Dohertys Road, Truganina
96A Application
Truganina PSP Area
Transport Impact Assessment

transportation planning, design and delivery

13M1981000 02/05/13

GTAconsultants

Dohertys Road, Truganina

96A Application, Truganina PSP Area

Transport Impact Assessment

Issue: A 02/05/13

Client: ID Land
Reference: 13M1981000
GTA Consultants Office: VIC

Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
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1. Introduction

1.1 Background

A planning permit is currently being sought for a proposed residential subdivision on land located at Dohertys Road in Truganina under a Section 96a Application. The subject site incorporates some 572 residential lots. It is noted that the overall site includes an additional 9.47ha which is to incorporate additional residential lots and a Neighbourhood Activity Centre (NAC). This additional area is to be assessed as part of a separate planning permit application.

The Growth Areas Authority (GAA) is currently in the pre-planning stage of preparing a Precinct Structure Plan (PSP) for the precinct which will form an Amendment in the Wyndham Planning Scheme. The subject site is located within the draft Truganina PSP area.

GTA Consultants was commissioned by ID Land in April 2013 to undertake a Transport Impact Assessment of the proposal in line with the requirements of Clause 56 of the Wyndham Planning Scheme and the anticipated requirements of the PSP.

1.2 Purpose of this Report

This report sets out an assessment of the traffic and transport implications of the proposed development, including consideration of the:

i existing road network and traffic conditions surrounding the site
ii accessibility of the site by public transport and other non-vehicular modes of travel
iii road hierarchy within the subdivision
iv proposed access arrangements for the subdivision
v impact of the development on the surrounding road network.

1.3 References

In preparing this report, a number of references have been made, including:

- Wyndham Planning Scheme
- PSP Notes '*Our Roads: Connecting People*' prepared by the GAA
- Future Urban Structure (draft) of the Truganina PSP Area (V121214), prepared by GAA
- plans for the proposed development prepared by Breese Pitt Dixon Pty Ltd
- traffic surveys undertaken by GTA Consultants as referenced in the context of this report
- various technical data as referenced in this report
- an inspection of the site and its surrounds
- other documents as nominated.

2. Existing Conditions

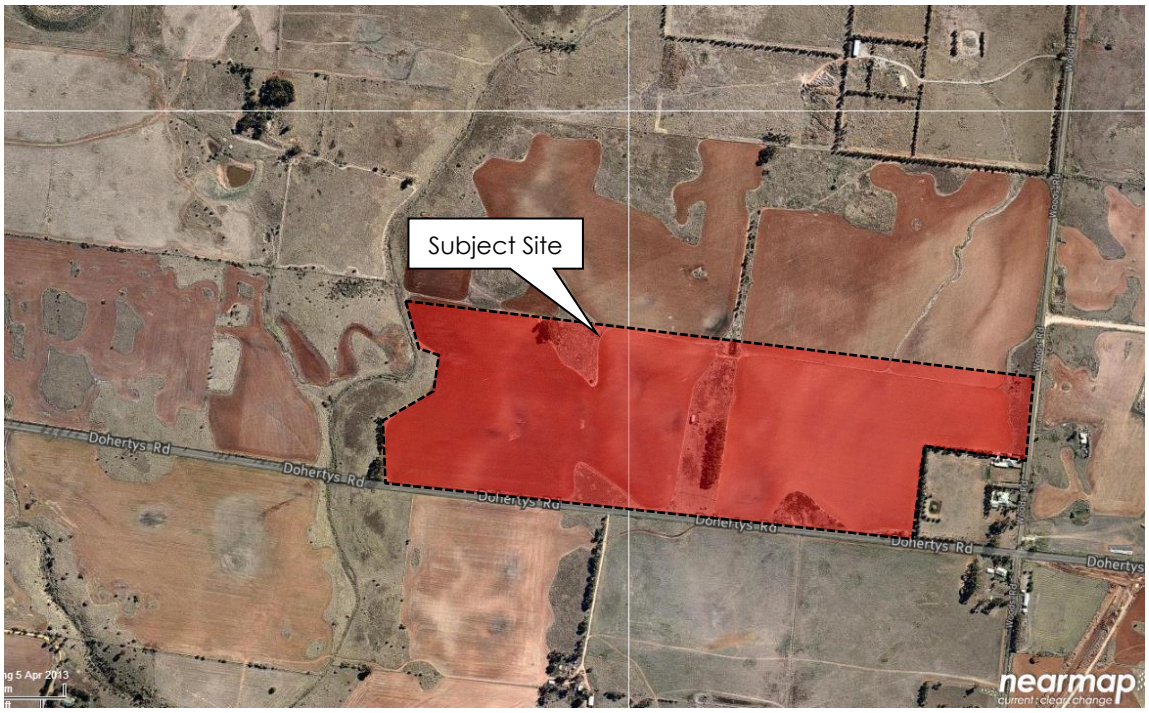
2.1 Subject Site

The subject site is located at Dohertys Road, to the west of Woods Road, in Truganina. The site of approximately 52.48ha has a southern frontage of 1,200m to Dohertys Road and an eastern frontage of 200m to Woods Road.

The site is located within an Urban Growth Zone and is currently unoccupied. The surrounding properties include a mix of farming and residential land uses.

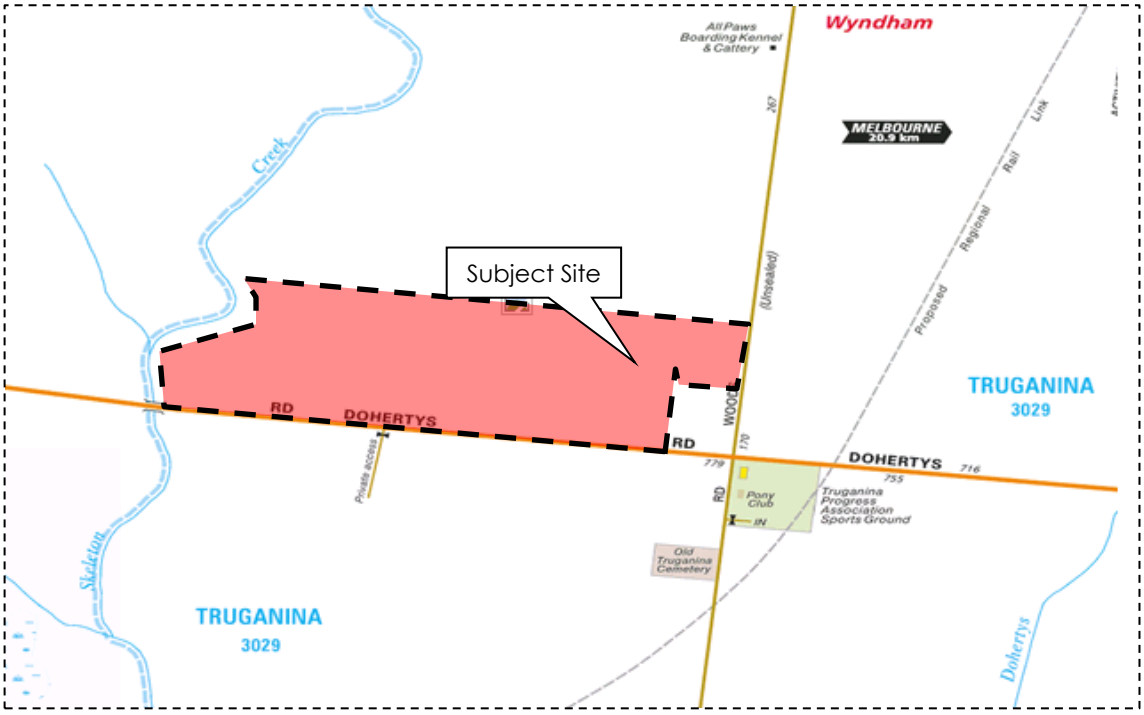
The location of the subject site and the surrounding environs is shown in Figure 2.1 and Figure 2.2.

