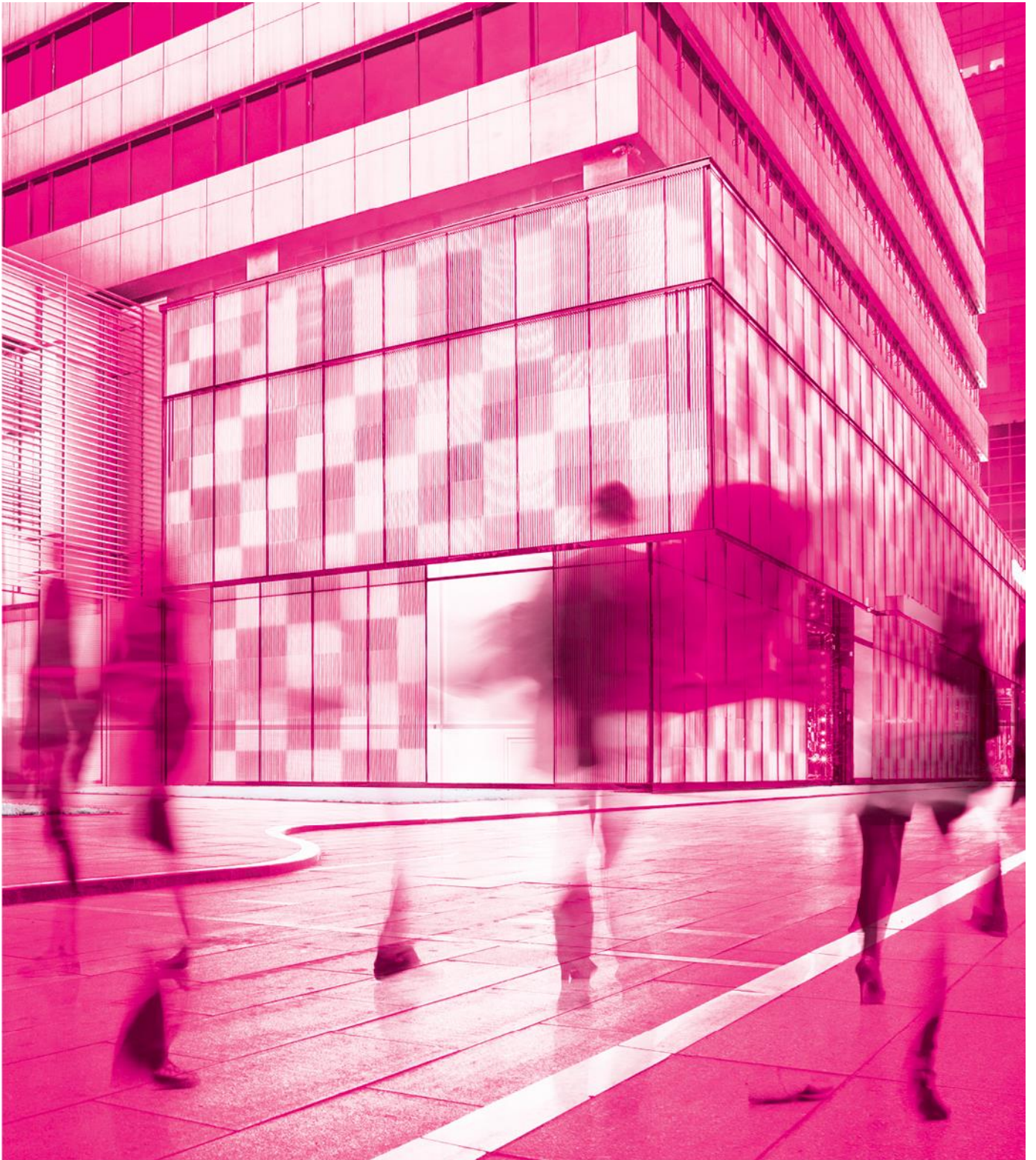


## **APPENDIX 2**

### **Traffic and Parking Assessment**



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# Traffic and Parking Assessment;

51 to 57 Henry Street, Penrith

For By The Park Pty Ltd  
23 January 2019

parking;  
traffic;  
civil design;  
wayfinding;  
**ptc.**

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## Document Control

51 to 57 Henry Street, Penrith, Traffic and Parking Assessment

Issue	Date	Issue Details	Author	Reviewed	For the attention of
1	21/01/19	Draft Issue	KB	SW	Adam Harb
2	23/01/19	Final Issue	KB	SW	Adam Harb
3					

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## 1. Introduction

### 1.1 Project Summary

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 residential, retail and commercial development at 57 Henry Street, Penrith.

The proposed development comprises of 451 residential units, 1,495m<sup>2</sup> of retail space and 4,023m<sup>2</sup> of commercial space within 2 buildings.

The location of the development is shown in Figure 1.

