Prepared for
Wardle Studio
ABN: 83 006 814 268

AECOM

436 Lonsdale Street, Melbourne

Transport Impact Assessment (TIA)

23-May-2024
436 Lonsdale Street Redevelopment

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Client: Wardle Studio

ABN: 83 006 814 268

Prepared by

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1.0 Introduction

1.1 Project overview and background

AECOM Australia Pty Ltd (AECOM) have been engaged by the Department of Treasury and Finance (DTF) to undertake a Traffic Impact Assessment (TIA) for the redevelopment of 436 Lonsdale Street, Melbourne.

This report provides a traffic, transport, and parking impact assessment of the project, based on a site visit, desktop analysis of policy and regulatory documents, and similar studies undertaken by AECOM. The report provides a detailed understanding of the transport impacts of the project and informs mitigation measures for traffic and transport issues relating to the operation of 436 Lonsdale Street. Construction phase impacts have not been considered as part of this Transport Impact Assessment.

1.2 Scope

This TIA will review the existing road and transport network near the site, consider the site access and potential traffic impacts of the redevelopment on the local road network, and identify any required mitigation measures.

Detailed traffic and pedestrian modelling is not within the scope of this document.

1.3 Report Structure

Following this introduction this TIA is structure as follows:

- Chapter 2.0 outlines the review of background documents and relating projects
- Chapter 3.0 provides details of the existing road and transport network near the site
- Chapter 4.0 outlines the development proposal
- Chapter 5.0 provides details of the impact assessment
- Chapter 6.0 concludes the TIA report

1.4 Reference documents

The following key reference documents were used in the development of this report:

- City of Melbourne Transport Strategy 2030
- City of Melbourne Bicycle Plan 2016-2020
- Melbourne Planning Scheme Clause 52.06 - Car Parking
- Melbourne Planning Scheme Clause 45.09 - Parking Overlay
- Melbourne Planning Scheme Schedule 1 to the Parking Overlay
- Melbourne Planning Scheme Clause 52.34 - Bicycle Facilities
- AS/NZS 2890.2:2002 Parking facilities - Off-street Commercial Vehicle Facilities

1.5 Assumptions and limitations

This report has been created using information provided by the City of Melbourne and the project team (including Biruu). Any further assumptions and limitations used within this TIA have been referenced throughout the document.

2.0 Background document review and projects

A desktop study has been undertaken to understand drivers of movement, and relevant strategies applicable to the redevelopment.

2.1 City of Melbourne Transport Strategy 2030

The City of Melbourne Transport Strategy 2030 promotes walking, cycling and public transport options and encourages high quality pick up and drop off facilities. Key sustainable transport routes and connections are shown in Figure 1 below.

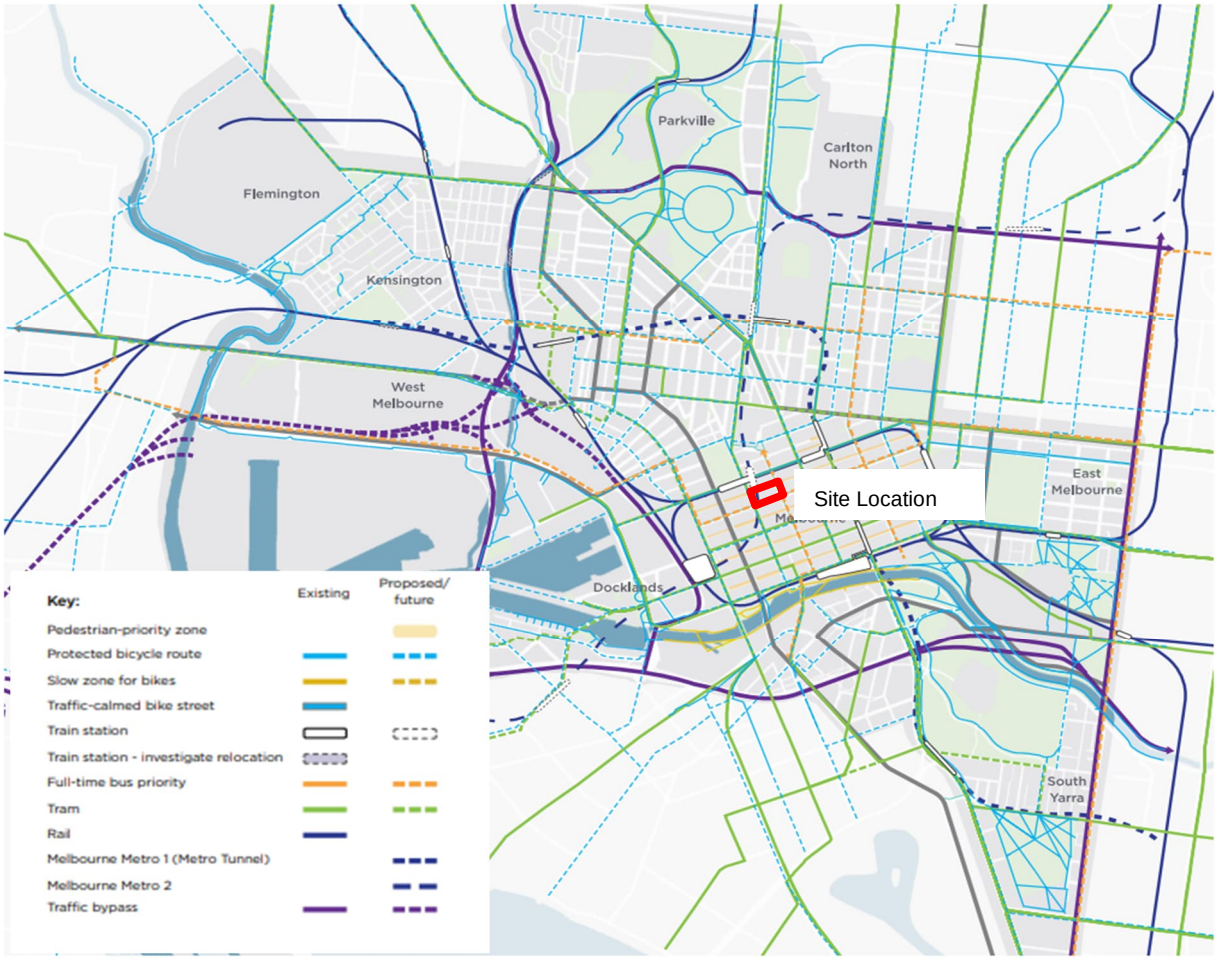

Figure 1 2030 Proposed Integrated Network (City of Melbourne)

According to this document, the mode share target for public transport, walking and cycling by 2030 is 70%, with a related target of reducing the central city through-traffic from 43% in 2018 to 21% in 2030. The development of the proposed City of Melbourne's Transport Strategy has considered the ongoing or planned major or large projects being conducted in and around the Melbourne CBD. These projects are illustrated in Figure 2 below.

