

28 April 2022

P001575 SH South Maitland Service Station TIA

Bunder Family Trust
C/- SLR Consulting Australia Pty Ltd
125 Bull Street
NEWCASTLE WEST NSW 2302

Attn: Kate Young

Dear Kate,

Traffic Impact Statement, proposed service station and fast-food outlet, 5-13 Louth Park Road, South Maitland

Further to your engagement we have now completed our site visit and review of the documentation provided for the proposed service station located on the corner of Louth Park Road and Les Darcy Road (New England Highway), South Maitland and provide the following traffic impact statement. This assessment has been prepared in conjunction with the Austroads Guidelines and Section 2.3 of the RTA Guide to Traffic Generating Developments which provides the structure for the reporting of key issues to be addressed when determining the impacts of traffic associated with a development. The RTA guide indicates that the use of this format and checklist ensures that the most significant matters are considered by the relevant road authority.

References to the RTA or RMS are interchangeable with Transport for New South Wales (TfNSW) as certain documentation remains unchanged.

1. Site Location and Context

- The proposed development is located at 5-13 Louth Park Road (Figure 1), to the immediate south of the intersection with the New England Highway (Les Darcy Drive).

Access to the subject site is proposed off the side road, with no direct access to the New England Highway.

The land that the subject site is located on is zoned RU1 Primary Production.

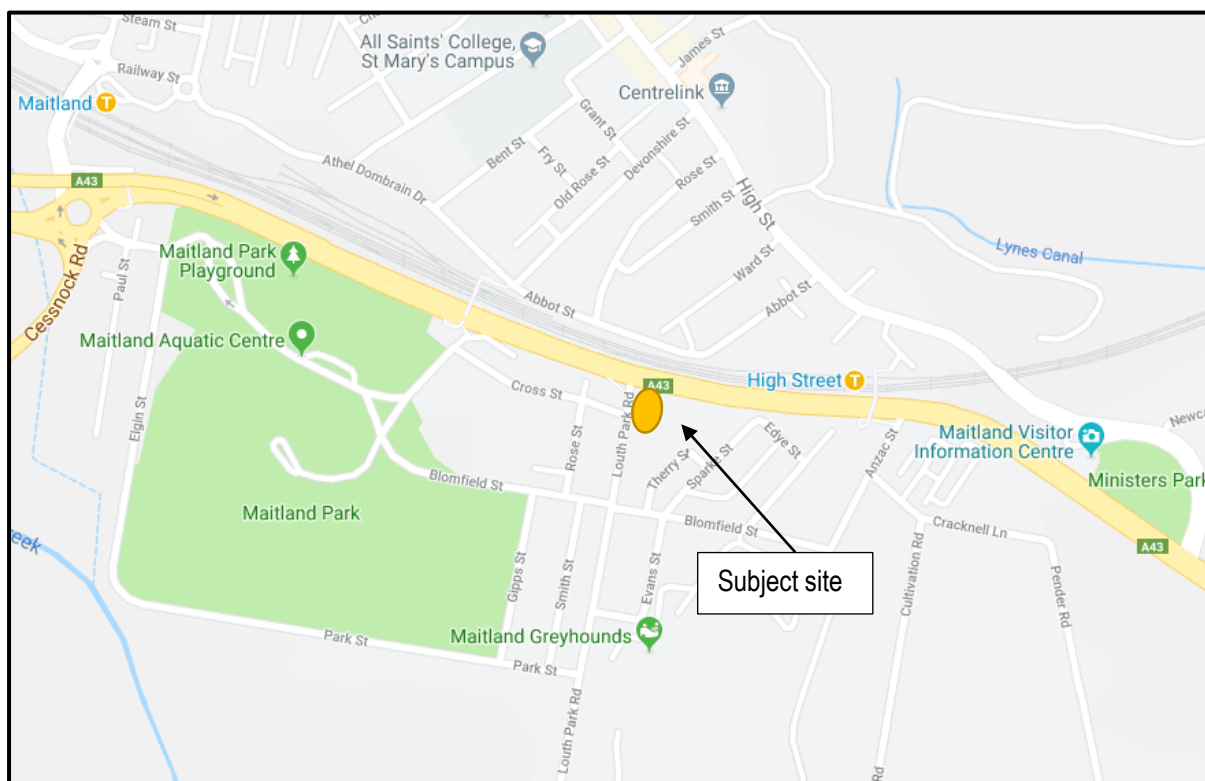
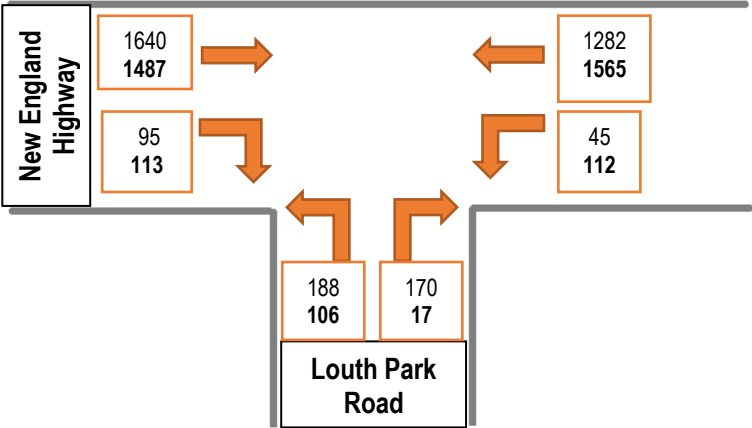


Figure 1 - Location of the subject site in the context of the local road network.

