development Group (Aust) Pty Ltd to undertake a traffic engineering assessment and prepare a report for the proposed shopping centre located at 221-229 Goulburn Valley Highway and 10 Ford Road in Shepparton.

In preparing this report, the subject site and environs have been inspected, relevant data has been collected and reviewed, plans of the proposed development have been perused and the traffic engineering implications of the proposed development have been assessed.

2 Existing Conditions

2.1 The Site

The subject site is located on the east side of Goulburn Valley Highway and the south side of Ford Road in Shepparton, as shown in the locality plan at Figure 1 below.

![Subject Site Map](Source: Reproduced with permission from Melway Publishing Pty Ltd.)

**Figure 1: Locality Map**

The site is currently undeveloped. It is irregular in shape with an area of approximately 4.05 hectares and frontages to Ford Road and Goulburn Valley Highway of approximately 178 metres and 74 metres respectively.

An aerial view (2016) of the subject site photographs of the site and from Ford Road and Goulburn Valley Highway are shown in Figures 2 to 6 below.
Traffic Engineering Assessment
221-229 Goulburn Valley Highway and 10 Ford Road, Shepparton: Proposed Shopping Centre

Figure 2: Aerial View

Subject Site

Figure 3: Subject Site viewed from Ford Road

Figure 4: Subject Site viewed from Ford Road

Figure 5: Subject Site viewed from Goulburn Valley Highway

Figure 6: Subject Site viewed from Goulburn Valley Highway
2.2 Land Use

The subject site is within a Commercial Zone – Schedule 2 (C2Z) as shown in the Land Use Zone Map at Figure 7.

Surrounding uses are currently predominantly a residential and farm to the east and north. Land uses along Goulburn Valley Highway are commercial including fast food tenancies, supermarkets, service stations and restaurants/eateries.

Figure 7: Land Use Zoning Map
2.3 Road Network

**Goulburn Valley Highway** in the vicinity of the subject site is a VicRoads declared road (Road Zone Category 1). Goulburn Valley Highway extends in a north-south direction from Hume Highway to Murray Valley Highway.

In the vicinity of the subject site, Goulburn Valley Highway is constructed with a divided carriageway comprising 2 lanes of through traffic in each direction and bicycle lanes on each side.

A posted speed limit of 60km/h applies to Goulburn Valley Highway.

**Figure 8: Goulburn Valley Highway view North**

**Figure 9: Goulburn Valley Highway view South**

**Ford Road** is a local road which extends approximately 5.4 kilometres in an east-west direction between Lemnos N Road (where it continues as Lemnos – Cosgrove Road) and Goulburn Valley Highway.

Ford Road is constructed with a 7.5 metre (approx.) carriageway comprising one traffic lane in each direction.

A posted speed limit of 60km/h applies to Ford Road.

We understand from VicRoads that as part of the Shepparton North Growth Corridor, Ford Road and the intersection of Goulburn Valley Highway/Wanganui Road/Ford Road are to be upgraded. No plans are yet available detailing the extent of works that VicRoads will be undertaking as part of the upgrade, but we understand that it will include the signalisation of the intersection.

**Figure 10: Ford Road view West**

**Figure 11: Ford Road view East**
2.4 Sustainable Modes of Transport

2.4.1 Public Transport

There are currently no public transportation services available within reasonable walking distance of the subject site.

2.4.2 Bicycle Network

There are several on- and off-road bicycle routes provided throughout Shepparton. In addition, several new paths, including priority routes along Wyndham Road and Midland Highway connecting to Mooroopna, have been identified as part of future bicycle route planning. Figure 12 below shows the VicRoads’ Bicycle Network Planning map for Shepparton.
3 Proposal

The proposal is to develop the subject site for the purposes of a mixed-use development comprising a supermarket, specialty shops, medical centre and community facilities.

A schedule of uses for the proposed development is provided at Table 1.

Table 1: Schedule of Uses

<table>
<thead>
<tr>
<th>Use</th>
<th>Quantity / Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supermarket</td>
<td>3,960m²</td>
</tr>
<tr>
<td>Specialty Retail</td>
<td>2,030m²</td>
</tr>
<tr>
<td>Medical Centre</td>
<td>6 practitioners (300m²)</td>
</tr>
<tr>
<td>Community Centre</td>
<td>100m²</td>
</tr>
</tbody>
</table>

A total of 446 car parking spaces are to be provided on-site for the proposed development.

