



Scone Regional Airport,
Walter Pye Avenue,
Scone

Upper Hunter Shire Council

Traffic Impact Assessment

August 2019

Scone Regional Airport,
Walter Pye Avenue, Scone
Traffic Impact Assessment

Author: Sean Morgan

Client: Upper Hunter Shire Council C/- Public Works Advisory NSW Government

Issue: Ver01

Reference: P1522

20 August 2019

Quality Review and Document History

Version	Date	Description	Prepared By	Reviewed / Approved
Ver01	7/8/19	Draft	S. Morgan/ J. Harvey	C. Thomas
Ver02	19/8/19	Final	S Morgan	C Thomas



Ground Floor, 161 Scott Street, Newcastle NSW 2300

Ph: (02) 4032-7979

www.secasolution.com.au

© Seca Solution Pty Ltd 2019
The information contained in this document is confidential and intended solely for the use of the client for the purpose for which it has been prepared. Use or copying of this document in whole or in part without the written permission of Seca Solution constitutes an infringement of copyright. The intellectual property contained in this document remains the property of Seca Solution.

Contents

Contents.....	ii
1. Introduction.....	1
1.1 Background	1
1.2 Planning Context	1
1.3 Proposed Development	1
2. Traffic Impact Assessment Summary.....	2
3. Site Photos.....	12
4. Conclusion.....	13
Appendix A Site Plans and MasterPlan.....	14
Appendix B Plan of Scone Bypass.....	18
Appendix C Sidra Results	19

1. Introduction

1.1 Background

Seca Solution Pty Ltd has been commissioned by the NSW Government (Public Works Advisory) on behalf of Upper Hunter Shire Council to provide an assessment of the traffic, car parking and access associated with the proposed new Airport terminal and Warbird Visitor Attraction to house historically significant aircraft at Scone Regional Airport, on Walter Pye Avenue, Scone.

1.2 Planning Context

In preparing this document, the following guides and publications were used:

- RMS Guide to Traffic Generating Developments, Version 2.2 Dated October 2002;
- RMS Technical Direction TDT 2013/ 04a Updated traffic surveys;
- Upper Hunter Land Use Strategy April 2001;
- Upper Hunter Development Control Plan 2015;
- Australian / New Zealand Standard – Parking Facilities Part 1: off-street car parking (AS2890.1:2004)

1.3 Proposed Development

The location of the subject site is shown in Figure 1 below.



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

2. Traffic Impact Assessment Summary

The following assessment has been completed in accordance with Austroads Guidelines and the requirements of the RMS Guide to Traffic Generating Developments, which provide 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.

Item	
Existing Situation	
2.1 Site Location and Access	The site is located on Walter Pye Avenue, Scone with access to the wider road network via Bunnan Road/Satur Road.
2.2.1 Road Hierarchy	<p>The main road through the locality is the New England Highway which lies to the east of the subject site. It is a classified state road (HW9) providing a significant route between Newcastle and the Lower Hunter Valley north through the regional areas of the Northern Tablelands to the border with Queensland. It typically provides a single lane of travel in both directions with additional lanes at key intersections and through the centre of Scone. Within Scone, kerb side parking is available with street lighting provided within the town. The posted speed limit along the New England Highway within Scone town centre is 50 km/hr and outside of the built-up area is 100 km/hr.</p> <p>The New England Highway connects with Liverpool Street via a 4- way signal controlled intersection allowing for all turning movements as well as pedestrian movements.</p> <p>Liverpool Street has an east/west orientation and predominately provides a single lane of travel in each direction with additional lanes at intersections to maximise capacity. It typically provides a pavement width of 8 metres and street lighting is provided at regular intervals from Satur Road to the New England Highway. Footpaths are provided along both sides extending from the New England Highway to Satur Road.</p> <p>Liverpool Street connects with Satur Road via a roundabout intersection.</p> <p>Satur Road provides a single lane of travel in both directions and becomes Bunnan Road at the entry to Scone Regional Airport. It has a pavement width of 7 metres at its southern end and increases to 13 metres for much of its length to the airport access. Street lighting is provided at the entry to the airport and at other intersections. The posted speed limit is 60 km/hr within the locality and increases to 100 km/hr approximately 300 metres west of the airport access. There is a shared path for pedestrians and cyclists on the opposite side to the airport that runs towards the centre of Scone. In the vicinity of the airport Satur Road has grass verges with no sealed shoulders.</p> <p>Walter Pye Avenue provides access via Satur Road/Bunnan Road to Scone Regional Airport. It has a 6-metre-wide carriageway and allows for two-way movements.</p>

Item														
2.2.2 <i>Current and Proposed Roadworks, Traffic Management Works and Bikeways</i>	<p>The Federal and NSW Governments have committed funds to construct a New England Highway bypass of Scone to improve traffic flow, travel times and safety for road users. These works are currently underway with the bulk earthworks and bridge construction. This project is due for completion in June 2020. (Appendix B)</p> <p>There are no other roadworks, traffic management works, nor bikeways proposed within the vicinity of the subject site.</p>													
2.3 Traffic Flows														
2.3.1 <i>Daily Traffic Flows</i>	<p>As part of the project work traffic surveys were undertaken by Seca Solution Pty Ltd at the intersection of Liverpool Street and Satur Road as well as the driveway access of Walter Pye Avenue at Bunnan Road / Satur Road. These surveys were conducted during the afternoon on Monday the 29th July 2019. A summary of the two way traffic flows is provided below in Table 1.</p> <p><i>Table 1 – Peak hour traffic flows</i></p> <table border="1" data-bbox="612 842 1382 1115"> <thead> <tr> <th data-bbox="612 842 986 880">Location</th> <th data-bbox="986 842 1197 880"></th> <th data-bbox="1197 842 1382 880">PM Peak</th> </tr> </thead> <tbody> <tr> <td data-bbox="612 880 986 992" rowspan="2">South of Walter Pye Avenue (at Bunnan Road / Satur Road)</td> <td data-bbox="986 880 1197 931">Northbound</td> <td data-bbox="1197 880 1382 931">102</td> </tr> <tr> <td data-bbox="986 931 1197 992">Southbound</td> <td data-bbox="1197 931 1382 992">90</td> </tr> <tr> <td data-bbox="612 992 986 1115" rowspan="2">North of the Intersection of Liverpool Street and Satur Road</td> <td data-bbox="986 992 1197 1043">Northbound</td> <td data-bbox="1197 992 1382 1043">270</td> </tr> <tr> <td data-bbox="986 1043 1197 1115">Southbound</td> <td data-bbox="1197 1043 1382 1115">234</td> </tr> </tbody> </table>	Location		PM Peak	South of Walter Pye Avenue (at Bunnan Road / Satur Road)	Northbound	102	Southbound	90	North of the Intersection of Liverpool Street and Satur Road	Northbound	270	Southbound	234
Location		PM Peak												
South of Walter Pye Avenue (at Bunnan Road / Satur Road)	Northbound	102												
	Southbound	90												
North of the Intersection of Liverpool Street and Satur Road	Northbound	270												
	Southbound	234												
2.3.2 <i>AADT</i>	<p>Daily traffic volumes for the locality has been provided by the project team:</p> <ul style="list-style-type: none"> • MR62 Bunnan Road west of airport turnoff 1200 AADT March 2019 • MR62 Bunnan Road west of Flemington Drive (Racecourse) 1800 AADT May 2019 • MR62 Liverpool Street west of Guernsey Street 8200 AADT July 2013 • MR62 Liverpool Street west of Morse Street 7200 AADT 2012 													
2.3.3 <i>Daily Traffic Flow Distribution</i>	<p>Traffic flows along Bunnan Road / Satur Road at Walter Pye Avenue (the site access) saw a bias of traffic movements heading north during the PM with a 60/40 split. This distribution of traffic can be reversed for the AM as these flows would typically reflect the bias of vehicles heading to work within Scone town centre during the AM and returning home during the PM.</p> <p>Traffic flows through the intersection of Liverpool Street and Satur Road have a bias east to and from the Scone town centre split 55/45 outbound in the PM with the opposite expected in the AM.</p>													
2.3.4 <i>Vehicle Speeds</i>	No speed surveys were completed as part of the study work.													
2.3.5 <i>Existing Site Flows</i>	The airport hosts a biennial airshow which hosts around 7,000 visitors to the airport over the weekend. Allowing an occupancy rate of 2.5 people per car this equates to around 2,800 vehicles. During these events separate traffic management planning is conducted to control the traffic within the area as well as to manage parking. During normal periods of													

