



PARKING & TRAFFIC

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Driving success through valuable advice

51 to 57 Henry Street, Penrith

For By The Park Pty Ltd

Traffic and Parking Assessment (for Planning Application)

For the attention of: Ahmad Diab

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1 Introduction

1.1 Project Summary

Parking and Traffic Consultants (PTC) have been engaged by By The Park Pty Ltd to prepare a Parking and Traffic Assessment to accompany a Planning Proposal application to Penrith City Council (PCC) for the proposed a hotel, residential and retail development at 57 Henry Street, Penrith.

The proposed development comprises of a 100 room hotel, 454 residential units and 1571m² of retail space divided into 9 individual units, within 2 buildings of 25 and 38 storeys, respectively.

The location of the development is shown in Figure 1.

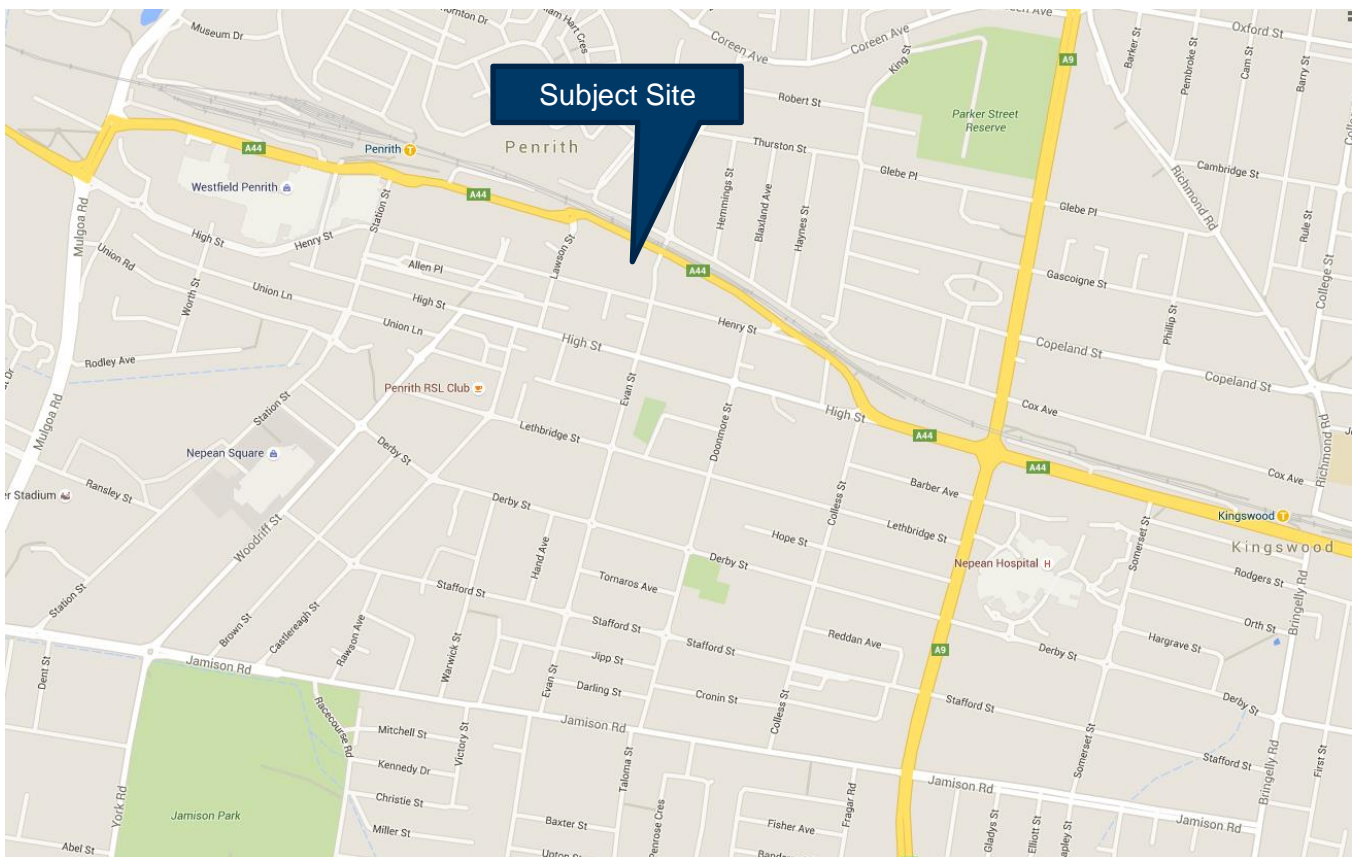


Figure 1 – Site Location

1.2 Structure of Report

This report presents the following considerations in relation to the Parking and Traffic assessment of the proposal:

- Section 1 - A description of the project,
- Section 2 - A description of the road network and transportations facilities serving the development,
- Section 3 - Determination of the traffic activity associated with the development proposal,
- Section 4 - Assessment of the required parking provision in context of the relevant planning policy control requirements,
- Section 5 - Assessment of the proposed parking and access arrangements, and
- Section 6 - Conclusion.

