TRAFFIC IMPACT ASSESSMENT

SENIORS LIVING DEVELOPMENT

LOT 100 IN DP 1084939
32 INDUSTRIAL DRIVE, MAYFIELD

PREPARED FOR: WESTS GROUP

MAY 2021

21/067

TRAFFIC IMPACT ASSESSMENT
WESTS GROUP

SENIORS LIVING DEVELOPMENT – WESTS MAYFIELD

LOT 100 IN DP 1084939
32 INDUSTRIAL DRIVE, MAYFIELD

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QUALITY ASSURANCE

This document has been prepared, checked and released in accordance with the Quality Control Standards established by Intersect Traffic Pty Ltd.

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1.0 INTRODUCTION

Intersect Traffic Pty Ltd (Intersect Traffic) has been engaged by WPP Planning and Property on behalf of Wests Group to prepare a Traffic Impact Assessment for the construction of a multi-storey seniors living residential complex on Lot 100 DP 1084939, 32 Industrial Drive, Mayfield. The existing "Newcastle Knights" Rugby League Facility at the site will be relocated to the new Sports Centre of Excellence at Broadmeadow allowing for 176 apartments and associated car parking to be provided on the site.

Vehicular access to the site development is proposed via the existing access at William Street near Industrial Drive and a proposed new access at William Street adjacent to the southern boundary of the site which will service the car park for the residential apartments. All existing accesses in Industrial Drive will be removed. The proposed development plan is shown in ***Attachment A***.

This report is required to support a development application to Newcastle City Council for the proposal and allow the Council to assess the proposal regarding its impact on the local and state road network. The report addresses issues raised by Transport for NSW (TfNSW) in pre-DA consultations and in their correspondence dated 23rd July 2018 (See ***Attachment D***). This report presents the findings of the traffic assessment and includes the following:

1. An outline of the existing situation near the site.
2. An assessment of the traffic impacts of the proposed development including the predicted traffic generation and its impact on existing road and intersection capacities.
3. Determines any triggers for the provision of additional infrastructure.
4. Review's parking, public transport, pedestrian, and cycle way requirements for the proposed development, including assessment against Council's DCP and Australian Standard requirements.
5. Presentation of conclusions and recommendations.

2.0 SITE DESCRIPTION

The subject site currently contains the 'Wests Mayfield' club facility, a multi storey hotel with carpark, 'Balance' gymnasium, cafe and pool, the 'Newcastle Knights' facility buildings and training field, a 3-storey carpark and a number of at-grade carparks. The site is located on the corner of Industrial Drive and William Street, Mayfield. It is approximately 1.5 kilometres north of the Mayfield Shopping precinct and approximately 6 kilometres west of the Newcastle CBD. Its location within the context of surrounding residential and industrial land and buildings is shown in the location plan provided as ***Figure 1***, below.

Figure 1 – Site Location

The site contains the following property descriptors:

- Formal land title of Lot 100 in DP 1084939,
- Postal address of 32 Industrial Drive, Mayfield,
- Site area of approximately 4.8 hectares, and
- Land zoning of RE2 – Private Recreation in accordance with Newcastle LEP (2012).

The site currently has road frontage to Industrial Drive and William Street. It has a number of vehicular accesses at Industrial Drive and a combined entry / exit vehicular access to William Street. The site access at William Street currently has the right turn out of the site prohibited through a raised concrete median across the access. This directs all exiting traffic from the site to the Industrial Drive / William Street intersection. ***Photographs 1 – 4*** show some of the existing development on the site and some of the existing vehicular accesses at the site.

Photograph 1 – Existing site development site and access at Industrial Drive

Photograph 2 – Existing development at Industrial Drive

Photograph 3 – Existing site development – training field / hotel

Photograph 4 – Existing access at William Street

3.0 EXISTING ROAD NETWORK

3.1 Industrial Drive

Industrial Drive is a major transport road collecting and distributing traffic to and from Newcastle suburbs west and southeast of the site and connecting to regional areas. It serves as a sub-arterial road under a functional road hierarchy as a State Highway (HW10) from the Pacific Highway (Maitland Road) at its western end, past William Street near the development site and continuing to the Pacific Highway (Stewart Avenue / Hunter Street) in Newcastle to the southeast. Industrial Drive is under the care and control of Transport for NSW (TfNSW).

Adjacent to William Street, Industrial Drive is a four-lane two-way sealed road separated by a concrete edged grassed median island with 3.0 to 3.3 metre travel line marked lanes and sealed cycleway / breakdown lanes varying from 1.5 metre to 3.0 metres in width with kerb and gutter and longitudinal drainage on both sides.

It has an 80 km/h speed zoning near the site and at the time of inspection Industrial Drive was in good condition as shown in ***Photograph 5*** below.

Photograph 5 – Industrial Drive fronting the site

3.2 Vine Street

Vine Street is an urban road collecting and distributing traffic to and from Industrial Drive and the southern suburbs of Newcastle. It serves as a sub-arterial road under a functional road hierarchy as State Road 326 near the site. Vine Street is under the care and control of TfNSW.

Near Industrial Drive it is a 12.5 metre carriageway between kerbs and is a two-lane two-way sealed road with centreline marking and 3.0 to 3.3 metre travel lanes and sealed parking lanes approximately 3.0 metres in width.

It has a 60 km/h speed zoning near the site and at the time of inspection Vine Street was in good condition as shown in ***Photograph 6*** below.

Photograph 6 – Vine Street near the site

3.3 Crebert Street

Crebert Street near the site is an urban local road under the care and control of Newcastle City Council. Under a functional road hierarchy, it would function as a local collector road with its primary function being to collect and distribute traffic between Ingall Street and Vine Street while also providing vehicular access to adjoining properties. In the vicinity of the site it is a two-lane two-way sealed road with a carriageway width of 12.5 metres. A 50 km/h speed limit applies to this section of road and at the time of inspection Crebert Street was observed to be in fair to good condition (***Photograph 7***).

Photograph 7 – Crebert Street near the site

3.4 William Street

William Street near the site is an urban local road under the care and control of Newcastle City Council. Under a functional road hierarchy, it would function as a local collector road with its primary function being to collect and distribute traffic between Wests Club and Industrial Drive and Crebert Street while also providing vehicular access to adjoining properties. In the vicinity of the site it is a two-lane two-way sealed road with a carriageway width of 12.5 metres with unrestricted parking on both sides of the road. A 50 km/h speed limit applies to this section of road and at the time of inspection William Street was observed to be in good condition (***Photograph 8***). It is noted that the current club access to William Street is restricted to a left out only for exiting vehicles directing all exiting site traffic to the Industrial Drive / William Street intersection.

Photograph 8 – William Street near the site

4.0 ROAD NETWORK IMPROVEMENTS

There are no known road upgrades near the site that will increase the capacity of the local road network. Relatively recently completed roadworks in Tourle Street doubling the number of lanes north of Industrial Drive and the construction works for the Light Rail installation will have a minor impact on traffic near the site. Improvements to the local road network may be undertaken in the future in line with Newcastle City Council's and TfNSW Works Programmes.

5.0 TRAFFIC VOLUMES

Previously, Intersect Traffic engaged Northern Transport Planning and Engineering (NTPE) to carry out manual traffic counts at the Industrial Drive / Vine Street signalised T-intersection, the Industrial Drive / Ingall Street Signalised four-way cross intersection and the Industrial Drive / William Street T-intersection which were undertaken on 19 June 2018. The counts revealed that the peak hour traffic occurred between 7.30 am and 8.30 am and 4:15 pm to 5:15 pm. Intersect Traffic also previously carried out manual traffic counts at the Crebert Street / William Street T-intersection on the 23 July 2018 with the peak hour periods being 8.00 am to 9.00 am and 4.15 pm to 5.15 pm.

The mid-block traffic volumes calculated from these traffic counts have been utilised to determine current and future traffic volumes without the development. The predicted 2021 and 2031 volumes have been calculated using an annual background growth rate factor of 1.5% per annum for all roads and are as shown in ***Table 1*** below. The tally sheets for the manual traffic counts carried out by NTPE and Intersect Traffic are provided within ***Attachment B***.

Table 1 – Mid-block 2021 and 2031 traffic volumes

Road	Section	2021 AM peak vtph	2021 PM peak vtph	2031 AM peak vtph	2031 PM peak vtph
Industrial Drive	West of Vine Street	3757	3531	4580	4305
Industrial Drive	East of Vine Street	3350	3004	4084	3662
Industrial Drive	West of William Street	3366	3267	4103	3982
Industrial Drive	East of William Street	3224	2990	3930	3644
Industrial Drive	West of Ingall Street	3198	2970	3898	3620
Industrial Drive	East of Ingall Street	2885	2653	3517	3234
Vine Street	South of Industrial Drive	708	761	863	928
Crebert Street	West of William Street	486	455	593	554
Crebert Street	East of William Street	470	361	572	440
William Street	North of Crebert Street	169	205	206	250
William Street	South of Industrial Drive	178	200	217	243
Ingall Street	North of Industrial Drive	141	178	172	217
Ingall Street	South of Industrial Drive	364	304	444	371

6.0 ROAD CAPACITY

The capacity of the road network is generally determined by the capacity of intersections. However, the *RTA's Guide to Traffic Generating Developments* provides some guidance on mid-block capacities and likely levels of service. For urban roads *Table 4.3* of the *RTA's Guide to Traffic Generating Developments*, reproduced below, provides guidance on mid-block capacities.

Table 4.3
Typical mid-block capacities for urban roads with interrupted flow

Type of Road	One-Way Mid-block Lane Capacity (pcu/hr)	
Median or inner lane:	Divided Road	1,000
	Undivided Road	900
Outer or kerb lane:	With Adjacent Parking Lane	900
	Clearway Conditions	900
	Occasional Parked Cars	600
4 lane undivided:	Occasional Parked Cars	1,500
	Clearway Conditions	1,800
4 lane divided:	Clearway Conditions	1,900

Source: - RTA's Guide to Traffic Generating Developments (2002).

Noting Industrial Drive in this location as a four-lane divided road would have a one-way mid-block capacity of at least 1,900 vtph and a two-way mid-block capacity of 3,800 vtph for a LoS C from the above table. However, as a major sub-arterial / collector road it is accepted that a lower level of service i.e. a LoS D would still be acceptable with lane capacities of up to 1,100 vtph and a two-way mid-block capacity of 4,400 vtph. Therefore, the adopted two-way mid-block capacity of Industrial Drive within this assessment is 4,400 vtph.

Similarly, a LoS C on a single lane of flow occurs when mid-block traffic volumes exceed 900 vtph, the one way one lane mid-block traffic volume threshold for a LoS C is 900 vtph. This means the two-way two-lane mid-block traffic volume threshold for a LoS C is 1,800 vtph. Therefore, it is considered that Vine Street, Crebert Street, Ingall Street and William Street near the site, as two-way two-lane urban roads, each have a mid-block road capacity of 1,800 vtph.

However, for local streets with predominately residential dwellings along their length, such as William Street, the Environmental Capacity of the road as a measure of acceptable residential amenity within the street also needs to be considered.

The environmental road capacity thresholds accepted by TfNSW are provided within *Table 4.6* of the *RTA's Guide to Traffic Generating Developments (2002)* as reproduced below.

For a local collector street, the environmental capacity of the local road network is determined from the above table as 300 to 500 vtph. A maximum capacity of 500 vtph has therefore been determined for William Street.

Therefore, two-way mid-block road capacities of 4,400 vtph for Industrial Drive, 1,800 vtph for Vine Street, Crebert Street and Ingall Street as well as an environmental capacity of 300 vtph for William Street have been adopted for this assessment.

Table 4.6
Environmental capacity performance standards on residential streets

Road class	Road type	Maximum Speed (km/hr)	Maximum peak hour volume (veh/hr)
Local	Access way	25	100
	Street	40	200 environmental goal
			300 maximum
Collector	Street	50	300 environmental goal
			500 maximum

Note: Maximum speed relates to the appropriate design maximum speeds in new residential developments. In existing areas maximum speed relates to 85th percentile speed.

Source: - RTA's Guide to Traffic Generating Developments (2002).

7.0 ALTERNATE TRANSPORT MODES

Currently Newcastle Transport (Keolis Downer) operates the public transport services (bus) along Industrial Dive past the site. The service route running past the site is Route 24 (Wallsend – Jesmond – Waratah – Mayfield – Carrington – Newcastle) which operates Monday to Sunday (see ***Figure 2***).

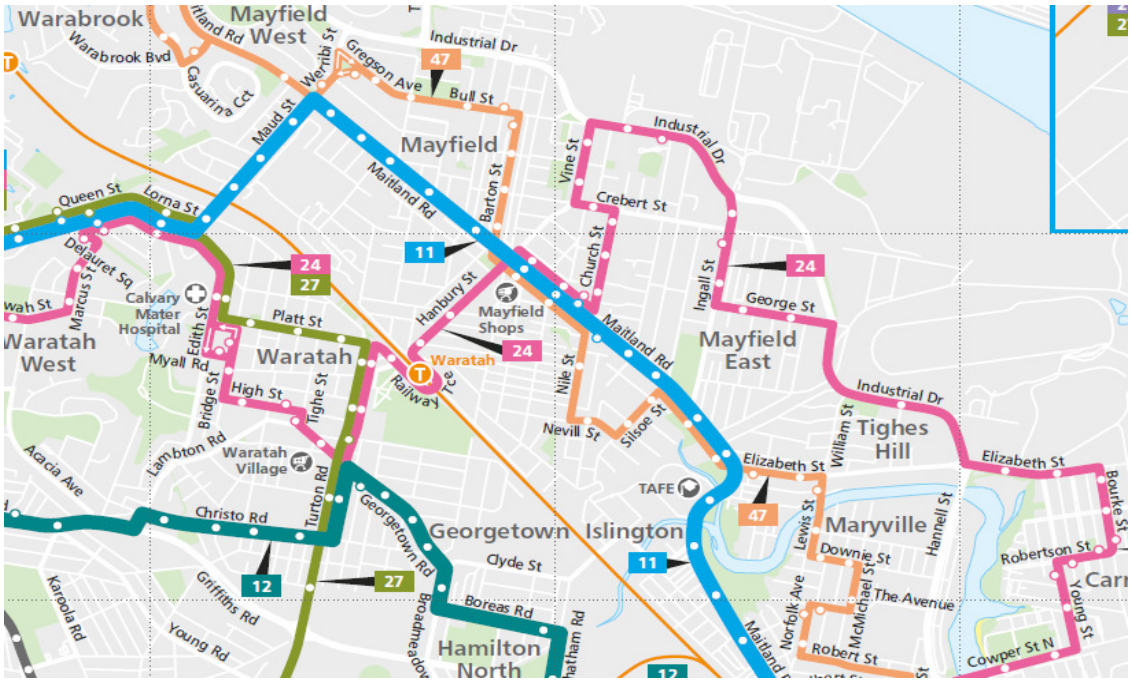


Figure 2 – Existing Bus Route

The nearest bus stop is located directly at the front boundary of the site on the southern side of Industrial Drive (shown below in ***Photograph 9***) and one on the northern side of Industrial Drive opposite the Industrial Drive pedestrian access to the club. The bus stops are between 100 and 200 metres from the proposed Seniors Living development. The bus service is convenient for use by future residents of the seniors living development. This service connects to major bus interchanges at Jesmond, Wallsend and Newcastle providing connection to other bus services to Newcastle, Lake Macquarie, Port Stephens and Maitland suburbs, and railway stations including connection to local railway stations on the Hunter line and to adjoining regions.

Photograph 9 –Bus stop and shelter at the front of the site

A 3.0-metre-wide on-road cycleway on both sides of the road and a 2.4-metre-wide bitumen pedestrian pathway running east / west exist along the Industrial Drive frontage of the development have been provided and are as shown in ***Photograph 10*** below. This provides benefit to pedestrians and cyclists accessing the site from or to the local areas of Mayfield and surrounding suburbs as it connects to concrete footpaths in Vine Street west of the site. In William Street cyclists and pedestrians would either use the existing grassed verges or share the travel lanes on the local road network. ***Photograph 11*** below shows the existing verges in William Street.

Photograph 10 –Cycleway and footpath at Industrial Drive frontage of the site

Photograph11 – Verge at the William Street frontage of the site

8.0 DEVELOPMENT PROPOSAL

The development proposal involves the redevelopment of Wests Mayfield to include a seniors living residential complex on Lot 100 DP 1084939, 32 Industrial Drive, Mayfield. Specifically, the development will include the following works:

- Demolition of the buildings used as 'Newcastle Knights' Training facilities,
- Construction of new 176 seniors living residential apartments within three (3) buildings each 6 storeys high comprising 38 - three bedroom, 58 – two bedroom and 80 – one-bedroom units, (totalling 310 bedrooms)
- Construction of a new basement car parking area with 302 car spaces and 16 motorbike spaces,
- Construction of new internal roadways and driveways,
- Removal of the right turn out restriction at the existing William Street access to the site,
- Construction of a new community parkland / recreation area, and
- Provision of associated site drainage structures and landscaping.

The development plans are provided within ***Attachment A*** and shows the external road connections to William Street.

9.0 TRAFFIC GENERATION

The *RTA's Guide to Traffic Generating Development's* provides specific advice on the traffic generation potential of various land uses.

Regarding housing for aged and disabled the following amended advice is provided within the Technical Direction (TDT 2013/4).

TfNSW also released in its Technical Direction (TDT 2013/4) the results of updated traffic surveys and amended land use traffic generation rates regarding housing for seniors.

Seniors Housing Rates

Weekday daily vehicle trips = 2.1 per dwelling
Weekday peak hour vehicle trips = 0.4 per dwelling
(Note that morning site peak hour does not generally coincide with the network peak hour)

Therefore, the additional traffic generated by the proposed seniors living apartments during the weekday peak period can be calculated as follows (rounded up):

Daily vehicle trips = 176 dwellings x 2.1 trips per dwelling
= 370 vtpd.

Weekday AM & PM peak hour = 176 dwellings x 0.4 trips per dwelling
= 71 vtph.

The total traffic generated from the development is therefore **370 vtpd and 71 vtph**.

However, as the 'Newcastle Knights' training facility is to be relocated, the related peak hour traffic reduction occurring on the site from this relocation is estimated to be in the order of 22 vtph. The resultant likely additional peak hour traffic increase for the development site would therefore be **49 vtph** and **300 vtpd**.

10.0 TRIP DISTRIBUTION

Before carrying out any traffic assessment the additional peak hour traffic generated by the development needs to be distributed through the adjoining road network. This involves making assumptions as to distribution patterns to and from the development. In distributing the peak hour traffic through the adjacent road network, the following assumptions have been made for this site.