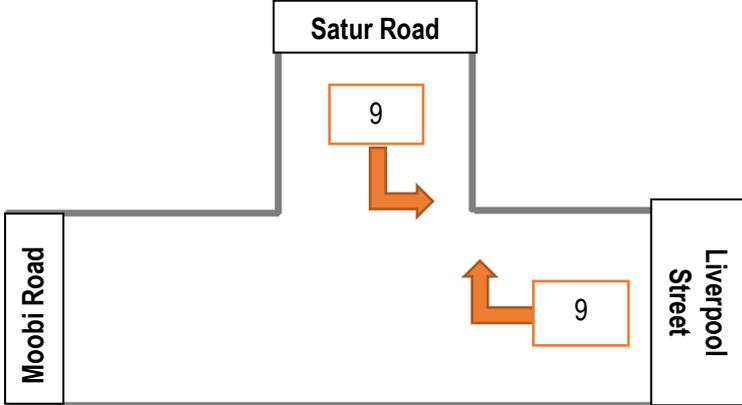
Item	
	operation the traffic demands associated with the site are relatively low with a variety of flight based services based at the airport.
2.3.6 Heavy Vehicle Flows	Surveys recorded heavy vehicle flows past Walter Pye Avenue at Bunnan Road / Satur Road of up to 10% of total vehicle traffic. Heavy vehicle flows of up to 5% were recorded through the intersection of Liverpool Street and Satur Road. These are associated with local demands as well as some through traffic associated with agricultural users to the west of Scone.
2.3.7 Current Road Network Operation	Observations on site during the afternoon peak period shows that the road network in the vicinity of the subject site operates very well, with low delays observed.
2.4 Traffic Safety and Crash History	<p>Accident data for 2013-2017, provided on the Centre for Road Safety website shows that there has been a single accident along Satur Road in the vicinity of the site access, classified as an 'Other straight' collision. A single accident also occurred at the roundabout intersection of Satur Road and Bunnan Road, relating to a left near collision.</p> <p>Overall it is considered that the local road network operates in a safe manner, due to the straight overall alignment and wide pavement provided along Bunnan Road / Satur Road.</p>
2.5 Parking Supply and Demand	
2.5.1 On-street Parking Provision	There is no designated on-street parking provided within the locality. However, given the width of the road drivers are able to park on the side of the road if required.
2.5.2 Off-street Parking Provision	Informal parking is provided on-site. Given the rural nature of the area the majority of the parking demands for the various properties on Satur Road/Bunnan Road are catered for within the various lots.
2.5.3 Current Parking Demand and Utilisation	<p>During the site work there was limited on-street parking observed in the general locality of the subject site along Bunnan Road / Satur Road. There were also minimal car parking observed within the informal parking area on-site.</p> <p>During the biennial airshow event, as noted in section 2.3 above, there are up to 2,800 vehicles requiring parking. Typically, these vehicles have been accommodated on properties on the northern side of Satur Road. This is controlled and operated as part of a separate Event Management Plan.</p>
2.5.4 Short term set down or pick up areas	There are no set down or pick up areas available in the immediate locality of the site.
2.6 Public Transport	
2.6.1 Rail Station Locations	The site is not accessible by rail for public use. The closest stations is Scone which is on the Hunter line and is serviced by trains from Newcastle and Maitland. Regional trains also operate between Sydney and Armidale via Scone.
2.6.2 Bus Stops and Associated Facilities	<p>The site in not accessible by public bus.</p> <p>There is a school bus service run by Osborn's Transport which brings students in via Satur Road/Bunnan Road to Scone. The service heads south-east during the morning dropping student off to schools within Scone town centre and the opposite during the afternoon dropping the student's home.</p>

Item	
2.7 Pedestrian Network	There is a shared path which runs from the veterinary clinic driveway, opposite the airport to Liverpool Street and Scone town centre.
2.8 Other Proposed Developments	There are currently no proposed developments within the vicinity of the site.
The Development	
3.1.1 Nature of Development	<p>Scone Airport is looking to expand the existing site to accommodate new features to the airport including a taxiway extension, upgraded pavement throughout the airport, Council workshop, new passenger terminal and aviation visitor attraction. This project forms part of the initial stages of the airport development and allows for the development of a new airport terminal, visitor parking bay and the Warbird Visitor attraction. The new Warbird Visitor attraction will also provide a function centre, gift shop and café.</p> <p>The project also allows for an upgrade to the access with the relocation of Walter Pye Avenue to the west, which include the provision of a new street light over the intersection to improve vision at night and during inclement weather.</p> <p>The proposed site plan for the development is provided in Appendix A.</p>
3.1.2 Access and Circulation Requirements	The site will allow for three access points, with airport users and tenants able to use all three. Emergency services and service vehicles will use the relocated Walter Pye Avenue access. All vehicles will drive through the site in a forward direction and exit in a forward direction.
3.2 Access	
3.2.1 Driveway Location	<p>The driveways are located on Satur Road with the existing Walter Pye Avenue being relocated to the west of the existing access, which will form the main access to the airport.</p> <p>A new access will be provided for the car park being constructed for the project site, to the east of the existing Walter Pye Avenue access. A second new access will be created to the west of Walter Pye Avenue that provided access to hangars. This access is to the east of the access to the racecourse .</p>
3.2.2 Sight Distances	The required sight distance from exit driveways are provided in AS2890.1 clause 3.2.4. For the posted speed limit of 60 km/hr and the desirable 5 second gap, the distance is 83 metres. The sight distance from the three separate driveway exceeds this requirement with a distance of over 130 metres available in both directions for drivers exiting the site.
3.2.3 Service Vehicle Access	The site will provide service vehicle access, which includes petrol tankers and emergency vehicles, via the new main access at Walter Pye Avenue site.
3.2.4 Queuing at entrance to site	Given the low overall traffic flows associated with the site, no queues are expected to occur at the entrance to the site.
3.2.5 Comparison with existing site access	Existing site access provides a sealed driveway for vehicles to enter and exit the site, with the proposed new driveway located in a similar location and allows for overall improved access for all users.
3.2.6 Access to Public Transport	Given the limited availability of public transport in the area it is considered that staff and visitors will use private vehicles to access the site.
3.3 Circulation	

