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22 April 2020

P1487 TBG Station Lane Lochinvar Residential Subdivision

The Bathla Group
PO Box 270
Wentworthville NSW 2145

Attn: Sakawat Hossain

Dear Sakawat,

Proposed Residential Subdivision, Station Lane, Lochinvar, NSW.

Further to your recent email, we have now completed our site work and assessment for the proposed residential subdivision located off Station Lane, Lochinvar. We have reviewed the documentation provided for the proposed development and are pleased to provide the following traffic impact assessment to support the development application to be submitted to Maitland City Council.

This assessment has been prepared in accordance with the Austroads Guidelines and Section 2.3 of the RMS Guide to Traffic Generating Developments (note that RMS are now renamed Transport for NSW (TfNSW)), which provides the structure for the reporting of key issues to be addressed when determining the impacts of traffic associated with a development. This guide indicates that the use of this format and checklist ensures that the most significant matters are considered by the relevant road authority.

The report has also taken into consideration the planning requirements outlined in the Maitland Development Control Plan 2011.

Site Location and Context

The proposed development is located to the west of Station Lane within the suburb of Lochinvar as shown in Figure 1. It is located within the Lochinvar Urban Release Area and encompasses three adjoining lots, being:

- 51 Station Lane (Lot 3, DP 564631)
- 134 Station Lane (Lot 4, DP 634523)
- 146 Station Lane (Lot 2, DP 634523)

The surrounding land use comprises mostly rural land and large lot residential, with St Patricks Primary School and St Nicholas Early Learning Centre located at the northern end of Station Lane. Opposite Station Lane, on the northern side of the New England Highway is All Saints College St Josephs Campus, a Year 7 to Year 12 high school.

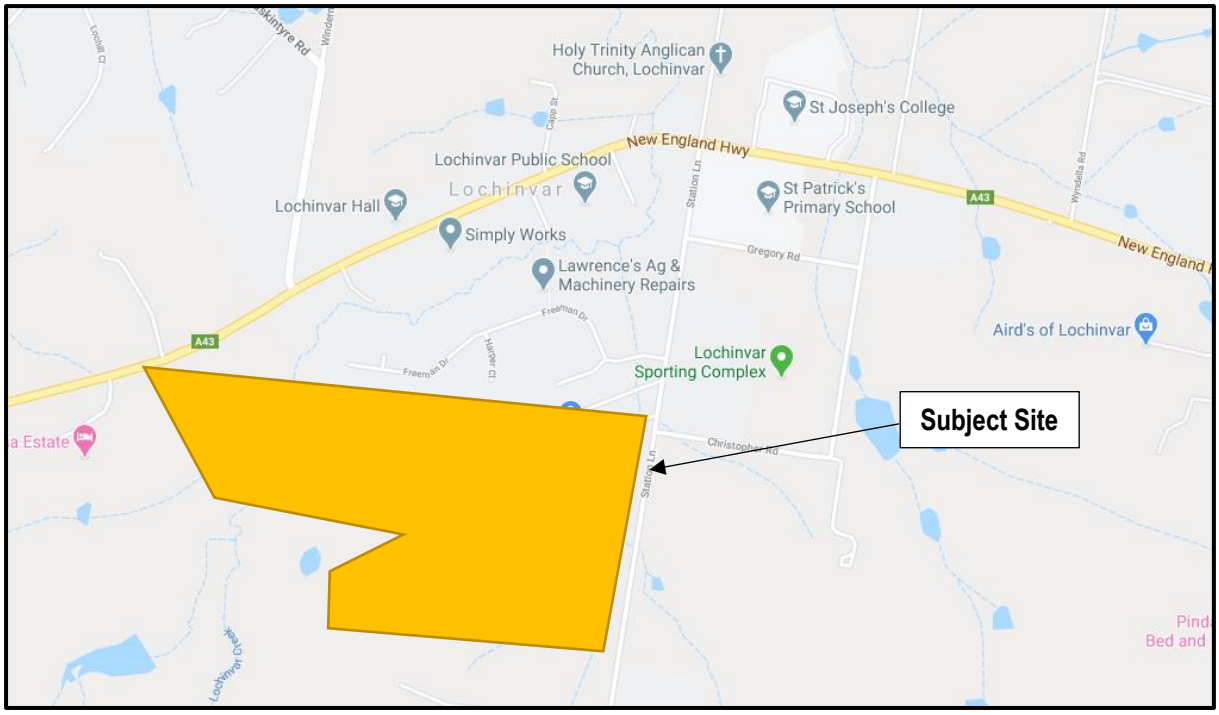


Figure 1 – Subject site in the context of the local road network

A summary of the key issues and their comments are provided below:

Item	Comment
Existing Situation	
2.1 Site Location and Access	The proposed development is located to the west of Station Lane within the suburb of Lochinvar as shown in Figure 1. It comprises three adjoining rural lots each with a single freestanding dwelling. Access to each lot is available via separate unsealed driveways off Station Lane.
2.2.1 Road Hierarchy	The **New England Highway** is the major arterial road through the locality, which forms part of the state road network (HW9) connecting Lochinvar with Greater Newcastle (via Maitland) to the east and the Upper Hunter (via Muswellbrook) to the west. Through Lochinvar, it provides a single lane of travel in each direction, with sealed shoulders to both sides and an unsealed verge. The posted speed limit on the New England Highway is 60 km/hr in this location, however a 40 km/hr school zone operate within the immediate locality of Station Lane. Since the opening of the Hunter Expressway, there has been a significant decrease in the demands for regional traffic passing through the village of Lochinvar. The New England Highway connects with Station Lane and Cantwell Road via a four-way sign controlled intersection allowing for all turning movements, with the New England Highway being the priority road. Short left turn deceleration lanes are provided on the New England Highway for the left turns into both Station Lane and Cantwell Road. There are no sheltered right turn lanes provided.

Item	Comment
	A signalised pedestrian crossing is provided on the New England Highway approximately 130m east of Station Lane, in front of St Joseph's College and a second crossing approximately 340m to the west, in front of Lochinvar Public School. Approximately 1.5kms to the west of Station Lane, the New England Highway connects with St Helena Close via a sign controlled T-intersection with a seagull treatment. **Station Lane** is a local road which provides a sealed pavement in the order of 8-9 metres wide allowing for a single lane of travel in each direction and parking on street. Street lighting is provided with kerb and gutter to both sides to the north of Gregory Road. The posted speed limit on Station Lane is 50 km/hr, with a 40 km/hr school zone associated with the St Patricks Primary School. **St Helena Close** is a local road which offers a divided carriageway with a single 3.5m wide lane in each direction. Additional lanes and widening is provided approaching the New England Highway. Street lighting is available with kerb and gutter and pedestrian footpaths provided to each side. The posted speed limit on St Helena Close is 50 km/hr **Cantwell Road** is a local road which provides access to a number of rural residential lots with no through traffic movements. It provides a sealed pavement in the order of 4 metres wide, with unsealed shoulders and a verge, increasing to approximately 5 metres approaching the New England Highway. Due to the constrained width, it operates as a single lane, two-way road, with vehicles required to travel on the unsealed verge when passing. The posted speed limit on Cantwell Road is 50 km/hr. The surrounding roads are all local streets under the control and care of Maitland City Council.
2.2.2 Current and Proposed Roadworks, Traffic Management Works and Bikeways	A review of the Maitland Development Control Plan 2011, Part F, Chapter 9 - Lochinvar Urban Release Area shows that a new divided carriageway is to be constructed between St Helena Close and Wyndella Road with Station Lane to be upgraded to a collector road standard with a 12 metre pavement **(Appendix E).** The intersection of the New England Highway and St Helena Close is to be upgraded to provide traffic control signals, with traffic signals also shown at the intersection of Station Lane and the proposed divided carriageway. New off road shared paths and on road commuter paths are also proposed along Station Lane and the new divided carriageway. A Section 94 Contributions Plan has been prepared for the Lochinvar Urban Release Area which allows for the funding of the above road and intersection works.
2.3 Traffic Flows	Traffic surveys were completed at the intersection New England Highway / Station Lane / Cantwell Road on Thursday 27th February 2020 (7:30am-9:30am) and Friday 28th February 2020 (3:45pm-5:15pm) to determine the current demands and distribution of traffic through this intersection.

<table>
<tr><th>Item</th><th>Comment</th></tr>
<tr><td></td><td>These surveys were undertaken during both the morning and afternoon with times selected to coincide with the typical commuter peak periods on the local road network. The peak hours were determined as being 8-9AM and 4.15-5.15PM.

A summary of the peak hour traffic volumes obtained from these surveys is provided below, with detailed survey data presented in Attachment C.
<table>
<tr><th>Location</th><th>Peak</th><th>Two-Way</th><th>Eastbound / Northbound</th><th>Westbound / Southbound</th></tr>
<tr><td rowspan="2">New England Highway (West of Station Lane)</td><td>AM</td><td>1,185</td><td>723</td><td>462</td></tr>
<tr><td>PM</td><td>1,271</td><td>588</td><td>683</td></tr>
<tr><td rowspan="2">New England Highway (East of Station Lane)</td><td>AM</td><td>1,177</td><td>750</td><td>427</td></tr>
<tr><td>PM</td><td>1,266</td><td>591</td><td>675</td></tr>
<tr><td rowspan="2">Station Lane</td><td>AM</td><td>287</td><td>176</td><td>111</td></tr>
<tr><td>PM</td><td>127</td><td>67</td><td>60</td></tr>
</table></td></tr>
<tr><td>2.3.1 Daily Traffic Flows</td><td>The Guide to Traffic Generating Developments shows that peak hours represent between 8-12% of daily traffic volumes. Adopting the average of 10%, this would indicate daily traffic volumes on the New England Highway in the order of 12,200 vehicles per day (vpd).

