Picton Town Centre - Administration Building

Peer Review
Planning Proposal

Prepared by: GTA Consultants (NSW) Pty Ltd for Keylan Consulting Pty Ltd
on 1/12/2020
Reference: N202510
Issue #: A

GTAconsultants

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Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
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1. INTRODUCTION

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1.1. Background

In August 2019, Wollondilly Shire Council adopted the Cultural, Civil and Community Precinct (CCCP) Master Plan to inform future development of public facilities in the Picton Town Centre. As an expansion and upgrade to Council's existing facilities on Menangle Street, the CCCP will deliver a new administration building, multifunction hall, library and village green to enhance services to the community.

Council subsequently commissioned the preparation of a Planning Proposal to secure the height controls required under the Wollondilly Shire Local Environmental Plan 2011 for the site accommodating the new Administration Building. Specifically, an amendment will increase the maximum permissible height of the site from 9 metres to 16 metres. The corresponding increase in floor space will accommodate Council's long-term projection of 400 office staff.

Keylan Consulting was recently engaged by Council to provide an independent assessment of the Planning Proposal and hence a recommendation on whether the proposal should proceed in its current form. In turn, Keylan Consulting has engaged GTA Consultants to provide an independent review of the traffic and parking aspects of the Planning Proposal, having regard to the methodology and conclusions of the Traffic and Transport Report prepared by SLR Consulting Australia (SLR).

It is acknowledged that the SLR Report generally aims to capture the parking requirements and traffic impacts of the entire CCCP under a full development scenario. Notwithstanding, the report includes sufficient detail in relation to the new administration building to allow an objective assessment of the potential traffic and parking impacts associated with the Planning Proposal, and distinctions have been made where relevant with respect to any additional impacts or issues identified as requiring further investigation that are associated more broadly with the CCCP.

The scope of this assessment includes a review of SLR's Aimsun network model, which was used to assess the performance of the intersections in the study area on which the findings and conclusions of the SLR report were based. The SLR model is based on Council's previous Aimsun network model that was developed to inform the infrastructure improvements being delivered under the Picton Town Centre Transport Plan 2026, and this review therefore focuses on the suitability of the changes made to that model by SLR.

1.2. Purpose of this Report

The purpose of this peer review is to objectively consider the impacts of future traffic generation, parking demand and accessibility characteristics of the proposal.

This report sets out an assessment of the impacts associated with the administration building as envisaged under the Planning Proposal, with consideration of the following:

- existing traffic and parking conditions
- likely parking requirements for the development
- the cumulative traffic generating characteristics of the development and CCCP
- the transport impact of the development and CCCP on the surrounding road network
- the suitability of any potential mitigation measures proposed to mitigate the traffic effects of the proposal
- suitability of the documented access arrangements for the site.

1.3. References

In preparing this report, reference has been made to the following:

- *Traffic and Transport Report, Wollondilly Shire Community Cultural and Civic Precinct, SLR Consulting* Australia, dated 27 May 2020
- *Planning Proposal, Picton Town Centre Administration Building, Elton Consulting*, dated 8 June 2020
- *Urban Design Report, Wollondilly Shire Council Administration Building, e8urban*, dated May 2020
- other documents and data as referenced in this report.

2. SUMMARY OF PLANNING PROPOSAL

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2.1. Subject Site

The subject development site (Site) for the new administration building partially occupies two land parcels at 6-8 Colden Street and 62 Menangle Street in Picton, on the southwest corner of the intersection between Colden Street and Manolis Lane. It has a site area of approximately 2,500m^2 and occupies the northeast corner of the CCCP as shown in Figure 2.1.

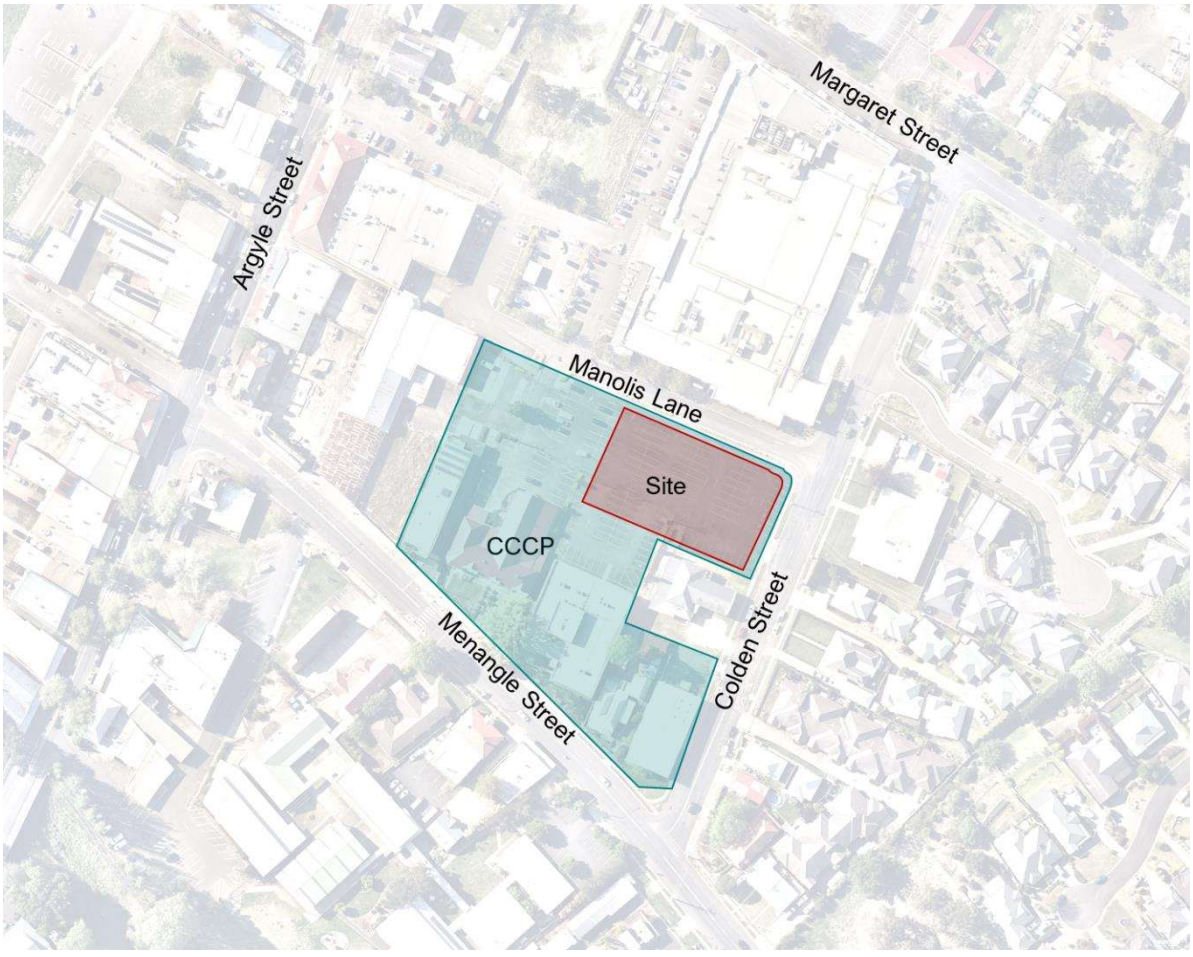
The Site is presently used as a surface public car park (Council owned), with accesses from Colden Street and Manolis Lane. The cark park (extending beyond the site boundaries) is informally bound by the following developments, with those included in the CCCP identified.

