



253-267 Pacific Highway, North Sydney

Transport Impact Assessment

Prepared for:

Legacy Property

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PROJECT INFORMATION

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1 Introduction

1.1 Background

JMT Consulting has been engaged by Legacy Property to carry out a traffic and transport assessment for a new high density development at 253-267 Pacific Highway, North Sydney ('the site'). The Planning Proposal seeks to increase the height and FSR to deliver approximately 37 residential dwellings on the site as well as retail and commercial uses.

1.2 Site location

The subject site is located in the North Sydney Centre and is bounded by West Street to the north, McLaren Street to the south, Church Lane to the east, and Pacific Highway to the west. The site extents are illustrated in Figure 1 below.

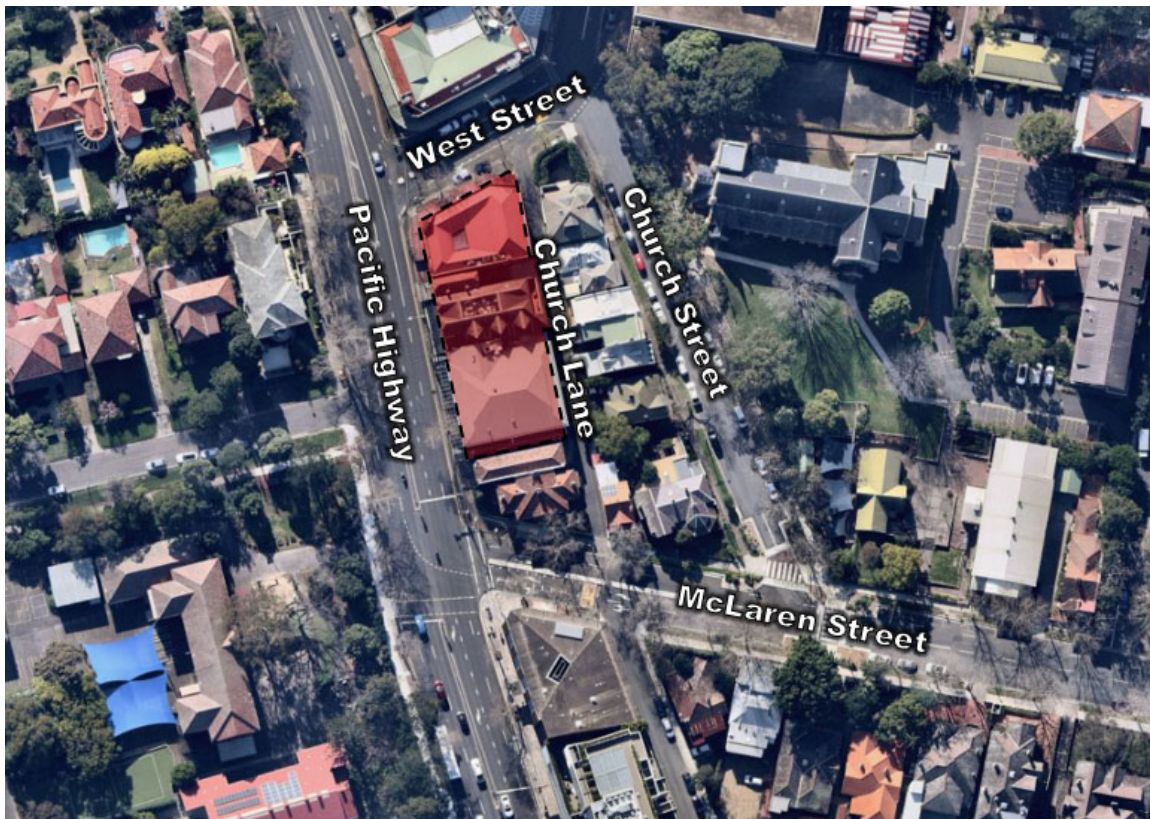


Figure 1 Site location

1.3 Report purpose

The purpose of this report is to describe the traffic, transport and parking implications of the Planning Proposal for the site at 253-267 Pacific Highway, North Sydney. The report details the following:

- Existing transport conditions
- Proposed vehicle site access arrangements
- Additional traffic movements likely to be generated by the proposal and their associated impact on the surrounding road network
- Parking demands arising from the proposal and ability of the site to accommodate these demands
- Proposed vehicle loading and servicing arrangements
- Pedestrian and bicycle access
- Green travel initiatives

2 Existing Transport Conditions

2.1 Existing travel patterns

The most recent 2016 Journey to Work Census data for residents of North Sydney living in the vicinity of the site is presented in Figure 2 below. The data shows that approximately 40% of residents travel to work by public transport (train and bus), with only 20% of residents choosing to drive to work. It is expected this proportion of people choosing to drive will only decrease further following the introduction of the Sydney Metro project.