2 Proposal

2.1 Development Site

The development site is located on the northern side of Henry Street, the western side of Evans Street and the southern side of North Street, within the Penrith CBD.

The site occupies an area of approximately 8,680m² and currently accommodates the former Penrith Regional Office of the Department of Education and Training. The existing buildings are generally 2 storeys and occupy 2,500m² in area.

The site has at-grade site frontages of approximately, 81m with Henry Street and 65m with North Street. The frontage along Evans Street is bounded by the existing road embankment.

The site also includes a heritage property, located on the Henry Street frontage, which is not included within the proposed development area and approximately 1322m² of land, along the North Street frontage, which is allocated to the RMS for future widening of North Street.

The development site is shown in Figure 2.

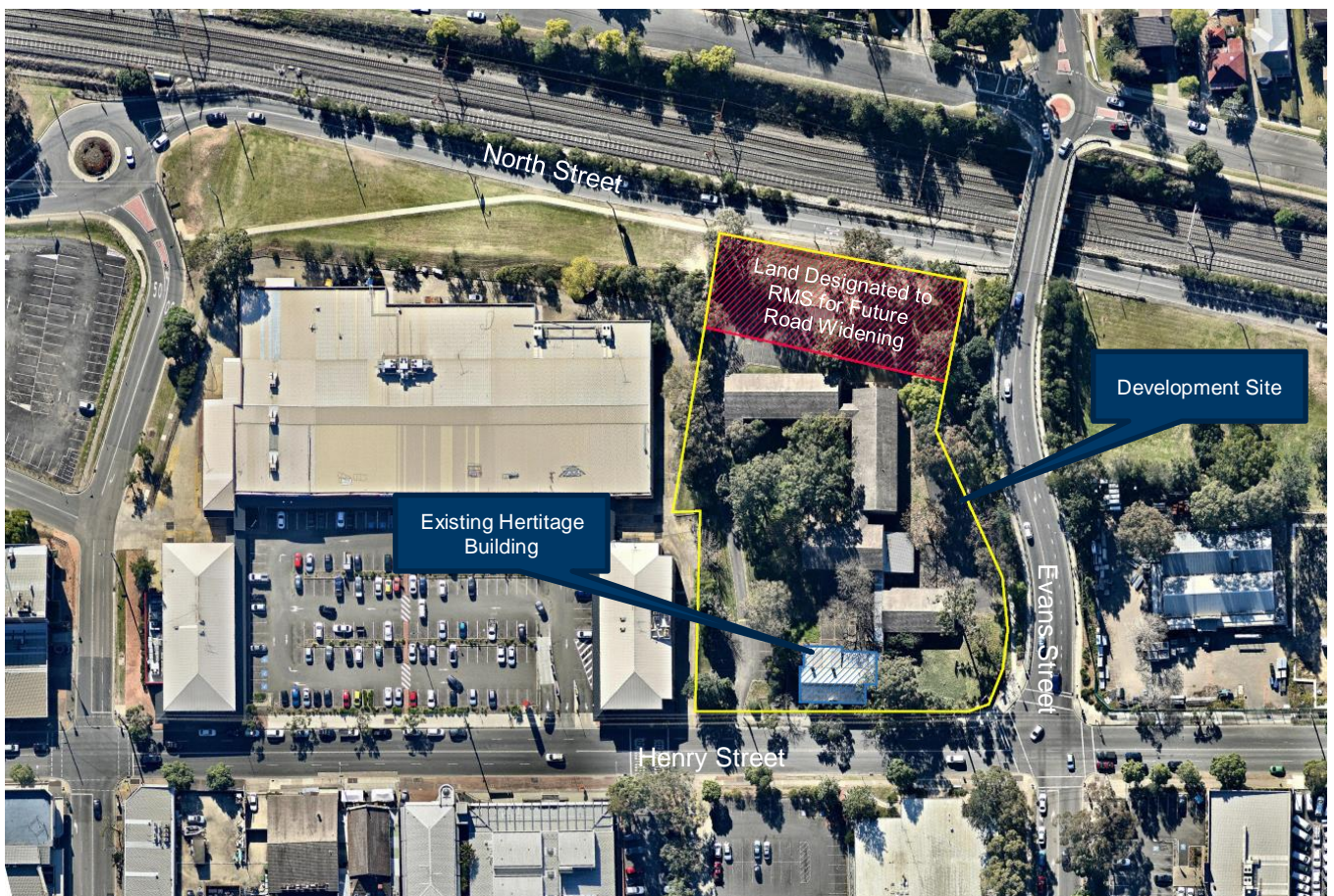


Figure 2 – The Development Site

2.2 Development Proposal

The proposed development is for a mixed use development consisting of 2 multi storey buildings.

- Building A - 38 Storeys
- Building B - 25 Storeys.

Building A is proposed to comprise of the following:

- Tourist Related GFA - 7,730m²,
- Hotel - 100 rooms, and
- Residential - 297 units.

Building B is proposed to comprise of the following:

- Retail / Commercial Space - 1,571m² GFA, and
- Residential - 157 units.

In total the development will house:

- Retail / Commercial Space - 1,571m² GFA,
- Tourist Related GFA - 7,730m²,
- Hotel - 100 rooms, and
- Residential - 454 units.

The residential unit mix is proposed as follows:

- 1 bedroom units - 110 units,
- 2 bedroom units - 249 units, and
- 3 bedroom units - 95 units.

Car parking for the development is proposed in 2 car park areas, with the Hotel/Retail parking with a 2 basement levels accessed via Henry Street and the residential parking within 3 (full) basement levels and a 4th basement containing 36 parking spaces and the bulk of the services, accessed via North Street.

There is also a proposed loading and service area with access from North Street and a 'Port Cochere' to provide access to the Hotel entrance and drop off area off Henry Street.