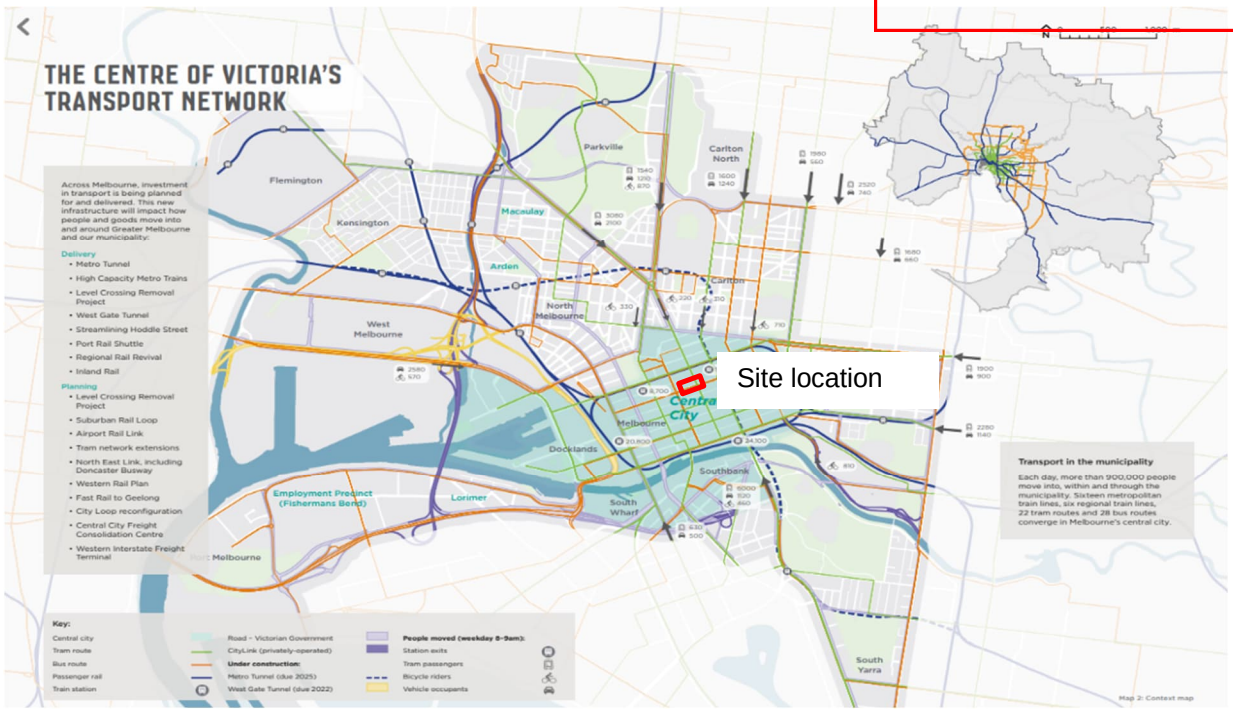

Figure 2 Map showcasing projects being undertaken in city

2.2 City of Melbourne Bicycle Plan 2016-2020

As part of the City of Melbourne's Transport Strategy 2030, a Bicycle Plan for the period 2016-2020 was created with the aim of making Melbourne a more cycle friendly city. Projects that have already been undertaken near the redevelopment site include improved intersection design along La Trobe Street and investigation into full time bicycle lanes on Exhibition, Little Lonsdale, Spring, and Victoria Streets. Figure 3 below illustrates the level of use of bicycles in each street within the CBD (based on 2015 data).

Figure 3 Modelled trips by bicycle for journeys to work in the City of Melbourne 2015

2.3 Metro Tunnel Project

The Metro Tunnel Project (MTP) is a proposed underground rail link that will help untangle the City Loop so more trains can run more often across Melbourne. The new line will run from Sunbury to Cranbourne/Pakenham and the line will include new generation signalling technology, bigger and better trains, and five new stations. One of the new stations is State Library, as shown in Figure 4. The station will be located at the corner of La Trobe St and Swanston St which is 565m north-east of the redevelopment site as well as the nearby station in Flagstaff.

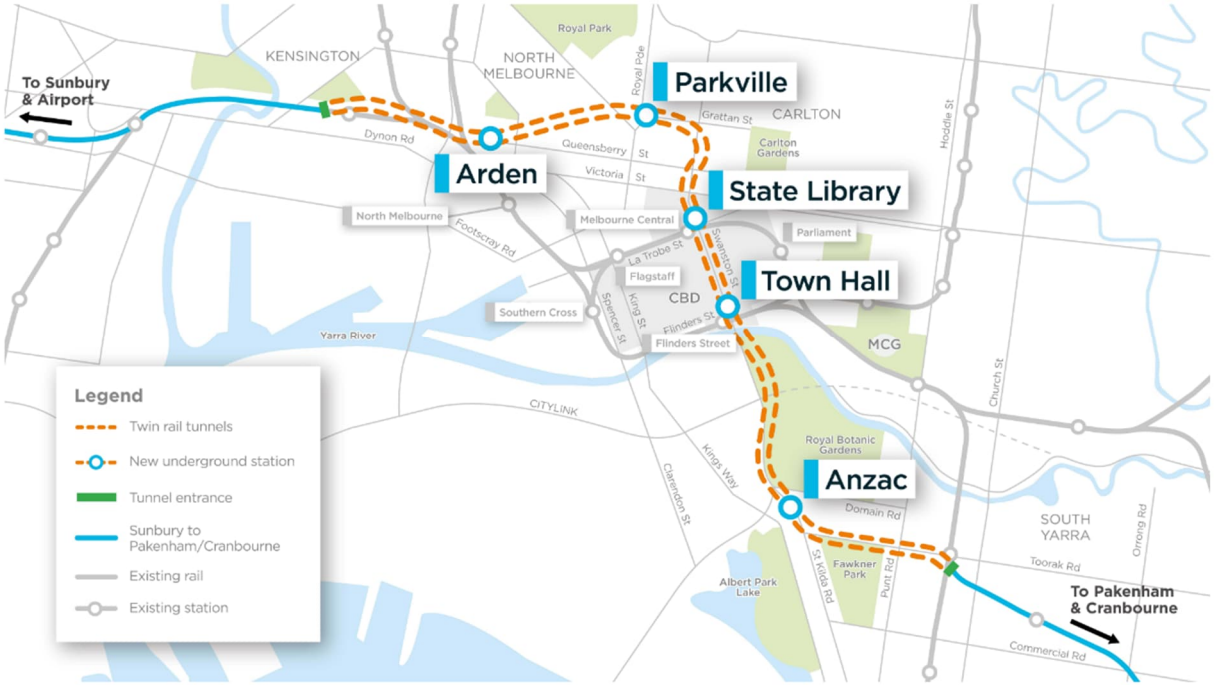

Figure 4 Metro Tunnel Map

3.0 Existing conditions

3.1 Site location

The site is located at 436 Lonsdale in Melbourne, and was formerly occupied by DTF. It is directly opposite to the Lonsdale Exchange Building and is within the Melbourne CBD. Figure 5, shows the site location in red and surrounding road networks.

The site is surrounded by large office buildings often the buildings close by house court rooms of different causes. 436 Lonsdale Street is quite central within the CBD with no land vacant surrounding it. Figure 5 shows examples of the surrounding environment.

Figure 5 Site location and surrounding networks (Source: Nearmap)

3.2 Planning zones and overlays

The site is located within a Capital City Zone (CCZ1), which encompasses surrounding sites, including State Library to the East as well as the five major train station within the CBD in Flinders St, Flagstaff, Melbourne Central, Parliament and Southern Cross Station.

Schedule 1 (Capital City Zone – Outside of the Retail Core) is applicable for this site. Docklands Zone (DZ2 to DZ7) is found to west of the site. An overview of the site is found in Figure 6,. The site is subject to a Heritage Overlay Schedule 717 (436-450 Lonsdale Street).