- 100% of the additional development traffic will access via the new southern William Street access to the site (residential units),
- AM traffic will be split 80% outbound and 20% inbound, whilst PM traffic will be split 70% inbound and 30% inbound,
- In the AM and PM 40% of trips will exit the site north on William Street and then west on Industrial Drive and past Vine Street,
- In the AM and PM 60% of trips will exit the site south on William Street and then on Crebert Street with 40% east and 20% west of William Street,
- In the AM and PM, the 20% of exiting traffic on Crebert Street west of William Street will turn left (north) at Hanbury Street,

- In the AM and PM 40% of traffic will enter the site via Industrial Drive west of Vine Street turning right (south) into Vine Street, then left (west) into Crebert Street and then left (north) into William Street,
- In the AM and PM 20% of traffic will enter the site via Hanbury Street north of Crebert Street turning right (east) into Crebert Street, then left (north) into William Street,
- In the AM and PM 20% of traffic will enter the site via Industrial Drive east of William Street, turning left (south) into William Street,
- In the AM and PM 20% of traffic will enter the site via Crebert Street east of William Street,
- The **current** AM and PM traffic exiting the site will be redistributed at the existing William Street access 40% north and 60% south, resulting in:
    - 36 vtph less AM and 63 vtph less PM traffic on Industrial Drive west of William Street and on Vine Street north of Industrial Drive,
    - 24 vtph less AM and 42 vtph less PM traffic in southbound Vine Street traffic turning left (east) into Crebert Street and then north into William Street,
    - 12 vtph less AM and 21 vtph less PM in southbound Vine Street traffic south of Crebert Street,
    - 24 vtph more AM and 42 vtph more PM traffic west of the existing northern access in William Street and left (east) on Crebert Street,
    - 12 vtph more AM and 21 vtph more PM traffic west of the existing northern access in William Street and right (west) on Crebert Street and then left (south) on Hanbury Street.

There may be other traffic movements that have not been considered above however their impact on the network is considered insignificant. These assumptions will result in the trip distributions shown in ***Figure 3*** for the relevant traffic movements.

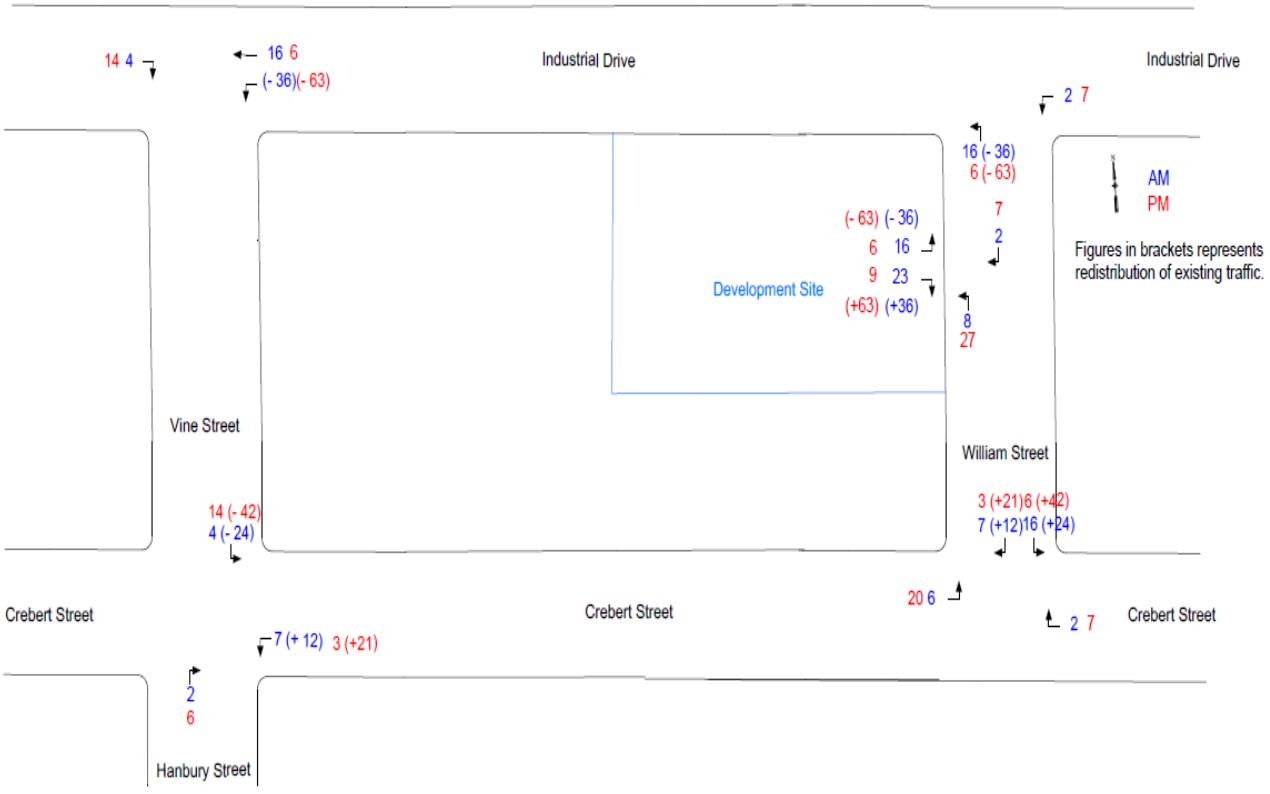


Figure 3 – Development Trip Distribution - PM

11.0 TRAFFIC IMPACTS OF DEVELOPMENT

11.1 Road Network Capacity

It has previously been shown in ***Section 6*** of this report that the local and state road network is currently operating within its technical mid-block capacity. The proposed development of the site is likely to generate the following maximum adjustments to traffic on the local road network based on the trip distributions shown in ***Figure 3***:

- Industrial Drive east of Vine Street – minus 20 vtph AM peak and minus 57 vtph PM peak,
- Industrial Drive west of Vine Street – 20 vtph AM and PM peak,
- Vine Street – minus 32 vtph AM Peak and minus 49 vtph PM peak,
- Crebert Street east of William Street– 42 vtph AM peak and 55 vtph PM peak,
- Crebert Street west of William Street– 1 vtph AM and PM peak, and
- William Street – 67 vtph AM and 99 vtph PM peak.

The addition of this traffic onto the 2021 traffic volumes determined in ***Section 5*** will not result in the capacity thresholds for Industrial Drive, Vine Street, Crebert Street and William Street determined in ***Section 6*** to be reached. Even with 1.5 % per annum background traffic growth over a further ten-year period these road capacity thresholds are not reached, except for 2031 AM where capacity is just reached. This is demonstrated in ***Table 1*** below.

Table 2 - Road Capacity Assessment

Road	Section	Capacity vtph	2021 AM peak vtph	2021 PM peak vtph	2031 AM peak vtph	2031 PM peak vtph	Development	
							AM	PM
Industrial Drive	West of Vine Street	4400	3777	3551	4600	4325	20	20
Industrial Drive	East of Vine Street	4400	3330	2947	4064	3605	-20	-57
Industrial Drive	West of William Street	4400	3346	3210	4083	3925	-20	-57
Industrial Drive	East of William Street	4400	3226	2997	3932	3651	2	7
Industrial Drive	West of Ingall Street	4400	3200	2977	3900	3627	2	7
Industrial Drive	East of Ingall Street	4400	2887	2660	3519	3241	2	7
Vine Street	South of Industrial Drive	1800	676	712	831	879	-32	-49
Crebert Street	West of William Street	1800	485	457	592	556	-1	2
Crebert Street	East of William Street	1800	488	374	590	453	18	13
William Street	North of Crebert Street	500	236	304	273	349	67	99
William Street	South of Industrial Drive	500	160	150	199	193	-18	-50
Ingall Street	North of Industrial Drive	1800	141	178	172	217	0	0
Ingall Street	South of Industrial Drive	1800	364	304	444	371	0	0

Therefore, it can be concluded that the local and state road network subject to suitable intersection controls being in place has sufficient spare capacity to cater for the proposed development.

11.2 Intersection Capacity

In assessing intersection performance, the main intersections impacted by the development will be:

- Industrial Drive / Vine Street signalised T-intersection,
- Industrial Drive / Ingall Street Signalised 4 Way Cross intersection,
- Industrial Drive / William Street Give Way Controlled T-intersection, and
- Crebert Street / William Street Give Way Controlled T-intersection.

For this assessment it needs to be determined whether the intersections as currently constructed can cater for the additional traffic generated by this development or whether any upgrading works are necessary.

The impacts of the development are best assessed using the SIDRA INTERSECTION modelling software. This software package predicts likely delays, queue lengths and thus levels of service that will occur at intersections. Assessment is then based on the level of service requirements of TfNSW shown below in Table 4.2. Assumptions made in this modelling were:

- The intersection layouts will remain as per current conditions.
- Base traffic volumes used in the modelling were as collected by NTPE and Intersect Traffic in 2018.
- As the development AM peak is the hour ending 10 am, these traffic volumes recorded at the Industrial Drive / Vine Street intersection have been utilised.
- Traffic generated and re-routed by the development is distributed as per ***Figure 3.***
- Future traffic growth predicted using a 1.5% per annum background traffic growth rate.

Table 4.2
Level of service criteria for intersections

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode

Source: - RTA's Guide to Traffic Generating Developments (2002).

The summarised 'all vehicles' results of the modelling of each of the intersections are provided in ***Tables 3 - 6*** below. For signalised intersections, the average LoS is provided in the summary whilst for the non-signalised intersections the worst movement LoS is provided. The Sidra Movement Summary Tables of each of the intersections are provided in ***Attachment C***.

Table 3 – Industrial Drive / Vine Street Signalised T-intersection – Sidra Modelling – Results Summary

Modelled Peak	Degree of Saturation (v/c)	Average Delay (s)	Average Level of Service	95% back of queue length (cars)
2021AM with reroute	0.908	16.4	B	9.9
2021 PM with reroute	0.912	26.0	B	38.6
2021 AM + DEV + reroute	0.923	17.1	B	10.4
2021 PM + DEV + reroute	0.902	26.0	B	40.0
2031AM with reroute	0.906	17.6	B	13.7
2031 PM with reroute	1.109	149.8	F	156.9
2031 AM + DEV + reroute	0.889	18.1	B	14.0
2031 PM + DEV + reroute	1.129	157.8	F	158.9

The modelling and the summarised results in ***Table 3*** above shows that the Industrial Drive / Vine Street Signalised T-intersection currently operates satisfactorily during both the AM and PM peak periods and would continue to do so post development in 2021 without and with development; and with 10 years traffic growth to 2031 in all cases, except the PM peak period. Average delays, LoS and 95% back of queue lengths all remain at acceptable levels based on the TfNSW assessment criteria listed above. However, the 2031 PM models without and with development, fail requiring intersection upgrades to reduce delays for right turning movements. As the intersection fails in 2031 PM without the addition of the development it would not be the responsibility of this development on its own to provide the upgrades. The results show that 94% of the cause of the increase in delays is the predicted 1.5% growth over 10 years and 6% is caused by the development. Therefore, no upgrading of the intersection is required initially in 2021 and a contribution may be required for the future works. The developer has shown its willingness to cooperate with the TfNSW to achieve a reasonable result by reducing the size of the development and believes the proposal is approvable based on complying with TfNSW requirements and a contribution to future intersection upgrading.

The modelling for the other three intersections - Industrial Drive / Ingall Street Signalised four way cross intersection; Industrial Drive / William Street give way controlled T-intersection; and Crebert Street / William Street give way controlled T-intersection – shows that all intersections will operate satisfactorily with the inclusion of development traffic in 2021 during both the AM and PM peak periods and would continue to do so with development traffic in 2031 as shown in ***Tables 4 – 6*** below. Average delays, LoS and 95% back of queue lengths all remain at acceptable levels based on the TfNSW assessment criteria listed above. As the development has been significantly reduced it can be shown that these intersections will perform satisfactorily in 2021 and 2031 without requiring upgrades. Further, this modelling shows improved performance of the Industrial Drive / William Street intersection with the reinstatement of the right turn out movement at the existing site access to William Street. Again, this is consistent with the requirements of TfNSW (see ***Attachment D***) for there to be no further adverse impact on this intersection.

Table 4 – Industrial Drive / Ingall Street Signalised intersection – Sidra Modelling – Results Summary

Modelled Peak	Degree of Saturation (v/c)	Average Delay (s)	Average Level of Service	95% back of queue length (cars)
2021 AM with development	0.886	26.2	B	29.7
2021 PM with development	0.882	24.5	B	32.9
2031 AM with development	0.899	26.9	B	46.4
2031 PM with development	0.893	30.0	C	44.0

Table 5 – Industrial Drive / William Street Give Way T-intersection – Sidra Modelling – Results Summary

Modelled Peak	Degree of Saturation (v/c)	Worst Average Delay (s)	Worst Level of Service	95% back of queue length (cars)
2021 AM with development	0.487	7.0	A	0.4
2021 PM with development	0.398	7.0	A	0.3
2031 AM with development	0.565	7.0	A	0.5
2031 PM with development	0.462	7.0	A	0.3

Table 6 – Crebert Street / William Street Give Way T-intersection – Sidra Modelling – Results Summary

Modelled Peak	Degree of Saturation (v/c)	Worst Average Delay (s)	Worst Level of Service	95% back of queue length (cars)
2021 AM with development	0.166	5.6	A	0.5
2021 PM with development	0.152	5.2	A	0.4
2031 AM with development	0.196	6.1	A	0.7
2031 PM with development	0.176	5.6	A	0.5

It is also noted that the additional traffic at the Vine Street / Crebert Street / Hanbury Street four way stop cross intersection is a decrease of 1 vtph in the AM and an increase of 2 vtph in the PM peak, due to the rerouting of traffic associated with the development. Uninterrupted flow conditions that were observed to operate at this intersection during inspections during peak times will continue.

Furthermore, it is noted that the additional peak hour traffic on Crebert Street will occur east of William Street and will be a maximum of 16 vtph eastbound and 7 vtph westbound. This traffic will be distributed over 7 intersections and would not result in any significant impact on their operations. It is therefore concluded that no upgrading of the local and state road network is required as a result of this development, except for the Industrial Drive / Vine Street Signalised T-intersection as discussed above.

In assessing performance of the existing development access and the new development access with William Street it is noted that traffic on William Street is likely to be a maximum of 362 vtph (2031) and the likely maximum traffic on the existing and proposed accesses will be a total 302 vtph and 49 vtph, respectively. The volumes at these accesses are within the thresholds in the following table taken from Austroads *Guide to Traffic Management – Part 6 – Intersections, Interchanges & Crossings (2009)* for which the guide states a detailed analysis to demonstrate adequate capacity is available is unlikely to be necessary as uninterrupted flow conditions would prevail; and those of the existing access resemble the lower volume amounts in the table and would result in uninterrupted flow conditions.

Major road type[1]	Major road flow (vph)[2]	Minor road flow (vph)[3]
Two-lane	400	250
	500	200
	650	100
Four-lane	1000	100
	1500	50
	2000	25

Notes:

1. Major road is through road (i.e. has priority).
2. Major road flow includes all major road traffic with priority over minor road traffic.
3. Minor road design volumes include through and turning volumes.

It can be concluded therefore that both the proposed new development vehicular access and the existing development accesses at William Street will operate with uninterrupted flow conditions and as such can be constructed as a normal private property urban accesses, subject to Australian Standards *AS2890.1-2004 Parking facilities – Part 1 - Off-street car parking* requirements described below.

11.3 Access

In assessing the site accesses compliance with Australian Standard *AS2890.1-2004 Parking facilities – Part 1 - Off-street car parking* the following is noted for the existing and proposed accesses.

- Vehicular sight distance from the existing and proposed accesses has been observed to be suitable to meet the requirements as shown in *Figure 3.2* of the Standard, i.e. minimum 45 metres for a 50 km/h speed zone.
- Pedestrian sight lines as required in *Figure 3.2* of the Standard is achieved with the construction of driveways via the appropriate design of landscaping and fencing around the access.

- The existing access at William Street near Industrial Drive will support up to 300 car spaces of Class 2 parking (entertainment centres, motels). *Table 3.1* of the Standard thus requires a minimum Class 3 access facility to be constructed for Class 2 parking. *Table 3.2* of the Standard then designates a Class 3 access facility as a separated entry / exit with entry a minimum 6.0 metres wide and exit a minimum 4.0 metres wide and separated 1 to 3 metres. The existing access at William Street complies with these requirements.
- The proposed access at William Street adjacent to the southern boundary will support up to 300 car spaces of Class 1A parking (residential parking). *Table 3.1* of the Standard thus requires a minimum Class 2 access facility to be constructed for Class 1A parking. *Table 3.2* of the Standard then designates a Class 2 access facility as a combined entry and exit 6.0 to 9.0 metres wide or minimum each 3.0 metres wide if separated. As a minimum 6.0-metre-wide access is proposed for the new combined entry / exit access location adjacent to the southern property boundary at William Street, the proposal complies with the standard.
- The proposal removes a number of existing accesses to Industrial Drive resulting in improved road safety environment on this busy arterial road. This is supported by TfNSW (see ***Attachment D***).

The proposed internal roads need to comply with the requirements of Australian Standard *AS2890.1-2004 Parking facilities – Part 1 - Off-street car parking* which requires the minimum width of the internal two-way roads to be 5.5 metres. The access design and internal road dimensions have not been provided on the plans however scale to comply with this requirement. This will need to be confirmed at CC stage.

It is concluded that the proposed access arrangements provide a safe and suitable site access to all components of the development and would comply with Newcastle City Council and Australian Standard *AS2890.1-2004 Parking facilities – Part 1 - Off-street car parking* requirements.

11.4 Off-Street Parking

On-site parking and manoeuvrability should comply with Australian Standard *AS2890.1-2004 Parking facilities – Off-street car parking* and *State Environmental Planning Policy (SEPP) (Housing for Seniors and People with a Disability) 2004*. The SEPP states the following in Part 7 Development Standards that cannot be used as grounds to refuse a consent within Division 4 Self-contained units (Clause 50):

(h) Parking: if at least the following is provided:

(i) 0.5 car spaces for each bedroom where the development application is made by a person other than a social housing provider, or

(ii) 1 car space for each 5 dwellings where the development application is made by, or is made by a person jointly with, a social housing provider.

The proposal is to provide 310 bedrooms within the seniors living buildings on the site and, as the development is proposed by a private entity and not a social housing provider, the seniors living component would need to provide a total of 155 on-site car parks. Noting that 302 resident and visitor car parks (plus 16 motor bike parking spaces, which is greater than 1 in 20 per number of car parking spaces,) are proposed within the concept plan, it is concluded that an excess of on-site car parking is provided for this component of the development.

Australian Standards *AS 2890.1 2004* requires the following for 90º angle parking as a minimum:

- Class 1A facility - 2.4m wide x 5.4m long bays x a 5.8m aisle width, and
- 1.0 metre blind aisle extensions.

