TRAFFIC IMPACT ASSESSMENT

INDUSTRIAL & RESIDENTIAL SUBDIVISION

LOT 1 IN DP995228
HUNTER STREET, MUSWELLBROOK

PREPARED FOR: OAK PROPERTY INVESTMENTS PTY LTD

MAY 2025

REF: 25/029

TRAFFIC IMPACT ASSESSMENT.
INDUSTRIAL & RESIDENTIAL SUBDIVSION
OAK PROPERTY INVESTMENTS PTY LTD

LOT 1 IN DP995228
HUNTER STREET, MUSWELLBROOK

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Issue	Date	Description	By
A	08/05/25	Draft	JG
B	10/05/25	Edit	JG
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D		Approved	JG

This document has been authorised by 

Date 14th May 2025

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CONTENTS

APPENDICES

FIGURES

PHOTOGRAPHS

TABLES

1. INTRODUCTION

Intersect Traffic Pty Ltd (Intersect Traffic) was engaged by Oak Property Investments Pty Ltd to prepare a traffic impact assessment (TIA) for a proposed 1 lot industrial and 57 lot residential subdivision of Lot 1 in DP995228 – Hunter Street, Muswellbrook. The proposal is to be undertaken in 2 stages, with stage 1 being the subdivision of the existing lot into 2 lots with one lot being zoned industrial while the other lot is zoned residential. Stage 2 involves the subdivision of the residential zoned lot into 57 lots including a reserve lot. The proposed subdivision plans are provided within ***Appendix 1***. A separate development application will also be lodged in the future for a change of use for the existing Oak dairy factory on the new industrial lot to a rum distillery with a café / tasting rooms / retail sales area with capacity for up to 60 persons.

Access to all of the lots of the proposed subdivision will be via the existing Oak factory Hunter Street access for the industrial lot and a new cul-de-sac public road down the centre of the residentially zoned land which connects to Hunter Street as shown in the subdivision plans provided in ***Appendix 1***.

The aim of this TIA is to determine the likely impact of the traffic generated by the development on the adjacent local road network and allow Muswellbrook Council to assess the merits of the development in an informed manner. 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, trip distribution and its impact on existing road and intersection capacities.
3. An assessment of the proposed subdivision access and layout.
4. A review of parking, public transport, pedestrian, and cycleway requirements for the proposed development, including assessment against Council and TfNSW standards and requirements.
5. A presentation of conclusions and recommendations.

2. SITE DESCRIPTION

The subdivision site lies on the south-eastern side of both the New England Highway and the Hunter Rail Line approximately 1.3 kilometres northeast of the centre of the Muswellbrook CBD. The main access to the arterial road network (New England Highway) for development traffic will be via Hunter Street to Manning Street. The site is bounded by residential properties to the north, east, south and west of the site and contains the old Oak dairy factory as well as a lpg gas bottle storage facility. The site still contains all the old structures associated with the Oak dairy factory with the current proposal for the buildings to be home of new distillery. ***Figure 1*** below shows the location of the subdivision in the context of the surrounding development.

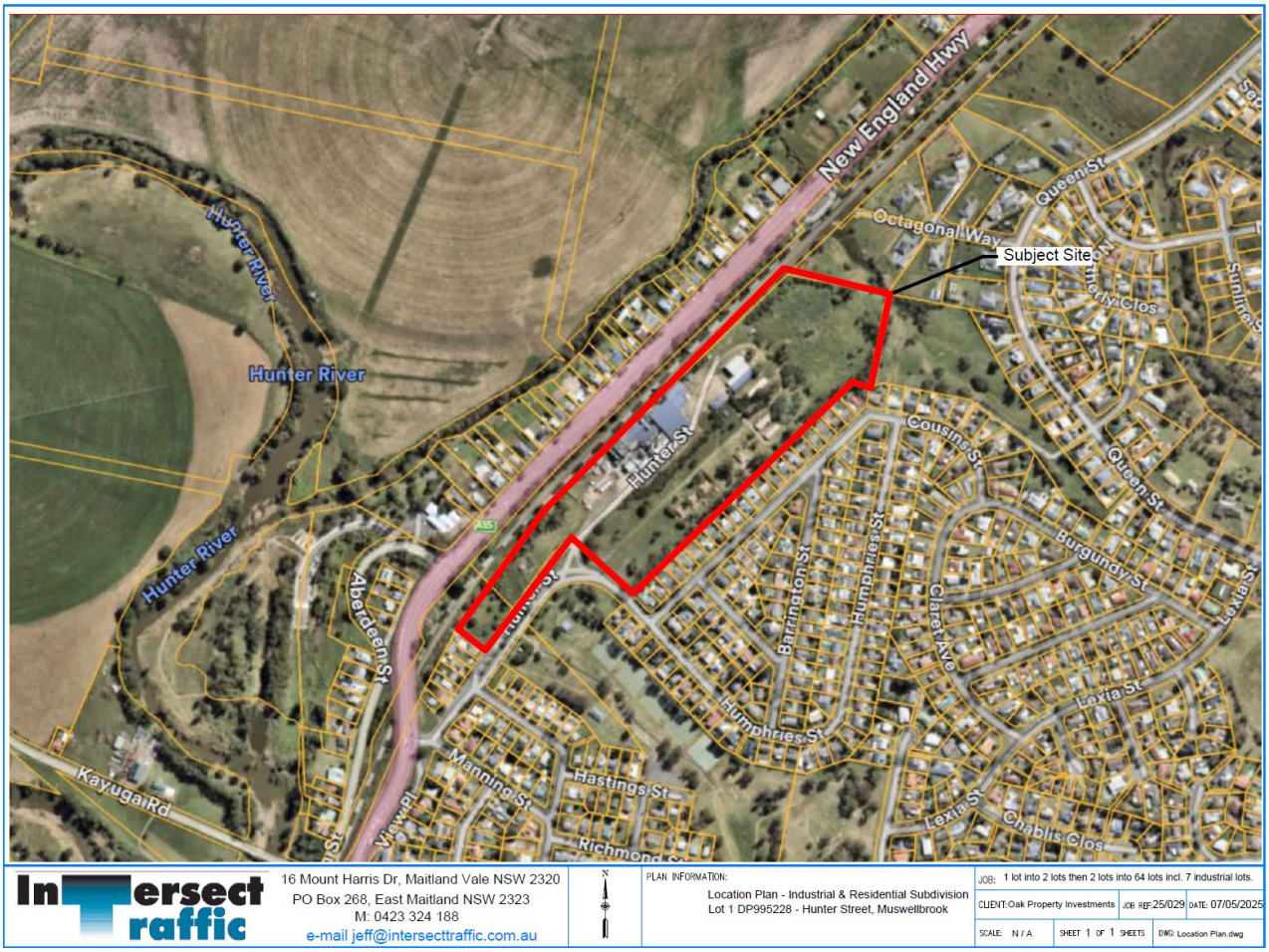


Figure 1 - Site Location Plan

The site contains the following property descriptors:

- Formal land title of Lot 1 in DP995228,
- Residential address of Lot 1 Hunter Street, Muswellbrook.
- Lot area of approximately 96.3 hectares, and
- Land zoning of R1 – General Residential, E4 General Industrial and RE1 – Public Recreation within the Muswellbrook LEP (2009).

Photograph 1 below shows the proposed industrial site (old Oak factory) and Hunter Street extension to the site whilst ***Photograph 2*** shows the proposed residential site from Hunter Street.

Photograph 1 – Industrial development site and vehicular access from Hunter Street.

Photograph 2 – Residential development site from Hunter Street.

3. ROAD NETWORK IMPROVEMENTS

There are no known future road network upgrades that will increase the capacity of the road network near the site. Maintenance and rehabilitation works would be undertaken in future in line with Muswellbrook Shire Council works programs.

4. EXISTING ROAD NETWORK

Access to the arterial road network (New England Highway) to the site is via Hunter Street and Manning Street. The New England Highway near Manning Street is a three-lane urban road with two southbound lanes and one northbound lane and as a state highway is under the care and control of TfNSW. Lane widths at this location are in the order of 3.5 metres wide and the highway is both centre line and edge line marked. The intersection of Manning Street with the highway is constructed as a give way priority controlled urban seagull intersection with raised concrete medians along the centre line of both the New England Highway and Manning Street as well as within the seagull on the northbound lanes. An on-road cycleway is constructed through the intersection on the southbound carriageway while the shoulder of the northbound carriageway through the intersection is also marked as an on-road cycle area. In the vicinity of Manning Street, the New England Highway is speed zoned 60 km/h and at the time of inspection was observed to be in good condition as shown in ***Photograph 3*** below.

Manning Street is a sealed two lane two-way urban road running east – west from the New England Highway with a 10-metre-wide pavement between kerb and gutter providing one travel lane (2.9 metres wide) and a parking lane (2.1 metres wide) in each direction. Functionally the road operates as a local urban street providing access to properties along its length and as such is under the care and control of Muswellbrook Shire Council. However, the very small section of Manning Street from the New England Highway to Hunter Street would be part of a local collector road along with Hunter Street as traffic uses this route to access the New England Highway. The road is not centre line marked, except at its intersections with Hunter Street and the New England Highway and a 50 km/h speed limit exists on Manning Street. At the time of inspection, it was observed to be in good condition as shown in ***Photograph 4*** below.