Daily flows on Station Lane would be significantly lower in the order of 2,100 vpd.</td></tr>
<tr><td>2.3.2 AADT</td><td>There is no current AADT data available in the locality.</td></tr>
<tr><td>2.3.3 Daily Traffic Flow Distribution</td><td>The surveys undertaken indicate a strong demand for vehicles travelling east along the New England Highway in the morning, being reflective of typical commuter demands towards local employment to the east of the site. These flows are tidal with the reverse occurring in the afternoon associated with commuters returning at the end of the working day.

Over the course of a day, traffic would be reasonably balanced along the New England Highway.

Flows on Station Lane are influenced by the schools to the north as well as demands for residents travelling to/from work.</td></tr>
<tr><td>2.3.4 Vehicle Speeds</td><td>No speed surveys were completed as part of the study work. Observations on site indicate that traffic travels at the posted speed limit, with a fixed speed camera located on the New England Highway at the eastern entry to the town.</td></tr>
<tr><td>2.3.5 Existing Site Flows</td><td>The subject site comprises three adjoining rural lots which each contain a single freestanding dwelling. Traffic demands generated by these lots would be negligible being around 22 trips per day.</td></tr>
<tr><td>2.3.6 Heavy Vehicle Flows</td><td>The New England Highway is an approved B-Double route which sees a moderate demand for heavy vehicles using this road each day. From the surveys undertaken, heavy vehicles represent approximately 8% of traffic using the New England Highway in the morning peak and 4% of traffic in the afternoon.

Station Lane does not provide a through route for heavy vehicles and as such experiences a low volume of heavy vehicle demands. A number of school</td></tr>
</table>

Item	Comment
	buses access the northern end of Station Lane in the morning and afternoon associated with St Patricks Primary School and All Saints College.
2.3.7 Current Road Network Operation	Observations on site indicate that the local roads and intersections typically operate to an acceptable standard, although some delays and queuing are noted on Station Lane during the morning and afternoon peak periods associated with right turns onto the New England Highway. These queues are typically minimal, however are more extensive towards the end of the peak hour (8:40-8:55am) due to increased demands for parents dropping off their children at St Patrick's Primary School and the ELC and the low number of gaps available for drivers turning right onto the New England Highway. Queues typically clear within a short time after forming. All other roads and intersections operate well within their capacity with minimal delays and congestion noted. Performance standards for assessing the capacity of a road are described within The Guide to Traffic Generating Developments. For the New England Highway, which provides an arterial function with a single lane of travel in each direction, the mid-block capacity is indicated as 900 vph per direction. Given the low number of intersections in this location and minimal delays for through traffic on the New England Highway, increased mid-block capacities of 1,200-1,400 vph (per direction) can be achieved, corresponding with the upper limit of a Level of Service (LoS E). The traffic surveys above indicate peak direction flows on 750 vph eastbound on the New England Highway in the morning peak period, which corresponds with a LoS D and is therefore within the mid-block capacity of this road. The operation of the northern end of Station Lane is governed by the intersection of Station Lane and the New England Highway and the school demands generated by St Patricks Primary and the ELC during the school peaks. Outside the school peaks the traffic flows are much lower (127vph) which would also represent typical flows to the south which is well within the capacity of this road.
2.4 Traffic Safety and Accident History	A review of accident data provided by TfNSW shows that there have been a low number of accidents recorded in the locality of the site, with only two crashes recorded on the New England Highway over the 5 year period between July 2014 and June 2019. One of these accidents involved a rear end collision approaching the intersection of the New England Highway and Station Lane with the other accident involved a vehicle leaving a parking space to enter the New England Highway. Neither accident resulted in serious injury. Maitland City Council Lochinvar Urban Release Area plan indicates that this intersection shall not be upgraded due to its 'visually sensitive location within the heritage precinct of the existing village'. Based on this Station Lane has the potential to be restricted to left in and left out over the long term, subject to ongoing development within the Lochinvar Urban Release Area. The local roads and intersections in the vicinity of the site are generally well aligned and provide an acceptable level of traffic safety as reflected in the number of accidents recorded in this location. A site inspection of the

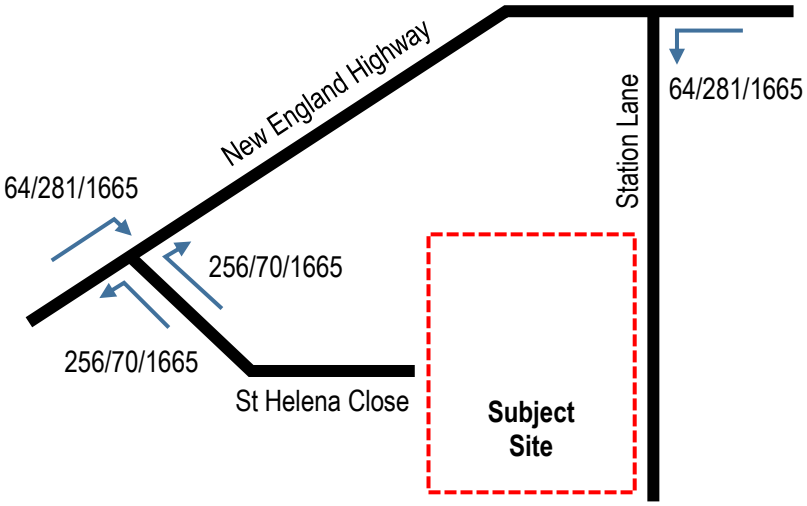
Item	Comment
	surrounding roads and intersections has not identified any significant safety concerns.
2.5 Parking Supply and Demand	
2.5.1 On-street Parking Provision	Opportunities for on-street parking are available along Station Lane with no parking restrictions noted. Proposed widening of Station Lane will see further opportunities for kerbside parking created.
2.5.2 Off-street Parking Provision	No formal off-street parking is provided in the locality.
2.5.3 Current Parking Demand and Utilisation	Minimal demands for on-street parking are noted in the immediate locality of the site with the surrounding residential lots providing for off-street parking.
2.5.4 Short term set down or pick up areas	There are no set down or pick up areas in the vicinity of the site.
2.6 Public Transport	
2.6.1 Rail Station Locations	Lochinvar Railway Station is located some 1.5km to the south of the site and accessible by Station Lane.
2.6.2 Bus Stops and Associated Facilities	The nearest bus stops are located on the New England Highway to the east of Station Lane, approximately 1 km from the site. Seating and shelter is provided.
2.6.3 Transport Services	Bus services operate along the New England Highway to the north of the site with services provided by Hunter Valley Buses including the following routes: • Route 179: North Rothbury to Stockland Green Hills • Route 180: Singleton Heights to Stockland Green Hills A number of school buses also operate throughout the locality associated with nearby schools at the northern end of Station Lane.
2.7 Pedestrian Network	No pedestrian footpaths or shared pathways are provided along Station Lane. Sealed pathways are provided to both sides of St Helena Close. Future improvements to pedestrian and cyclist facilities in the locality of the site are identified within the Lochinvar Urban Release Area Plan and are described in Section 2.2.2 above.
2.8 Other Developments	There is ongoing development planned within the Lochinvar Urban Release Area which comprises 650 hectares of land with an approximate yield of 5,000 lots.
The Development	
3.1.1 Nature of Development	The proposed development allows for the subdivision of three existing lots to create up to 900 new residential lots over several stages with associated road and infrastructure works. Details of staging have not been confirmed at this time, however it is proposed to develop a small number of initial lots off Station Lane with subsequent stages to be developed following construction of a new road access through to St Helena Close as identified within the Lochinvar Urban Release Area Plan and Lochinvar Section 94 Contributions Plan 2014. A concept plan for the masterplan development is provided in **Attachment A**.

Item	Comment
	The following assessment has been provided for the full masterplan development of up to 900 lots with advice regarding the timing of the new road access to St Helena Close.
3.1.2 Access and Circulation Requirements	The layout of the subdivision shall be consistent with the Lochinvar URA Area Plan as detailed in Part F9 of the Maitland Development Control Plan. The internal roads within the subdivision shall connect to surrounding development areas in a logical hierarchy of street function. The subdivision layout shall provide well connected and multiple route options for all modes of transport with the design of pedestrian, cycle and bus routes to take precedence over vehicle routes. Future bus routes shall be considered in the design of roads. Internal roads shall be designed and constructed in accordance with the Austroads Guidelines, Council standard drawings and specifications.
3.2 Access	Access for the subdivision is proposed via new road connections to both Station Lane (two connections) and St Helena Close, consistent with the Lochinvar URA Area Plan. These new road connections shall be designed as intersections in accordance with the Austroads Guidelines, Council standard drawings and design specifications. The Lochinvar URA Area Plan shows that traffic control signals are to be provided at the northern most intersection on Station Lane. This forms part of the future road links that will provide a connection from St Helena Close, south of the New England Highway to connect with Station Lane and then continue through to the connection at Wyndella Road. While traffic control signals would not be required over the short term at this location, on-going development in Lochinvar shall impact on the capacity for the right turns onto the New England Highway at Station Lane (and Robert Road). During the initial stages of the development of land in Lochinvar this intersection can operate as a priority sign-controlled intersection with the long term geometry of this intersection to be determined in consultation with Council.
3.2.1 Driveway Location	Driveway locations for the various lots within the subdivision shall be determined in conjunction with the future development of each lot. Driveways shall be located to suit the internal site layout and designed and constructed in accordance with Council requirements and Australian Standard AS2890 (Parking Facilities).
3.2.2 Sight Distances	Sight distance requirements for intersections are specified by the Austroads Guide to Road Design, which requires two criteria to be met: • **Safe Intersection Sight Distance** which is the minimum sight distance for the major road approaches; and • **Approach Sight Distance** which is the minimum sight distance for the minor road approaches. For the posted speed limit of 50 km/hr along Station Lane the Austroads Guide specifies a minimum safe intersection sight distance (SISD) of 97 metres. Station Lane provides a mostly straight and flat road alignment, which ensures that adequate sight distance can be achieved. This will be confirmed as part of the detailed design of these intersections.