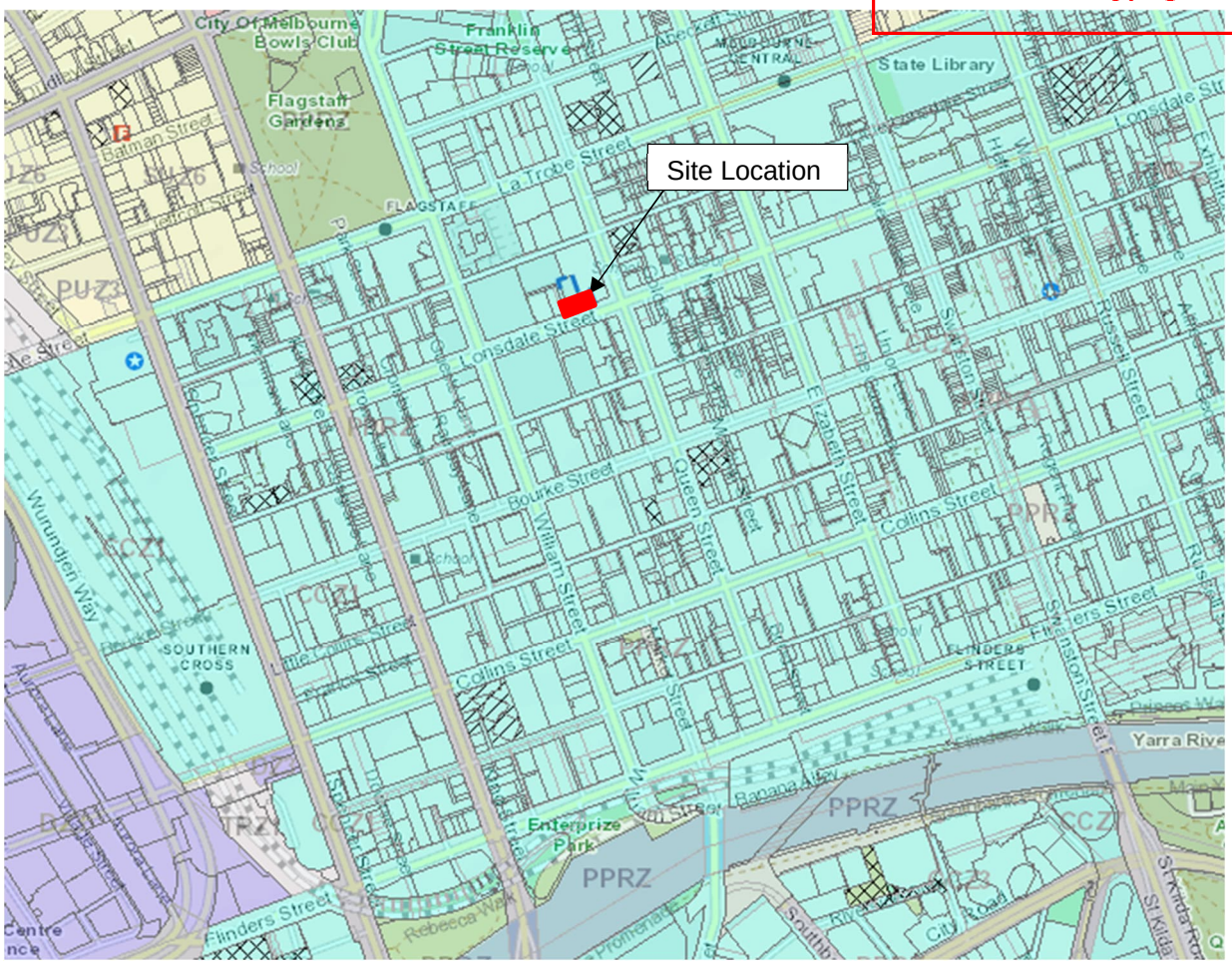

Figure 6 Victorian Planning Scheme overlays (Source: VicPlan)

3.3 Local transport network

3.3.1 Surrounding road network

Table 1 summarises the existing function and operation of key roads surrounding the site, specifically Lonsdale Street and Queen Street. Lonsdale Lane will serve as a service path to access the building for waste and loading vehicles, as well as for bicycles accessing parking and End of Trip (EOT) facilities. Lonsdale Lane is a Shared Zone with a speed limit of 10km/h and is part of a No-Stopping Area.

The surrounding B-Double gazetted network is shown in Figure 7.

Table 1 Existing Road Conditions

Transport element	Lonsdale Street	Queen Street
Speed Limit (km/h)	40	40
Classification	Arterial	Arterial
Managed by	DoT	DoT
Carriageway Width (m)	16	16
Total number of lanes	4 (excl. turning)	4 (excl. turning)
Traffic Control	Signalised intersections with major arterial roads in and around the Melbourne CBD.	Signalised intersections with major arterial roads in and around the Melbourne CBD.

Transport element	Lonsdale Street	Queen Street
	Surrounding roads with give way entry/exits. Generally restricted to left in/left out.	Surrounding roads with give way entry/exits. Generally restricted to left in/left out.
On the Principal Bicycle Network?	No	No
On a Strategic Cycling Corridor?	No	No
Bicycle facilities	Yes No shared path on either side of road	Yes No shared path on either side of road
Pedestrian facilities	Yes – both sides	Yes – both sides
Bus facilities	Yes	No
B-Double Approved Route? (Figure 7)	None	None
Truck Over-Dimensional Route?	No	No
Over size and over mass (OSOM) route	No	No
On-street parking facilities	Yes, street-parking on the bus lane as well as on mediums in the street	Yes, street-parking on the bus lane as well as on mediums in the street

Figure 7 B-Double approved roads within the study area

3.3.2 Crash data

The Department of Transport and Planning (DTP) Crash Stats was utilised to provide the last five years of available crash data, between 2019-2023. Around the site location, a study area bounded by Lonsdale Street and Queens Street in are considered for the crash analysis. Figure 8 outlines this crash analysis study area and Table 2 summaries the crash output statistics. There were no recorded incidents within the five-year period in proximity of the site entrance.

Figure 8 Crash map for study area 2019-2023

Table 2 Crash statistics summary for study area 2019-2023

Crash Statistics	
Total number of crashes	**29**
Persons Involved	65
Fatal accident	0
Serious injury accident	**8**
Other injury accident	23
Mode Involvement	
Passenger (car)	7
Driver (car)	32
Cyclist	4
Pedestrian	10
Motorcyclist	0
Unknown	2

A total of 34 crashes were found to occur on Lonsdale Street and Queens Street, with the following key trends found:

- In terms of severity, zero were classified as “Fatal”, eight as “Serious” and twenty-three as “Other” injury accidents
- 19 crashes involved only vehicles (“Collision with vehicle”). The remaining type (ten crashes) is “Struck Pedestrian”
- In terms of DCA classification the following crashes occurred:
  - The most common crash type was “Right Turn Sideswipe” with a total of five crashes
  - Total of seven pedestrians hit on the near side by a vehicle from the right
  - Total of three cross traffic at intersections and a total of three right through.
  - Other crash types include rear end, left turn and lane side sideswipe, leaving parking, far side, U-turn, lane change right, and vehicle off footpath strikes vehicle on carriageway.
- A total of fourteen crashes occurred during day light and remaining occurred in the dark, dusk/dawn, or unknown conditions

3.3.3 Active transport

The site is located on a major road, with shared on-street cycle facilities provided on surrounding roads. Eight bicycle racks are provided (see Figure 9 below), of which three are located on Lonsdale Street whilst the other five are located on Queens Street. However, no secured bicycle parking is provided.

Surrounding strategic cycle networks are shown in Figure 10.

Figure 9 Existing bicycle rack provision in the surrounding of the site

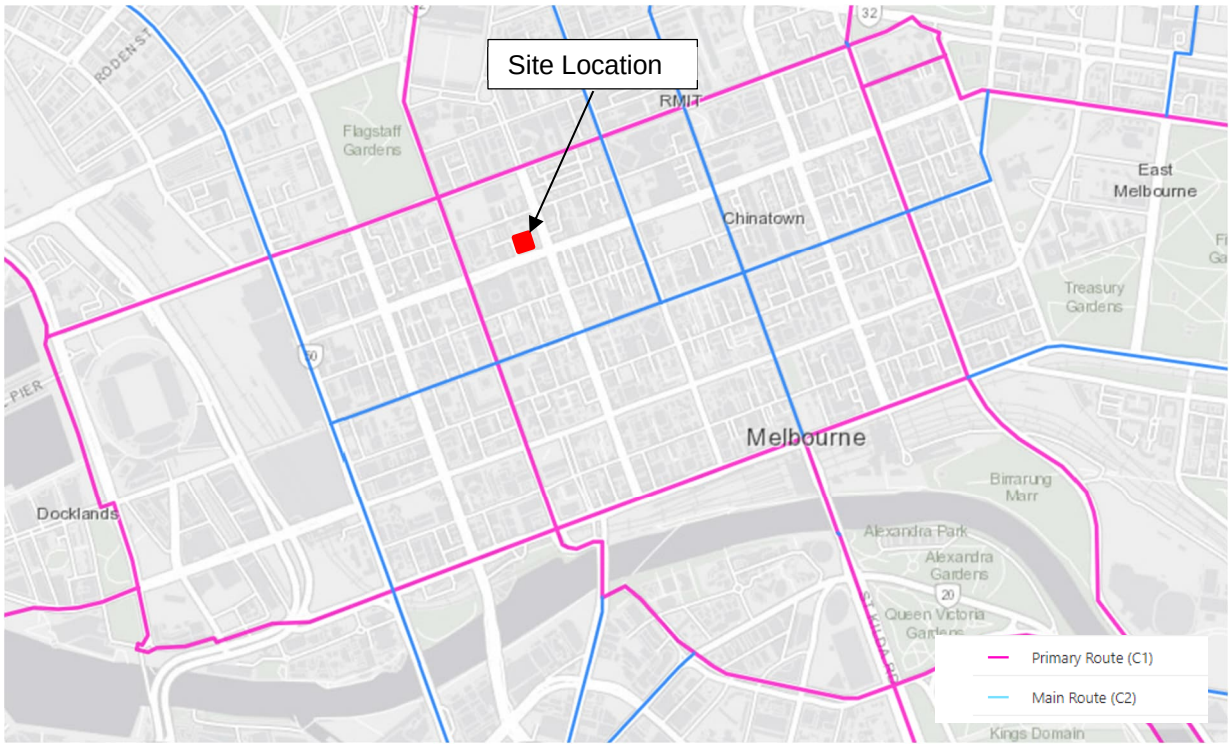

Figure 10 Principal bicycle network

3.3.4 Public transport network

The site is located within the Principal Public Transport Network (PPTN), which considers the site to be within 400m of public transport options. The site is in close proximity to the following public transport services:

- Several bus services operate along Lonsdale Street:
  - Bus routes 305, 905, and 908 all operate between the city and The Pines Shopping Centre via different routes and the Eastern Freeway. The headway during peak period is approximately 10 minutes for all routes and 15 minutes during off-peak hours.
  - Bus routes 302, 304, 906, and 907 all operate towards different areas with all but one of the routes utilising the Eastern Freeway. The headway during peak period is approximately 10 minutes for routes 302 and 304 and approximately 7 minutes for routes 906 and 907. During off-peak hours, the headway is approximately 15 minutes for all routes
- Flagstaff railway station is approximately 0.3km northwest of the site. The station runs within the CBD and many of Melbourne's different train lines run through this station.
- Metro Tunnel planned State Library station is located 565m northeast of the site.

A local map of these services is provided in Figure 11 below.

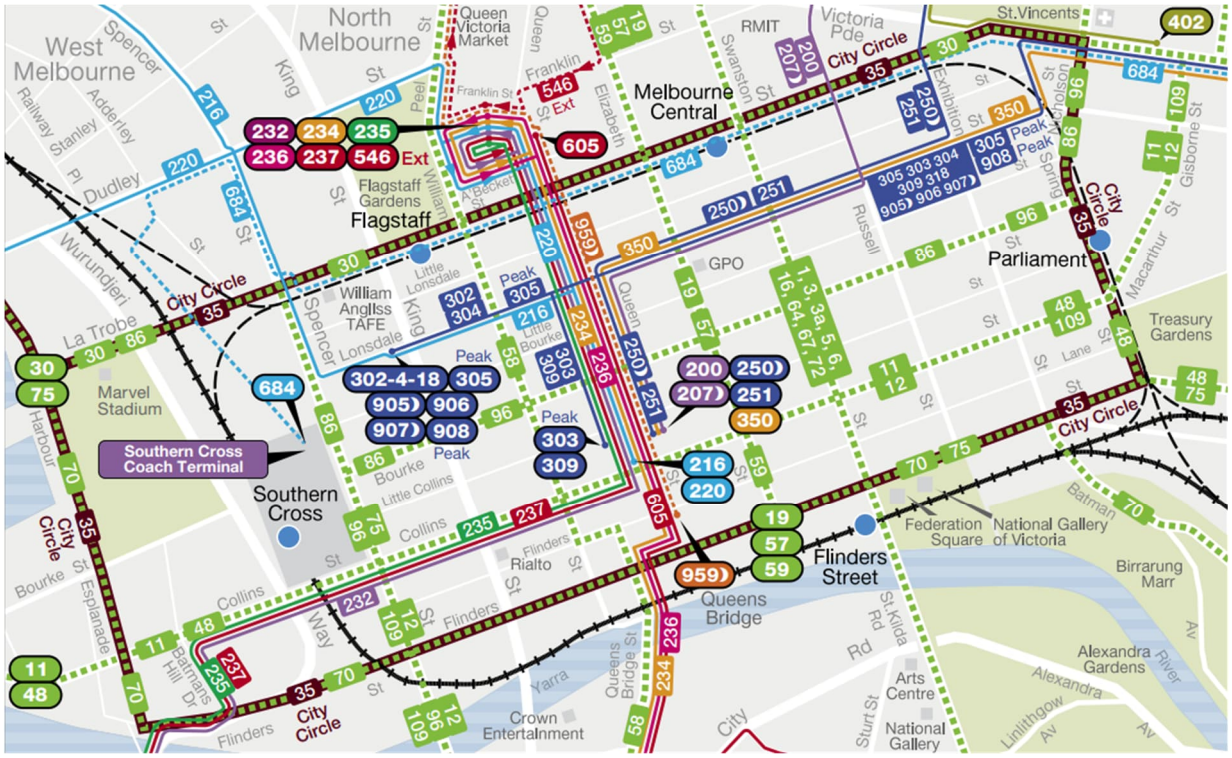

Figure 11 Surrounding public transport network

3.4 Car Parking

The existing building does not include any car parking within the building; however, the building is surrounded by 94 parking spaces along both Lonsdale Street and Queens Street (detailed in Figure 12 below). The parking facilities are split into the following:

- Lonsdale Street:
  - 48 parking spaces in the middle of the street
  - 12 parking spaces along Lonsdale Street adjacent to the building (Clearway: Mon-Fri 4-6:30pm). Two of these spaces are designated accessible parking spaces

  - 16 parking spaces along Lonsdale Street opposite the building (Clearway: Mon-Fri 7-9:30am)
- Queens Street:
  - 16 parking spaces in the middle of the street
  - Eight parking spaces along Lonsdale on the side nearest to the building
  - Three parking spaces along Lonsdale on the side opposite of the building

Figure 12 Existing Carparking Provision at 436 Lonsdale Street

Furthermore, there are secure carparks in close proximity of the site for all-day parking (arriving at 7:00am and departing at 5:30pm) as shown in Figure 13.

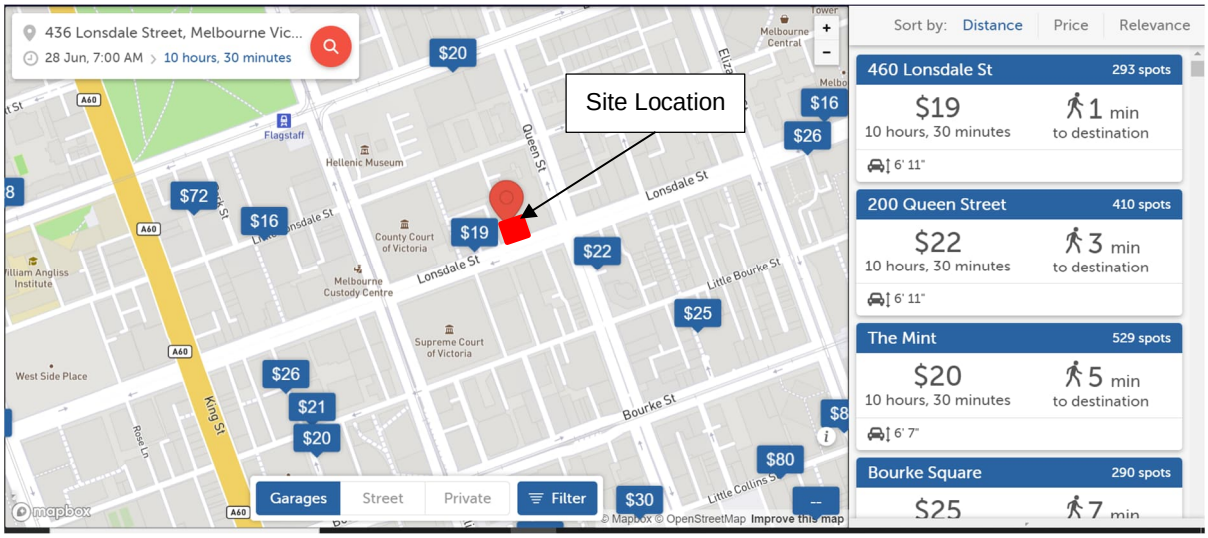

Figure 13 Secure Parking Locations

4.0 Development proposal

The proposed development has been designed by John Wardle Architects for the site at 436 Lonsdale Street to convert it from its current courts building into a commercial office building. The proposed vertical layout is shown in Figure 14.

This building has been designed in accordance with requirements for 6 Star Green Star buildings. The Green Star rating is an internationally recognised rating system charged with setting the standard for healthy, resilient, positive buildings and places. Higher star rating is provided in the transport category if the project reduces the dependency of car transport and encourages the use of sustainable transport to access the site.