- Picton Mason Lodge to the south (external to the CCCP)
- existing Council Administration Building to the south-west (to be demolished in CCCP)
- Shire Hall and Council Chambers to the south-west(to be retained in CCCP)
- Wollondilly Library to the west – Picton Branch (to be retained and repurposed in CCCP)
- retail store (hardware) to the west (external to CCCP).

The boundaries of the CCCP also include an existing child care centre and the Picton Rural Fire Brigade (at the corner of the intersection of Menangle Street and Colden Street).

The Site is zoned as B2-Local Centre under the Wollondilly Local Environmental Plan (LEP) 2011.

Figure 2.1: Subject site and its environs



Base image source: NearMap

2.2. Planning Proposal Overview

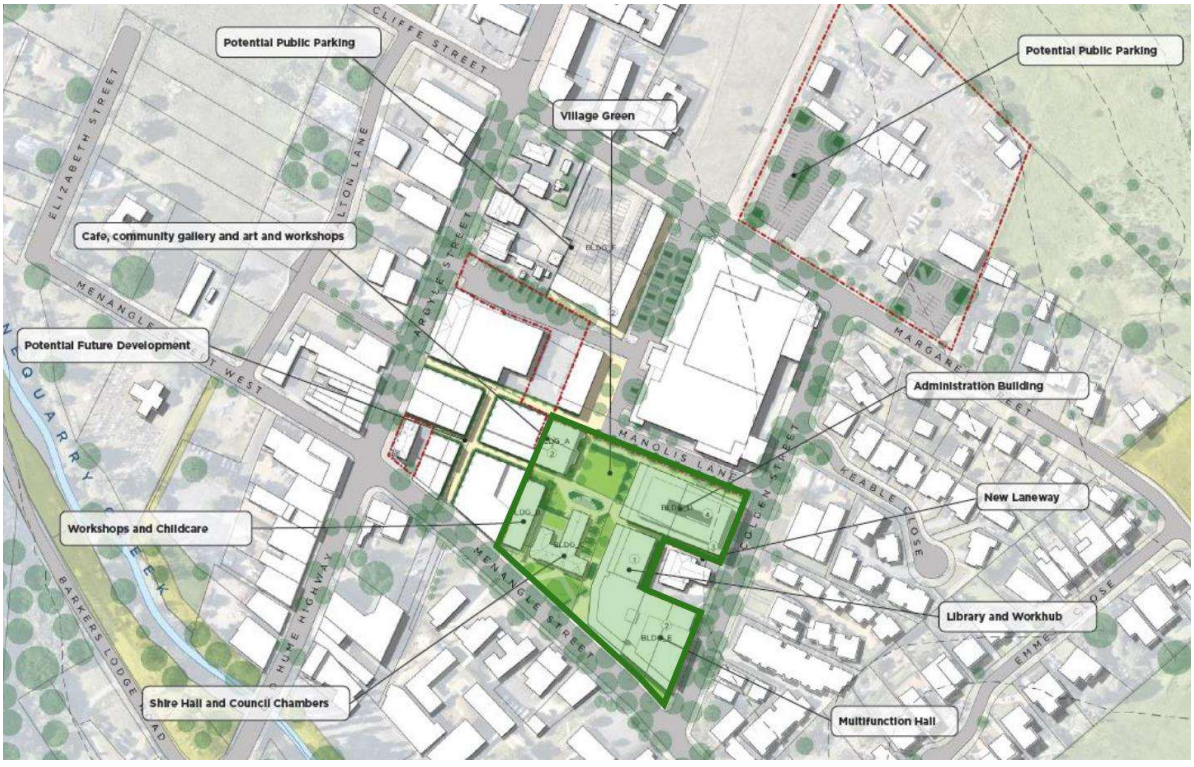
The Planning Proposal (Elton Report) will seek approval to increase the permissible height limit of the site from 9 metres to 16 metres. The included sketches show the new concept administration building having a total of four storeys, which is reduced to two storeys along the Colden Street frontage.

The Elton Report confirms that the gross floor area for the new administration building will be approximately 5,900m^2, which is understood to accommodate Council's long-term projection of 400 workers. The concept design also incorporates a two storey basement car park to be accessed from Manolis Lane.

From a transport planning perspective, the traffic impacts of a Planning Proposal are typically assessed for the highest yielding development scheme that becomes permissible under the proposed changes to the LEP. Noting that there is no floor space ratio applicable for the Site, it is unclear whether the 5,900m^2 is the maximum gross floor area achievable under the proposed height limit.

The SLR Report assesses the traffic impacts and parking requirements for the entire CCCP under a fully developed scenario. The layout of the precinct is shown in Figure 2.2, with the floor spaces for each component listed in Table 2.1.

Figure 2.2: CCCP Layout



Source: Planning Proposal (Elton Consulting)

Table 2.1: CCCP Schedule of Areas

Land Use	GFA or No.
Multifunction Hall	1,525m^2
Gallery	580m^2
Workhub	760m^2
Library	1,100m^2
Childcare	40 children
Workshops and Community Spaces	468m^2
Potential Café	220m^2
Proposed Administration Building	5,900m^2
(Existing Administration Building)	(2,400m^2)

Source: Traffic and Transport Report (SLR Consulting)

2.3. Vehicle Access and Road Network

There are inconsistencies between the Elton Report and SLR Report with the access arrangements proposed for the new administration building under the Planning Proposal:

- The SLR Report indicates a single access on Manolis Lane as shown in the extract in Figure 2.3.
- The Elton Report indicates one access on Manolis Lane and one access on Colden Street as shown in the extract in Figure 2.4. The Manolis Lane access is also located further east than the location shown in the SLR Report.