2. Traffic Impact Assessment:

Item	Comment
Existing Situation	
2.1.1 Site Location and Access	<p>The subject site is located on the corner of Louth Park Road and the New England Highway, as shown in Figure 1.</p> <p>Access to the subject site is currently available via the domestic driveways on Louth Park Road only with no vehicle access direct to the New England Highway.</p>
2.2.1 Road Hierarchy	<p>The main road through the locality is the New England Highway (Les Darcy Drive) which forms part of the state road network (MR09) providing a generally north-south connection between Newcastle and the Lower Hunter Valley to the south east and Queensland to the north. In the locality of the site it provides two lanes of travel in both directions, with a raised central median. It carries a mixture of both local and regional traffic movements including B-doubles. It operates under the posted speed limit of 80 km/hr. Street lighting is provided at intersections, including at the intersection with Louth Park Road.</p> <p>The New England Highway meets Louth Park Road at a priority controlled T-intersection, with the highway being the priority road. Channelised turn lanes are provided on the highway for both left and right turns into Louth Park Road.</p> <p>Louth Park Road is a local road which allows for one lane of travel in each direction, with a width varying between 11-13 metres allowing</p>

Item	Comment
	<p>kerbside parking along both sides of the road where permitted. It operates under the posted speed limit of 50km/hr, with street lighting provided.</p> <p>The surrounding roads are all local roads under the control of Maitland City Council. As the New England Highway is classified as a state road, and the proposed access is within 90 metres of this, the project will require review by TfNSW under Schedule 3 of the Infrastructure SEPP.</p>
<p>2.2.2 <i>Current and Proposed Roadworks, Traffic Management Works and Bikeways</i></p>	<p>TfNSW have undertaken upgrades along the New England Highway to the west of the site, at the intersections with Church Street and Cessnock Road with these identified to improve safety and traffic flow in these locations.</p> <p>There are no further roadworks or traffic management works currently proposed in the vicinity of the subject site.</p>
<p>2.3 Traffic Flows</p>	<p>Seca Solution undertook traffic surveys at the intersection of the New England Highway and Louth Park Road during the morning (7:30-9:30am) and afternoon (3:30-5.30pm) on Wednesday 30th March 2022. The peak hours were determined as 7:45-8:45am and 3:30-4:30pm with the traffic flows for these peak hours shown below (AM / PM).</p> 
<p>2.3.1 <i>Daily Traffic Flows</i></p>	<p>Peak hour flows typically represent 8-12% of daily flows. Given the high demands throughout the day on the highway, an allowance for 8% is appropriate. Taking an average of the AM and PM volumes the daily traffic flows on the New England Highway (west of Louth Park Road) would therefore be in the order of 40,500 vehicles per day (vpd).</p>
<p>2.3.2 <i>AADT</i></p>	<p>There is an TfNSW count station (id: 05140) located 50 metres south of Emerald Street, East Maitland approximately 1.9 kilometres east of the subject site. Daily flows in this location in 2018 were in the order of 41,400vpd on weekdays. 2019 data westbound was similar however 2020 data was substantially less (50%) due to the Covid pandemic.</p>
<p>2.3.3 <i>Daily Traffic Flow Distribution</i></p>	<p>Traffic flows recorded along the New England Highway adjacent to the site showed a bias in eastbound movements during the AM and a slight bias in flows westbound in the PM.</p> <p>Along Louth Park Road traffic demands are tidal with the highest flows northbound in the AM peak and southbound in the PM. Significant numbers of vehicles turning left into Louth Park Road in the PM then turned right into Cross Street with a minimal number travelling south past the subject site. It is uncertain whether these demands are generated by</p>

Item	Comment
	<p>the vast number of activities within the Maitland Showgrounds which include sports pitches, swimming centre and various childcare centres or whether motorists are using it as a shortcut to Cessnock Road to avoid delays at the Cessnock Road/New England Highway roundabout.</p> <p>Other turn movements off the highway related to the existing petrol station on the western corner of Louth Park Road and the New England Highway which has driveways off both Louth Park Road and Cross Street.</p>
2.3.4 Vehicle Speeds	No speed surveys were completed as part of the site work. The high traffic volumes in the peak periods typically see drivers travel at or below the posted speed limit due to the interaction with other vehicles.
2.3.5 Existing Site Flows	The site is currently occupied by four residential dwellings and generates minimal traffic demands.
2.3.6 Heavy Vehicle Flows	There are regional truck movements along the New England Highway as well as heavy vehicles associated with local services. The traffic data collected by Seca Solution shows that the heavy vehicle content is around 4.5% of the AM peak traffic flows, with lower demand in the PM of 2.6%. Heavy vehicles include B doubles use the New England Highway.
2.3.7 Current Road Network Operation	<p>Observations on site indicate that the local road network operates reasonably well through the day, but during peak periods the intersection of the New England Highway and Cessnock Road suffers from delays and congestion, which have been reviewed by TfNSW and road upgrades implemented. Delays for westbound traffic can encourage rat running through the showground along Cross Street.</p> <p>Observations show that the intersection of Louth Park Road and the New England Highway overall operates well although there can be significant delays for right turn movements. During absolute peak periods some motorists turning right onto the highway hold within the central median to allow for the turn to be undertaken in two stages, however the layout and space within the centre of the intersection does not really support this. Sidra modelling has been completed for the current situation, with the result provided below. These results show that the right turn movements suffer from unacceptable delays – however the observations on site show these delays are less. This is potentially reflective of some platooning of traffic movements westbound created by the traffic signals at High Street (850 metres downstream) but probably more reflective of drivers taking smaller gaps in the through traffic movements.</p>
2.4 Traffic Safety and Accident History	<p>Accident data for the intersection of the New England Highway and Louth Park Road has been reviewed (Centre for Road Safety) (Attachment B), with a total of 3 crashes recorded at this intersection in the five year period 2016-2020. Two related to right turns into Louth Park Road with one a vehicle turning right out. Two resulted in moderate injuries.</p> <p>Overall the intersection is well laid out with good visibility on intersection approaches. Given the high volume of traffic in this location and the relative low number of accidents recorded, it is considered that the road network provides an acceptable level of overall road safety.</p>
2.5 Parking Supply and Demand	