Item	
3.3.1 <i>Pattern of circulation</i>	All vehicles will be able to enter and exit the site in a forward direction, with the internal roadways allowing for ease of circulation and for two-way internal traffic movements through the site.
3.3.2 <i>Internal Road width</i>	The internal carpark provides a minimum aisle width of 5.8 metres which safely allows for two-way movements. The internal roadways all allow for 2-way traffic movements.
3.3.3 <i>Internal Bus Movements</i>	<p>No regular service buses will need to access the site. However, the Warbird Visitor attraction is expected to attract coach travel with potential for 2 to 3 coaches per week expected to access the site.</p> <p>During the biennial airshows, the Event Management Plan may need to allow for buses to access the site, to allow for Park'n'Ride operations to accommodate visitor demands. Council has indicated that parking could be provided at the nearby racecourse site and a shuttle bus used to transport people to the airport. Similarly, a bus could be used to transfer people from the centre of Scone e.g. hotels, to the site to reduce traffic and parking demands associated with this event.</p> <p>The layout of the site will allow for these bus movements with an Event Management Plan to be prepared by Council to accommodate this growth in patronage.</p>
3.3.4 <i>Service Area Layout</i>	<p>No specific loading dock is required for the project.</p> <p>Supplies to the on-site café would be via small vans e.g. Toyota HiAce that can be accommodated within the proposed car park for the project.</p> <p>The majority of deliveries would occur during the week when parking demands would be minimal.</p>
3.4 <i>Parking</i>	
3.4.1 <i>Proposed Supply</i>	The development will allow for 77 parking spaces on site, including two accessible spaces.
3.4.2 <i>Authority Parking</i>	The Upper Hunter Shire Council DCP does not provide applicable rates for this type of development. As such the parking demand has been calculated from first principles.
3.4.3 <i>Parking Layout</i>	<p>The parking layout provides parking spaces in accordance with AS2890 with a parking aisle width between 6 - 6.5 metres, to provide for two-way movements, as per the DCP.</p> <p>Informal spill over parking will also be provided adjacent to this new car park, which will cater for any additional parking demands during the monthly informal airshow as well as cater for demands for car / caravan combinations.</p>
3.4.4 <i>Parking Demand</i>	<p>Typical daily parking demands will relate to staff and visitors to the new Warbird Visitor attraction and terminal. Staff numbers are not known at this stage but based on the proposed uses on site it is considered that staffing levels could be generally seven and hence seven spaces could be provided to cater for this.</p> <p>It is expected in the order of 35 vehicles per day (vpd) would access the site during weekdays, with busier weekend operation seeing up to 70vpd (discussed further in Section 4.1). These would be distributed throughout the day with peak demands expected to in the later morning through early afternoon and being lower than 70 thus being able to be accommodated within the proposed parking supply.</p>

Item	
	<p>Outside of these typical demand periods, functions could be held with advice from the study team indicating that the function centre will hold up to 80 patrons. Allowing for a vehicle occupancy rate of 2 people per vehicle the parking associated with these events can be accommodated within the proposed supply, with additional parking available for staff etc within the site.</p> <p>The proposal to provide 77 spaces is therefore suitable to accommodate the day to day demands of the development.</p> <p>The existing parking demands for the hanger owners and their staff will remain as per the existing situation, located across the site adjacent to the various buildings.</p> <p>As part of the project, informal monthly airshows will be held with increased parking demands. These events could generate 1,000 visitors over a weekend (500 per day) with 70% of these people arriving by car. Based on 2.5 people per car this would generate 140 vehicles. These would be able to park within the proposed new car park area with the informal parking area adjacent to this catering for the additional demand.</p> <p>As noted previously, for large events such as the biennial air show, a separate Event Management Plan will be created to accommodate additional parking demands. Advice from the study team has indicated the racecourse site to the north-west of the site could be used for future events with a shuttle service provided.</p>
<p>3.4.5 Service Vehicle Parking</p>	<p>No dedicated service vehicle parking is required. Servicing for the café will be via a small van that can park in the new car park being developed on site.</p>
<p>3.4.6 Pedestrian and Bicycle Facilities</p>	<p>Due to the sites relatively remote location, on the edge of the residential area, the demand for pedestrian facilities will be very low along the front of the site, with no off-site pedestrian facilities considered to be required. The existing shared pathway along the northern side of Bunnan Road / Satur Road will be able to accommodate any future pedestrian and cycle demands wishing to access the site from the centre of Scone.</p>
<p>Traffic Assessment</p>	
<p>4.1 Traffic Generation</p>	<p>The RMS Guide to Traffic Generating Developments does not provide any rates which are applicable to this particular site and proposed use. As such the traffic will be assessed from first principles.</p> <p>Advice from the study team indicates that 45,000 visitors are expected to the airport facilities per annum, inclusive of the visitors to the biennial airshow. As the airshow is subject to a separate event management plan, a conservative value of 40,000 visitors to the site per year has been used as the basis for this assessment.</p>

Item	
	<p>Applying a vehicle occupancy rate of 2.5 people per cars would see a weekly total of 308 vehicles to the site. Allowing for double the number of visitors on a weekend day compared to a weekday, gives a total of 34vpd (34 inbound / 34 outbound) during the week and 69vpd (69 inbound / 69 outbound) on a Saturday or Sunday.</p> <p>Allowing for these additional trips to occur over a typical 8 hour day could generate in the order of 10 vph during the week and 18 vph on weekends.</p> <p>Based on the assessment above the traffic is summarised as follows:</p> <ul style="list-style-type: none"> • 68 daily vehicle trips, Monday to Friday • 138 daily vehicle trips, Saturday and Sunday • 10 (5 in / 5 out) peak hour vehicle trips, Monday to Friday • 18 (9 in / 9 out) peak hour vehicle trips, Saturday and Sunday <p>Staff arrivals shall typically occur prior to the opening of the museum, gift shop etc as do other movements associated with the day to day operations of the airport.</p> <p>The Warbirds are required to be flown on a monthly basis and informal monthly air shows will be held to facilitate this activity. These events could generate approximately 1,000 visitors and it is expected that the majority (70%) of these will travel to the site by private vehicles, with 20% by coach and 10% by air.</p> <p>This would give 700 visitors arriving by car, and assuming 2.5 people per car this could generate some 280 cars visiting the site on a weekend. Spread over 2 days this could generate 140 vehicles per day typically, giving 140 inbound in the morning and 140 outbound in the afternoon.</p> <p>As discussed above, the biennial airshows will have a specific event management plan for the parking and traffic which will include off-site parking. These events will generate higher traffic demands, which will impact upon the local road network. However these will be over a short timeframe and will be mitigated with Park 'N' Ride facilities to link with town and off-site parking in the racecourse site.</p>
4.1.1 Daily and Seasonal Factors	Limited season or daily variation in traffic flows expected.
4.1.2 Pedestrian Movements	Limited external pedestrian movements are expected to be generated by the project.
4.2 Hourly distribution of trips	
4.2.1 Origin / destinations assignment	<p>The vast majority of visitors are expected to have an origin / destination from the Scone area and would gain access via the intersections of Liverpool Street / Satur Road. These would typically be visitors from Scone itself or from people travelling through Scone on their way north or south along the New England Highway. In the future this may also include visitors travelling along the Scone bypass who can exit the bypass at St Aubins Street to then connect with Liverpool Street.</p>
4.3 Impact on Road Safety	<p>The road network within the vicinity of the site currently provides a very good level of road safety as documented in Section 2.4. Only one accident</p>