Figure 2.3: Access Location – SLR Report

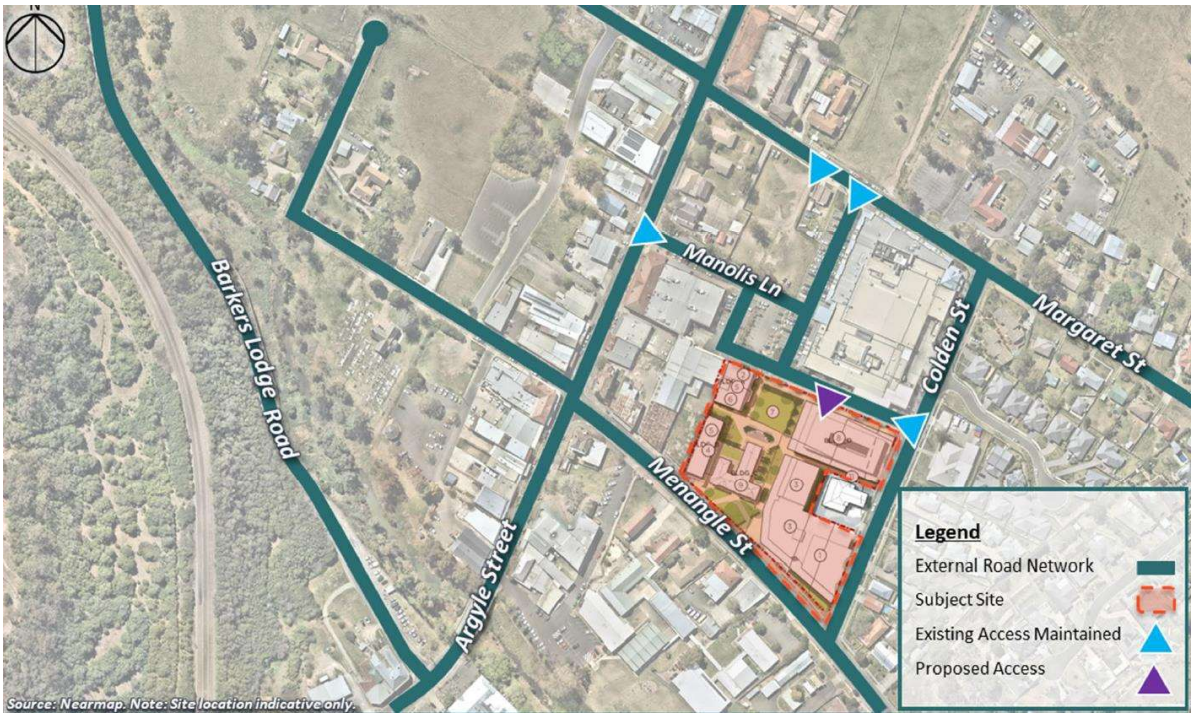
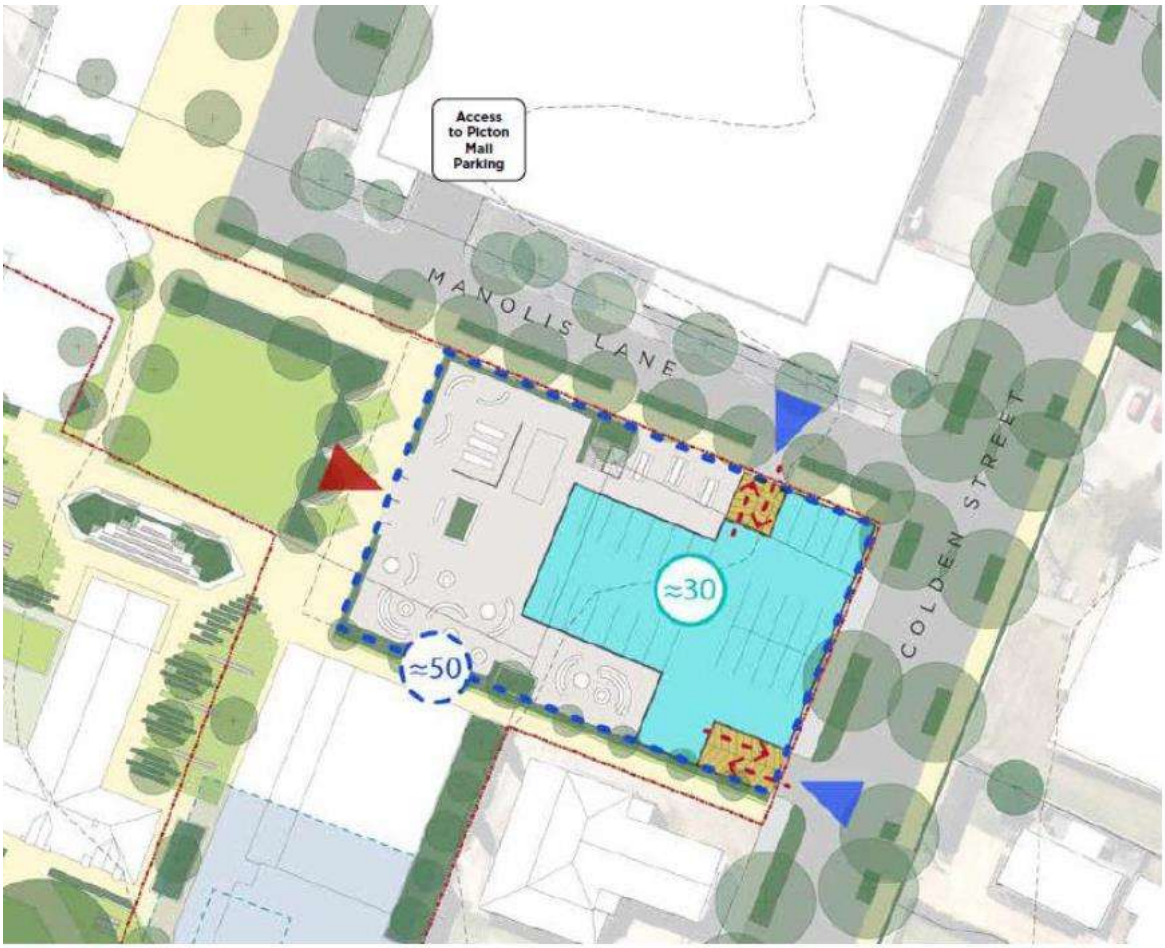


Figure 2.4: Access Locations – Elton Report



3. REVIEW OF REPORT METHODOLOGY

03

3.1. Car Parking

3.1.1. Parking Rates

Section 2.10 from Volume 5 of the Wollondilly Development Control Plan (DCP) 2016 stipulates parking rates for specific land uses, with the following clause indicating the need for further assessment for non-listed land uses:

> *"Development for purposes not listed above shall be provided by car parking at a similar rate to other comparable developments having regard to the nature of the particular proposal and its location in the road network."*

The classification of land uses and adopted parking rates in the SLR Report are summarised in Table 3.1.

Table 3.1: Adopted Parking Rates

Land Use	DCP Rate (Minimum)	Alternate SLR Rate
Café (Food and Drink Premises)	The greatest of: 12 spaces per 100m^2 of GFA; or 1 space per 5 seats (internal and external); or 1 space per 2 seats (internal); and Where a drive through is proposed queuing area for 12 cars.	N/A
Gallery (Information and Education Facilities)	N/A	9 spaces per 100m^2
Child Care Premises	1 space for every 4 children in attendance. The number of children shall be determined in accordance with the numbers licensed by the NSW Government.	N/A
Workshop and Community Spaces (Community Facility)	N/A	1.8 spaces per 100m^2
Administration Building (Office and Business Premises)	2.5 car parking spaces per 100m^2 of GFA	N/A
Library (Community Facility)	N/A	1.8 spaces per 100m^2
Work Hub (Community Facility)	N/A	1.8 spaces per 100m^2
Multifunction Hall (Function Centre)	15 spaces per 100m^2	N/A

While the selection of land uses (including alternate comparison land uses) is considered appropriate, the parking rates adopted by SLR for non-listed uses are unsourced, and not apparent in the DCP or the Transport for NSW (TfNSW) *Guide to Traffic Generating Developments*. Further justification of the basis for the alternate parking rates adopted is therefore required to confirm their appropriateness and thereby validate the available supply of public spaces.

It is also noted that since the library and shire hall are existing developments, a site-specific parking rate could be derived with surveys. However, this level of detail would only be expected during a subsequent Planning Proposal or Development Application for these components.

Notwithstanding the above, the administration building has a stipulated DCP parking rate (in addition to the multifunction centre which will rely on the basement) and thus the required quantum of parking for the site can be directly evaluated for the purposes of assessing the Planning Proposal.

3.1.2. Parking Requirements

The selected parking rates in the SLR Report were applied to the CCCP Scheme (under a full development scenario) as summarised in Table 3.2.