Whilst the current concept plan is not suitably detailed to provide dimensions there is sufficient room and an excess of car parking on the site to ensure all parking spaces and manoeuvring areas could comply with the requirements of both Australian Standard *AS2890.1-2004 Parking facilities – Off-street car parking*.

The existing site car parking was assessed as suitable for the existing development in the previous Intersect TIA Wests Mayfield Report 18_057 dated 14th August 2018 and does not require reassessment.

Therefore, it is concluded that the provision of the proposed car parking complies with the requirements for development specified by the Australian Standard *AS2890.1-2004 Parking facilities – Off-street car parking*, the *State Environmental Planning Policy (SEPP) (Housing for Seniors and People with a Disability) 2004 Part 7 Development Standards* and *Section 7.03 Traffic, Parking and Access* of Newcastle City Council DCP 2012, subject to verification of parking layout dimensions.

For the purpose of assessing a site compatibility certificate application, there is sufficient space within the site to accommodate the requisite number of parking spaces. Further analysis and design of car parking arrangements will be undertaken in the development of DA plans.

11.5 Servicing

As a seniors' living development suitable servicing of the site is required to be designed into the development. In this regard the key servicing will be the regular weekly waste collection. This will be undertaken by a private contractor using a suitably sized MRV (8.8 m) side collection vehicle that will enter the site and collect waste from bins within the site. Normal waste and recyclables will be collected separately. The internal road layout and design will therefore need to be able to accommodate the movement of this vehicle such that forward entry and exit from the site onto William Street will occur. Whilst the concept plan at this stage is not detailed enough to provide swept turning paths there is sufficient room on site for this to occur and swept turning paths can be provided at Construction Certificate stage.

Overall, it is concluded that the proposed servicing arrangements of the site are suitable with all servicing undertaken on site with forward entry and exit from the site.

12.0 PEDESTRIAN & CYCLE FACILITIES

It is considered that the external pedestrian and bicycle traffic generated by the development would not be significant enough as to provide a nexus for the provision of additional external pedestrian and bicycle paths (on or off road) to the site and the existing infrastructure is considered satisfactory for the scale of development proposed noting a significant amount of pedestrian traffic will be contained to within the site. Suitable internal pedestrian linkages exist on the site and these will be extended to service both the residential care facility and the independent living units proposed on the site.

13.0 PUBLIC TRANSPORT FACILITIES

Industrial Drive near the site is currently serviced by public transport (bus) services provided by Newcastle Transport (Keolis Downer) providing suitable access to all necessary services, facilities and locations near the site. Therefore, suitable public transport services already exist near the site and no additional services or infrastructure is required.

The proposed development may generate additional public transport usage and under *State Environmental Planning Policy (SEPP) (Housing for Seniors and People with a Disability) 2004* the site residents must have access to a bus with a minimum capacity of 10 persons. The above bus service that runs past the site is frequent, very convenient to the site, has a bus shelter and therefore provides a satisfactory public transport service to the development thereby satisfying the requirements of the SEPP.

14.0 CONCLUSIONS

This traffic impact assessment for a proposed Seniors Living Development on Lot 100 in DP 1084939, 32 Industrial Drive, Mayfield which is to provide 176 Seniors Living residential dwellings has concluded:

- Existing traffic volumes on the local road network are within the technical and environmental capacity standards determined by Austroads and the TfNSW.
- The local road network is currently operating satisfactorily with good levels of service and acceptable delay for motorists and has capacity to cater for additional traffic associated with new development in the area.
- The proposed development is likely to generate up to an additional 49 vehicle trips per hour during the AM peak and PM peak traffic periods.
- The local road network will cater for the development traffic generated by this development in 2021 through to 2031 without adversely impacting on either current levels of service experienced by motorists on the road or the residential amenity of existing residents.
- Sidra modelling of the Industrial Drive / Vine Street Signalised T-intersection has shown that it currently operates satisfactorily during both the AM and PM peak periods and would continue to do so post development and with 10 years traffic growth to 2031, except for the 2031 PM without and with development models. The development together with many future developments results in the need to upgrade the Industrial Drive / Vine Street Signalised T-intersection which will fail in the 2031 PM peak with or without this development.
- Sidra modelling of the Industrial Drive / Ingall Street Signalised four-way cross intersection; Industrial Drive / William Street Give Way T-intersection; and Crebert Street / William Street Give Way T-intersection was undertaken in 2018 and showed that they currently operate satisfactorily during both the AM and PM peak periods and would continue to do so post development and with 10 years traffic growth to 2028. Average delays, LoS and 95 % back of queue lengths all remained at acceptable levels based on the TfNSW assessment criteria and no intersection upgrades would be required.
- The site accesses at William Street, including the modified access near Industrial Drive where the raised median prohibiting right turn movements out of the site will be removed, will operate with uninterrupted flow conditions and as such can be constructed with configurations as described in ***Section 11.3***.

- The proposed site accesses would comply with Newcastle City Council and Australian Standard *AS2890.1-2004 Parking facilities – Part 1 - Off-street car parking* thereby providing safe and suitable vehicular access to the site.
- The proposed development will provide sufficient and suitable on-site car parking to meet the requirements of both Australian Standard *AS2890.1-2004 Parking facilities – Off-street car parking* and *State Environmental Planning Policy (SEPP) (Housing for Seniors and People with a Disability) 2004*.
- The site can be suitably serviced for waste collection via a private contractor utilising a side loading MRV (8.8 metre) collection vehicle weekly. There is enough room on site for this vehicle to enter the site, manoeuvre through the site and exit the site in a forward direction.
- The proposed development will not generate significant enough external pedestrian and cycle traffic to require additional external facilities particularly as the majority of pedestrian movements will be contained within the site.
- The existing public bus service that services the site is frequent, very convenient to the site, has a bus shelter and provides a satisfactory public transport service to the development thereby satisfying the public transport requirements of the SEPP.

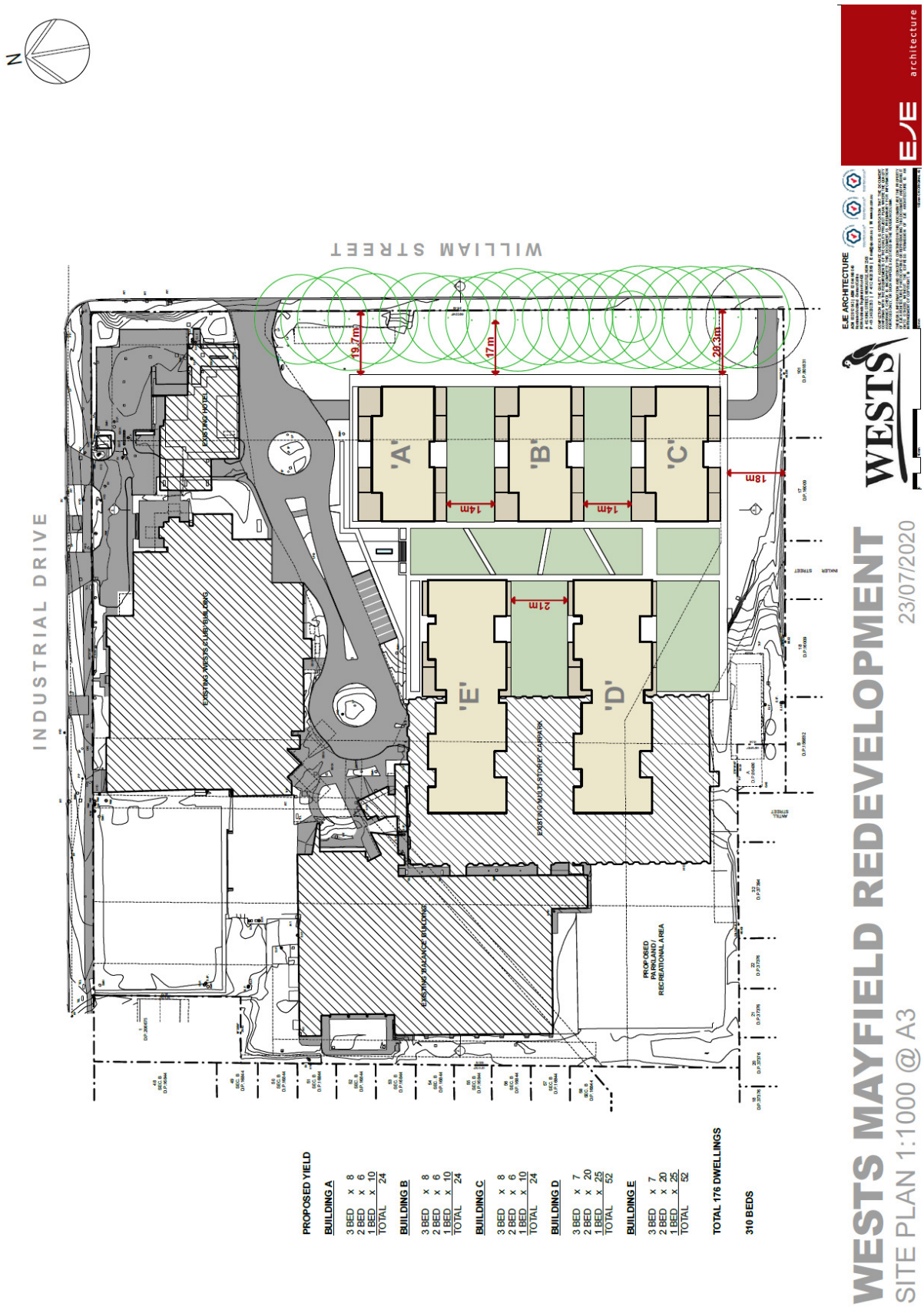
15.0 RECOMMENDATION

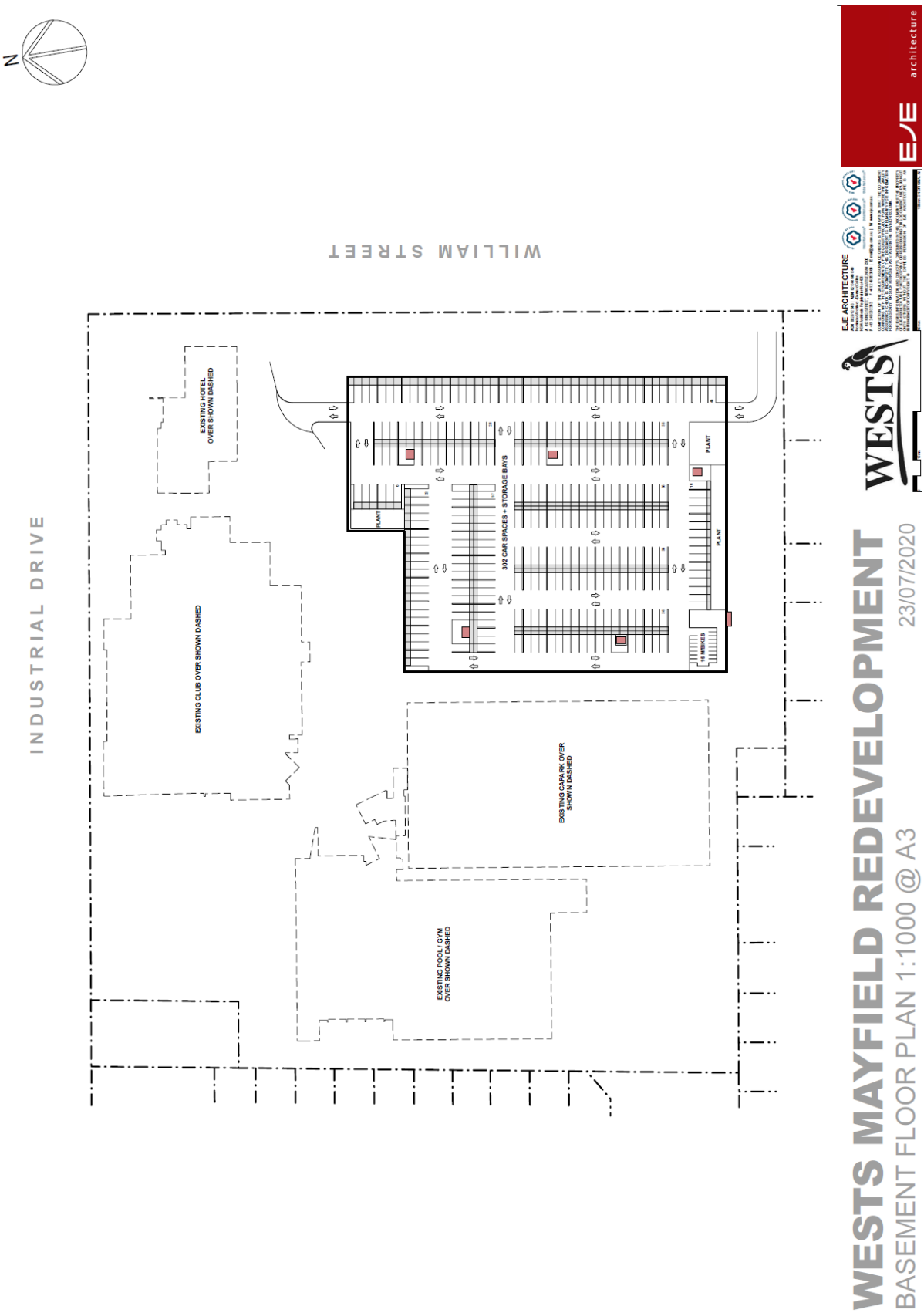
Having carried out this traffic impact assessment for a proposed Seniors Living development on Lot 100 in DP 1084939, 32 Industrial Drive, Mayfield it is recommended that the proposal can be supported from a traffic impact perspective as it will not adversely impact on the local and state road network and can comply with all relevant Newcastle City Council, Austroads, *State Environmental Planning Policy (SEPP) (Housing for Seniors and People with a Disability) 2004* and TfNSW traffic and parking related requirements.

JR Garry BE (Civil), Masters of Traffic
Director
Intersect Traffic Pty Ltd

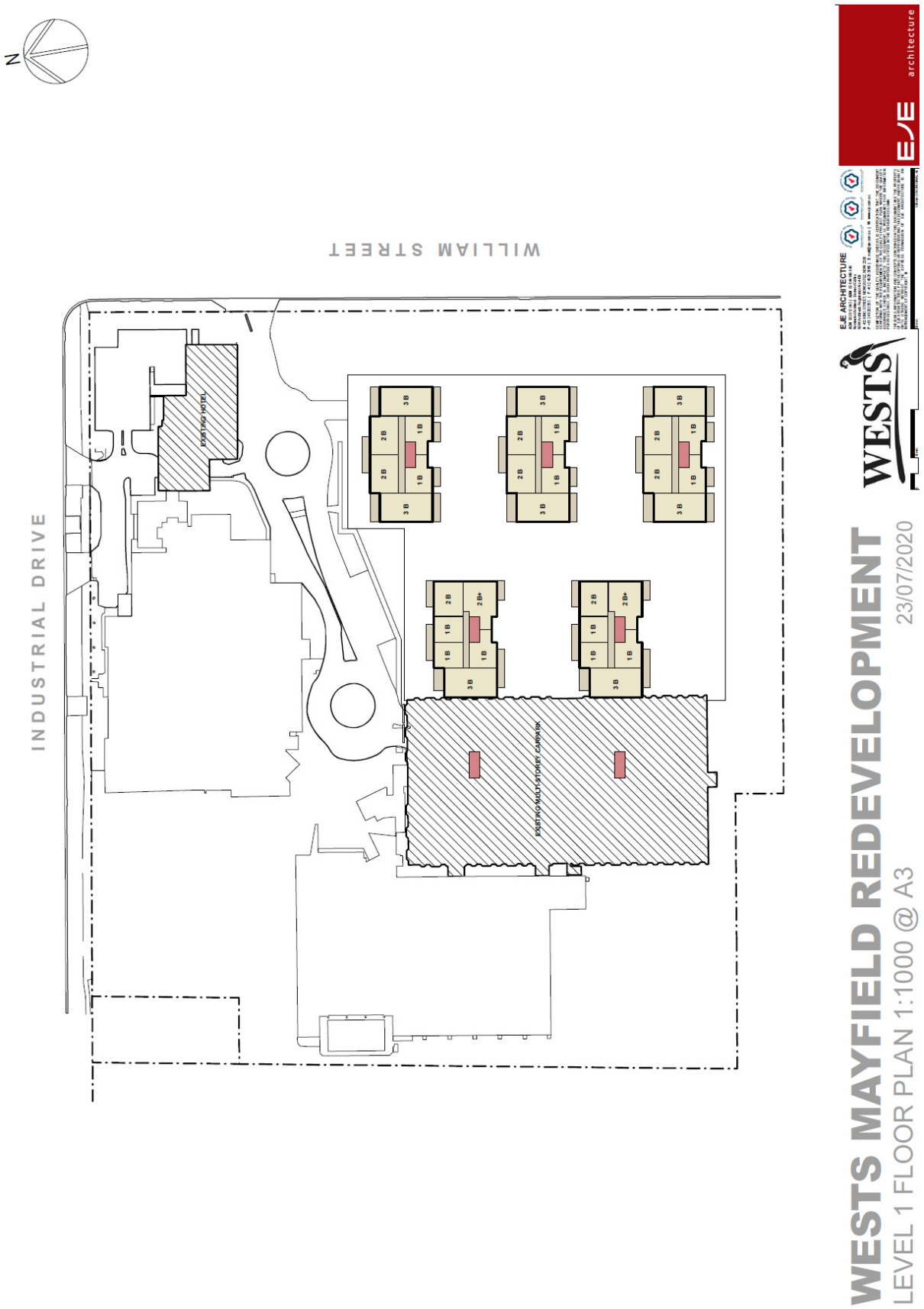
ATTACHMENT A

Development Plans


N
WILLIAM STREET
INDUSTRIAL DRIVE
'A'
'B'
'C'
'D'
'E'
19.7m
17m
29.3m
14m
14m
18m
21m
EXISTING WESTS CLUB BUILDING
EXISTING HOTEL
EXISTING MULTI STOREY CARPARK
EXISTING BALANCE BUILDING
PROPOSED PARKLAND / RECREATIONAL AREA
PROPOSED YIELD
BUILDING A
3 BED x 8
2 BED x 6
1 BED x 10
TOTAL 24
BUILDING B
3 BED x 8
2 BED x 6
1 BED x 10
TOTAL 24
BUILDING C
3 BED x 8
2 BED x 6
1 BED x 10
TOTAL 24
BUILDING D
3 BED x 7
2 BED x 20
1 BED x 25
TOTAL 52
BUILDING E
3 BED x 7
2 BED x 20
1 BED x 25
TOTAL 52
TOTAL 176 DWELLINGS
310 BEDS
E/E ARCHITECTURE
E/E architecture
WESTS
WESTS MAYFIELD REDEVELOPMENT
SITE PLAN 1:1000 @ A3
23/07/2020