Item	Comment
2.5.1 On-street Parking Provision	<p>There is no parking available in the general locality of the site on the New England Highway. There is a shoulder that allows a vehicle to be parked in an emergency only and be clear of the through traffic movements.</p> <p>Louth Park Road allows for on-street parking, except on market or show days when there is no parking permitted. There is the usual restriction at intersections, driveways and bus zones.</p>
2.5.2 Off-street Parking Provision	No public off-street parking is provided in the locality of the site. The service station on the western side of Louth Park Road provides off-street parking for patrons and there are areas of at grade parking associated with the netball courts and other activities within the showground to the west of the site.
2.5.3 Current Parking Demand and Utilisation	During the site work there were minor demands observed for parking along the eastern side of Louth Park Road, with this likely to be generated by the dwellings on this side of the road. No demand was observed for on the opposite kerbside.
2.5.4 Short term set down or pick up areas	None
2.6 Modal Split	Given the location it is considered that the majority of trips shall be undertaken by private vehicle, however there is the opportunity for some local residents to walk to the convenience store or food outlet located within the service station.
2.7 Public Transport	
2.7.1 Rail Station Locations	High Street station is located approximately 300 metres to the east of the subject site, with a pedestrian overpass allowing for pedestrian access across the New England Highway.
2.7.2 Bus Stops and Associated Facilities	There is a bus stop located on the western side of Louth Park Road to the immediate south of the subject site.
2.7.3 Transport Services	Hunter Valley Buses operates Route 192 passing the subject site, with this providing a loop service from the Maitland town centre (Elgin Street and High Street) through the South Maitland area and back to Maitland. This service operates 4 times a day Monday – Friday, with 3 services provided on Saturdays.
2.8 Pedestrian Network	A shared path runs along the southern side of the New England Highway through the locality of the site, with this including connection to the two pedestrian overbridges to the north and south of the site.
2.9 Other Proposed Developments	There are no other significant developments currently proposed within the immediate vicinity of the subject site
The Development	
3.1.1 Nature of Development	<p>The proposed development allows for a service station with access via a new two-way driveway off Louth Park Road. The service station/convenience store has a floor area of 211m²</p> <p>The site also provides a fast food premises (200m² GFA) with associated Drive-Thru provision. On site parking is provided for 43 light vehicles and an air / water parking space.</p>
3.1.2 Access and Circulation Requirements	Access driveways are to be designed to allow all vehicles to enter or exit in a single turning movement and in a forward direction. The driveway crossings shall be designed and located in accordance with the current relevant Australian Standard (AS2890 Parking Facilities) and shall provide

Item	Comment
	<p>adequate sight distance to traffic on the frontage road as well as pedestrians.</p> <p>The required design vehicles for this site are light vehicles (with trailers / caravans), MRV and a semi-trailer for fuel deliveries.</p>
3.2 Access	
3.2.1 Driveway Location	<p>Access to the development is proposed via a two-way driveway off Louth Park Road only which shall allow for all turning movements.</p> <p>The driveway is to be located to the south of Cross Street in order to allow for the separation of movements at the site access and the intersection.</p> <p>The driveway allows for the swept path movement of the fuel tanker (semi-trailer). These movements will be infrequent and will occur outside of the peak use for the development. The tanker requires a large portion of the driveway to enter or exit, however a motorist exiting the site will be able to observe the truck entering (and vice versa) and adjust the approach to the driveway to allow for this movement if necessary.</p>
3.2.2 Sight Distances	<p>For the posted speed limit of 50 km/h the sight distance requirement for the driveway to allow for heavy vehicles per AS2890.2 is 69 metres. Louth Park Road offers a straight horizontal and vertical alignment in the locality of the site access. Visibility to the left exceeds 100 metres, whilst clear visibility to the New England Highway is available to the right with sight distances therefore in accordance with AS2890.2.</p>
3.2.3 Service Vehicle Access	<p>The service needs for the site will be a petrol tanker as well as general deliveries for the service station and food outlet.</p> <p>A fuel filler point is provided within the service station area and will be managed on site to ensure that tankers parked on site do not impact upon the general operations of the site. Typically, these deliveries occur outside of the busy demand period for the service station.</p>
3.2.4 Queuing at entrance to site	<p>Vehicles have free flow entering the site with no constraints at the site entry. For vehicles approaching from the New England Highway this movement is left in without delays nor the risk of a queue back to the highway.</p> <p>For vehicles turning right into the site, the peak demand for northbound traffic on Louth Park Road is in the morning when opposing traffic demands southbound are low. Motorists approaching the service station will be able to see towards the intersection and adjust their approach speed to coincide with a suitable gap in the approaching traffic. The forward visibility for vehicles travelling along Louth Park Road exceeds 120 metres enabling these motorists to anticipate a turning vehicle ahead and either adjust their speed to suit or to pass the vehicle, if necessary, on the kerb side.</p> <p>The layout of the site allows vehicles to be located wholly within the site and away from the entry points to ensure that no queues will occur back onto the roads.</p>
3.2.5 Comparison with existing site access	None, existing access is several domestic driveways.
3.2.6 Access to Public Transport	The site is not serviced by public transport.