Item	Comment
	The approach sight distance is subject to confirmation as part of the detailed design for the site. However, a review of the concept plans shows that the internal roads within the subdivision provide a relatively straight alignment approaching Station Lane which ensures that the approach sight distance requirements can be satisfied. Connection to St Helena Close will be subject to further design as roads to the west of the site are developed. Allowing for the current layout it is anticipated that sight lines can be achieved as part of this connection.
3.2.3 Service Vehicle Access	Future servicing of the subdivision shall include kerbside waste collection by Maitland City Council, with occasional demands for general deliveries. The internal roads within the subdivision shall be designed to cater for the swept paths of these vehicles up to a 12.5 metre heavy rigid truck in accordance with *AS2890.2:2018*. Internal roads shall be designed in accordance with Council's design requirements.
3.2.4 Queuing at entrance to site	Allowing for the various access points and the very low traffic volumes on Station Lane, no vehicle queues are expected at the proposed access points to Station Lane or to St Helena Close. The future planning for the area allows for access via 3 or 4 locations to the New England Highway and will ensure that traffic can disperse across a number of routes, reducing potential delays and queuing for vehicles accessing the surrounding road network. The intersection of St Helena Close and the New England Highway provides a seagull treatment offering adequate spare capacity to support the demands for vehicles exiting into the New England Highway. Whilst there may be some delays for vehicles turning left or right into or out of St Helena Close, these delays would be low and would have an acceptable impact upon through traffic travelling along the New England Highway. Intersection modelling for the intersection of St Helena Close and the New England Highway is detailed below as is the intersection of Station Lane and the New England Highway.
3.2.5 Comparison with existing site access	Existing unsealed access driveways shall be removed and new intersections constructed onto Station Lane as outlined on the site plan.
3.2.6 Access to Public Transport	The internal roads shall be designed to accommodate future bus routes as required by the Lochinvar Urban Release Area Plan. Provisions for new bus infrastructure has been allowed for within the Lochinvar Section 94 Contributions Plan 2014 with the location of these to be determined by Council in consultation with the relevant bus providers. Rail services are available from Lochinvar station to the south of the site with services to the east to Maitland and Newcastle and to the west to Singleton and Scone.
3.3 Circulation	

Item	Comment
3.3.1 Pattern of circulation	All vehicles will be able to enter and exit the site in a forward direction and travel along the internal roadways to access the residential lots. All new roads shall allow for two-way movements with access via Station Lane or St Helena Close. Dead-end roads have been avoided where possible and shall be designed as cul-de-sacs or with suitable turning areas to enable service vehicles to turn around as required.
3.3.2 Internal Road width	All internal roads will be designed in accordance with the requirements of the Lochinvar Structure Plan and Maitland Development Control Plan 2011.
3.3.3 Internal Bus Movements	No changes to bus routes are proposed in conjunction with this development. Any change to bus services shall be determined by Council in conjunction with the bus operators to meet travel demands, with the internal roads within the subdivision to be designed to accommodate buses as appropriate.
3.3.4 Service Area Layout	No dedicated service area is required for this type of development.
3.4 Parking	
3.4.1 Proposed Supply	The supply of parking will be within each individual lot and shall be confirmed in conjunction with the development of each lot. All parking will be contained within the site with no impact on the surrounding road network.
3.4.2 Authority Parking	Maitland Development Control Plan 2011 specified a minimum parking requirement of one space per dwelling house, with this space to be located behind the building line.
3.4.3 Parking Layout	Driveways and garages will be designed in accordance with Council DCP requirements and AS2890.
3.4.4 Parking Demand	Normal parking demands will be accommodated on site in accordance with Council DCP requirements.
3.4.5 Service Vehicle Parking	No dedicated service vehicle parking required on site. The occasional service vehicle will be able to park on the internal roads as required to service the individual dwellings within the site.
3.4.6 Pedestrian and Bicycle Facilities	Pedestrian and bicycle pathways shall be provided along the internal roads as outlined within the Lochinvar Urban Release Area Plan.
Traffic Assessment	
4.1 Traffic Generation	Standard trip rates for low density residential development are provided within the Guide to Traffic Generating Developments and associated Technical Direction (TDT 2013/04A): • Weekday Average Morning Peak Hour Trips: 0.71 per dwelling • Weekday Average Evening Peak Hour Trips: 0.78 per dwelling • Weekday Average Daily Trips: 7.4 per dwelling The lot yield for the proposed subdivision is expected to provide a maximum of 900 new residential dwellings, which equates to: • 639 trips in the morning peak hour • 702 trips in the afternoon peak hour • 6,660 trips per day

Item	Comment
4.1.1 Daily and Seasonal Factors	Limited daily and seasonal variation in traffic movements associated with the development, other than normal variation between weekdays (working days) and weekends.
4.1.2 Pedestrian Movements	The site is located within reasonable walking distance of St Patricks Primary School, All Saints College and Lochinvar Public School, which would see demands for pedestrians to and from the north of the site. There may also be some demands for pedestrians accessing bus stops on the New England Highway over the short term. Future bus services may be redirected through the subdivision. The Lochinvar Urban Release Area Plan nominates new pedestrian pathways to be provided along Station Lane and the internal roads within the subdivision which will provide improved pedestrian connectivity throughout the locality.
4.2 Hourly distribution of trips	Consistent with the typical demands for residential developments of this nature, it is assumed that 80% of trips are outbound in the morning with 20% inbound with the reverse distribution in the afternoon.
4.2.1 Origin / destinations assignment	The distribution of traffic onto the New England Highway is expected to be consistent with the existing distributions for commuter traffic into and out of Station Lane, which is relatively balanced to the east and west. The following distribution has therefore been adopted: • 50% of traffic has an origin / destination to or from the east • 50% of traffic has an origin / destination to or from the west It is proposed that a small number of lots are initially developed with access to Station Lane only. During these initial stages, all vehicles shall therefore be required to access the New England Highway using either Station Lane or Robert Road. As further stages are released, the connection through to St Helena Close will provide an alternate access route to the New England Highway, providing relief for the critical intersection of the New England Highway and Station Lane. Due to the delays for vehicles turning right onto the New England Highway from Station Lane, it is expected that drivers may alter their route and use St Helena Close when accessing the New England Highway to travel east. Currently, both the intersection of the England Highway with Station Lane and Robert Road can experience significant delays for these right turn movements in the peak periods, with these generally associated with the peak demands associated with the nearby schools. The following distribution has therefore been adopted when assigning traffic to the New England Highway: • All traffic with an origin to the west would turn right into St Helena Close from the New England Highway. • All traffic with an origin to the east would turn left into Station Lane from the New England Highway. • All traffic with a destination to the west would turn left onto the New England Highway from St Helena Close.

Item	Comment
	• All traffic with a destination to the east would turn right onto the New England Highway from St Helena Close. Whilst some vehicles will continue to use Station Lane to access the New England Highway, the above distribution will ensure a robust assessment of the potential traffic impacts to the St Helena Close / New England Highway intersection. Over the longer term, the provision of a through road connection to the traffic signals at the intersection of the New England Highway and Wyndella Road will provide additional capacity to cater for these right turn demands, with Station Lane expected to be restricted to left in left out only at this time. The distribution of trips onto the local road network is summarised below.  *Trip Distribution (AM / PM / Daily)*
4.3 Impact on Road Safety	The intersection of the New England Highway / Station Lane does not currently provide a channelised right turn lane or auxiliary left lane for vehicles turning left or right into Station Lane. With the increased demands for vehicles turning into Station Lane, more vehicles will be required to slow down or stop within the through traffic lanes on the New England Highway. Whilst this could increase the risk of rear end collision in this location, Council have indicated that this intersection cannot be upgraded to improve its capacity or road safety. It is noted that the road pavement in this location allows for a left turn lane into Cantwell Road which, based on observations on site, allows through traffic to pass a vehicle propped waiting to turn right into Station Lane. The Lochinvar Urban Release Area Plan nominates new connections to the New England Highway via St Helena Close and to the south of Wyndella Road which shall offer improved access to the Lochinvar URA and ensure that an acceptable level of traffic safety can be maintained for vehicles accessing the New England Highway. Station Lane is to be restricted to left in and left out only over the long term, minimising the risks of accidents in this location.