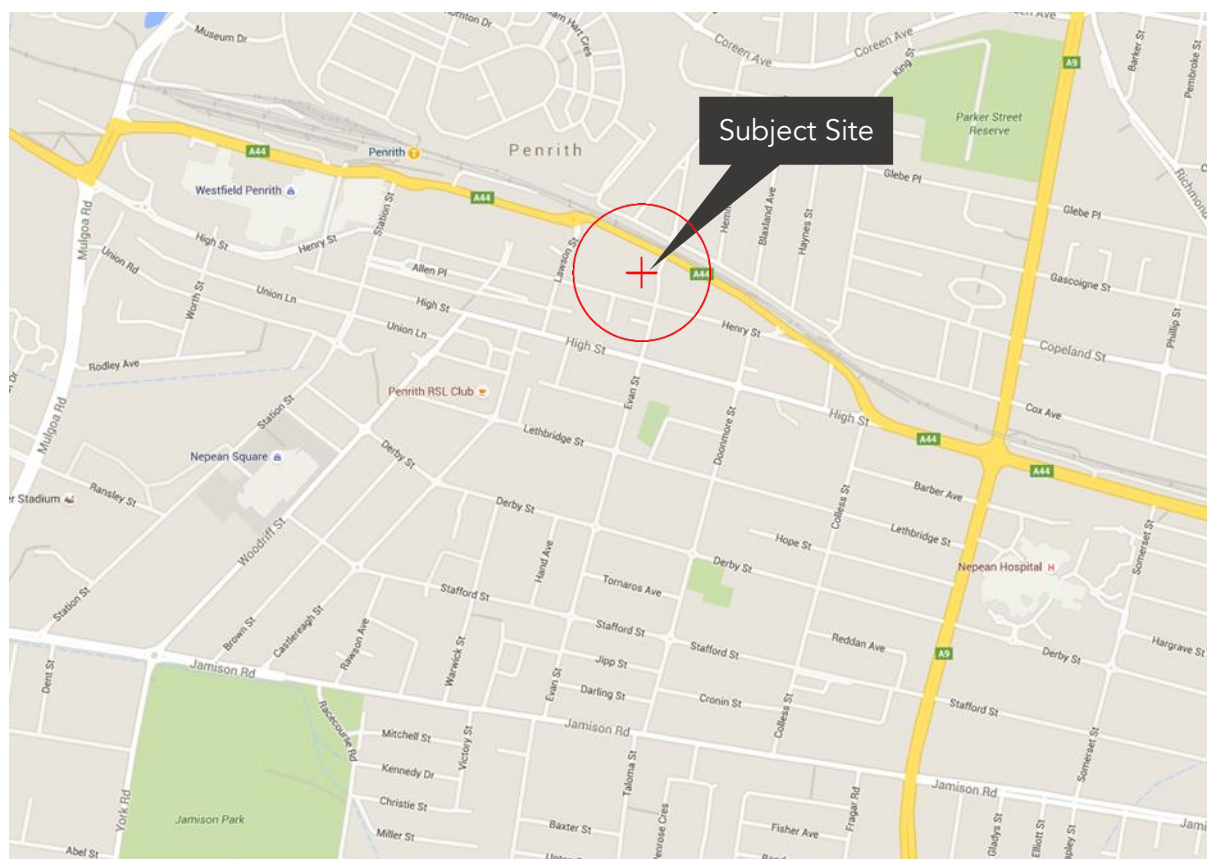


Figure 1 – Site Location

## **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. Site Context

### 2.1 Site Location

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 7,358m<sup>2</sup> and currently accommodates the former Penrith Regional Office of the Department of Education and Training. The existing buildings are generally 2 storeys and occupy 2,500m<sup>2</sup> 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 1,322m<sup>2</sup> 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 Surrounding Land Use

As shown in Figure 3, the majority of the site is currently zoned 'B3 Commercial Core', with the northern section zoned 'SP2 Infrastructure' as part of the future road widening.