Item	Comment
	There is a bus stop on Louth Park Road opposite the subject site and a railway station within 300 metres of the site.
3.3 Circulation	
3.3.1 Pattern of circulation	All vehicles will be able to enter and exit the site in a forward direction.
3.3.2 Internal Road Widths	<p>The internal layout of the site has been designed to accommodate the swept path requirements for the vehicles accessing the site and allow for separation of the entry and exit movements. The Drive-Thru provides a minimum width between kerbs of 3 metres with widening on the corners to allow for the swept path movement of light vehicles. A height restriction bar will be provided on this Drive-Thru to ensure that light vehicles only use this portion of the site.</p> <p>Line marking and signage will be provided internal to the site to direct drivers around the site. This will be completed as part of the detailed design for the project.</p>
3.3.3 Internal Bus Movements	No requirement for buses to access the development.
3.3.4 Service Area Layout	A service area is provided to the rear of side of the building, which shall allow for waste collection and deliveries.
3.4 Parking	
3.4.1 Proposed Supply	Parking for the service station and food outlet will be provided with a total 43 spaces, as well as 1 space for air and water and parking under the car canopy for drivers utilising the fuel bowsers.
3.4.2 Authority Parking	<p>The Council DCP nominates the following:</p> <p>Service Stations</p> <ul style="list-style-type: none"> • 1 space per 20m² GFA of convenience store <p>Drive In Take Away Food Outlets</p> <ul style="list-style-type: none"> • 1 space per 8m² GFA, <i>plus</i> • 1 space per 3 seats <p>An exclusive area for queuing of cars for a drive through facility is required (queue length of 5 to 12 cars measured from pick up point). There should also be a minimum of four car parking spaces for cars queued from the ordering point.</p>
3.4.3 Parking Layout	The layout of the carpark shall be in accordance with AS2890.
3.4.4 Parking Demand	<p>The fuel outlet provides 4 bowsers and space either side, giving 8 spaces in total.</p> <p>A single space is provided for the air / water outlet.</p> <p>The retail outlet provides an area of 211m² and requires 10.5 (11) spaces.</p> <p>The food outlet provides an area of 200m² and assumed to provide 30 seats. This gives a requirement for 30 spaces.</p> <p>Total parking demand is therefore 42.5 spaces. The on-site provision provides 43 spaces, plus 1 air / water spaces, plus 8 spaces by the bowsers giving 52 spaces in total. This is considered appropriate for the project site.</p> <p>A minimum of 7 vehicles can queue within the drive through prior to the pick up point, with additional area available on site through the service station ensuring queues can be contained within the site. This also allows the minimum space for 4 vehicles to queue prior to the ordering point.</p>
3.4.5 Service Vehicle Parking	Service vehicles can park adjacent to the building and the gates to the service area to the rear of the building. Space is provided for a single vehicle, which is appropriate for the site given the low demand for

Item	Comment
	servicing. This servicing will be managed on site to ensure service vehicles do not access the site at the same time.
3.4.6 <i>Pedestrian and Bicycle Facilities</i>	<p>No dedicated bicycle facilities are provided on site.</p> <p>A pedestrian path is provided along the frontage of the service station to provide connection to the existing path to the south of the New England Highway.</p> <p>An internal path is provided along the front of the service station and food outlet for direct access to the parking along the front of the buildings. These are the high turnover spaces and most frequently used. The remaining spaces are accessed with pedestrians walking across the site as part of the shared zone. This is consistent with other service stations.</p>
Traffic Assessment	
4.1 Traffic Generation	<p>The RMS Guide provides the following rates:</p> <p>Evening peak hour trip rate of 0.66 A(F) where A(F) is the gross floor area of the convenience store. The alternative approach uses the overall site area, but in this site it can be seen that the site area is large and allows for significant on-site parking associated with the take away food outlet.</p> <p>Using the area of the convenience store the peak hour rate is given at 140 vehicles per hour.</p> <p>For the food outlet, allowing for a KFC type outlet would give some 120 vehicles per hour. However, 50% of this as a minimum is considered to be passing trade during the peak periods. This use could generate demand for trips solely associated with the food outlet, however these would typically occur outside of the road network peaks when flows are lower (lunch / dinner). Similarly, given the site location it is considered that the majority of the traffic movements associated with the service station will also be passing trade, with much lower <i>additional</i> traffic movements as such.</p> <p>Using the above values, the peak rate could be in the order of 260 vehicle movements, equally split between 130 inbound and 130 outbound. This would occur in the PM peak with significantly lower flows in the AM peak given the food outlet generates lower traffic flows in this period.</p> <p>This value is considered to be an upper limit and actual flows would be much lower. The peak hourly flows on the New England Highway westbound are in the order of 1,565 vehicles per hour and the above value of 130 inbound movements equates to around 8.5% of traffic on the highway using this new site, with demand unlikely to be this high.</p> <p>The majority of these demands would be passing trips, not generating additional movements along the New England Highway, but seeing more turning movements in/out of Louth Park Road.</p>
4.1.1 <i>Daily and Seasonal Factors</i>	Minimal daily and seasonal variation in traffic movements associated with the development, other than normal variation between weekdays (working days) and weekends.
4.1.2 <i>Pedestrian Movements</i>	Minimal pedestrian movements are expected to and from the site, however there is the opportunity for local residents to walk to the convenience store or take way food outlet.