Hunter Street from Manning Street to the site is generally a sealed two lane two-way urban road running north - south from with a 25-metre-wide pavement between kerb and gutter and a central vegetated median 6 metres wide. Therefore, both the northbound and southbound carriageways are 9.5 metres wide providing a wide travel and parking lane in both directions. Functionally the road operates as a local urban collector road collecting and distributing traffic from the northern part of Muswellbrook to the New England Highway as well as providing vehicular access to properties along its length. Therefore, it is under the care and control of Muswellbrook Shire Council. The road is not centre line marked, except at its stop sign controlled T-intersection with Manning Street which includes a central raised concrete median. A 50 km/h speed limit exists near the site and at the time of inspection, it was observed to be in good condition as shown in ***Photograph 5*** below.

Photograph 3 – New England Highway near Manning Street.

Photograph 4 – Manning Street near Hunter Street.

Photograph 5 – Hunter Street near the site.

5. TRAFFIC VOLUMES

Intersect Traffic engaged Northern Transport Planning and Engineering (NTPE) to undertake traffic counts at the New England Highway / Manning Street intersection, and these were carried out on Wednesday 26th March 2025 (PM period) and Thursday 27th March 2025 (AM period). The counts determined the peak hour periods as 8.15 am – 9.15 am and 4.15 pm – 5.15 pm. Intersect Traffic also undertook traffic counts at the Hunter Street / Humphries Street / Site access intersection at the same times though the peak periods for the local roads were determined to be 8 am – 9 am and 3 pm to 4 pm. The traffic count results for both intersections are presented in ***Appendix 2***. It is also noted the percentage of traffic that was heavy vehicles was recorded as 10% average on the New England Highway and 3% average on the local road network.

The current (2025) and future (2035) two-way mid-block traffic volumes based on these counts and using a background traffic growth rate of 2% per annum as recommended by TfNSW for use in the Hunter region are shown below in ***Table 1***. These baseline two-way mid-block traffic volumes for the adjoining road network have been adopted in this assessment.

Table 1 – 2025 & 2035 baseline two-way mid-block traffic volumes – road network.

Road	Section	2025		2035 @ 2% p.a.	
		AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)
New England Highway	north of Manning Street	1036	1125	1263	1371
New England Highway	south of Manning Street	1054	1174	1285	1431
Manning Street	east of New England Highway	212	245	258	299
Hunter Street	west of Humphries Street (near site)	172	173	210	211

6. ROAD CAPACITIES

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 for a level of service (LoS) C.

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 the one-way mid-block capacity from the above table for undivided inner lane or outer lane or kerb lane with adjacent parking is 900 vtph and for roads with one lane each way a two-way mid-block capacity of 1,800 vtph for a LoS C would apply. This would mean that the two-way mid-block capacity of the New England Highway is at least 2,700 vtph. As existing two-way mid-block traffic volumes are below this capacity level there is spare capacity within the arterial road network (New England Highway) to cater for additional development in the area.

However, as Manning Street and Hunter Street are primarily residential streets the environmental capacity of these streets also needs to be considered to ensure the residential amenity for existing residents living on these streets is maintained at an acceptable level. The environmental capacity thresholds are contained in Table 4.6 of *RTA's Guide to Traffic Generating Developments*, reproduced below.

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).

Therefore, as the route from the site to the New England Highway (Hunter Street and Manning Street) is a local collector route these sections of Hunter Street and Manning Street would have an environmental capacity threshold of 500 vtph. This has been adopted as the road capacity for Manning Street and Hunter Street in this assessment. Based on the traffic data collected and shown in ***Section 5*** the local road network (Manning Street and Hunter Street) is currently operating below its environmental capacity threshold therefore has spare capacity to cater for additional development in the area.

7. ALTERNATE TRANSPORT MODES

Osborn's Transport operates public bus services in the region. A public bus service, Route 412 (Northern Loop) already services the development site running along Hunter Street stopping in Humphries Street adjacent to the site. This service includes 6 services weekdays and 4 on Saturdays connecting to the Muswellbrook train station, areas of the CBD as well as 3 other bus route services and many suburban areas. ***Figure 2*** below shows an extract of the town bus routes. It is concluded the site therefore already has excellent access to public transport services in Muswellbrook.

Currently there are no off-road pedestrian pathways or on and off-road cycleways in the vicinity site. Pedestrians would likely use the flat well maintained grassed footway areas while cyclists would need to share the travel lanes on the road network with all other vehicles. Aside from the on-road cycle lanes through the New England Highway / Manning Street intersection there is little specific pedestrian or bicycle infrastructure until the New England Highway becomes Bridge Street and enters the Muswellbrook CBD area south of the site.

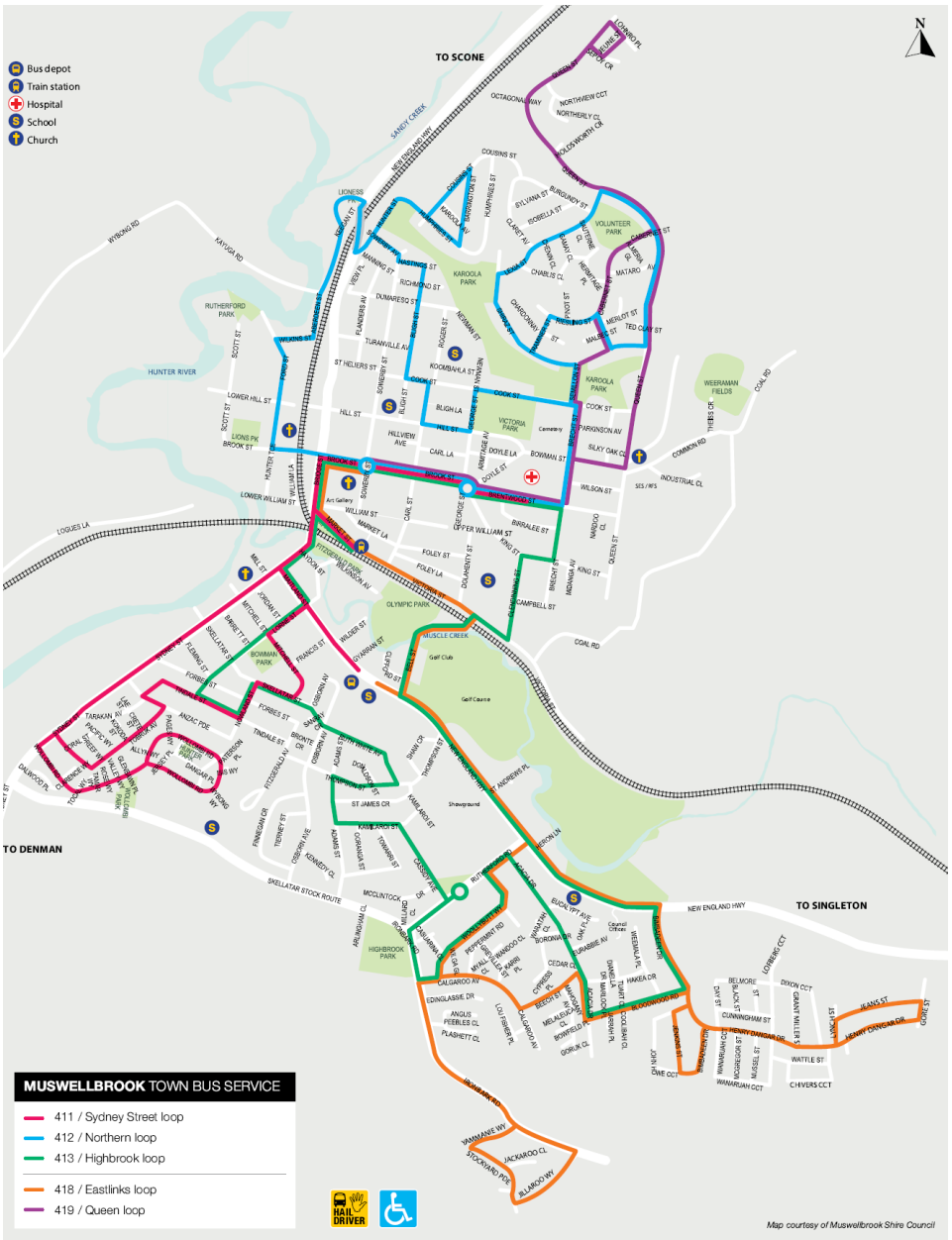


Figure 2 – Osborn Coaches bus route map extract.

8. PROPOSED DEVELOPMENT

The proposed development involves the subdivision of the 96.3 ha property into an industrial lot and low-density residential allotments. The subdivision is to be undertaken in two stages with stage 1 involving a two-lot subdivision of the property that separates the E4 General Industrial zoned land on the property and the R1 General Residential zoned land on the property. Stage 2 of the development involves the further subdivision of the R1 – General Residential zoned lot into 56 new low density residential lots and a reserve lot over the small section of RE1 – Public recreation zoned land at the front of the site. The concept subdivision plans are provided in ***Appendix 1***. Access to the site will be provided via the existing extension of Hunter Street to the industrial site and a new cul-de-sac public road off Hunter Street.