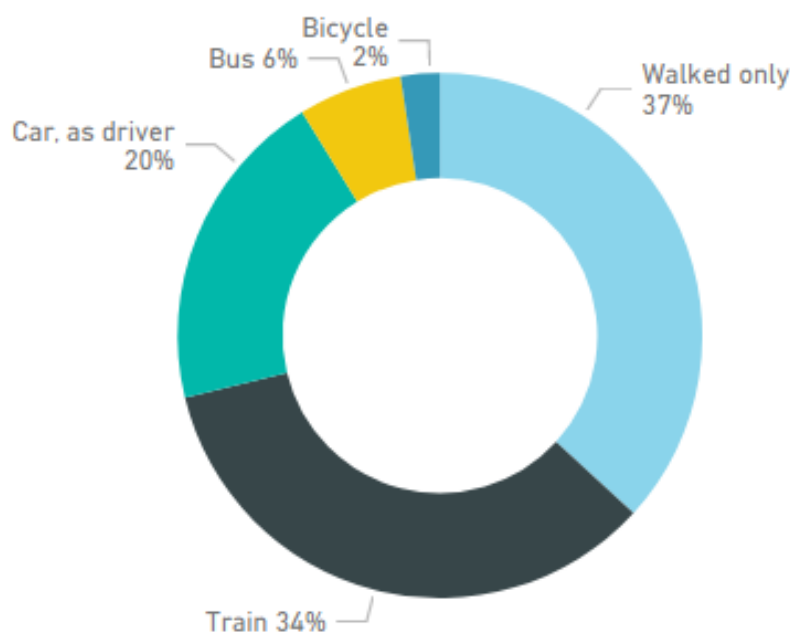


Figure 2 Journey to work mode split for residents of North Sydney

2.2 Road network

To manage the extensive network of roads for which councils are responsible under the Roads Act 1993, Transport for NSW (TfNSW) in partnership with local government established an administrative framework of *State*, *Regional*, and *Local Road* categories. State Roads are managed and financed by TfNSW and Regional and Local Roads are managed and financed by councils.

Regional Roads perform an intermediate function between the main arterial network of State Roads and council controlled Local Roads. Due to their network significance TfNSW provides financial assistance to councils for the management of their Regional Roads. Key State and Regional roads which provide access to the site are illustrated in Figure 3 below, which demonstrates the site is very well connected to the surrounding road network.

The site is in close proximity to two high-capacity roads (the Pacific Highway and the Warringah Freeway). In addition, Miller Street is the main arterial route running through the North Sydney CBD area. In the vicinity of the site, McLaren Street is a two-way road running parallel to Berry Street between the Pacific Highway and Walker Street. Adjacent to the development, a one-way (southbound) local access road runs parallel to Pacific Highway and provides access to the development site as well as residential properties along Church Street. Vehicles can only turn left out onto McLaren Street from Church Lane.

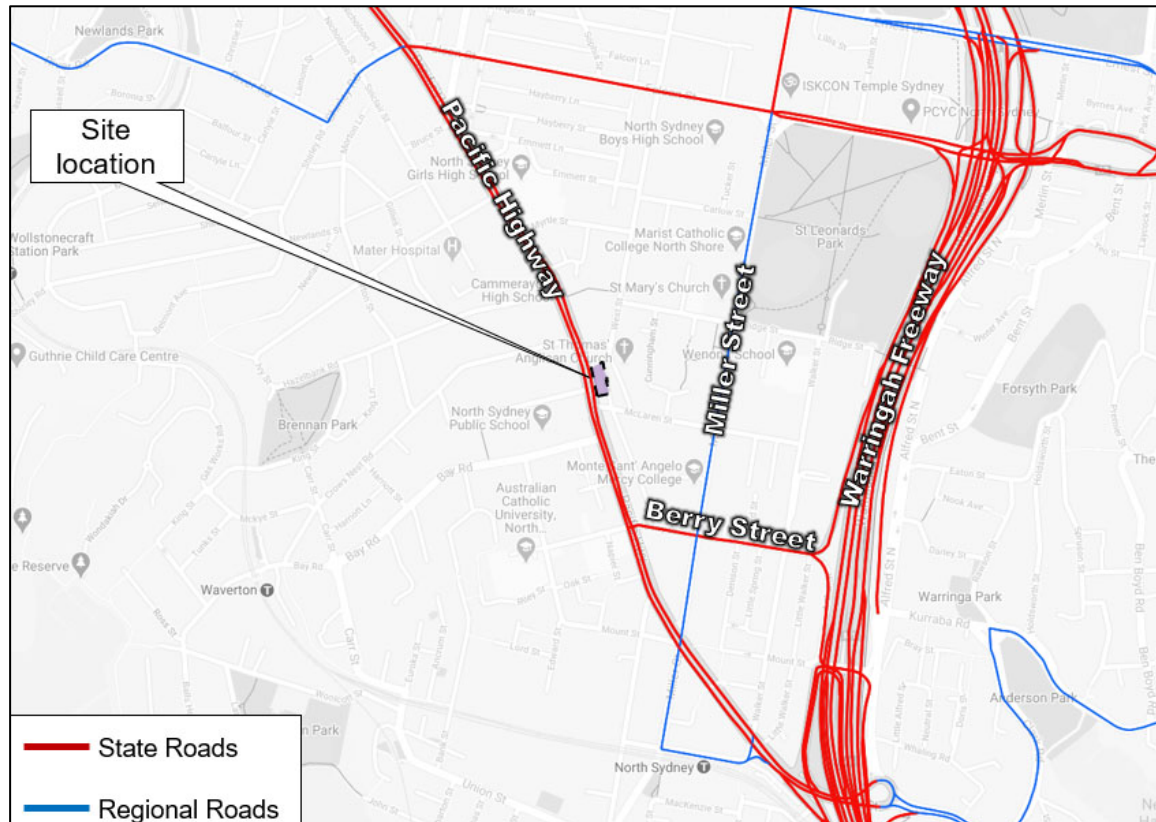


Figure 3 Road network serving the site

2.3 Public transport

The public transport network in the vicinity of the site consists of bus and rail services. A large number of bus routes within a 5 minute walk of the site (along Miller Street) with additional services available from the Pacific Highway while T1 northern line train services are available from North Sydney Train Station (10 minutes by foot).