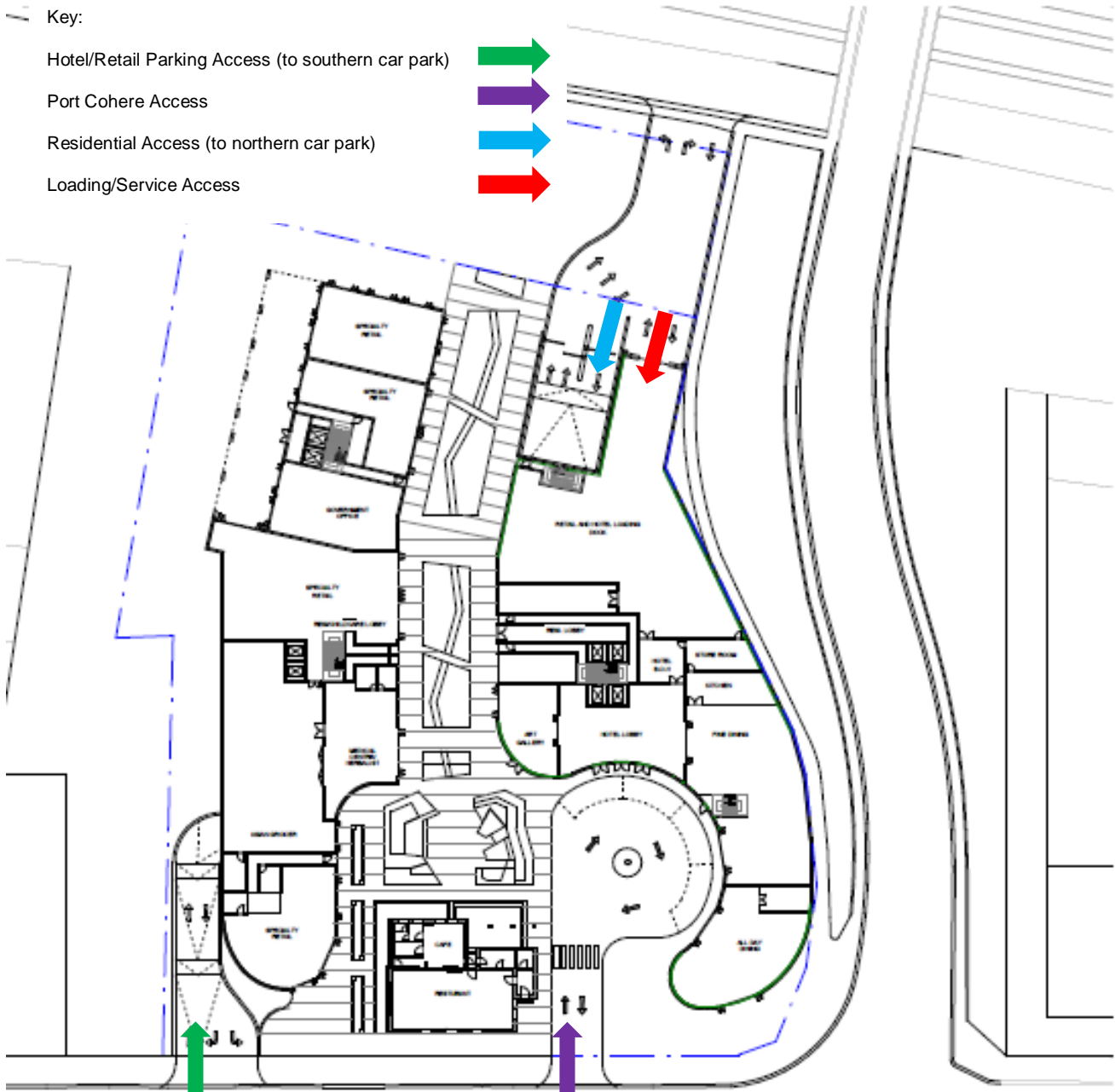


Figure 4 – Proposed Development, access locations.

3 Existing Transportation Facilities

3.1 Road Hierarchy

The subject site is located at 51 to 57 Henry Street, Penrith with direct access on to Henry Street to the south and North Road to the north.

North Street is a State Road, which provides links to a number of Regional and State controlled roads and to the greater Sydney road network.



Figure 5 – Road hierarchy (Source: RMS Road Hierarchy Review)

The NSW administrative road hierarchy, illustrated in Figure 5, comprises the following road classifications, which align with the generic road hierarchy as follows:

- State Roads - Freeways and Primary Arterials (RMS Managed)
- Regional Roads - Secondary or sub arterials (Council Managed, Part funded by the State)
- Local Roads - Collector and local access roads (Council Managed)

The road network serving the site includes:

Table 1 – Existing Road Network – Western Motorway

Western Motorway	
Road Classification	State Road (Motorway)
Alignment	East - West
Number of Lanes	3 lanes in each direction and a hard shoulder
Carriageway Type	Divided
Carriageway Width	50 metres
Speed Limit	110 kph
School Zone	No
Parking Controls	Motorway Clearway
Forms Site Frontage	No



Figure 6 – Western Motorway – Westbound

Table 2 – Existing Road Network – Parker Street

Parker Street

Road Classification	State Road
Alignment	North - South
Number of Lanes	3 lanes in each direction
Carriageway Type	Divided
Carriageway Width	23 metres
Speed Limit	70 kph
School Zone	No
Parking Controls	No Stopping