All existing structures on the residential land will be demolished except for four existing dwellings and sheds that will remain on separate residential lots created by the Stage 2 subdivision. The new public road infrastructure will be constructed to Muswellbrook Shire Council requirements and include drainage and landscaping also to Council's requirements.

9. TRAFFIC GENERATION

TfNSW's *Guide to Transport Impact Assessment (2024)* provides specific advice on the traffic generation potential of low-density residential dwellings as shown below.

Table 5.3. **Low density residential sample summary (weekday)**

Weekday rates	Sydney	Regional
Person trips (person trips/dwelling)		
AM peak hour	1.09	1.20
PM peak hour	1.14	1.11
Vehicle trips (vehicle trips/dwelling)		
AM peak hour	0.68	0.83
PM peak hour	0.77	0.84
Daily	8.12	7.53

Based on this table and noting there are four existing dwellings within the residential subdivision the additional traffic generated on the network by the proposed residential subdivision in a regional area can be calculated as shown below, rounded up.

Daily trips = 52 x 7.53 vtpd
= **392 vtpd.**

PM peak hour trips = 52 x 0.84 vtph
= **44 vtph**.

AM peak hour trips = 52 x 0.83 vtph
= **44 vtph**.

In terms of traffic generation of the industrial lot the existing site development was surveyed to be generating approximately 4 vtph in the AM peak hour and 2 vtph in the PM peak hour. It is understood that a development application is currently being prepared for a Rum distillery in the old Oak factory which will include a restaurant and a tasting / retail space. The client has provided the following advice with regard to the traffic generated by the distillery operation.

		300 Days	50 weeks	12 months	
In/Out Movements	**Assumption**	**Day (6-day/wk)**	**Week**	**Month**	**Annual**
Staff	21 Staff - 3 shifts @ 7 staff & 3 staff off	21	147	612	7349
Molasses - Inbound	26MT Single Trailer	1.2	7.2	30.0	360
Barrels - Inbound	40' FCL Sideloader/ Single Trailer	0.05	0.32	1.33	16.00
Glass - inbound	40' FCL Sideloader/ Single Trailer	0.67	4.00	16.67	200.00
Packaging - Inbound	Semi - Single Trailer	1.00	6.00	25.00	300.00
Courier - Inbound	LR/MR Delivery truck	1.00	6.00	25.00	300.00
Vinasse - Outbound	40MT Single Trailer	2.00	12.00	50.00	600.00
Barrels - Outbound	Semi - Single Trailer	0.09	0.52	2.17	26.00
Bulk Isotainer - Outbound	25kl Isotainer Tanker	0.05	0.32	1.33	16
FSBS - Outbound	40' FCL Sideloader/ Single Trailer	1.67	10	41.67	500.00
Courier - outbound	LR/MR Delivery truck	1.00	6.00	25.00	300.00
	TOTAL	**9**	**52**	**218**	**2618**
	-20% Scenario	**7**	**42**	**175**	**2094**
	+20% Scenario	**10**	**63**	**262**	**3142**

Based on this advice the peak daily traffic generation for the distillery is likely to be 31 vtpd which is likely to equate to a peak hour traffic generation (when staff arrive at the site in the AM peak and leave the site in the PM peak) of 14 staff trips and a maximum 2 delivery trips = 16 vtph.

The café / tasting rooms / retail sales building in the distillery will have a maximum capacity for 60 persons and thus is likely to generate traffic volumes of approximately 20 vtph based on the car parking rate of 1 space per 3 persons for a café and the assumption that customers are likely to have an average stay of 1 hour. These traffic volumes will be confirmed and assessed in a Traffic Impact Assessment report that will support the future Development Application for the distillery.

Therefore, for this assessment the total likely traffic generation from the site following completion of the Stage 2 subdivision is likely to be as follows and has been adopted in this assessment.

AM & PM peak hour traffic generation = 44 + 16 + 20 = **80 vtph.**

10. 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. Based on the traffic counts the trip distribution and likely origin / destinations of traffic using the development is as follows:

- In the AM peak 70% of traffic will be outbound and in the PM peak 60% of traffic will be inbound,
- Origins / destinations at the New England Highway will be 60% south towards and from CBD and 40% north.

Therefore, the adopted development traffic trip distribution at the New England Highway / Manning Street and Manning Street / Hunter Street intersections for this assessment is shown in ***Figure 3*** below.

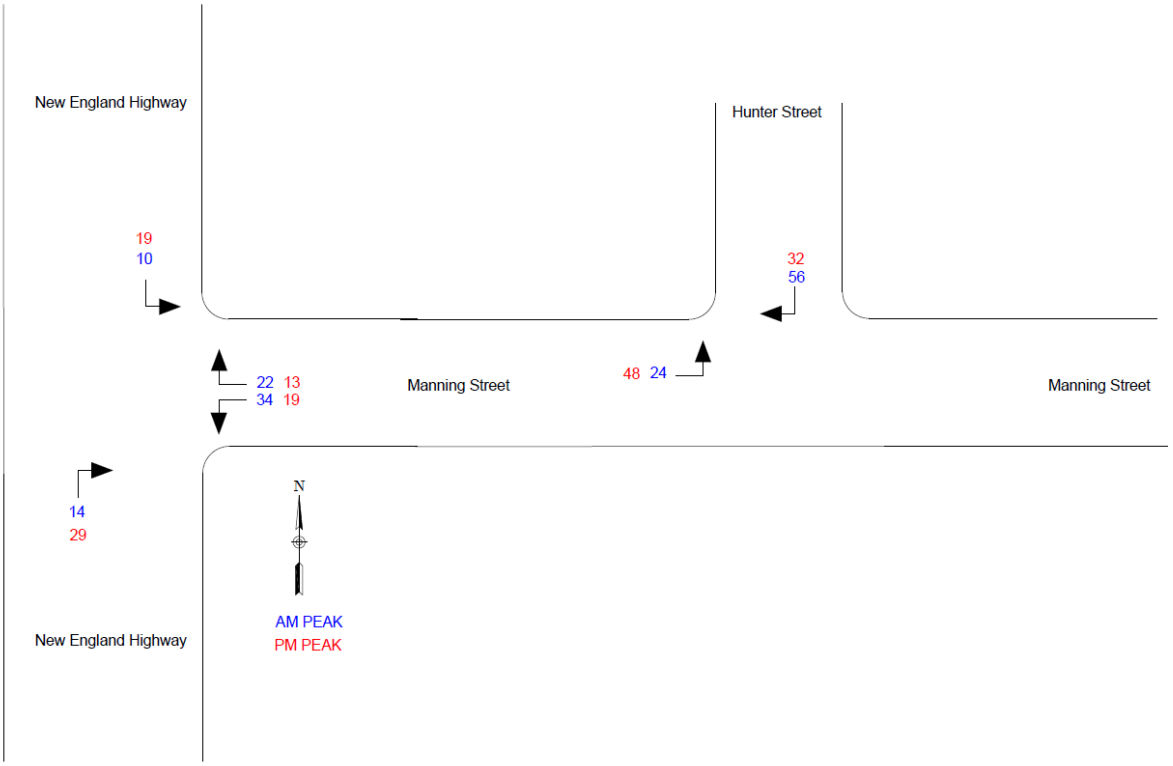


Figure 3 - Development Traffic Trip Distribution

11. TRAFFIC IMPACT ASSESSMENT

11.1 Road Network Capacity

This TIA has determined in ***Section 6*** that the existing road network around the site is currently operating below its technical capacity and subject to satisfactory intersection performance has spare capacity to cater for additional traffic generated by the subdivision.

Section 10 of this TIA determined that the proposed development of the 1-lot industrial and 56-lot residential subdivision is likely to generate an additional 80 vtph in the AM peak and PM peak hour periods. This will result in the following maximum two-way mid-block AM and PM peak hour traffic volumes on the local and state road network post development and in 2035 (2 % p.a. traffic growth rate) as shown in ***Table 2*** below.

Table 2 shows that two-way mid-block traffic volumes on the New England Highway, Manning and Hunter Streets will remain well below the t3echnical and environmental capacity thresholds as relevant for these roads as determined in ***Section 6***.

Table 2 – Two-way mid-block Road Capacity Assessment

Road	Section	Capacity	2025		2035 @ 1.5% p.a.		Development traffic	
		vtph	AM (vtph)	PM (vtph)	AM (vtph)	PM (vtph)	AM	PM
New England Highway	north of Manning Street	2700	1068	1157	1295	1403	32	32
New England Highway	south of Manning Street	2700	1102	1222	1333	1479	48	48
Manning Street	east of New England Highway	500	292	325	338	379	80	80
Hunter Street	west of Humphries Street (near site)	500	252	253	290	291	80	80

Therefore, it is concluded that there is sufficient spare capacity within the immediate state and local road network to cater for the proposed industrial and residential subdivision without the need to upgrade the adjoining road network.

11.2 Intersection Capacity

The existing intersections impacted by the development will be the New England Highway / Manning Street urban seagull, the Manning Street / Hunter Street stop priority-controlled T-intersection and the give way priority-controlled Hunter Street / Humphries Street T-intersection.