The 15, 30 and 45 minute journey time catchment of the site by public transport is presented in Figure 4.

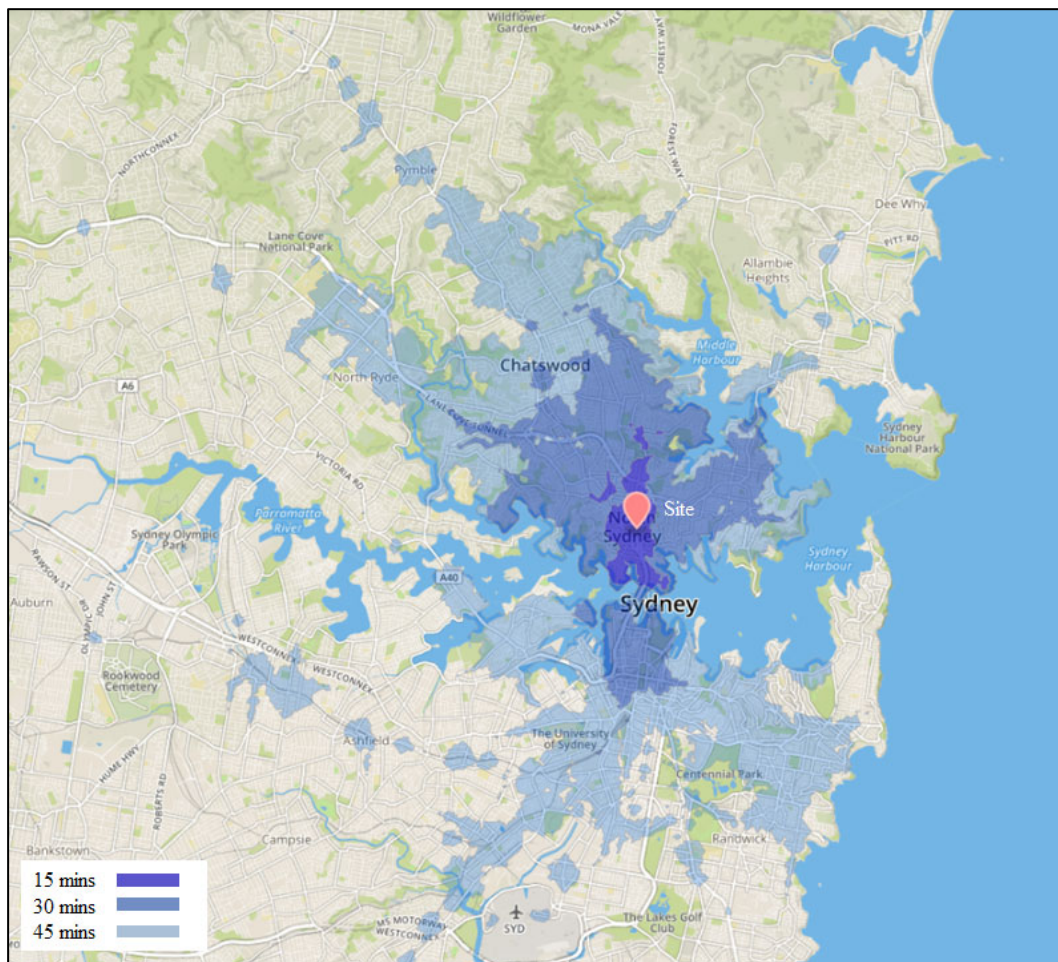


Figure 4 Public transport catchment

2.4 Pedestrian and cycling network

The pedestrian network generally consists of the footpaths running along both sides of the roads along the surrounding road network. Pedestrian crossings are provided on the south and east arms for the McLaren Street/Pacific Highway intersection.

North Sydney train station is approximately 10 minutes walk away from the development site, while the nearest bus stop is located on Pacific Highway, just under 5 minutes by foot from the development site.

North Sydney is served by a network of local and regional bicycle routes as shown in Figure 5 below.