Table 3.2: Parking Requirement

Land Use	GFA / No.	Provision (spaces)
Café (Food and Drink Premises)	220m²	27
Gallery (Information and Education Facilities)	580m²	53
Child Care Premises	40 Children	10
Workshop and Community Spaces (Community Facility)	468m²	9
Administration Building (Office and Business Premises)	5,900m²	148
Library (Community Facility)	1,100m²	20
Work Hub (Community Facility)	760m²	14
Multifunction Hall (Function Centre)	1,525m²	229
	Total	**510**

The SLR Report acknowledges Clause 10 (Section 2.10, Volume 5) of the DCP which states that the total number of car parking spaces for a mixed use development shall be the sum of the number of parking spaces for each component use. This cumulative requirement equates to 510 parking spaces to satisfy all future uses within the CCCP.

It is thereafter argued in the SLR Report that the proposed land uses have different times of peak activity and that the TfNSW *Guide to Traffic Generating Developments* makes allowance for a lower level of parking provision where it can be demonstrated that these times do not necessarily coincide. In particular, the multifunction hall was emphasised as having a peak time of activity occurring later than the afternoon.

The approach for accounting for the peak parking demand rather than the cumulative parking requirement is supported by GTA. In any case, the overarching objective of parking under the DCP (Section 2.10, Volume 5) is to ensure developments accommodate parking demands of private land uses within private property, with the CCCP primarily delivering community facilities for the public.

Nevertheless, the Planning Proposal only seeks to amend controls for the Site, and therefore the only parking issues considered critical for assessment under this planning stage are those relevant to existing and proposed uses as summarised below:

- Accounting for the removal of 149 existing public parking spaces within the CCCP that are presently relied upon for the existing Council facilities (library, old administration building and shire hall) and amongst other developments in the Picton Town Centre.
  While the Site does not encompass all of these spaces, it is assumed that the remaining spaces will no longer be accessible to vehicles following the construction of the new administration building.

  It is noted that although the SLR Report discounts 87 parking spaces associated with these existing Council facilities as a parking credit, this should more realistically be applied to the old administration building (2,400m^2), as this is the only building which will presumably be disused under the Planning Proposal. The old administration building generates a parking requirement of 60 spaces and this reduces the level of parking that is effectively lost from the CCCP car park from 149 spaces to 89 spaces.
- A requirement to provide 148 parking spaces for the new administration building as per Table 3.2, which will operate in a manner consistent with a private commercial development in the context of generating staff parking demands.

3.1.3. Parking Demands

The SLR Report confirms that surveys were undertaken to estimate the existing demand for public parking within the Picton Town Centre, in order to assess spare capacity for the CCCP.

The survey area consisted of the block bounded by Argyle Street, Margaret Street, Colden Street and Menangle Street, which collectively accommodates 390 parking spaces (or 526 spaces including the basement car park at Picton Mall).

A parking accumulation profile was created by counting occupied parking spaces at the start of two time periods (7am and 4pm), and thereafter adjusting these based on movements captured from traffic surveys between 7am to 10am and 4pm to 6pm.

While a traditional parking survey would include regular counts of occupied parking spaces and would commonly be split into specific zones (and noting restrictions), the methodology may be suitable for the purpose of this Planning Proposal if it can be proved that there is an ample supply of spaces within reasonable walking distance. The validity of the estimated demands may, however, be questioned for the following reasons:

- The occupied parking spaces, which formed the basis for accumulating demand, were counted during a school holiday period (Thursday 9 January 2020) and may not be representative of ordinary demands. In particular, it is not uncommon for a shutdown period for businesses to occur during the first 1-2 weeks of January.
- The parking accumulation profile does not account for the entire day or address why the midday period (e.g. 11am-1pm) would not reflect a peak scenario (e.g. with lunch breaks).
- It is unclear whether the parking surveys excluded the basement car park for the Picton Mall, which could otherwise potentially 'dilute' the results for demand for public spaces.

- The surveyed area does not include the 226 parking spaces external to this block (Figure 6 of SLR Report), some of which are located in close proximity to the CCCP (south side of Menangle Street) and may be relevant when assessing the overall spare capacity.

The parking accumulation profile in the SLR Report (Figure 8) indicates that the maximum number of occupied parking spaces was 320 spaces, occurring at 9:50am. While this does indicate spare capacity (even when disregarding the 136 spaces available at Picton Mall), this again relies on base parking numbers counted during a school holiday (and potential shutdown) period and thus may not be representative of typical peak conditions.

In providing a non-cumulative assessment of peak demands across the day, the SLR Report estimates the increase in peak demands by applying a factor over the existing parking accumulation profile. Based on the abovementioned peak occupancy of 320 spaces, it was calculated that the peak demand arising from the CCCP under full development will be 513 spaces, or an increase of 193 spaces. Without having receipt of the traffic survey outputs, the corresponding increase over the existing peak occupancy during each time period is unable to be verified. It is also unclear whether the proposed parking accumulation profile makes any adjustment for the differing times of peak activity for uses within the CCCP.

In summary, the parking accumulation profile is not considered to have sufficient validity to quantify any spare capacity under existing or proposed conditions. Prior to submitting the Planning Proposal, it is recommended that the SLR Report be amended to incorporate the results of either:

- An updated parking accumulation profile based on surveys re-undertaken during a typical weekday period, if a condition is sought to accommodate any lost parking elsewhere in the Picton Town Centre. This would be more likely to be an accepted methodology for the site specific parking issues relevant to the Planning Proposal (loss of existing parking and deficiency of administration building parking) as these provisions are easily quantifiable.
- A traditional parking survey that captures parking occupancy at regular intervals and specific zones (and including details of any restrictions), if it is desired to address the parking demands for the entire CCCP. This methodology would be more robust in confirming spare capacity for public parking in the Picton Town Centre, particularly as the parking demands for other land uses for the CCCP rely on a greater number of assumptions.

Notwithstanding, the SLR Report outlines that dedicated parking for the administration building can potentially be accommodated at the Council Depot site at Margaret Street. This is discussed in the following section.

3.1.4. Parking Provision for Administration Building

The SLR Report makes reference to an unsourced master plan for the Picton Town Centre as shown in the extract in Figure 3.1, which identifies that additional parking areas at the Council Depot site on Margaret Street could be used by staff for the administration building.

A total of 117 spaces can be made available, which is an increase of 81 spaces over the existing 36 spaces currently available at this location.

The requirement of 148 parking spaces for the new administration building could therefore be accommodated by providing dedicated parking at the following locations:

- 78 parking spaces in the basement car park on-site
- 70 parking spaces (out of a total provision of 117 parking spaces) at the Council Depot.

It is acknowledged that Figure 3.1 also indicates that other parking areas within the Picton Town Centre can be reconfigured to offset the loss of public parking currently available on-site. It is recommended that a more detailed plan be provided to accompany an updated SLR Report to confirm the viability of these spaces. This will be particularly important in supporting an assessment for the CCCP.

Figure 3.1: Proposed Car Park Provision

Source: Traffic and Transport Report (SLR Consulting)

3.2. Access Arrangements and Parking Layout

3.2.1. Access Arrangements

As outlined in Section 2.3, a discrepancy arises with access locations between the SLR Report and Elton Report.