Figure 2.1: Subject Site and its Environs



(Reproduced with Permission from Nearmap)

Figure 2.2: Subject Site



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2.2 Road Network

2.2.1 Adjoining Roads

Dohertys Road

Dohertys Road functions as a major road (Local Council) within the vicinity of the subject site. It is a two-way road aligned in an east-west direction and configured with a two lane, 7 metre wide carriageway set within a 20 metre wide road reserve (approx.).

Dohertys Road carries approximately 8,600 vehicles per day[1] and is shown in Figure 2.3 and Figure 2.4.

Figure 2.3: Dohertys Road (looking East)

Figure 2.4: Dohertys Road (looking West)

[1] Based on turning movement counts undertaken by GTA Consultants at the Dohertys Road/Woods Road intersection on 17 April 2013 and adopting a peak to daily ratio of 8% for major roads and 10% for local roads.

Woods Road

Woods Road functions as a local road in the vicinity of the site. It is a two-way road aligned in a north-south direction and configured with an 8 metre wide carriageway set within a 20 metre wide road reserve (approx.). Woods Road is unsealed in the vicinity of the site.

Woods Road carries approximately 250 vehicles per day[1] and is shown in Figure 2.5 and Figure 2.6.

Figure 2.5: Woods Road (looking North)

Figure 2.6: Woods Road (looking South)

2.2.2 Surrounding Intersections

The key intersections in the vicinity of the site are the Dohertys Road/Woods Road and the Dohertys Road/Derrimut intersections which are currently unsignalised.

2.2.3 Traffic Volumes

GTA Consultants undertook traffic movement counts at the Dohertys Road/Woods Road intersection on Wednesday 17 April 2013 during the AM peak period (8:00am - 9:00am) and PM peak period (5:00pm – 6:00pm). The AM and PM peak hour volumes are shown in Figure 2.7 and Figure 2.8 respectively.

Figure 2.7: Existing AM Peak Hour Volumes

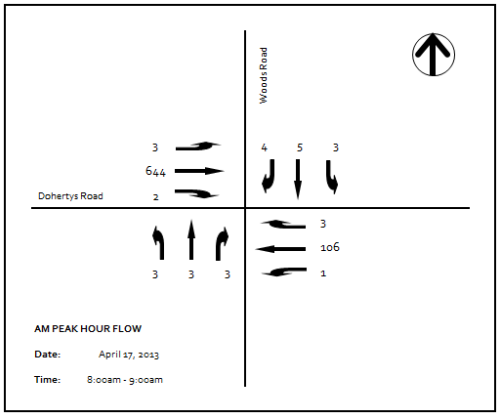
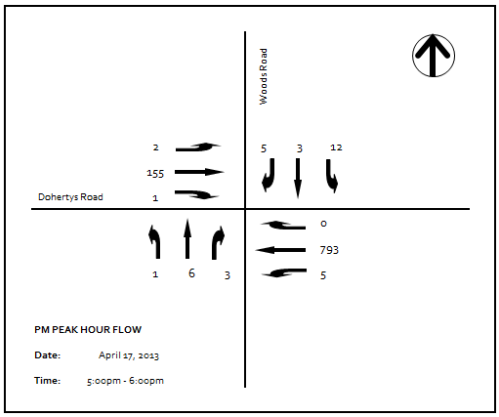


Figure 2.8: Existing PM Peak Hour Volumes



2.2.4 Accident Statistics

A review of the reported casualty accident history for the roads and intersections adjoining the subject site has been sourced from VicRoads CrashStats accident database. This database

records all accidents causing injury that have occurred in Victoria since 1987 (as recorded by Victorian Police) and categorises these accidents as follows:

- Fatal injury: at least one person was killed in the accident or died within 30 days as a result of the accident.
- Serious injury: at least one person was sent to hospital as a result of the accident.
- Other injury: at least one person required medical treatment as a result of the accident.

A summary of the accidents in the vicinity of the site for the last available five year period (1 January 2007 to 31 December 2011) is presented in Table 2.1.

Table 2.1: Casualty Accident History

Location	Accident No.		
	Fatality	Serious Injury	Other Injury
Roads Fronting Site			
Dohertys Rd (between Woods Rd & Derrimut Rd)	Nil	2	1
Woods Rd (between Dohertys Rd & Boundary Rd)	Nil	Nil	1
Nearby Intersections			
Dohertys Rd/Woods Rd	Nil	Nil	2

Source: VicRoads

Table 2.1 indicates that a total of 6 casualty incidents have been recorded in the vicinity of the site during the nominated period. A review of the incident data does not identify any recurring trend.

2.3 Sustainable Transport Infrastructure

There are currently no public transport services operating within the vicinity of the subject site.

Furthermore, no formal pedestrian paths or dedicated bicycle lanes are located within the vicinity of the site with existing pedestrian movements currently accommodated within the verges of Woods Road and Dohertys Road. Bicycle trips would currently need to occur on-road.

3. Truganina PSP Area (draft)

3.1 Overview

The site is located within the future Truganina PSP Area. The Future Urban Structure (draft) of the Truganina PSP Area is shown in Figure 3.1.

Figure 3.1: Truganina PSP Area – Future Urban Structure (draft)

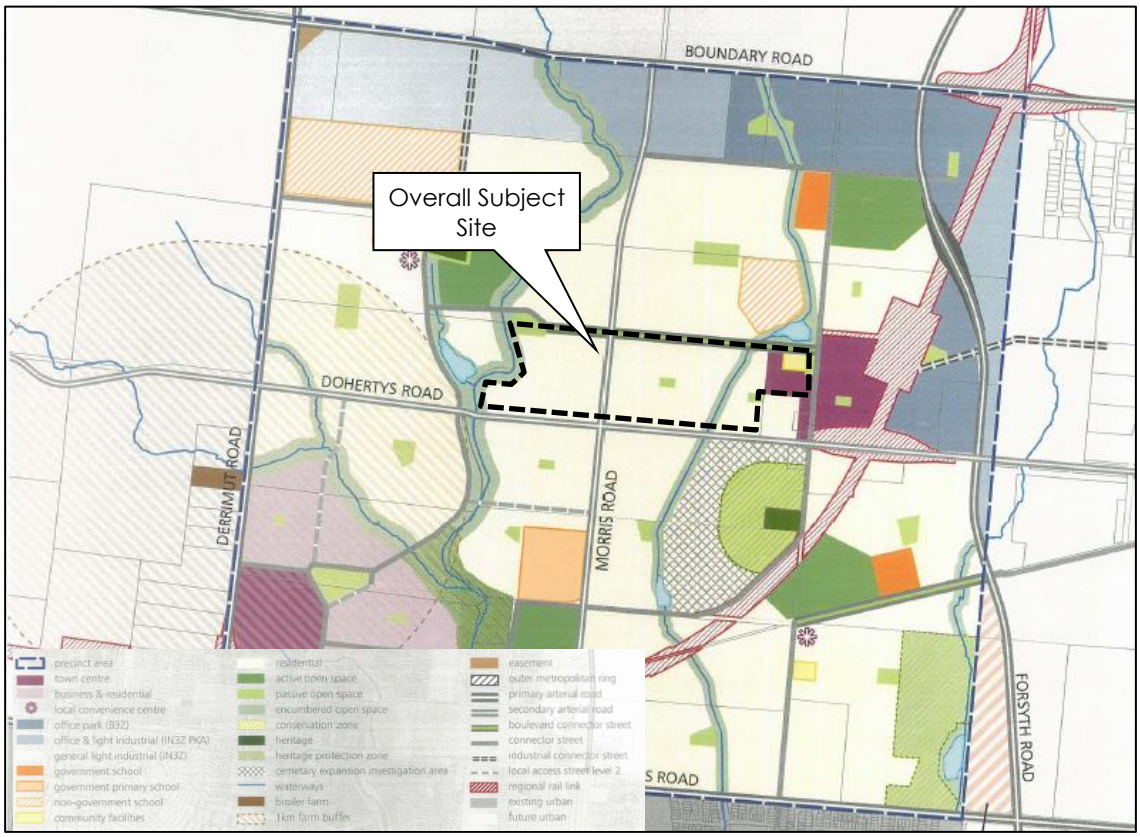


Figure 3.1 indicates that the site is to primarily be utilised for residential land uses with the north-east corner to be utilised for mixed-use and community facilities development.