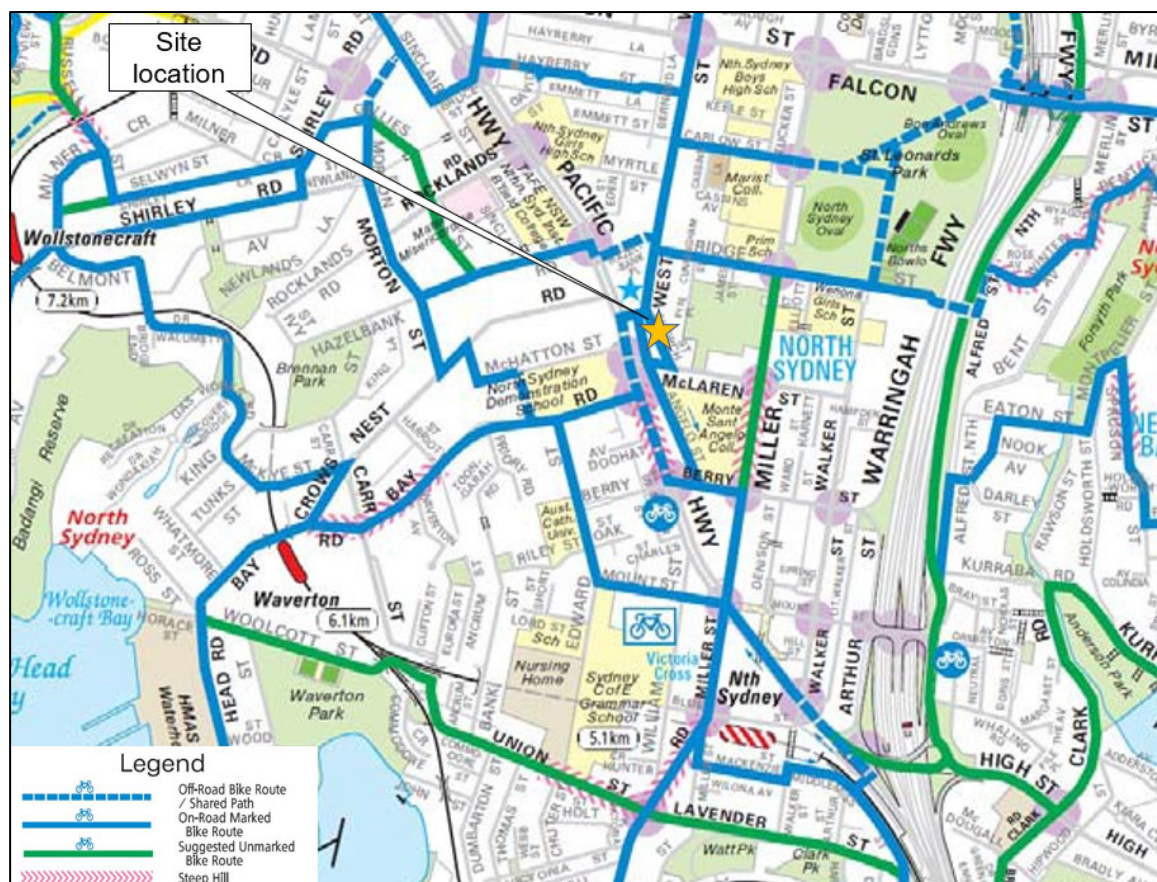


Figure 5 Existing cycling network

3 Future Context

3.1 Civic Precinct planning study

In May 2020 North Sydney Council placed the Civic Precinct Planning Study on exhibition for public comment. The Civic Precinct stretches from the north of the North Sydney CBD through to Crows Nest and includes the subject site. A transport assessment was prepared to support to the Civic Precinct study, and specifically considered the proposal for the 253-267 Pacific Highway site as previously submitted to Council, with key findings including:

- The site is well connected to local public transport and road infrastructure, with the new Metro line to further strengthen the site's accessibility and connectivity from / to surrounding key destinations.
- The location of the site enables it to play an integral part in the strategic planning and future growth of North Sydney and the existing development spine along the Pacific Highway.
- The proposed parking is considered appropriate to meet the parking needs of the development.
- Vehicular access of the proposal could be made via Church Lane to minimise conflicts with pedestrians along the Pacific Highway.

Therefore the findings of the transport assessment for the Civic Precinct study align with the intent of the revised Planning Proposal and confirms that the proposal will have minimal traffic impacts on the surrounding road network.



Figure 6 North Sydney Civic Precinct

Source: North Sydney Council

3.2 Sydney Metro

Sydney Metro is the next major rail project identified in Sydney's Rail Future. Sydney Metro scope has been developed to meet the Project objectives and deliver key elements of Stages 4 and 5 of Sydney's Rail Future.

The NSW Government has commenced construction on a new station in North Sydney, known as Victoria Cross, as part of the Sydney Metro project. The station is located beneath Miller Street (to the north of the Pacific Highway) between McLaren Street and south of Berry Street. Station access and entry is via the pedestrian plaza opening to Miller, Denison and Berry streets. Residents of the proposed development will benefit from the future northern access point into Victoria Cross station located at the corner of Miller and McLaren Street.

The new metro station is located less than a 5 minute walk of the 253-267 Pacific Highway site and will be operational from 2024. The metro will provide a high frequency, high capacity public transport service in close proximity to the site, which will have the effect of reducing reliance on private vehicles, lowering on-street parking demands and reducing traffic movements generated by existing and future residents.

