



68-80 Banks Avenue, Pagewood

SSD - 83256472

Transport Impact Assessment

Prepared for:

Homes NSW

5 November 2025

PROJECT INFORMATION

Project Name:	68-80 Banks Avenue, Pagewood
Client:	Homes NSW
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We confirm this transport impact assessment report addresses the requirement of SEAR No. 83256478 and relevant State and local legislation, policies, and guidelines. I further confirm that none of the information contained in this document is false or misleading.



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1 Introduction

1.1 Background

This transport impact assessment report has been prepared by JMT Consulting to accompany a State Significant Development Application (SSDA) for a residential development for the site at 68-80 Banks Avenue, Pagewood within the Bayside Local Government Area (LGA). This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD- 83256472) on 12 May 2025.

1.2 Site context

The site is located at 68-80 Banks Avenue, Pagewood in the Bayside Local Government Area (LGA) and comprises 18 lots with a combined site area of 9,262sqm. It is currently occupied by 5 buildings containing 82 dwellings within 2-3 storey walk-up buildings.

The site is bound by Banks Road to the west, Park Parade to the north and south, and Jellicoe Park to the east. The Bonnie Doon Golf Course is opposite the site on Banks Avenue to the west.

The site location is shown in Figure 1 below.



Figure 1 Site location

Source: BVN Architects

1.3 Proposal description

The SSD application seeks consent for the following:

- Demolition of all existing structures on the site, tree removal, excavation and site preparation works
- Construction of new residential flat buildings comprising:
 - A seven storey social housing residential flat building with 84 dwellings with a single basement level accessed from Park Avenue to the south
 - Two eight storey private market housing residential flat buildings with 140 dwellings over a consolidated two level basement accessed from Park Avenue to the north
- Shared servicing access via a lay-by from Banks Avenue
- Associated landscaping and communal open space
- Infrastructure servicing
- Staged delivery to enable relocation of existing tenants and demolition of existing social housing dwellings.

A detailed description of the project is included in the EIS.

1.4 Report purpose

This report has been prepared in response to the Secretary's Environmental Assessment Requirements (SEARs) for SSD- 83256478 relevant to traffic and transport as summarised in Table 1.

Table 1 Project SEARs

SEARs Item	Description of Requirement - SSD- 83256478	Response
<i>Item 9. Transport</i>	• Provide a Transport Impact Assessment (TIA) in accordance with the processes and methodology recommended in the Guide to Transport Impact Assessment (GITA) published by TfNSW.	As per the recently released GTIA the subject development is considered to have a 'low' impact level given the proposal does not meet the criteria for either Columns 2 and 3 of Schedule 3 in the State Environmental Planning Policy (Transport and Infrastructure) 2021. The GTIA recommends the development of a 'Transport Impact Statement' for this scale of development, covering the following items: • site location and context • development scale and access arrangements • trip generation and distribution The above items have been addressed in this report.

SEARs Item	Description of Requirement - SSD-83256478	Response
	If the construction of the development would cause interruptions to regular pedestrian and transport routes (including public transport, active transport or general traffic), a preliminary Construction Traffic (or Transport) Management Plan (CTMP) should be prepared as part of the TIA to mitigate any such impacts.	The site is not located on a major on-road (bus) public transport corridor nor is it adjacent to a major road. Therefore future construction of the development is not forecast to cause significant disruptions to public transport, pedestrians, cyclists or general road users. A detailed CTMP will be prepared prior to any works commencing on site, this requirement can be reinforced via a suitably worded consent condition. Notwithstanding the above a preliminary CTMP has been prepared and outlined in Section 5 of this document.

The report has been prepared with consideration of the relevant items contained within the TfNSW Guide to Transport Impact Assessment (GTIA) document.

As per the GTIA the subject development is considered to have a 'low' impact level given the proposal does not meet the criteria for either Columns 2 and 3 of Schedule 3 in the State Environmental Planning Policy (Transport and Infrastructure) 2021. The GTIA recommends the development of a 'Transport Impact Statement' for this scale of development covering items such as site location and context, development scale and access arrangements and trip generation. These items have been addressed in this report.

1.5 State Environmental Planning Policy (Transport & Infrastructure) 2021

With regards to the State Environmental Planning Policy (Transport & Infrastructure – T&I SEPP) 2021 the following is noted:

- The site does not have a direct frontage to a classified road, therefore not triggering the assessment requirements of clause 2.119 of the SEPP.
- The site does not adjoin a road with an annual average daily traffic volume of more than 20,000 vehicles, therefore not triggering the assessment requirements of the T&I SEPP; and
- The proposal will provide for fewer than 300 dwellings and 200 parking spaces and is not expected to impact the operation of the local road network and is therefore not considered to be 'traffic generating development' as defined under Schedule 3 of the T&I SEPP.