Item	Comment
	There have been a low number of crashes recorded in the immediate locality of the site, with no significant road safety concerns identified. The proposed subdivision will provide a new road connection to St Helena Close. Given the delays associated with the right turns out of Station Lane, the majority of the future demands are expected to use St Helena Close when accessing the New England Highway which offers a suitable intersection layout to safely accommodate these movements.
4.4 Impact of Generated Traffic	
4.4.1 Impact on Daily Traffic Flows	The overall impact upon daily traffic flows within the local road network would be reasonable and within the capacity of the local roads. The proposed subdivision could generate in the order of 6,660 vpd, which could see daily flows on the New England Highway increase by up to 3,330 vpd (east and west of Station Lane). Flows on Station Lane could increase by up to 1,665 vpd. Whilst there are no limits on daily traffic flows, the Guide to Traffic Generating Developments provides performance standards for assessing the mid-block capacity of a road based on the peak hour traffic demands. The proposed development could increase eastbound traffic flows on the New England Highway (east of Station Lane) by up to 256 vph. This would see peak hour flows eastbound on the New England Highway of 1,006 vph, which corresponds with a LoS E and is within the theoretical capacity of this road. Peak hour flows on Station Lane could increase by up to 281 vph southbound in the afternoon peak to 348 vph, which is well within the capacity of this road (900 vph) and shall therefore have a negligible impact upon its overall operation.
4.4.2 Peak Hour Impacts on Intersections	The key intersections that could be impacted upon by the development are the intersection of the New England Highway / St Helena Close and the intersection of the New England Highway / Station Lane. The intersection of the New England Highway / Station Lane currently experiences delays and congestion during the morning and afternoon peak associated with the demands for right turning traffic out of Station Lane and minimal suitable gaps on the New England Highway. Maitland City Council have indicated that this intersection will not be upgraded to improve the capacity for this critical right turn, and so it is expected that traffic wishing to turn right onto the New England Highway will instead use St Helena Close to access the New England Highway, avoiding delays and queuing on Station Lane. Intersection modelling has therefore been completed to assess the impacts of the full subdivision on the intersection of the New England Highway and St Helena Close with the results of this assessment summarised below. Modelling has also been completed to assess the available capacity at the intersection of New England Highway and Station Lane to support the construction of a number of dwellings prior to the balance of the subdivision being connected to St Helena Close.

Item	Comment
4.4.3 Impact of Construction Traffic	All construction work associated with the proposed subdivision will be located on site with minimal impacts to the surrounding road network. There may be some external disruptions to Station Lane associated with the connection of services and construction of the new access points, however these would be short term works and subject to the preparation of a construction traffic management plan which outlines the necessary traffic control to complete these works. This shall be prepared by the contractors at the commencement of work on site to the satisfaction of Council. The construction traffic will be significantly less than that associated with the proposed subdivision, and shall therefore have an acceptable impact upon the external road network. No significant earthworks involving the importation or removal of fill is anticipated for the site.
4.4.4 Other Developments	There is ongoing residential development within the Lochinvar Urban Release Area. All necessary road and intersection upgrades to support this development have been documented within Lochinvar Structure Plan and Lochinvar S94 Contributions Plan 2014.
4.5 Public Transport	
4.5.1 Options for improving services	No proposal to improve services in conjunction with this development.
4.5.2 Pedestrian Access to Bus Stops	The provision of new pedestrian and cyclist facilities as outlined by the Lochinvar Urban Release Area Plan will see improved pedestrian connectivity throughout the locality with improved access to bus stops on the New England Highway. Internal roads within the subdivision shall be designed to accommodate future bus routes as appropriate.
4.6 Recommended Works	
4.6.1 Improvements to Access and Circulation	Ensure access and internal roads / driveways are designed and constructed in accordance with Council requirements.
4.6.2 Improvements to External Road Network	None required other than those outlined within the Lochinvar Urban Release Area Plan and Lochinvar Section 94 Contributions Plan 2014.
4.6.3 Improvements to Pedestrian Facilities	None required other than those outlined within the Lochinvar Urban Release Area Plan and Lochinvar Section 94 Contributions Plan 2014.
4.6.4 Effect of Recommended Works on Adjacent Developments	Nil.
4.6.5 Effect of Recommended Works on Public Transport Services	Nil.
4.6.6 Provision of LATM Measures	Nil.
4.6.7 Funding	Works associated with the subdivision not listed within the Lochinvar Section 94 Contributions Plan 2014 shall be funded by the developer.

Sidra Intersection Modelling

New England Highway / St Helena Close

The intersection of the New England Highway / St Helena Close has been modelled using *Sidra Intersection 8* to assess its capacity to support the additional traffic generated by the proposed subdivision. There are several residential subdivision located off St Helena Close, with only a small number of lots having already been developed. As such, the demands for turning volumes into and out of St Helena Close has been taken as those determined for the approved 191 lot residential subdivision of Lot 100 and Lot 102, DP 1216128 (DA 2018/1538). The traffic impact assessment for this development was prepared by Intersect Traffic and included a background growth rate of 3% per annum.

Allowances have also been made in the baseline assessment for the proposed 69 lot residential subdivision of Lot 100, DP 1252311 (DA 2019/958). Through traffic volumes are based on those surveyed to the west of Station Lane.

The distribution of traffic through the intersection of the New England Highway / St Helena Close adopted for the baseline assessment is as summarised in Figure 2 below.

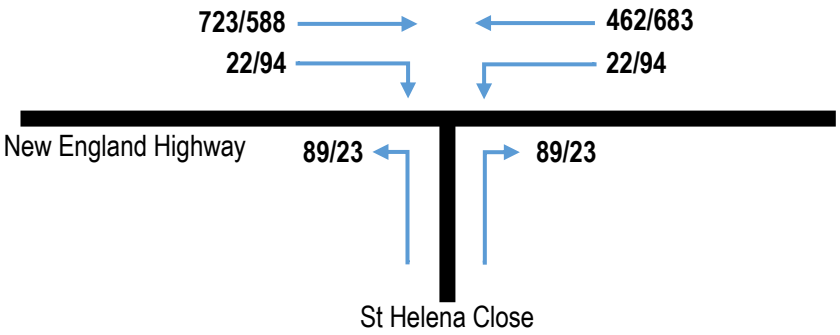


Figure 2 - Baseline traffic demands through the intersection of New England Highway / St Helena Close (AM/PM)

Results for this basement assessment are summarised in Table 1 below.

Table 1 – Sidra Results – New England Highway / St Helena Close – 2020 Baseline Assessment (AM/PM)

Approach	Movement	Level of Service	Ave. Delay (s)	95% Queue (m)
St Helena Close	Left Turn	A / A	9.5 / 10.9	2.6 / 0.8
	Right Turn [1]	B / B	24.5 / 25.4	9.5 / 2.6
New England Highway (Westbound)	Left Turn	A / A	5.5 / 5.5	0.0 / 0.0
New England Highway (Eastbound)	Right Turn	A / A	7.5 / 9.9	0.6 / 3.9

[1] Average delays and queuing are reported as the sum of delays and queues for both stages of this movement.

To assess the potential impacts of the proposed subdivision off Station Lane, further modelling was then undertaken allowing for the above baseline assessment together with the additional traffic outlined within Section 4.2.1 above. The results of this assessment are summarised in Table 2.

Table 2 – Sidra Results – New England Highway / St Helena Close – 2020 With Development (AM/PM)

Approach	Movement	Level of Service	Ave. Delay (s)	95% Queue (m)
St Helena Close	Left Turn	A / A	10.3 / 11.2	13.1 / 3.5
	Right Turn [1]	C / C	40.4 / 36.4	76.7 / 15.6
New England Highway (Westbound)	Left Turn	A / A	5.5 / 5.5	0.0 / 0.0
New England Highway (Eastbound)	Right Turn	A / A	7.6 / 13.4	2.5 / 25.9

[1] Average delays and queuing are reported as the sum of delays and queues for both stages of this movement.

The above results confirm that the proposed development shall have an acceptable impact upon the intersection of the New England Highway / St Helena Close. Whilst there may be some additional delays for vehicles turning right out of St Helena Close onto the New England Highway these additional delays are low and are well within the capacity of the existing intersection geometry. No intersection upgrades shall therefore be required over the short term to improve the capacity of this intersection.

Finally, modelling was also undertaken to confirm the capacity of this intersection for the 2030 (+10 year) future design horizon, allowing for 3% per annum growth on the New England Highway. The results of this assessment are summarised in Table 3.

Table 3 – Sidra Results – New England Highway / St Helena Close – 2030 With Development (AM/PM)

Approach	Movement	Level of Service	Ave. Delay (s)	95% Queue (m)
St Helena Close	Left Turn	A / A	12.2 / 14.0	17.3 / 4.8
	Right Turn [1]	F / E	335.0 / 63.5	476.4 / 25.3
New England Highway (Westbound)	Left Turn	A / A	5.5 / 5.5	0.0 / 0.0
New England Highway (Eastbound)	Right Turn	A / A	8.7 / 25.3	3.0 / 47.5

[1] Average delays and queuing are reported as the sum of delays and queues for both stages of this movement.

The above results indicate that by the 2030 future design year, the intersection of the New England Highway / St Helena Close will be operating above capacity based on its existing layout and controls, with significant delays and queuing associated with the critical right turn onto the New England Highway during the morning and afternoon peak periods. The necessary upgrades to provide traffic control signals in this location have been outlined within both the Lochinvar Urban Release Area Plan and Lochinvar Section 95 Contributions Plan and will need to be investigated at this time.