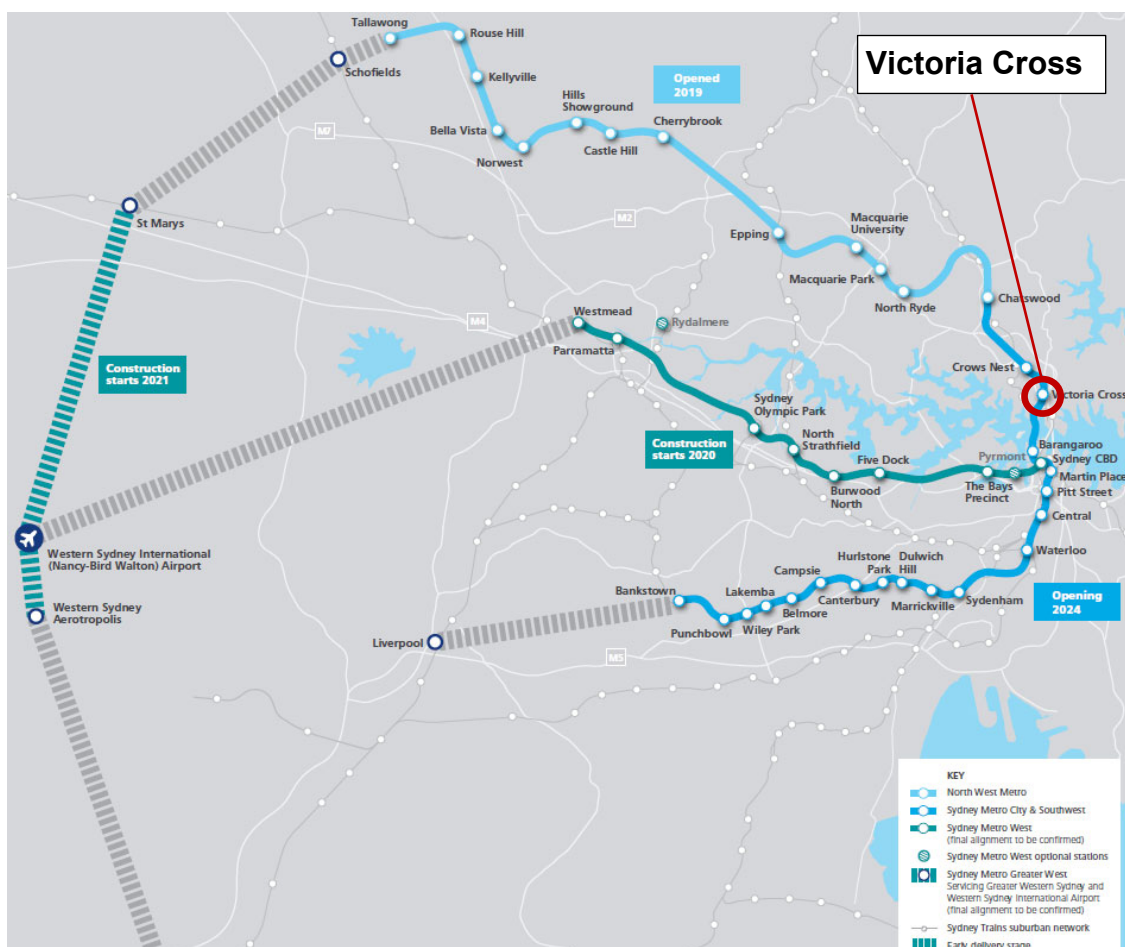


Figure 7 Sydney Metro network

Source: Transport for NSW

3.3 Western Harbour Tunnel and Beaches Link

In March 2017 the NSW Government announced the Western Harbour Tunnel and Beaches Link (WHTBL) motorway project. In January 2020 the Environmental Impact Statement (EIS) for the Western Harbour Tunnel and Warringah Freeway Upgrade Project was released by TfNSW, with the project approved in January 2021. In December 2020 the EIS for the Beaches Link and Gore Hill Freeway Connection was publicly exhibited by TfNSW

The projects will significantly improve road access for residents of the subject site to the broader Sydney motorway network, reducing traffic flows on existing routes including the Pacific Highway and Military Road.



Figure 8 Western Harbour Tunnel and Beaches Link project

Source: Transport for NSW

4 Transport Assessment

4.1 Proposed development summary

Following the recommendations of the North Sydney Council Civic Precinct planning study the revised Planning Proposal includes a total GFA of approximately 5,700m² GFA. Based on the indicative architecture concept prepared by PTW Architects the proposal would provide for 1,776m² of retail/commercial floor space and 3,891m² of residential floor space, equivalent to 37 residential apartments under the current concept.

4.2 Vehicle access

Vehicle access to the site will be provided via Church Lane, consistent with the recommendations of the North Sydney Council Civic Precinct planning study. Two vehicle access points would be provided, one serving the car park for the residential building via a basement ramp and a second separate entry for the retail/commercial building on the corner of Church Lane and West Street.