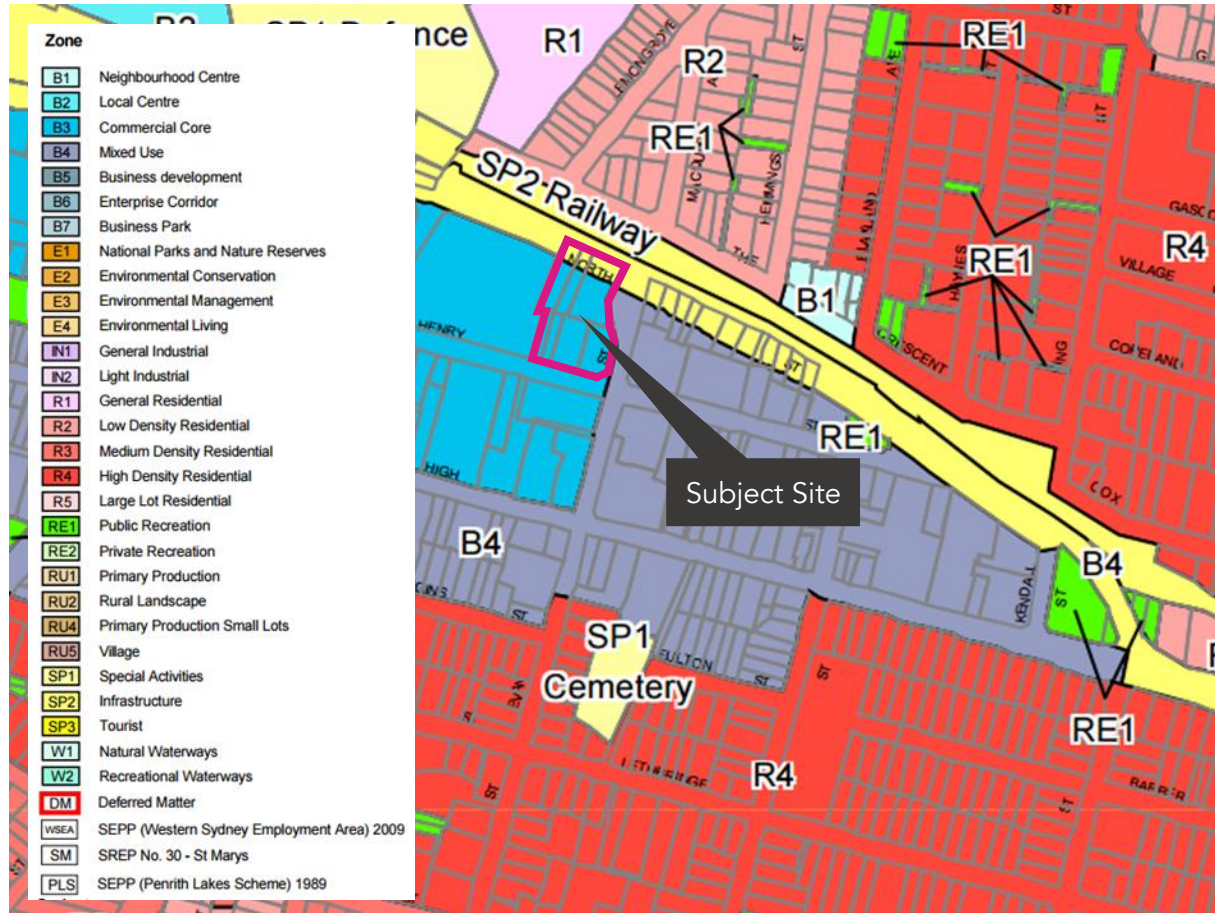


Figure 3 – Land Use Zone Map (Source – Penrith City Council LEP)

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### 3. Development Proposal

The proposed development is for a mixed use development consisting of 2 multi storey buildings. In total the development will house:

- Residential Space 451 units (approximately, the final number is TBC)
- Commercial Office Space 4,023m<sup>2</sup> GFA
- Retail Space 1,495m<sup>2</sup> GFA

The residential unit mix is proposed as follows:

- 1 bedroom units 113 units (approximately, the final number is TBC)
- 2 bedroom units 248 units (approximately, the final number is TBC)
- 3 bedroom units 90 units (approximately, the final number is TBC)

It should be noted that these figures are subject to alteration resulting from detailed planning at the DA stage.

A single driveway access off Henry Street will be provided to cater for the residential, commercial and service vehicle activity. The design and location of this driveway will be provided at the DA stage, but it will take into consideration the adjacent intersections.