Three loading bays are provided on-site, a dedicated loading space is provided to the supermarket at the rear of the supermarket and two shared loading areas are provided for the retail uses, one on the south side of the supermarket and one to the east of retail tenancy 14.

Vehicle access to the site is to be taken from new crossovers via Ford Road, Doddy Street and a new access directly via Goulburn Valley Highway.

A copy of the proposed development plan is attached at Appendix A.
4 Car Parking Assessment

4.1 Statutory Car Parking Requirements

Clause 52.06 of the Planning Scheme sets out the statutory requirements for car parking as summarised at Table 2. The purpose of Clause 52.06 is:

- To ensure that car parking is provided in accordance with the State Planning Policy Framework and Local Planning Policy Framework.
- To ensure the provision of an appropriate number of car parking spaces having regard to the demand likely to be generated, the activities on the land and the nature of the locality.
- To support sustainable transport alternatives to the motor car.
- To promote the efficient use of car parking spaces through the consolidation of car parking facilities.
- To ensure that car parking does not adversely affect the amenity of the locality.
- To ensure that the design and location of car parking is of a high standard, creates a safe environment for users and enables easy and efficient use.

Table 2: Statutory Car Parking Requirements

<table>
<thead>
<tr>
<th>Use</th>
<th>Measure</th>
<th>Rate(1)</th>
<th>Requirement(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supermarket</td>
<td>3,960m²</td>
<td>5 spaces per 100m² of leasable floor area</td>
<td>198 spaces</td>
</tr>
<tr>
<td>Shop</td>
<td>2,030m²</td>
<td>4 spaces per 100m² of leasable floor area</td>
<td>81 spaces</td>
</tr>
<tr>
<td>Medical Centre</td>
<td>6 Practitioners</td>
<td>5 spaces to the first person providing health services and 3 spaces to each other person providing health services</td>
<td>20 spaces</td>
</tr>
<tr>
<td>Community Centre</td>
<td>100m² (34 patrons)</td>
<td>0.3 per patron permitted</td>
<td>10 spaces</td>
</tr>
</tbody>
</table>

(1) We note that Clause 21.04-6 specifies parking rates for medical centres within residential areas. The site is not located in a residential area and the update to Clause 52.06 postdates those sections of the Planning Scheme.

(2) Clause 52.06-5 states ... “If in calculating the number of car spaces the result is not a whole number, the required number of car parking spaces is to be rounded down to the nearest whole number.”

The proposed development has provision for 446 parking spaces which exceeds the statutory requirement under Clause 52.06 and accordingly, the application is not seeking a permit to reduce the statutory car parking requirement.
4.2 Car Parking Layout

The proposed car parking layout and access arrangements have been assessed under the relevant sections of the Planning Scheme and the relevant Australian Standards.

Key elements of the design include:

**Design Standard 1 – Accessways**

- All vehicles can exit the site in a forwards direction in accordance with the requirements of the Planning Scheme.
- Adequate pedestrian sight triangles will be available at all the proposed crossovers.
- Articulated vehicles (i.e. 19m semi-trailer) are expected to enter the site via Ford Road and exit via Doddy Street for the purposes of deliveries for the supermarket.

**Design Standard 2 – Car Parking Spaces**

- All standard car spaces are provided with dimensions in excess of the minimum requirements of the Planning Scheme.
- The proposed disabled car spaces are provided in accordance with AS/NZS 2890.6:2009.

Based on the foregoing, we are satisfied that the proposed car parking layout arrangements are satisfactory and will work well.
4.3 Site Access

4.3.1 Goulburn Valley Highway Access

Traffic Group has prepared a concept access layout plan for an amended access treatment from Goulburn Valley Highway. This amended access includes a lengthening of the existing channelised right turn deceleration lane on Goulburn Valley Highway turning to the service road.

Based on an operating speed of 60km/h the right turn deceleration lane has been designed at 85 metres (including 25 metres taper and 30 metres of storage). The treatment has been designed in accordance with the specifications in the Austroads Guide to Road Design Part 4A.