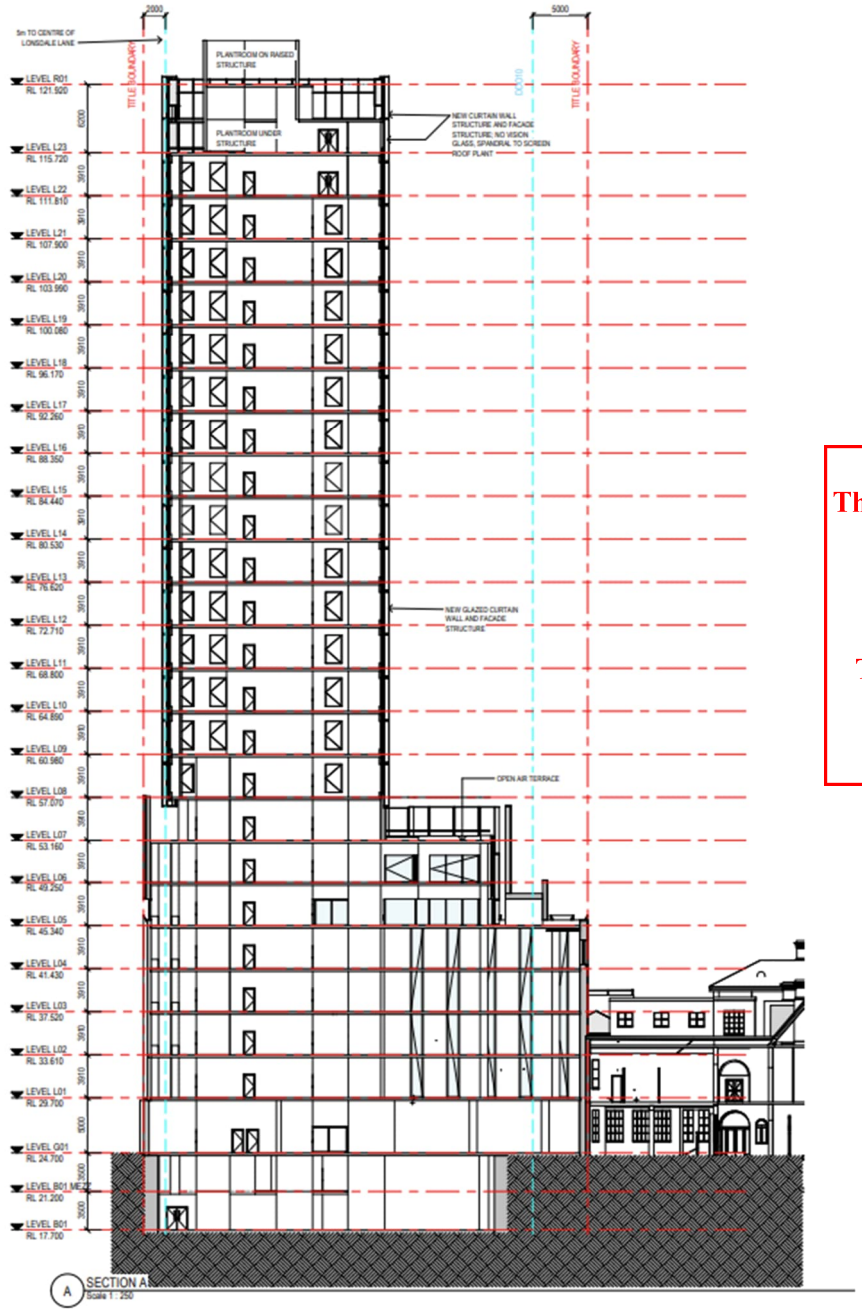

Figure 14 Proposed vertical layout of 436 Lonsdale St

4.1 Car parking provision and access

The design proposes no parking to be provided and therefore it is not expected that staff or visitors will park their car on site.

4.2 Bicycle facilities and access

The current proposed development includes the provision of bicycle parking and End of Trip (EOT) facilities, which will be accessed via Lonsdale Lane. These facilities will provide 182 bicycle parking spaces and 10 showers, with direct access to the building via stairs and lifts. These facilities are proposed to be provided in the Ground (G1) Level, as shown in Figure 15.

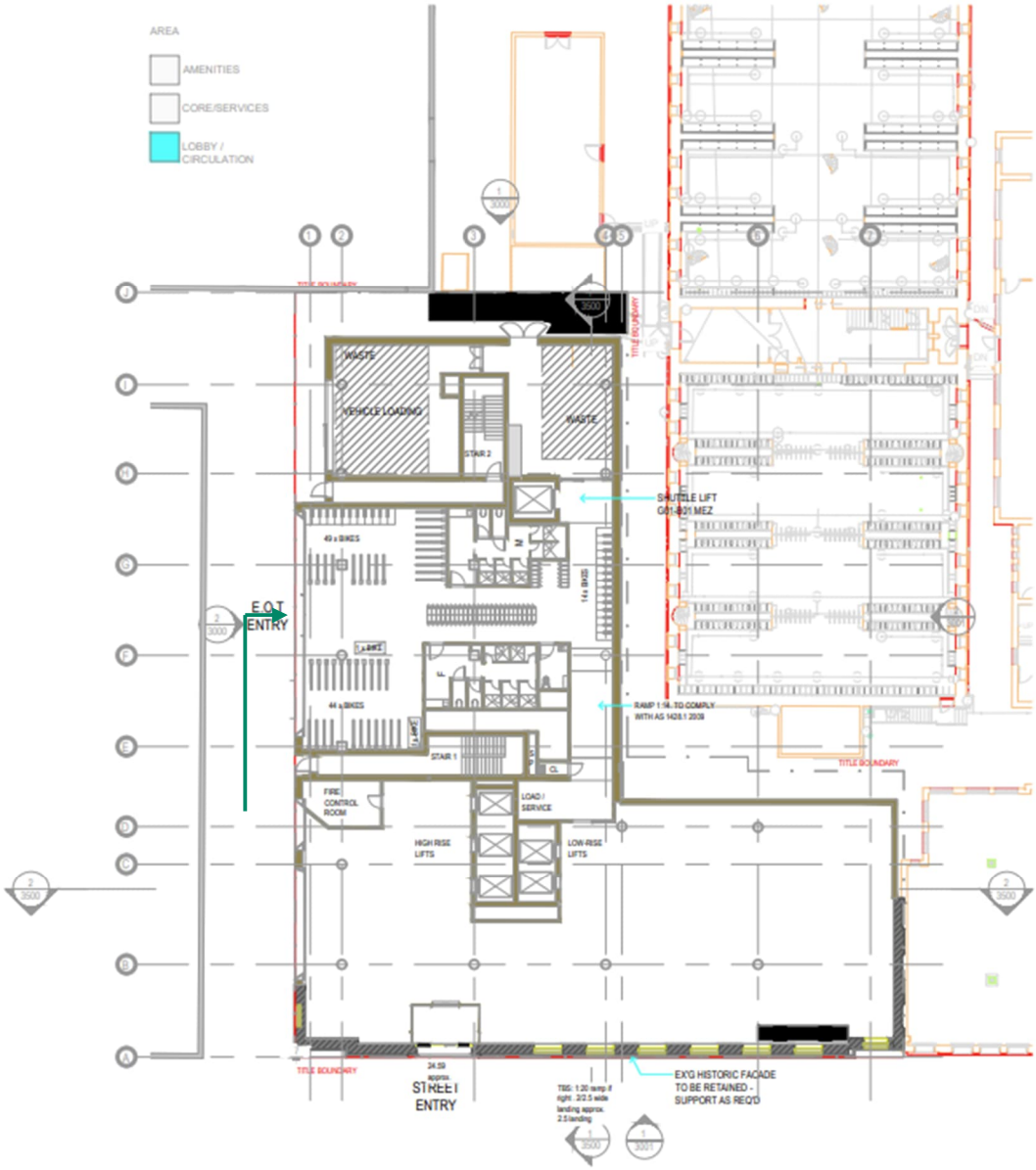

Figure 15 Floor plans of Ground Floor (G1)

4.3 Waste and loading access

The proposed layout has a dedicated waste and loading areas in the northern corner of the building at ground level on Lonsdale Lane as illustrated in Figure 16.