It is noted though that the the Hunter Street / Humphries Street T-intersection post development will operate with major and minor traffic volumes of approximately 400 vtph and 80 vtph respectively in 2035. As such, the intersection would still fall within the capacity thresholds for uninterrupted flow conditions as shown below in the table sourced from *Austroads Guide to Traffic Management – Part 6 Intersections, Interchanges and Crossings (2007)*. The Guide states if traffic volumes fall below these thresholds there is no need for detailed analysis of the intersections. On this basis it is concluded the site access onto Hunter Street and Humphries Street will well into the future operate satisfactorily with uninterrupted flow conditions and high levels of service with little or no delay and queuing being experienced by motorists.

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.

Source: - Austroads Guide to Traffic Management – Part 6 Intersections, Interchanges and Crossings (2007)

Similarly, the Manning Street / Hunter Street intersection will also operate with traffic volumes less than the thresholds for uninterrupted flow conditions even through to 2035 with the major flow traffic volume being 380 vtph and the minor traffic flow being 291 vtph. On this basis it is concluded the Manning Street / Hunter Street intersection will operate satisfactorily with uninterrupted flow conditions and high levels of service with little or no delay and queuing being experienced by motorists through to and beyond 2035.

To assess the impact of the development on the New England Highway / Manning Street intersection it has been modelled using the SIDRA INTERSECTION modelling program. 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.

Assumptions made in the modelling for both intersections were.

- The existing intersection layout will remain as per current conditions.
- Traffic volumes used in the modelling were as collected by NTPE and Intersect Traffic in March 2025.
- Traffic generated by the developments is distributed as per ***Figures 3.***
- Future traffic growth predicted using a 2.0% per annum background traffic growth rate as presented above.

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 results of the modelling for the worst average delay and LoS is shown in ***Table 3*** below while the Sidra summary movement tables are provided in ***Attachment C***.

Table 3 – New England Highway / Manning Street Intersection – Sidra Modelling Results.

Modelled Peak	Degree of Saturation (v/c)	Worst Delay (s)	Worst Level of Service	95% back of queue length (cars)
2025 AM	0.241	9.3	A	0.3
2025 PM	0.329	8.2	A	0.4
2025 AM with development	0.241	9.4	A	0.5
2025 PM with development	0.329	8.5	A	0.6
2035 AM with development	0.293	11.4	A	0.8
2035 PM with development	0.401	10.1	A	0.9

The modelling shows that the New England Highway / Manning Street urban seagull continues to operate satisfactorily post development through to and beyond 2035 with motorists experiencing excellent levels of service and all critical criteria being well below TfNSW's thresholds for satisfactory intersection performance. The impact of the development on the operation of the intersection is minimal with average delays and 95% back of queue lengths increasing by less than 0.3 seconds and 0.2 car lengths respectively.

Overall, it is concluded that the proposed development will not adversely impact on existing intersections on the adjoining state and local road network.

11.3 On-Site Car Parking

The development as a residential subdivision does not generate an immediate on-site parking demand however future development of the individual allotments will generate such a demand. Future development on the individual allotments will need to comply with the Muswellbrook Council DCP regarding the provision of on-site car parking however it is reasonable to conclude that as the lots comply with the minimum lot size requirements of Muswellbrook Shire Council there is enough area within each lot to provide the required on-site car parking. This will need to be assessed at DA stage for the development of each allotment. Similarly on-site car parking for the proposed distillery on the industrial lot created by this development will be assessed within a Traffic Impact Assessment that will be prepared to support a future development application for the distillery once plans for the distillery are finalised.

11.4 Alternative Transport Modes

It has been determined in ***Section 7*** that the site is already well serviced by public transport and there is little in the way of pedestrian and cycle way infrastructure in the area The additional alternative transport demand from this residential development is not considered sufficient for there to be a nexus for the provision of external pedestrian and cycle way infrastructure aside from the pedestrian paths required to be provided within the new subdivision works as determined by Council.

11.5 Subdivision Design

The subdivision design is provided in ***Appendix 1***. The internal layout consists of a new internal cul-de-sac public road centrally located within the property and connecting to Hunter Street. The design provided maximises lot yield and is considered suitable for the site with a road environment that is low speed and has low traffic volumes.

There appeared no constraints to suitable sight distance being available at the new connection intersection to Hunter Street and a standard BAL / BAR intersection is considered suitable for this connection as it will operate with uninterrupted flow conditions given the very minimal traffic volumes on the roads. The subdivision roads will need to comply with the Muswellbrook Shire Council DCP Section 5 Subdivision and Council's Natspec Design and Construction Standards. The road reserve width complies with Muswellbrook Shire Council DCP - *Section 5.5.1 - Local Street Design* requirements and will be specified within conditions of consent for any consent issued for the development.

Overall, it is concluded that the internal road layout and subdivision design is satisfactory and compliant with current best practice and Muswellbrook Shire Council requirements.

12. CONCLUSIONS

This traffic impact assessment for a proposed 1 lot industrial and 57 lot residential subdivision of Lot 1 in DP995228 – Hunter Street, Muswellbrook being the Oak factory site in northern Muswellbrook has concluded the following:

- The existing state and local road network are operating below its technical and environmental capacity thresholds as relevant and have capacity to accommodate additional traffic from the subdivision.
- Using rates contained within the TfNSW's *Guide to Transport Impact Assessment (2024)* and the likely operational traffic generated by the proposed distillery on the excised industrial lot it is estimated that the on completion of the subdivision the site will generate an additional 80 vtph in the AM peak hour and PM peak hour periods on the state and local road network.
- There is sufficient spare capacity within the immediate state and local road network to cater for the proposed industrial and residential subdivision as well as the likely future use of the excised industrial lot.
- Sidra modelling of the New England Highway / Manning Street urban seagull intersection and the Manning Street / Hunter Street stop priority-controlled T-intersection has shown the proposed development will not adversely impact on existing intersections on the adjoining state and local road network.
- The existing Hunter Street / Humphries Street T-intersection currently operates with uninterrupted flow conditions and will continue to do so post development and with in excess of 10 years background traffic growth.
- The development as an industrial and residential subdivision does not generate an immediate on-site parking demand however future development of the individual allotments

will generate such a demand. On-site car parking will need to be assessed at development application stage for development of each of the individual lots. However, it is reasonable to conclude that as the lots satisfy the minimum lot size requirements of Muswellbrook Shire Council there is sufficient area within each lot to accommodate the required on-site car parking.

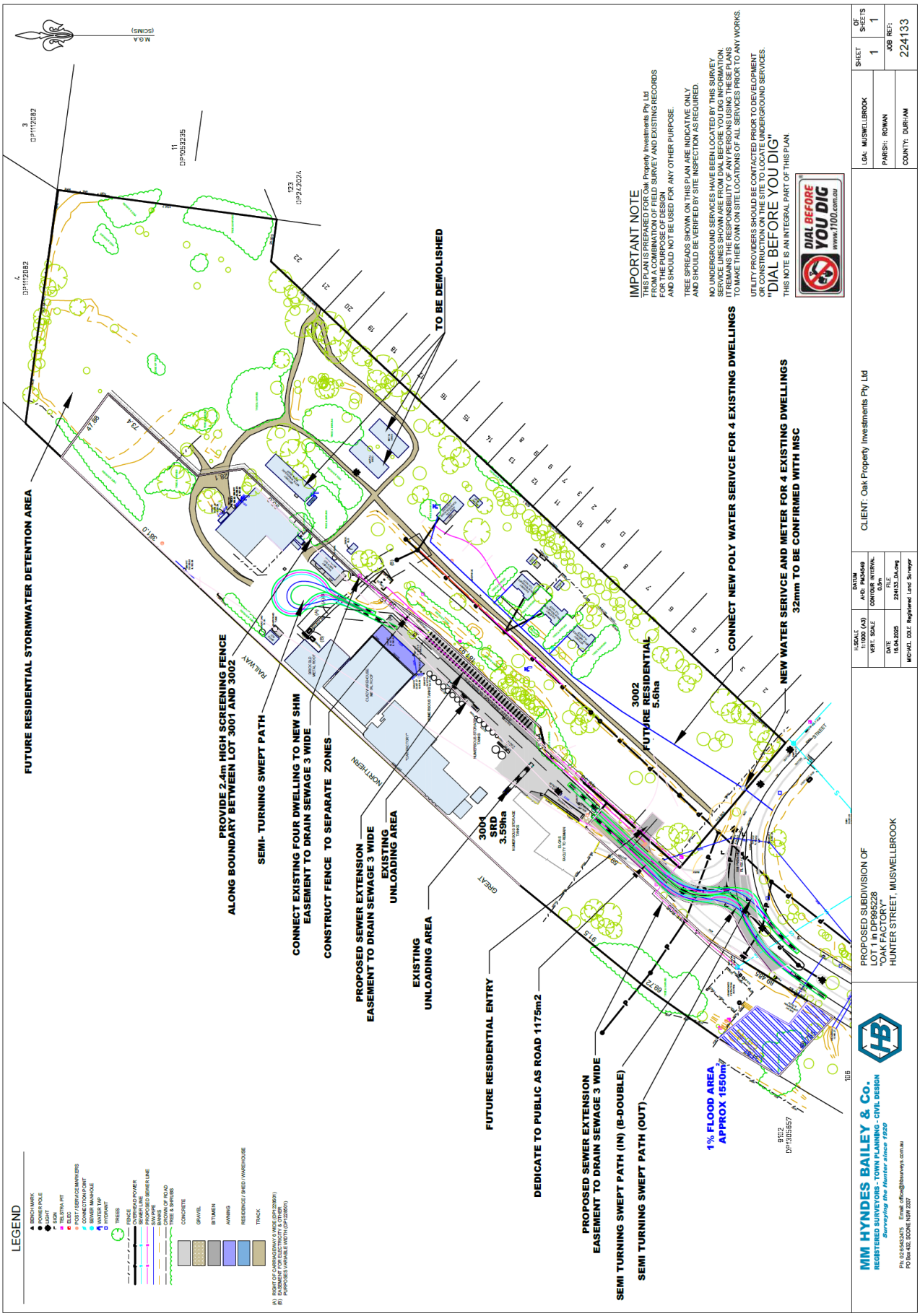
- The development is already serviced by a suitable public transport (bus service) operated by Osborn Buses. Therefore, there is no nexus for changes to this service or additional public transport infrastructure resulting from this development.
- The additional alternative transport demand from this industrial and residential development is not considered sufficient for there to be a nexus for the provision of external pedestrian and cycle way infrastructure aside from the pedestrian paths required to be provided within the new subdivision works as determined by Council.
- The internal road layout and subdivision design is satisfactory and compliant with Muswellbrook Shire Council requirements and current best practice.