Forms Site Frontage	No



Figure 7 – Parker Street – Northbound

Table 3 – Existing Road Network – Henry Street

Henry Street

Road Classification	Local Road
Alignment	East - West
Number of Lanes	1 lane and a parking lane westbound, 2 lanes eastbound
Carriageway Type	Un-divided
Carriageway Width	12 metres
Speed Limit	50 kph
School Zone	No
Parking Controls	No Parking 3pm to 6pm Monday to Friday (westbound), No Stopping (eastbound)
Forms Site Frontage	Yes



Figure 8 – Henry Street – Westbound

Table 4 – Existing Road Network – Evans Street

Evans Street

Road Classification	Local Road
Alignment	North - South
Number of Lanes	1 lane in each direction
Carriageway Type	Un-divided
Carriageway Width	8 metres
Speed Limit	50 kph
School Zone	No
Parking Controls	No Stopping
Forms Site Frontage	Yes



Figure 9 – Evans Street – Southbound

Table 5 – Existing Road Network – North Street

North Street

Road Classification	State Road
Alignment	East - West
Number of Lanes	1 lane in each direction
Carriageway Type	Un-divided
Carriageway Width	8 metres
Speed Limit	50 kph
School Zone	No
Parking Controls	No Stopping
Forms Site Frontage	Yes



Figure 10 – North Street - Westbound

3.2 Public Transport

In assessing the accessibility of the site to public transport, reference is made to the NSW Planning Guidelines for Walking and Cycling (2004) (the Cycling and Walking Guide). This document recommends a distance of 400-800m is a walkable catchment to access public transport and local amenities. Further details identifying the accessibility of these services are provided in Figure 11 below.