This access will provide left-in and right-in movements only.

South of Doddy Street, a new egress will provide left-out only into the southbound lanes on Goulburn Valley Highway.

In addition, at the request of VicRoads, the left-in to the service road, just north of Grant Court is to be removed.

A copy of the functional layout plan for the proposed access via Goulburn Valley Highway is attached at Appendix B.

4.3.2 Ford Road Access

Traffic Group has prepared a concept access layout plan for the proposed access points via Ford Road directly into the site.

Based on an operating speed of 60km/h the left turn deceleration lanes have been designed at 55 metres (including 20 metres taper) in accordance with the Austroads Guide to Road Design Part 4A.

For simplicity of design and construction, Ford Road is to be widened on the north side for majority of the site’s frontage. These will allow for AUR type treatments at each access point.

A copy of the functional layout plan for the proposed access points via Ford Road is attached at Appendix C.
5 Traffic Considerations

5.1 Traffic Generation

5.1.1 Supermarket and Shops

Traffix Group has undertaken detailed turning movement counts of a similar site on the corner of Archer Street and Benalla Road at the direction of VicRoads. Extensive surveys were carried out from 12:30pm-6:00pm. The peak hour was from 4:00pm-5:00pm when 751 vehicle movements were recorded. An estimate of approximately 6,800m\(^2\) for the floor area of the shops and supermarket was based on aerial photography of the site.

Accordingly, given the site’s location and similar characteristics, a peak afternoon vehicle generation rate of 11 vehicles per 100m\(^2\) has been adopted. This equates to up to 659 movements in the PM peak hour.

5.1.2 Medical Centre

The likely traffic generation for the proposed medical centre development is estimated from first principles, based on the following assumptions:

- consultations will be by appointment with an average consultation time of 12 minutes, and
- all patients will drive to the site, i.e. up to 10 vehicle trip-ends per practitioner each hour (5 arriving and 5 leaving).

Based on the above assumptions, it is anticipated that a maximum of 60 vehicle trip-ends may be generated by the site during any one hour. Staff would typically arrive prior to the scheduled appointment times, and depart after the last appointment, and accordingly the staff vehicle movements would not coincide with the busiest hour.

5.1.3 Nearby Development

Childcare Centre

We understand that a childcare centre has recently been approved in the immediate vicinity of the subject site. Accordingly, we believe it is appropriate to include this traffic given that it will form part of the existing traffic on the road network.

The RTA Guide to Traffic Generating Developments (2002) (RTA Guide) sets out traffic generation rates based on survey data collected in New South Wales for a range of land uses. This guide is referred to in the Austroads Guide which is used by VicRoads, and is generally regarded as the standard for metropolitan development characteristics.

The RTA Guide sets out the following relevant rates:

- Childcare Centre: AM peak hour: 0.8 vehicle trip-ends per child
- PM peak hour: 0.7 vehicle trip-ends per child

Accordingly, the childcare centre is estimated to generate up to 74 movements in the PM peak hour.
5.1.4 Summary

We note that it is highly unlikely that the PM peak traffic generation of each of the above uses will coincide. Nevertheless, for the purposes of a robust assessment, we have assumed that all peak rates will overlap and accordingly, up to 793 vehicle movements will be generated by the proposed development in the PM peak period.

5.2 Traffic Distribution

An economic impact assessment report has been prepared by MacroPlan Dimasi dated January 2017. At section 4.2 to this report are detailed numbers regarding the origin of sales for the proposed development. For traffic distribution purposes, we have adopted the conclusions from the report. Traffic will be distributed to and from the site in the following way:

- 50% of traffic will enter and 50% will exit in the peak periods,
- 5% of traffic will arrive from and depart to the west,
- 27% of traffic will arrive from and depart to the north,
  - 80% will access the site from Goulburn Valley Highway, south of Ford Road, and
  - 20% will access the site via Ford Road.
- 16.5% of traffic will arrive from and depart to the east or southeast via Ford Road
  - 85% of traffic to and from the east will enter/exit via the western access on Ford Road, and
  - 15% of traffic to and from the east will enter/exit via the eastern access on Ford Road,
- 51.5% of traffic will arrive and depart to the south.
  - 25% from the southwest quadrant,
  - 10% from beyond the trade area, and
  - 16.5% from east/southeast
    - 10% of exiting southbound traffic will turn left from Ford Road onto Goulburn Valley Highway,
    - 90% of exiting southbound traffic will turn left from Doddy Street onto Goulburn Valley Highway.