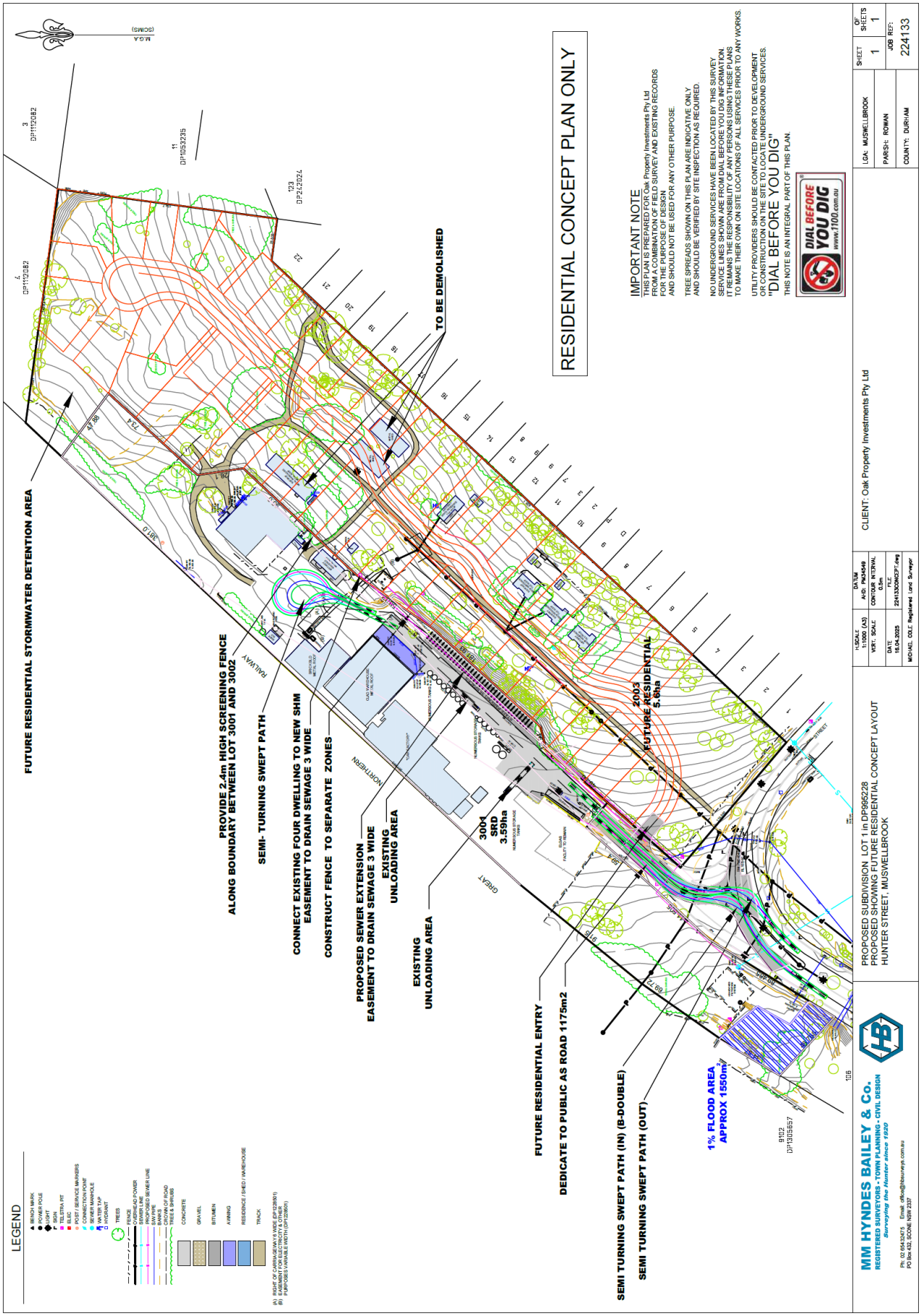
13. RECOMMENDATION

Having carried out this traffic impact assessment of a proposed 1 lot industrial and 57 lot residential subdivision of Lot 1 in DP995228 – Hunter Street, Muswellbrook on the Oak factory site in northern Muswellbrook it is recommended that the subdivision can be supported from a traffic impact perspective as the state and local road network have sufficient capacity to cater for the additional demand generated by the development. Therefore, the subdivision will not adversely impact on the state and local road network and complies with the relevant requirements of Muswellbrook Shire Council, TfNSW and Austroads.

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

APPENDIX 1
DEVELOPMENT PLANS


FUTURE RESIDENTIAL STORMWATER DETENTION AREA
PROVIDE 2.4m HIGH SCREENING FENCE ALONG BOUNDARY BETWEEN LOT 3001 AND 3002
SEMI- TURNING SWEPT PATH
CONNECT EXISTING FOUR DWELLING TO NEW SHM EASEMENT TO DRAIN SEWAGE 3 WIDE
CONSTRUCT FENCE TO SEPARATE ZONES
PROPOSED SEWER EXTENSION EASEMENT TO DRAIN SEWAGE 3 WIDE
EXISTING UNLOADING AREA
EXISTING UNLOADING AREA
FUTURE RESIDENTIAL ENTRY
DEDICATE TO PUBLIC AS ROAD 1175m2
PROPOSED SEWER EXTENSION EASEMENT TO DRAIN SEWAGE 3 WIDE
SEMI TURNING SWEPT PATH (IN) (B-DOUBLE)
SEMI TURNING SWEPT PATH (OUT)
1% FLOOD AREA APPROX 1550m²
TO BE DEMOLISHED
3001 SRD 3.59ha
3002 FUTURE RESIDENTIAL 5.6ha
CONNECT NEW POLY WATER SERIVCE FOR 4 EXISTING DWELLINGS
NEW WATER SERIVCE AND METER FOR 4 EXISTING DWELLINGS 32mm TO BE CONFIRMED WITH MSC
IMPORTANT NOTE
THIS PLAN IS PREPARED FOR Oak Property Investments Pty Ltd FROM A COMBINATION OF FIELD SURVEY AND EXISTING RECORDS FOR THE PURPOSE OF DESIGN ONLY AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.
TREE SPREADS SHOWN ON THIS PLAN ARE INDICATIVE ONLY AND SHOULD BE VERIFIED BY SITE INSPECTION AS REQUIRED.
NO UNDERGROUND SERVICES HAVE BEEN LOCATED BY THIS SURVEY. SERVICE LINES SHOWN ARE FROM DIAL BEFORE YOU DIG INFORMATION. IT REMAINS THE RESPONSIBILITY OF ANY PERSONS USING THESE PLANS TO MAKE THEIR OWN ON SITE LOCATIONS OF ALL SERVICES PRIOR TO ANY WORKS.
UTILITY PROVIDERS SHOULD BE CONTACTED PRIOR TO DEVELOPMENT OR CONSTRUCTION ON THE SITE TO LOCATE UNDERGROUND SERVICES.
"DIAL BEFORE YOU DIG"
THIS NOTE IS AN INTEGRAL PART OF THIS PLAN.
DIAL BEFORE YOU DIG www.1100.com.au
LEGEND
BENCH MARK
POWER POLE
LIGHT
GAS
TELSTRA PIT
ELEC
POST / STAR / FENCE MARKERS
CONNECTION POINT
SEWER MANHOLE
WATER TAP
HYDRANT
TREES
FENCE
OVERHEAD POWER
SEWER LINE
PROPOSED SEWER LINE
SAN PIPE
BANKS
EDGE OF ROAD
TREE & SHRUBS
CONCRETE
GRAVEL
BITUMEN
AWNING
RESIDENCE / SHED / WAREHOUSE
TRACK
(A) RIGHT OF CARRIAGEWAY & WIDE (DP128091)
(B) EASEMENT TO DRAIN SEWAGE 3 WIDE (DP128091)
PURPOSES VARIABLE WIDTH (DP128091)
MM HYNDES BAILEY & Co.
REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN
Surveying the Hunter since 1920
Ph: 0265432475 Email: office@hbsurveys.com.au
PO Box 452, SCONE NSW 2337
PROPOSED SUBDIVISION OF LOT 1 in DP865228 "OAK FACTORY" HUNTER STREET, MUSWELLBROOK
H SCALE 1:1000 (A3)
VERT. SCALE
DATE 16.04.2025
DATUM AHD: PM34549
CONTOUR INTERVAL 0.5m
FILE: 224133_DA.dwg
MICHAEL COLE Registered Land Surveyor
CLIENT: Oak Property Investments Pty Ltd
LGA: MUSWELLBROOK
PARISH: ROMAN
COUNTY: DURHAM
SHEET 1
OF SHEETS 1
JOB REF: 224133