2 Existing Transport Conditions

2.1 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.

Key State and Regional roads which provide access to the site are illustrated in Figure 2 below and include Heffron Road / Maroubra Road, Bunnerong Road, Wentworth Avenue, Southern Cross Drive and Anzac Parade.

Banks Avenue and Park Parade immediately fronting the site are local roads under the control of Bayside Council. A signalised intersection is in place at Banks Avenue / Heffron Road to the south of the site which provides the primary point of access. Park Parade is a one way roadway that runs in an anti-clockwise direction around the perimeter of Jellicoe Park adjacent to the site.

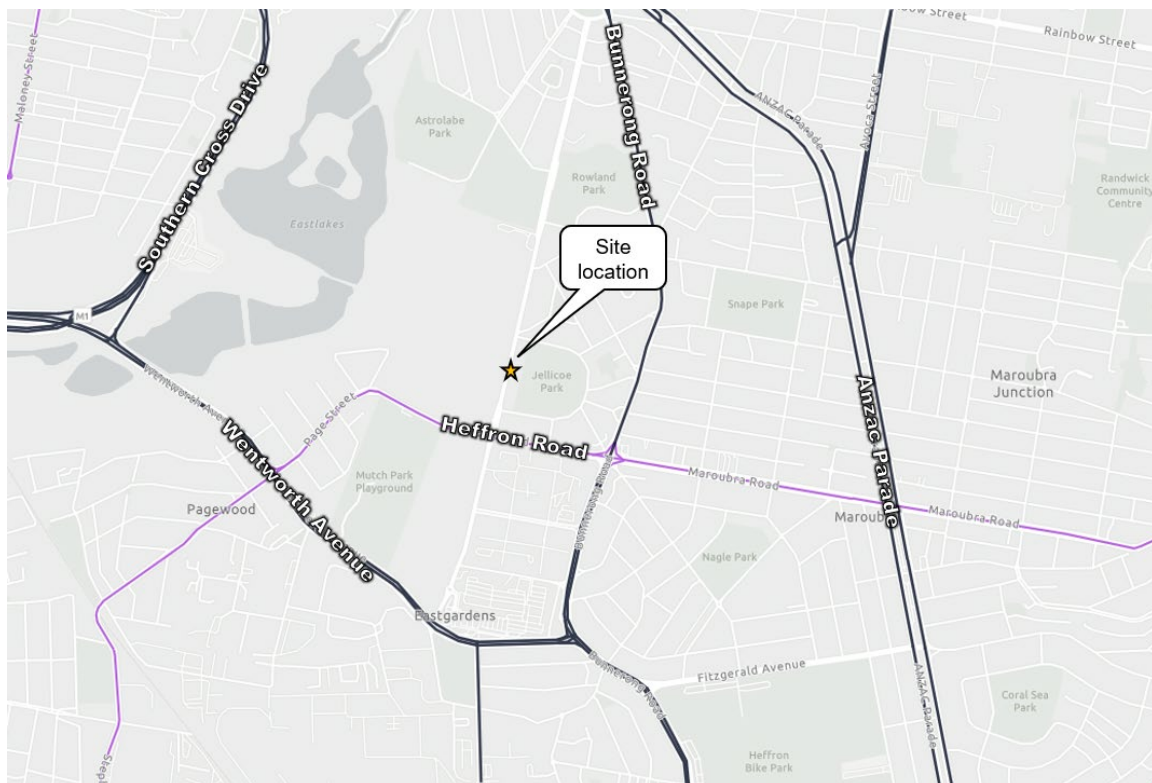


Figure 2 Road network serving the site

2.2 Vehicle site access

Vehicle access to the site is currently provided via one of two driveways on Banks Avenue as indicated in Figure 3.