Based on the above assumptions, the anticipated peak hour turning movements generated by the proposed mixed-use development is summarised in Figure 13 below.
5.3 Traffic Impact

Goulburn Valley Highway/Wanganui Road/Ford Road Intersection

Traffic Group has discussed the future operation of Goulburn Valley Highway/Wanganui Road/Ford Road intersection with VicRoads’ officers.

We understand that the intersection of Ford Road, Wanganui Road and Goulburn Valley Highway will be realigned to form a cross-intersection that will be signalised. Furthermore, it is likely that traffic volumes and expansion of the area will result in upgrade works to Goulburn Valley Highway in the vicinity of the subject site, giving additional capacity.

We have been advised that the applicant will provide a monetary contribution to be used at the discretion of Council/VicRoads for interim works at the intersection of Goulburn Valley Highway/Wanganui Road/Ford Road intersection until the ultimate intersection is constructed as part of the Shepparton Bypass.

Figure 13: Expected Traffic Generation and Distribution
Traffic Engineering Assessment
221-229 Goulburn Valley Highway and 10 Ford Road, Shepparton: Proposed Shopping Centre

Goulburn Valley Highway Access

The proposed development may result in up to 204 right-turn entry movements and 86 left-turn entry movements from Goulburn Valley Highway. Traffic surveys undertaken by GTA Consulting show that there are in the order of 500 southbound movements in the midweek PM peak hour.

A SIDRA intersection analysis has been undertaken to determine the performance of the new access via Goulburn Valley Highway to the development site in the PM peak hour under post development conditions. A peak flow factor of 95% has been adopted.

Table 3: SIDRA Summary

<table>
<thead>
<tr>
<th>Approach</th>
<th>Degree of Saturation</th>
<th>Average Delay (sec)</th>
<th>Queue Length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goulburn Valley Highway (south)</td>
<td>0.339</td>
<td>2.6</td>
<td>9.7</td>
</tr>
<tr>
<td>Goulburn Valley Highway (north)</td>
<td>0.271</td>
<td>0.9</td>
<td>0.0</td>
</tr>
</tbody>
</table>

The SIDRA analysis indicates that the proposed access has ample capacity on each approach to accommodate the number of entry movements, and there will be only a very minor delay for vehicles turning right into the site.

Significantly, Degrees of Saturation (DOS) less than 0.8 are considered to be good operating conditions for unsignalised intersections. As can be seen each DOS (being the highest DOS of any one approach at that intersection) is significantly lower than 0.8.

Full outputs of the SIDRA analysis for existing and post development conditions are attached at Appendix D.

Based on the above assessment, we are satisfied that the introduction of up to 204 right-turn movements and 86 left-turn into the site will not severely impact on the operation of Goulburn Valley Highway.

Ford Road Access

The proposed development may result in up to 272 movements in/out of the site via the central access via Ford Road.

Traffix Group has undertaken a SIDRA intersection analysis has been undertaken to determine the performance of the new access via Ford Road under post development conditions. A peak flow factor of 95% has been adopted.

Table 4: SIDRA Summary

<table>
<thead>
<tr>
<th>Approach</th>
<th>Degree of Saturation</th>
<th>Average Delay (sec)</th>
<th>Queue Length (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Access (south)</td>
<td>0.205</td>
<td>8.0</td>
<td>6.1</td>
</tr>
<tr>
<td>Ford Road (east)</td>
<td>0.103</td>
<td>1.3</td>
<td>0.0</td>
</tr>
<tr>
<td>Ford Road (west)</td>
<td>0.121</td>
<td>1.5</td>
<td>2.3</td>
</tr>
</tbody>
</table>
The SIDRA analysis indicates that the proposed access has ample capacity on each approach to accommodate the number of movements, and there will be only a very minor delay for vehicles turning out of the site.