RESIDENTIAL CONCEPT PLAN ONLY
FUTURE RESIDENTIAL STORMWATER DETENTION AREA
PROVIDE 2.4m HIGH SCREENING FENCE ALONG BOUNDARY BETWEEN LOT 3001 AND 3002
SEMI- TURNING SWEPT PATH
CONNECT EXISTING FOUR DWELLING TO NEW SHM EASEMENT TO DRAIN SEWAGE 3 WIDE
CONSTRUCT FENCE TO SEPARATE ZONES
PROPOSED SEWER EXTENSION EASEMENT TO DRAIN SEWAGE 3 WIDE
EXISTING UNLOADING AREA
EXISTING UNLOADING AREA
TO BE DEMOLISHED
FUTURE RESIDENTIAL ENTRY
DEDICATE TO PUBLIC AS ROAD 1175m2
SEMI TURNING SWEPT PATH (IN) (B-DOUBLE)
SEMI TURNING SWEPT PATH (OUT)
1% FLOOD AREA APPROX 1550m2
FUTURE RESIDENTIAL 2003 5.6ha
3001 SRD 3.59ha
RAILWAY
NORTHERN
GIBSON
LEGEND
IMPORTANT NOTE
THIS PLAN IS PREPARED FOR Oak Property Investments Pty Ltd. FROM A COMBINATION OF FIELD SURVEY AND EXISTING RECORDS FOR THE PURPOSE OF DESIGN AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.
TREE SPREADS SHOWN ON THIS PLAN ARE INDICATIVE ONLY AND SHOULD BE VERIFIED BY SITE INSPECTION AS REQUIRED.
NO UNDERGROUND SERVICES HAVE BEEN LOCATED BY THIS SURVEY SERVICE LINES SHOWN ARE FROM DIAL BEFORE YOU DIG INFORMATION. IT REMAINS THE RESPONSIBILITY OF ANY PERSONS USING THESE PLANS TO MAKE THEIR OWN ON SITE LOCATIONS OF ALL SERVICES PRIOR TO ANY WORKS.
UTILITY PROVIDERS SHOULD BE CONTACTED PRIOR TO DEVELOPMENT OR CONSTRUCTION ON THE SITE TO LOCATE UNDERGROUND SERVICES.
"DIAL BEFORE YOU DIG"
THIS NOTE IS AN INTEGRAL PART OF THIS PLAN.
DIAL BEFORE YOU DIG www.1100.com.au
CLIENT: Oak Property Investments Pty Ltd
LGA: MUSWELLBROOK
PARISH: ROWAN
COUNTY: DURHAM
SHEET 1 OF SHEETS 1
JOB REF: 224133
PROPOSED SUBDIVISION LOT 1 in DP995228
PROPOSED SHOWING FUTURE RESIDENTIAL CONCEPT LAYOUT
HUNTER STREET, MUSWELLBROOK
H-SCALE 1:1000 (A3)
V-SCALE
DATUM AHD: PM34549
CONTOUR INTERVAL 0.5m
DATE 16.04.2025
FILE 224133CONCEPT.dwg
MICHAEL COLE Registered Land Surveyor
MM HYNDES BAILEY & Co.
REGISTERED SURVEYORS - TOWN PLANNING - CIVIL DESIGN
Surveying the Hunter since 1920
Ph: 02 6543 2475 Email: office@hbsurveys.com.au
PO Box 452, SCONE NSW 2337

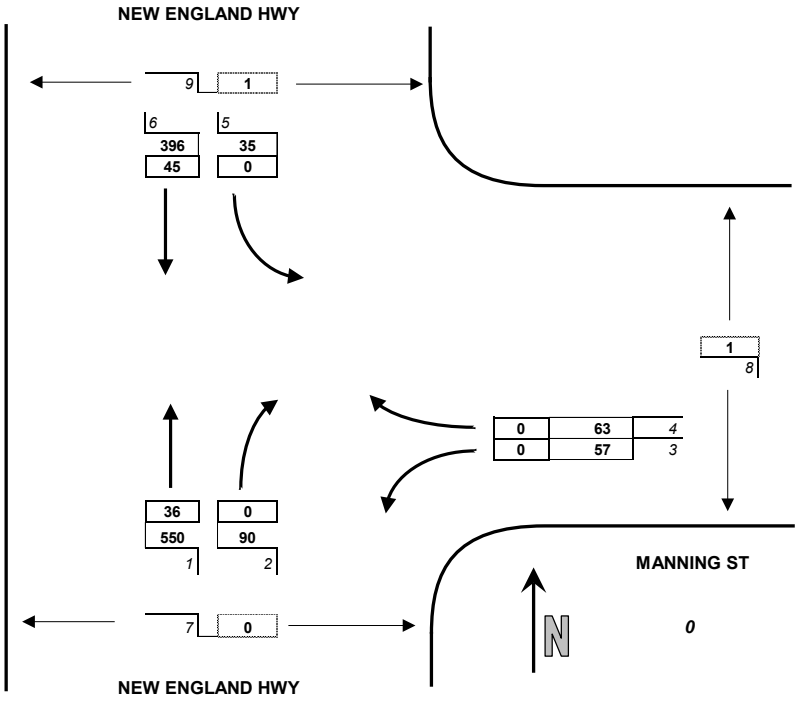
APPENDIX 2
TRAFFIC DATA

26/3/2025 - NEW ENGLAND HWY / MANNING ST, MUSWELLBROOK

17:15 <<< HOUR ENDING **Wednesday**

Quality Surveys 254024

Summary: NEW ENGLAND HWY / MANNING ST	
1191	Total Light Vehicles
81	Total Heavy Vehicles
2	Total Pedestrians



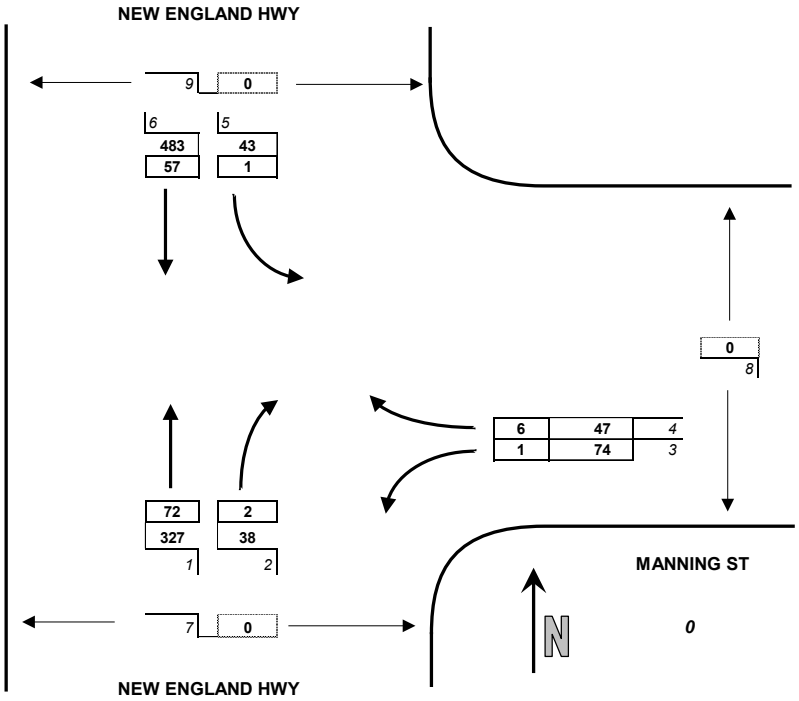
90	Light Vehicles
0	Heavy Vehicles
1	Pedestrians