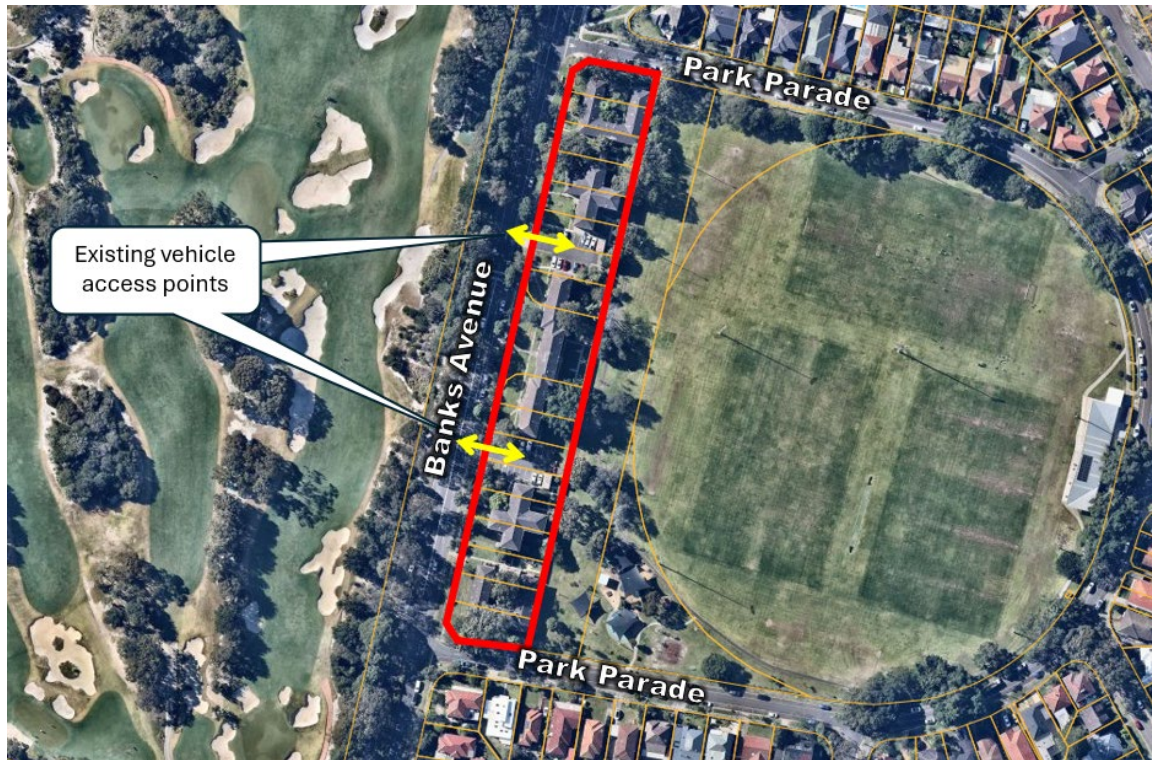


Figure 3 Existing vehicle site access

2.3 Public transport services

The site is well serviced by a network of local and regional bus routes as indicated in Figure 4. Key bus routes serving the site are as follows:

- Route 307 (Eastgardens <> Mascot)
- Route 392 (Little Bay <> Redfern)
- Route 392X (Little Bay <> City)

Bus stops are located within close walking distance of the site on Heffron Road and Bunnerong Road as illustrated in Figure 5 – enabling residents to easily access these good quality public transport services.