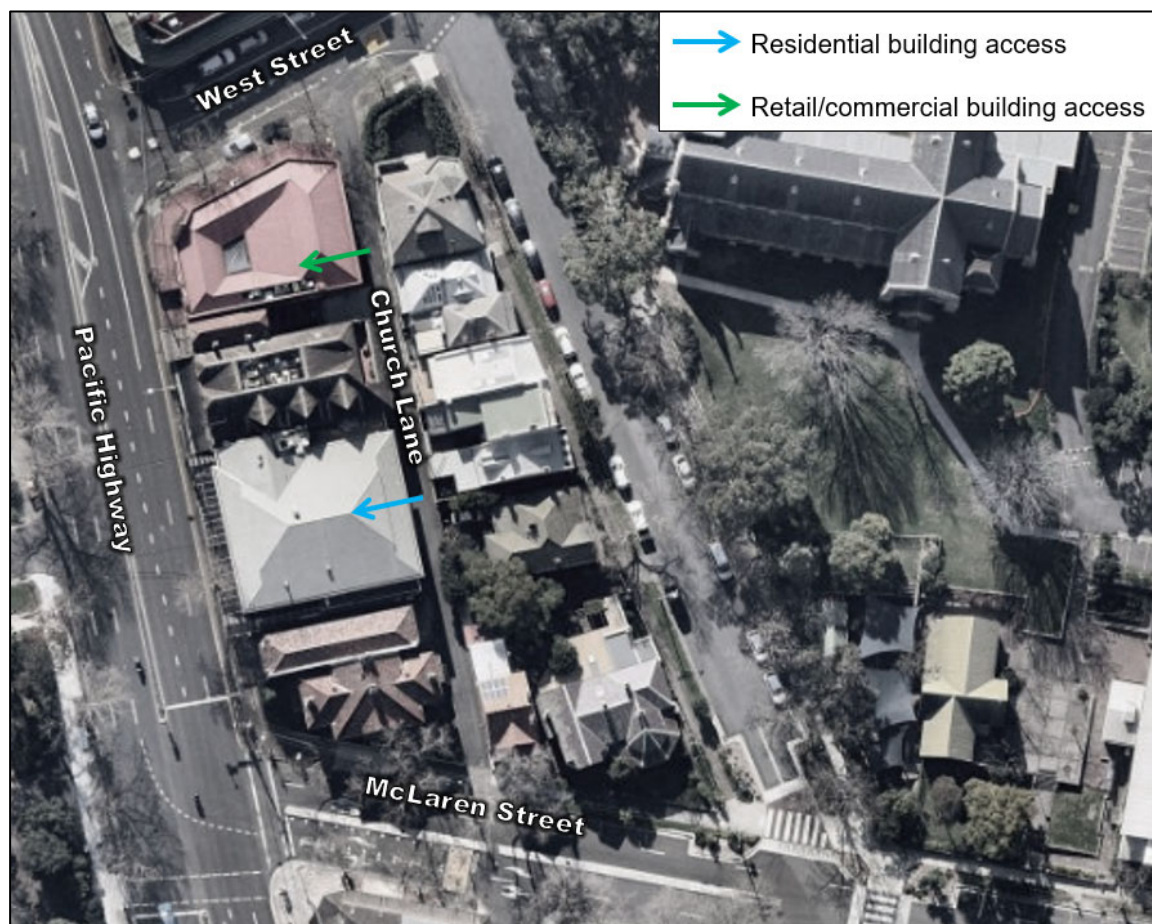


Figure 9 Proposed vehicle access arrangements

4.3 Parking

4.3.1 Car parking

The maximum residential car parking rate, as set out in Table B-10.2 of the North Sydney Development Control Plan 2013 (and as amended in 2015), permits only maximum parking rates for residential and retail/commercial development in zones noted as B4 (development is located in Zone B4). Based on the current indicative dwelling mix and reference design prepared for the Planning Proposal, the potential number of parking spaces that could be achieved is outlined in Table 1 below.

The proposed parking provision of 38 spaces is consistent with the maximum parking rates noted in Council's DCP. This number of spaces is considered appropriate to meet the parking needs of the development while also minimising the impact on the adjacent road network by reducing traffic generation. The final car parking requirements for the site will be confirmed at the Development Application (DA) stage of the project.

Table 1 Car parking rates and potential provision

Land Use		No.*	DCP Parking Rate (Maximum Rate)		Parking provision based on reference design
			Parking rate	No. spaces	
Residential	Studio	0	0.5 / unit	0	34
	1 bedroom	6	0.5 / unit	3	
	2 bedroom	18	1.0 / unit	18	
	3 bedroom	13	1.0 / unit	13	
Sub-Total - Residential				34	
Retail / Commercial		1776 m ²	1 / 400m ² GFA	4	4
Total				38	38

* Based on reference design prepared to support Planning Proposal. Final dwelling mix and GFA to be determined at DA stage

4.3.2 Accessible parking

Clause 10.2.1, P6 of the North Sydney DCP-Part B stipulates that each adaptable residential apartment is required to be allocated an accessible car parking space. Additionally, Clause 10.3.1, P2 of the North Sydney DCP-Part B stipulates that 1- 2% of all non-residential car parking is required to be provided as accessible parking.

These spaces will be allocated as the design progresses towards a development application.

4.3.3 Motorcycle parking

The North Sydney DCP requires the provision of motorcycle parking at the rate of 1 space per 10 car spaces, or part thereof. Based on the reference design four motorcycle parking spaces would be required. Future development applications for the site would comply with this requirement.

4.3.4 Bicycle parking

Clause 10.5.1, P1 of the North Sydney DCP-Part B requires bicycle parking to be provided at the following rates:

Residential land use:

- 1 bicycle space per dwelling, plus
- 1 bicycle space per 10 units for visitors

Commercial land use:

- 1 bicycle space per 150m² GFA for staff, plus
- 1 bicycle space per 400m² GFA for visitors

Retail land use:

- 1 bicycle space per 250m² GFA for staff, plus
- 2 + 1 bicycle space per 100m² GFA for visitors

Sufficient bicycle parking will be provided as part of the proposal and detailed in future development applications for the site.

4.3.5 Car share

The installation of car share parking to replace general off-street parking is optional and at the discretion of the developer. This will be detailed during later stages of planning for the site.