Item	Comment
	<p>There will be internal movements between the parking and the service station shop and food outlet. This will occur in a similar manner to other service stations with the site operating as a shared zone with low traffic speeds.</p>
<p>4.2 Hourly distribution of trips</p>	<p>The majority of traffic will access the site via the New England Highway and would be reflective of the hourly variation in traffic flows along this road.</p>
<p>4.2.1 Origin / destinations assignment</p>	<p>Traffic surveys of the existing service station on Louth Park Road were completed in order to determine the demands and origin/destination for this development. During the PM peak period a total of 44 inbound and 46 outbound movements were recorded across the three driveways. Of these, 29 inbound movements came from the highway (27 left in, 2 right in) and 14 outbound movements departed to the highway (12 left, 2 right). The remainder of vehicles arrived or departed the site along the local roads to the south.</p> <p>Based on the above, 61% of inbound movements and 30% of outbound movements utilised the intersection of the New England Highway and Louth Park Road. This provides an indicative origin/destination for the proposed service station. Applying this, the following split of development traffic (130 inbound / 130 outbound) will utilise the intersection of the New England Highway and Louth Park Road:</p> <ul style="list-style-type: none"> • 79 inbound / 39 outbound <p>The remainder shall disperse across the local road network to the south. During the peak periods, the vast majority of movements shall be left in from the highway and left out onto the highway, as per the recorded demand for the existing service station. Allowing for 95% to be left in and the same left out gives the below split of traffic in the PM peak, with these also being applied in the AM as a worst case scenario noting that demands for both site uses are typically lower in this period:</p> <div data-bbox="620 1335 1374 1765" data-label="Diagram"> <p>The diagram illustrates the traffic flow at the intersection of the New England Highway and Louth Park Road. On the New England Highway, 4 vehicles turn left and 75 vehicles turn right onto Louth Park Road. On Louth Park Road, 36 vehicles turn left and 2 vehicles turn right back onto the New England Highway.</p> </div> <p>The above represents the additional movements inbound and outbound at the intersection of the New England Highway and Louth Park Road, with the bulk of these being diverted trips. As a conservative assessment, no allowance has been made to discount the above from the through traffic flows along the New England Highway.</p>

Item	Comment
4.3 Impact on Road Safety	<p>The proposed access driveway is located on a straight and flat road that will ensure there is suitable visibility for drivers entering and exiting the site.</p> <p>The intersection of the New England Highway and Louth Park Road has a low accident history, with only 2 accidents recorded relating to the right turn movements into Louth Park Road and one for the right turn out. The road alignment is straight and provides good visibility for all road users.</p> <p>The bulk of the demands for the development shall be passing trade, already on the road network. Overall, it is considered that the project will have a minimal and acceptable impact upon road safety in this location.</p>
4.4 Impact of Generated Traffic	
4.4.1 Impact on Daily Traffic Flows	<p>It is considered that the vast majority of the traffic associated with the project will be passing trade along the New England Highway. Therefore, the impact on the overall daily traffic flows associated with <i>additional</i> traffic will be minimal.</p> <p>The food outlet may generate some additional traffic, however it is considered that this will be low, with the majority of these demands to be from the southern residential precinct via Louth Park Road or from surrounding sports grounds etc, thereby not increasing demands at the intersection with the New England Highway.</p>
4.4.2 Peak Hour Impacts on Intersections	<p>The traffic impacts during the peak periods created by any <i>additional</i> traffic is considered to be low. The potential traffic movements generated by the site have been assessed using Sidra modelling, with a summary of the results provided in Part 3 following this table.</p> <p>In summary, the assessment of the development flows as well as background growth to the 2032 design horizon determined the left turns in and out of Louth Park Road can continue to operate at the existing LoS A. These movements represent the vast majority of the demands associated with the proposal.</p> <p>There may be some demand for right turns in and out of Louth Park Road. The right turn in will see increased delays in 2032, with this associated primarily with the existing situation along with background growth. The modelling was unable to accurately determine the existing delays for the right turn out, however based on observations this movement is constrained with limited capacity due to the two-way high traffic volumes on the highway. As a result of this, there is currently low demand for this movement in the peak periods, with drivers able to utilise alternate routes. The development flows are not expected to see a significant increase in this turning movement and as such shall have a minimal impact.</p>
4.4.3 Impact of Construction Traffic	<p>A detailed construction traffic management plan will be prepared as part of the detailed design process to manage the impact of heavy vehicles accessing the site during construction. All construction traffic will access the site off Louth Park Road only.</p> <p>Given the overall size of the site it is considered that the parking for the construction workers can be accommodated on site with minimal impact upon the local roads.</p>

Item	Comment
4.4.4 Other Developments	There are no other significant developments in the immediate vicinity of the site.
4.5 Public Transport	
4.5.1 Options for improving services	The site will not generate significant demand for public transport therefore no improvements are required.
4.5.2 Pedestrian Access to Bus Stops	None required
4.6 Recommended Works	
4.6.1 Improvements to Access and Circulation	The proposed site layout allows for ease of circulation around the site and no alterations are required to improve the access.
4.6.2 Improvements to External Road Network	No changes required as a result of this development.
4.6.3 Improvements to Pedestrian Facilities	None required.
4.6.4 Effect of Recommended Works on Adjacent Developments	No works proposed that will impact on adjacent developments.
4.6.5 Effect of Recommended Works on Public Transport Services	None
4.6.6 Provision of LATM Measures	None Required
4.6.7 Funding	All works on site shall be funded by the developer.

Site Photos



Photo 1 – Intersection of New England Highway and Louth Park Road



Photo 2 – Cross-section of Louth Park Road to the north showing straight and flat alignment (subject site to the right)



Photo 3 – Cross-section of Louth Park Road to the south showing straight and flat alignment (subject site to the left)



Photo 4 – Cross Street intersection and service station access located opposite the subject site

3. Intersection of Louth Park Road and New England Highway

Sidra modelling has been completed for the intersection of the New England Highway and Louth Park Road, to determine its capacity to support the additional traffic movements associated with the proposed development. The intersection has been assessed for the current 2022 AM and PM flows as well as the future 2032 AM and PM flows.

The existing operation is outlined in Table 1 below.