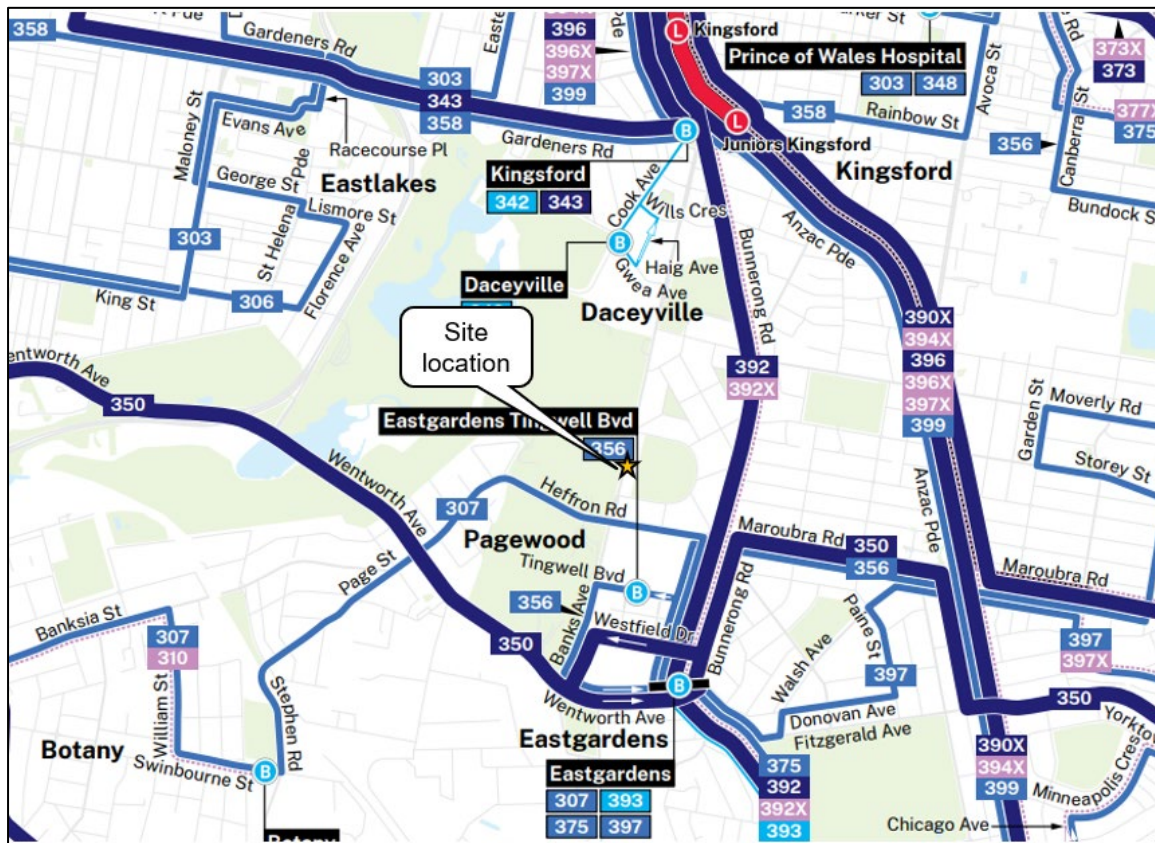


Figure 4 Surrounding bus network



Figure 5 Nearby bus stops

2.4 Active transport network

There is a well established network of pedestrian and cycling facilities in the vicinity of the site. Banks Avenue fronting the site contains a formal on-road cycleway which provides connectivity to the on-road cycleway along Heffron Road. Pedestrian crossing facilities are available at the nearby Heffron Road / Banks Avenue signalised intersection.

2.5 Crash data

A review of crash data published by Transport for NSW for the most recent five year period has been review and is shown in Figure 6. This indicates no recorded crash history immediately adjacent to the site on either Banks Avenue or Park Parade. The two existing vehicle driveways on Banks Avenue were not found to have recorded any crashes over this period. The analysis confirms there are no major concerns in relation to road safety along the site frontage.