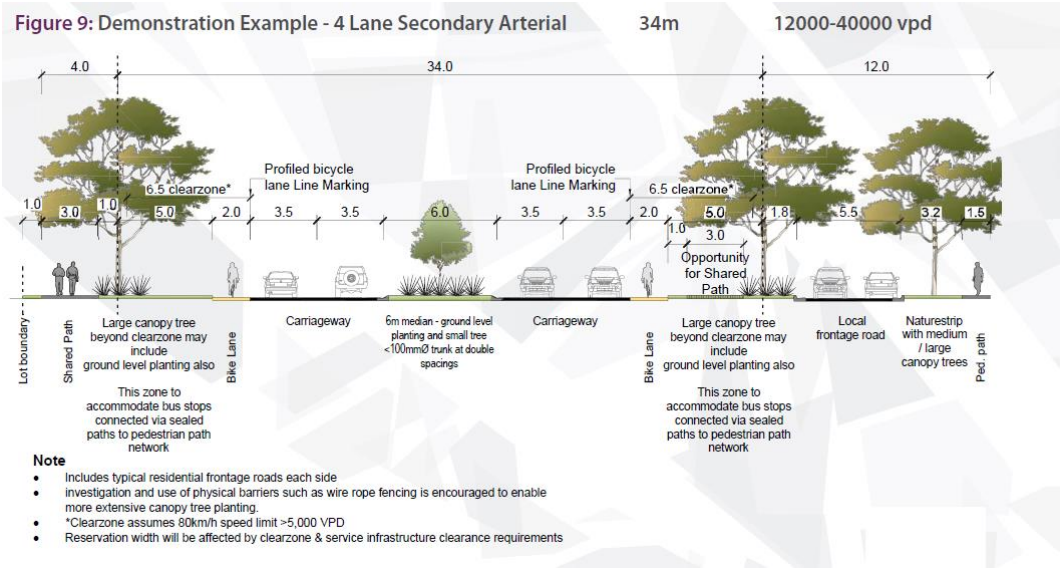
It is noted that a primary school is to be located to the north of the site, west of Woods Road. Tarneit train station is also to be located to the east of the site.

3.2 Road Network

The Future Urban Structure (draft) indicates that Dohertys Road, to the south of the site is proposed to be duplicated in the future. In addition, a new north-south arterial road will pass through the site ultimately connecting to Morris Road.

It is understood that these roads will ultimately be configured with 4 lane divided carriageways set within a 34m road reserve. These roads will be classified as 'Secondary Arterial' roads and will be controlled by Council. The future anticipated cross-section of Dohertys Road and the new north-south road is illustrated in Figure 3.2.

Figure 3.2: 4-Lane Secondary Arterial Cross Section



(source: GAA 'Our Roads: Connecting People' PSP Notes)

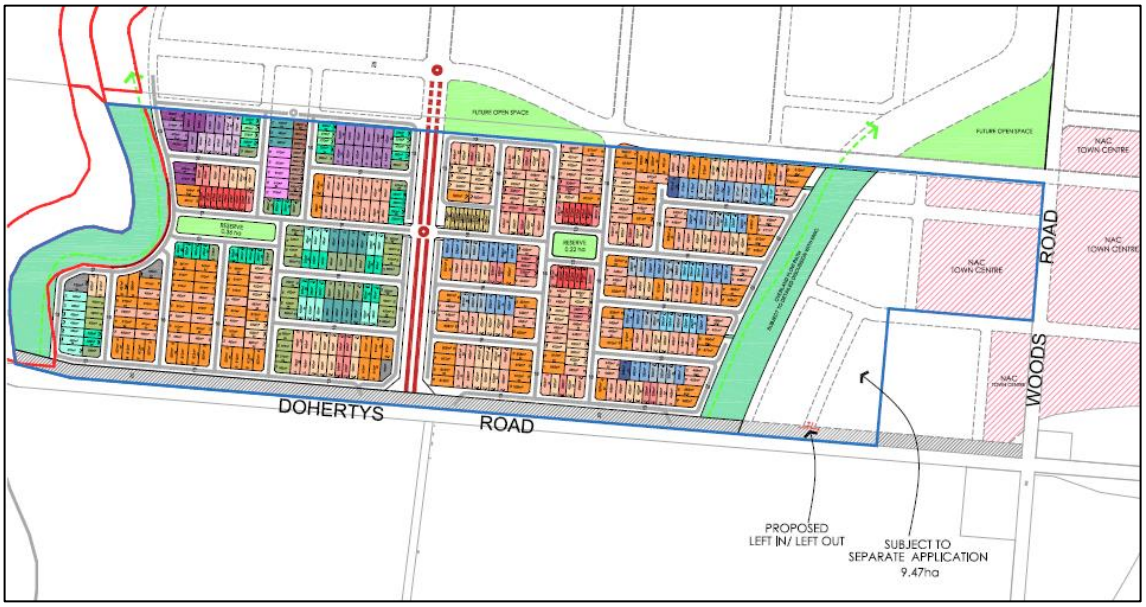
4. Development Proposal

4.1 Overall

4.1.1 Land Uses

The proposed development is to incorporate a residential subdivision of 572 lots. The proposed subdivision layout is illustrated in Figure 4.1.

Figure 4.1: Overall – Subdivision Layout



4.2 Access and Internal Circulation

4.2.1 External Access - Interim

In the first instance, access to the site is proposed solely via an unsignalised intersection to Dohertys Road (providing full turning movements) on the site's southern frontage.

4.2.2 External Access - Ultimate

Following the development of the neighbouring lots to the north of the site, additional connections will be available to connect residents to the internal PSP road network.

In addition, it is understood that Dohertys Road will ultimately be duplicated and the new north-south arterial road which bisects the site will form a cross-intersection with Morris Road at which point the intersection will be signalised.

While no specific timing information is currently available, it is envisaged that duplication will occur following greater development of the PSP and broader Wyndham North area.

5. Integrated Transport Infrastructure

5.1 Preamble

The Truganina PSP will outline infrastructure requirements necessary to facilitate development of the area. These requirements include the provision of walking and cycling infrastructure, public transport infrastructure, and the road network. These requirements will provide future development with coherent guidelines which must be met to facilitate development within the precinct.

In this regard, reference is made to the PSP Notes "Our Roads: Connecting People" prepared by the GAA. This document indicates that the objective of the road network is:

"to provide guidance for developing road cross sections for PSPs that consider competing transport and community ideal and to provide balanced outcomes and promote more sustainable travel modes".