N
WILLIAM STREET
INDUSTRIAL DRIVE
EXISTING HOTEL OVER SHOWN DASHED
EXISTING CLUB OVER SHOWN DASHED
EXISTING CARPARK OVER SHOWN DASHED
EXISTING POOL/ GYM OVER SHOWN DASHED
302 CAR SPACES + STORAGE BAYS
PLANT
PLANT
PLANT
16 MTBIKES
E/E ARCHITECTURE
E/E architecture
WESTS
WESTS MAYFIELD REDEVELOPMENT
BASEMENT FLOOR PLAN 1:1000 @ A3
23/07/2020


N
WILLIAM STREET
INDUSTRIAL DRIVE
EXISTING HOTEL
EXISTING WESTS CLUB BUILDING
EXISTING MULTI-STOREY CARPARK
EXISTING BOWLING BUILDING
PROPOSED PARKLAND/ RECREATIONAL AREA
19.7m
17m
28.3m
18m
14m
14m
21m
E/E architecture
E.E ARCHITECTURE
WESTS
WESTS MAYFIELD REDEVELOPMENT
GROUND FLOOR PLAN 1:1000 @ A3
23/07/2020


N
WILLIAM STREET
INDUSTRIAL DRIVE
EXISTING MOTEL
EXISTING MULTI-STOREY CARPARK
WESTS MAYFIELD REDEVELOPMENT
LEVEL 1 FLOOR PLAN 1:1000 @ A3
23/07/2020
EJE architecture
WESTS

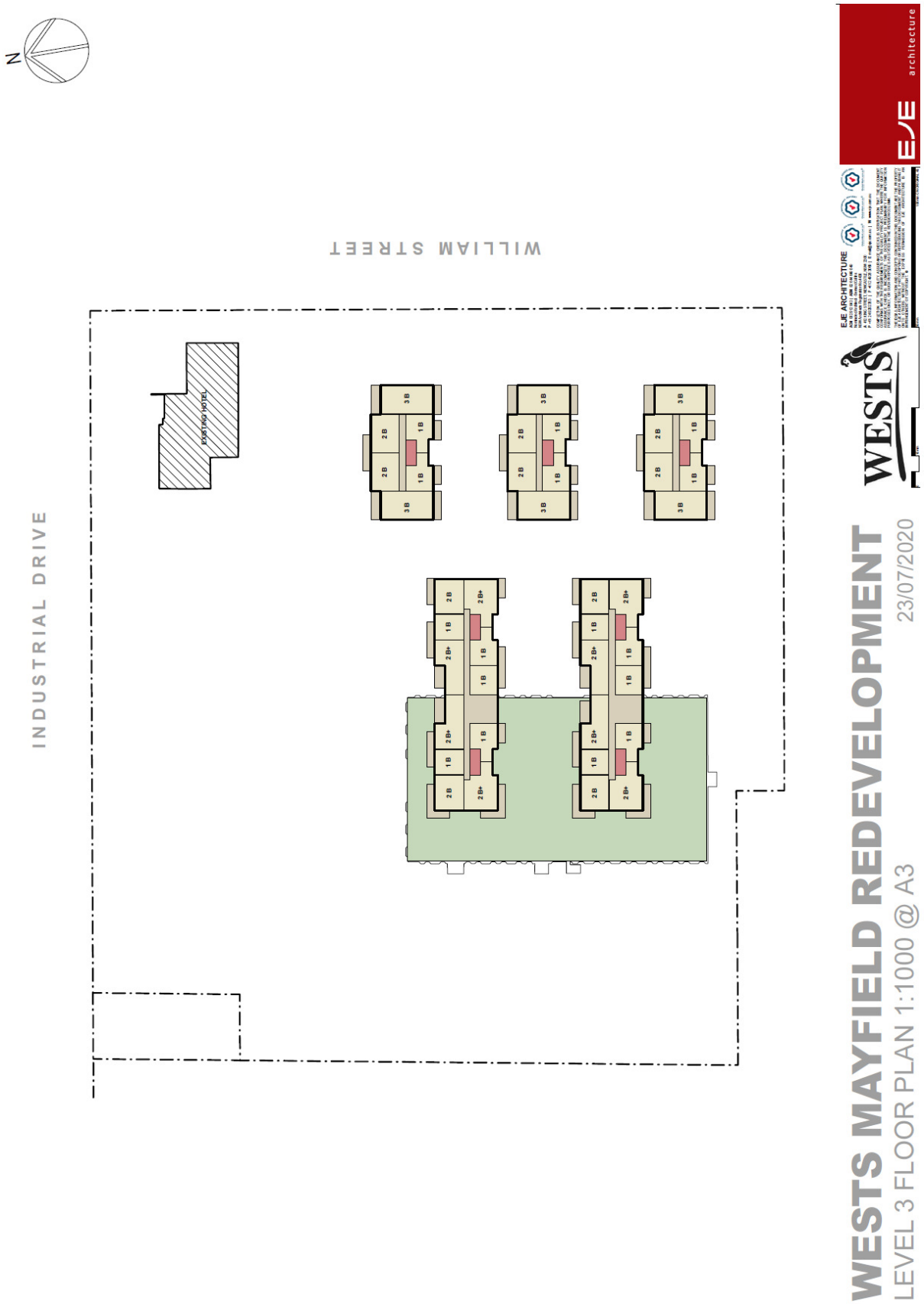
WESTS MAYFIELD REDEVELOPMENT

LEVEL 2 FLOOR PLAN 1:1000 @ A3

23/07/2020

EJE ARCHITECTURE

EJE architecture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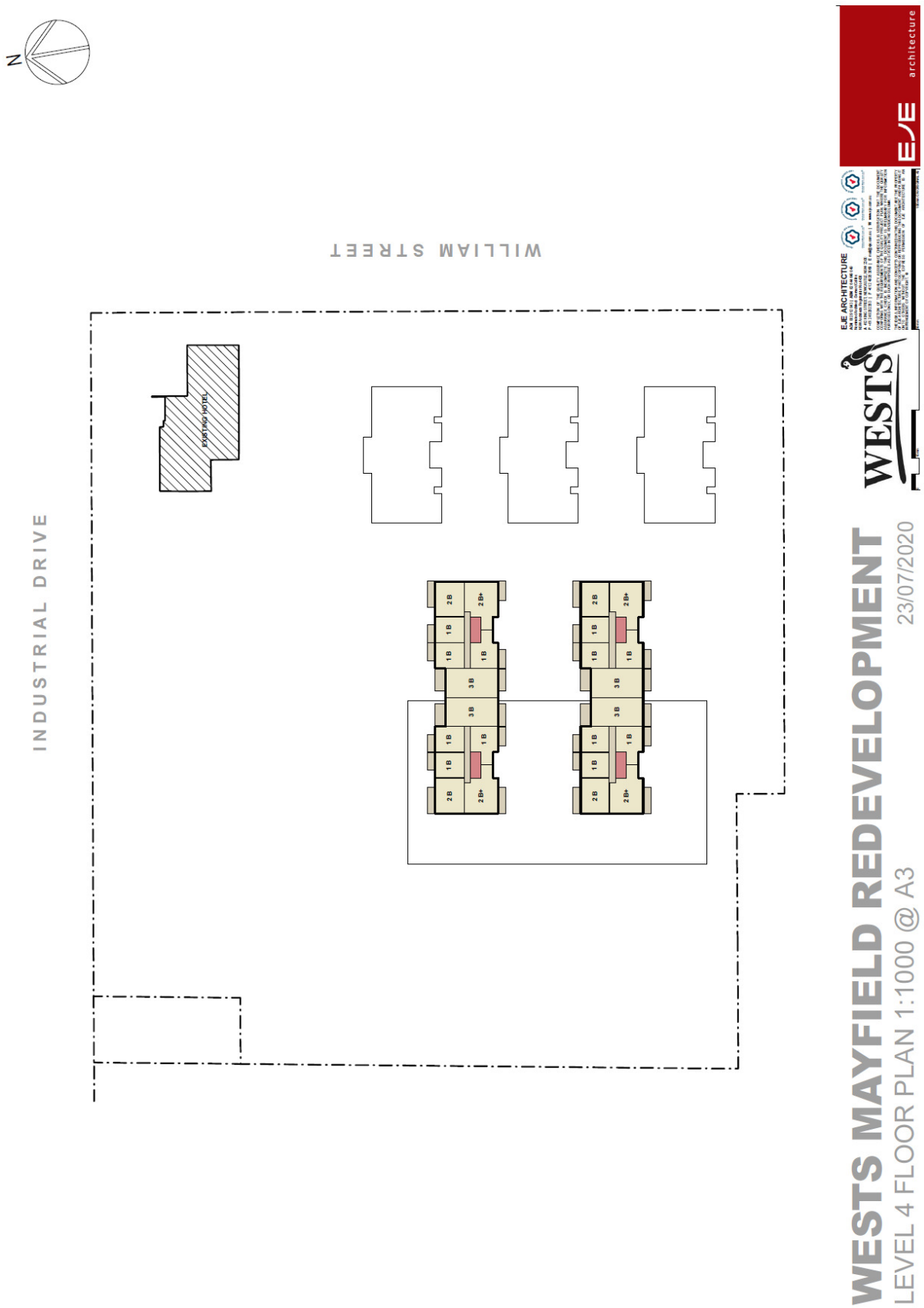
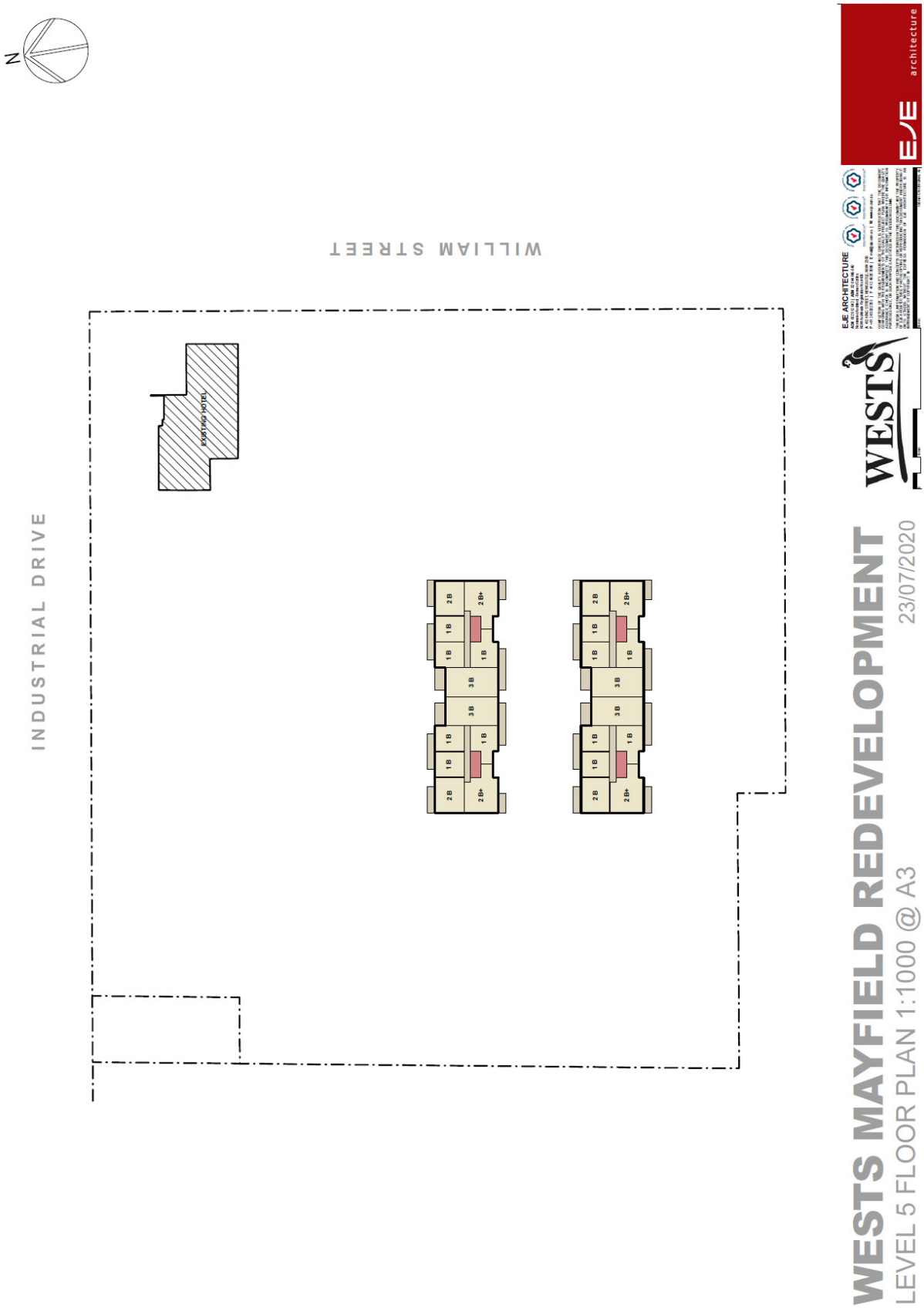
WILLIAM STREET
INDUSTRIAL DRIVE
EXISTING HOTEL
EJE ARCHITECTURE
WESTS
WESTS MAYFIELD REDEVELOPMENT
LEVEL 3 FLOOR PLAN 1:1000 @ A3
23/07/2020


N
WILLIAM STREET
INDUSTRIAL DRIVE
EXISTING HOTEL
2B
2B+
1B
3B
E/E architecture
WESTS
WESTS MAYFIELD REDEVELOPMENT
LEVEL 4 FLOOR PLAN 1:1000 @ A3
23/07/2020


N
WILLIAM STREET
INDUSTRIAL DRIVE
EXISTING HOTEL
2B
1B
3B
2B+
E/E architecture
E/E ARCHITECTURE
WESTS
WESTS MAYFIELD REDEVELOPMENT
LEVEL 5 FLOOR PLAN 1:1000 @ A3
23/07/2020

ATTACHMENT B

Traffic Count Data

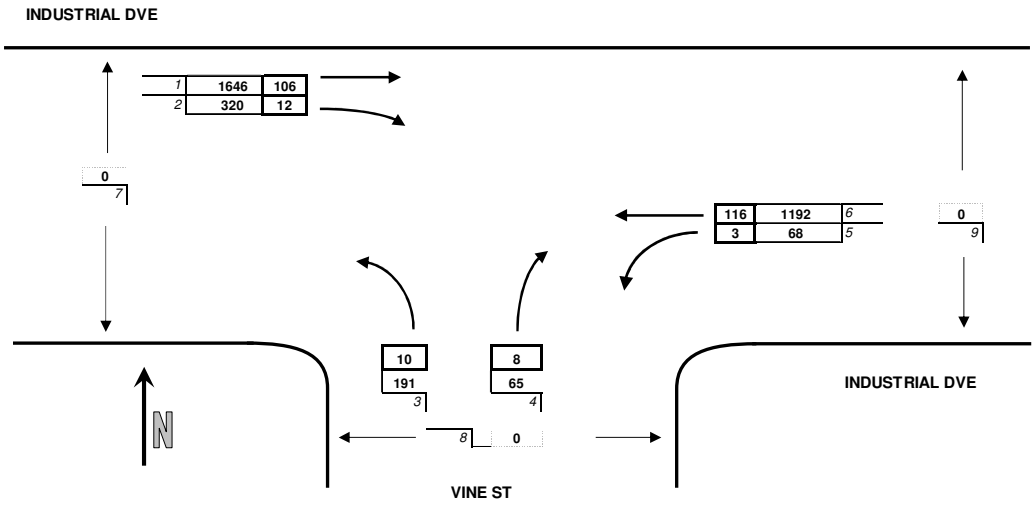
19/6/2018 - INDUSTRIAL DVE / VINE ST, MAYFIELD

08:30 <<< HOUR ENDING **Tuesday**

Summary: INDUSTRIAL DVE / VINE ST	
3482	Total Light Vehicles
255	Total Heavy Vehicles
0	Total Pedestrians

Quality Surveys
182830

1646 Light Vehicles
106 Heavy Vehicles
0 Pedestrians



19/6/2018 - INDUSTRIAL DVE / VINE ST, MAYFIELD

	Light Vehicles 1	2	3	4	5	6	Total Vehicles 15 MIN	HOUR	Pedestrians 7	8	9
07:15	312	50	46	16	17	262	703		0	0	0
07:30	350	49	37	9	6	312	763		0	0	0
07:45	461	58	37	14	10	303	883		0	0	0
08:00	397	89	50	24	22	311	893	3242	0	0	0
08:15	414	100	52	13	13	284 <	876	3415	0	0	0
08:30	374 <	73	52	14	23 <	294	830	3482 <	0	0	0
08:45	406	71 <	47 <	15 <	9	265	813	3412	0	0	0
09:00	340	63	42	15	10	230	700	3219	0	0	0
09:15	284	67	33	12	13	184	593	2936	0	0	0
09:30	239	44	34	9	17	175	518	2624	0	0	0
09:45	198	44	24	2	10	181	459	2270	0	0	0
10:00	170	72	37	4	11	177	471	2041	0	0	0

	Heavy Vehicles 1	2	3	4	5	6	Total Vehicles 15 MIN	HOUR
07:15	20	3	1	1	1	13	39	
07:30	21	2	1	2	2	19	47	
07:45	23	2	0	1	1	17	44	
08:00	30	3	0	2	1	35	71	201
08:15	35	4	3	2	1	22	67	229
08:30	18	3	7	3 <	0	42	73	255
08:45	29 <	3 <	0	0	2	46	80	291 <
09:00	25	2	1 <	1	2	30	61	281
09:15	34	1	2	0	2	30 <	69	283
09:30	24 <	2	2	1	1 <	25	55	265
09:45	24	1	2	1	0	26	54	239
10:00	28	1	0	2	1	34	66	244

	All Vehicles 1	2	3	4	5	6	Total Vehicles 15 MIN	HOUR
07:15	332	53	47	17	18	275	742	
07:30	371	51	38	11	8	331	810	
07:45	484	60	37	15	11	320	927	
08:00	427	92	50	26	23	346	964	3443
08:15	449	104	55	15	14	306	943	3644
08:30	392 <	76	59	17 <	23 <	336 <	903	3737 <
08:45	435	74 <	47 <	15 <	11 <	311	893	3703
09:00	365	65	43	16	12	260	761	3500
09:15	318	68	35	12	15	214	662	3219
09:30	263	46	36	10	18	200	573	2889
09:45	222	45	26	3	10	207	513	2509
10:00	198	73	37	6	12	211	537	2285

Note : Arrows "<" indicate the end time for the peak hour for each turning movement.