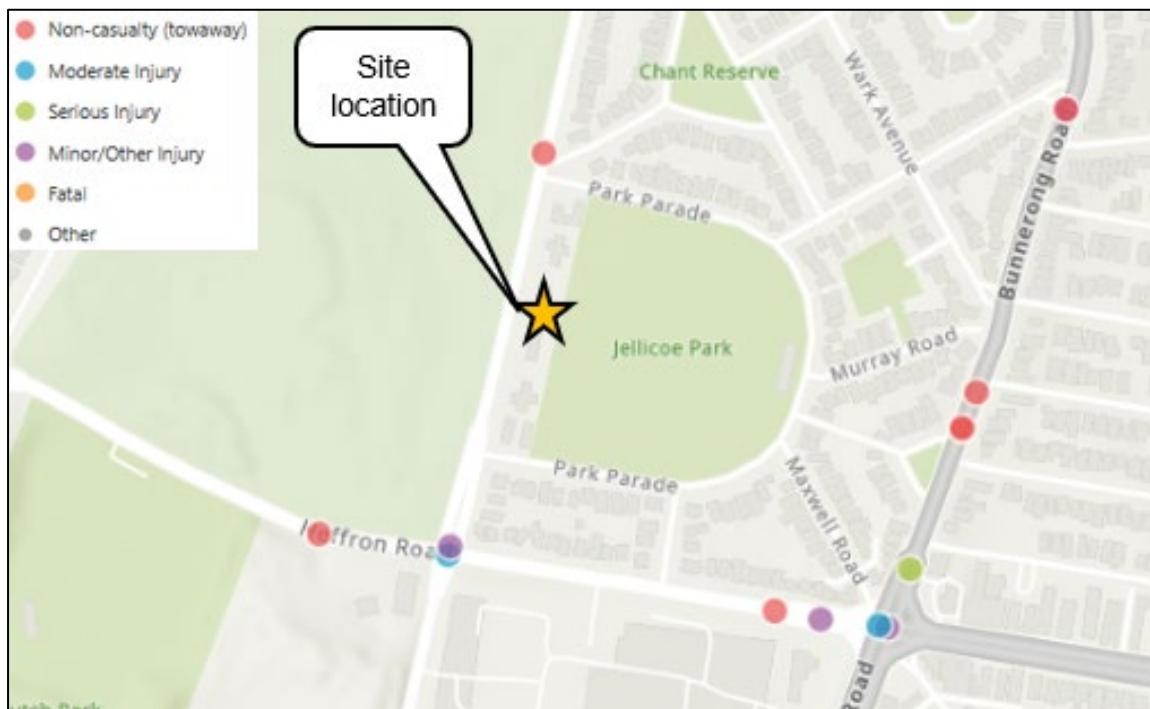


Figure 6 Crash data

Source: NSW Centre for Road Safety

2.6 Existing traffic volumes

Traffic counts were undertaken at the key nearby intersection of Heffron Road / Banks Avenue. The traffic data was collected on Thursday 5 June 2025 which sits outside of any school or public holiday periods. This existing traffic data is indicated in Figure 7 and has formed the basis for the road network analysis undertaken in later sections of this document.

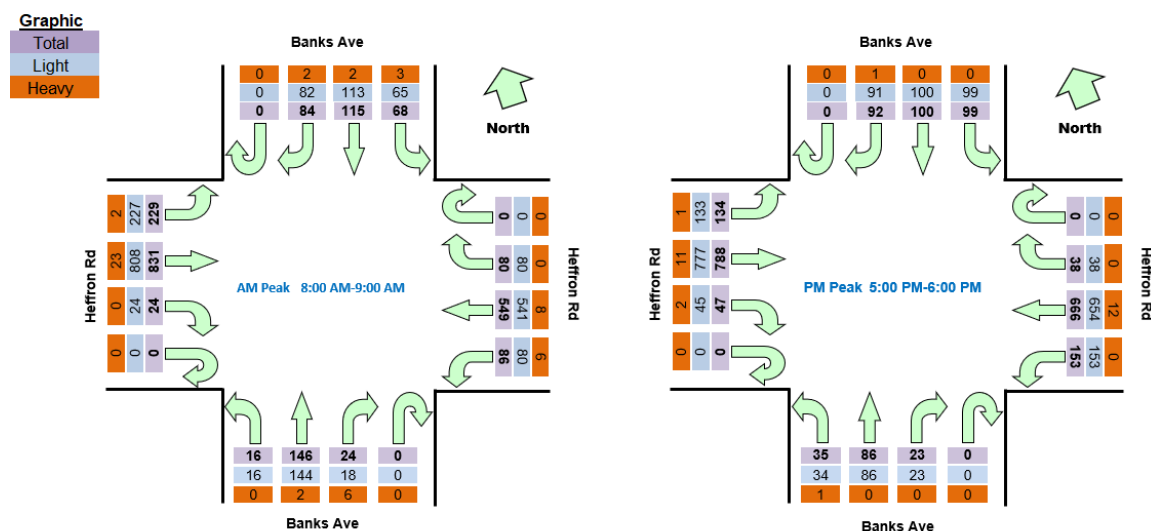


Figure 7 Existing traffic flows – Heffron Road / Banks Avenue

Traffic modelling has been undertaken using the TfNSW approved 'SIDRA' software to understand the existing operational performance of these adjacent intersections.

The traffic modelling metric used to analyse the performance of the intersections is intersection Level of Service (LOS). Level of Service is a measure that uses the average delay experienced by vehicles to categorically assign each approach and movement with a qualitative ordinal grade (A through F, with A being the best and F being the worst). In typical urban environments it is typical for intersections to operate at Level of Service D or E and still remain within acceptable performance levels.

Another common measure of intersection performance is the degree of saturation (DOS), which provides an overall measure of the capability of the intersection to accommodate additional traffic. A DOS of 1.0 indicates that an intersection is operating at capacity.

The modelling indicates that the adjacent intersection to the site at Heffron Road / Banks Avenue currently operates at a very good Level of Service B in the morning peak and the afternoon peak hour. A summary of the existing intersection performance is provided in Table 2.

Table 2 Existing intersection performance

Intersection	Intersection Performance – AM Peak Hour			Intersection Performance – PM Peak Hour		
	Level of Service	Degree of Saturation	Average Delay (s)	Level of Service	Degree of Saturation	Average Delay (s)
Heffron Road / Banks Avenue	B	0.85	21	B	0.81	17

3 Transport and Parking Strategy

3.1 Vehicle site access

Under the SSDA access to the site would be via the following means:

- Passenger vehicle access to the basement of the social housing building via the southern end of Park Parade;
- Passenger vehicle access to the basement of the market housing building via the northern end of Park Parade; and
- Loading and waste collection for both buildings occurring via a shared layby area adjacent to a landscaped plaza fronting Banks Avenue.

These proposed vehicular access arrangements are indicated in Figure 8.