Public transport is provided at a number of bus stops within the vicinity of the site and Penrith Train Station, all within 800m of the site.



Figure 11 – Public Transport surrounding the site

3.2.1 Train Services

Penrith Train Station is operated by Sydney Trains and serves the following routes:

- T1 Western Line; and
- Blue Mountains Line



Figure 12 – Sydney Trains Network

During the weekday, typical peak and off peak train frequency is in the order of 15 minutes respectively. While on weekends the frequency of the train service is every 30 minutes. Bicycle storage facilities are provided at the station to encourage more active travel options.

3.2.2 Bus Services

The site is serviced by bus services that operate from two (2) bus stops located within 100m of the site, as shown in Figure 13 and summarised in Table 6.



Figure 13 – Local Bus Services

Table 6 - Bus Service Summary

Route Number	Frequency (approximate)	Coverage	Location
678	6 services daily between 6.40am and 5.25pm	Penrith to Richmond	100m, 1 minute walk
780	20 minute intervals, between 6.10am & 10.20pm	Penrith to Mt Druitt	100m, 1 minute walk
782	20 minute intervals, between 6.20am & 9.10pm	Penrith to St Marys	100m, 1 minute walk
785	30 minute intervals, between 7.00am & 9.00pm	Penrith to Werrington	100m, 1 minute walk
786	30 minute intervals, between 5.50am & 10.40pm	Penrith Loop	100m, 1 minute walk

3.2.3 Public Transport Summary

The NSW Planning Guidelines for Walking and Cycling (2004), suggests a distance of 800m is a walkable catchment and 1500 metres is a cycle catchment to public transport. As such, the site is accessible by public transport within an acceptable walking and cycling distance.

3.3 Active Transport

The locality was reviewed for features that would attract active transport trips (walking and cycling). It was noted that the site is located within the Penrith CBD, which contains a large range of businesses including Westfield Penrith, health care, banks, restaurants, supermarkets etc.

The site is also in close proximity to a number of educational facilities, including Penrith High School, along with other facilities such as Penrith RSL and St Nicholas of Myra Catholic Parish Church.

These features are highlighted in Figure 14. When considering the wide range of features surrounding the subject site, it was concluded that the great majority of general activities can be carried out within the site's walking and cycling catchment.

Also, as shown in Figure 14, the site is served by a cycle route along Evans Street and provides access to the local area and to the wider Sydney cycle network.



Figure 14 – Local Features (Source; RMS Cycleway Finder 2015)

3.4 Existing Traffic Generation

The development is proposed on a site which is currently vacant but was previously occupied by the former Penrith Regional Office of the Department of Education and Training and could potentially generate some traffic activity.

Section 3.5 of the RTA Guide to Generating Developments (the guide) provides traffic generation rates for the existing land uses and applying the conservative rate of an office and commercial usage, the resulting vehicular trip generated from this use are shown in Table 7 below:

Table 7 – Calculation of existing traffic generation

Address	Uses	Area m ² (approx.)	Trip Generation (PM Peak)	Weekday Peak Hour Vehicle Trips
51-57 Henry Street	Office and Commercial	2,500	2 per 100m ² GFA	50
Total				50

4 Development Traffic Assessment

4.1 Development Traffic Generation

This Planning Proposal is being made to facilitate a mixed used development incorporating a 100 room hotel, 454 residential units and 1,571m² of retail space.

In order to estimate traffic volumes likely to be generated by the subject site, reference was made to the following trip guides:

- Hotel Component;
 - 'Casual Accommodation' - RMS Guide to Traffic Generating Developments (2002)
- Residential Component;
 - 'High density residential flat buildings' – RMS Technical Direction, TDT 2013/04
- Retail Component
 - 'Office & Commercial Space' – RMS Guide to Traffic Generating Developments (2002)

4.1.1 Hotel Traffic Generation

For traffic generation purposes, a tourist hotel best describes the proposed hotel, however no traffic generation data is available for NSW. The hotel is located in a CBD environment and as shown in Section 3, benefits from good access to public transport links.

The guide provides a rate for motel use and based on 100% occupancy, recommends a trip generation of 0.4 trips per unit (or room in this case) during the evening peak hour. No rate is presented for the morning peak, however there is no evidence to suggest it would be higher or lower than the evening peak.

This rate is considered conservative and motels would generally be located outside a CBD environment and would rely predominately of car usage. However as no trip generation data is available for hotels, this conservative rate has been adopted.

Application of this rate to the proposal for 100 rooms indicates a traffic generation of **40 trips during the evening peak**, and for the purposes of this assessment, we have also applied this activity to the morning peak.