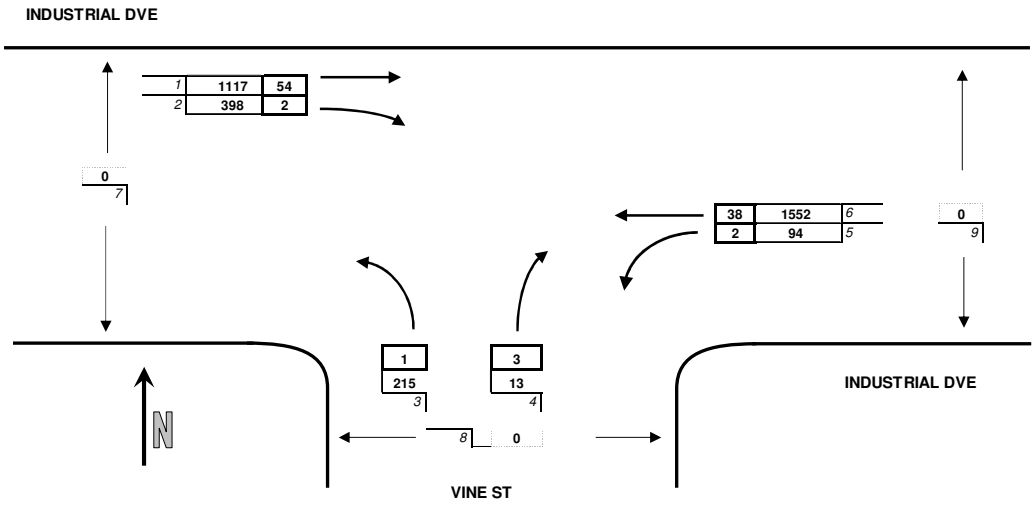
19/6/2018 - INDUSTRIAL DVE / VINE ST, MAYFIELD

17:15 <<< HOUR ENDING **Tuesday**

Summary: INDUSTRIAL DVE / VINE ST	
3389	Total Light Vehicles
100	Total Heavy Vehicles
0	Total Pedestrians

Quality Surveys
182830

1117 Light Vehicles
54 Heavy Vehicles
0 Pedestrians



19/6/2018 - INDUSTRIAL DVE / VINE ST, MAYFIELD

	Light Vehicles 1	2	3	4	5	6	Total Vehicles 15 MIN HOUR		Pedestrians 7	8	9
15:15	183	49	57	8	28	369	694		0	0	0
15:30	181	56	70	12	18	310	647		0	0	0
15:45	194	59	51	4	22	428	758		0	0	0
16:00	221	51	52	2	11	360	697	2796	0	0	0
16:15	204	79	65 <	6	28	351	733	2835	0	0	0
16:30	247	96	58	5	19	392	817	3005	0	0	0
16:45	295	99	54	3	30	387	868	3115	0	0	0
17:00	279	107	48	2	22	404	862	3280	0	0	0
17:15	296	96	55	3	23	369 <	842	3389 <	0	0	0
17:30	281 <	99 <	61	7	27 <	299	774	3346	0	0	0
17:45	291	66	47	7	23	311	745	3223	0	0	0
18:00	214	60	58	12 <	21	323	688	3049	0	0	0

	Heavy Vehicles 1	2	3	4	5	6	Total Vehicles 15 MIN HOUR	
15:15	32	4	3	0	3	29	71	
15:30	15	1	3	1	0	23	43	
15:45	25	1	2	1	1	24	54	
16:00	21 <	2 <	1 <	1	1 <	24 <	50	218 <
16:15	17	2	1	1 <	1	14	36	183
16:30	22	0	0	1 <	0	11	34	174
16:45	8	0	0	0	0	9	17	137
17:00	12	2	1	1	1	11	28	115
17:15	12	0	0	1	1	7	21	100
17:30	7	1	1	0	0	13	22	88
17:45	13	0	2	2 <	1	7	25	96
18:00	6	1	1	1 <	0	11	20	88

	All Vehicles 1	2	3	4	5	6	Total Vehicles 15 MIN HOUR	
15:15	215	53	60	8	31	398	765	
15:30	196	57	73	13	18	333	690	
15:45	219	60	53	5	23	452	812	
16:00	242	53	53	3	12	384	747	3014
16:15	221	81	66 <	7	29	365	769	3018
16:30	269	96	58	6	19	403 <	851	3179
16:45	303	99	54	3	30	396	885	3252
17:00	291	109	49	3	23	415	890	3395
17:15	308	96	55	4	24	376	863	3489 <
17:30	288	100 <	62	7	27 <	312	796	3434
17:45	304 <	66	49	9	24	318	770	3319
18:00	220	61	59	13 <	21	334	708	3137

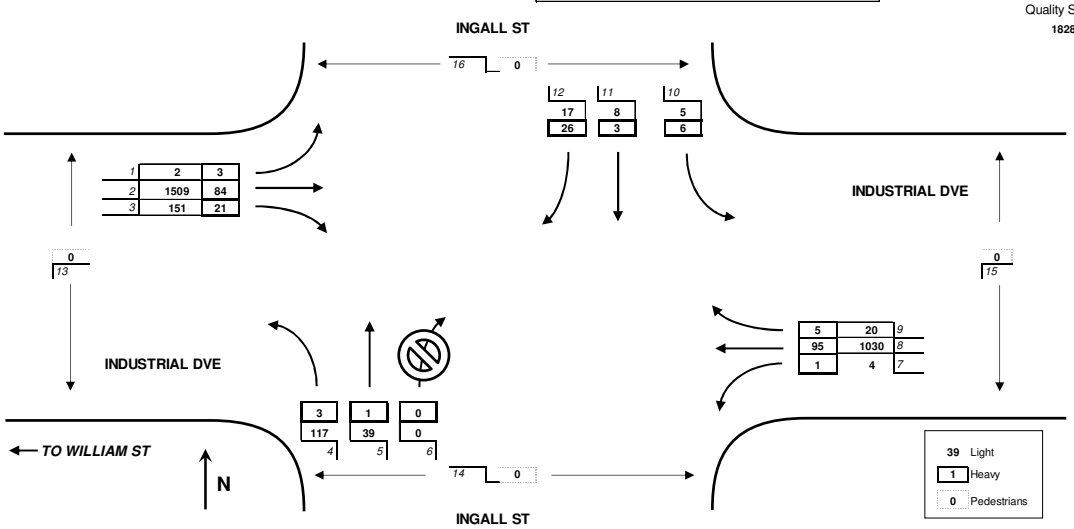
Note : Arrows "<" indicate the end time for the peak hour for each turning movement.

19/6/2018 - INGALL ST / INDUSTRIAL DVE, MAYFIELD

08:30 <<< HOUR ENDING **Tuesday**

Summary:	INGALL ST / INDUSTRIAL DVE
2902	Total Light Vehicles
248	Total Heavy Vehicles
0	Total Pedestrians

Quality Surveys
182830



19/6/2018 - INGALL ST / INDUSTRIAL DVE, MAYFIELD

Light Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN HOUR		Pedestrians 13	14	15	16
07:15	0	258	23	19	11	0	0	231	1	0	1	4	548		0	0	0	0
07:30	0	296	22	21	5	0	1	279	7	1	5	7	644		0	0	0	0
07:45	0	417	26	32	9	0	0	265	6	2	1	4	762		0	0	0	0
08:00	1	370	52	27	8	0	1	287 <	7	1	1	6	761	2715	0	0	0	0
08:15	1	371	32	29	11	0	1	226	3 <	1	5	5 <	685	2852	0	0	0	0
08:30	0	351 <	41 <	29 <	11 <	0	2	252	4	1	1	2	694	2902 <	0	0	0	0
08:45	1	381	26 <	22	5	0	3	240	4	1	0	4	687	2827	0	0	0	0
09:00	2	303	35	34	9	0	5 <	190	2	1	1	4	586	2652	0	0	0	0
09:15	2 <	251	22	19	7	0	0	170	2	4	5	2	484	2451	0	0	0	0
09:30	0 <	210	22	18	6	0	3 <	186	4	3	6	2	460	2217	0	0	0	0
09:45	0	200	29	13	2	0	3 <	142	4	1	1	7	402	1932	0	0	0	0
10:00	2	153	20	21	1	0	1	166	3	4 <	2 <	0	373	1719	0	0	0	0

Heavy Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN HOUR	
07:15	0	15	0	1	0	0	0	9	3	1	0	4	33	
07:30	0	15	1	1	0	0	0	16	1	0	0	2	36	
07:45	2	22	1	2	1	0	0	11	1	1	1	7	49	
08:00	0	25	1	0	0 <	0	0	28	0	4	1	6	65	183
08:15	0	18	11	1	0 <	0	1 <	19	2	1	1 <	4	58	208
08:30	1	19	8 <	0	0 <	0	0 <	37	2	0	0 <	9	76	248
08:45	0	17	0	2	0	0	0 <	33 <	1	3 <	0	6	62	261 <
09:00	1	23	2 <	2	0	0	0 <	26	0	1	0	3	58	254
09:15	0	26 <	0	1	0	0	0	19	0	1	0	11	58	254
09:30	1	18	2	2 <	0	0	0	17	2	0	1	8	51	229
09:45	0	13	4	1	0	0	0	15	3	0	1	6	43	210
10:00	4 <	13	3	0	0	0	0	27	1 <	1	0	7 <	56	208

All Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN HOUR	
07:15	0	273	23	20	11	0	0	240	4	1	1	8	581	
07:30	0	311	23	22	5	0	1	295	8	1	5	9	680	
07:45	2	439	27	34	10	0	0	276	7	3	2	11	811	
08:00	1	395	53	27	8	0	1	315	7	5	2	12	826	2898
08:15	1	389	43	30	11	0	2	245 <	5 <	2	6	9	743	3060
08:30	1	370 <	49 <	29 <	11 <	0	2	289	6	1	1	11 <	770	3150 <
08:45	1	398	26	24	5	0	3	273	5	4	0	10	749	3088
09:00	3	326	37	36	9	0	5 <	216	2	2	1	7	644	2906
09:15	2	277	22	20	7	0	0	189	2	5	5	13	542	2705
09:30	1	228	24	20	6	0	3	203	6	3 <	7	10	511	2446
09:45	0	213	33	14	2	0	3	157	7	1	2	13 <	445	2142
10:00	6 <	166	23	21	1	0	1	193	4	5 <	2 <	7 <	429	1927

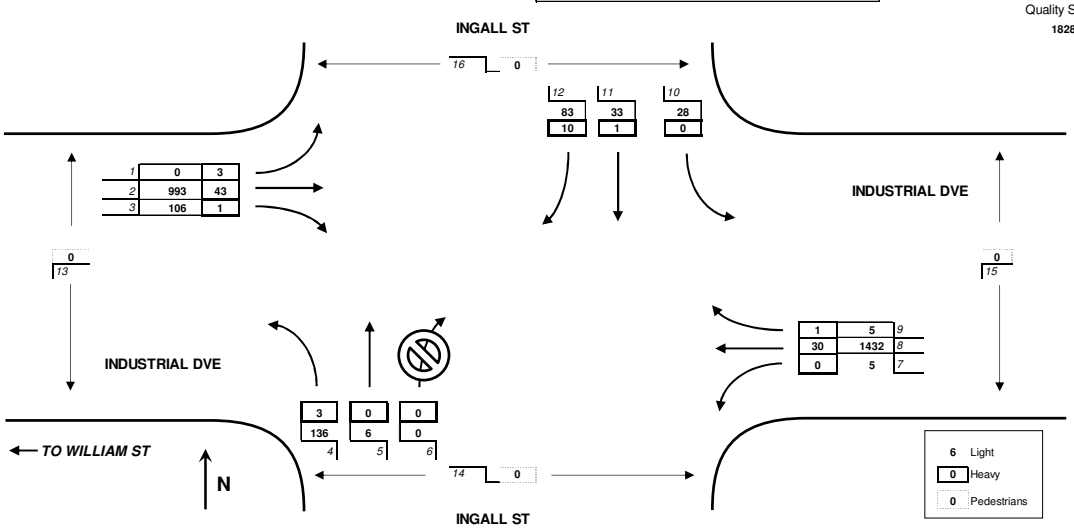
Note : Arrows "<" indicate the end time for the peak hour for each turning movement.

19/6/2018 - INGALL ST / INDUSTRIAL DVE, MAYFIELD

17:15 <<< HOUR ENDING **Tuesday**

Summary:	INGALL ST / INDUSTRIAL DVE
2827	Total Light Vehicles
92	Total Heavy Vehicles
0	Total Pedestrians

Quality Surveys
182830



19/6/2018 - INGALL ST / INDUSTRIAL DVE, MAYFIELD

Light Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN HOUR		Pedestrians 13	14	15	16
15:15	0	176	21	34	0	0	4	294	1	5	7	22	564		0	0	0	0
15:30	1	166	24	30	2	0	3	273	2	3	3	21	528		0	0	0	0
15:45	2	162	22	30	6	0	3	357	1	13	7	36	639		0	0	0	0
16:00	0	218	19	40	3	0	2	289	0	3	11	21	606	2337	0	0	0	0
16:15	0	182	19	49	3 <	0	2	305	0	14	14	26	614	2387	0	0	0	0
16:30	0	226	32	35 <	1	0	2	323	1	9 <	8	26 <	663	2522	0	0	0	0
16:45	0	254	21	29	0	0	1	347	2	7	7	20	688	2571	0	0	0	0
17:00	0	263	30	36	2	0	1	353	1	6	6	13	711	2676	0	0	0	0
17:15	0	250	23	36	3	0	1	409 <	1	6	12	24	765	2827 <	0	0	0	0
17:30	1	257	28	40	2	0	22	269	1	3	15	15	653	2817	0	0	0	0
17:45	1	262 <	27 <	19	2	0	21	284	3	5	8	13	645	2774	0	0	0	0
18:00	2 <	200	19	24	2	0	25 <	264	2 <	9	11 <	14	572	2635	0	0	0	0

Heavy Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN HOUR	
15:15	1	27	2	3	0	0	0	17	0	0	3	6	59	
15:30	1	13	0	2	1	0	0	17	0	0	0	7	41	
15:45	0	20	0	1	0	0	0	18	0	0	0	4	43	
16:00	1 <	19 <	1 <	1 <	0 <	0	0	20 <	0	0	1 <	0 <	43	186 <
16:15	0	16	1	1	0 <	0	0	14	0	0	0	4	36	163
16:30	1	21	0	0	0	0	0	10	1 <	0	0	2	35	157
16:45	1 <	5	0	0	0	0	0	7	0 <	0	1	2	16	130
17:00	0	10	1	2	0	0	0	9	0 <	0	0	2	24	111
17:15	1 <	7	0	1	0	0	0	4	0 <	0	0	4	17	92
17:30	0	7	0	0	0	0	0	9	0	0	0	5	21	78
17:45	1	5	2 <	1	0	0	0	6	0	0	0	1	16	78
18:00	1 <	2	1 <	0	0	0	1 <	4	0	2 <	0	4	15	69

All Vehicles

	1	2	3	4	5	6	7	8	9	10	11	12	Total Vehicles 15 MIN HOUR	
15:15	1	203	23	37	0	0	4	311	1	5	10	28	623	
15:30	2	179	24	32	3	0	3	290	2	3	3	28	569	
15:45	2	182	22	31	6	0	3	375	1	13	7	40	682	
16:00	1	237	20	41	3	0	2	309	0	3	12	21	649	2523
16:15	0	198	20	50	3 <	0	2	319	0	14	14	30 <	650	2550
16:30	1	247	32	35 <	1	0	2	333	2	9 <	8	28 <	698	2679
16:45	1	259	21	29	0	0	1	354	2	7	8	22	704	2701
17:00	0	273	31	38	2	0	1	362	1	6	6	15	735	2787
17:15	1	257	23	37	3	0	1	413 <	1	6	12	28	782	2919 <
17:30	1	264	28	40	2	0	22	278	1	3	15	20	674	2895
17:45	2	267 <	29 <	20	2	0	21	290	3	5	8	14	661	2852
18:00	3 <	202	20	24	2	0	26 <	268	2 <	11	11 <	18	587	2704

Note : Arrows "<" indicate the end time for the peak hour for each turning movement.

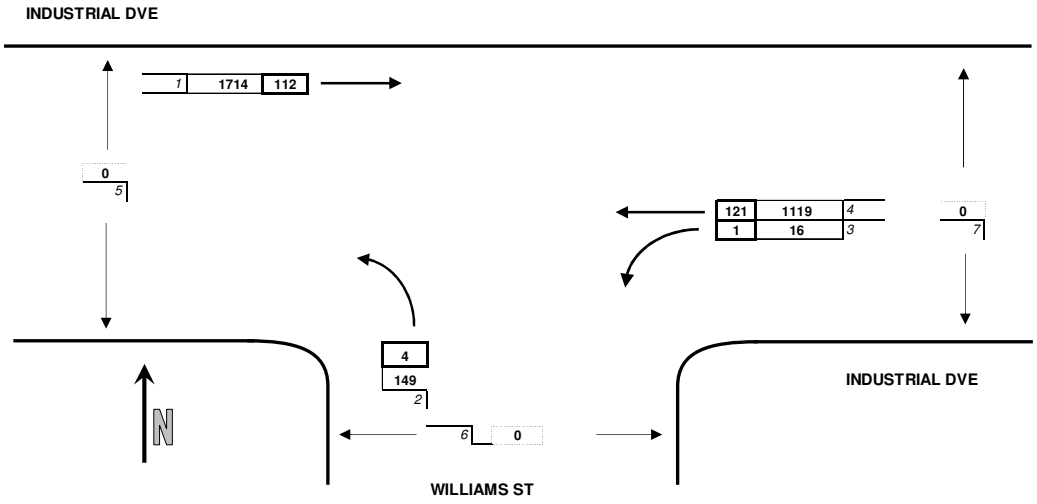
19/6/2018 - INDUSTRIAL DVE / WILLIAMS ST, MAYFIELD

08:30 <<< HOUR ENDING **Tuesday**

Summary: INDUSTRIAL DVE / WILLIAMS ST	
2998	Total Light Vehicles
238	Total Heavy Vehicles
0	Total Pedestrians

Quality Surveys
182830

1714 Light Vehicles
112 Heavy Vehicles
0 Pedestrians



19/6/2018 - INDUSTRIAL DVE / WILLIAMS ST, MAYFIELD

	Light Vehicles 1	2	3	4	Total Vehicles 15 MIN HOUR		Pedestrians 5	6	7
07:15	310	52	8	247	617		0	0	0
07:30	371	20	3	292	686		0	0	0
07:45	451	25	3	291	770		0	0	0
08:00	420	53 <	8	291	772	2845	0	0	0
08:15	445	33	2	267 <	747	2975	0	0	0
08:30	398 <	38	3	270	709	2998 <	0	0	0
08:45	417	23	7	247	694	2922	0	0	0
09:00	363	15	6	211	595	2745	0	1 <	0
09:15	286	20	6	185	497	2495	0	0 <	0
09:30	267	27	7	187	488	2274	0	0 <	0
09:45	203	13	8 <	170	394	1974	0	0 <	0
10:00	191	22	5	180	398	1777	0	0	0

	Heavy Vehicles 1	2	3	4	Total Vehicles 15 MIN HOUR	
07:15	20	0	0	15	35	
07:30	24	1	0	20	45	
07:45	24	1	0	18	43	
08:00	29	1	1	36	67	190
08:15	37	1 <	0	23	61	216
08:30	22	1 <	0	44	67	238
08:45	22	1 <	0	45	68	263
09:00	34 <	0	0	32	66	262
09:15	30	1	1	31 <	63	264 <
09:30	26	0	0	25	51	248
09:45	19	0	0	28	47	227
10:00	30	1	1 <	33	65	226

	All Vehicles 1	2	3	4	Total Vehicles 15 MIN HOUR	
07:15	330	52	8	262	652	
07:30	395	21	3	312	731	
07:45	475	26	3	309	813	
08:00	449	54 <	9	327	839	3035
08:15	482	34	2	290	808	3191
08:30	420 <	39 <	3	314 <	776	3236 <
08:45	439	24	7	292	762	3185
09:00	397	15	6	243	661	3007
09:15	316	21	7	216	560	2759
09:30	293	27	7	212	539	2522
09:45	222	13	8 <	198	441	2201
10:00	221	23	6 <	213	463	2003

Note : Arrows "<" indicate the end time for the peak hour for each turning movement.