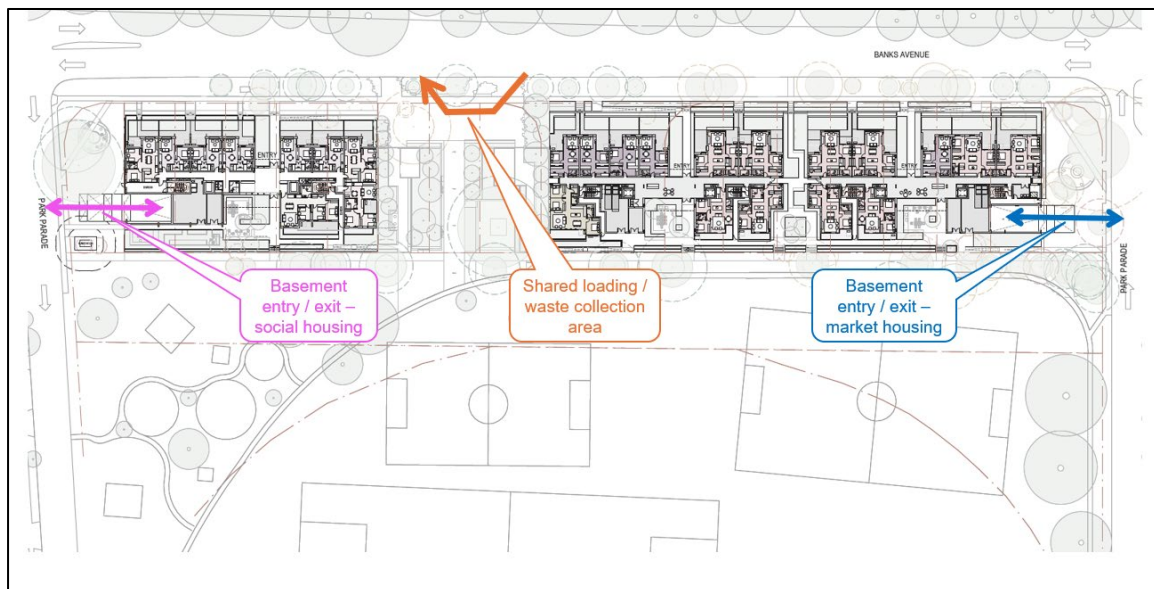


Figure 8 Proposed vehicle site access point

The vehicle access points have been designed in accordance with the design requirements set out in the relevant Australian Standard, namely AS2890.1:2004. Vehicle swept paths indicating the entry and exit of passenger vehicles from the site is provided on the following page – demonstrating suitable allowance for simultaneous movement of vehicles entering and exiting the site.