Table 1: Sidra Results - Existing Situation 2022 (AM/PM)

Approach	Critical Movement	Level of Service (LoS)	Average Delay (seconds)	95% Queue (metres)
Louth Park Road	Left turn	A / A	10.4 / 11.1	11.3 / 6.0
	Right turn	F / F	1348.8 / 2200.7	47.0 / 99.9
New England Highway (westbound)	Left turn	A / A	7.2 / 7.0	0.0 / 0.0
New England Highway (eastbound)	Right turn	D / F	47.4 / 418.7	20.6 / 180.0

The modelling results above indicate that the left turns in and out of Louth Park Road operate at the highest level of service with minimal delays. The right turn into Louth Park Road experiences a reasonably high demand and operates at an acceptable level of service in the AM however an unacceptable level of service in the PM peak due to the high westbound traffic movement. Drivers on site are able to complete this manoeuvre more efficiently due to regular gaps in the westbound traffic stream, created by the downstream traffic signals at High Street, approximately 800 metres east. However, it can be seen that this movement indicates that drivers are prepared to take a smaller gap in the traffic when making these right turns.

The modelling determined the right turn out of Louth Park Road experiences excessive delays, with the results indicating the recorded movements are not able to be completed within the peak periods. This is not consistent

with the on-site observations, with 17 vehicles in the AM and 10 in the PM completing this manoeuvre. These drivers were able to find gaps in the traffic streams to enter the highway, with the platooning observed in both directions aiding these movements. The minimal demand recorded for this movement reflects the high delays for drivers to find suitable gaps, with typical driver behaviour seeing alternate routes used to travel eastbound if required.

The results of the assessment allowing for background growth through to 2032 are outlined in Table 2. Based on the Options assessment report completed by RMS for the determination of preferred option for the Railway Station Roundabout, the New England Highway in this location experiences 1% per annum background growth. An allowance for 1% per annum for traffic has been allowed for in the model for the future design year 2032.

Table 2: Sidra Results – Existing + background growth 2032 (AM/PM)

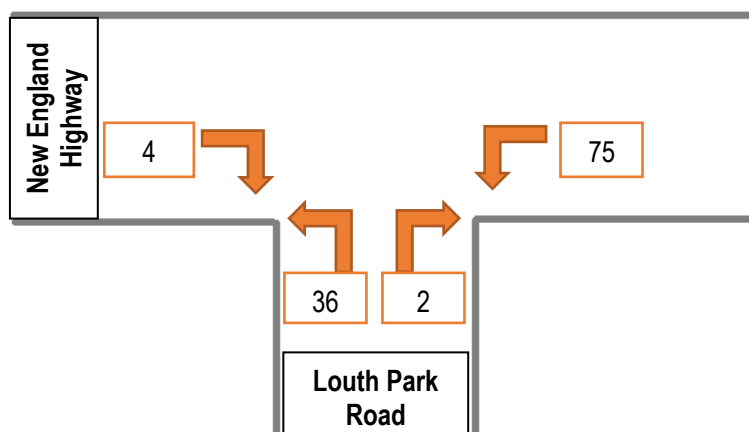
Approach	Critical Movement	Level of Service (LoS)	Average Delay (seconds)	95% Queue (metres)
Louth Park Road	Left turn	A / A	11.7 / 11.1	12.7 / 6.0
	Right turn	F / F	1307.9 / 2200.7	45.7 / 99.9
New England Highway (westbound)	Left turn	A / A	7.2 / 7.0	0.0 / 0.0
New England Highway (eastbound)	Right turn	F / F	86.2 / 418.7	32.9 / 180.0

Allowing for background growth, the left turn movements can continue to operate with minimal delays. However, both the right turn into Louth Park Road and the right turn out of Louth Park Road will suffer from excessive delays with the right turn queue exceeding the available queuing space and spilling into the adjacent through traffic lane.

Whilst driver behaviour may improve the operation for the right turns, it can be seen that the background growth along the New England Highway in this location will create significant issues for traffic due to the potential delays. This in turn could lead to drivers taking smaller gaps in the traffic stream increasing the risk of collisions.

From the above assessment, it can be seen that the layout and controls at this intersection will need to be reviewed by the road authority due to the ongoing growth in background traffic along the New England Highway.

The predicted traffic flows associated with the project site are shown below, and it can be seen that the right turn traffic movements are very low, with just 4 potentially turning right into Louth Park Road and 2 turning right out. The vast majority are left in and left out only, reflecting the fact that the vast majority of drivers will seek to use a service station on the left hand side of the road and typically avoid service stations on the right hand side, unless in an emergency. This pattern can be seen with the existing service station traffic flows and the removal of the right turns into Louth Park Road shall reduce the potential traffic movements associated with the project, but the majority of the traffic movements will remain as a left in and left out option only.



4. Conclusion

From the site work undertaken and the review of the development proposal and associated plans against the requirements of the RTA Guide to Traffic Generating Developments and Austroads Guide to Traffic Management, it is considered that the proposed development application should have no objections raised on traffic and access grounds.

Sidra modelling of the key intersection of the New England Highway and Louth Park Road shows that this intersection has limited spare capacity based on the current 2022 AM and PM peak traffic flows, due to the high traffic volumes occurring along the New England Highway. Allowing for background traffic growth of 1% per annum as per the traffic report prepared by TfNSW in this location, in 2032 this intersection will operate very poorly particularly for the critical right turn movements. It is considered that currently drivers take a smaller gap than normal when wishing to turn right here and the increased through traffic will make this worse in time with potential safety concerns. Any upgrade to this intersection however is beyond the requirements of this application and an existing matter for the road authority.

It can be seen that the vast majority of the traffic movements associated with the proposed development site will be left in and left out only, similar to the existing service station in this location and representative of normal driver behaviour. The project will not significantly alter the right turn demands nor the results for the operation of the intersection.

The site layout allows for a safe and appropriate circulation, with access to be provided off Louth Park Road suitable to cater for the swept path of the largest design vehicle.

Parking allowed on site meets the DCP requirements.