## 4. Existing Transportation Facilities

### 4.1 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.

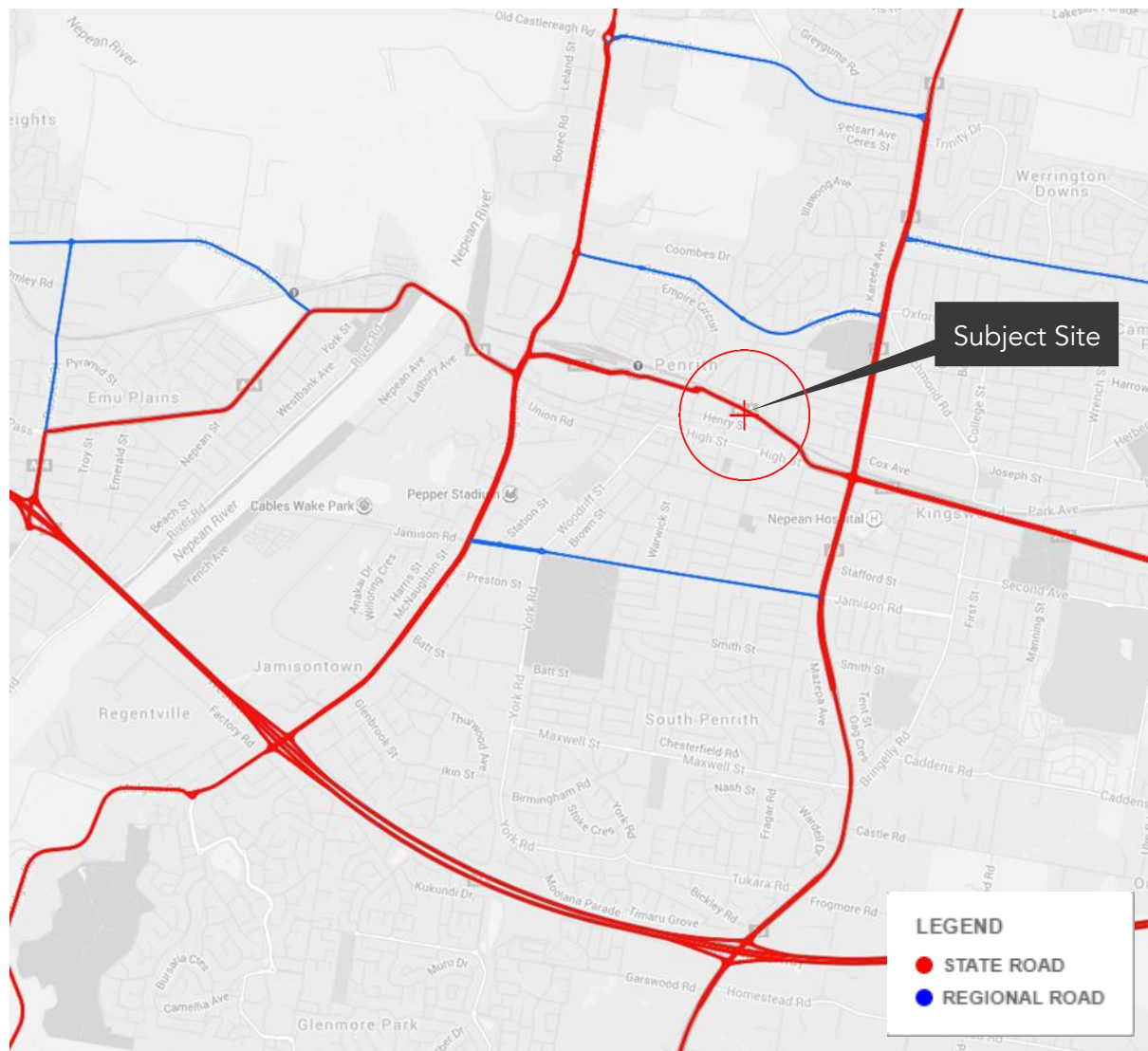


Figure 4 – Road Hierarchy (Source: RMS Road Hierarchy Review)

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:

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 km/h
School Zone	No
Parking Controls	Motorway Clearway
Forms Site Frontage	No



Figure 5 – Streetview of Western Motorway, Westbound (Source: Google Maps)

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 km/h
School Zone	No
Parking Controls	No Stopping
Forms Site Frontage	No



Figure 6 – Streetview of Parker Street, Northbound (Source: Google Maps)



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 km/h
School Zone	No
Parking Controls	No Parking 3pm to 6pm Monday to Friday (westbound), No Stopping (eastbound)
Forms Site Frontage	Yes



Figure 7 – Streetview of Henry Street, Westbound (Source: Google Maps)

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 km/h
School Zone	No
Parking Controls	No Stopping
Forms Site Frontage	Yes



Figure 8 – Streetview of Evans Street, Southbound (Source: Google Maps)

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 km/h
School Zone	No
Parking Controls	No Stopping
Forms Site Frontage	Yes



Figure 9 – Streetview of North Street, Westbound (Source: Google Maps)

## 4.2 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 10 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.

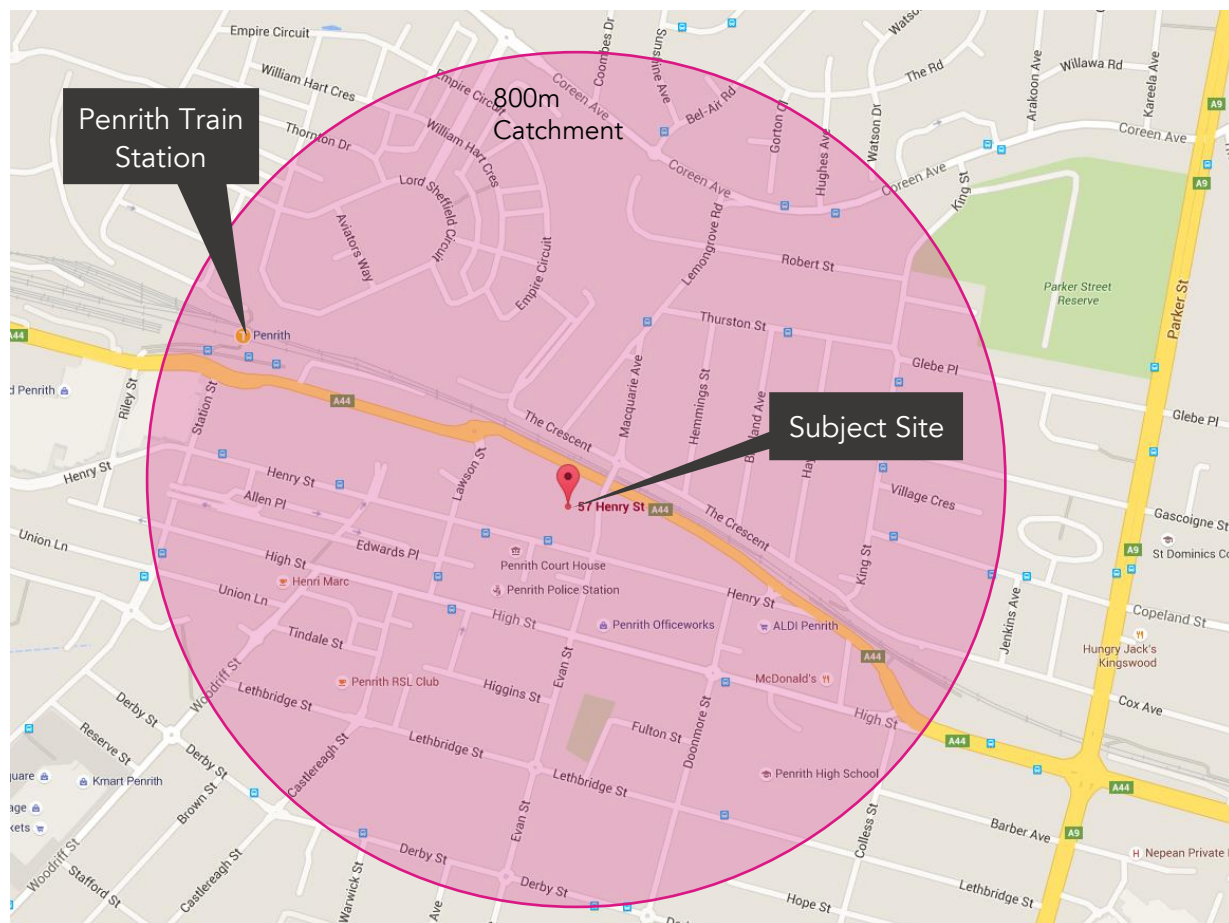


Figure 10 – Public Transport Surrounding the Site





#### 4.2.2 Bus Services

The site is serviced by bus services that operate from two bus stops located within 100m of the site, as shown in Figure 12 and summarised in Table 1.