4.1.2 Residential Traffic Generation

The TDT 2013/14 is based on recent surveys conducted for high-density residential flat buildings across the Greater Sydney Region. It is currently considered to be the most relevant guide to estimating traffic generations for residential flat buildings containing (20) or more dwellings. This guide suggests the following rates:

- AM Peak Hour Rate: 0.19 trips / unit;
- PM Peak Hour Rate: 0.15 trips /unit.

The proposal accommodates a total of 454 units and leads to an estimated **AM peak hour rate of 86 trips** and a **PM peak hour rate of 68 trips**. These rates are based on developments with reasonable access to public

transport. It has been established previously in Section 3 that the site has excellent access to public transport. Thus, the above rates are considered appropriate.

4.1.3 Retail Traffic Generation

The nature of the proposed ground floor retail space use is not known at this stage. The RMS Guide provides the following rates for commercial and office spaces:

- PM Peak Hour Trip Rate: 2 trip / 100m² GFA;

No rate is presented for the morning peak, however there is no evidence to suggest it would be higher or lower than the evening peak.

The commercial space has a proposed gross floor area of 1,571 m². Applying this area to the above rates leads to an estimated **peak hour rate of 31 trips**.

4.2 Traffic Impact Assessment

The proposed development is estimated to generate the following volumes, with comparison to the existing volumes, shown in Table 8.

Table 8 – Trip Generation Summary

Period	Hotel Trip Generation	Residential Trip Generation	Retail Trip Generation	Net Trips*
AM Peak Hour Trips	40	86	31	140
PM Peak Hour Trips	40	68	31	89

* Net Trips reflect the difference between existing and proposed trip rates

The data indicates that the projected peak hour generation of vehicles resulting from the proposed project will result in **157 vehicle trips during the AM peak period** and **139 vehicle trips in the PM peak**.

The development site is proposed on a site with potential existing uses in operation and a peak hour traffic generation **50 vehicle trips** (refer to section 3.4).

If the projected traffic generation of the proposal is compared against the existing land uses, it is evident that the proposal could generate an additional **107 vehicle trips in the AM peak** and **89 vehicle trips in the PM peak**.

4.3 Amendment to Penrith Local Environmental Plan 2010

In April 2016, Penrith City Council issued the 'Incentive Clause for Keys Sites' report. This document is proposed to amend the Penrith Local Environmental Plan (LEP) 2010 to insert an incentive clause for key sites, by way of a planning application.

The intention of the planning proposal is to seek to amend the planning controls for key sites, within Penrith CBD, to increase FSR and building heights to facilitate delivery of residential / mixed use developments at a higher density than currently permitted.

The preparation of the planning proposal is the first step in the NSW Department of Planning and Environment's (DP&E) gateway process for amending the Penrith LEP 2010.

The key sites which form part of this proposal are shown in Figure 15



Figure 15 – Key Sites Map (Source: Penrith City Council, Incentives Clause for Key Sites, 2016)

The traffic activity throughout the CBD will change as a result of the development of the key sites, which could potentially coincide with the completion of the subject development. In this regard the recording and modelling of the existing road network in isolation provides limited insight into the impacts of this proposal.

In the development assessment stage of the planning proposal for the Key Sites, detailed traffic assessments will be required to assess the road network capacity, public transport facilities and active transport options. It is proposed that the traffic generation indicated in Section 4.2 (for the development of 51 to 57 Henry Street) be incorporated into this traffic study, to provide a holistic traffic assessment for the Penrith CBD.

5 Parking Provision

5.1 Planning Policy Requirements – Car Parking

The parking provision for the development has been established with reference to the requirements presented in Part C10 of the Penrith City Development Control Plan 2014 and State Environmental Planning Policy No 65 (SEPP 65) – Design Quality of Residential Developments.

The hotel and retail component of the development has been established with reference to Part C10 of the Penrith City Development Control Plan 2014, Section C10, Table C10.2. In accordance to the DCP, the relevant parking requirements are as follows:

- Hotel
 - 1 space per unit/room
 - 1 space per manager
 - 1 space per 6 employees.
- Retail
 - 1 space per 30m² GFA

In reference to SEPP 65, the car parking provision is based on proximity to public transport in Sydney Metropolitan area. For developments within 800m of a railway station or light rail stop the minimum car parking requirement is set out in the Guide to Traffic Generating Developments (RMS). The RMS guide outlines that for high density residential developments the minimum parking provision for Metropolitan Regional (CBD) Centres:

- 0.4 space per 1 bedroom unit
- 0.7 spaces per 2 bedroom unit
- 1.2 spaces per 3 bedroom unit
- 1 space per 7 units for visitors

The site is located within 800m of Penrith Railway station (refer to Figure 11) and it is therefore considered acceptable to adopt the SEPP65 requirement for minimum parking provision (refer to RMS Guide to Traffic Generating Developments).