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

Yours sincerely,



Sean Morgan
Director

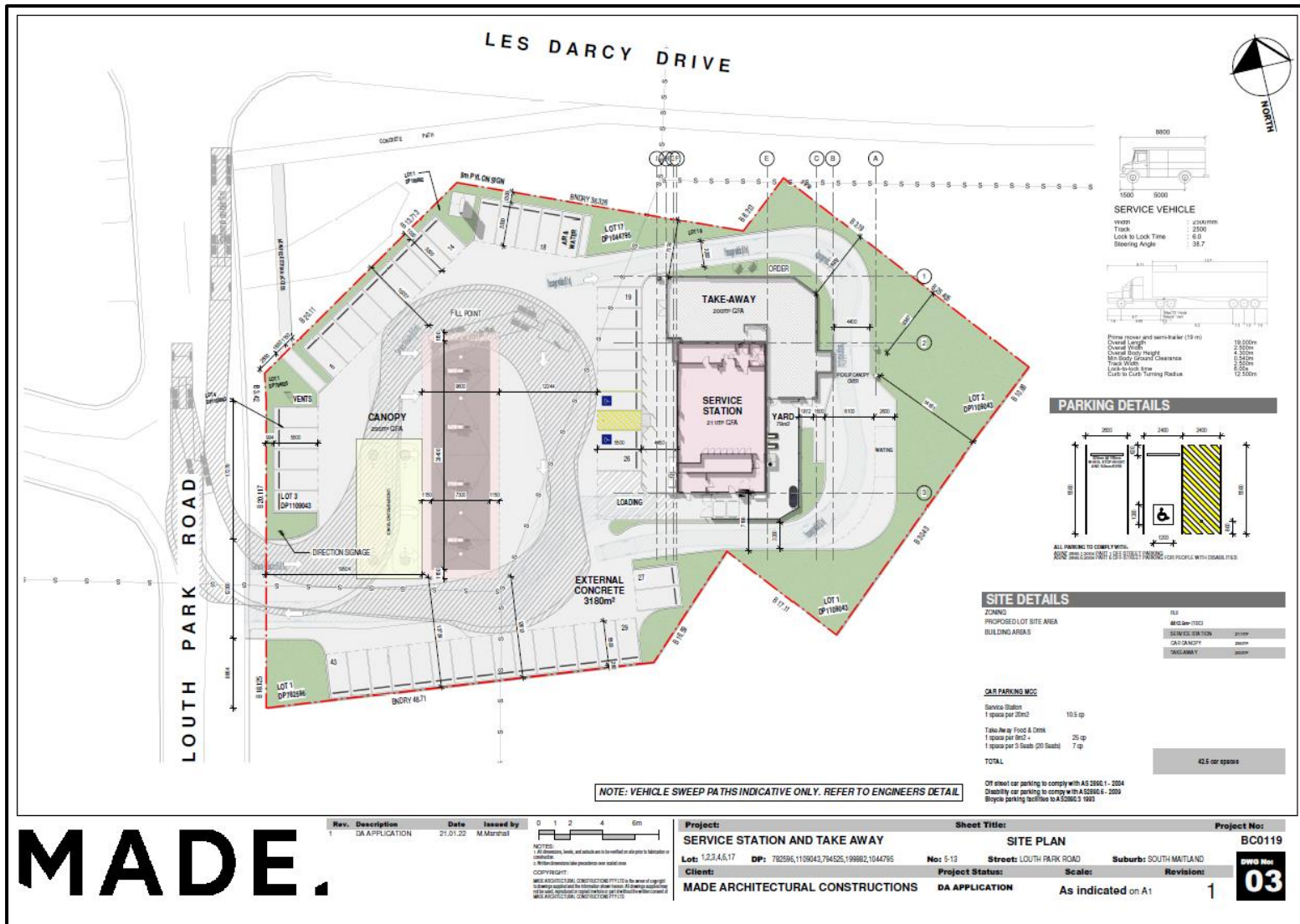
Attachment A: Site Plans

Attachment B: Accident Data

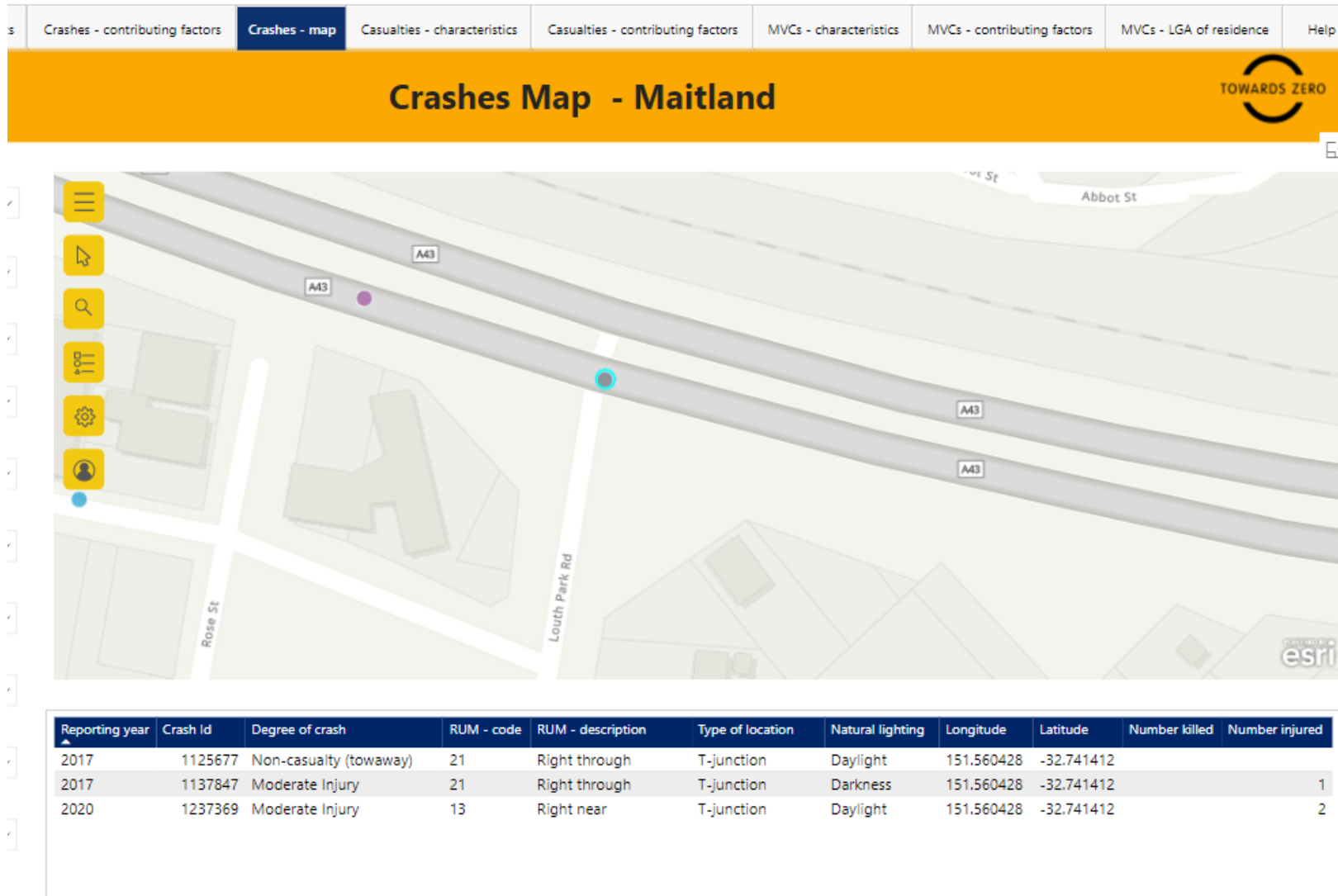
Attachment C: Sidra Assessment



Attachment A: Site Plan



Attachment B: Accident Data



Attachment C: Sidra Assessment

Calibration

Project Details:

Project Name	P2370 SLR Louth Park Road Sidra Notes
Last Revised	30 th March 2022
Client	SLR

The following tables summarise the revisions and calibration history of the intersection modelling completed for the abovementioned project. This modelling has been completed using *Sidra Intersection 9*, which is a lane based micro-modelling software package recognised by Transport for NSW for the modelling of single intersections and simple linear networks.