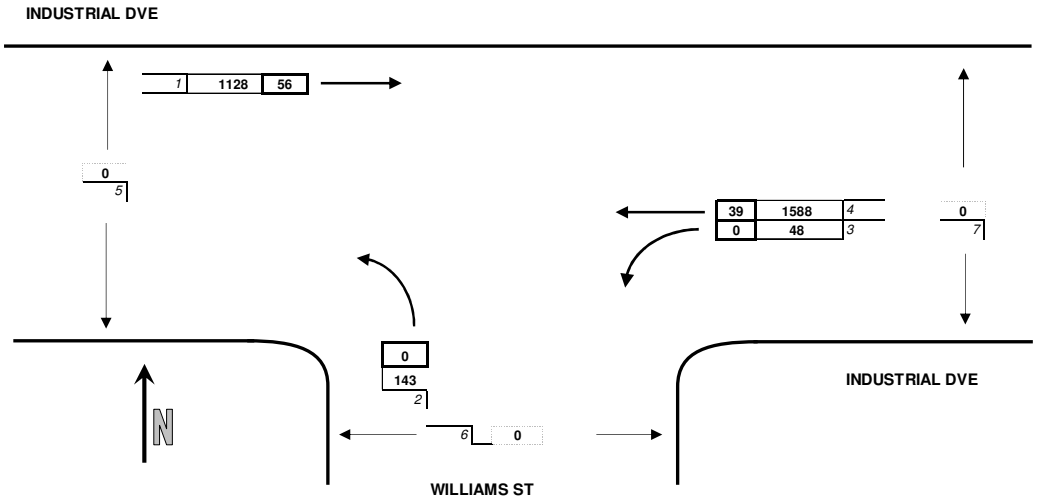
19/6/2018 - INDUSTRIAL DVE / WILLIAMS ST, MAYFIELD

17:15 <<< HOUR ENDING **Tuesday**

Summary: INDUSTRIAL DVE / WILLIAMS ST	
2907	Total Light Vehicles
95	Total Heavy Vehicles
0	Total Pedestrians

Quality Surveys
182830

1128 Light Vehicles
56 Heavy Vehicles
0 Pedestrians



19/6/2018 - INDUSTRIAL DVE / WILLIAMS ST, MAYFIELD

	Light Vehicles 1	2	3	4	Total Vehicles 15 MIN HOUR		Pedestrians 5	6	7
15:15	197	34	12	334	577		0	0	0
15:30	207	19	4	316	546		0	0	0
15:45	203	27	5	421	656		0	0	0
16:00	222	19	5	350	596	2375	0	0	0
16:15	212	29	5	372	618	2416	0	0	0
16:30	272	29	11	391	703	2573	0	0	0
16:45	274	38	8	400	720	2637	0	0	0
17:00	306	36	10	393	745	2786	0	0	0
17:15	276	40	19	404 <	739	2907 <	0	0	0
17:30	291 <	44	14	340	689	2893	0	0	0
17:45	272	41	16	307	636	2809	0	0	0
18:00	232	48 <	25 <	322	627	2691	0	0	0

	Heavy Vehicles 1	2	3	4	Total Vehicles 15 MIN HOUR	
15:15	30	3	0	29	62	
15:30	22	0	0	28	50	
15:45	25	0	0	23	48	
16:00	19 <	1 <	0	20 <	40	200 <
16:15	18	0	0	18	36	174
16:30	23	0	0	10	33	157
16:45	5	0	0	8	13	122
17:00	15	0	0	13	28	110
17:15	13	0	0	8	21	95
17:30	8	0	0	13	21	83
17:45	13	0	0	8	21	91
18:00	7	0	1 <	10	18	81

	All Vehicles 1	2	3	4	Total Vehicles 15 MIN HOUR	
15:15	227	37	12	363	639	
15:30	229	19	4	344	596	
15:45	228	27	5	444	704	
16:00	241	20	5	370	636	2575
16:15	230	29	5	390	654	2590
16:30	295	29	11	401	736	2730
16:45	279	38	8	408	733	2759
17:00	321	36	10	406	773	2896
17:15	289	40	19	412 <	760	3002 <
17:30	299	44	14	353	710	2976
17:45	285 <	41	16	315	657	2900
18:00	239	48 <	26 <	332	645	2772

Note : Arrows "<" indicate the end time for the peak hour for each turning movement.

Intersect Traffic
PO Box 268
East Maitland, Nsw, 2323
0423324188

Turn Count Summary

Location: William Street at Crebert Street , Mayfield
GPS Coordinates:
Date: 2018-07-23
Day of week: Monday
Weather:
Analyst: Peter

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:32	1	0	2	0	19	16	0	0	0	19	40	0	97
07:45	6	0	0	0	27	9	0	0	0	18	44	0	104
08:00	2	0	3	0	64	18	0	0	0	17	44	0	148
08:15	3	0	1	0	52	23	0	0	0	16	69	0	164
08:30	3	0	1	0	46	9	0	0	0	21	41	0	121
08:45	4	0	2	0	34	11	0	0	0	28	26	0	105
09:00	0	0	0	0	5	0	0	0	0	2	2	0	9

Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:32	1	0	2	0	19	16	0	0	0	18	39	0	95
07:45	6	0	0	0	27	9	0	0	0	18	44	0	104
08:00	2	0	3	0	52	18	0	0	0	16	44	0	135
08:15	3	0	1	0	48	23	0	0	0	16	69	0	160
08:30	3	0	1	0	46	9	0	0	0	21	41	0	121
08:45	4	0	2	0	33	11	0	0	0	28	26	0	104
09:00	0	0	0	0	5	0	0	0	0	2	2	0	9

Heavy traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:32	0	0	0	0	0	0	0	0	0	1	1	0	2
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	12	0	0	0	0	1	0	0	13
08:15	0	0	0	0	4	0	0	0	0	0	0	0	4
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	1	0	0	0	0	0	0	0	1
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
07:32	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	12	0	7	0	196	61	0	0	0	82	180	0	538
Factor	0.75	0.00	0.58	0.00	0.77	0.66	0.00	0.00	0.00	0.73	0.65	0.00	0.82
Approach Factor	0.79			0.78			0.00			0.77			

Peak Hour Vehicle Summary

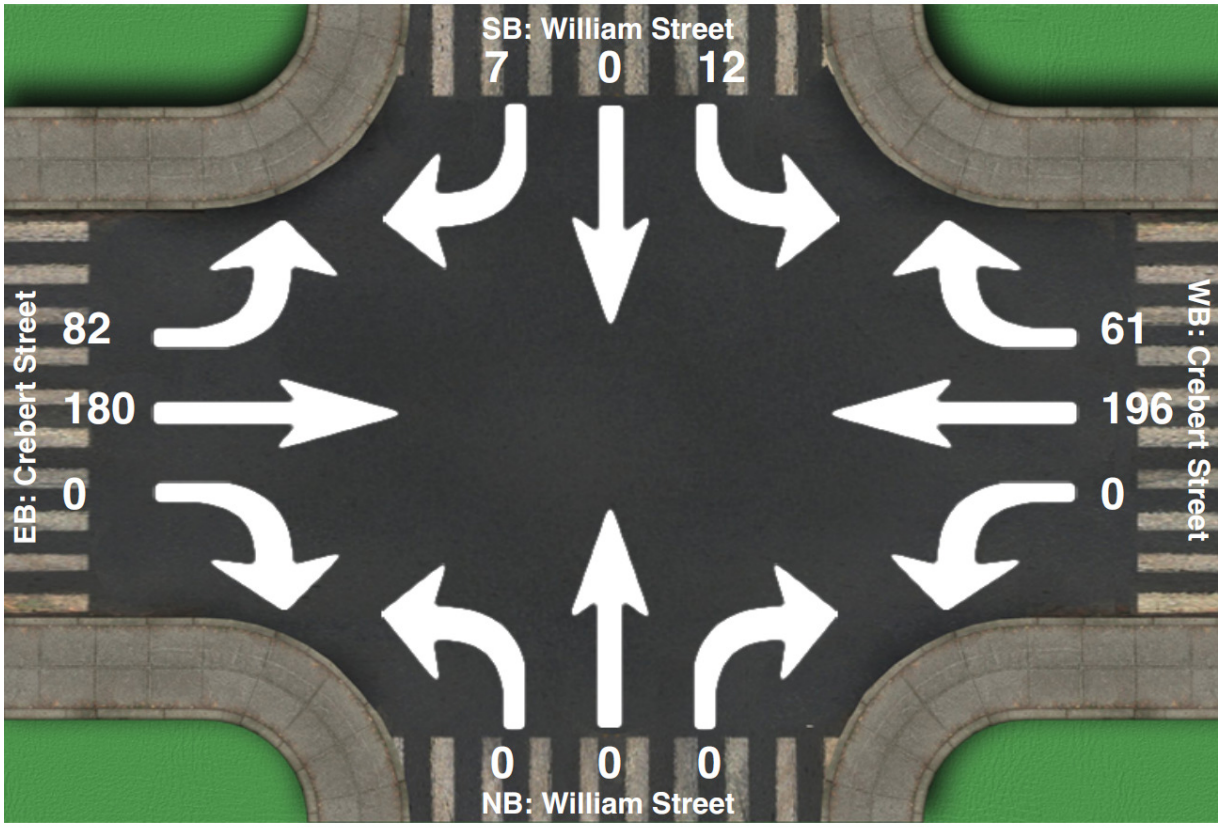
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	12	0	7	0	179	61	0	0	0	81	180	0	520
Heavy	0	0	0	0	17	0	0	0	0	1	0	0	18

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Peak Hour

Location: William Street at Crebert Street , Mayfield
GPS Coordinates:
Date: 2018-07-23
Day of week: Monday
Weather:
Analyst: Peter



Intersection Peak Hour

08:00 - 09:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	12	0	7	0	196	61	0	0	0	82	180	0	538
Factor	0.75	0.00	0.58	0.00	0.77	0.66	0.00	0.00	0.00	0.73	0.65	0.00	0.82
Approach Factor	0.79			0.78			0.00			0.77			

Intersect Traffic
PO Box 268
East Maitland, Nsw, 2323
0423324188

Turn Count Summary

Location: William Street Q at Crebert Street , Mayfield
GPS Coordinates: Lat=-32.895299, Lon=151.743890
Date: 2018-07-23
Day of week: Monday
Weather: Sunny
Analyst: Peter

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:15	4	0	1	0	44	7	0	0	0	37	35	0	128
16:30	2	0	2	0	29	11	0	0	0	35	32	0	111
16:45	3	0	0	0	30	12	0	0	0	34	35	0	114
17:00	1	0	1	0	46	13	0	0	0	33	41	0	135

Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:15	4	0	1	0	44	7	0	0	0	37	35	0	128
16:30	2	0	2	0	29	11	0	0	0	35	32	0	111
16:45	3	0	0	0	30	12	0	0	0	34	35	0	114
17:00	1	0	1	0	46	13	0	0	0	33	41	0	135

Heavy traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0

Pedestrian volumes

Interval starts	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
16:15	0	0	0	0	0	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Peak Hour

16:15 - 17:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	10	0	4	0	149	43	0	0	0	139	143	0	488
Factor	0.62	0.00	0.50	0.00	0.81	0.83	0.00	0.00	0.00	0.94	0.87	0.00	0.90
Approach Factor	0.70			0.81			0.00			0.95			

Peak Hour Vehicle Summary

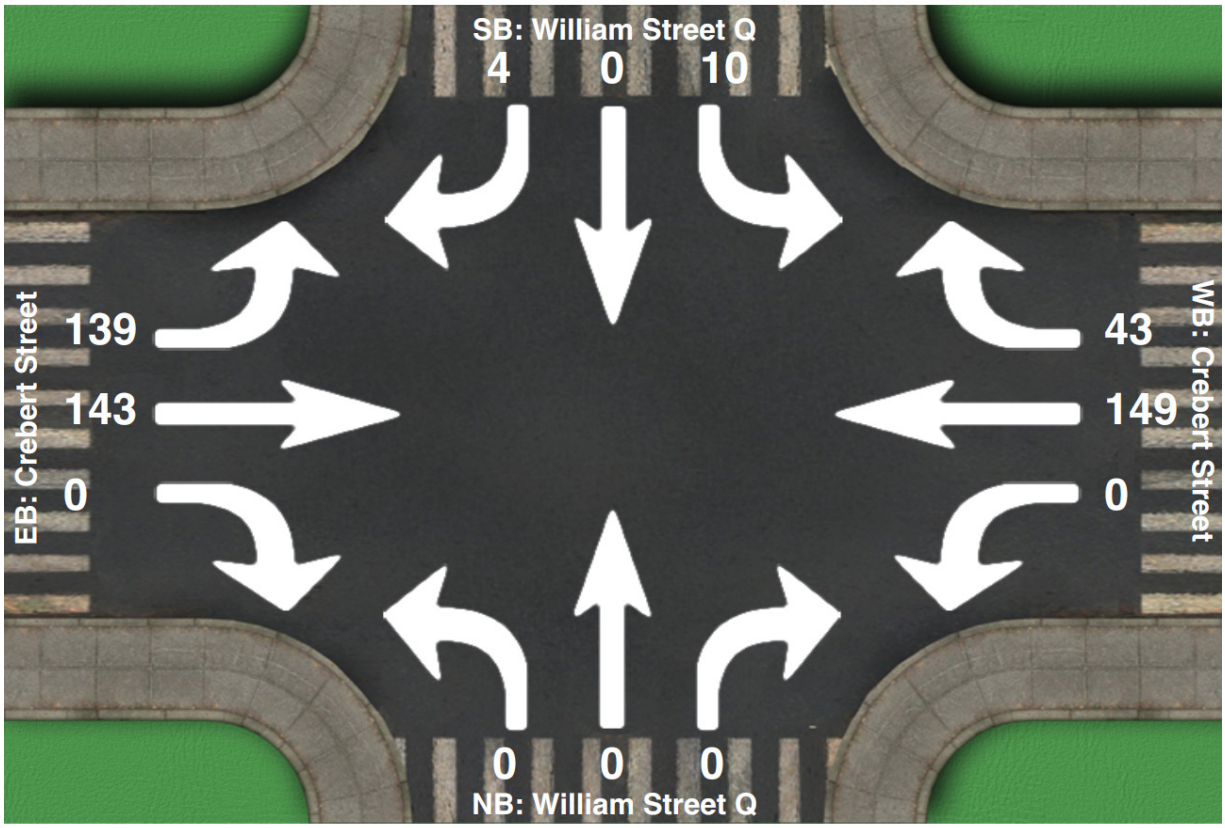
Vehicle	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Car	10	0	4	0	149	43	0	0	0	139	143	0	488
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0

Peak Hour Pedestrians

	NE			NW			SW			SE			Total
	Left	Right	Total	Left	Right	Total	Left	Right	Total	Left	Right	Total	
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0

Intersection Peak Hour

Location: William Street Q at Crebert Street , Mayfield
GPS Coordinates: Lat=-32.895299, Lon=151.743890
Date: 2018-07-23
Day of week: Monday
Weather: Sunny
Analyst: Peter



Intersection Peak Hour

16:15 - 17:15

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	10	0	4	0	149	43	0	0	0	139	143	0	488
Factor	0.62	0.00	0.50	0.00	0.81	0.83	0.00	0.00	0.00	0.94	0.87	0.00	0.90
Approach Factor	0.70			0.81			0.00			0.95			

ATTACHMENT C

SIDRA Movement Summary Tables

MOVEMENT SUMMARY

Site: 102 [Industrial Dr / Vine St 2021 AM (10am) with existing reroute (Site Folder: General)]

Industrial Drive Vine St Signalised T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 41 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Vine Street														
1	L2	140	4.5	140	4.5	0.532	24.8	LOS B	2.9	20.7	0.97	0.79	1.00	43.2
3	R2	33	12.9	33	12.9	* 0.133	23.4	LOS B	0.6	4.8	0.90	0.71	0.90	40.4
Approach		173	6.1	173	6.1	0.532	24.5	LOS B	2.9	20.7	0.96	0.78	0.98	42.7
East: Industrial Drive														
4	L2	22	7.3	22	7.3	0.169	19.9	LOS B	1.3	9.9	0.80	0.65	0.80	48.9
5	T1	870	13.8	870	13.8	* 0.845	21.6	LOS B	9.9	77.1	0.99	1.01	1.42	51.8
Approach		892	13.7	892	13.7	0.845	21.6	LOS B	9.9	77.1	0.98	1.00	1.40	51.7
West: Industrial Drive														
11	T1	1047	11.0	1047	11.0	0.513	6.1	LOS A	6.6	50.7	0.66	0.58	0.66	69.4
12	R2	243	2.2	243	2.2	* 0.908	35.5	LOS C	6.6	47.3	1.00	1.19	2.02	37.8
Approach		1290	9.3	1290	9.3	0.908	11.7	LOS A	6.6	50.7	0.72	0.69	0.92	59.6
All Vehicles		2355	10.7	2355	10.7	0.908	16.4	LOS B	9.9	77.1	0.84	0.82	1.10	54.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Vine Street												
P1	Full	50	50	15.0	LOS B	0.0	0.0	0.86	0.86	39.5	31.9	0.81
All Pedestrians		50	50	15.0	LOS B	0.0	0.0	0.86	0.86	39.5	31.9	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Monday, 3 May 2021 11:09:41 AM
Project: C:\Work Documents\2021\2021.067 Wests Mayfield\Sidra\Wests Mayfield.sip9