Item	
	<p>has been recorded between 2013 and 2018 in the vicinity of the airport access on Bunnan Road / Satur Road, with an additional accident at the Satur Road / Liverpool Street roundabout.</p> <p>The minor increase in daily traffic flows associated with the proposal can be accommodated within the existing road network which operates in a safe and efficient manner.</p>
<p>4.4 Impact of Generated Traffic</p>	
<p>4.4.1 Impact on the capacity of the existing road network.</p>	<p>The overall impact of the additional traffic movements associated with the development upon daily traffic flows in the locality will be minimal.</p> <p>The development could generate additional peak hourly flows of 10 vehicles during the AM and PM peak during the week and 18 vehicles during the weekend, split evenly inbound and outbound.</p> <p>Weekend flows on the road network are less than peak hour weekday flows. For the purpose of this assessment, to allow for the worst case the higher weekend traffic generation has been applied during the weekday peak periods. All development traffic has been assigned an origin / destination to/from Scone Town Centre to allow for an assessment of the impact on the intersection of Liverpool Street and Satur Road.</p> <p>The development flows have been assigned per Figure 2.</p>  <p>The diagram shows a road network with three main sections: Moobi Road on the left, Satur Road at the top, and Liverpool Street on the right. Satur Road is connected to Moobi Road on its left end and Liverpool Street on its right end. An orange arrow points from Satur Road towards the right, with a box containing the number '9'. Another orange arrow points from Liverpool Street towards the left, also with a box containing the number '9'.</p>
<p>4.4.2 Peak Hour Impacts on Intersections</p>	<p>The key intersection of Satur Road and Liverpool Street/Moobi Road has been assessed using Sidra Intersection 8. The impact of the additional flows associated with the development have been assessed based on the PM peak flows but allowing for weekend demands as a worst case scenario. The Sidra modelling confirms that the additional traffic movements shall have a negligible impact upon the operation of this roundabout.</p> <p>All movements will operate at a level of service (LoS) of A, with minor delays and queues similar to the existing observed operation of this roundabout. Allowing for background growth of 2% per annum on all legs</p>

Item	
	<p>through to 2029 the intersection maintains LoS A. The Sidra Outputs are provided in Appendix B.</p> <p>The intersection has been assessed during the afternoon peak period only, as it is considered that the visitor centre will not be open until 9.30 AM and as such the only traffic accessing the site in the AM peak would be those associated with staff movements. These could be seven vehicles and will have a negligible impact upon the operation of this roundabout.</p>
<p>4.4.3 <i>Impact of Construction Traffic</i></p>	<p>The majority of the construction work will be contained within the site and have minimal impact upon the external road network. There will be a requirement for some construction machinery to access site, which will include some heavy machinery and a crane. This will be detailed in the Construction Traffic Management Plan which will be required for work on site and to provide access controls as appropriate. This will be completed as part of the CC once the contractor has been engaged.</p> <p>Workers associated with construction will be able to park within the site as required.</p> <p>No details are available for the number of workers on site for this project, but it is expected that there will be less than 50 based on site. It is expected that these workers will not be based in Scone, due to a potential lack of accommodation. The construction of the bypass has created a demand for accommodation within Scone meaning that workers for this development may need to travel from Muswellbrook or Tamworth. These workers will be encouraged to car share to reduce the number of vehicles accessing the site.</p>
<p>4.4.4 <i>Other Developments</i></p>	<p>There are works proposed airside to the airport that will occur at the same time as the construction for this project. The Scone bypass is also being constructed and is due to be completed in June 2020.</p> <p>This project, together with the airside work, is due to commence in late 2019 and be concluded in August 2020. Once built the airside project will not create any significant increase in traffic flows.</p>
<p>4.5 Public Transport</p>	
<p>4.5.1 <i>Options for improving services</i></p>	<p>There are no public transport services in the area, and due to the relatively low staffing levels, as well as adequate parking provided on site, there is no need for public transport facilities to be extended to the site.</p>
<p>4.5.2 <i>Pedestrian Access to Bus Stops</i></p>	<p>There are no public transport facilities within the vicinity of the site and as such no pedestrian facilities are required.</p> <p>The existing shared pathway opposite the airport on Bunnan Road / Satur Road provides a pedestrian link to Liverpool Street and the Scone Town Centre.</p>
<p>4.6 Recommended Works</p>	
<p>4.6.1 <i>Improvements to Access and Circulation</i></p>	<p>The new driveway will ensure that all vehicles can enter and exit the site in a forward direction.</p>
<p>4.6.2 <i>Improvements to External Road Network</i></p>	<p>None required as the traffic flows associated with the expansion of the site are relatively low.</p>

Item	
4.6.3 <i>Improvements to Pedestrian and Cyclist Facilities</i>	No upgrades required as a direct consequence of this development. Pedestrians and cyclists can access the site via the shared path on the opposite side of Bunnan Road from the site.
4.6.4 <i>Effect of Recommended Works on Adjacent Developments</i>	No impact as no external works recommended.
4.6.5 <i>Effect of Recommended Works on Public Transport Services</i>	Nil.
4.6.6 <i>Provision of LATM Measures</i>	None Required.

3. Site Photos



Photo 1 – Sight distance to the left out of proposed driveway along Bunnan Road / Satur Road



Photo 2 – Sight distance to the right out of proposed driveway along Bunnan Road / Satur Road

4. Conclusion

From the site work and the review of the development proposal against the requirements of the RMS Guide to Traffic Generating Developments, it is considered that there the project should be approval on traffic, parking and access grounds. The traffic movements generated by the development will be relatively low and acceptable impact upon the local road network.

Existing traffic flows within the general locality of the subject site are relatively low and the road network operates well. The roundabout controlled intersection of Liverpool Street / Moobi Road / Satur Road operates very well with minimal delays and queues. The project could generate up to 18 additional traffic movements per hour through this roundabout typically between Monday and Friday and shall have a minimal and acceptable impact upon its overall operation.