5.2 Development Car Parking Provisions

This Planning Proposal is being made to facilitate a mixed used development incorporating a 100 room hotel, 454 residential units and 1,571m² of retail space. Applying the SEPP 65 and DCP rates to this development leads to the parking provisions outlined in Table 9.

Table 9 –Car Parking Provision Calculation

Use Type		Units / GFA / Staff		DCP Rate	Minimum Spaces
Hotel	Room / unit	100 rooms	@	1 space per unit	100
	Manager	1	@	1 space per unit	1
	Staff	73**	@	1 space per 6 staff	12.2
Total Hotel Parking spaces:					113.2 (113)
Retail	Retail space	1,571 m ²	@	1 spaces per 30m ²	52.4
Total Retail Parking spaces:					52.4 (52)
Residential	1 bedroom unit	110 units	@	0.4 space per unit	44
	2 bedroom unit	249 units	@	0.7 space per unit	174.3
	3 bedroom unit	95 units	@	1.2 space per unit	114
	Visitors	454 units	@	1 space per 7 units	64.9
Total Residential Parking spaces:					397.2 (397)
Total Parking spaces:					562.8 (563)

** Estimated hotel staff numbers taken from data provided by Hill PDA Pty Ltd

The proposed parking provision has been determined based on a number of factors including the size of the development area and the location of the site in relation to public transport.

The proposed parking provision will be allocated as **113** spaces for Hotel and **52** spaces for retail in the southern car parking area and **398** spaces residents and residential visitors in the northern car park area. Refer to Figure 4 for car park locations.

The proposed provision of a total of **563** spaces is therefore considered compliant with the requirements of the SEPP 65 and DCP which stipulates a minimum provision of **563** spaces.

5.3 Planning Policy Requirements – Bicycle Parking

The bicycle parking provision for the development has been established with reference to the requirements presented in Part C10 of the Penrith City Development Control Plan 2014.

In accordance with Table C10.2, bicycle parking should be provided in accordance with the suggested bicycle parking provision rates for different land use types in the document 'Planning Guidelines for Walking and Cycling' (NSW Government 2004).

With reference to 'Planning Guidelines for Walking and Cycling', the relevant bicycle parking requirements are as follows:

- Hotel - 3-5% of rooms
- Retail Staff - 3-5% of staff
- Retail Visitors - 5-10% of staff
- Residential Units - 20-30% of units
- Residential Visitors - 5-10% of units

5.4 Development Bicycle Parking Provisions

This Planning Proposal is being made to facilitate a mixed used development incorporating a 100 room hotel, 454 residential units and 1,571m² of retail space. Applying the DCP rates to this development leads to the bicycle parking provisions outlined in Table 10.

Table 10 – Bicycle Parking Provision Calculation

Use Type		Units / GFA / Staff		DCP Rate	Minimum Spaces
Hotel	Room / unit	100 rooms	@	3-5% of rooms	3
Total Hotel Bicycle Parking spaces:					3
Retail Staff	Retail Staff	18 staff***	@	3-5% of staff	0.54
	Retail Visitors	18 staff***		5-10% of staff	0.9
Total Retail Parking spaces:					1.44 (1)
Residential	Residents	454 units	@	20-30% of units	90.8
	Visitors	454 units	@	5-10% units	22.7
Total Residential Parking spaces:					113.5 (114)

*** Estimated retail staff numbers of 18 based on 2 members of staff per retail unit.

The bicycle parking provision has been determined based on a number of factors including site location with respect to public transport and the site land use.

The proposed parking provision will be allocated as 5 spaces for Hotel and 2 spaces for retail in the southern car parking area and 114 spaces residents and residential visitors in the northern car park area. Refer to Figure 4 for car park locations.

The proposed provision of 121 bicycle spaces is compliant with DCP and Planning Guidelines for Walking and Cycling and provides residents and visitors the option to utilise alternate sustainable transport options.