4.4 Service area

The North Sydney Development Control Plan 2013 requires that for developments containing more than 30 dwellings but less than 60 must provide at least 1 service delivery space, capable of accommodating at least 1 Medium Rigid Vehicle. It is proposed to provide one Heavy Rigid Vehicle bay within the site boundary adjacent to Church lane (see Figure 10) which can also accommodate Council waste collection vehicles. HRV's will be able to enter and exit the site in a forwards direction.

Further details regarding the proposed loading strategy will be provided at the development application stage.

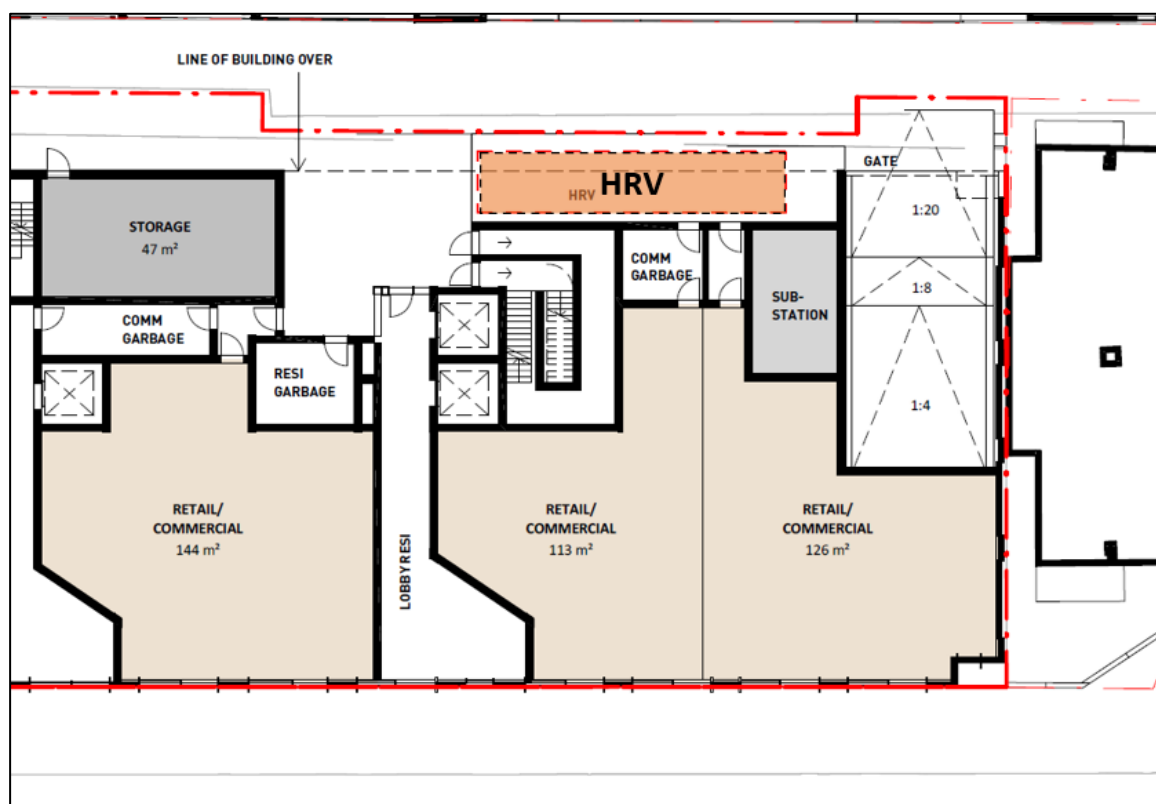


Figure 10 Proposed on-site loading area

4.5 Travel demand analysis

Recent surveys undertaken by the TfNSW of high density residential developments indicates a person trip generation rate of approximately 0.60 trips / dwelling. The equivalent trip generation rate for commercial/retail uses was found to be 2.26 trips per 100m² GFA in the AM peak hour and 1.73 trips per 100m² GFA in the PM peak hour. Applying these rates to the yields possible under the planning proposal results in the following total development trips:

Table 2 Development trip generation

Use	Yield	Quantum	Trip rate (per unit / 100m ²)		Number of trips	
			AM peak hour	PM peak hour	AM peak hour	PM peak hour
Residential	37	units	0.60	0.60	22	22
Commercial/Retail	1,776	m ² GFA	2.26	1.73	40	31
Total trips					62	53

Based on the existing travel behaviours of residents and employees of North Sydney, existing and future public transport services, as well as the proposed parking rates for the different uses forecast mode shares have been developed. These mode shares, along with the forecast trip generation noted in Table 2, have been used to estimate the number of trips by mode to and from the site. This is summarised in the table below.

Table 3 Trip generation by mode

Travel mode	Residential trips			Retail/Commercial trips			Total	
	Mode share	AM peak hour	PM peak hour	Mode share	AM peak hour	PM peak hour	AM peak hour	PM peak hour
Car driver	18%	4	4	18%	7	6	11	10
Car passenger	1%	0	0	1%	0	0	1	1
Bus	6%	1	1	6%	2	2	4	3
Train / Metro	36%	8	8	36%	14	11	22	19
Walk	37%	8	8	37%	15	11	23	20
Other	2%	0	0	2%	1	1	1	1
Total	100%	22	22	100%	40	31	62	53

4.6 Public transport

The site has an excellent level of public transport accessibility as illustrated in Figure 11. The distance to North Sydney train station is approximately 600m, while the bus stops on Miller Street are approximately 250m away. There are a high number of bus services serving the stops on the Pacific Highway during the morning peak period, while trains operate at a 3-minute frequency through North Sydney. Further the site is approximately 260m or less than a five minute walk away from the future Victoria Cross metro station entry on McLaren Street which will offer residents and visitors with a high frequency, high capacity public transport service.