MOVEMENT SUMMARY

Site: 102 [Industrial Dr / Vine St 2021 PM with existing reroute (Site Folder: General)]

Industrial Drive Vine St Signalised T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 81 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Vine Street														
1	L2	226	0.5	226	0.5	0.300	23.0	LOS B	6.0	42.5	0.72	0.76	0.72	44.9
3	R2	17	18.8	17	18.8	*0.140	46.2	LOS D	0.7	5.5	0.96	0.69	0.96	30.3
Approach		243	1.7	243	1.7	0.300	24.6	LOS B	6.0	42.5	0.73	0.76	0.73	43.6
East: Industrial Drive														
4	L2	47	2.1	47	2.1	0.182	21.5	LOS B	3.6	25.9	0.64	0.60	0.64	47.6
5	T1	1663	2.4	1663	2.4	*0.912	38.0	LOS C	38.6	275.8	0.98	1.07	1.27	40.9
Approach		1710	2.4	1710	2.4	0.912	37.5	LOS C	38.6	275.8	0.97	1.06	1.26	41.1
West: Industrial Drive														
11	T1	1225	4.6	1225	4.6	0.416	3.1	LOS A	7.8	57.1	0.35	0.32	0.35	74.2
12	R2	418	0.5	418	0.5	*0.871	46.7	LOS D	19.1	134.4	1.00	0.99	1.32	33.7
Approach		1643	3.6	1643	3.6	0.871	14.2	LOS A	19.1	134.4	0.52	0.49	0.60	56.3
All Vehicles		3596	2.9	3596	2.9	0.912	26.0	LOS B	38.6	275.8	0.75	0.78	0.92	47.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Vine Street												
P1	Full	50	50	16.7	LOS B	0.1	0.1	0.64	0.64	41.3	31.9	0.77
All Pedestrians		50	50	16.7	LOS B	0.1	0.1	0.64	0.64	41.3	31.9	0.77

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Industrial Dr / Vine St 2021 AM (10am)+DEV with existing reroute (Site Folder: General)]

Industrial Drive Vine St Signalised T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 41 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Vine Street														
1	L2	140	6	140	4.5	0.532	24.8	LOS B	2.9	20.7	0.97	0.79	1.00	43.2
3	R2	33	4	33	12.9	*0.133	23.4	LOS B	0.6	4.8	0.90	0.71	0.90	40.4
Approach		173	11	173	6.1	0.532	24.5	LOS B	2.9	20.7	0.96	0.78	0.98	42.7
East: Industrial Drive														
4	L2	22	4	22	19.2	0.172	20.1	LOS B	1.3	10.1	0.80	0.65	0.80	48.5
5	T1	886	120	886	13.6	*0.861	22.8	LOS B	10.4	81.0	0.99	1.03	1.48	50.9
Approach		908	124	908	13.7	0.861	22.7	LOS B	10.4	81.0	0.98	1.02	1.46	50.8
West: Industrial Drive														
11	T1	1047	115	1047	11.0	0.513	6.1	LOS A	6.6	50.7	0.66	0.58	0.66	69.4
12	R2	247	5	247	2.1	*0.923	37.7	LOS C	7.0	50.1	1.00	1.25	2.16	36.9
Approach		1294	120	1294	9.3	0.923	12.1	LOS A	7.0	50.7	0.72	0.71	0.95	59.0
All Vehicles		2375	255	2375	10.7	0.923	17.1	LOS B	10.4	81.0	0.84	0.83	1.14	54.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Vine Street												
P1	Full	50	50	15.0	LOS B	0.0	0.0	0.86	0.86	39.5	31.9	0.81
All Pedestrians		50	50	15.0	LOS B	0.0	0.0	0.86	0.86	39.5	31.9	0.81

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Industrial Dr / Vine St 2021PM+DEV with existing reroute (Site Folder: General)]

Industrial Drive Vine St Signalised T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 89 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Vine Street														
1	L2	184	1	184	0.6	0.253	25.1	LOS B	5.4	37.8	0.71	0.76	0.71	43.7
3	R2	17	3	17	18.8	* 0.154	50.9	LOS D	0.7	6.1	0.97	0.69	0.97	28.9
Approach		201	4	201	2.1	0.253	27.3	LOS B	5.4	37.8	0.74	0.75	0.74	42.1
East: Industrial Drive														
4	L2	100	2	100	2.1	0.178	21.4	LOS B	3.9	27.5	0.61	0.66	0.61	46.0
5	T1	1669	40	1669	2.4	* 0.890	34.1	LOS C	39.4	281.2	0.97	1.02	1.16	43.1
Approach		1769	42	1769	2.4	0.890	33.4	LOS C	39.4	281.2	0.95	1.00	1.13	43.2
West: Industrial Drive														
11	T1	1225	56	1225	4.6	0.406	2.8	LOS A	7.8	56.9	0.32	0.29	0.32	74.7
12	R2	432	2	432	0.5	* 0.903	55.2	LOS D	23.0	161.6	1.00	1.03	1.40	31.1
Approach		1657	59	1657	3.5	0.903	16.5	LOS B	23.0	161.6	0.50	0.48	0.60	54.1
All Vehicles		3627	105	3627	2.9	0.903	25.3	LOS B	39.4	281.2	0.73	0.75	0.87	47.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Vine Street												
P1	Full	50	50	16.4	LOS B	0.1	0.1	0.61	0.61	41.0	31.9	0.78
All Pedestrians		50	50	16.4	LOS B	0.1	0.1	0.61	0.61	41.0	31.9	0.78

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Monday, 3 May 2021 11:10:16 AM
Project: C:\Work Documents\2021\2021.067 Wests Mayfield\Sidra\Wests Mayfield.sip9

MOVEMENT SUMMARY

Site: 102 [Industrial Dr / Vine St 2031 AM (10am) with existing reroute (Site Folder: General)]

Industrial Drive Vine St Signalised T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 46 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Vine Street														
1	L2	140	4.5	162	4.5	0.519	25.6	LOS B	3.6	25.9	0.95	0.79	0.95	42.8
3	R2	33	12.9	38	12.9	*0.173	26.4	LOS B	0.8	6.4	0.92	0.72	0.92	38.7
Approach		173	6.1	201	6.1	0.519	25.7	LOS B	3.6	25.9	0.95	0.78	0.95	42.0
East: Industrial Drive														
4	L2	22	7.3	26	7.3	0.173	20.0	LOS B	1.6	12.2	0.76	0.64	0.76	48.7
5	T1	870	13.8	1010	13.8	*0.864	24.3	LOS B	13.1	102.7	0.98	1.04	1.41	49.6
Approach		892	13.7	1035	13.7	0.864	24.2	LOS B	13.1	102.7	0.98	1.03	1.40	49.6
West: Industrial Drive														
11	T1	1047	11.0	1215	11.0	0.548	5.8	LOS A	8.2	62.4	0.63	0.56	0.63	69.9
12	R2	243	2.2	282	2.2	*0.887	35.5	LOS C	8.2	58.1	1.00	1.12	1.73	37.8
Approach		1290	9.3	1497	9.3	0.887	11.4	LOS A	8.2	62.4	0.70	0.67	0.84	59.9
All Vehicles		2355	10.7	2733	10.7	0.887	17.3	LOS B	13.1	102.7	0.82	0.81	1.06	54.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Vine Street												
P1	Full	50	61	16.6	LOS B	0.1	0.1	0.85	0.85	41.1	31.9	0.78
All Pedestrians		50	61	16.6	LOS B	0.1	0.1	0.85	0.85	41.1	31.9	0.78

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Industrial Dr / Vine St 2031 PM with existing reroute (Site Folder: General)]

Industrial Drive Vine St Signalised T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Vine Street														
1	L2	226	0.5	275	0.5	0.337	28.9	LOS C	10.5	73.5	0.70	0.77	0.70	41.6
3	R2	17	18.8	21	18.8	* 0.253	69.2	LOS E[11]	1.3	10.2	0.99	0.71	0.99	24.5
Approach		243	1.7	296	1.7	0.337	31.7	LOS C	10.5	73.5	0.72	0.77	0.72	39.9
East: Industrial Drive														
4	L2	47	2.1	57	2.1	0.222	27.6	LOS B	6.7	47.5	0.64	0.61	0.64	43.3
5	T1	1663	2.4	2027	2.4	* 1.109	247.7	LOS F[11]	156.9	1120.9	0.98	2.14	2.64	11.0
Approach		1710	2.4	2084	2.4	1.109	241.7	LOS F[11]	156.9	1120.9	0.97	2.10	2.58	11.2
West: Industrial Drive														
11	T1	1225	4.6	1493	4.6	0.464	2.3	LOS A	10.6	76.8	0.27	0.25	0.27	75.6
12	R2	418	0.5	510	0.5	* 1.105	274.4	LOS F[11]	81.4	572.4	1.00	1.64	2.88	10.2
Approach		1643	3.6	2003	3.6	1.105	71.5	LOS F[11]	81.4	572.4	0.46	0.60	0.93	28.0
All Vehicles		3596	2.9	4384	2.9	1.109	149.8	LOS F[11]	156.9	1120.9	0.72	1.33	1.70	16.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.
* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Vine Street												
P1	Full	50	61	21.7	LOS C	0.1	0.1	0.60	0.60	46.2	31.9	0.69
All Pedestrians		50	61	21.7	LOS C	0.1	0.1	0.60	0.60	46.2	31.9	0.69

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Industrial Dr / Vine St 2031 AM (10am)+DEV with existing reroute (Site Folder: General)]

Industrial Drive Vine St Signalised T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 46 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Vine Street														
1	L2	161	7	161	4.5	0.514	25.5	LOS B	3.5	25.6	0.95	0.79	0.95	42.8
3	R2	38	5	38	12.9	* 0.171	26.4	LOS B	0.8	6.4	0.92	0.72	0.92	38.7
Approach		199	12	199	6.1	0.514	25.7	LOS B	3.5	25.6	0.95	0.78	0.95	42.0
East: Industrial Drive														
4	L2	26	5	26	18.7	0.176	20.2	LOS B	1.6	12.4	0.76	0.64	0.76	48.4
5	T1	1026	137	1026	13.4	* 0.878	25.7	LOS B	13.8	107.8	0.98	1.06	1.47	48.6
Approach		1052	142	1052	13.5	0.878	25.6	LOS B	13.8	107.8	0.98	1.05	1.45	48.6
West: Industrial Drive														
11	T1	1204	134	1204	11.1	0.544	5.8	LOS A	8.0	61.6	0.63	0.56	0.63	69.9
12	R2	286	6	286	2.1	* 0.899	36.9	LOS C	8.5	60.6	1.00	1.16	1.81	37.2
Approach		1490	139	1490	9.4	0.899	11.7	LOS A	8.5	61.6	0.70	0.67	0.85	59.5
All Vehicles		2741	294	2741	10.7	0.899	18.1	LOS B	13.8	107.8	0.82	0.83	1.09	53.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Vine Street												
P1	Full	50	50	16.6	LOS B	0.1	0.1	0.85	0.85	41.1	31.9	0.78
All Pedestrians		50	50	16.6	LOS B	0.1	0.1	0.85	0.85	41.1	31.9	0.78

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Industrial Dr / Vine St 2031PM+DEV with existing reroute (Site Folder: General)]

Industrial Drive Vine St Signalised T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 120 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Vine Street														
1	L2	271	2	271	0.6	0.332	28.9	LOS C	10.3	72.1	0.70	0.77	0.70	41.6
3	R2	21	4	21	17.9	* 0.255	69.2	LOS E	1.3	10.3	0.99	0.71	0.99	24.5
Approach		292	5	292	1.8	0.332	31.7	LOS C	10.3	72.1	0.72	0.77	0.72	39.9
East: Industrial Drive														
4	L2	57	1	57	2.6	0.222	27.7	LOS B	6.7	47.6	0.64	0.61	0.64	43.3
5	T1	2033	48	2033	2.4	* 1.112	252.0	LOS F	158.9	1135.2	0.98	2.16	2.67	10.8
Approach		2090	50	2090	2.4	1.112	245.9	LOS F	158.9	1135.2	0.97	2.12	2.61	11.0
West: Industrial Drive														
11	T1	1470	68	1470	4.6	0.457	2.3	LOS A	10.3	74.9	0.27	0.25	0.27	75.6
12	R2	524	2	524	0.5	* 1.129	312.5	LOS F	90.7	637.3	1.00	1.74	3.12	9.1
Approach		1994	70	1994	3.5	1.129	83.8	LOS F	90.7	637.3	0.46	0.64	1.01	25.2
All Vehicles		4376	125	4376	2.9	1.129	157.8	LOS F	158.9	1135.2	0.72	1.36	1.76	15.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance

Mov ID	Crossing	Input Vol. ped/h	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Vine Street												
P1	Full	50	50	21.6	LOS C	0.1	0.1	0.60	0.60	46.2	31.9	0.69
All Pedestrians		50	50	21.6	LOS C	0.1	0.1	0.60	0.60	46.2	31.9	0.69

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Project: C:\Work Documents\2021\2021.067 Wests Mayfield\Sidra\Wests Mayfield.sip9

MOVEMENT SUMMARY

Site: 105 [Industrial Drive / Ingall Street 2021AM + DEV (Site Folder: General)]

Industrial Drive Ingall Street Signalised 4 Way Cross intersection
Wests Mayfield Redevelopment
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 66 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Ingall Street														
1	L2	126	4	126	3.2	0.153	16.0	LOS B	2.4	17.1	0.62	0.70	0.62	41.7
2	T1	42	1	42	2.4	0.241	32.1	LOS C	1.3	9.6	0.96	0.71	0.96	23.3
Approach		168	5	168	3.0	0.241	20.0	LOS B	2.4	17.1	0.70	0.70	0.70	36.6
East: Industrial Drive														
4	L2	6	1	6	16.7	0.010	21.6	LOS B	0.1	1.0	0.66	0.66	0.66	42.7
5	T1	1179	100	1179	8.5	*0.886	33.4	LOS C	23.4	175.9	1.00	1.08	1.36	44.6
6	R2	27	6	27	22.2	0.185	39.7	LOS C	0.9	7.2	0.96	0.71	0.96	33.1
Approach		1212	107	1212	8.8	0.886	33.5	LOS C	23.4	175.9	1.00	1.07	1.34	44.4
North: Ingall Street														
7	L2	13	7	13	53.8	0.030	14.0	LOS A	0.2	2.2	0.60	0.62	0.60	37.1
8	T1	12	3	12	25.0	*0.362	31.6	LOS C	1.5	16.2	0.94	0.65	0.94	23.3
9	R2	45	27	45	60.0	0.362	38.5	LOS C	1.5	16.2	0.98	0.74	0.98	25.5
Approach		70	37	70	52.9	0.362	32.8	LOS C	1.5	16.2	0.90	0.70	0.90	27.0
West: Industrial Drive														
10	L2	7	4	7	57.1	0.010	15.3	LOS B	0.1	1.1	0.47	0.66	0.47	45.4
11	T1	1666	88	1666	5.3	0.857	21.5	LOS B	29.7	217.4	0.88	0.92	1.07	53.0
12	R2	180	22	180	12.2	*0.580	23.6	LOS B	3.9	30.3	0.96	0.80	0.97	38.8
Approach		1853	114	1853	6.2	0.857	21.7	LOS B	29.7	217.4	0.89	0.91	1.06	51.7
All Vehicles		3303	263	3303	8.0	0.886	26.2	LOS B	29.7	217.4	0.92	0.95	1.14	47.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

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Project: C:\Work Documents\2021\2021.067 Wests Mayfield\Sidra\Wests Mayfield.sip9

MOVEMENT SUMMARY

Site: 105 [Industrial Drive / Ingall Street 2021PM + DEV (Site Folder: General)]

Industrial Drive Ingall Street Signalised 4 Way Cross intersection
Wests Mayfield Redevelopment
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 77 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Ingall Street														
1	L2	145	3	145	2.1	0.203	21.4	LOS B	3.6	25.8	0.70	0.73	0.70	38.0
2	T1	7	0	7	0.0	0.046	37.0	LOS C	0.3	1.8	0.95	0.62	0.95	21.5
Approach		152	3	152	2.0	0.203	22.1	LOS B	3.6	25.8	0.71	0.72	0.71	37.1
East: Industrial Drive														
4	L2	6	0	6	0.0	0.007	19.0	LOS B	0.1	0.8	0.56	0.66	0.56	44.7
5	T1	1536	31	1536	2.0	*0.882	31.5	LOS C	32.9	234.1	0.98	1.03	1.21	45.8
6	R2	7	1	7	14.3	0.053	44.7	LOS D	0.3	2.0	0.95	0.66	0.95	31.1
Approach		1549	32	1549	2.1	0.882	31.5	LOS C	32.9	234.1	0.98	1.02	1.20	45.7
North: Ingall Street														
7	L2	29	0	29	0.0	0.058	13.3	LOS A	0.5	3.6	0.56	0.64	0.56	47.6
8	T1	36	1	36	2.8	*0.786	39.9	LOS C	4.6	35.4	0.98	0.77	1.10	20.2
9	R2	98	11	98	11.2	0.786	48.2	LOS D	4.6	35.4	1.00	0.94	1.36	26.1
Approach		163	12	163	7.4	0.786	40.2	LOS C	4.6	35.4	0.92	0.85	1.16	27.6
West: Industrial Drive														
10	L2	4	4	4	100.0	0.006	15.0	LOS B	0.1	0.8	0.40	0.65	0.40	43.8
11	T1	1523	485	1523	31.8	0.805	15.7	LOS B	25.2	224.2	0.80	0.78	0.87	58.3
12	R2	112	1	112	0.9	*0.389	27.5	LOS B	3.0	21.0	0.94	0.77	0.94	36.3
Approach		1639	490	1639	29.9	0.805	16.5	LOS B	25.2	224.2	0.81	0.78	0.88	56.7
All Vehicles		3503	537	3503	15.3	0.882	24.5	LOS B	32.9	234.1	0.88	0.89	1.03	48.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Monday, 3 May 2021 11:11:48 AM
Project: C:\Work Documents\2021\2021.067 Wests Mayfield\Sidra\Wests Mayfield.sip9

MOVEMENT SUMMARY

Site: 105 [Industrial Drive / Ingall Street 2031AM + DEV (Site Folder: General)]