Full outputs of the SIDRA analysis for existing and post development conditions are attached at Appendix E.

6 Bicycle Parking

Clause 52.34 of the Planning Scheme sets out the statutory requirements for bicycle facilities. The purpose of Clause 52.34 is:

- To encourage cycling as a mode of transport.
- To provide secure, accessible and convenient bicycle parking spaces and associated shower and change facilities.

The number of bicycle spaces required under Clause 52.34 is set out below.

Table 5: Statutory Bicycle Parking Requirement

<table>
<thead>
<tr>
<th>Use</th>
<th>Measure</th>
<th>Rate</th>
<th>Requirement(1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employee</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td>2,030m²</td>
<td>1 space to each 300m² of leasable floor area</td>
<td>7 space</td>
</tr>
<tr>
<td>Supermarket</td>
<td>3,960m²</td>
<td>1 space to each 600m² of leasable floor area if the leasable floor area exceeds 1,000m²</td>
<td>7 spaces</td>
</tr>
<tr>
<td>Medical Centre</td>
<td>6 practitioners</td>
<td>1 space to each eight practitioners</td>
<td>1 space</td>
</tr>
<tr>
<td>Community Centre</td>
<td>100m²</td>
<td>1 space to each 300m² of net floor area if the net floor area exceeds 1,000m²</td>
<td>0 spaces</td>
</tr>
<tr>
<td>Shopper/Visitor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td>2,030m²</td>
<td>1 space to each 500m² of leasable floor area</td>
<td>4 spaces</td>
</tr>
<tr>
<td>Supermarket</td>
<td>3,960m²</td>
<td>1 space to each 500m² of leasable floor area if the leasable floor area exceeds 1,000m²</td>
<td>8 spaces</td>
</tr>
<tr>
<td>Medical Centre</td>
<td>6 practitioners</td>
<td>1 space to each four practitioners</td>
<td>2 space</td>
</tr>
<tr>
<td>Council/Community Centre</td>
<td>100m²</td>
<td>1 space to each 1,000m² of leasable floor area if the leasable floor area exceeds 1,000m²</td>
<td>0 spaces</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td></td>
<td></td>
<td><strong>29 spaces</strong></td>
</tr>
</tbody>
</table>

(1) Clause 52.34 states... “If in calculating the number of bicycle facilities the result is not a whole number, the required number of bicycle facilities is the nearest whole number. If the requirement is one-half, the requirement is the next whole number.”

The proposed development has a statutory requirement for 29 bicycle spaces, comprising 15 employee spaces and 14 visitor spaces.
A total of 30 bicycle parking spaces are provided on-site including 16 within a secure area for employees and 14 spaces provided at horizontal rails near tenancy 4 for visitors.

Two shower/change room facilities are provided adjacent to the secure bicycle parking.

Accordingly, the bicycle and end of trip facility requirements set out at Clause 52.34 of the Planning Scheme are met.

7 Loading

Clause 52.07 of the Planning Scheme specifies that:

*No building or works may be constructed for the manufacture, servicing, storage or sale of goods or materials unless:*

- Space is provided on the land for loading and unloading vehicles as specified in the table below.
- The driveway to the loading bay is at least 3.6 metres wide. If a driveway changes direction or intersects another driveway, the internal radius at the change of direction or intersection must be at least 6 metres.
- The road that provides access to the loading bay is at least 3.6 metres wide.

<table>
<thead>
<tr>
<th>FLOOR AREA OF BUILDING</th>
<th>MINIMUM LOADING BAY DIMENSIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2,600 m² or less in single occupation</td>
<td>Area 27.4 m²</td>
</tr>
<tr>
<td></td>
<td>Length 7.6 m</td>
</tr>
<tr>
<td></td>
<td>Width 3.6 m</td>
</tr>
<tr>
<td></td>
<td>Height Clearance 4.0 m</td>
</tr>
<tr>
<td>For every additional 1,800 m² or part</td>
<td>Additional 18 m²</td>
</tr>
</tbody>
</table>

The supermarket is 3,960 m² in area requiring a 45.4 m² loading area. The supermarket loading bay is significantly larger than this and exceeds the Planning Scheme requirement.