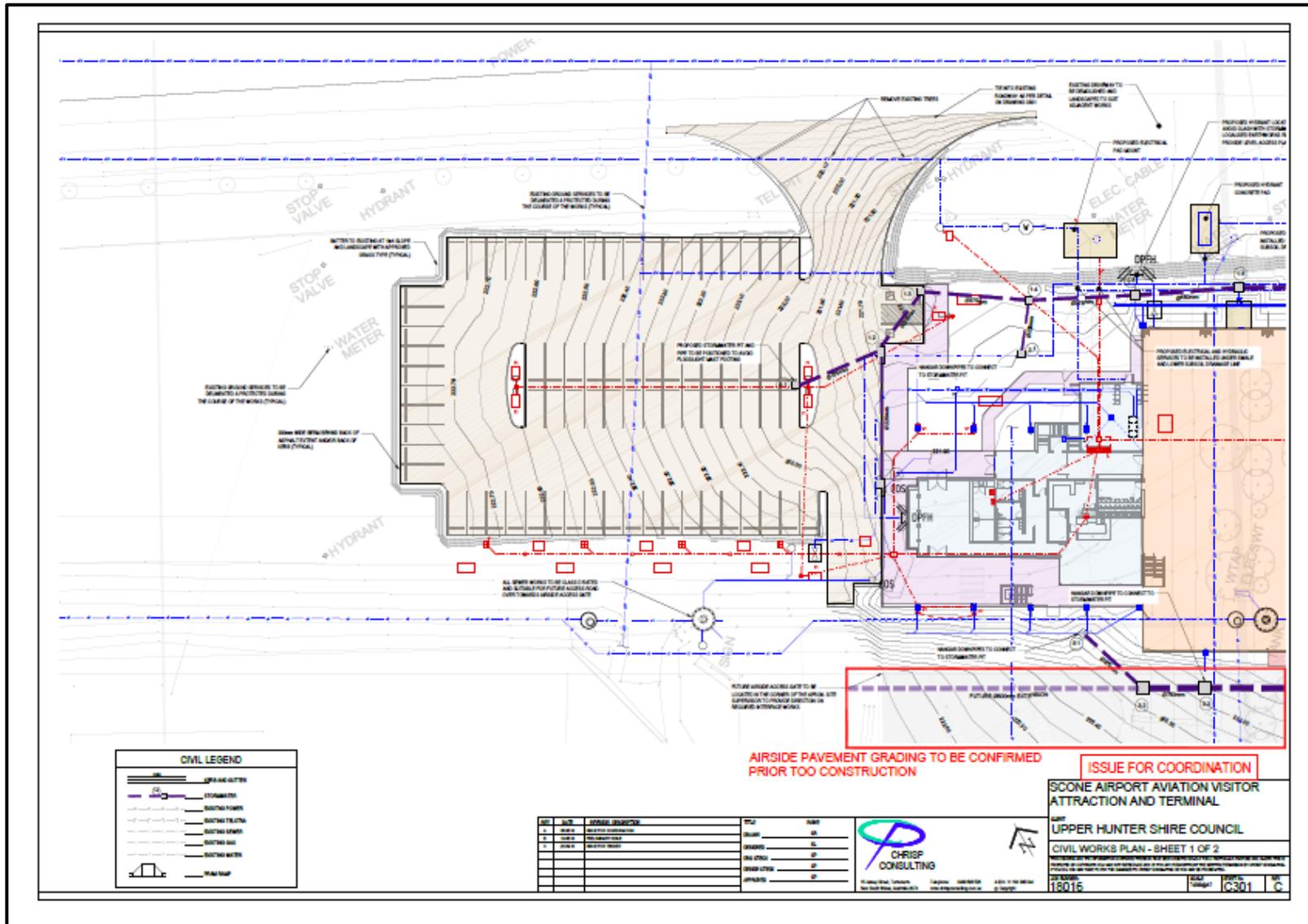
For the monthly informal airshow, there will be increased traffic demands, but given the amount of spare capacity in the road network the impacts of these will be acceptable and over a short timeframe. The biennial airshow will see much higher traffic flows, with an event management plan put in place at these times to control traffic and parking for the site. These demands will be spread over the weekend and will be reduced due to the use of shuttle buses between the site and the town centre. The construction of the Scone bypass will reduce the extent of traffic driving through the town centre and reduce the potential delays created by the peak demands created by this biennial airshow.

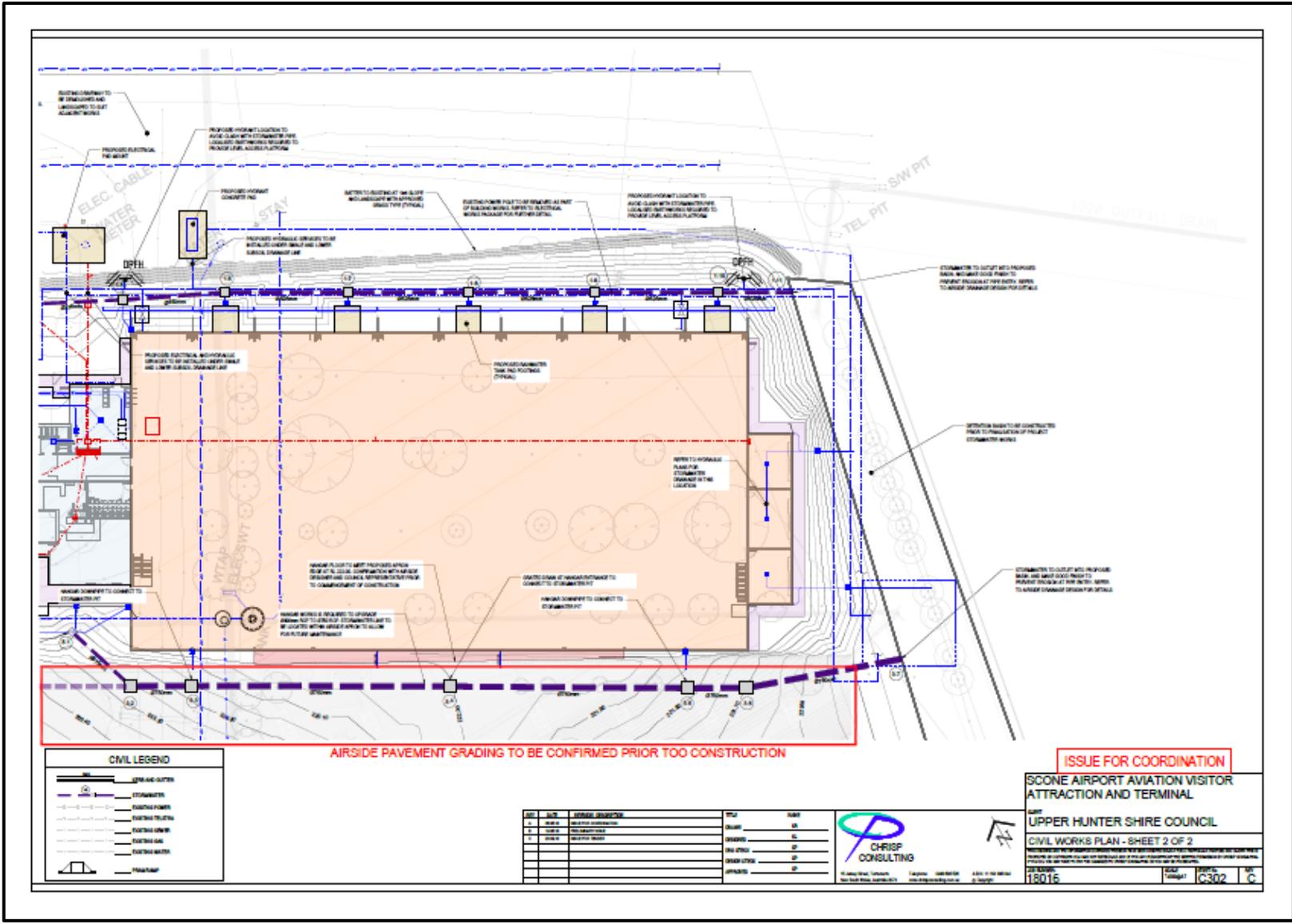
The project shall provide 77 formal parking spaces on site, which shall satisfy the typical demands associated with the normal use of the visitor centre. During functions, when there could be 80 visitors (plus staff) it is considered that this parking on-site will be adequate with no impact upon the external road network. For the monthly informal airshows, the parking demand could be around 140 vehicles, and the informal parking area adjacent to this new car park can cater for this spill over parking.