The SLR report proposes a single access from Manolis Lane. As no concept sketches for the administration building indicate this arrangement, it is assumed that this is the incorrect layout, though the following is noteworthy:

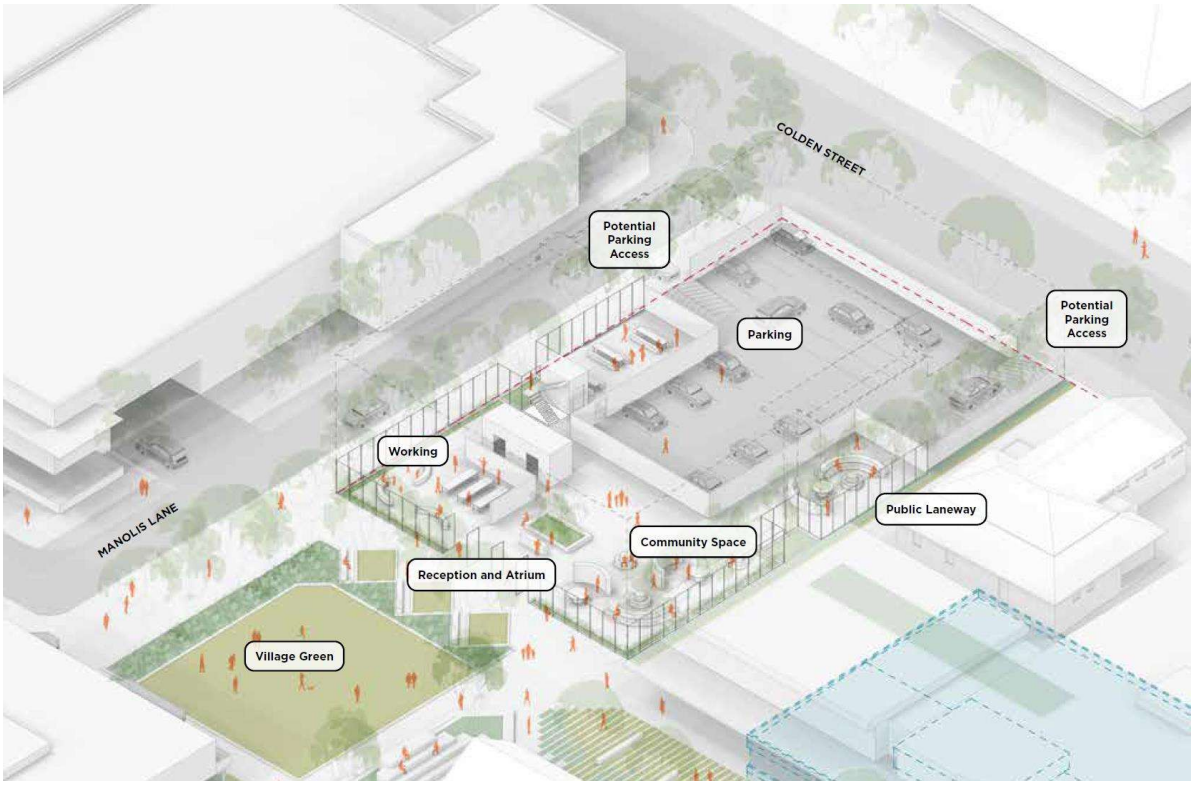
- The access location appears to be situated directly opposite the entrance to the basement car park for Picton Mall. It is desirable to offset these driveways to minimise conflicts arising from through movements between these sites.

- Clarification may be required as to whether the AIMSUN software model will need to updated, noting potentially different movements at the intersection of Manolis Lane and Colden Street.

The arrangements for two accesses on Manolis Lane and Colden Street as indicated in the Elton Report are considered to be the intended configuration, given that this is evident in the concept design sketches as shown in the extract from the Urban Design Report in Figure 3.2.

The Urban Design Report also clarifies that these are potential access points, with a final design to incorporate either one or both accesses. The location of these accesses is supportable (no longer opposite major accesses such as Picton Mall) and demonstrates that the basement car park for the new administration building can directly access the external road network without relying on further works associated with the CCCP.

Figure 3.2: Concept Design



Source: Urban Design Report (e8urban)

3.2.2. Parking Layout

While detailed design can generally be undertaken during the development application stage, the Planning Proposal needs to demonstrate that the number of parking spaces is achievable with the concept layout. In this regard, there is limited information regarding the following:

- The width of the accesses, which should be designed according to the turnover of the car park.
- Control point accesses, which are to be incorporated inside the Site and will offset any parking aisles.
- Circulation between basement levels, as no vehicular ramps are shown on the sketches.

3.2.3. Service Vehicles

The SLR Report does not discuss any requirements or arrangements for service vehicles. Section 2.10 of Volume 5 of the DCP requires that *"commercial premises must be provided with a minimum of one (1) loading / unloading space with sufficient capacity for the site"*. Developments with a gross floor area exceeding 500m^2 should also be provided with a separate access for service and delivery vehicles.

With a floor space of 5,900m^2 gross floor area, the new administration building will generate significant servicing demands, and in contrast to the existing at-grade car park, deliveries by trucks could no longer be informally facilitated in the basement car park. Accordingly, provision for a dedicated servicing area should be addressed in the Planning Proposal, whether for the new administration building only or to integrate with the entire CCCP. The need for a separate access for service and delivery vehicles should also be investigated.

3.3. Traffic Impacts

3.3.1. Trip Generation

The SLR Report assesses the traffic impacts arising from the CCCP under a full development scenario. Where applicable, trip rates were stated to be adopted from the Trips Database Bureau, which is understood to be a New Zealand based organisation that maintains a database of trip rates. It would be standard practice, however, to first reference the following NSW based publications from Transport for NSW:

- *Guide to Traffic Generating Developments*
- *Technical Direction: Updated Traffic Surveys (TDT2013/04a).*

Comments for the final trip rates adopted for each land use are provided in Table 3.3. Clarification should be provided as to how the trip rates were selected, including why the TfNSW rates are generally unapplicable (e.g. nature of use or regional location). It is also recommended that greater emphasis be given to justify the trip rates used for the larger traffic generators, being the administration building and multifunction hall.

The following approaches to assessing land uses are supported:

- Adopting a first principles approach based on seating capacity and car occupancy for:
    - Multifunction Hall (350 people at 2 persons per car)
    - Gallery (63 people at 1.5 persons per car).

  Any proposal directly relevant to these uses may, however, require more justification on car occupancies given the wide variance.
- Accounting for net traffic generation as follows:
    - zero trips for the library and child care centre
    - the net increase in floor space for the new administration building over the old administration building.

Table 3.3: Adopted Trip Generation Rates

Land Use	AM Peak Trip Rate	PM Peak Trip Rate	GTA Comment
Multifunction Hall	2.50 trips per 100m^2	11.48 trips per 100m^2	Consistent with first principles approach. Lower AM rate is assumed to be associated with staff arrivals only. Additional operational data could potentially justify that an event starting during the PM peak would represent a worst case scenario.
Gallery	9.54 trips per 100m^2	4.77 trips per 100m^2	Consistent with first principles approach. AM conservatively accounts for turnover (in and out)
Workhub	0.83 trips per 100m^2	0.95 trips per 100m^2	Further clarification needed to confirm trip rate
Workshops and Community Spaces	0.83 trips per 100m^2	0.95 trips per 100m^2	Further clarification needed to confirm trip rate
Potential Café	10.31 trips per 100m^2	20.63 trips per 100m^2	Considered very conservative. A secondary retail store under the TfNSW Guide will have peak generation of 4.6 trips per 100m^2
Administration Building	1.65 trips per 100m^2	1.28 trips per 100m^2	Further clarification needed to confirm rate, though similar to the Sydney based average trip rates for commercial developments in the TfNSW Technical Direction TDT 2013/04a

3.3.2. Trip Distribution

The assigned trip distributions in the SLR Report are supported:

- The distribution of development traffic to and from the wider road network is based on the pattern of road network traffic as surveyed. This is considered to be an acceptable alternative to reviewing Journey to Work data that can be required for a site in a more complex metropolitan road network.
- The splits of development traffic entering and leaving the CCCP are also considered reasonable having regard to the nature of each land use.