It is noted however that the above assessment has allowed for all right turn demands onto the New England Highway to occur via St Helena Close. Ongoing development within the locality will see the future road link to Wyndella Road completed, which will provide relief for the critical right turn out of St Helena Close. A 60% reduction in the right turn demands out of St Helena Close will see the existing intersection controls being adequate to support the demands up to the 2030 design year (Table 4), however there will still be some delays for drivers turning right at this intersection, particularly in the morning peak hour.

Table 4 – Sidra Results – New England Highway / St Helena Close – 2030 With Development - 40% right turns (AM peak only)

Approach	Movement	Level of Service	Ave. Delay (s)	95% Queue (m)
St Helena Close	Left Turn	A	12.2	17.3
	Right Turn [1]	E	56.6	48.8
New England Highway (Westbound)	Left Turn	A	5.5	0.0
New England Highway (Eastbound)	Right Turn	A	8.7	3.0

[1] Average delays and queuing are reported as the sum of delays and queues for both stages of this movement.

New England Highway / Station Lane

Sensitivity modelling has been completed to assess the available spare capacity at the intersection of the New England Highway / Station Lane and determine the number of lots which could be developed over the short term before connection has been established to St Helena Close (or Wyndella Road). In completing this modelling, consideration has been given to three separate design horizons (+0 years, +2 years and +3 years) with turning demands out of Station Lane increased proportionally until the level of service for the critical right turn movement exceeded a LoS D (being the capacity for a sign controlled intersection). Background growth has been adopted as 3% per annum, consistent with the above assessment (DA 2018/1538).

Assuming that all traffic developed as part of the initial stages of the subdivision accesses the New England Highway via Station Lane, the maximum number of dwellings that can be developed at each design horizon is as summarised below in Table 5. This demonstrates how sensitive the intersection is to changes in flows on the New England Highway during the absolute peak periods.

Table 5 – Sidra Results – New England Highway / Station Lane – Spare Capacity (AM peak only)

Design Year	Today (+0 years)	2022 (+2 Years)	2023 (+3 Years)
Additional Trips	90	39	13
Dwellings	126	55	18

Site Photos

Photo 1 – View looking west along the New England Highway from St Helena Close

Photo 2 - View looking east along the New England Highway from St Helena Close

Conclusion

From the above assessment and the review of the proposal and associated plans against the requirements of the Guide to Traffic Generating Developments and Austroads Guide to Traffic Management, it is considered that the proposed development should be approved on traffic and access grounds. The subject land forms part of the Lochinvar Urban Release Area and as such has been included in the s94 Contribution Plan and the Structure Plan for the area.

The additional traffic movements generated by the new residential development will have an acceptable impact upon the surrounding road network. The road upgrades identified within the Lochinvar URA will support the development of the site and the surrounding land with funding for these outlined within the Lochinvar Section 94 Contributions Plan. The assessment above shows that 55 lots could be developed prior to the major upgrades identified in the Lochinvar URA being provided. The provision of the link to St Helena Close will reduce the issues identified at Station Lane and the New England Highway and allow for ongoing development beyond 55 lots.

Suitable access can be provided to the proposed subdivision off Station Lane and St Helena Close, with these intersections to be designed in accordance with the Austroads Guidelines and Council requirements. Adequate sight lines can be achieved at each access in accordance with the Austroads Guide to Road Design.

The proposal can meet the requirements of the Development Control Plan in relation to traffic, parking and access as well as the overall planning for the subject site.

Please feel free to contact our office on 4032 7979, should you have any queries.