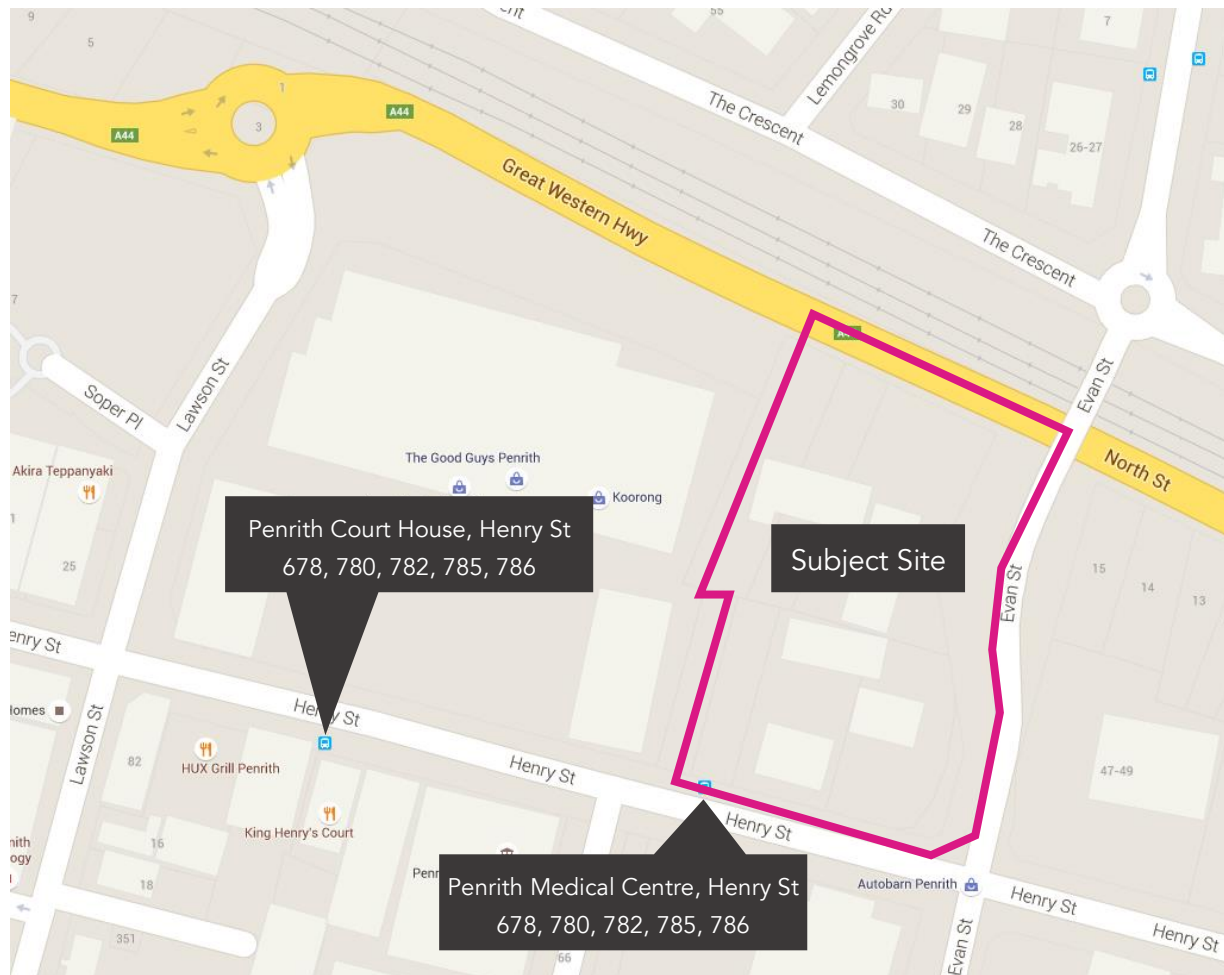


Figure 12 – Locan Bus Services

Table 1 – 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

#### 4.2.3 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.

### 4.3 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 13.

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 13, 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.