The following revisions and calibrations should be read in conjunction with the corresponding traffic report:

- P002370 SLR South Maitland Service Station TIA

Model Revision History:

Version	Revision Date	Details
V01	30-3-2022	TIA Issue

Model Calibration History

Version	Calibration Notes
V01	Extra bunching of 16% was input for eastbound traffic flows in order to account for the impact of the signalised intersection of the New England Highway and High Street, approximately 800 metres west of Louth Park Road. This value is consistent with the indicative values provided within the Sidra User Guide for this distance between intersections (refer Figure 1 to follow), with the upper range adopted given observations indicated platooning occurred frequently. No other changes to standard parameters.

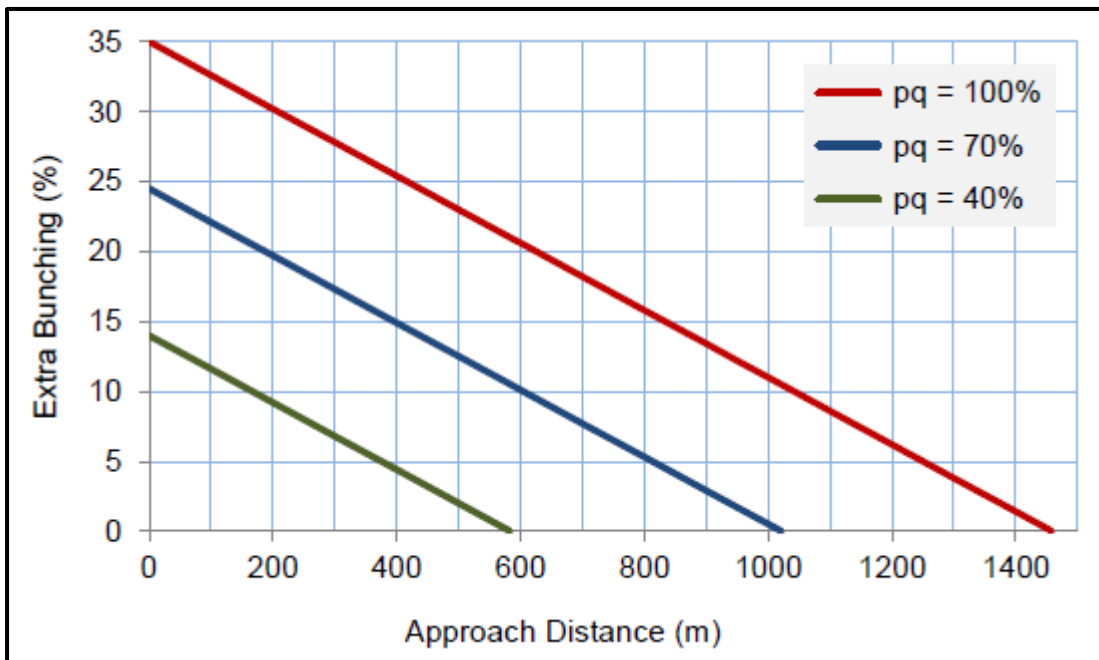


Figure 2 – Guide for values to specify extra bunching provided within the Sidra User Guide