27/3/2025 - NEW ENGLAND HWY / MANNING ST, MUSWELLBROOK

9:15 <<< HOUR ENDING **Thursday**

Quality Surveys 254024

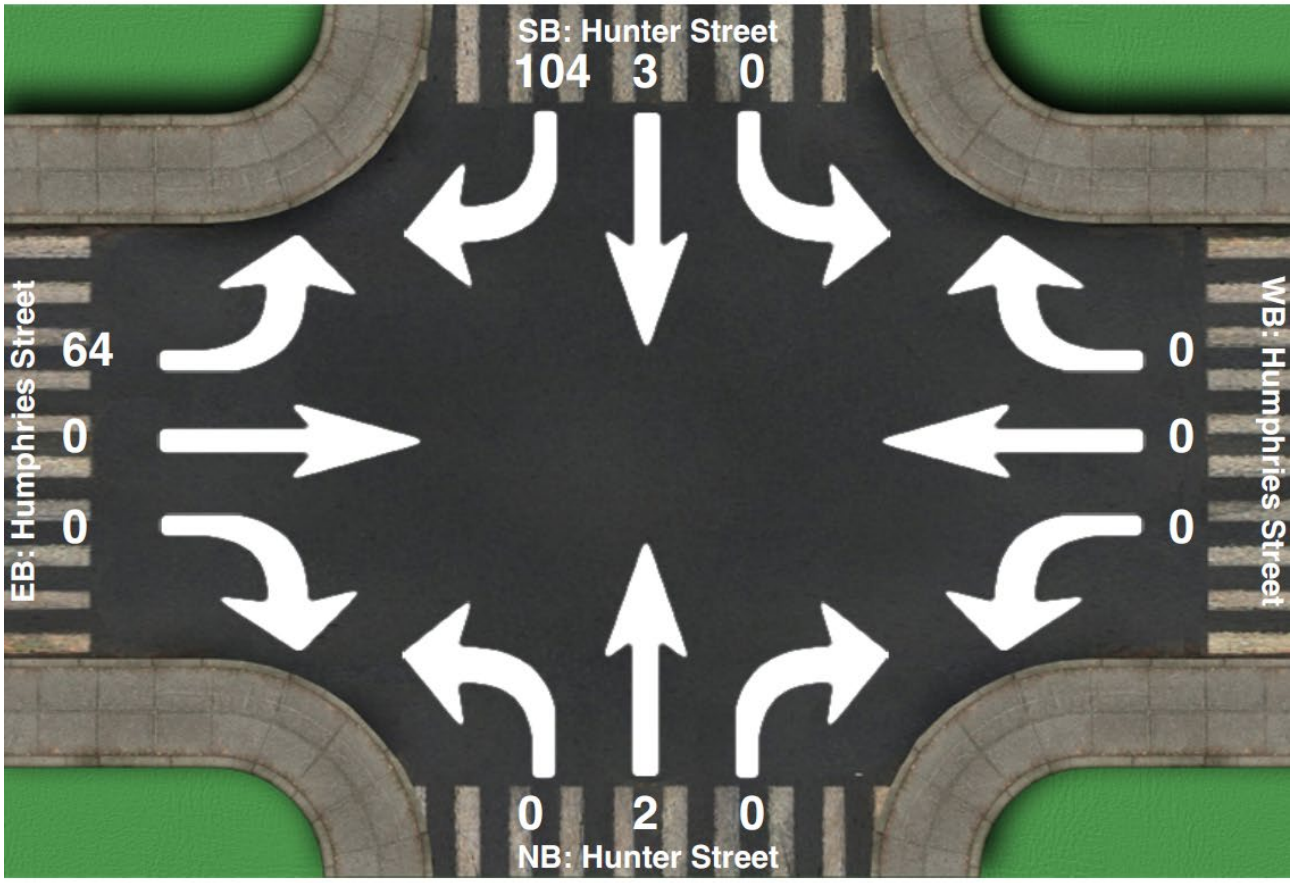
Summary: NEW ENGLAND HWY / MANNING ST	
1012	Total Light Vehicles
139	Total Heavy Vehicles
0	Total Pedestrians



38	Light Vehicles
2	Heavy Vehicles
0	Pedestrians

Intersection Peak Hour

Location: Hunter Street at Humphries Street, Muswellbrook
GPS Coordinates: Lat=-32.260358, Lon=150.890657
Date: 2025-03-26
Day of week: Wednesday
Weather: Overcast
Analyst: Mick



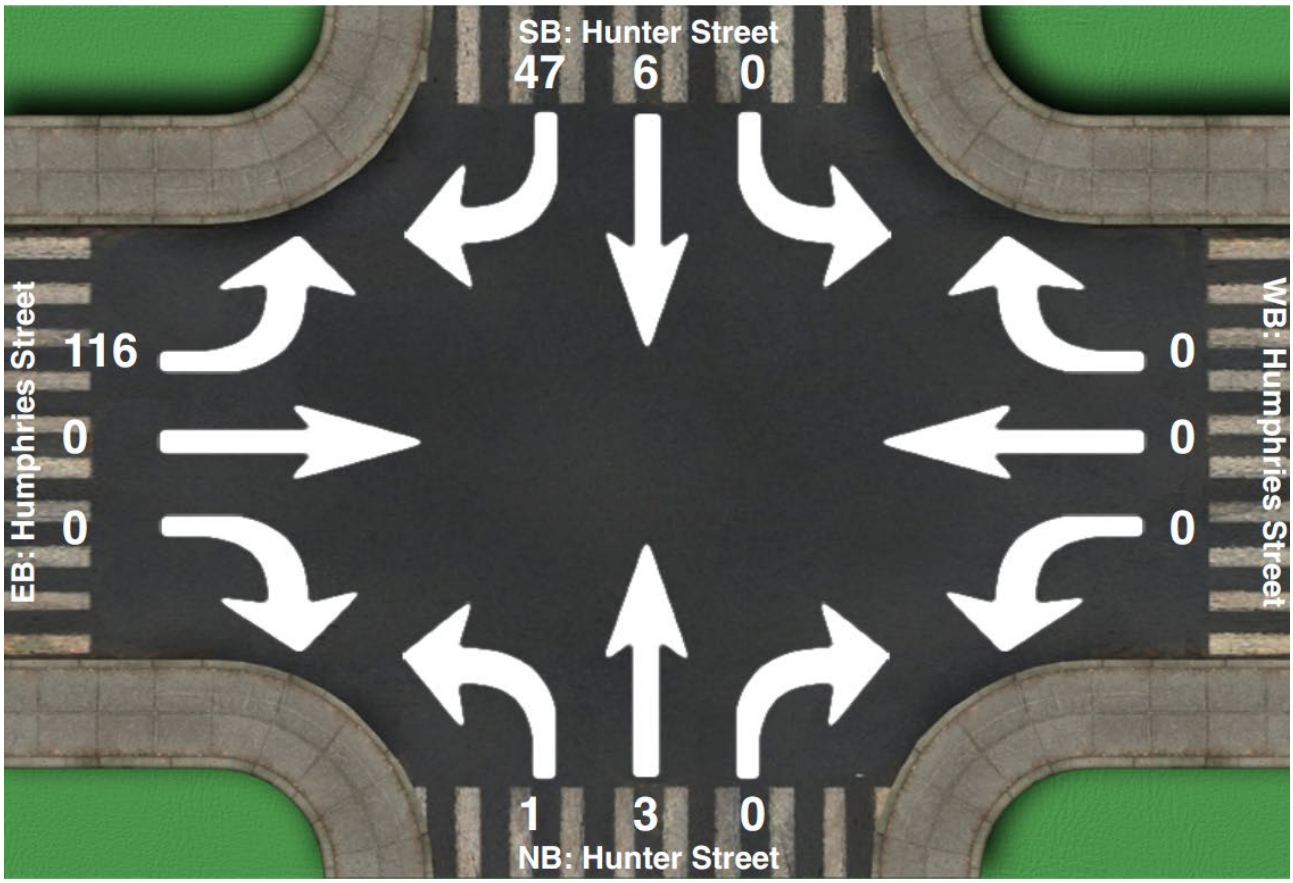
Intersection Peak Hour

15:00 - 16:00

	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Vehicle Total	0	3	104	0	0	0	0	2	0	64	0	0	173
Factor	0.00	0.75	0.74	0.00	0.00	0.00	0.00	0.50	0.00	0.76	0.00	0.00	0.83
Approach Factor	0.74			0.00			0.50			0.76			

Intersection Peak Hour

Location: Hunter Street at Humphries Street, Muswellbrook
GPS Coordinates: Lat=-32.253029, Lon=150.893605
Date: 2025-03-27
Day of week: Thursday
Weather: Fine
Analyst: Mick



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	0	6	47	0	0	0	1	3	0	116	0	0	173
Factor	0.00	0.38	0.47	0.00	0.00	0.00	0.25	0.38	0.00	0.81	0.00	0.00	0.77
Approach Factor	0.53			0.00			0.33			0.81			