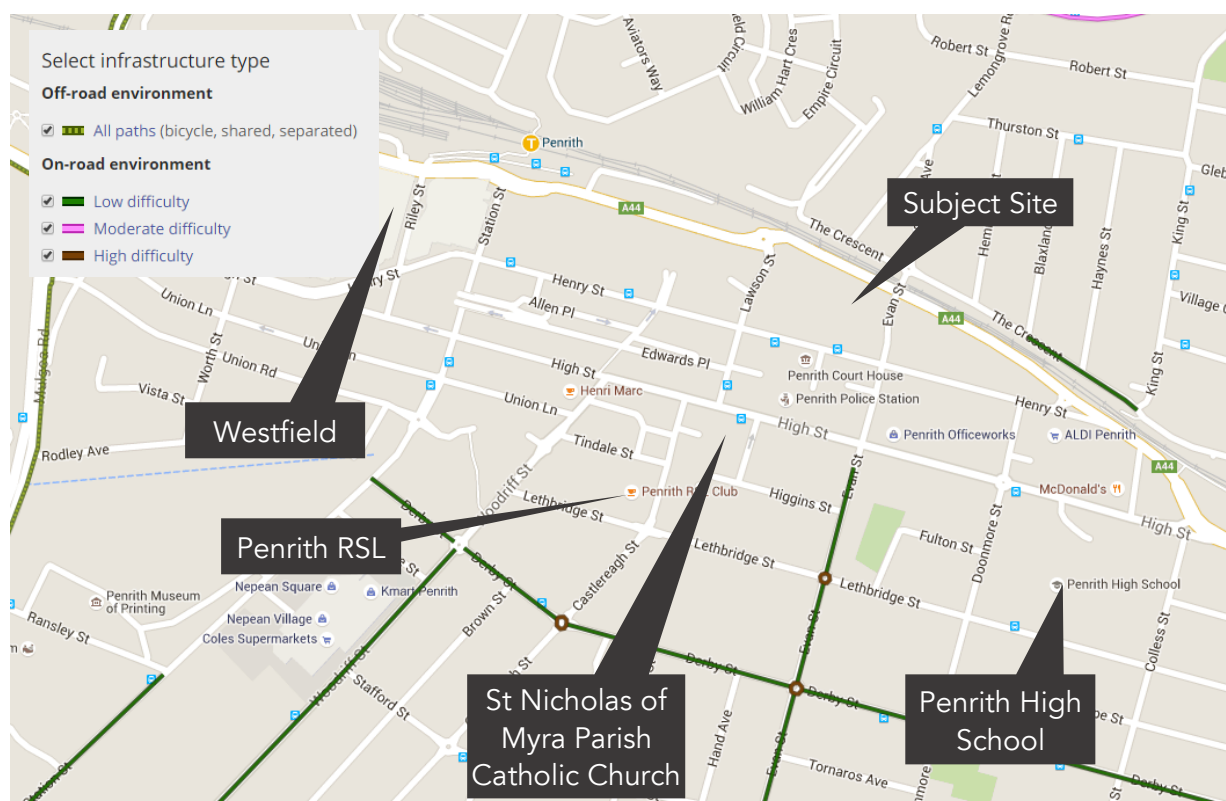


Figure 13 – Local Features (Source: RMS Cycleway Finder 2019)

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## 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 (DCP) and State Environmental Planning Policy No 65 (SEPP 65) – Design Quality of Residential Developments.

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 site is located within 800m of Penrith Railway station and it is therefore considered acceptable to adopt the SEPP65 requirement for minimum parking provision. The RMS guide outlines that for high density residential developments the minimum parking provision for Metropolitan Regional (CBD) Centres is as follows:

- 1 bedroom unit: 0.4 space per unit
- 2 bedroom unit: 0.7 spaces per unit
- 3 bedroom unit: 1.2 spaces per unit
- Residential Visitors: 1 space per 7 units

In addition, Penrith DCP stipulates the provision of car washing bays for residential flat building at the following rate:

- 1 space for car washing for every 50 units, up to a maximum of 4

The commercial 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:

- Commercial Space: 1 space per 100m<sup>2</sup> GFA (Penrith City Centre)
- Retail Space: 1 space per 30m<sup>2</sup> GFA (Penrith City Centre)

For retail and commercial development located in Penrith City Centre, the DCP stipulates the following:

*“A maximum 60% of the total number of commercial parking spaces required by a development, other than for service vehicles, car washing bays and parking spaces allocated to people with a disability, are to be provided on-site.*

*The balance of the total required number of spaces not provided on-site would need to be subject to a contribution under an adopted Contribution Plan or as set by the terms of a Voluntary Planning Agreement.”*

## 5.2 Development Car Parking Provision

Based on the requirements of the DCP and SEPP65, the car parking provision for the revised development is as follows:

Table 2 – Car Parking Provision Calculation

Use Type		Units / GFA		Parking Provision Rate	Minimum Provision	Proposed Provision
Residential	1 bedroom unit	113	@	0.4 space per unit	45.2	327
	2 bedroom unit	248	@	0.7 space per unit	173.6	
	3 bedroom unit	90	@	1.2 space per unit	108	
	Car Wash Bay	451	@	1 space per 50 units (max 4)	4	4
	Visitors	451	@	1 space per 7 units	64.4	65
Commercial	Commercial Space	4,023 m <sup>2</sup>	@	60% of 1 space per 100m <sup>2</sup>	23.5 + 1 accessible	
Retail	Retail Space	1,495 m <sup>2</sup>	@	60% of 1 space per 30m <sup>2</sup>	29.3 + 1 accessible	31
<b>Total Parking Spaces</b>					<b>450</b>	<b>427</b>

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

It is noted that the times of use of the residential visitors and the commercial staff are expected to not coincide, therefore it would be reasonable that these spaces can be shared between the two uses.

Hence, the development proposes to provide a total of 427 parking spaces. The proposed parking provision will be allocated as 327 spaces for residents, 4 car wash bays for residents, 65 spaces for commercial and residential visitors combined and 31 spaces for retail. The proposed provision of a total of 427 spaces is therefore considered compliant with the requirements of the SEPP 65 and DCP.

It should be noted that these figures are subject to alteration resulting from detailed planning at the DA stage.