3.3.3. Intersection Modelling

The adoption of the AIMSUN microsimulation model that underpinned the Picton Town Centre Transport Plan 2026 provides the most thorough assessment of traffic impacts arising from the CCCP, with the advantage of incorporating planned road network upgrades in future scenarios. SLR undertook intersection surveys in 2019 to adjust the base case model from the original 2016 volumes which is supported. Their observations also confirmed that the intersection of Argyle Street and Margaret Street had since been upgraded to signals.

The modelling assessed the performance of the Picton Town Centre network for the following scenarios:

- 2019 base case
- 2036 'do minimum' scenario, which includes the upgrades flagged under the Picton Town Centre Plan 2026:
    - realignment of the Argyle Street/ Lumsdaine Street intersection, to include signal control
    - improvements to the Argyle Street/ Prince Street intersection
    - right turn ban to traffic turning from Menangle Street at the Argyle Street/ Menangle Street intersection
    - upgrade to signal control at the Menangle Street/ Prince Street intersection.
- 2036 base case plus development scenario, incorporating the CCCP volumes.

The summary delays and LOS outputs for each scenario are shown in Table 3.4. It is noted that GTA has undertaken a review of the modified AIMSUN network model prepared by SLR Consulting, with comments provided in Section 4. That review has identified that additional information is needed to confirm the calibration and validation of this model (as well as justification of departures). As such, the performance of the network cannot be verified at this stage and the implications of the LOS outputs as discussed below therefore need to be considered in that context.

Table 3.4: Summary Delays and LOS Outputs

Intersection	2019 Base Case - Delay (LOS)		2036 Do-Minimum - Delay (LOS)		2036 Base Case + Development - Delay (LOS)	
	AM	PM	AM	PM	AM	PM
Argyle Street/ Prince Street	11 (A)	25 (B)	29 (C)	30 (C)	37 (C)	20 (B)
Menangle Street/ Prince Street	42 (D)	30 (C)	26 (B)	24 (B)	20 (B)	19 (B)
Argyle Street/ Bakers Lodge Road	22 (B)	17 (B)	25 (B)	28 (C)	28 (B)	31 (C)
Argyle Street/ Menangle Street/ Menangle Street West	20 (B)	22 (B)	18 (B)	23 (B)	19 (B)	22 (B)
Argyle Street/ Margaret Street/ Cliff Street	18 (B)	25 (B)	27 (B)	25 (B)	23 (B)	23 (B)
Menangle Street/ Colden Street	8 (A)	3 (A)	15 (B)	22 (B)	10 (A)	12 (A)
Margaret Street/ Colden Street	2 (A)	2 (A)	2 (A)	2 (A)	2 (A)	2 (A)

Based on the results in Table 3.4, it is evident that the network is currently (in 2019) performing satisfactorily overall, with all intersections operating at a minimum Level of Service C, with the exception of Menangle Street and Prince Street which is operating near capacity at a Level of Service of D in the AM peak (note that this intersection has been flagged for signalisation).

The SLR Report, however, does not test the addition of any development volumes to the 2019 scenario. Indeed, the only scenario tested for additional volumes is the 2036 scenario which assumes the completion of the abovementioned upgrades under the Picton Town Centre.

The results of the 2036 + Development scenario indicate satisfactory performance, with a minimum level of service of C, and is a worthwhile exercise to demonstrate that the network will cope with increases in background volumes and the CCCP when fully developed. However, the assessment does not confirm if the CCCP can be partially or fully operational at a timeframe before these upgrades are implemented.

The results of additional testing during 2019 (i.e. for the base case scenario) or during an intermediate scenario with partial network upgrades is therefore recommended to support the Planning Proposal. With the benefit of undertaking this peer review in November 2020, Council has clarified the current status of projects as follows:

- pedestrian crossing on Argyle Street relocated
- detailed design for signalisation of Menangle Street and Prince Street 80% complete; land acquisition process commenced, construction scheduled to commence 2021
- detailed design for intersection upgrade of Argyle Street and Prince Street 80% complete; land acquisition process commenced, construction scheduled to commence 2022 (or after Menangle Street/ Prince Street signals are completed)
- Colden Street 'bypass' and intersection modification of Argyle Street and Menangle Street approved by Local Traffic Committee and Transport for NSW have offered to carry out detailed design and implementation (expected to commence early 2021)
- Funding secured for Barkers Lodge intersection detailed design

These projects should be incorporated into any additional modelling where deemed to be appropriate.

4. AIMSUN NETWORK REVIEW

04

4.1. Operational Assessment

The following section provides a summary of GTA's review of the modified Picton Town Centre Aimsun Network Model and supporting document(s), prepared by SLR Consulting Australia. This review identifies any outstanding issues or additional information to be documented.

The specific documents and traffic model(s) provided for the review are outlined in Table 4.1.

Table 4.1: Review Materials

Material	File Name	File description	Received date
Aimsun Model	• Picton TC - Base v0.6.2.ang • Picton TC - DM v0.2.1.ang	Picton Town Centre Redevelopment operational modelling. Each model was reviewed for the relevant scenarios as follows: • Rebase model (2019) • Future Year (2036) with Do Minimum • Future Year (2036) with Do Minimum and Development	23/11/2020
Report	Traffic and Transport Report	Traffic and transport report including operational assessment using Aimsun	30/10/2020

Table 4.2 provides a summary of the review comments.

Table 4.2: Summary of Review Comments

Item	Section	Comment
1	Overall Comments	The SLR Report only provides a summary of calibration and validation results for one peak hour. All detailed calibration results should be provided for further review and justification should be provided for the deviation of model calibration results from the criteria outlined in TfNSW modelling guidelines.
2	Report Comment 1- Rebase Model	• The 2019 rebase model will require approval by TfNSW • It is noted that the Aimsun model has 3-hour AM and 2-hour PM peak periods with a 15-minute warmup period. Each peak hour should be calibrated and validated, including the peak of the peak period. These details should be provided in the report. • Based on TfNSW's Traffic Modelling Guidelines (2013), the following criteria must be met: o Turning or link flow (addressed) o Disaggregated travel time results by key locations are missing. These should be included to ensure the model replicates congestion within the network. o Model stability (missing) • Median seed for testing base and future scenario is missing • 2019 Rebase Model Performance results are missing, including: o Network statistics including speed/posted speed o Intersection delay o Queues
3	Report Comment 2- Future Model	• The seed number applied for future scenario testing should be identified. • Appendix C shows the modelled network performance (speed/speed limit) excluding 2019 rebase model results. It is recommended to include a comparison of the three scenarios in the report. In addition, Appendix C indicates the results were derived from version V0.2.0, though a later model file (V0.2.1) was issued. • Section 8.3.2 shows the mean travel time for 2036 Do Minimum and 2036 Do Minimum with Development as summarised in the below tables. It should be clarified why the northbound travel time on Route 1 and 2 was improved with the extra development trips during the AM peak period.