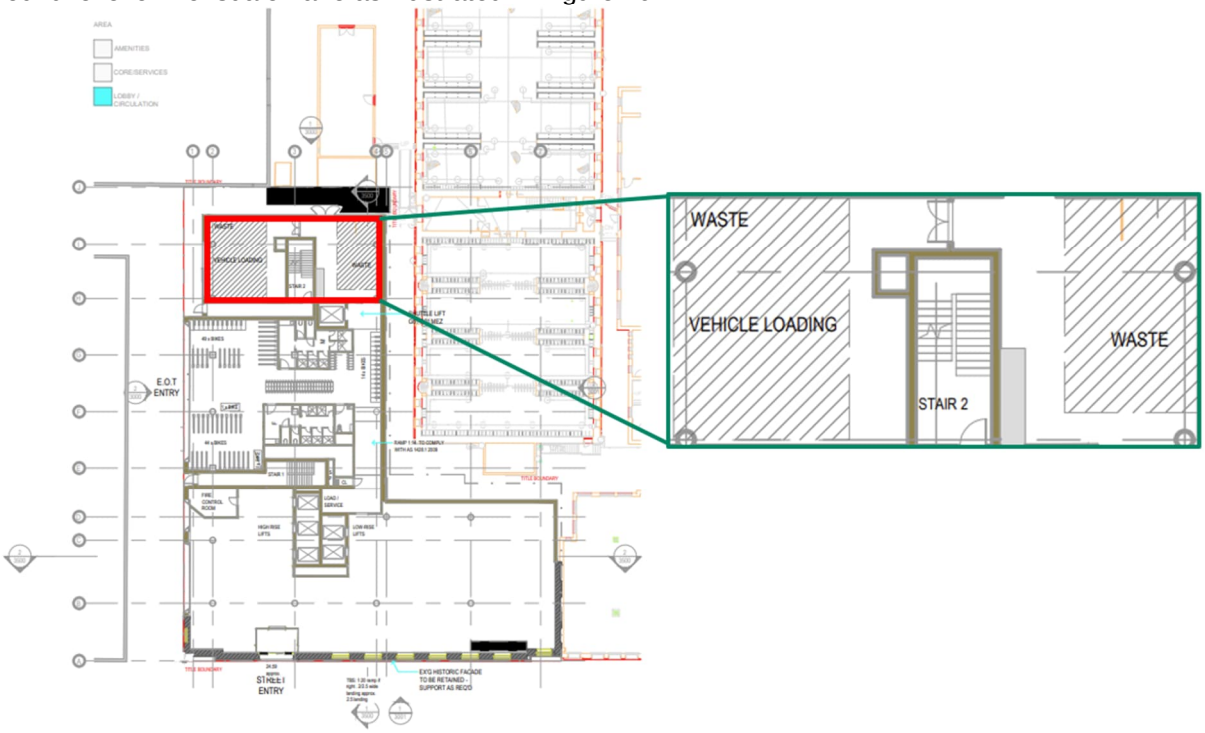

Figure 16 Loading zone on Ground Floor

Waste and loading access for an 8.8m Medium Rigid Vehicle (8.8m MRV) has been provided via Lonsdale Lane. Swept paths provided in Figure 18 and Figure 19 below indicate that the service vehicles will be able to enter and exit the loading area from Lonsdale Street via Lonsdale Lane. Vehicles will be able to manoeuvre within the space provided by reversing into the loading area and exiting in a forward direction towards Lonsdale Street (via Lonsdale Lane), at a speed of 5km/h. A 300mm clearance buffer has been adopted between the vehicle and vertical obstacles in accordance with AS/NZS 2890.2:2018. A 2m loading area has been allowed at the back of the vehicle.

The vehicle profile is provided in Figure 17.

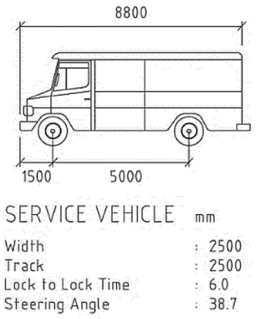

Figure 17 Design Vehicle Profile (Service Vehicle, Light Truck, Austroads 2013)