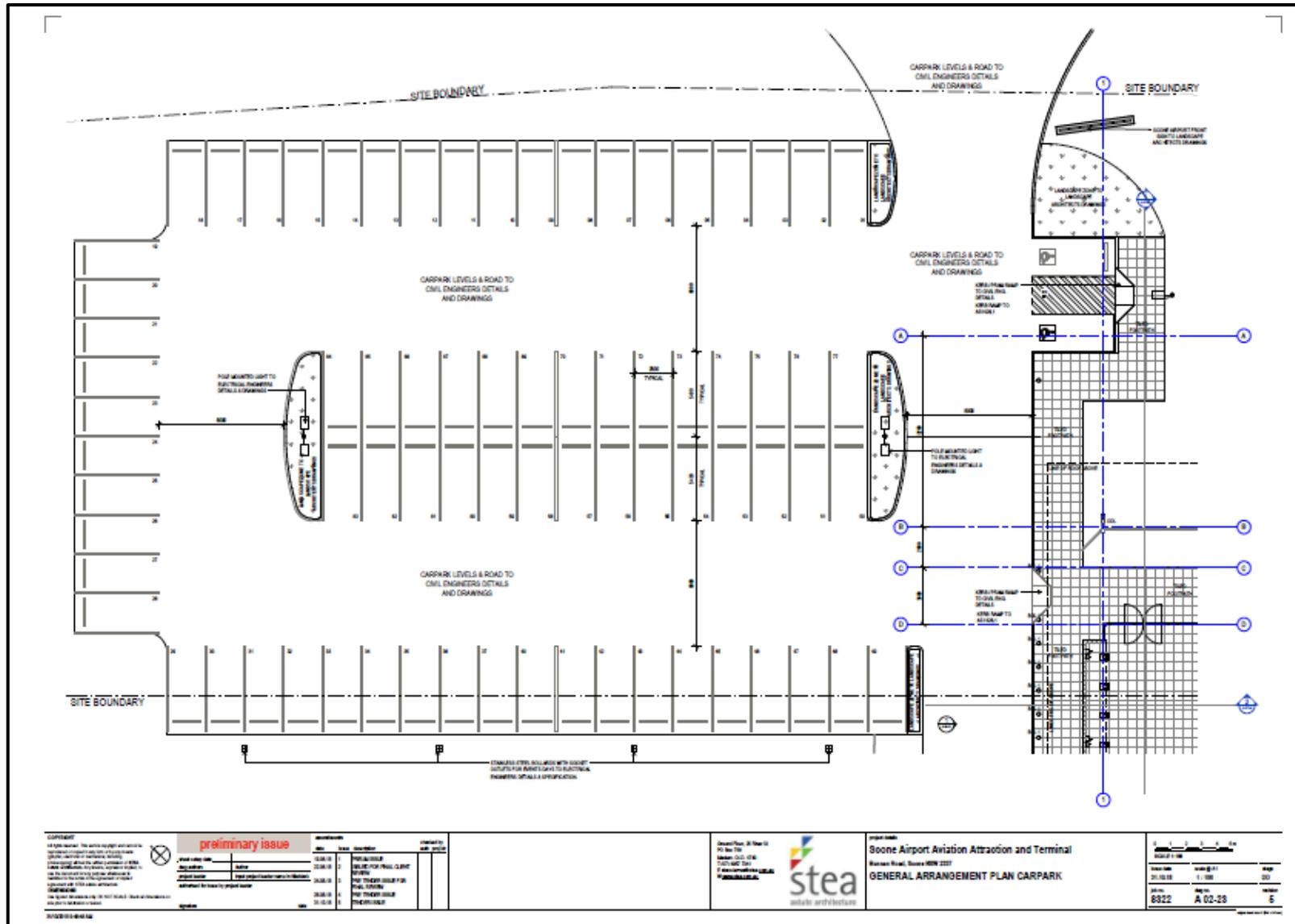
During the biennial airshow the parking demands are much higher and a separate Event Management Plan will be prepared to allow for the potential parking demands, with off-site parking provided in the racecourse area with shuttle buses to connect to the site.

The access to the airport shall be upgraded, with a relocation of the existing main access at Walter Pye Avenue together with 2 other formed access points. All of these can operate in a safe and efficient manner, providing good visibility for drivers entering and exiting the site. Given the low traffic flows adjacent to the site these access points can operate with minimal delays for all road users.

Appendix A Site Plans and MasterPlan







COMMENTS
 1. All dimensions are in meters unless otherwise stated.
 2. All dimensions are to the centerline of the road unless otherwise stated.
 3. All dimensions are to the centerline of the road unless otherwise stated.
 4. All dimensions are to the centerline of the road unless otherwise stated.
 5. All dimensions are to the centerline of the road unless otherwise stated.
 6. All dimensions are to the centerline of the road unless otherwise stated.
 7. All dimensions are to the centerline of the road unless otherwise stated.
 8. All dimensions are to the centerline of the road unless otherwise stated.
 9. All dimensions are to the centerline of the road unless otherwise stated.
 10. All dimensions are to the centerline of the road unless otherwise stated.

NO.	DATE	DESCRIPTION	BY	CHECKED BY
1	15/01/18	ISSUED FOR PERMIT	STEAD	STEAD
2	20/01/18	ISSUED FOR PERMIT	STEAD	STEAD
3	20/01/18	ISSUED FOR PERMIT	STEAD	STEAD
4	20/01/18	ISSUED FOR PERMIT	STEAD	STEAD
5	20/01/18	ISSUED FOR PERMIT	STEAD	STEAD