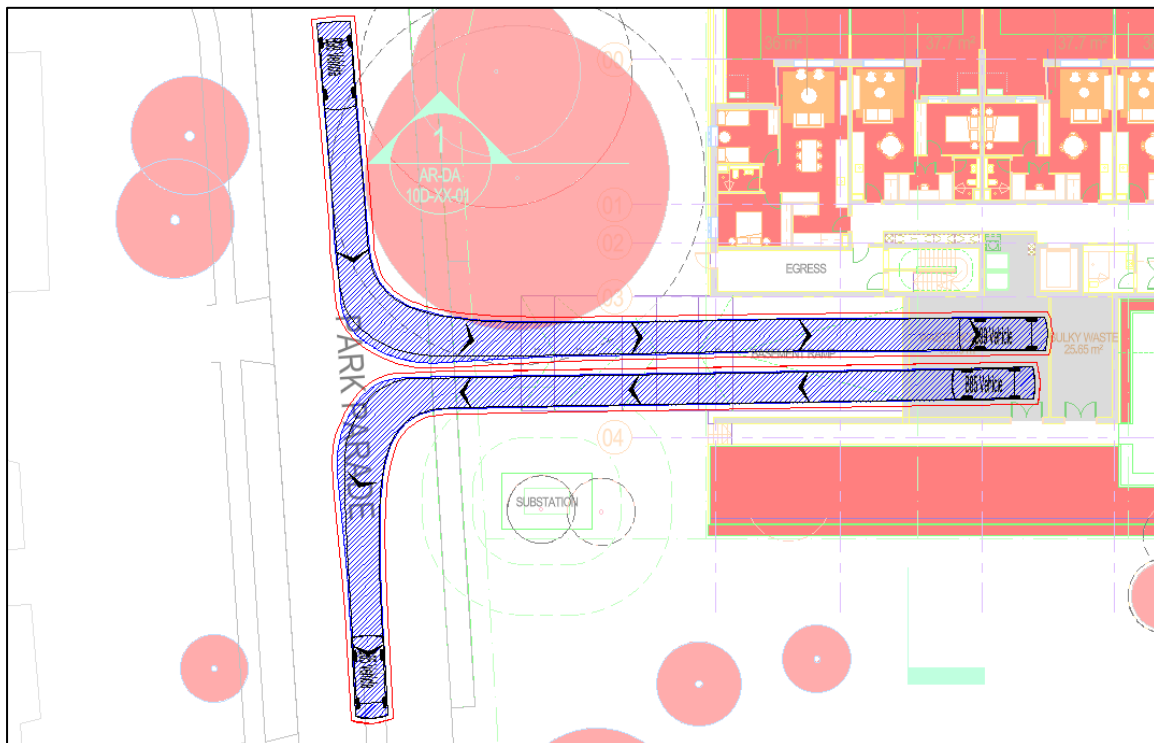


Figure 9 Swept paths analysis – social housing building

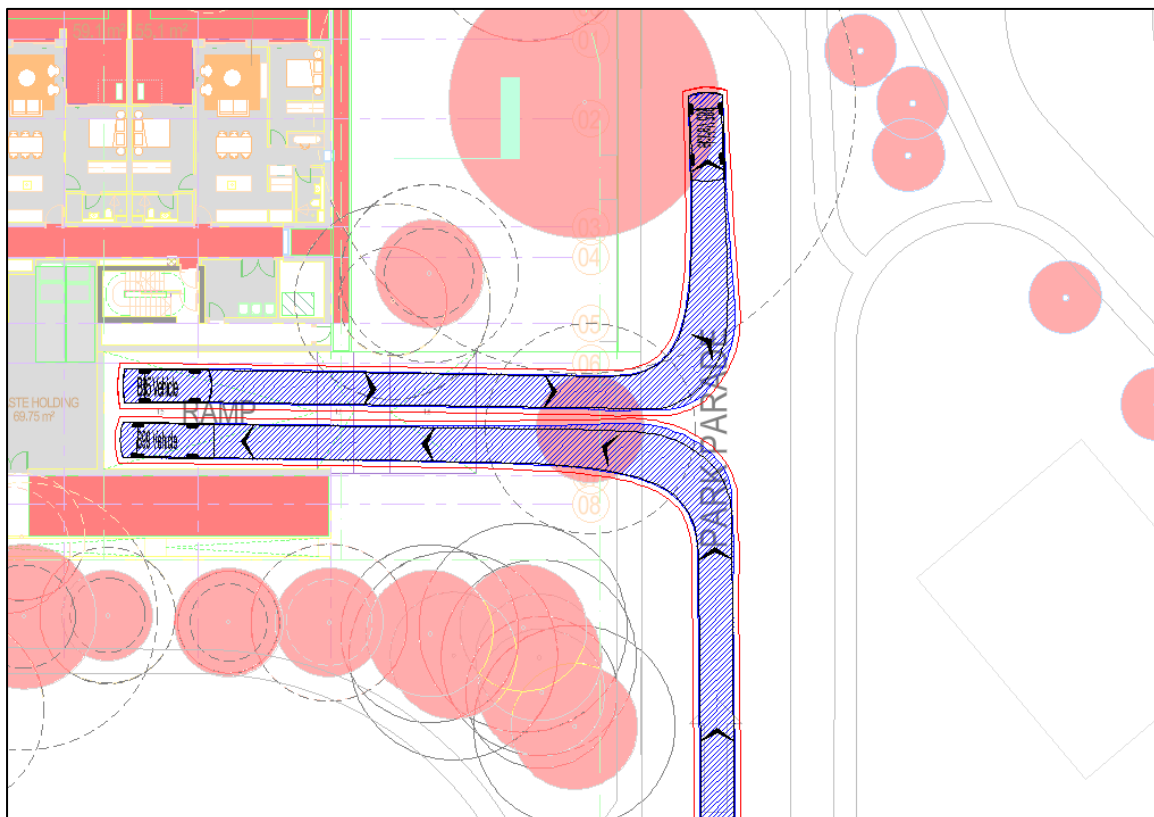


Figure 10 Swept paths analysis – market housing building

3.2 Car park design

The car park has been designed in accordance with AS2890.1 with respect to ramp gradients, circulation aisle widths and car space dimensions. A review of the plans has found that the car park layout complies with the requirements of AS2890.1-2004 for all uses. Relevant dimensions provided include aisles minimum 5.8 metres wide with parking spaces 2.4 metres wide by 5.4 metres long

The main entry ramp has a relatively flat gradient for the first 6m beyond the property boundary in accordance with AS2890.1. The following vehicle clearance heights will be provided in the on-site car parking areas to accommodate the safe movement of vehicles:

- 4.5m height clearance within the ground floor service bay to accommodate a range of delivery vehicles including Council's waste collection vehicle; and
- 2.2m clearance height within the basement levels, as per the requirements of AS2890.1. The exception to this will be a 2.5m clearance height above accessible car parking spaces and adjoining shared areas as required under AS2890.6.