On the basis of the above, the following sections have been prepared to summarise the walking and cycling, public transport and road network provisions associated with the proposed development and demonstrate their compliance with the typical GAA guidelines.

5.2 Walking

PSP Requirements

The PSP Note indicates that the following outcomes for pedestrians should be achieved through the road network design:

- *"Continuous footpaths on both sides of all streets and roads;*
- *Regular crossing points, shade and rest points;*
- *Provision for users of all abilities;*
- *Pedestrian priority in areas of high foot traffic, (eg town centres - also known as activity centres and schools); and*
- *An attractive appearance to improve amenity and encourage walking."*

It is noted that there are no specific pedestrian requirements within the draft Future Urban Structure.

Compliance with PSP Requirements

Pedestrian footpaths will be provided on both sides of roads within the proposed subdivision, except roads with reserve frontages.

5.3 Cycling

PSP Requirements

The PSP Note indicates that the following outcomes for cyclists should be achieved through the road network design:

- *"Bicycle priority treatments over motorised traffic where appropriate;*
- *On-road bicycle lanes on all connector streets and arterial roads to facilitate travel by cyclists;*
- *Appropriate separation from motor vehicles on high demand cycle routes;*

- *On declared arterial roads, VicRoads may have additional requirements;*
- *Where provided, shared landscape trails on local and connector streets will complement the off road network of shared paths;*
- *Off road shared paths may also be needed on arterial roads; and*
- *Safe road crossing facilities."*

It is noted that there are no specific cyclist requirements within the draft Future Urban Structure.

Compliance with PSP Requirements

Each of the roads within the subdivision will be designed in accordance with the requirements of an 'Access Street level 1' which will have pedestrian and cyclist priority. It is noted that 2m wide bike lanes will be provided within Dohertys Road (once duplicated) and the new north-south arterial road in accordance with PSP requirements for secondary arterial roads.

5.4 Public Transport

PSP Requirements

The PSP Note indicates that the following outcomes for public transport should be achieved through the road network design:

- *"Bus routes planned for relevant connectors and arterial roads;*
- *Roads to cater for bus routes shall be designed to accord with the Department of Transport's Public Transport Guidelines for Land Use and Development;*
- *Bus priority treatments where appropriate;*
- *Roadside infrastructure to provide safe and accessible DDA compliant bus stops; and*
- *Safe crossing points to bus stops where appropriate."*

It is noted that there are no specific public transport requirements within the draft Future Urban Structure.

Compliance with PSP Requirements

While the Future Urban Structure (draft) does not nominate anticipated bus routes in the vicinity of the site, it is anticipated that bus routes will operate on the arterial road network, including the new north-south road. The proposed cross-section of the new north-south road is consistent with the requirements of the PSP Guidelines and as such is anticipated to be appropriate to cater for bus movements if and when required.

5.5 Road Network

PSP Requirements

The PSP Note indicates that the following outcomes for private motor vehicle users should be achieved through the road network design:

- *"High mobility for through traffic with adequate capacity and speeds on arterial roads; and*
- *High accessibility for local traffic with a fine grained local road network, frequent intersections and good property access"*

In addition to the above road network features, the PSP notes recommend that local access streets *"length should be limited to approximately 240m"*. The PSP notes also provide guidance on recommended cross-sections for each of the various road types.

Compliance with PSP Requirements

Table 5.1 provides a summary of the proposed internal road hierarchy. The proposed cross-sections are consistent with the standard GAA and Clause 56.06 cross-sections. It is noted that the Access Street road reserves located adjacent to reserve frontages (or which provide vehicle access on one frontage) have been reduced from 16m to 13m.

Table 5.1: Proposed Internal Road Hierarchy

Street Type	Proposed Road Reservation	Carriageway Width	Parking Provision	Pedestrian and Cyclist Provisions	Anticipated Daily Volume
Access Street – Level 1 (reserve frontage)	13m	7.3m	Kerbside parking on one side	Pedestrian paths on development side only	Up to 2,000vpd
Access Street – Level 1	16m	7.3m	Kerbside parking on both sides	Pedestrian paths on both sides of road	Up to 2,000vpd
Secondary Arterial	34m	24m	None	Pedestrian paths on both sides of road	Up to 40,000vpd

The typical 'Secondary Arterial' and 'Access Street Level 1' cross sections are illustrated in Figure 5.1 and Figure 5.2.

Figure 5.1: 34m Road Reserve Indicative Cross-Section

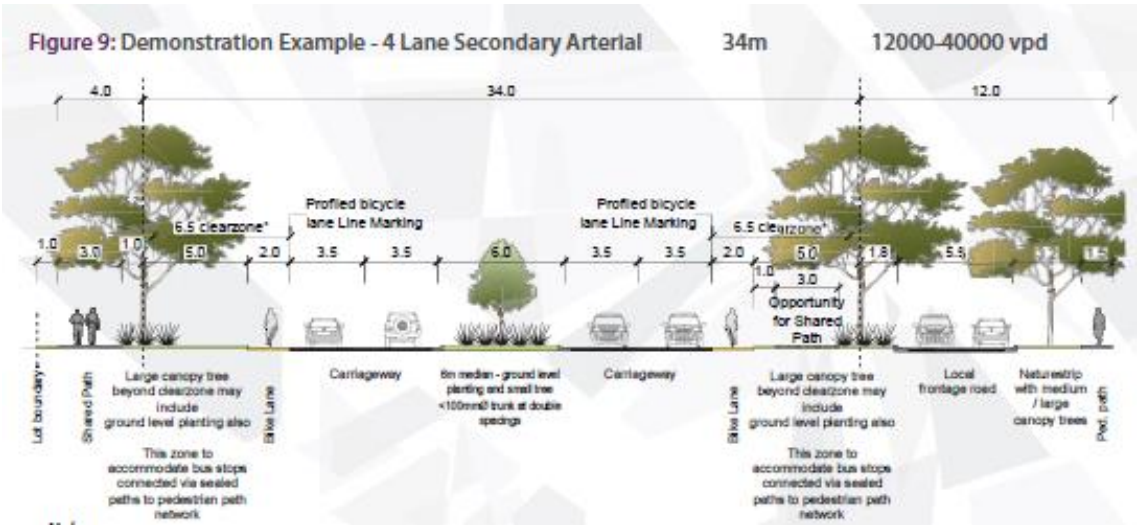
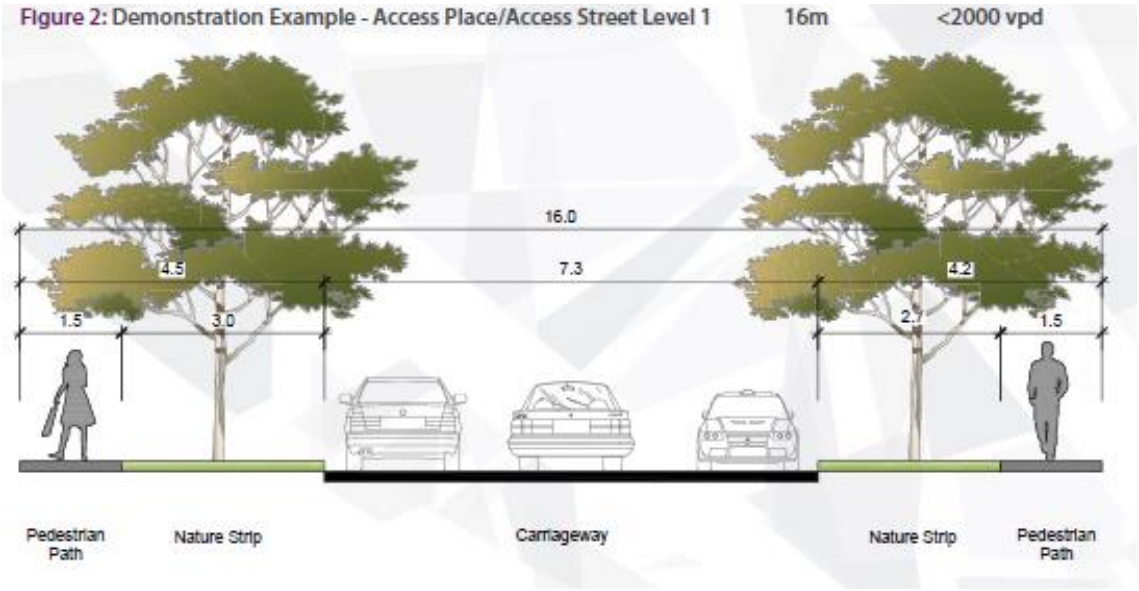