The development is forecast to generate demand for 19 trips by train/metro and 3 trips by bus during the AM peak hour based on the travel demand analysis previously undertaken. This level of demand can be easily accommodated on the public transport network servicing North Sydney.



Figure 11 Public transport accessibility

4.7 Traffic generation and road network impacts

The traffic generated by the site has been calculated based on the development yields associated with the indicative architecture concept prepared for the Planning Proposal as well as the expected mode shares as detailed in Section 4.5 of this document. Based on these factors the site is estimated to generate a net increase of no more than 11 car trips during the busiest hour of the day. This volume of additional traffic is considered negligible in the context of existing traffic flows and would not impact the operation of the surrounding road network.

4.8 Cycling

As part of the future development of the site bicycle parking spaces will be provided for staff, residents and visitors. Based on the indicative architecture concept approximately 60 bicycle parking spaces would be provided, however this will be confirmed at the DA stage of the project.

4.9 Green travel plan

This report includes a preliminary Green Travel Plan (GTP) identifying some key items that could be included in a more detailed plan to be completed in the DA stage of planning.

4.9.1 Background

A Green Travel Plan (GTP) is a package of measures put in place by the development occupants to try and encourage more sustainable travel. It is a means for a development to demonstrate a commitment and take a pro-active step towards improving the environmental sustainability of its activities.

More generally, the principles of a GTP are applied to all people travelling to and from a site. Government authorities are placing increasing emphasis on the need to reduce the number and lengths of motorised journeys and in doing so encourage greater use of alternative means of travel with less negative environmental impacts than the car.

4.9.2 Objectives

The main objectives of the GTP are to reduce the need to travel and promotion of sustainable means of transport. The more specific objectives include:

- High mode share for public transport, cycling and walking to work journeys;
- Ensuring adequate facilities are provided at the site to enable the tenants and visitors of the development to commute by sustainable transport modes;
- Reduce the number of car journeys associated with business travel;
- Facilitate the sustainable and safe travel of occupants; and

- Raise awareness of sustainable transport amongst residents of the development.

4.9.3 Potential measures

A suite of potential measures is described below to be implemented as part of the GTP, which can be developed further as the proposal progresses towards a Development Application.

Table 4 List of potential GTP measures

Action	Responsibility
Cycling	
Provide sufficient cycle parking to meet needs, which is easily accessible and secure	Developer
Provide adequate cycle parking facilities for visitors	Developer
Ensure cycle parking is clearly visible or provide signage to direct people to cycle bays	Building manager
Produce a map showing cycle routes and bike stands in the area	Building manager
Walking	
Produce a map showing safe walking routes to and from the site with times, distances to local facilities, such as shops and bus stops	Building manager
Public Transport	
Develop a map showing public transport routes in the area	Building manager
Put up a noticeboard with leaflets and maps showing the main public transport routes to and from the site	Building manager
Carshare / Carpooling	
Put a poster on the noticeboard where residents would register their interest in carpooling by indicating their work location	Building manager
Develop a map showing car-share spots in the area	Building manager
General actions	
Promotion including: <ul style="list-style-type: none"> • An events calendar. Best in conjunction with statewide events such as National Bike Week, and Bike2Work Day, National Walk to Work Day. • Display boards in prominent locations to show public transport maps and timetables. 	Building manager

4.9.4 Monitoring and review

In order for the GTP to be effective, it must be reviewed on a regular basis. It is important to ensure that the GTP is meeting its objectives and having the intended impact on car use and transport choices. The GTP should be reviewed periodically by undertaking resident and other users of the building travel surveys. It is recommended that the mode shares are first reviewed at least 18 months after occupation, to allow activity levels to settle at the site.

5 Summary

This transport impact assessment report has been prepared by JMT Consulting on behalf of Legacy Property to support a Planning Proposal for the site at 253-267 Pacific Highway, North Sydney. Key findings of the assessment are as follows:

- Under the indicative architecture concept vehicle access would be provided off Church Lane to minimise conflicts with pedestrians and general traffic along the Pacific Highway
- The proposed on-site parking provision, based on the reference design prepared for the Planning Proposal, is less than the maximum permissible under Council's DCP parking rates for B4 zoned areas.
- The site is located in close proximity to various public transport facilities, including North Sydney transport interchange, nearby bus stops and the future Victoria Cross metro station only 260m away, with any future development not expected to not generate significant traffic impacts.
- Analysis indicates that the potential increase in traffic as a result of the Planning Proposal is an additional 11 vehicles in the AM peak hour and 10 vehicles in the PM peak hour. This volume of additional traffic is considered negligible in the context of existing traffic flows and would not impact the operation of the surrounding road network.
- Service vehicle parking is proposed in accordance with the requirements set out in the North Sydney DCP.
- Secure bicycle parking would be provided as a component of any future proposed development, in line with rates specified in the North Sydney DCP.

In the above context, the traffic and transport impacts arising from the proposal are considered acceptable.