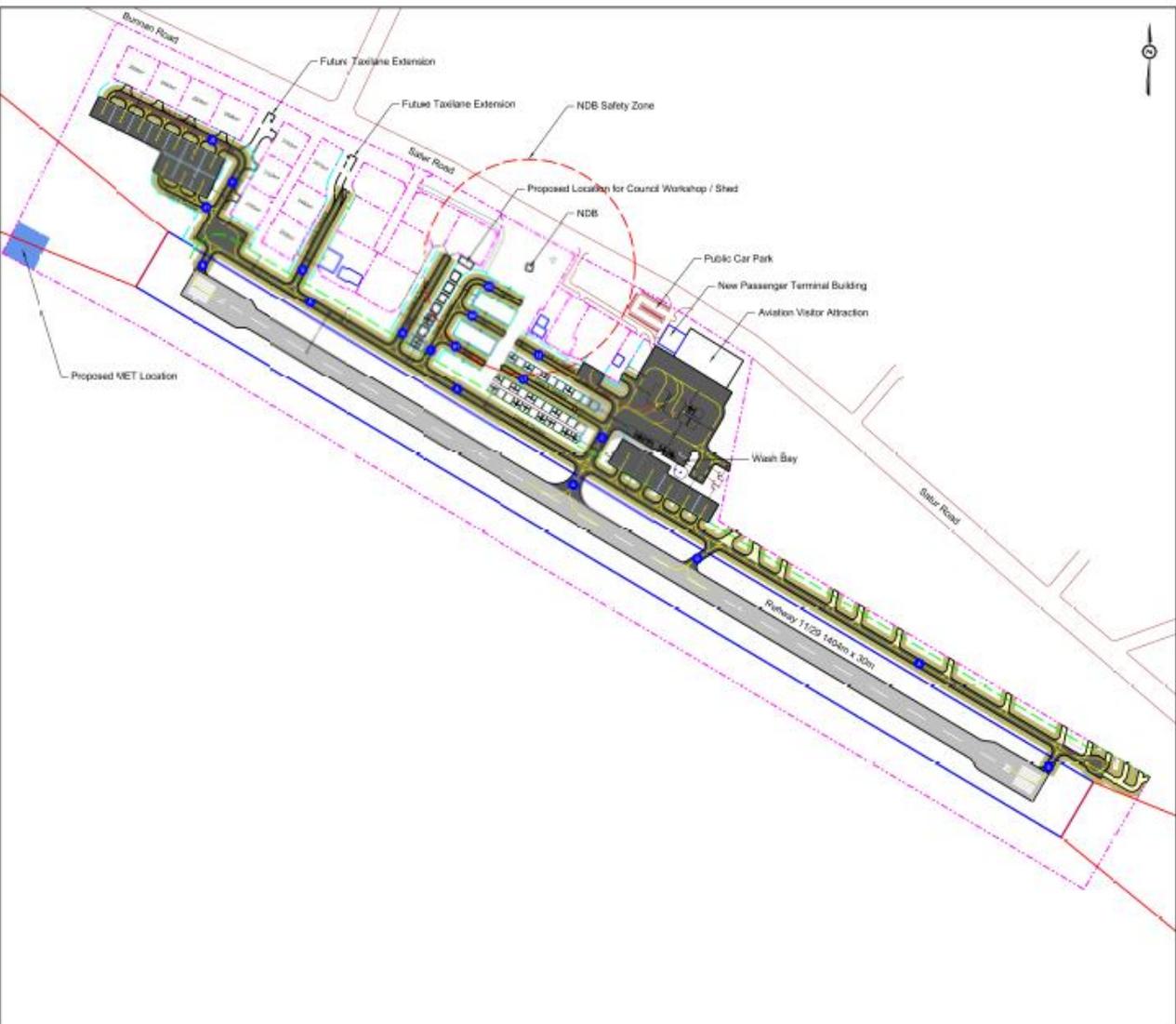
NO.	DATE	DESCRIPTION	BY	CHECKED BY
1	15/01/18	ISSUED FOR PERMIT	STEAD	STEAD
2	20/01/18	ISSUED FOR PERMIT	STEAD	STEAD
3	20/01/18	ISSUED FOR PERMIT	STEAD	STEAD
4	20/01/18	ISSUED FOR PERMIT	STEAD	STEAD
5	20/01/18	ISSUED FOR PERMIT	STEAD	STEAD

STEAD
 15/01/18
 20/01/18
 20/01/18
 20/01/18
 20/01/18

Project Name: Stead
 Project No: 15/01/18
 Project Date: 20/01/18
 Project Location: Stead

Project Name: Stead
 Project No: 15/01/18
 Project Date: 20/01/18
 Project Location: Stead

NO.	DATE	DESCRIPTION	BY	CHECKED BY
1	15/01/18	ISSUED FOR PERMIT	STEAD	STEAD
2	20/01/18	ISSUED FOR PERMIT	STEAD	STEAD
3	20/01/18	ISSUED FOR PERMIT	STEAD	STEAD
4	20/01/18	ISSUED FOR PERMIT	STEAD	STEAD
5	20/01/18	ISSUED FOR PERMIT	STEAD	STEAD





UPPER HUNTER SHIRE COUNCIL

Notes

- All dimensions to be checked on site.
- Do not build this and beyond.
- All dimensions are shown in metres unless otherwise stated.
- The consultant is not responsible for dissemination or use of data due to the accuracy and dissemination must verify the set out prior to commencing works.
- If in doubt ask.

Legend

- Proposed Building
- Proposed Pavement
- Taxiway Strip
- Taxiway / Taxiway Gravel Area
- Taxiway / Taxiway Gravel to Object Clearance
- Existing Pavement
- Proposed New Pavement

No.	Revision	Date	By
01	Proposed Helicopter Based to Main Road Pavement	14/03/17	BM
02	Proposed Helicopter Based to Main Road Pavement	14/03/17	BM

Revisions

01 Add 10 Additional Helicopter Hard Stands
 Revised Proposed Taxiway Location

02 Change Helicopter Based Code 4 Taxiway to Code 8
 Add 7 Helicopters and remove heliport access. Subdivide Council Land, Add Road Closure Area, Vehicle Access Area, and Identify Council Workshop