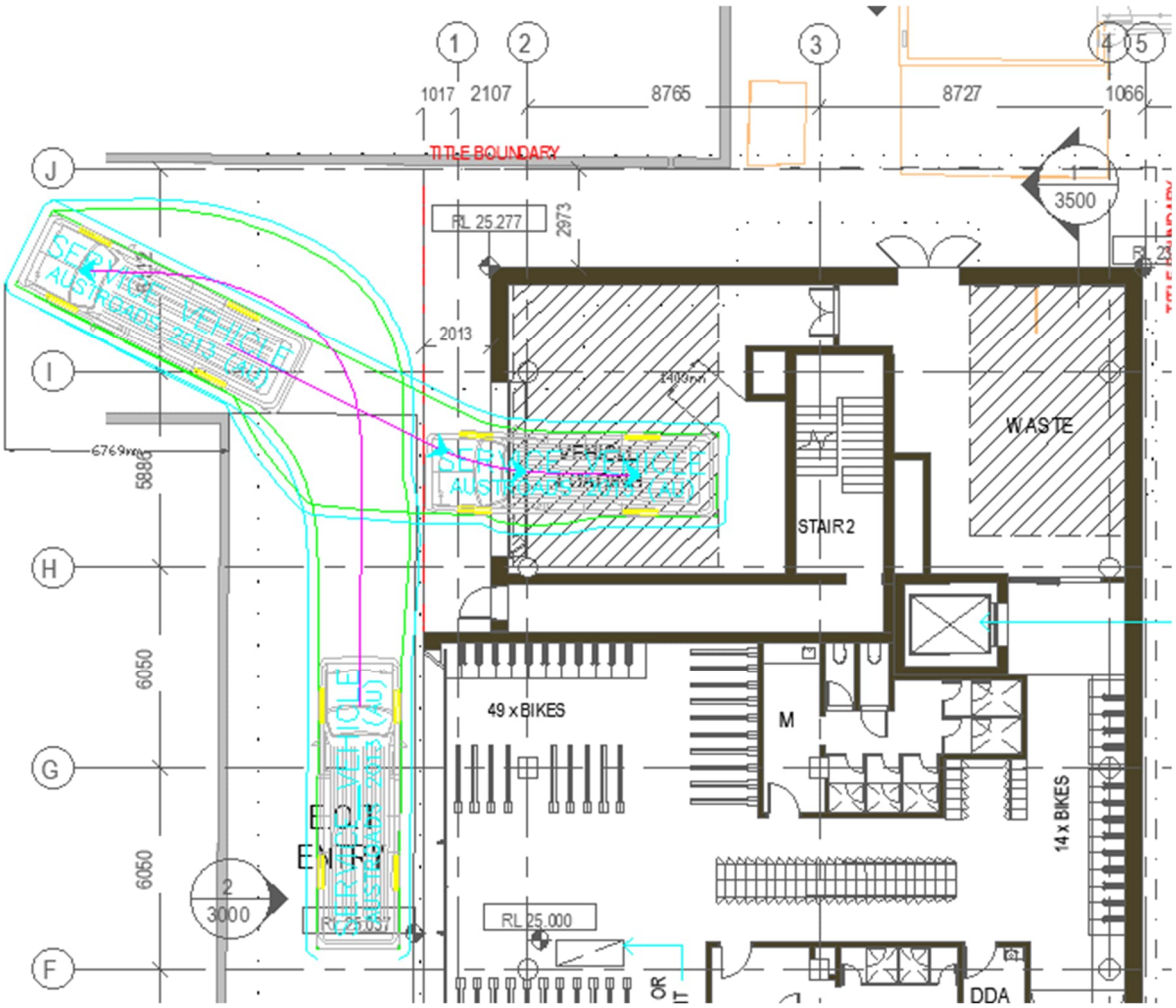

Figure 18 8.8m service vehicle swept path entering the loading area

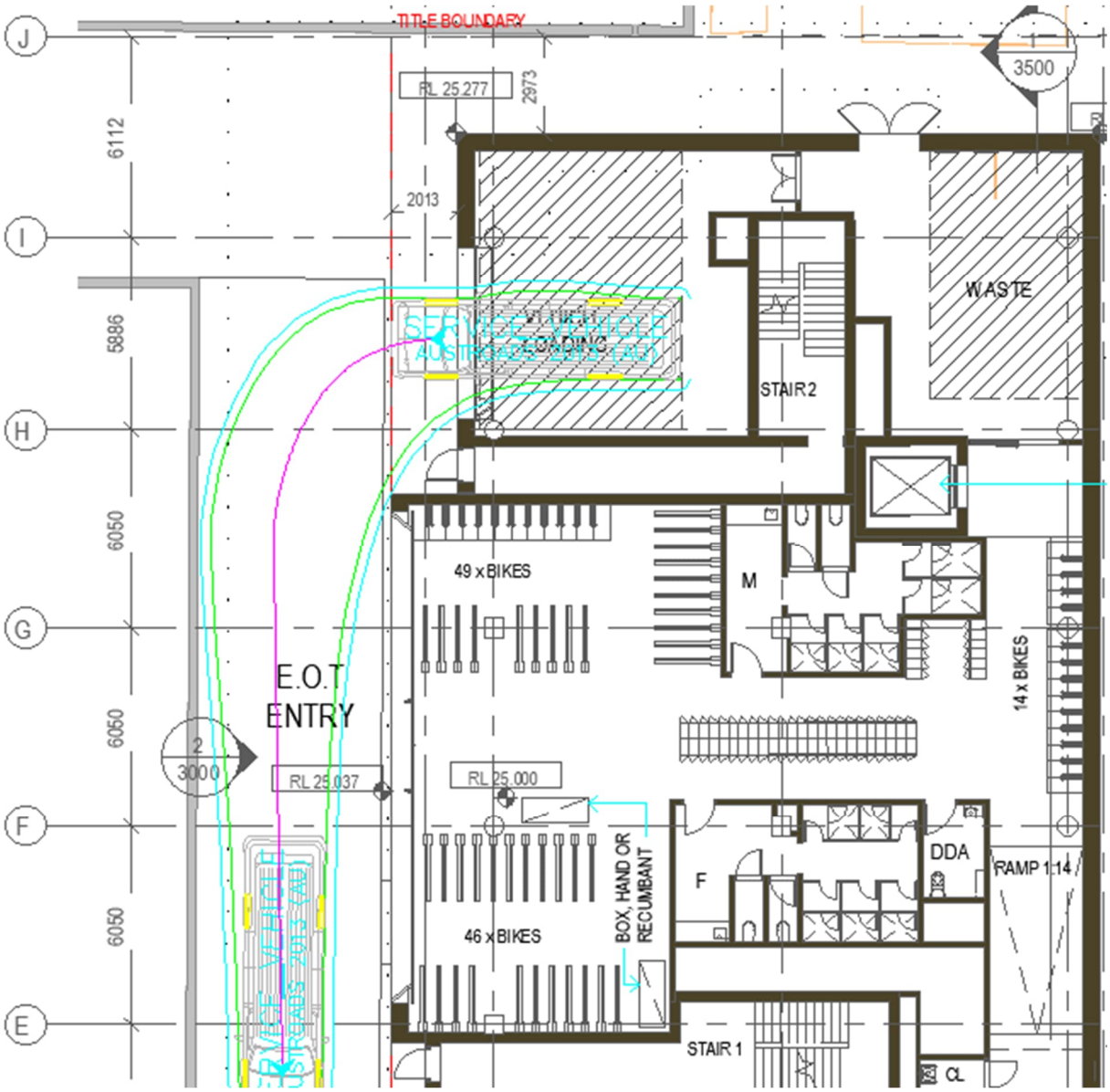

Figure 19 8.8m service vehicle swept path exiting the loading area

5.0 Impact assessment

5.1 Car Parking

The proposed development has a Net Floor Area (NFA) of 14,989m2 and is considered Class 5 (commercial) according to the Victorian Building Authority (VBA). The building falls under Schedule 1 to the Parking Overlay (Capital City Zone – Outside the Retail Core) which has maximum parking requirements, overriding the minimum parking provision requirements of Clause 52.06. Following the guidance in the Schedule, the maximum parking spaces that may be provided is 75.

According to this Parking Overlay, a permit is only required if the proposed development provides an excess of car parking to the 75 required.

The proposed development design does not include any car parking spaces, therefore, no permit is required for this purpose. The provision of zero (0) car parking spaces is based on the matters listed in Table 3. These are based on the Car Parking Demand Assessment considerations (for the reduction on car parking provision) outlined in Clause 52.06.

Table 3 Car parking provision reduction to zero (0) matters and responses

Item	Planning clause 52.06 matters	Development response
1	*The likelihood of multi-purpose trips within the locality which are likely to be combined with a trip to the land in connection with the proposed use.*	It is likely that a proportion of the patrons accessing this site will be accessing other sites in Melbourne CBD. Melbourne CBD is the core of Melbourne metropolitan area and a major financial centre, offering a wide range cultural, recreational, retail, health and hospitality amenities.
2	*The variation of car parking demand likely to be generated by the proposed use over time.*	This site is expected to have 95% regular occupants and 5% visitors. Considering 10sqm per occupant, the site is expected to have approx. 1,424 regular occupants, with occupancy levels remaining relatively consistent throughout business hours (approximately 9am to 5pm). Visitors are expected to visit the site, potentially causing fluctuations in parking demand over time. However, it is anticipated that these trips will predominantly use sustainable transportation options or use available on-street parking and secured car parks in the surrounding area.
3	*The short-stay and long-stay car parking demand likely to be generated by the proposed use.*	As discussed above, the vast bulk of the demand will be driven by the staff, which has relatively stable, and long duration, occupancy levels during business hours (approx. 9am to 5pm). As such, it is expected that occupants will generally arrive using sustainable transportation options or by using secured car parks in the surrounding area.
4	*The availability of public transport in the locality of the land.*	The local area benefits from excellent public transport alternatives to the private motor vehicle, as it is within the Principal Public Transport Network (PPTN) area of Melbourne CBD. This area is well served by buses, trams and trains. Please refer to Section 3.3.4 for further details.

5	*The convenience of pedestrian and cyclist access to the land.*	The site is well connected to the SCC network, including La Trobe Street, Bourke Street, Elisabeth Street and William Street, all within a 300-metre distance from the site. Cyclists will travel between the site and the SCC network via Lonsdale Street (with a 40km/h speed limit) and Lonsdale Lane (Shared Zone with a 10km/h speed limit). Additionally, sealed pedestrian footpaths surround the site, providing connections to all public transport services in the area.
6	*The provision of bicycle parking and end of trip facilities for cyclists in the locality of the land.*	Bicycle parking and end of trip facilities are currently being considered to be provided according to Clause 52.34 and 6 Star Green Star building requirements.
7	*The anticipated car ownership rates of likely or proposed visitors to or occupants (residents or employees) of the land*	Not applicable
9a	*Other matters: Availability of alternative car parking in the locality of the land*	As mentioned in Section 3.4, the building is surrounded by on-street parking spaces along both Lonsdale and Queens Street (including DDA parking). Additionally, there are approximately 1,200 car parking spaces available within carparks located within a 5-minute walk from the site.
9b	*Other matters: Any relevant local planning policy or incorporated plan*	The City of Melbourne Transport Strategy 2030 aims to reduce central city through-traffic from 43% in 2018 to 21% by 2030, while also aiming to achieve a 70% mode share target for public transport, walking, and cycling by the same year. By providing no car parking options and by following the 6 Star Green Star sustainable transport requirements, the proposed development supports the vision outlined in the City of Melbourne Transport Strategy 2030.

Motorcycle parking or DDA parking is not required based on the following planning requirements:

- Schedule 1 to the Parking Overlay (Capital City Zone – Outside the Retail Core) requires motorcycle parking based on the number of car parking spaces provided, resulting in zero (0).
- National Construction Code (NCC), and according to a Class 5 building, requires accessible car parking spaces based on the number of car parking spaces provided, resulting in zero (0).

5.2 Bicycle parking and facilities

5.2.1 Proposed land use and bicycle parking requirements against Planning Clause 52.34

The City of Melbourne planning scheme Clause 52.34 Bicycle Facilities is applicable to calculating the minimum bicycle parking and EOT provisions based on its total net floor area.