Figure 5.2: 16m Access Street Level 1 Indicative Cross-Section



A review of the anticipated ultimate daily traffic volumes on the internal road network is provided in Section 6 of this assessment. The assessment indicates that the anticipated daily traffic volumes within the subdivision are within the theoretical capacities of the nominated road typologies.

Figure 5.3 has been prepared to summarise the proposed road hierarchy within the subject site.

Figure 5.3: Proposed Road Hierarchy

Reference to Table 5.1 and the proposed road-reserve widths nominated on the development plan indicates that the proposed hierarchy is consistent with the road infrastructure requirements nominated within the PSP and Clause 56.06 of the Wyndham Planning Scheme.

It is noted that a number of local roads appear to exceed the 240m length recommendation specified within the PSP notes. As such, it is recommended that these roads be treated to limit vehicle speeds.

Further to the above, it is noted that a number of dead-end roads exist within the site. These roads are anticipated to service a maximum of four lots and are of a limited length. As such, the proposed arrangement is considered to be appropriate.

6. Traffic Impact Assessment

6.1 Preamble

The subject site will initially adopt "interim" access arrangements which will be required to accommodate the traffic volume requirements of the subject site prior to the development of the land parcel to the north and the duplication of Dohertys Road. These access arrangements will then be upgraded to accord with the overall 'ultimate' road network requirements outlined within the Truganina PSP, as future development of surrounding sites is completed.

The following sections have been prepared to assess the operation of the interim access arrangement, noting that the ultimate access arrangements are consistent with those included in the draft PSP, and as such have already been assessed in some detail, and are therefore considered to be satisfactory.

6.2 Traffic Generation

The Victorian Integrated Survey of Travel Activity (VISTA) is a survey of personal travel for residents in each of the Melbourne municipalities and major regional centres in Victoria. Travel data collated provided data regarding the number of trips each household generated, including vehicle (passenger and driver), public transport, walking and cycling trips. Reference to the VISTA07 dataset indicates an average range of 2.5 to 7.2 daily car trips per household within Metropolitan Melbourne. Reference to the VISTA09/10 dataset indicates that Wyndham has a traffic generation rate of 6.0 movements per household. It is noted that this data does not distinguish between various housing types, i.e. detached, medium density or apartment types or indeed location (municipality wide).

In order to present a conservative assessment and having consideration for the initial 'isolation' of the subject site area a traffic generation rate of 8 movements per day per lot has been assumed.

Table 6.2 sets out the interim traffic generation estimates for the peak hour and daily periods for the subject site.

Table 6.1: Estimated Development Traffic Generation (interim)

No. of Dwellings	Design Generation Rates		Traffic Generation Estimates	
	Peak Hour [1]	Daily	Peak Hour	Daily
572	0.8 vehicle movements / dwelling	8 vehicle movements / dwelling	458 vehicle movements / hour	4,576 vehicle movements / day

[1] Adopting a peak to daily ratio of 10%.

Table 6.2 indicates the proposed development could be expected to generate approximately 4,600 vehicle movements per day and 460 vehicle movements during the weekday AM and PM peak hours.

Ultimately, the subject site is anticipated to generate 3,400 vehicle movements per day and up to 340 vehicle movements per peak hour.

The following traffic impact assessment has been prepared to assess the impact of the subject site, noting that a traffic impact assessment for the overall site (additional residential lots and NAC) has been undertaken as part of the broader PSP process.

6.3 Traffic Distribution

The directional distribution and assignment of traffic generated by the proposed development will be influenced by a number of factors, including the:

i configuration of the road network in the immediate vicinity of the site
ii existing operation of intersections providing access between the local and arterial road network
iii distribution of households in the vicinity of the site
iv surrounding employment centres, retail centres and schools in relation to the site
v configuration of access points to the site.

In this instance, the directional distributions on Dohertys Road have been derived from outputs obtained from strategic transport modelling (Interim) undertaken by AECOM for the Wyndham North area as follows:

- Dohertys Road (east) 80%
- Dohertys Road (west) 20%.

In addition, the directional split of traffic (i.e. the ratio between the inbound and outbound traffic movements) have been assumed to be 80% out to 20% in during the AM peak hour, and 40% out to 60% in during the PM peak hour.

Based on the above, Figures 6.1 and 6.2 have been prepared to show the estimated marginal increase in turning movements in the vicinity of the subject property following full site development.

Figure 6.1: AM Peak Hour Traffic Volumes (site generated)

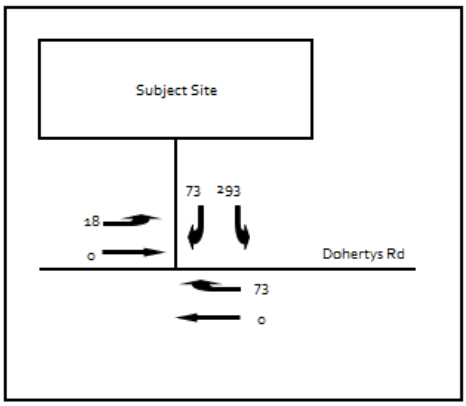
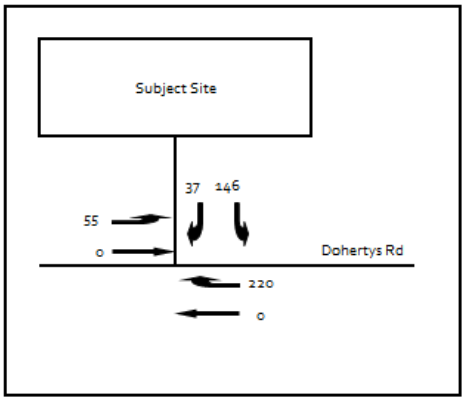


Figure 6.2: PM Peak hour Traffic Volumes (site generated)



6.4 Traffic Impact – Peak Hour

Traffic Volumes

The future traffic volumes of Dohertys Road will ultimately be constrained by the capacity of the Dohertys Road/Derrimut Road intersection and the broader road network. In this regard, GTA Consultants has undertaken an assessment of the future capacity of the existing road network prior to the duplication of Dohertys Road. The results of this assessment indicate that Dohertys Road could support up to 15,000 vehicles per day prior to the broader road network reaching capacity. This volume represents a 74% increase over the existing volumes on Dohertys Road.

Utilising the direction distributions obtained from strategic modelling the following peak hour volumes have been derived:

- AM peak: Eastbound: 1,200 vehicles, Westbound 300 vehicles
- PM peak: Eastbound: 300 vehicles, Westbound 1,200 vehicles.

By adding the AM and PM development traffic to the future traffic flows we can estimate the future traffic volumes at the primary site access point. These are outlined in Figure 6.3 and Figure 6.4.