Client
 Upper Hunter Shire Council

Project Consultant
 Leading Edge Aviation Planning Professionals Pty Ltd

Engineer
 MM Hyndes Bailey & Co

Project Title
 SCONE AIRPORT SET-OUT & MARKING

Drawing Title
 General Arrangements

Scale
 1: 250 @ A1

Date
 August 2017

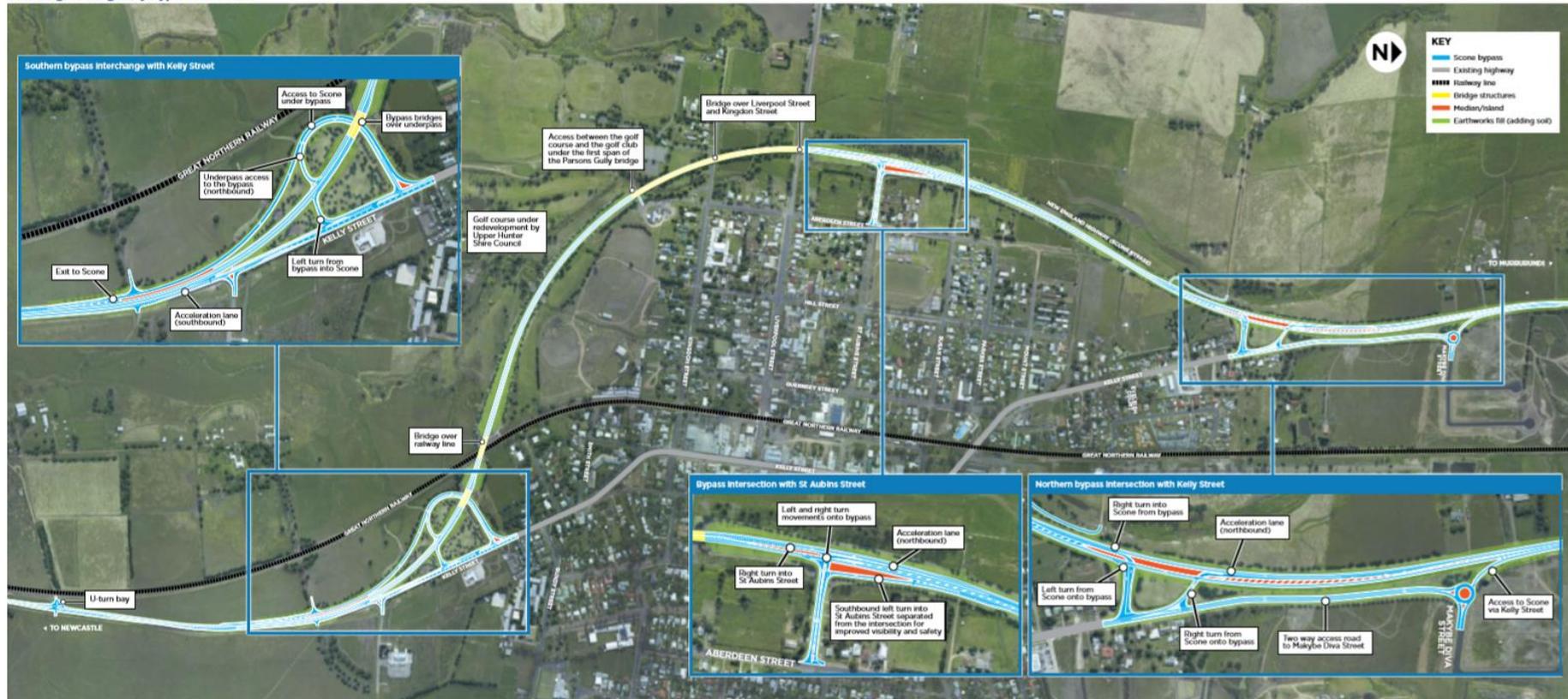
Drawn By
 Rayvicki Garwood

Checked/Checked by Planning
 Water Craig
 P. Eng., C. Eng., MRAS., IMC.

ESMP Drawing Number	172810000g	Rev	01
ESMP Project Code	17281	Rev	01

Appendix B Plan of Scone Bypass

New England Highway bypass of Scone



Appendix C Sidra Results

MOVEMENT SUMMARY

Site: 101 [2019 PM]

Satur Road and Liverpool Street/Moobi Road
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
East: Liverpool Street												
5	T1	109	1.9	0.246	4.7	LOS A	1.0	6.9	0.07	0.61	0.07	53.5
6	R2	272	3.9	0.246	8.3	LOS A	1.0	6.9	0.07	0.61	0.07	50.3
Approach		381	3.3	0.246	7.3	LOS A	1.0	6.9	0.07	0.61	0.07	51.5
North: Satur Road												
7	L2	229	8.3	0.180	4.9	LOS A	0.6	4.5	0.13	0.53	0.13	50.3
9	R2	17	12.5	0.180	8.5	LOS A	0.6	4.5	0.13	0.53	0.13	55.2
Approach		246	8.5	0.180	5.2	LOS A	0.6	4.5	0.13	0.53	0.13	50.8
West: Moobi Road												
10	L2	13	0.0	0.065	5.5	LOS A	0.2	1.4	0.25	0.52	0.25	54.4
11	T1	63	3.3	0.065	5.3	LOS A	0.2	1.4	0.25	0.52	0.25	54.3
12u	U	2	0.0	0.065	10.6	LOS A	0.2	1.4	0.25	0.52	0.25	56.6
Approach		78	2.7	0.065	5.5	LOS A	0.2	1.4	0.25	0.52	0.25	54.4
All Vehicles		705	5.1	0.246	6.3	LOS A	1.0	6.9	0.11	0.57	0.11	51.7

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

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 8.0 | Copyright © 2000-2019 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: SECA SOLUTION | Processed: Wednesday, 7 August 2019 11:42:31 AM

Project: C:\Sidra folders\P1522 Scone airport.sip8

MOVEMENT SUMMARY

 **Site: 101 [2019 PM with development]**

Satur Road and Liverpool Street/Moobi Road
 Site Category: (None)
 Roundabout

Movement Performance - Vehicles												
Mov ID	Turn	Demand Flows Total veh/h	Deg. HV %	Average Delay sec	Level of Service	95% Back of Queue Vehicles	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h		
East: Liverpool Street												
5	T1	109	1.9 0.252	4.7	LOS A	1.0	7.1	0.07	0.61	0.07	53.5	
6	R2	281	3.7 0.252	8.3	LOS A	1.0	7.1	0.07	0.61	0.07	50.3	
Approach		391	3.2 0.252	7.3	LOS A	1.0	7.1	0.07	0.61	0.07	51.5	
North: Satur Road												
7	L2	239	7.9 0.187	4.9	LOS A	0.6	4.7	0.13	0.53	0.13	50.4	
9	R2	17	12.5 0.187	8.5	LOS A	0.6	4.7	0.13	0.53	0.13	55.2	
Approach		256	8.2 0.187	5.2	LOS A	0.6	4.7	0.13	0.53	0.13	50.9	
West: Moobi Road												
10	L2	13	0.0 0.065	5.5	LOS A	0.2	1.4	0.26	0.52	0.26	54.4	
11	T1	63	3.3 0.065	5.3	LOS A	0.2	1.4	0.26	0.52	0.26	54.3	
12u	U	2	0.0 0.065	10.7	LOS A	0.2	1.4	0.26	0.52	0.26	56.6	
Approach		78	2.7 0.065	5.5	LOS A	0.2	1.4	0.26	0.52	0.26	54.4	
All Vehicles		724	4.9 0.252	6.3	LOS A	1.0	7.1	0.11	0.57	0.11	51.7	

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

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 8.0 | Copyright © 2000-2019 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: SECA SOLUTION | Processed: Wednesday, 7 August 2019 11:56:59 AM

Project: C:\Sidra folders\P1522 Scone airport.sip8

MOVEMENT SUMMARY

Site: 101 [2029 PM with development+growth]

Satur Road and Liverpool Street/Moobi Road
 Site Category: (None)
 Roundabout
 Design Life Analysis (Final Year): Results for 10 years

Movement Performance - Vehicles													
Mov ID	Turn	Demand Total veh/h	Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h		
East: Liverpool Street													
5	T1	131	1.9	0.303	4.7	LOS A	1.3	9.1	0.09	0.61	0.09	53.5	
6	R2	337	3.7	0.303	8.3	LOS A	1.3	9.1	0.09	0.61	0.09	50.3	
Approach		469	3.2	0.303	7.3	LOS A	1.3	9.1	0.09	0.61	0.09	51.4	
North: Satur Road													
7	L2	287	7.9	0.225	5.0	LOS A	0.8	6.0	0.15	0.53	0.15	50.3	
9	R2	20	12.5	0.225	8.6	LOS A	0.8	6.0	0.15	0.53	0.15	55.1	
Approach		307	8.2	0.225	5.2	LOS A	0.8	6.0	0.15	0.53	0.15	50.8	
West: Moobi Road													
10	L2	15	0.0	0.080	5.7	LOS A	0.3	1.8	0.30	0.54	0.30	54.3	
11	T1	76	3.3	0.080	5.5	LOS A	0.3	1.8	0.30	0.54	0.30	54.2	
12u	U	3	0.0	0.080	10.8	LOS A	0.3	1.8	0.30	0.54	0.30	56.5	
Approach		93	2.7	0.080	5.7	LOS A	0.3	1.8	0.30	0.54	0.30	54.3	
All Vehicles		869	4.9	0.303	6.4	LOS A	1.3	9.1	0.13	0.57	0.13	51.6	

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

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

Roundabout Capacity Model: SIDRA Standard.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

SIDRA INTERSECTION 8.0 | Copyright © 2000-2019 Akcelik and Associates Pty Ltd | sidrasolutions.com

Organisation: SECA SOLUTION | Processed: Wednesday, 7 August 2019 11:57:02 AM

Project: C:\Sidra folders\P1522 Scone airport.sip8