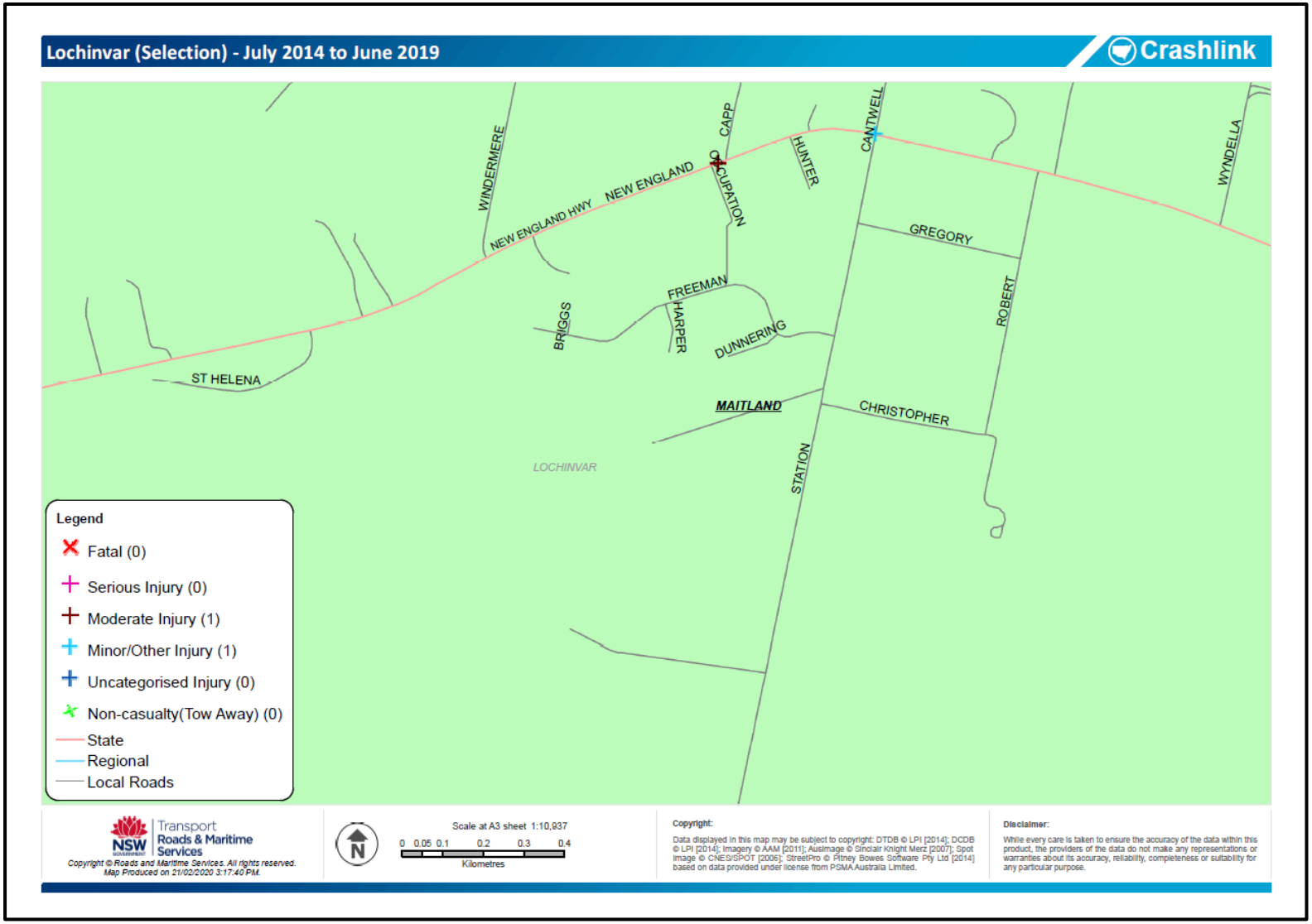
Yours sincerely,

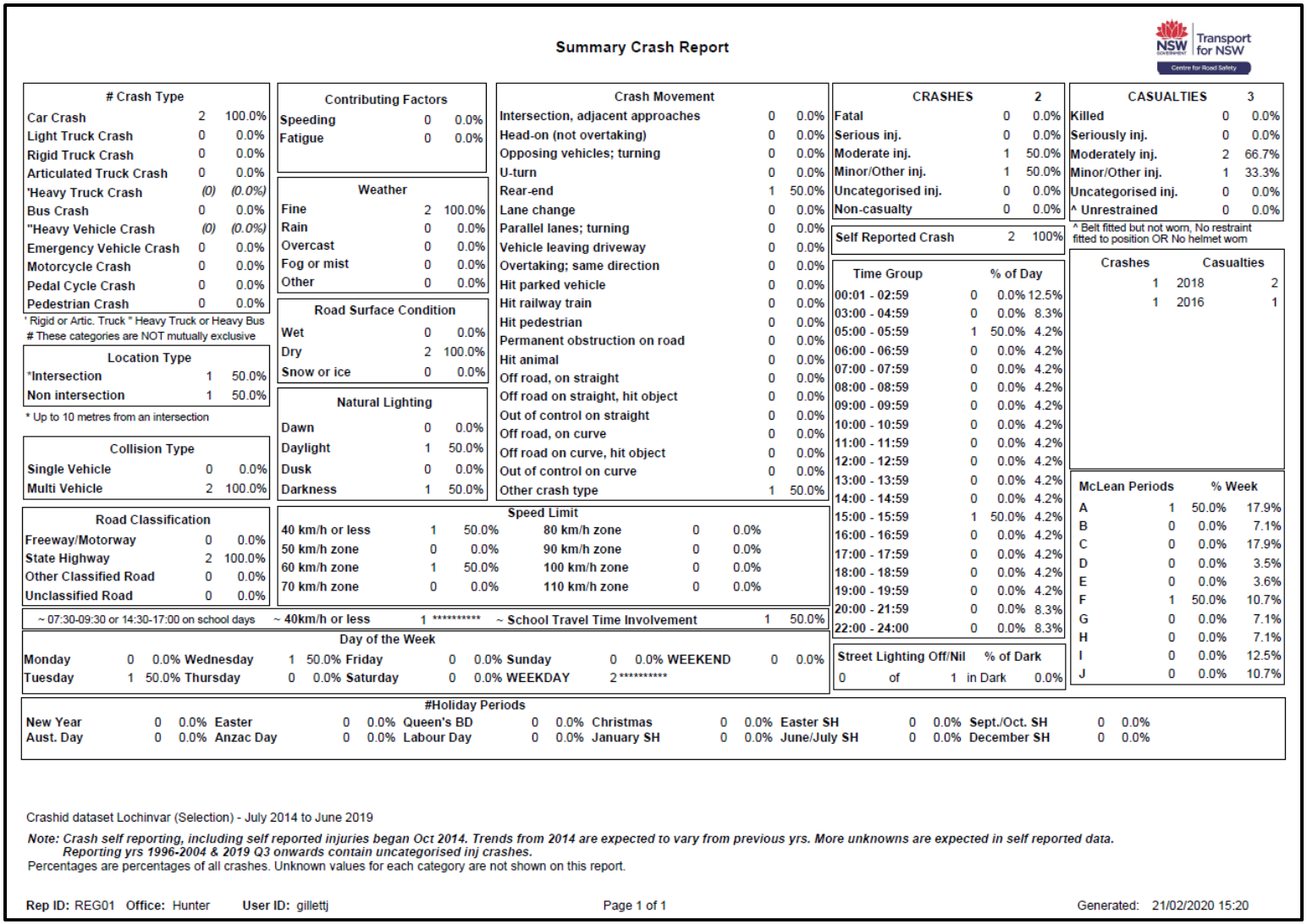
Sean Morgan
Director

Attached:
A – Site Plan
B – Accident Data
C – Survey Data
D - Criteria for Interpreting Sidra Results
E - Extract from Lochinvar Urban Release Area Plan

Attachment A Site Plan

Attachment B RMS Accident Data





Summary Crash Report

Transport for NSW — Centre for Road Safety

# Crash Type		
Car Crash	2	100.0%
Light Truck Crash	0	0.0%
Rigid Truck Crash	0	0.0%
Articulated Truck Crash	0	0.0%
'Heavy Truck Crash	(0)	(0.0%)
Bus Crash	0	0.0%
"Heavy Vehicle Crash	(0)	(0.0%)
Emergency Vehicle Crash	0	0.0%
Motorcycle Crash	0	0.0%
Pedal Cycle Crash	0	0.0%
Pedestrian Crash	0	0.0%

' Rigid or Artic. Truck " Heavy Truck or Heavy Bus
These categories are NOT mutually exclusive

Location Type		
*Intersection	1	50.0%
Non intersection	1	50.0%

* Up to 10 metres from an intersection

Collision Type		
Single Vehicle	0	0.0%
Multi Vehicle	2	100.0%

Road Classification		
Freeway/Motorway	0	0.0%
State Highway	2	100.0%
Other Classified Road	0	0.0%
Unclassified Road	0	0.0%

Contributing Factors		
Speeding	0	0.0%
Fatigue	0	0.0%

Weather		
Fine	2	100.0%
Rain	0	0.0%
Overcast	0	0.0%
Fog or mist	0	0.0%
Other	0	0.0%

Road Surface Condition		
Wet	0	0.0%
Dry	2	100.0%
Snow or ice	0	0.0%

Natural Lighting		
Dawn	0	0.0%
Daylight	1	50.0%
Dusk	0	0.0%
Darkness	1	50.0%

Crash Movement		
Intersection, adjacent approaches	0	0.0%
Head-on (not overtaking)	0	0.0%
Opposing vehicles; turning	0	0.0%
U-turn	0	0.0%
Rear-end	1	50.0%
Lane change	0	0.0%
Parallel lanes; turning	0	0.0%
Vehicle leaving driveway	0	0.0%
Overtaking; same direction	0	0.0%
Hit parked vehicle	0	0.0%
Hit railway train	0	0.0%
Hit pedestrian	0	0.0%
Permanent obstruction on road	0	0.0%
Hit animal	0	0.0%
Off road, on straight	0	0.0%
Off road on straight, hit object	0	0.0%
Out of control on straight	0	0.0%
Off road, on curve	0	0.0%
Off road on curve, hit object	0	0.0%
Out of control on curve	0	0.0%
Other crash type	1	50.0%

Speed Limit				
40 km/h or less	1	50.0%	80 km/h zone	0 0.0%
50 km/h zone	0	0.0%	90 km/h zone	0 0.0%
60 km/h zone	1	50.0%	100 km/h zone	0 0.0%
70 km/h zone	0	0.0%	110 km/h zone	0 0.0%

~ 07:30-09:30 or 14:30-17:00 on school days ~ 40km/h or less 1 ********** ~ School Travel Time Involvement 1 50.0%

Day of the Week								
Monday	0	0.0%	Wednesday	1	50.0%	Friday	0	0.0%
Tuesday	1	50.0%	Thursday	0	0.0%	Saturday	0	0.0%
Sunday	0	0.0%	WEEKEND	0	0.0%			
WEEKDAY	2	**********						

CRASHES	2	
Fatal	0	0.0%
Serious inj.	0	0.0%
Moderate inj.	1	50.0%
Minor/Other inj.	1	50.0%
Uncategorised inj.	0	0.0%
Non-casualty	0	0.0%

Self Reported Crash	2	100%

Time Group		% of Day	
00:01 - 02:59	0	0.0%	12.5%
03:00 - 04:59	0	0.0%	8.3%
05:00 - 05:59	1	50.0%	4.2%
06:00 - 06:59	0	0.0%	4.2%
07:00 - 07:59	0	0.0%	4.2%
08:00 - 08:59	0	0.0%	4.2%
09:00 - 09:59	0	0.0%	4.2%
10:00 - 10:59	0	0.0%	4.2%
11:00 - 11:59	0	0.0%	4.2%
12:00 - 12:59	0	0.0%	4.2%
13:00 - 13:59	0	0.0%	4.2%
14:00 - 14:59	0	0.0%	4.2%
15:00 - 15:59	1	50.0%	4.2%
16:00 - 16:59	0	0.0%	4.2%
17:00 - 17:59	0	0.0%	4.2%
18:00 - 18:59	0	0.0%	4.2%
19:00 - 19:59	0	0.0%	4.2%
20:00 - 21:59	0	0.0%	8.3%
22:00 - 24:00	0	0.0%	8.3%

Street Lighting Off/Nil		% of Dark
0 of	1 in Dark	0.0%

CASUALTIES	3	
Killed	0	0.0%
Seriously inj.	0	0.0%
Moderately inj.	2	66.7%
Minor/Other inj.	1	33.3%
Uncategorised inj.	0	0.0%
^ Unrestrained	0	0.0%

^ Belt fitted but not worn, No restraint fitted to position OR No helmet worn

Crashes		Casualties
1	2018	2
1	2016	1

McLean Periods		% Week	
A	1	50.0%	17.9%
B	0	0.0%	7.1%
C	0	0.0%	17.9%
D	0	0.0%	3.5%
E	0	0.0%	3.6%
F	1	50.0%	10.7%
G	0	0.0%	7.1%
H	0	0.0%	7.1%
I	0	0.0%	12.5%
J	0	0.0%	10.7%

#Holiday Periods

New Year	0	0.0%	Easter	0	0.0%	Queen's BD	0	0.0%	Christmas	0	0.0%	Easter SH	0	0.0%	Sept./Oct. SH	0	0.0%
Aust. Day	0	0.0%	Anzac Day	0	0.0%	Labour Day	0	0.0%	January SH	0	0.0%	June/July SH	0	0.0%	December SH	0	0.0%

Crashid dataset Lochinvar (Selection) - July 2014 to June 2019

Note: Crash self reporting, including self reported injuries began Oct 2014. Trends from 2014 are expected to vary from previous yrs. More unknowns are expected in self reported data. Reporting yrs 1996-2004 & 2019 Q3 onwards contain uncategorised inj crashes.

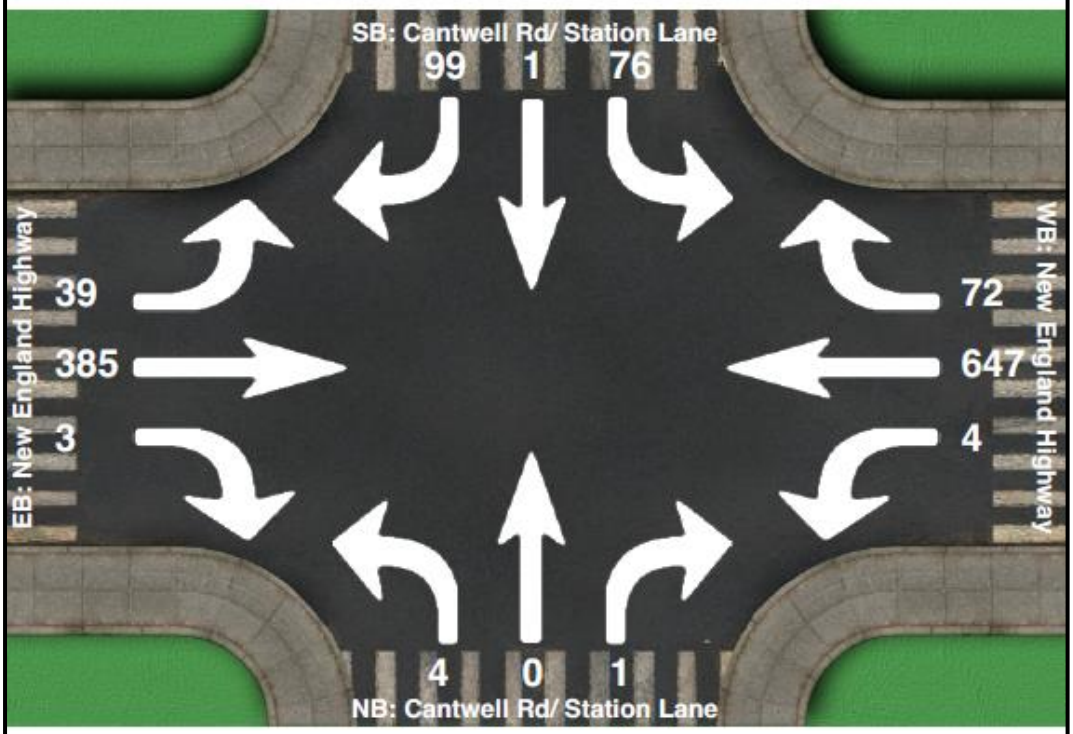
Percentages are percentages of all crashes. Unknown values for each category are not shown on this report.