Figure 6.3: AM Peak Hour Traffic Volumes (future traffic)

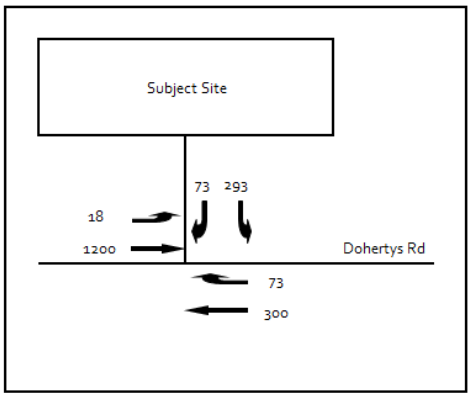
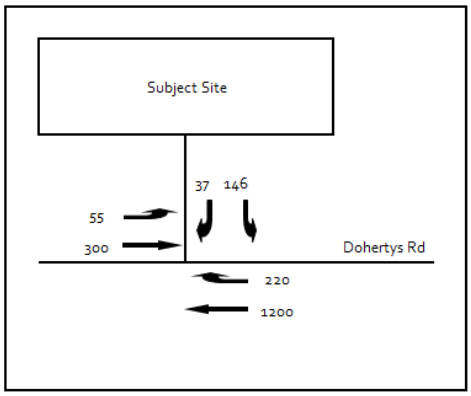


Figure 6.4: PM Peak Hour Traffic Volumes (post development)



6.4.1 Post-Development Intersection Operation – Interim Scenario

The operation of the Dohertys Road/Site Access intersection under the interim development scenario (i.e. prior to the duplication of Dohertys Road) has been assessed using *SIDRA INTERSECTION*, a computer based modelling package which calculates intersection performance.

The commonly used measure of intersection performance is referred to as the *Degree of Saturation (DOS)*. The DOS represents the flow-to-capacity ratio for the most critical movement on each leg of the intersection. For unsignalised intersections, a DOS of around 0.90 has been typically considered the practical limit, beyond which queues and delays increase disproportionately[2].

The results of this assessment are summarised in Table 6.2 with detailed results, including the intersection layout, provided at Appendix A.

[2] SIDRA INTERSECTION adopts the following criteria for Level of Service assessment:

		Intersection Degree of Saturation (X)		
		Signals	Roundabouts	Unsignalised
A	Excellent	<=0.60	<=0.60	<=0.60
B	Very Good	0.60-0.70	0.60-0.70	0.60-0.70
C	Good	0.70-0.90	0.70-0.85	0.70-0.80
D	Acceptable	0.90-0.95	0.85-0.95	0.80-0.90
E	Poor	0.95-1.00	0.95-1.00	0.90-1.00
F	Very Poor	>=1.0	>=1.0	>=1.0

Table 6.2: Site Access Intersection Operation - Interim Access Scenario

Peak Hour	Approach	DOS	Average Delay	95th Percentile Queue
AM Peak	Dohertys Road (east)	0.30	5 sec	7m
	Site Access (north)	# 0.82	34 sec	39 m
	Dohertys Road (west)	0.63	Nil	Nil
PM Peak	Dohertys Road (east)	# 0.63	2 sec	7 m
	Site Access (north)	0.27	15 sec	6 m
	Dohertys Road (west)	0.16	1 sec	Nil

DOS – Degree of saturation, # - Intersection DOS

Table 6.2 indicates that the Dohertys Road/Site Access intersection is anticipated to operate with 'acceptable' to 'good' service levels following the development of the interim development scenario.

6.4.2 Ultimate Intersection Operation

The ultimate layout of the site access intersections will be assessed as part of the Truganina PSP. Given the proposed development yield and ultimate access arrangements (including access to the north) are generally consistent with the draft PSP, the ultimate access arrangements are considered satisfactory.

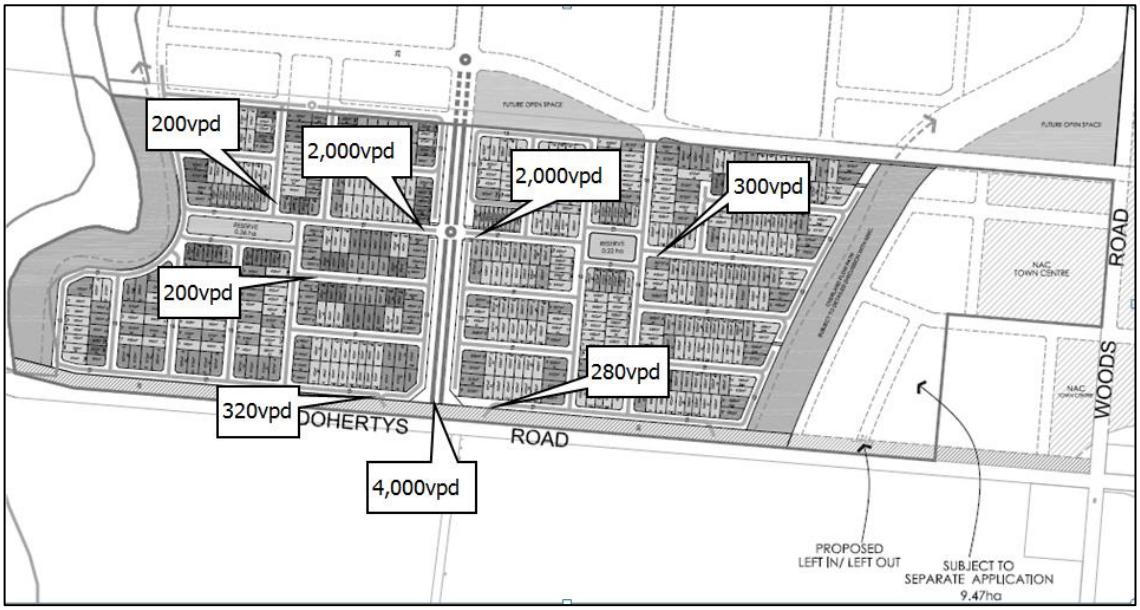
6.5 Traffic Impact – Daily

6.5.1 Interim Development Scenario

On the basis of the anticipated overall development site-generated traffic volumes presented in Section 6.1, it is anticipated that during the interim period the site will ultimately generate in the order of 4,600 vehicle movements per day. The anticipated site generated daily traffic volumes have been distributed across the internal road network and are presented in Figure 6.5.

Given the internal layout of the site, the interim period is expected to reflect a conservative assessment of the daily traffic volumes as it does not include internal connections to adjacent land or any discounting for internal trips that is likely to occur following future development.

Figure 6.5: Interim Internal Daily Two-Way Traffic Volumes



The anticipated two-way daily volumes are consistent with the anticipated daily volumes for the proposed internal road hierarchy as outlined in Section 5 of this report. On this basis, and given that the internal road hierarchy is generally consistent with the road hierarchy outlined within the PSP, the proposed internal road network is anticipated to be sufficient to cater for the daily volumes outlined within Figure 6.5.

7. Conclusion

Based on the analysis and discussions presented within this report, the following conclusions are made:

i The proposed development would generate approximately 4,600 vehicle movements per day and 460 vehicle movements per hour in the interim development scenario. Ultimately, the development is anticipated to generate in the order of 3,400 vehicle movements per day and up to 340 vehicle movements per hour.

ii There is sufficient capacity within the existing road network to accommodate the additional traffic movements.

iii The proposed subdivision would include a walking and cycling network in accordance with the aims of the PSP.

iv The proposed street network has been designed in accordance with the PSP with road reservations sufficient to accommodate the requirements of the PSP.

v The provision of a full turning movement access point to Dohertys Road is anticipated to operate satisfactorily in the interim period (i.e. prior to duplication).