The application of these parking rates is shown in Table 4 and results in the need to provide a minimum of 50 bicycle parking spaces for employees and 15 bicycle parking spaces for visitors. Clause 52.34 also states a minimum of 6 showers to be provided on site. Note that one change room, or direct access to a communal change room, is required for each shower. The change room may be a combined shower and change room.

Table 4 Bike Parking Requirements for proposed development

Land Use	NFA (m^2)	Requirement		Bicycle spaces *(Visitor = V Employee = E)*		Showers/change rooms	
		Bike Parks / 1000 m^2	Shower / employee bike space	Required	Provided	Required	Provided
Office	14,989	1 visitor and 3.33 employee	1/10 (1/5 for first 5 spaces)	15V/50E	182	6	10

(Source: https://planning-schemes.app.planning.vic.gov.au/Melbourne/ordinance/8818927)

5.2.2 6 Star Green Star requirements for bicycle parking and facilities provision

The 6 Star Green Star Buildings assessment findings (ARUP), including the Green Star Buildings v1B Credit 27 Movement and Place, specify a minimum of 178 bicycle parking spaces, along with a minimum of 177 lockers and 10 showers. Visitor bicycle parking is not covered in the Green Star assessment.

These minimum requirements should support the 90% uplift target in active transport, aiming to increase cycling from approximately 4% to 12.5%, and walking from about 7% to 8.75%.

5.2.3 Proposed bicycle parking provisions

The proposed development provides two levels of parking with entry from Lonsdale Lane and lift access. The total provision of bicycle parking is 182 secure, undercover spaces for occupants, and 10 showers which overall complies with Planning Clause 52.34. However, it is recommended that the 15 visitor parking spaces (8 hoops) are publicly accessible from Lonsdale Street and provided outside the main access to the site

According to the Green Star assessment, the proposed provision of bicycle parking (182 parking spaces) complies with the requirements (178 parking spaces). Additionally, the number of showers comply with 6 Star Green Star building requirements.

The bicycle parking provision further exceeds the minimum statutory requirements which will help supporting the mode share shift towards sustainable modes of transport.

Bicycle parking should be designed following AS2890.3:2015 and guided by AP-R527-16 and AP-R528-16.

5.3 Road Network

SIDRA Intersection modelling of existing traffic network is not required because the proposed development will not incur significant impacts on the network performance. This is a result of the following:

- Light vehicle traffic generation is expected to be minimal since the proposed development does not provide parking spaces on site
- Minimal volumes of heavy vehicles are expected to access the site (via Lonsdale Lane) and will only include service waste collection and deliveries.

5.4 Public Transport

There is no expected impact to the surrounding public transport network.

The proposed development is well serviced by public transport services. The number of available routes, and the frequency of services during peak periods during which demand at the site will be highest, indicate that there is sufficient capacity on the network to accommodate users of the site.

5.5 Active Transport

There is no expected impact to the surrounding active transport network.

As shown in Figure 20, it is expected that cyclists will arrive via the surrounding Strategic Cycling Corridors (La Trobe Street, Bourke Street, Elisabeth Street and William Street) and will connect to the development site for not more than 300 metres along Lonsdale Street and Lonsdale Lane, which do not provide bicycle infrastructure. Since the speed limit of Lonsdale Street is 40km/h and the speed limit of Lonsdale Lane is 10km/h (Shared Zone), dedicated transport facilities won't be required.

It is however recommended to provide wayfinding signage and line marking to assist cyclist on accessing the site through the bicycle facilities. This can be part of the review of Lonsdale St to align with Shared Zone guidelines, which would also improve overall pedestrian safety along Lonsdale Lane.

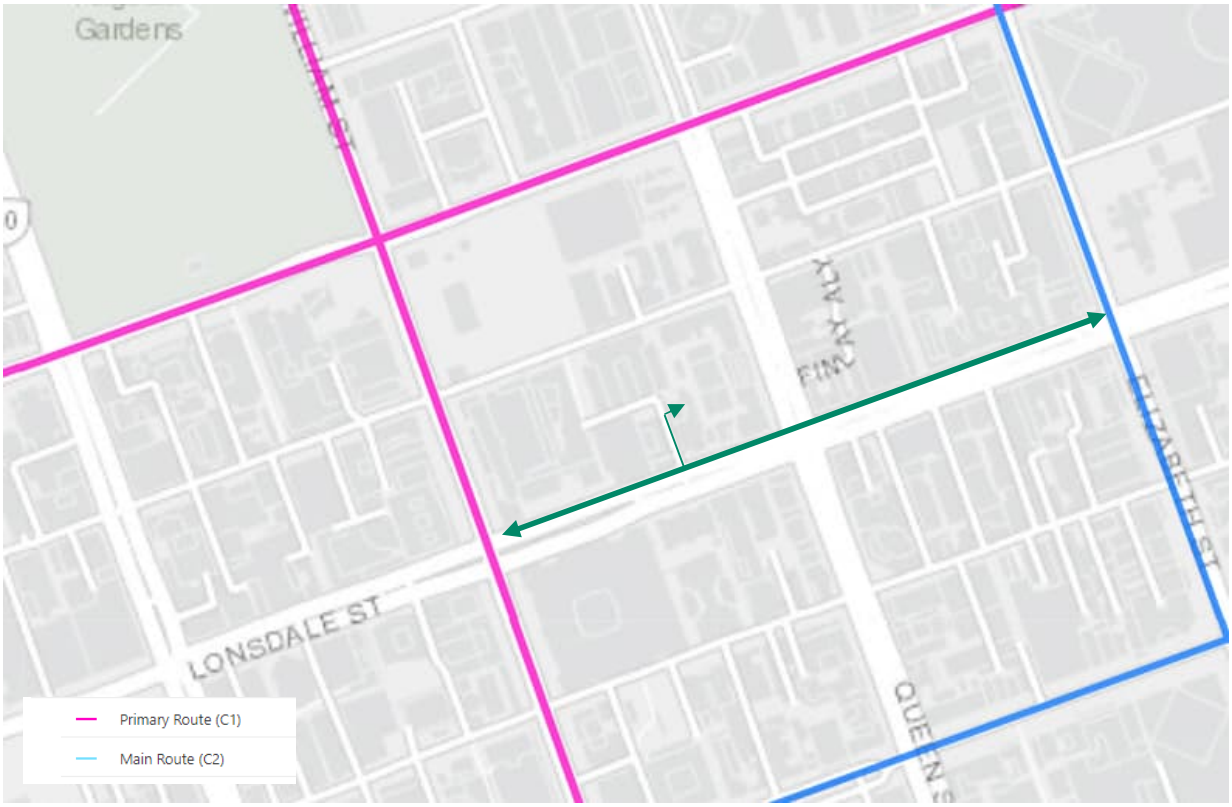

Figure 20 Bicycle route access to secured bicycle parking and facilities

6.0 Conclusion

The proposed redevelopment is not expected to significantly impact surrounding transport networks. This conclusion is based on the availability of nearby public transport options, on-site bicycle parking facilities, and on-site End of Trip (EOT) provisions, which are predicted to encourage a shift towards active and public transport modes. The surrounding roads and surrounding existing carparks are anticipated to adequately accommodate any minimal increase in traffic resulting from the development.

Recommendations and next steps associated with the development include:

- Provision of a minimum of 15 bicycle parking spaces (8 hoops), ideally located close to the site main entrance, publicly accessible and without blocking any pedestrian or vehicle path.
- Further development of the design of bicycle parking and heavy vehicle loading area should follow Australian Standards and Guidelines (AS2890.3:2015, AP-R527-16, AP-R528-16, AS/NZS 2890.2:2018 and others if relevant)
- Development of a Green Travel Plan to encourage the mode shift from private motorised vehicle to sustainable modes of transport.
- Preparation of a construction traffic management plan.
- Review of Lonsdale Lane cross section and layout (e.g. linemarking) to improve safety and wayfinding for cyclists accessing the secured parking and EOT facilities. This can be part of the review of Lonsdale Lane to align with Shared Zone guidelines, which would also improve overall pedestrian safety along Lonsdale Lane.
- Ensure that heavy vehicle access is maintained clear at all times (No-Stopping Area) along Lonsdale Lane and that only one vehicle is permitted to access Lonsdale Lane at a time. Loading area door should be kept open while the vehicle is in the loading area.