## 5.3 Planning Policy Requirement – 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:

- Commercial and Retail Staff - 3-5% of staff
- Commercial and Retail Visitor - 5-10% of staff
- Residential Units - 20-30% of units
- Residential Visitors - 5-10% of units



## 5.4 Development Bicycle Parking Provision

Applying the DCP rates to the revised development leads to the bicycle parking provisions outlined below:

Table 3 – Bicycle Parking Provision Calculation

Use Type		Units / GFA		DCP Rate	Minimum Provision	Proposed Provision
Residential	Residents	451	@	20-30% of units	135.3	136
	Visitors	451	@	5-10% of units	45.1	46
Commercial	Commercial Staff	192 staff*	@	3-5% of staff	9.6	10
Retail	Retail Staff	27 staff**	@	3-5% of staff	1.4	2
	Retail Visitors	27 staff**	@	5-10% of staff	2.7	3
<b>Total Parking Spaces</b>					<b>195</b>	<b>197</b>

\* Based on 21m<sup>2</sup> per worker for office premises, as specified in City of Sydney Development Contributions Plan 2015

\*\* Based on 57m<sup>2</sup> per worker for Shops, as specified in City of Sydney Development Contributions Plan 2015

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 182 spaces for residents and residential visitors, 46 for commercial staff and 5 spaces for retail staff and visitors.

The proposed provision of 197 bicycle spaces is compliant with DCP and Planning Guidelines for Walking.

According to Part C10.7 of the DCP, bicycle spaces for the commercial part of the development shall be provided in secure and accessible locations with weather protection.

It should be noted that these figures are subject to alteration resulting from detailed planning at the DA stage.

## 5.5 Planning Policy Requirement – Service Vehicles

With reference to the DCP and the RMS Guide to Generating Traffic (the Guide), the following Service Vehicle provisions are required:

- Residential Units - 1 service vehicle space per 40 units (the DCP)
- Commercial Space - <200,00m<sup>2</sup>, 1 space per 4,000m<sup>2</sup> GFA (the Guide)
- Retail Space - <2,000m<sup>2</sup>, 1 space per 400m<sup>2</sup> GFA (the Guide)

## 5.6 Development Service Vehicle Parking Provision

Based on the above requirements, 12 service vehicle spaces will be provided as part of the residential development, two service vehicle spaces provided for the commercial portion and four spaces for the retail portion.

In accordance with table C10.3 of the DCP, the minimum design vehicle for commercial developments up to 1,500m<sup>2</sup> required a service design vehicle up to a Medium Rigid Vehicle (MRV) and developments greater than 4,000m<sup>2</sup> require an Articulated vehicle. Given that the commercial portion of the development is to be office, it has been deemed that the provision of articulated service vehicles would be not warranted, given the type of deliveries etc. that would be expected.

In accordance with Section C5 of the DCP, refuse collection will be undertaken by a Heavy Rigid Vehicle (HRV), therefore one of the residential service bays will be provided to accommodate an HRV.

Therefore the service vehicle areas would be provided to accommodate a maximum vehicle size of an HRV.

It should be noted that these figures are subject to alteration resulting from detailed planning at the DA stage.

## 6. Traffic Impact Assessment

### 6.1 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 trips generated from this use are shown in Table 4 below.

Table 4 – Calculation of Existing Traffic Generation

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

### 6.2 Development Traffic Generation

The revised development comprises a mixed used development incorporating approximately 451 residential units, 1,400m<sup>2</sup> of retail space and 4,100m<sup>2</sup> of commercial office space.

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

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

It should be noted that the following figures are subject to alteration resulting from detailed planning at the DA stage.

#### 6.2.1 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 451 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. Since it has been established previously that the site has excellent access to public transport, the above rates are considered appropriate.

### 6.2.2 Commercial and Retail Traffic Generation

The RMS Guide provides the following rates for commercial sites:

- PM Peak Hour Trip Rate: 2 trips / 100m<sup>2</sup> 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 and retail space has a proposed gross floor area of 5,518m<sup>2</sup>. Applying this area to the above rates leads to an estimated **peak hour rate of 111 trips**.

### 6.2.3 Combined Traffic Generation

Based on the above figures the revised development is estimated to generate the following traffic volumes:

Period	Residential Trip Generation	Commercial / Retail Trip Generation	Combined Trip Generation	Net Trip Generation*
AM Peak	86	111	197	147
PM Peak	68	111	179	129

\* Net Trip Generation reflects 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 197 vehicle trips during the AM peak period and 179 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 6.1).

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 **147 vehicle trips in the AM peak** and **129 vehicle trips in the PM peak**.

However, it should be noted that the traffic activity throughout the Penrith CBD will change as a result of the proposed 'Key Sites' developments, which are described in more detail in the following section.

## 6.3 Amendment to Penrith Local Environmental Plan 2010

In April 2016, Penrith City Council issued the 'Incentive Clause for Key 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 14.