<table>
<tr><th>Item</th><th>Section</th><th>Comment</th></tr>
<tr><td></td><td></td><td>
In addition, explanation should be provided as to why the westbound travel time during the PM peak has been significantly reduced with the additional development trips.
<table>
<tr><th>2036 AM</th><th>Direction</th><th>Do Mininum Travel Time</th><th>Do Mininum + Dev Travel Time</th><th>Difference (secs) (36DM+Dev)-(36DM)</th></tr>
<tr><td>Route 1</td><td>northbound</td><td>232</td><td>228</td><td>-4</td></tr>
<tr><td>Route 1</td><td>southbound</td><td>179</td><td>182</td><td>3</td></tr>
<tr><td>Route 2</td><td>northbound</td><td>145</td><td>143</td><td>-2</td></tr>
<tr><td>Route 2</td><td>southbound</td><td>126</td><td>126</td><td>0</td></tr>
<tr><td>Route 3</td><td>eastbound</td><td>111</td><td>113</td><td>2</td></tr>
<tr><td>Route 3</td><td>westbound</td><td>71</td><td>101</td><td>30</td></tr>
</table>
<table>
<tr><th>2036 PM</th><th>Direction</th><th>Do Mininum Travel Time</th><th>Do Mininum + Dev Travel Time</th><th>Difference (secs) (36DM+Dev)-(36DM)</th></tr>
<tr><td>Route 1</td><td>northbound</td><td>210</td><td>213</td><td>3</td></tr>
<tr><td>Route 1</td><td>southbound</td><td>175</td><td>177</td><td>2</td></tr>
<tr><td>Route 2</td><td>northbound</td><td>125</td><td>127</td><td>2</td></tr>
<tr><td>Route 2</td><td>southbound</td><td>122</td><td>124</td><td>2</td></tr>
<tr><td>Route 3</td><td>eastbound</td><td>123</td><td>117</td><td>-6</td></tr>
<tr><td>Route 3</td><td>westbound</td><td>102</td><td>78</td><td>-24</td></tr>
</table>

Section 8.3.4 indicated the level of service of the network based on modelled vehicle speeds compared to the posted speed limit only. It is recommended to assess all three scenarios and include network statistics outputs such as demand, unreleased demand, delay, speed, Vehicle Kilometres travelled (VKT) and Vehicle Hours Travelled (VHT).
Section 8.3.5 summarised the maximum queue observed at various times during the simulation. It is recommended to include all three scenarios to indicate how the development trips affect the network performance.

</td></tr>
<tr><td>4</td><td>Model Comment 1 – Rebase Model</td><td>

Public Transport coding such as service bus and stops is missing.
It has been identified that some road sections within the study area have steep grades which may impact vehicle behaviour and performance, in particular for heavy vehicles. A slope model may be required depending on vehicle composition.
RDS (raw data set) for 2019 is missing.
The order of the process to produce path assignment for DUE run should be clarified. It seems both DUE and SRC runs have adopted the same path assignment as an input (which are outputs of DUE run).
It is noted that the cycle of costs for SRC was defined as 2 minutes compared to 15 minutes for DUE runs. However, this will not change the operation of the model as 100% of paths are following the input path assignment from the meso model run.

</td></tr>
<tr><td>5</td><td>Model Comment 2 – Future Model</td><td>

The Base and future network layouts are shown in Figure 4.1. Four infrastructure changes have been made based on the 2026 Transport Plan as mentioned in Section 8.3 of the report. However, two areas have changed from the rebased model, as highlighted. Clarification of all network changes for future scenarios is required.
It is noted that the background traffic growth rate is 1.4% per annum for the AM peak and 1% per annum for the PM peak period. Further information and clarification is required to enable a review of the methodology used for the background demand development for future year scenarios to be undertaken.
Extra development trips in the model are estimated as 286 veh for the AM peak (3 hours) and 380 veh for the PM peak period (2 hours). Further information and clarification is required to enable a review of the development demand to be undertaken.
The signal coding at the intersection between Argyle Street and Margaret Street has changed as shown in Figure 4.2. Justification of the changes made to the cycle time and signal phasing is required, since it appears unlikely that the intersection will be coordinated with any of the new upgraded intersections.

</td></tr>
</table>

Figure 4.1: Network Comparison

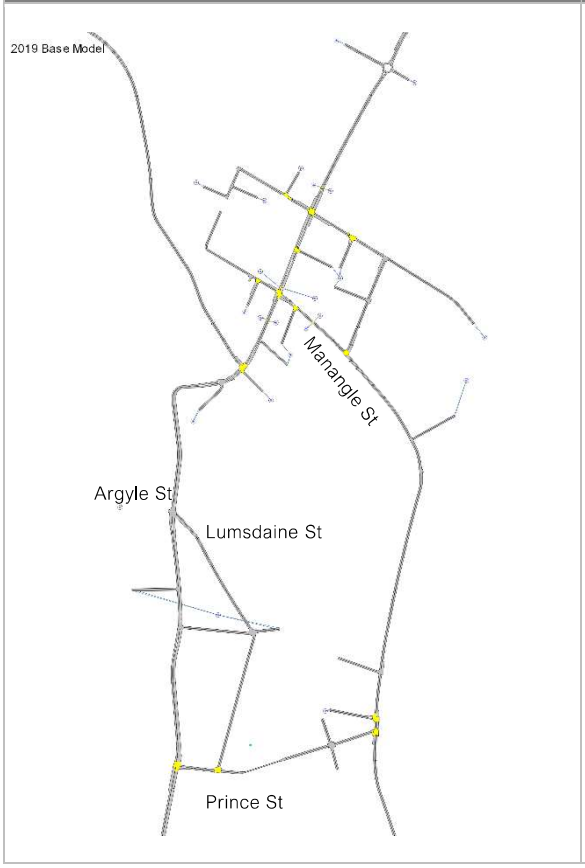
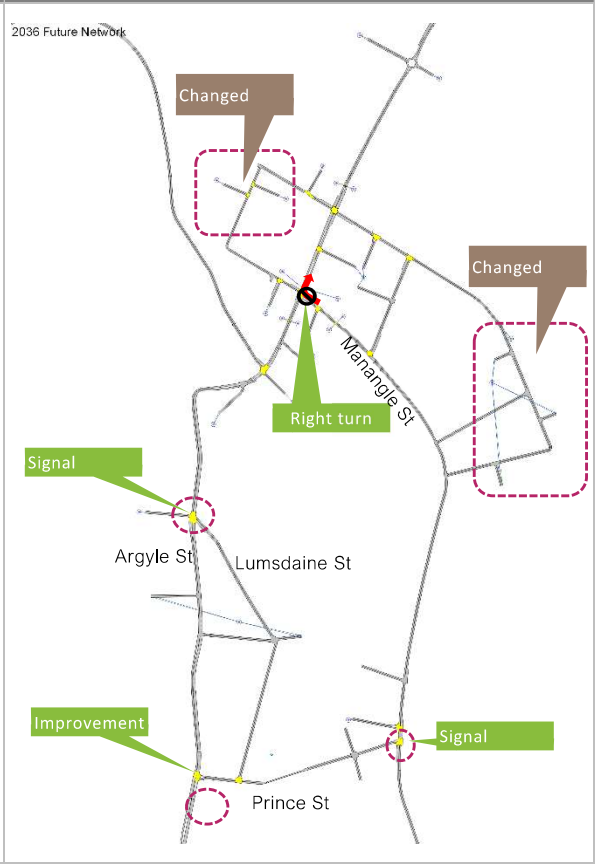
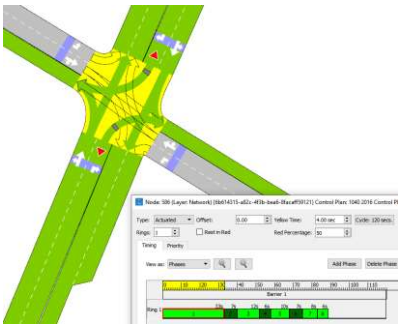
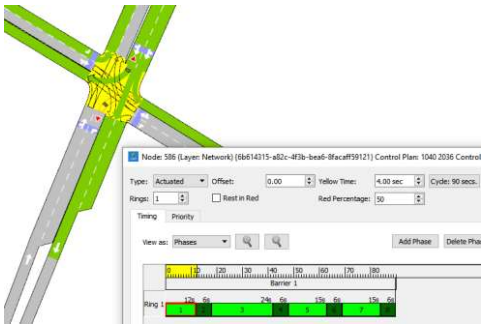
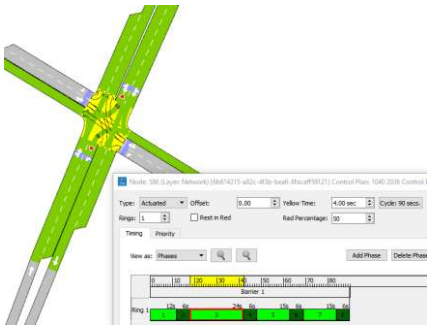
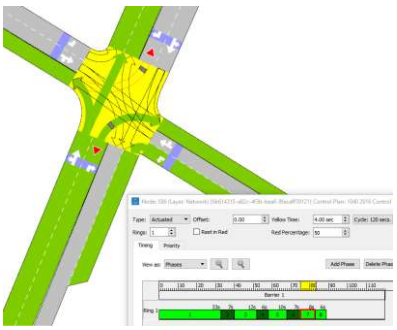
2019 rebase Model	2036 Future Do Minimum Model
	