Appendix A

VITM Modelling (AECOM)

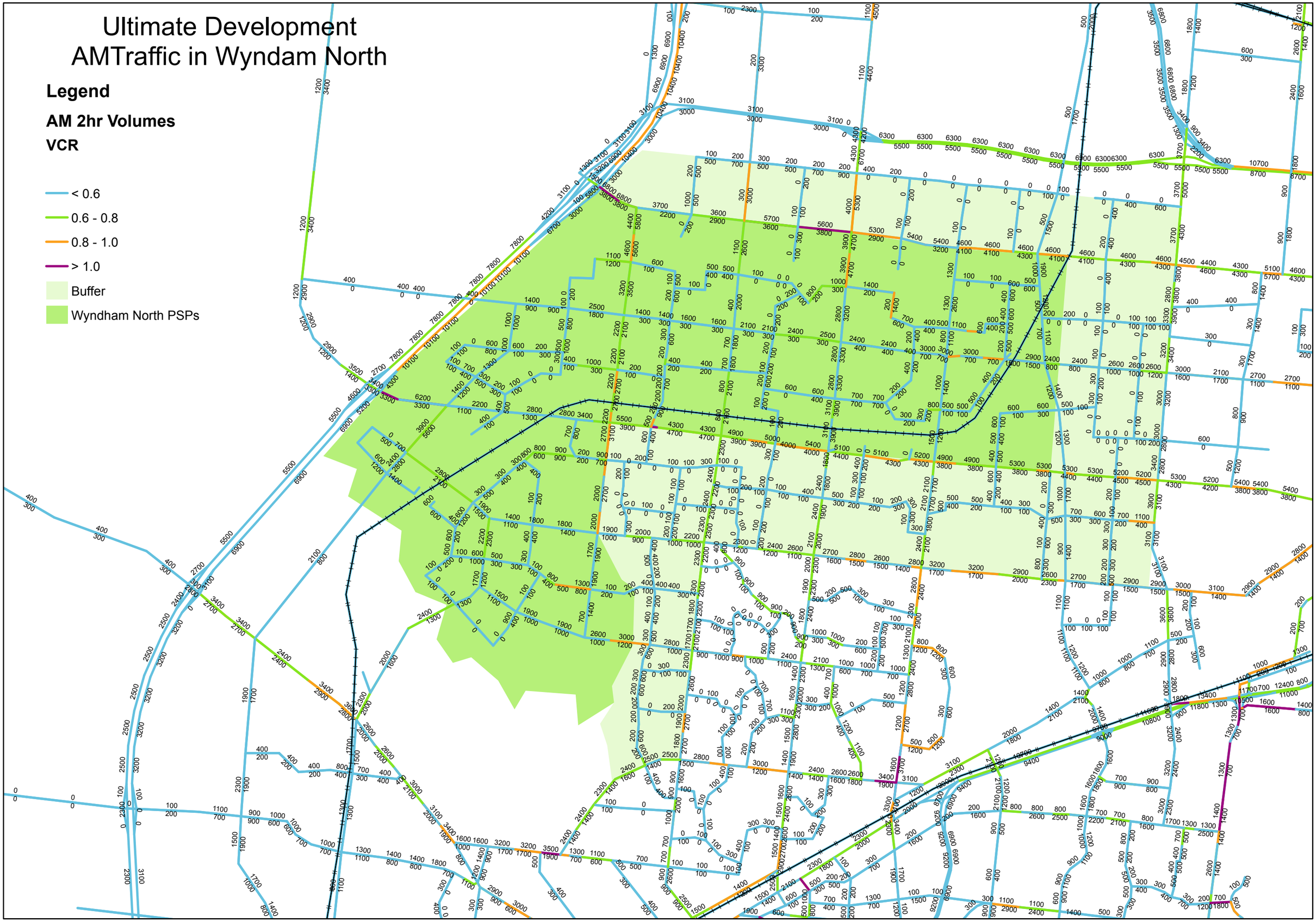
Ultimate Development
AMTraffic in Wyndam North

Legend

AM 2hr Volumes

VCR

- < 0.6
- 0.6 - 0.8
- 0.8 - 1.0
- > 1.0
- Buffer
- Wyndham North PSPs



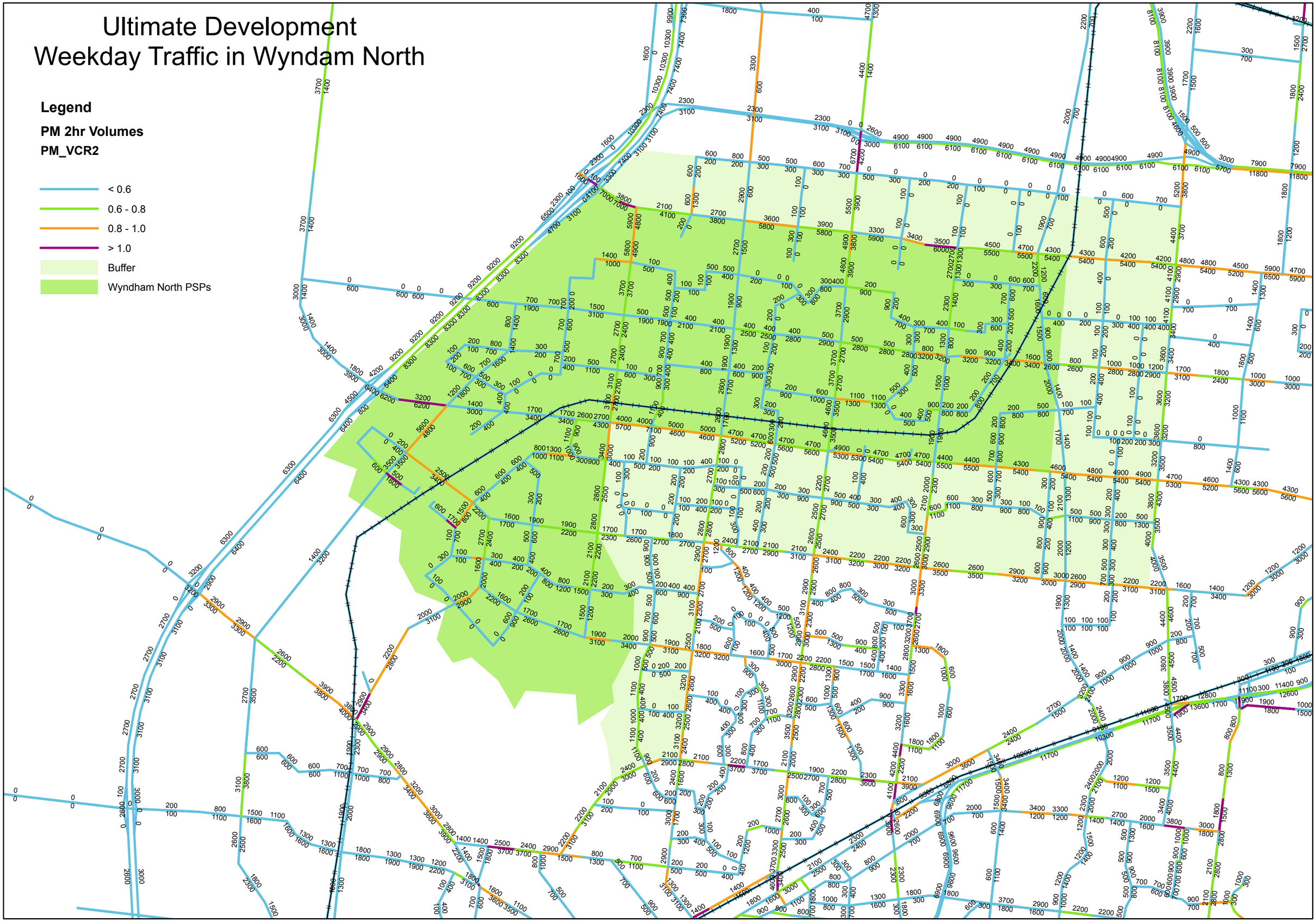
Ultimate Development
Weekday Traffic in Wyndam North