Rep ID: REG01 Office: Hunter User ID: gillettj Page 1 of 1 Generated: 21/02/2020 15:20

Attachment C Survey Data

Intersection Peak Hour

Location: Cantwell Rd/ Station Lane at New England Highway,
GPS Coordinates:
Date: 2020-02-27
Day of week: Thursday
Weather:
Analyst: Im



Intersection Peak Hour

08:00 - 09:00

Note: Northbound / Southbound and Eastbound / Westbound are reversed.

Turn Count Summary

Location: Cantwell Rd/ Station Lane at New England Highway,
GPS Coordinates:
Date: 2020-02-27
Day of week: Thursday
Weather:
Analyst: lm

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30	6	0	5	1	143	6	1	0	1	5	117	0	285
07:45	5	0	5	1	165	9	1	0	2	7	104	0	299
08:00	7	0	13	1	148	8	1	0	1	12	91	0	282
08:15	18	0	27	1	161	27	1	0	0	8	80	3	326
08:30	23	1	31	1	162	28	1	0	0	11	96	0	354
08:45	28	0	28	1	176	9	1	0	0	8	118	0	369
09:00	10	0	10	2	157	6	0	0	1	7	81	0	274
09:15	3	0	5	0	131	4	1	0	1	5	82	1	233
09:30	0	0	0	0	0	0	0	0	0	0	2	0	2

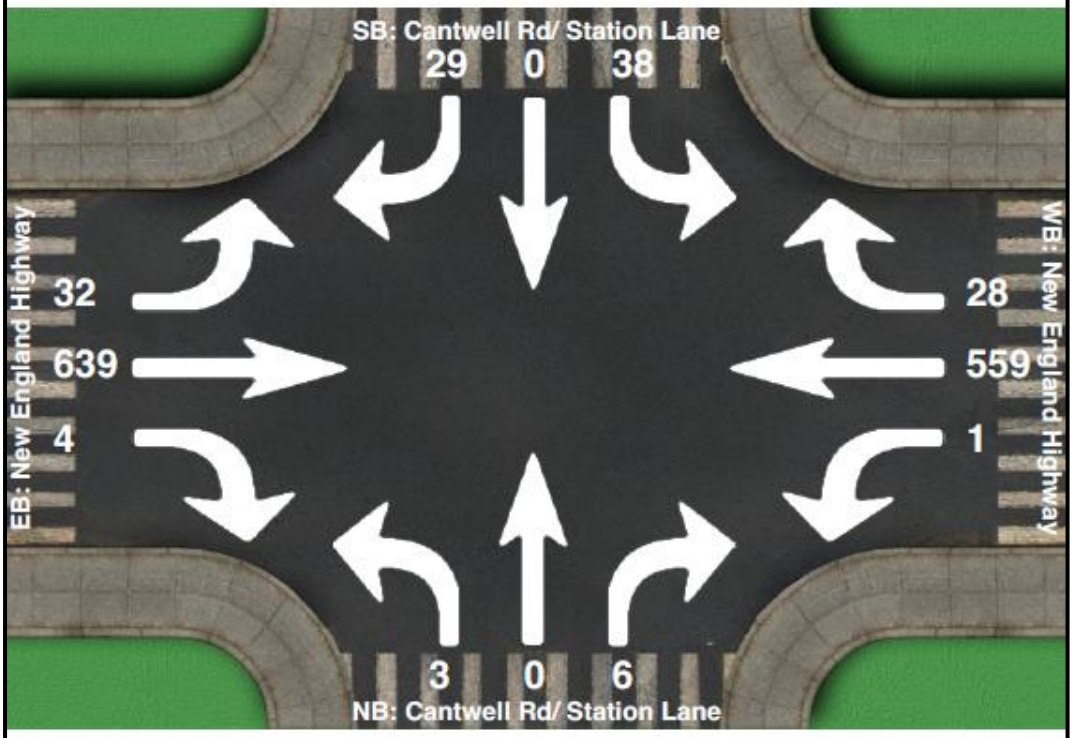
Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30	6	0	5	1	142	6	1	0	1	5	109	0	276
07:45	5	0	5	1	148	9	1	0	2	7	98	0	276
08:00	6	0	12	1	135	8	1	0	1	11	79	0	254
08:15	17	0	24	1	150	27	1	0	0	7	76	3	306
08:30	20	1	29	1	149	28	1	0	0	9	88	0	326
08:45	26	0	27	1	166	9	1	0	0	8	105	0	343
09:00	9	0	10	2	151	6	0	0	1	6	72	0	257
09:15	3	0	5	0	128	4	1	0	1	5	68	1	216
09:30	0	0	0	0	0	0	0	0	0	0	2	0	2

Note: Northbound / Southbound and Eastbound / Westbound are reversed.

Intersection Peak Hour

Location: Cantwell Rd/ Station Lane at New England Highway,
GPS Coordinates: Lat=-32.942493, Lon=151.702035
Date: 2020-02-28
Day of week: Friday
Weather:
Analyst: Im



Intersection Peak Hour

16:15 - 17:15

Note: Northbound / Southbound and Eastbound / Westbound are reversed.

Turn Count Summary

Location: Cantwell Rd/ Station Lane at New England Highway,
GPS Coordinates:
Date: 2020-02-27
Day of week: Thursday
Weather:
Analyst: lm

Total vehicle traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30	6	0	5	1	143	6	1	0	1	5	117	0	285
07:45	5	0	5	1	165	9	1	0	2	7	104	0	299
08:00	7	0	13	1	148	8	1	0	1	12	91	0	282
08:15	18	0	27	1	161	27	1	0	0	8	80	3	326
08:30	23	1	31	1	162	28	1	0	0	11	96	0	354
08:45	28	0	28	1	176	9	1	0	0	8	118	0	369
09:00	10	0	10	2	157	6	0	0	1	7	81	0	274
09:15	3	0	5	0	131	4	1	0	1	5	82	1	233
09:30	0	0	0	0	0	0	0	0	0	0	2	0	2

Car traffic

Interval starts	SouthBound			Westbound			Northbound			Eastbound			Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30	6	0	5	1	142	6	1	0	1	5	109	0	276
07:45	5	0	5	1	148	9	1	0	2	7	98	0	276
08:00	6	0	12	1	135	8	1	0	1	11	79	0	254
08:15	17	0	24	1	150	27	1	0	0	7	76	3	306
08:30	20	1	29	1	149	28	1	0	0	9	88	0	326
08:45	26	0	27	1	166	9	1	0	0	8	105	0	343
09:00	9	0	10	2	151	6	0	0	1	6	72	0	257
09:15	3	0	5	0	128	4	1	0	1	5	68	1	216
09:30	0	0	0	0	0	0	0	0	0	0	2	0	2

Note: Northbound / Southbound and Eastbound / Westbound are reversed.

Attachment D Criteria for Interpreting Sidra Results

The capacity of an urban road is typically limited by the overall performance of the various intersections. The RMS Guide to Traffic Generating Developments specifies delays and queuing as the key performance measures for assessing the effectiveness of both signalised and unsignalised intersections. Degree of saturation is also recommended for assessing the performance of roundabouts and traffic signals.
A summary of the key criteria for assessing the operation of signalised and unsignalised intersections is provided below.

Average Delays

The level of service criteria for each intersection type is outlined below.

Level of Service	Average Delay per Vehicle (secs)	Traffic Signals, Roundabouts	Give Way & Stop Signs
A	d ≤ 14.5	Good operation.	Good operation.
B	14.5 ≤ d ≤ 28.5	Good with acceptable delays and spare capacity.	Acceptable delays and spare capacity.
C	28.5 ≤ d ≤ 42.5	Satisfactory.	Satisfactory, accident study required.
D	42.5 ≤ d ≤ 56.5	Operating near capacity.	Near capacity, accident study required.
E	56.5 ≤ d ≤ 70.5	At capacity; at signals, incidents will cause excessive delays. Roundabout requires other control mode.	At capacity, requires other control mode.
F	70.5 < d	Failure.	Failure.

Degree of Saturation

Degree of Saturation (DoS) is another measure for assessing the performance of an intersection. It is usually calculated based on as the highest ratio of traffic volumes on an approach to its theoretical capacity and is a measure of the utilisation of available green time at traffic signals.