Figure 4.2: Traffic Signals at the Intersection of Margaret Street and Argyle Street

	2019 Rebase Model	2036 Future Do Minimum Model
Cycle Length	120 seconds	90 seconds
Phase 1		
Phase 2		
Phase 3		
Phase 4		

5. OTHER CONSIDERATIONS

05

5.1. Public Transport

The SLR Report has assessed the existing public transport network where it is noted that a multitude of bus services operate from Menangle Street. These routes serve the local region and also provide a link to/ from Picton Station to the south, however, this is outside the comfortable walking distance (1.3km).

While the availability of services will reduce the reliance on private transport, particularly for administration staff, the parking rates and trip rates adopted in the SLR report are of a general nature and are not reliant on locations having high public transport usage. As such, this makes for a conservative assessment.

It is also acknowledged that the CCCP can potentially improve active transport networks, allowing improved pedestrian connectivity within the Picton Town Centre (in particular between bus stops on Menangle Street and Picton Mall). SLR Consulting also updated the Wollondilly Bike Plan in June 2019 which is understood to have been adopted by Council. Figure 11 of the SLR Report details the proposed strategic routes that rely on major roads being designated as strategic routes with additional local roads providing connections to Picton Station. The implementation of bicycle parking within the CCCP can therefore leverage these new networks.

5.2. Additional Parking Requirements

While only concept level designs are expected for a Planning Proposal, consideration should be given to the following parking requirements to inform a later detailed design stage:

- Bicycle Parking: The SLR Report has detailed the requirements under the DCP to provide bicycle parking for each use of the CCCP. Some uses, including the administration building, are of a sufficient size to warrant end of trip facilities and storage to be incorporated. Dedicated bicycle parking could be provided within the basement for the new administration building or a central bicycle parking area could be incorporated for the CCCP.
- Accessible Parking: Accessible parking should be provided in accordance with the DCP or rates as scheduled in the Building Code of Australia. This is normally expressed as a percentage of the overall car parking spaces provided. The basement for the new administration building forms the ideal location to accommodate all accessible parking for the CCCP, being covered and with lifts readily available.
- Motorcycle Parking: There are no motorcycle parking requirements stipulated in the DCP for any uses of the CCCP. The spatial requirements for motorcycle parking area are low, however, and the opportunity for providing spaces may arise during the detailed design stage.

5.3. Queueing

The SLR Report has detailed the results of a queuing assessment in accordance with the off-street parking standard AS2890.1. The analysis accounts for different flow rates and capacities associated with using ticketed or number plate recognition (NPR) systems to allow entry to the car park.

The assessment has not been reviewed in detail as this is not considered a critical aspect to inform the Planning Proposal. However, the results as expressed in queue lengths (e.g. 12m for ticketed and 6m for NPR) will be useful to inform the detailed design in the case where the basement car park for the new administration centre is allocated for high turnover public use.

6. CONCLUSIONS AND RECOMMENDATIONS

06

6.1. Summary

GTA Consultants has completed a traffic and parking peer review of the Planning Proposal, having regard to the methodology and conclusions of the Traffic and Transport report prepared by SLR Consulting Australia. The purpose of this review is to objectively consider the impacts of future traffic generation, parking demand and accessibility characteristics of the proposal. The review is intended to inform Council of any potential shortcomings, which should be considered or rectified prior to submission of the Planning Proposal.

In summary, the following conclusions and recommendations are made:

- Further consideration should be given to the alternate parking rates adopted for uses not listed in the DCP, if the Planning Proposal seeks to account for the entire CCCP under full development.
- There are two critical parking aspects directly relevant to the Planning Proposal:
    - Providing 148 parking spaces for the new administration building. This is achievable with the 78 parking spaces envisaged for the basement car park and with the remainder of spaces being provided at the Council Depot site at Margaret Street.
    - Accounting for the loss of 149 public parking spaces that are presently on-site. This can be reduced to an effective loss of 89 spaces, since the old administration building will be disused and the associated demand for 60 spaces can be discounted.
- The SLR Report has created parking accumulation profiles for existing and proposed conditions to establish spare capacity for public parking in the Picton Town Centre. While this methodology may be accepted for the Planning Proposal in the context of accounting for the lost on-site public parking, it may not be robust enough to confirm if demands for the entire CCCP can be accommodated. There are particular concerns regarding the timing of surveys underpinning these parking accumulation profiles which occurred in off-peak conditions.
- There is a discrepancy in the access arrangements proposed between the SLR Report and the Planning Proposal report prepared by Elton Consulting. It is believed that the Planning Proposal report shows the intended configuration with accesses on Manolis Lane and Colden Street. These locations are supported.
- The concept layout of the basement car park for the new administration building shows limited detail regarding the accesses and circulation between levels. This is needed in order to confirm that the intended yield of 78 spaces is achievable.
- The Planning Proposal should address servicing vehicle provisions either for the new administration building in isolation or as an integrated solution for the CCCP, as required under the DCP.
- Further justification should be given for the adopted trip rates, including why any Transport for NSW based trip rates are unsuitable for the nature of use or site location.
- The AIMSUN intersection network model only adopts development volumes for the year 2036, when all upgrades for the Picton Town Centre have been assumed to be completed. Testing however should be undertaken for the 2019 (i.e. existing) scenario or an intermediate scenario (with partial network upgrades) to confirm whether the CCCP can operate with acceptable traffic impacts before all of these upgrades have been implemented.
- Additional information should be documented regarding the modified Aimsun network model prepared by SLR Consulting, including information regarding the calibration and validation results for all time periods and justifications for any departures from the TfNSW Guidelines or changes to the intersection phasing arrangements.

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