Legend

PM 2hr Volumes

PM_VCR2

- < 0.6
- 0.6 - 0.8
- 0.8 - 1.0
- > 1.0
- Buffer
- Wyndham North PSPs



Appendix B

SIDRA INTERSECTION Results

MOVEMENT SUMMARY

Site: Post Development AM - Conversion

Dohertys Road/Site Access Intersection
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	ODMov	Demand Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Dohertys Road											
5	T1	316	0.0	0.156	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
6	R2	77	0.0	0.296	24.8	LOS C	1.1	7.4	0.89	1.00	35.6
Approach		393	0.0	0.296	4.9	NA	1.1	7.4	0.17	0.20	52.9
North: Site Access											
7	L2	308	0.0	0.824	34.6	LOS D	5.5	38.5	0.96	1.37	30.7
9	R2	77	0.0	0.416	32.4	LOS D	1.4	9.6	0.93	1.03	31.7
Approach		385	0.0	0.824	34.1	LOS D	5.5	38.5	0.96	1.30	30.9
West: Dohertys Road											
10	L2	19	0.0	0.010	8.2	LOS A	0.0	0.0	0.00	0.67	49.0
11	T1	1263	0.0	0.625	0.2	LOS A	0.0	0.0	0.00	0.00	59.7
Approach		1282	0.0	0.625	0.3	NA	0.0	0.0	0.00	0.01	59.5
All Vehicles		2060	0.0	0.824	7.5	NA	5.5	38.5	0.21	0.29	49.7

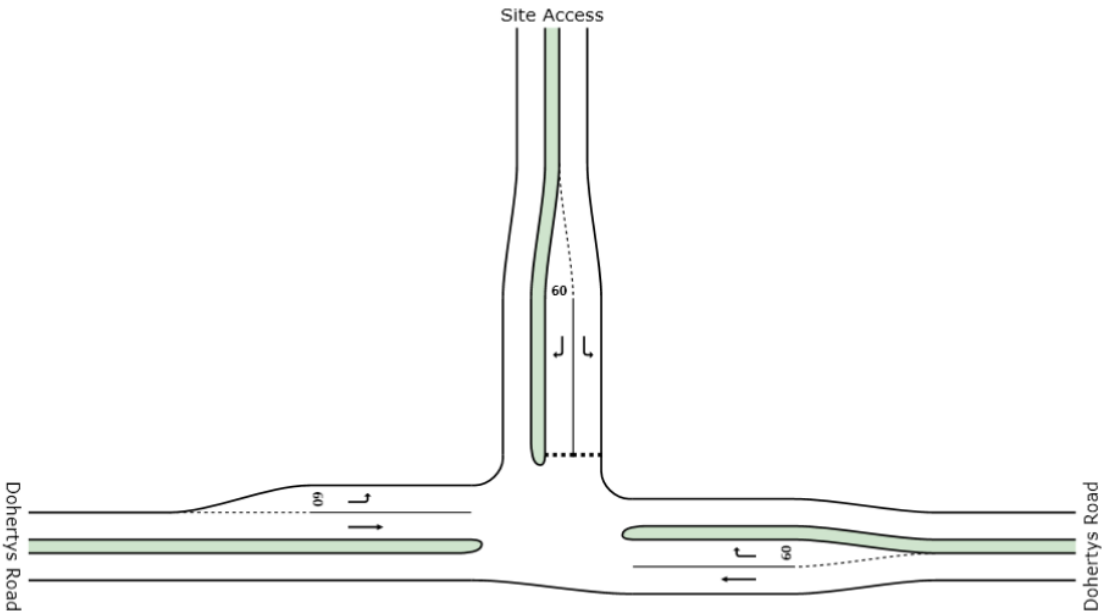
MOVEMENT SUMMARY

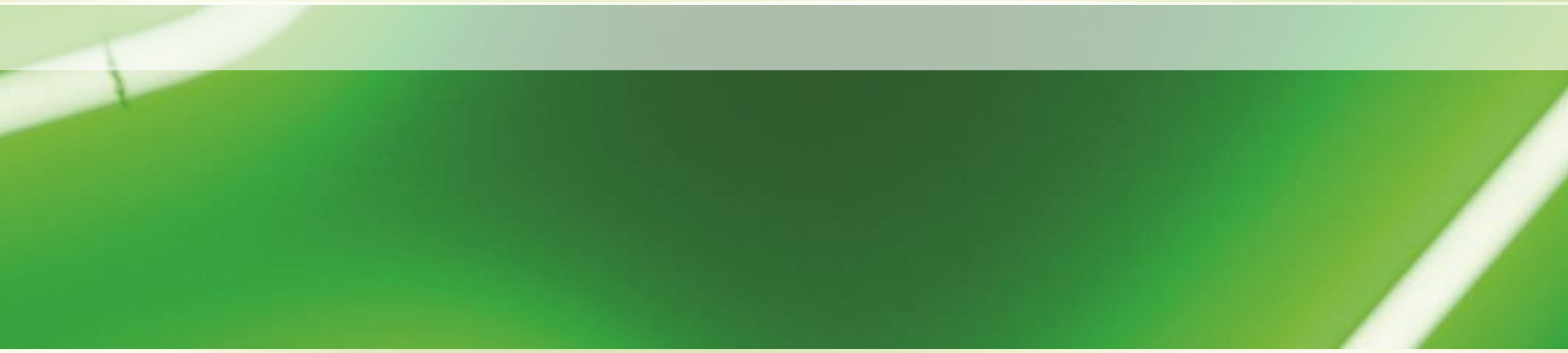
Site: Post Development PM - Conversion

Dohertys Road/Site Access Intersection
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	ODMov	Demand Flows Total	HV	Deg. Satn	Average Delay	Level of Service	95% Back of Queue Vehicles	Distance	Prop. Queued	Effective Stop Rate	Average Speed
		veh/h	%	v/c	sec		veh	m		per veh	km/h
East: Dohertys Road											
5	T1	1263	0.0	0.625	0.2	LOS A	0.0	0.0	0.00	0.00	59.7
6	R2	232	0.0	0.236	10.2	LOS B	1.0	7.2	0.48	0.74	46.9
Approach		1495	0.0	0.625	1.7	NA	1.0	7.2	0.07	0.12	57.3
North: Site Access											
7	L2	154	0.0	0.158	9.7	LOS A	0.6	4.2	0.40	0.71	47.2
9	R2	39	0.0	0.271	35.3	LOS E	0.8	5.7	0.93	1.00	30.4
Approach		193	0.0	0.271	14.9	LOS B	0.8	5.7	0.51	0.77	42.5
West: Dohertys Road											
10	L2	58	0.0	0.030	8.2	LOS A	0.0	0.0	0.00	0.67	48.9
11	T1	316	0.0	0.156	0.0	LOS A	0.0	0.0	0.00	0.00	60.0
Approach		374	0.0	0.156	1.3	NA	0.0	0.0	0.00	0.10	58.0
All Vehicles		2061	0.0	0.625	2.9	NA	1.0	7.2	0.10	0.17	55.6


Site Access
60
Dohertys Road
60
Dohertys Road



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