For intersections controlled by traffic signals, both queues and delays increase rapidly as the DoS approaches 1.0, with overflow queuing starting to become a problem at around 0.8-0.85. A satisfactory level of operation is generally achieved when DoS is kept below 0.75

Attachment E Extract from Lochinvar URA Plan

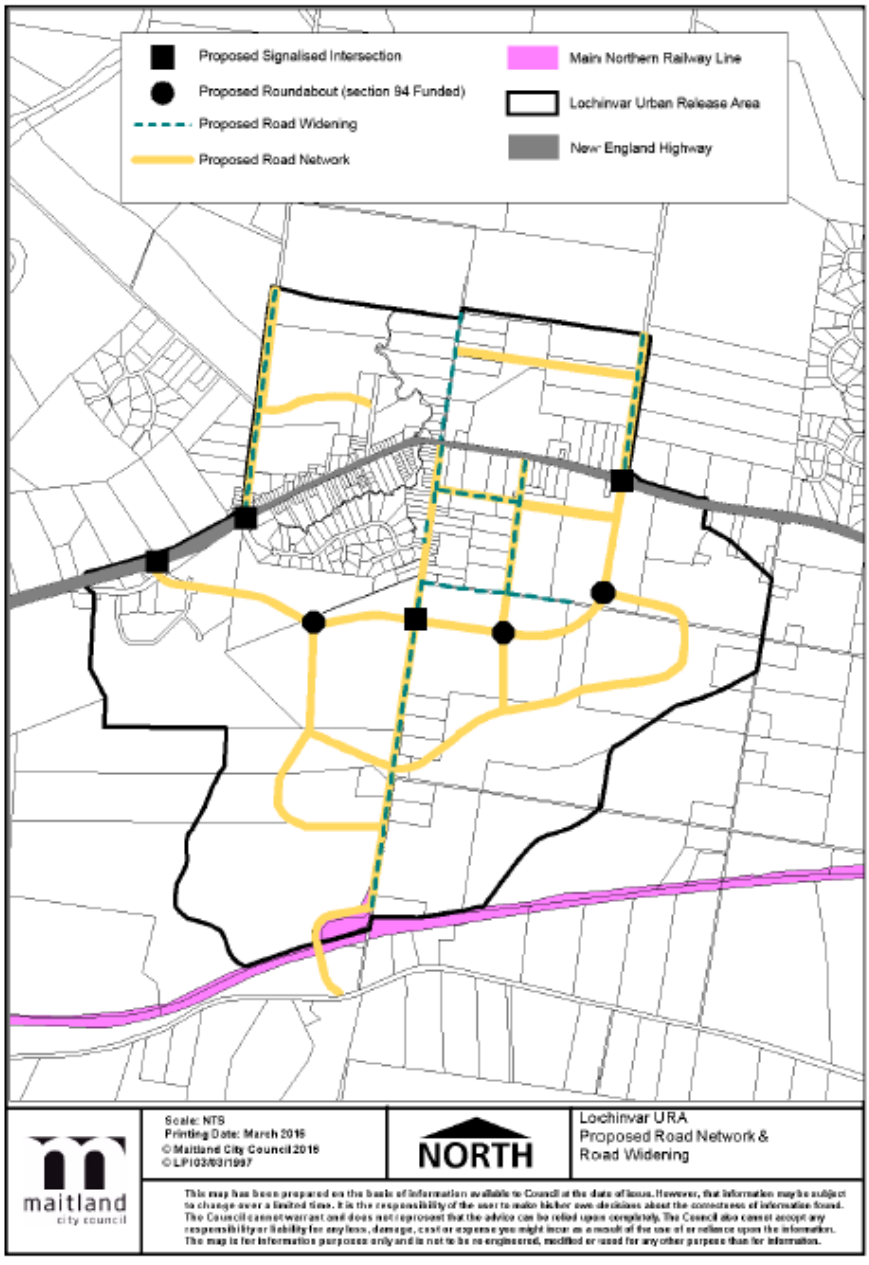


Figure 57: Lochinvar URA Proposed Road Network and Road Widening

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Newcastle NSW 2300
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23 June 2021

P1487 TBG Station Lane Lochinvar Response to Council RFI

The Bathla Group

Attn: Graeme Allen

Dear Matt,

Response to Council RFI (April 2021) – Residential subdivision for upto 900 lots

Further to your email we have reviewed the comments provided by Council with regards to the proposed residential subdivision located on Station Lane, Lochinvar and provide the following response.

Councils DCP and supporting traffic report by URaP and SIDRA analysis has nominated the intersection at Station Lane as Traffic Control Signals. This intersection is a central intersection and a key enabler for vehicular traffic, cyclists and pedestrians safely travelling across a 4 way intersection of 2 major roads and through the URA and using the central commercial precinct. There is nothing in other reports to suggest that traffic control signals are wildly inappropriate only comment on preference from RMS. Council should see a well prepared and fully developed traffic analysis before considering any change to this intersection type

Response – no detailed traffic assessment has been completed on this intersection to determine if the roundabout or traffic signals would be the preferred solution. The roundabout has been nominated based on the advice from TfNSW in their correspondence. When assessing the appropriate control, a wide range of issues that should be addressed taking into account all future users and demands. Using Safe System approach to the intersection should also be considered rather than just basing the control demands around traditional approaches.

Connecting to St Helena Close is Stage 1 is out of sequence, this connection and intersection upgrade to traffic control signals has been planned for the final major connection stage 3.1 in the URA (refer URaP Report figure 6.1 Infrastructure Plan). The URaP Reports Infrastructure plan, which was adopted by council, requires intersections along the Southern Ring Road from the east to be completed in an orderly sequence from intersections 1.1, 1.2, 1.3 and 1.4 to be completed prior to the commencement of development of the Bathla site and then connection south towards Lochinvar Train Station with 2.3, 2.4 and 2.5 all prior to the St Helena Close connection and upgrade. There has been no justification or funds modelling for council or the panel to consider these changes and by connecting out of sequence without arrangements in place will create undesirable impacts along the New England Highway for RMS and it substantially changes the rollout of the URA away from the DCP intersection staging, the URA's internal traffic circulation and the funds available for the orderly rollout. This adhoc approach will likely leave RMS with significant traffic issues on New England Highway and council with internal traffic problems on Station Lane as well as a significant funding liability. DA2019/958 will bring the total lot count off this upgraded seagull intersection at Terrine Drive to 190 lots. RMS responded (dated 11/11/2018) to a referral under DA2018/1538 which states, in part: the WAD process for the upgrade of the intersection with the New England Highway under DA16-651 to a seagull type intersection and that this intersection will be required to service a total of 190 lots (this DA + DA16-651) until such time as the southern ring road connection is constructed. The capacity of this intersection must be addressed in detail within the TIA

Response – a detailed assessment of the seagull controlled intersection of the New England Highway and St Helena Close can be completed to determine the capacity of this intersection prior to upgrade to traffic signals. Alternative funding mechanisms could be provided for these signals e.g. works in kind if the upgrade of this intersection to traffic signals is required to support this application. The change in sequence could benefit the road network by removing traffic at the intersection of Station Lane and New England Highway.

SECA traffic report assumes a 50/50 east west distribution. Assumptions regarding trip distribution should be agreed with Council and TfNSW. It is noted that the adopted URaP traffic report for the LSP has 80/20 east west distribution which has a significant affects on the local road network if the Southern Ring Rd to the east is not already operational when this development comes online. This modelling needs to be revisited

The 50 / 50 distribution is based on the current commuter traffic demands observed at Station Lane where it connects to the New England Highway, This is reflective of drivers habits heading west on the New England Highway, to then head south on Allendale Road / Lovedale Road to connect to the Hunter Expressway. The original assessment for the URaP did not allow for the full impact of the Hunter Expressway and the change in driver behaviour in this location.

SECA traffic report doesn't give an indication of how the internal staging affects the capacity of the St Helena Close intersection in terms of trigger points for upgrade to TCS (if it were to be approved out of sequence), its doesn't discuss Station Lane/NEH intersection being left in left out utilising a U-turn bay for eastern traffic

The traffic report shows that the current layout of the New England Highway and St Helena Close has capacity to cater for the full development, however as the background traffic increases on the New England Highway this will impact on the right turn out from St Helena Close. No detailed assessment has been completed for this timeframe; however it is considered that this upgrade to traffic signals would be required within 5 years under huis scenario.

However, it is noted that the traffic signals to the east have been constructed at Windella Road and once there is a connection to here, the right turn demand from St Helena Close will decrease significantly.

The use of the U-turn bay for traffic wishing to exit Station Lane to head east is not considered appropriate, as this facility will have very limited capacity. The development of the traffic signals at St Helena Close and Windella Road is considered to be the more appropriate traffic solution for traffic exiting here to head east.

SECA traffic report has used traffic generation for 55 lots which is highly inappropriate as stage 1 shows 201 lots and the master plan is 850 lots. This needs to be revisited.

Section 3.1.1 of the traffic assessment states that the assessment allowed for up to 900 residential lots to be developed. This exceeds the Masterplan for 850 lots and ensures that the assessment is robust.

SECA traffic report has no commented upon indicative bus routes, bus stops and pedestrian refuge locations for the masterplan

These can be detailed at the detailed design stage in consultation with Council and the local bus providers.

Yours sincerely,

Sean Morgan
Director