6 Access and Car Park Assessment

6.1 Car Park Assessment

According to AS2890.1, Table 1.1 the classifications of the off street parking facilities will be as follows:

- Hotel Parking - User Class 2 (Long term city and town centre parking including hotels)
- Retail - User Class 1A (Residential, domestic and employee parking)
- Residential - User Class 1A (Residential, domestic and employee parking)

Given that is proposed to accommodate the hotel and retail parking in the southern car park and the residential parking in the northern car park, it has been deemed that the southern car park will be classified as a User Class 2 car park facility and the northern car park a Class 1A facility.

The parking space dimensions and associated aisle widths for each classification are presented in Table 2.2, and accordingly, a Class 1A facility requires parking space dimensions of 2.4 x 5.4 metres with an access aisle width of 5.8 metres and a Class 2 facility requires parking space dimensions of 2.5 x 5.4 metres with an access aisle width of 5.8 metres

The proposed car parks will be designed to provide compliant spaces for both the Hotel/Retail and Residential portions of the development in accordance with the requirements of AS2890.1 including ramp widths, grades and headroom requirements.

All accessible parking requirements will be in accordance with AS2890.6 and bicycle parking requirements are to be in accordance AS2890.3.

6.2 Vehicular Access

According to AS2890.1, Section 3.2 the access driveway off Henry Street (southern car park) will service a Class 2 facility off of a local road, servicing a car park of between 101 to 300 parking spaces. Based on Table 3.2, this would result in a Category 3 Access Driveway with an entry width of 6m and an exit width of 4m to 6m. However, from our experience the provision of a 6m wide entry lane, can cause safety issues as 2 vehicles may attempt to access the driveway simultaneously. Given this concern the driveway is proposed with a 4m entry and a 6m exit with a 1m separation, therefore meeting the overall width requirement of 11m.

According to AS2890.1, Section 3.2 the access driveway off North Street (northern car park) will service a Class 1A facility off of an arterial road, servicing a car park of between 301 to 600 parking spaces. Based on Table 3.2, this would result in a Category 4 Access Driveway with an entry width of 6m to 8m and an exit width of 6m to 8m. Similarly to the Henry Street driveway, safety concerns are raised about providing a 6m entry lane, therefore a 4m entry / 6m exit / 1m separation configuration is also proposed for this driveway, providing a 11m total width.

Access to the service / loading dock area will be off North Street, adjacent to the car park driveway and in accordance with AS2890.2 Table 3.1, requires a minimum width of 7.1m to allow 2 way access for Heavy Rigid Vehicles. The proposed driveway width of 8m is therefore in excess of the minimum requirement of AS2890.2.

It should also be noted that, the northern driveways access North Street through the land dedicated for to the RMS for future widening of North Street. To accommodate this, the driveways to the northern car park

and loading area have been combined to a width of 10m at the point of entry onto North Street, to minimise the effect on the streetscape

An additional driveway is proposed off Henry Street to access the Port Cochere at the front of the Hotel. According to AS2890.1, Section 3.2, this access will be a Category 1 Access Driveway with a combined width of between 3m to 5.5m. The proposed driveway width of 6.5m is therefore compliant with the minimal driveway width to allow independent two-way access into the Port Cochere.

As part of the Development Application stage of the assessment, the design of the driveways will be reviewed against the requirements stipulated above. Initial swept paths analysis of these driveways is provided in Attachment 2,

6.3 Sight Distance

The sight distance requirements are described in Section 3.2.4 of AS2890.1 and are prescribed on the basis of the sign posted speed limit or 85th percentile vehicle speeds along the frontage road. The driveway access into the development has been assessed as an 'access driveway other than domestic'.

Henry Street and North Street both have posted speed limits of 50kph, which requires a desirable visibility distance of 69 metres and a minimum distance of 45 metres. Observations along both roads indicate that the speed limit is adhered to. The proposed driveway locations are in a position where sufficient sight distance is provided.

7 Conclusion

In summary, the proposed development of 51 – 57 Henry Street, Penrith comprises of, a 100 room hotel, 454 residential units and 1,517m² of retail space divided into 9 individual units, within 2 buildings of 25 and 38 storeys, respectively.

The traffic generations to be produced by this mixed use development, is likely to be greater than the existing generation of the site and this traffic is to be included into future traffic modelling / studies to be undertaken for the Penrith CBD.

The proposed parking provision of 52 Retail, 113 Hotel and 397 residential, meets the requirements of the SEPP 65 and Penrith DCP and the access and car park layouts meet the requirements of the relevant sections of AS2890.

The development is positioned in close proximity of bus and train facilities providing high frequency services, therefore providing residents and visitors' choices of alternative modes of transport to access the site.

Attachment 1 – Drawings

Attachment 2 – Swept Paths