APPENDIX 3
SIDRA MOVEMENT SUMMARY TABLES

MOVEMENT SUMMARY

Site: 1 [2025AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Manning Street Urban Seagull
March 2025 counts
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Manning Street															
1	L2	All MCs	79	1.3	79	1.3	0.078	3.8	LOS A	0.3	2.0	0.35	0.55	0.35	49.4
2	R2	All MCs	56	11.3	56	11.3	0.100	8.6	LOS A	0.4	2.8	0.58	0.75	0.58	44.9
Approach			135	5.5	135	5.5	0.100	5.8	LOS A	0.4	2.8	0.45	0.64	0.45	47.4
East: New England Highway															
3	L2	All MCs	46	2.3	46	2.3	0.168	5.6	LOS A	0.0	0.0	0.00	0.09	0.00	55.8
4	T1	All MCs	568	10.6	568	10.6	0.168	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
Approach			615	9.9	615	9.9	0.168	0.5	NA	0.0	0.0	0.00	0.04	0.00	59.3
West: New England Highway															
5	T1	All MCs	420	18.0	420	18.0	0.241	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	42	5.0	42	5.0	0.062	9.3	LOS A	0.2	1.6	0.55	0.73	0.55	45.3
Approach			462	16.9	462	16.9	0.241	0.9	NA	0.2	1.6	0.05	0.07	0.05	58.9
All Vehicles			1212	12.1	1212	12.1	0.241	1.2	NA	0.4	2.8	0.07	0.12	0.07	58.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Saturday, 10 May 2025 12:13:32 PM
Project: D:\Work\2025\25.029 Hunter Street Muswellbrook Industrial subdivision\Sidra\NEH_Manning.sip9

MOVEMENT SUMMARY

Site: 1 [2025PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Manning Street Urban Seagull
March 2025 counts
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Manning Street															
1	L2	All MCs	60	0.0	60	0.0	0.056	3.5	LOS A	0.2	1.4	0.31	0.52	0.31	49.9
2	R2	All MCs	66	0.0	66	0.0	0.096	7.6	LOS A	0.4	2.5	0.55	0.71	0.55	47.0
Approach			126	0.0	126	0.0	0.096	5.6	LOS A	0.4	2.5	0.43	0.62	0.43	48.3
East: New England Highway															
3	L2	All MCs	37	0.0	37	0.0	0.137	5.6	LOS A	0.0	0.0	0.00	0.09	0.00	55.8
4	T1	All MCs	464	10.2	464	10.2	0.137	0.0	LOS A	0.0	0.0	0.00	0.04	0.00	59.5
Approach			501	9.5	501	9.5	0.137	0.4	NA	0.0	0.0	0.00	0.04	0.00	59.4
West: New England Highway															
5	T1	All MCs	617	6.1	617	6.1	0.329	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	95	0.0	95	0.0	0.113	8.2	LOS A	0.4	3.1	0.51	0.71	0.51	46.4
Approach			712	5.3	712	5.3	0.329	1.2	NA	0.4	3.1	0.07	0.09	0.07	58.5
All Vehicles			1339	6.4	1339	6.4	0.329	1.3	NA	0.4	3.1	0.08	0.13	0.08	58.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Saturday, 10 May 2025 12:13:35 PM
Project: D:\Work\2025\25.029 Hunter Street Muswellbrook Industrial subdivision\Sidra\NEH_Manning.sip9

MOVEMENT SUMMARY

Site: 1 [2025AM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Manning Street Urban Seagull
March 2025 counts
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Manning Street															
1	L2	All MCs	115	0.9	115	0.9	0.113	3.8	LOS A	0.4	2.9	0.36	0.56	0.36	49.4
2	R2	All MCs	79	8.0	79	8.0	0.140	8.7	LOS A	0.5	3.9	0.60	0.78	0.60	44.9
Approach			194	3.8	194	3.8	0.140	5.8	LOS A	0.5	3.9	0.45	0.65	0.45	47.5
East: New England Highway															
3	L2	All MCs	57	1.9	57	1.9	0.171	5.6	LOS A	0.0	0.0	0.00	0.11	0.00	55.5
4	T1	All MCs	568	10.6	568	10.6	0.171	0.0	LOS A	0.0	0.0	0.00	0.05	0.00	59.4
Approach			625	9.8	625	9.8	0.171	0.6	NA	0.0	0.0	0.00	0.05	0.00	59.2
West: New England Highway															
5	T1	All MCs	420	18.0	420	18.0	0.241	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
6	R2	All MCs	57	3.7	57	3.7	0.083	9.4	LOS A	0.3	2.2	0.56	0.75	0.56	45.2
Approach			477	16.3	477	16.3	0.241	1.2	NA	0.3	2.2	0.07	0.09	0.07	58.6
All Vehicles			1296	11.3	1296	11.3	0.241	1.6	NA	0.5	3.9	0.09	0.16	0.09	57.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Saturday, 10 May 2025 12:13:33 PM
Project: D:\Work\2025\25.029 Hunter Street Muswellbrook Industrial subdivision\Sidra\NEH_Manning.sip9

MOVEMENT SUMMARY

Site: 1 [2025PM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Manning Street Urban Seagull
March 2025 counts
Site Category: (None)
Stop (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Manning Street															
1	L2	All MCs	80	0.0	80	0.0	0.074	3.4	LOS A	0.3	1.9	0.30	0.52	0.30	49.9
2	R2	All MCs	80	0.0	80	0.0	0.121	8.0	LOS A	0.5	3.2	0.57	0.74	0.57	46.6
Approach			160	0.0	160	0.0	0.121	5.7	LOS A	0.5	3.2	0.44	0.63	0.44	48.2
East: New England Highway															
3	L2	All MCs	57	0.0	57	0.0	0.142	5.6	LOS A	0.0	0.0	0.00	0.13	0.00	55.2
4	T1	All MCs	464	10.2	464	10.2	0.142	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	59.4
Approach			521	9.1	521	9.1	0.142	0.6	NA	0.0	0.0	0.00	0.06	0.00	59.1
West: New England Highway															
5	T1	All MCs	617	6.1	617	6.1	0.329	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	125	0.0	125	0.0	0.153	8.5	LOS A	0.6	4.3	0.53	0.73	0.53	46.1
Approach			742	5.1	742	5.1	0.329	1.5	NA	0.6	4.3	0.09	0.12	0.09	58.1
All Vehicles			1423	6.0	1423	6.0	0.329	1.7	NA	0.6	4.3	0.10	0.16	0.10	57.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

Organisation: INTERSECT TRAFFIC PTY LTD | Licence: NETWORK / 1PC | Processed: Saturday, 10 May 2025 12:13:36 PM
Project: D:\Work\2025\25.029 Hunter Street Muswellbrook Industrial subdivision\Sidra\NEH_Manning.sip9

MOVEMENT SUMMARY

Site: 1 [2035AM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Manning Street Urban Seagull
March 2025 counts
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Manning Street															
1	L2	All MCs	140	0.9	140	0.9	0.147	4.2	LOS A	0.6	3.9	0.41	0.60	0.41	48.9
2	R2	All MCs	96	8.0	96	8.0	0.214	11.4	LOS A	0.8	5.9	0.69	0.84	0.72	42.6
Approach			236	3.8	236	3.8	0.214	7.1	LOS A	0.8	5.9	0.52	0.70	0.53	46.1
East: New England Highway															
3	L2	All MCs	69	1.9	69	1.9	0.209	5.6	LOS A	0.0	0.0	0.00	0.11	0.00	55.5
4	T1	All MCs	693	10.6	693	10.6	0.209	0.1	LOS A	0.0	0.0	0.00	0.05	0.00	59.4
Approach			762	9.8	762	9.8	0.209	0.6	NA	0.0	0.0	0.00	0.05	0.00	59.2
West: New England Highway															
5	T1	All MCs	512	18.0	512	18.0	0.293	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
6	R2	All MCs	69	3.7	69	3.7	0.123	10.9	LOS A	0.4	3.2	0.63	0.83	0.63	43.6
Approach			581	16.3	581	16.3	0.293	1.4	NA	0.4	3.2	0.07	0.10	0.07	58.4
All Vehicles			1580	11.3	1580	11.3	0.293	1.8	NA	0.8	5.9	0.11	0.17	0.11	57.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 1 [2035PM + development (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.6.228

New England Highway / Manning Street Urban Seagull
March 2025 counts
Site Category: (None)
Stop (Two-Way)
Design Life Analysis (Final Year): Results for 10 years

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival 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	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Manning Street															
1	L2	All MCs	98	0.0	98	0.0	0.094	3.7	LOS A	0.3	2.4	0.35	0.55	0.35	49.6
2	R2	All MCs	98	0.0	98	0.0	0.177	10.1	LOS A	0.7	4.7	0.63	0.81	0.63	44.9
Approach			195	0.0	195	0.0	0.177	6.9	LOS A	0.7	4.7	0.49	0.68	0.49	47.1
East: New England Highway															
3	L2	All MCs	69	0.0	69	0.0	0.173	5.6	LOS A	0.0	0.0	0.00	0.13	0.00	55.1
4	T1	All MCs	566	10.2	566	10.2	0.173	0.0	LOS A	0.0	0.0	0.00	0.06	0.00	59.4
Approach			635	9.1	635	9.1	0.173	0.7	NA	0.0	0.0	0.00	0.06	0.00	59.1
West: New England Highway															
5	T1	All MCs	752	6.1	752	6.1	0.401	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	59.7
6	R2	All MCs	153	0.0	153	0.0	0.216	9.6	LOS A	0.9	6.0	0.59	0.80	0.59	45.0
Approach			905	5.1	905	5.1	0.401	1.7	NA	0.9	6.0	0.10	0.13	0.10	57.9
All Vehicles			1735	6.0	1735	6.0	0.401	1.9	NA	0.9	6.0	0.11	0.17	0.11	57.4

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