Swept path analysis of a 19m articulated vehicle accessing the supermarket loading bay has been undertaken and access was shown to be satisfactory. A copy of the swept path analysis is attached at Appendix F.

A further two loading bays are provided for loading of the retail tenancies. Given the small size of many of the retail premises and the nature of the proposed development, it would be appropriate to for the retail tenancies to share the two common loading areas.

In addition, deliveries to the retail tenancies are likely to be via small vans which could make use of the on-site parking to undertake deliveries.

The provision of loading bays meets the statutory requirement set out at Clause 52.07 of the Planning Scheme.
8 Conclusions

Having visited the site, perused relevant documents and plans, provided design advice, conducted a spot parking survey and undertaken traffic engineering assessments, we are of the opinion that:

a) The proposed development has a statutory car parking requirement for 309 spaces,

b) the provision of 446 spaces, exceeds the statutory parking requirement the application does not seek a permit to reduce the statutory parking requirement,

c) the proposed car parking layout is considered to be in accordance with both the relevant requirements of the Planning Scheme and Australian Standards and will operate in an appropriate and acceptable manner,

d) the new access via Goulburn Valley Highway has been designed in accordance with Austroads Guide to Road Design Part 4A and will operate in a safe and effective manner,

e) the treatments for the proposed access points on Ford Road have been designed in accordance with Austroads Guide to Road Design Part 4A and will work well as an interim treatment until the ultimate duplication of Ford Road,

f) a contribution has been made by the applicant to be used at the discretion of Council/VicRoads for interim works at the intersection of Goulburn Valley Highway/Wanganui Road/Ford Road prior to the ultimate construction of the intersection as part of the Shepparton bypass,

g) the provision of bicycle parking and end of trip facilities is in accordance with Clause 52.34 of the Planning Scheme,

h) the provision of three loading bays meets the statutory loading requirement set out at Clause 52.07, and

i) there are no traffic engineering reasons why a planning permit for the proposed mixed-use development at 221-229 Goulburn Valley Highway, Shepparton, should not be granted.
Appendix A: Development Plans
Appendix B: Functional Layout Plan of Goulburn Valley Highway Access
Appendix D:
SIDRA Output Goulburn Valley Highway Access
# Movement Summary

**Site: 101 [221-229 Goulburn Valley Highway, Shepparton]**

221-229 Goulburn Valley Highway, Shepparton  
Stop (Two-Way)

## Movement Performance - Vehicles

<table>
<thead>
<tr>
<th>Mov ID</th>
<th>OD Mov</th>
<th>Demand Flows Total veh/h</th>
<th>HV %</th>
<th>Deg Satn v/c</th>
<th>Average Delay sec</th>
<th>Level of Service</th>
<th>95% Back of Queue Delay veh</th>
<th>Prop Queued</th>
<th>Effective Stop Rate per veh</th>
<th>Average Speed Total HV Vehicles km/h</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>South: Goulburn Valley Highway</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>2</td>
<td>T1</td>
<td>637</td>
<td>6.0</td>
<td>0.339</td>
<td>0.0</td>
<td>LOS A</td>
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<td>0.0</td>
<td></td>
<td>0.00</td>
</tr>
<tr>
<td>3</td>
<td>R2</td>
<td>215</td>
<td>1.0</td>
<td>0.300</td>
<td>10.1</td>
<td>LOS B</td>
<td>1.4</td>
<td>9.7</td>
<td>0.61</td>
<td>0.89</td>
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<tr>
<td>Approach</td>
<td></td>
<td>852</td>
<td>4.7</td>
<td>0.339</td>
<td>2.6</td>
<td>NA</td>
<td>1.4</td>
<td>9.7</td>
<td>0.15</td>
<td>0.22</td>
</tr>
<tr>
<td>North: Goulburn Valley Highway</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>L2</td>
<td>91</td>
<td>1.0</td>
<td>0.049</td>
<td>5.6</td>
<td>LOS A</td>
<td>0.0</td>
<td>0.0</td>
<td></td>
<td>0.58</td>
</tr>
<tr>
<td>8</td>
<td>T1</td>
<td>509</td>
<td>6.0</td>
<td>0.271</td>
<td>0.9</td>
<td>NA</td>
<td>0.0</td>
<td>0.0</td>
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<td>0.00</td>
</tr>
<tr>
<td>Approach</td>
<td></td>
<td>600</td>
<td>5.2</td>
<td>0.271</td>
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<td>NA</td>
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<td>All Vehicles</td>
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<td>0.339</td>
<td>1.9</td>
<td>NA</td>
<td>1.4</td>
<td>9.7</td>
<td>0.09</td>
<td>0.17</td>
</tr>
</tbody>
</table>

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).