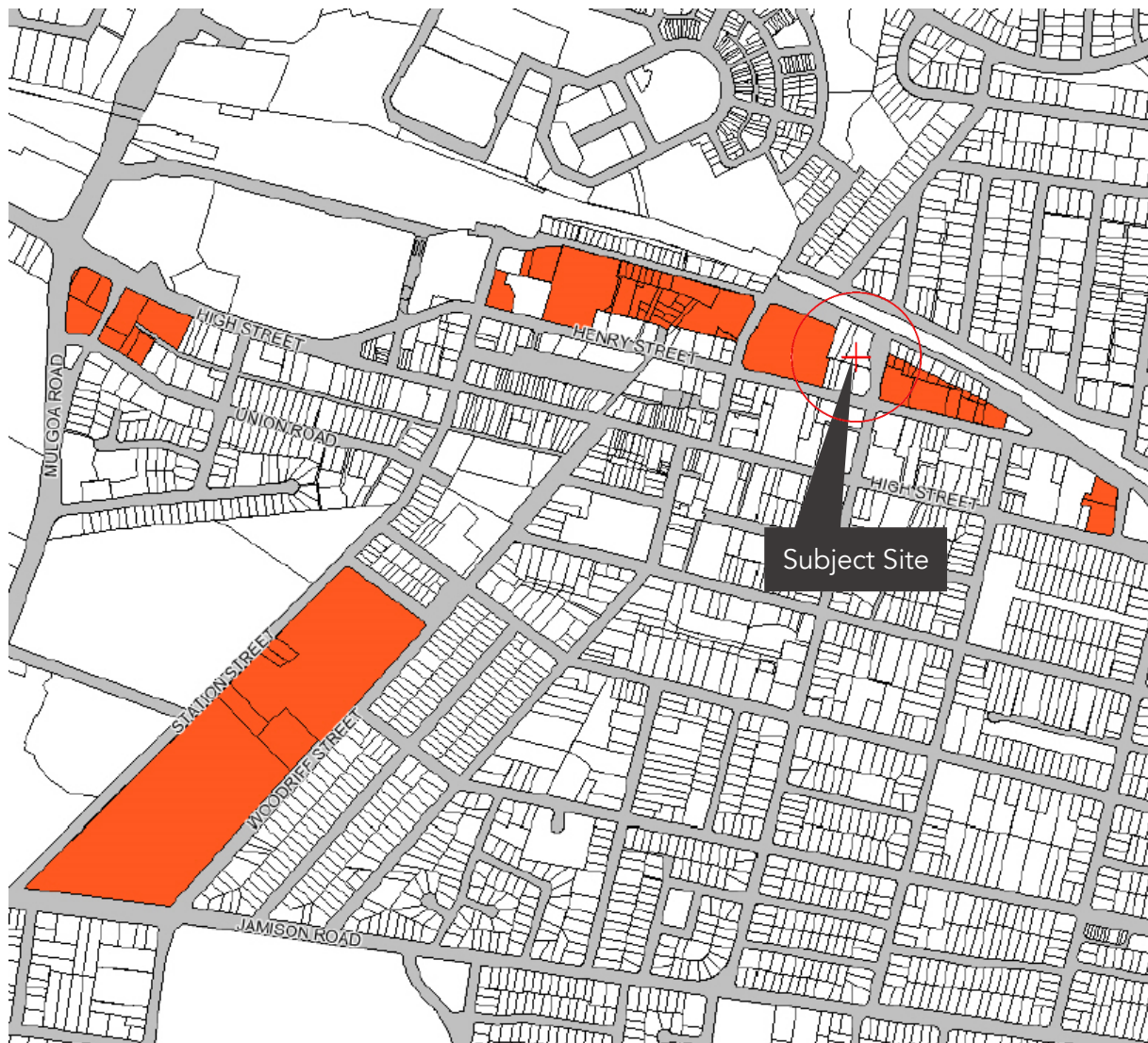


Figure 14 – Key Sites Map (Source: Penrith City Council, Incentives Clause for Key Sites, 2016)

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 6.2 (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.

---

## 7. Access and Car Park Assessment

### 7.1 Car Park Assessment

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

- Residential Parking - User Class 1A (residential, domestic and employee parking)
- Commercial and Retail Parking - User Class 1A (residential, domestic and employee parking)

At this stage of the development process the details of the car park layout design is not available.

The parking will be provided in accordance with AS2890.1 and AS2890.6 and the detailed layout will be provided at the DA stage of the design process.

Bicycle parking and End of Trip Facilities will be designed in accordance with AS2890.2 and the 'Planning Guidelines for Walking and Cycling' and these layout designs will be provided at DA stage.

The service vehicle spaces will be designed in accordance with AS2890.2. and the maximum vehicle size will be an HRV. The spaces and access will be designed to accommodate the design vehicle (maximum HRV) and in accordance with the requirements of AS2890.2.

### 7.2 Vehicular Access

Given the proposed parking provision of 425 spaces, in accordance with AS2890.1, Table 3.1, the Access Facility Category will be Category 3.

Subsequently in accordance with Table 3.2 of the standard, the driveway entry width will be 6.0m, the exit width will be 4.0m to 6.0m and the driveway will include a separation of 1.0m to 3.0m in width.

The driveway will be located on the Henry Street frontage of the development, taking into consideration the proximity of the Henry Street/Evans Street signalised intersection to the east and the driveway access to the adjacent car park to the west.

The driveway location and design of the driveway will be provided at the DA stage of the design process and will be designed in accordance with AS2890.1.

The service vehicle area will be designed to accommodate six MRV's for servicing the commercial and retail portion, one HRV for refuse collection and 11 car derived vans/utes to service the residential portion and the access and any service docks designed in accordance with the relevant requirements of AS2890.2.

Details of the service areas and access will be provided at DA stage.

A management plan will be put in place to manage the service vehicle bays and this will also be provided at DA stage.