Industrial Drive Ingall Street Signalised 4 Way Cross intersection
Wests Mayfield Redevelopment
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 83 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Ingall Street														
1	L2	126	4	146	3.2	0.209	23.0	LOS B	4.0	28.5	0.71	0.73	0.71	36.8
2	T1	42	1	49	2.4	0.351	42.3	LOS C	2.0	14.4	0.99	0.73	0.99	19.9
Approach		168	5	195	3.0	0.351	27.8	LOS B	4.0	28.5	0.78	0.73	0.78	32.0
East: Industrial Drive														
4	L2	6	1	7	16.7	0.009	19.6	LOS B	0.1	1.2	0.55	0.66	0.55	44.2
5	T1	1179	100	1368	8.5	0.802	23.1	LOS B	25.8	193.5	0.91	0.86	0.98	51.7
6	R2	27	6	31	22.2	0.203	47.0	LOS D[11]	1.2	10.3	0.95	0.72	0.95	30.3
Approach		1212	107	1407	8.8	0.802	23.6	LOS B	25.8	193.5	0.91	0.86	0.98	51.0
North: Ingall Street														
7	L2	13	7	15	53.8	0.041	18.3	LOS B	0.3	3.5	0.64	0.64	0.64	34.9
8	T1	12	3	14	25.0	*0.565	41.4	LOS C	2.3	24.4	0.96	0.67	0.97	20.1
9	R2	45	27	52	60.0	0.565	50.7	LOS D[11]	2.3	24.4	1.00	0.79	1.09	22.4
Approach		70	37	81	52.9	0.565	43.1	LOS D[11]	2.3	24.4	0.93	0.74	0.98	24.0
West: Industrial Drive														
10	L2	7	4	8	57.1	0.010	14.5	LOS B	0.1	1.3	0.40	0.66	0.40	46.1
11	T1	1666	88	1933	5.3	*0.899	28.0	LOS B	46.4	339.6	0.87	0.95	1.07	48.1
12	R2	180	22	209	12.2	*0.725	32.4	LOS C	6.7	52.0	1.00	0.85	1.13	33.5
Approach		1853	114	2150	6.2	0.899	28.3	LOS B	46.4	339.6	0.88	0.94	1.08	46.8
All Vehicles		3303	263	3833	8.0	0.899	26.9	LOS B	46.4	339.6	0.88	0.89	1.02	46.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.
* Critical Movement (Signal Timing)

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Monday, 3 May 2021 11:11:33 AM
Project: C:\Work Documents\2021\2021.067 Wests Mayfield\Sidra\Wests Mayfield.sip9

MOVEMENT SUMMARY

Site: 105 [Industrial Drive / Ingall Street 2031PM + DEV (Site Folder: General)]

Industrial Drive Ingall Street Signalised 4 Way Cross intersection
Wests Mayfield Redevelopment
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 92 seconds (Site Practical Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Ingall Street														
1	L2	145	3	168	2.1	0.264	27.8	LOS B	5.4	38.7	0.76	0.75	0.76	34.2
2	T1	7	0	8	0.0	0.048	42.8	LOS D[11]	0.3	2.4	0.94	0.63	0.94	19.8
Approach		152	3	176	2.0	0.264	28.5	LOS C	5.4	38.7	0.77	0.75	0.77	33.4
East: Industrial Drive														
4	L2	6	0	7	0.0	0.007	18.0	LOS B	0.1	1.0	0.50	0.66	0.50	45.6
5	T1	1536	31	1783	2.0	*0.893	32.8	LOS C	44.0	313.4	0.96	1.01	1.14	45.0
6	R2	7	1	8	14.3	0.074	53.4	LOS D[11]	0.4	2.9	0.96	0.67	0.96	28.2
Approach		1549	32	1798	2.1	0.893	32.9	LOS C	44.0	313.4	0.96	1.01	1.14	44.9
North: Ingall Street														
7	L2	29	0	34	0.0	0.075	19.1	LOS B	0.8	5.9	0.64	0.67	0.64	43.0
8	T1	36	1	42	2.8	*0.880	47.6	LOS D[11]	6.7	50.8	0.97	0.81	1.15	18.2
9	R2	98	11	114	11.2	0.880	60.8	LOS E[11]	6.7	50.8	1.00	1.08	1.60	22.8
Approach		163	12	189	7.4	0.880	50.5	LOS D[11]	6.7	50.8	0.93	0.94	1.33	24.4
West: Industrial Drive														
10	L2	4	4	5	100.0	0.007	14.7	LOS B	0.1	0.9	0.36	0.65	0.36	44.1
11	T1	1523	485	1768	31.8	0.879	24.6	LOS B	41.5	369.7	0.84	0.89	0.99	50.5
12	R2	112	1	130	0.9	*0.540	34.4	LOS C	4.5	31.5	0.98	0.78	0.98	32.5
Approach		1639	490	1902	29.9	0.879	25.3	LOS B	41.5	369.7	0.85	0.88	0.98	49.2
All Vehicles		3503	537	4065	15.3	0.893	30.0	LOS C	44.0	369.7	0.90	0.94	1.06	45.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

11 Level of Service is worse than the Level of Service Target specified in the Parameter Settings dialog.
* Critical Movement (Signal Timing)

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Monday, 3 May 2021 11:11:52 AM
Project: C:\Work Documents\2021\2021.067 Wests Mayfield\Sidra\Wests Mayfield.sip9

MOVEMENT SUMMARY

Site: 101 [Industrial Drive / William St 2021 AM + DEV (Site Folder: General)]

Industrial Drive William St Give Way T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: William Street														
1	L2	133	4	133	3.0	0.111	5.0	LOS A	0.4	3.0	0.20	0.52	0.20	50.7
Approach		133	4	133	3.0	0.111	5.0	LOS A	0.4	3.0	0.20	0.52	0.20	50.7
East: Industrial Drive														
4	L2	19	1	19	5.3	0.062	7.0	LOS A	0.0	0.0	0.00	0.11	0.00	69.5
5	T1	1240	121	1240	9.8	0.312	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	79.6
Approach		1259	122	1259	9.7	0.312	0.2	NA	0.0	0.0	0.00	0.01	0.00	79.4
West: Industrial Drive														
11	T1	1826	112	1826	6.1	0.487	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.5
Approach		1826	112	1826	6.1	0.487	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.5
All Vehicles		3218	238	3218	7.4	0.487	0.3	NA	0.4	3.0	0.01	0.03	0.01	77.6

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: PLUS / 1PC | Processed: Monday, 3 May 2021 11:10:36 AM
Project: C:\Work Documents\2021\2021.067 Wests Mayfield\Sidra\Wests Mayfield.sip9

MOVEMENT SUMMARY

Site: 101 [Industrial Drive / William St 2021 PM + DEV (Site Folder: General)]

Industrial Drive William St Give Way T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: William Street														
1	L2	86	0	86	0.0	0.071	4.9	LOS A	0.3	1.8	0.19	0.51	0.19	51.3
Approach		86	0	86	0.0	0.071	4.9	LOS A	0.3	1.8	0.19	0.51	0.19	51.3
East: Industrial Drive														
4	L2	53	0	53	0.0	0.080	7.0	LOS A	0.0	0.0	0.00	0.23	0.00	69.6
5	T1	1627	39	1627	2.4	0.398	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	79.4
Approach		1680	39	1680	2.3	0.398	0.3	NA	0.0	0.0	0.00	0.02	0.00	79.0
West: Industrial Drive														
11	T1	1184	56	1184	4.7	0.313	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
Approach		1184	56	1184	4.7	0.313	0.0	NA	0.0	0.0	0.00	0.00	0.00	79.8
All Vehicles		2950	95	2950	3.2	0.398	0.3	NA	0.3	1.8	0.01	0.03	0.01	78.1

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Industrial Drive / William St 2031 AM + DEV (Site Folder: General)]

Industrial Drive William St Give Way T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: William Street														
1	L2	133	4	154	3.0	0.131	5.1	LOS A	0.5	3.6	0.23	0.52	0.23	50.6
Approach		133	4	154	3.0	0.131	5.1	LOS A	0.5	3.6	0.23	0.52	0.23	50.6
East: Industrial Drive														
4	L2	19	1	22	5.3	0.072	7.0	LOS A	0.0	0.0	0.00	0.11	0.00	69.5
5	T1	1240	121	1439	9.8	0.362	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	79.5
Approach		1259	122	1461	9.7	0.362	0.2	NA	0.0	0.0	0.00	0.01	0.00	79.3
West: Industrial Drive														
11	T1	1826	112	2119	6.1	0.565	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.4
Approach		1826	112	2119	6.1	0.565	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.4
All Vehicles		3218	238	3735	7.4	0.565	0.4	NA	0.5	3.6	0.01	0.03	0.01	77.5

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 101 [Industrial Drive / William St 2031 PM + DEV (Site Folder: General)]

Industrial Drive William St Give Way T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: William Street														
1	L2	86	0	100	0.0	0.083	5.0	LOS A	0.3	2.2	0.21	0.52	0.21	51.3
Approach		86	0	100	0.0	0.083	5.0	LOS A	0.3	2.2	0.21	0.52	0.21	51.3
East: Industrial Drive														
4	L2	53	0	62	0.0	0.092	7.0	LOS A	0.0	0.0	0.00	0.23	0.00	69.6
5	T1	1627	39	1888	2.4	0.462	0.1	LOS A	0.0	0.0	0.00	0.01	0.00	79.3
Approach		1680	39	1950	2.3	0.462	0.3	NA	0.0	0.0	0.00	0.02	0.00	78.9
West: Industrial Drive														
11	T1	1184	56	1374	4.7	0.363	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach		1184	56	1374	4.7	0.363	0.1	NA	0.0	0.0	0.00	0.00	0.00	79.7
All Vehicles		2950	95	3424	3.2	0.462	0.3	NA	0.3	2.2	0.01	0.03	0.01	78.0

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 104 [Crebert Street / William Street 2021 AM + DEV (Site Folder: General)]

Crebert St William St Give Way T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Crebert Street														
5	T1	205	18	216	8.8	0.166	0.4	LOS A	0.5	3.9	0.21	0.13	0.21	39.0
6	R2	66	0	69	0.0	0.166	4.5	LOS A	0.5	3.9	0.21	0.13	0.21	39.0
Approach		271	18	285	6.6	0.166	1.4	NA	0.5	3.9	0.21	0.13	0.21	39.0
North: William Street														
7	L2	53	0	56	0.0	0.040	3.9	LOS A	0.2	1.1	0.26	0.46	0.26	37.8
9	R2	8	0	8	0.0	0.011	5.6	LOS A	0.0	0.2	0.43	0.59	0.43	37.0
Approach		61	0	64	0.0	0.040	4.1	LOS A	0.2	1.1	0.28	0.48	0.28	37.7
West: Crebert Street														
10	L2	92	1	97	1.1	0.141	3.4	LOS A	0.0	0.0	0.00	0.17	0.00	39.5
11	T1	164	0	173	0.0	0.141	0.0	LOS A	0.0	0.0	0.00	0.17	0.00	39.3
Approach		256	1	269	0.4	0.141	1.3	NA	0.0	0.0	0.00	0.17	0.00	39.4
All Vehicles		588	19	619	3.2	0.166	1.6	NA	0.5	3.9	0.13	0.18	0.13	39.0

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 104 [Crebert Street / William Street 2021 PM + DEV (Site Folder: General)]

Crebert St William St Give Way T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Crebert Street														
5	T1	156	0	164	0.0	0.125	0.4	LOS A	0.4	2.9	0.22	0.13	0.22	39.0
6	R2	52	0	55	0.0	0.125	4.5	LOS A	0.4	2.9	0.22	0.13	0.22	39.0
Approach		208	0	219	0.0	0.125	1.4	NA	0.4	2.9	0.22	0.13	0.22	39.0
North: William Street														
7	L2	61	0	64	0.0	0.043	3.7	LOS A	0.2	1.2	0.20	0.45	0.20	37.9
9	R2	29	0	31	0.0	0.035	5.2	LOS A	0.1	0.8	0.39	0.59	0.39	37.2
Approach		90	0	95	0.0	0.043	4.2	LOS A	0.2	1.2	0.26	0.49	0.26	37.7
West: Crebert Street														
10	L2	165	0	174	0.0	0.152	3.4	LOS A	0.0	0.0	0.00	0.28	0.00	39.1
11	T1	108	0	114	0.0	0.152	0.0	LOS A	0.0	0.0	0.00	0.28	0.00	38.8
Approach		273	0	287	0.0	0.152	2.1	NA	0.0	0.0	0.00	0.28	0.00	39.0
All Vehicles		571	0	601	0.0	0.152	2.2	NA	0.4	2.9	0.12	0.26	0.12	38.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
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Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 104 [Crebert Street / William Street 2031 AM + DEV (Site Folder: General)]

Crebert St William St Give Way T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Crebert Street														
5	T1	205	18	250	8.8	0.196	0.5	LOS A	0.7	4.8	0.24	0.13	0.24	38.9
6	R2	66	0	81	0.0	0.196	4.8	LOS A	0.7	4.8	0.24	0.13	0.24	39.0
Approach		271	18	331	6.6	0.196	1.5	NA	0.7	4.8	0.24	0.13	0.24	38.9
North: William Street														
7	L2	53	0	65	0.0	0.047	4.0	LOS A	0.2	1.3	0.29	0.48	0.29	37.7
9	R2	8	0	10	0.0	0.014	6.1	LOS A	0.0	0.3	0.47	0.62	0.47	36.8
Approach		61	0	75	0.0	0.047	4.3	LOS A	0.2	1.3	0.31	0.49	0.31	37.6
West: Crebert Street														
10	L2	92	1	112	1.1	0.164	3.5	LOS A	0.0	0.0	0.00	0.17	0.00	39.5
11	T1	164	0	200	0.0	0.164	0.0	LOS A	0.0	0.0	0.00	0.17	0.00	39.3
Approach		256	1	313	0.4	0.164	1.3	NA	0.0	0.0	0.00	0.17	0.00	39.3
All Vehicles		588	19	718	3.2	0.196	1.7	NA	0.7	4.8	0.14	0.19	0.14	39.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site tab).
Vehicle movement LOS values are based on average delay per movement.
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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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 104 [Crebert Street / William Street 2031 PM + DEV (Site Folder: General)]

Crebert St William St Give Way T-intersection
Wests Mayfield Redevelopment
Site Category: (None)
Give-Way (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
East: Crebert Street														
5	T1	156	0	191	0.0	0.147	0.5	LOS A	0.5	3.5	0.24	0.13	0.24	38.9
6	R2	52	0	64	0.0	0.147	4.8	LOS A	0.5	3.5	0.24	0.13	0.24	39.0
Approach		208	0	254	0.0	0.147	1.6	NA	0.5	3.5	0.24	0.13	0.24	38.9
North: William Street														
7	L2	61	0	75	0.0	0.051	3.8	LOS A	0.2	1.4	0.22	0.45	0.22	37.9
9	R2	29	0	35	0.0	0.043	5.6	LOS A	0.1	1.0	0.42	0.62	0.42	37.0
Approach		90	0	110	0.0	0.051	4.4	LOS A	0.2	1.4	0.29	0.51	0.29	37.6
West: Crebert Street														
10	L2	165	0	202	0.0	0.176	3.4	LOS A	0.0	0.0	0.00	0.28	0.00	39.1
11	T1	108	0	132	0.0	0.176	0.0	LOS A	0.0	0.0	0.00	0.28	0.00	38.8
Approach		273	0	334	0.0	0.176	2.1	NA	0.0	0.0	0.00	0.28	0.00	39.0
All Vehicles		571	0	698	0.0	0.176	2.3	NA	0.5	3.5	0.13	0.26	0.13	38.7

Site Level of Service (LOS) Method: Delay (RTA NSW). 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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

ATTACHMENT D
TfNSW CORRESPONDENCE

Transport Roads & Maritime Services

CR2018/002772
SF2018/195289
MJD

23 July 2018

Development Manager
Graph Building
57 Fletcher Street
Adamstown NSW 2289

Attention: Anthony Williams

INDUSTRIAL DRIVE (H10): PRE-DA ADVICE, SENIORS LIVING AT EXISTING CLUB, GYM, HOTEL AND RECREATION FACILITY, LOT: 100 DP: 1084939, 32 INDUSTRIAL DRIVE MAYFIELD

Reference is made to Graph Building's email dated 2 July 2018, and the meeting held with Roads and Maritime Services (Roads and Maritime) on 21 June 2018.

Roads and Maritime understands that Graph are currently seeking a site compatibility certificate from the Department of Planning for the seniors housing component of the site, proposed to be 262 independent living units and a 216 bed residential care facility.

Roads and Maritime response

Transport for NSW and Roads and Maritime's primary interests are in the road network, traffic and broader transport issues. In particular, the efficiency and safety of the classified road network, the security of property assets and the integration of land use and transport.

In accordance with the *Roads Act 1993*, Roads and Maritime has powers in relation to road works, traffic control facilities, connections to roads and other works on the classified road network. Industrial Drive (H10) is a classified (State) road and William Street is a local road. Roads and Maritime concurrence is required for connections to Industrial Drive with Council consent, under Section 138 of the Act. Council is the roads authority for these roads and all other public roads in the area.

Roads and Maritime has reviewed the information and provides the following pre-development application advice:

- RMS has no proposal that requires any part of the property. It is to be noted that the property has a common boundary with Industrial Drive (H10) which is classified as a State Road Corridor and is proposed to be declared as a Controlled Access Road.
- The intersection of Industrial Drive and William Street experiences lengthy delays, particularly in the PM peak. Roads and Maritime will require the proponent to investigate options which direct traffic through the local network. Any proposal which results in additional impact on the intersection of Industrial Drive and William Street is unlikely to be supported by RMS.
- Currently, all vehicles leaving the site via William Street are directed to Industrial Drive and not into the local area. It is considered that the removal of the right turn restriction from the existing site driveway at William Street will redistribute trips from site into the local area, and reduce the impact on the Industrial Drive / William Street intersection. Roads and Maritime support the removal of this restriction as part of

the future development, and recommend the proponent address the likely impacts of removing this restriction on the local road network and consult with Newcastle City Council as the road authority.

- Roads and Maritime support the removal of the existing driveways from the site to Industrial Drive, and will consider a driveway from Industrial Drive to the proposed Residential Care Facility (RCF) for ambulances / non-peak hour service vehicles only. Roads and Maritime note the proposed 29 space RCF basement car park with access direct to Industrial Drive, and are unlikely to support an access for this purpose. Roads and Maritime recommend that the proponent consider alternate access for car parking when preparing any future development applications for the RCF.

Please note, this advice is preliminary and based on the limited information provided. Should you require further information please contact Marc Desmond on 0475 825 820 or by email at development.hunter@rms.nsw.gov.au

Yours sincerely

Peter Marler
Manager Land Use Assessment
Hunter Region