Vehicle movement LOS values are based on average delay per movement.

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

NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.


HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Appendix E:
SIDRA Output Ford Road Access
## Movement Summary

### Site: 1 [Ford Road Access]

**Stop (Two-Way)**

### Movement Performance - Vehicles

<table>
<thead>
<tr>
<th>Mov ID</th>
<th>OD Mov</th>
<th>Demand Flows Total veh/h</th>
<th>HV %</th>
<th>Deg. Satn v/c</th>
<th>Average Delay sec</th>
<th>Level of Service</th>
<th>95% Back of Queue Distance m</th>
<th>Prop. Queued</th>
<th>Effective Stop Rate per veh</th>
<th>Average Speed km/h</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>South: Site Access</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>L2</td>
<td>132</td>
<td>0.0</td>
<td>0.205</td>
<td>7.2</td>
<td>LOS A</td>
<td>0.9</td>
<td>6.1</td>
<td>0.39</td>
<td>0.90</td>
</tr>
<tr>
<td>3</td>
<td>R2</td>
<td>59</td>
<td>0.0</td>
<td>0.205</td>
<td>10.0</td>
<td>LOS B</td>
<td>0.9</td>
<td>6.1</td>
<td>0.39</td>
<td>0.90</td>
</tr>
<tr>
<td><strong>Approach</strong></td>
<td>191</td>
<td>0.0</td>
<td>0.205</td>
<td>8.0</td>
<td>LOS A</td>
<td>0.9</td>
<td>6.1</td>
<td>0.39</td>
<td>0.90</td>
<td>47.4</td>
</tr>
<tr>
<td><strong>East: Ford Road</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td>4</td>
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<td>59</td>
<td>0.0</td>
<td>0.032</td>
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<td>0.00</td>
<td>0.58</td>
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<tr>
<td>5</td>
<td>T1</td>
<td>195</td>
<td>5.0</td>
<td>0.103</td>
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<td>LOS A</td>
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<td>0.0</td>
<td>0.00</td>
<td>0.00</td>
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<tr>
<td><strong>Approach</strong></td>
<td>254</td>
<td>3.8</td>
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<td>NA</td>
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<td>0.0</td>
<td>0.00</td>
<td>0.13</td>
<td>58.0</td>
</tr>
<tr>
<td><strong>West: Ford Road</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>11</td>
<td>T1</td>
<td>165</td>
<td>5.0</td>
<td>0.121</td>
<td>0.3</td>
<td>LOS A</td>
<td>0.3</td>
<td>2.3</td>
<td>0.16</td>
<td>0.11</td>
</tr>
<tr>
<td>12</td>
<td>R2</td>
<td>37</td>
<td>0.0</td>
<td>0.121</td>
<td>6.6</td>
<td>LOS A</td>
<td>0.3</td>
<td>2.3</td>
<td>0.16</td>
<td>0.11</td>
</tr>
<tr>
<td><strong>Approach</strong></td>
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<td>4.1</td>
<td>0.121</td>
<td>1.5</td>
<td>NA</td>
<td>0.3</td>
<td>2.3</td>
<td>0.16</td>
<td>0.11</td>
<td>57.7</td>
</tr>
<tr>
<td><strong>All Vehicles</strong></td>
<td>646</td>
<td>2.8</td>
<td>0.205</td>
<td>3.3</td>
<td>NA</td>
<td>0.9</td>
<td>6.1</td>
<td>0.16</td>
<td>0.35</td>
<td>55.4</td>
</tr>
</tbody>
</table>

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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Appendix F: Swept Path Diagrams