3.3 Loading area

The loading strategy for the proposal involves the creation of a shared layby area adjacent to a landscaped plaza located within the large building break between the market and social housing components, accessed via Banks Avenue. This shared loading area also includes provision for waste collection by an 11m long Bayside Council waste collection vehicle. The loading area will have a height clearance of 4.5m and therefore sufficient to meet the requirements of Council's waste collection vehicle or general delivery vehicles to the site.

Building management will be responsible for transferring bins from internal bin rooms to temporary holding zones adjacent to the Council waste truck pickup area, located within the central plaza. Following collection, bins are promptly returned to their respective bin rooms.

Vehicle swept paths have been developed to confirm the suitability of the design to accommodate the movement of an 11m long Council waste collection vehicle into and out of this shared loading area as demonstrated in the swept paths provided in Figure 11. The loading area has been designed to allow for Council waste vehicle (and other delivery vehicles) to enter and exit the site in a forwards direction.

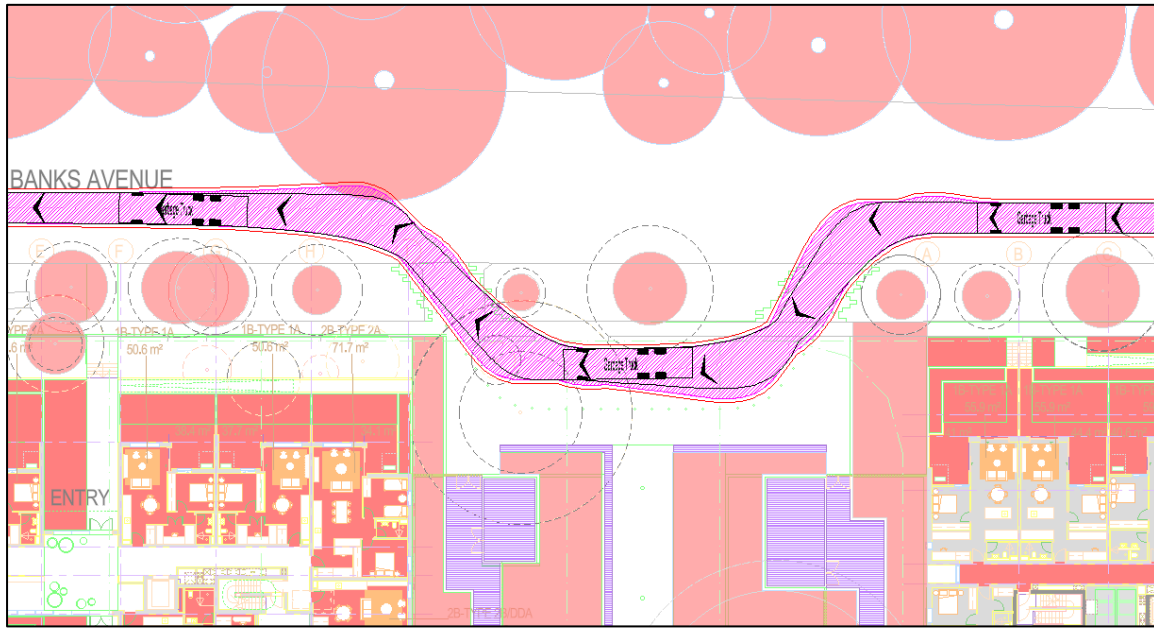


Figure 11 Swept paths – Council waste collection vehicle



Figure 12 Setout of proposed loading area

Source: BVN

3.4 Car parking supply

Based guidance for in-fill affordable housing noted in Part 2, Division 1 of the Housing SEPP 2021, a consent authority may not refuse an in-fill affordable housing development, if the following **minimum** parking requirements met:

- For dwellings not used for affordable housing
 - For each dwelling containing 1 bedroom – at least 0.5 parking spaces
 - For each dwelling containing 2 bedrooms – at least 1 parking spaces
 - For each dwelling containing at least 3 bedrooms – at least 1.5 parking spaces.
- For dwellings used for affordable housing
 - For each dwelling containing 1 bedroom – at least 0.4 parking spaces
 - For each dwelling containing 2 bedrooms – at least 0.5 parking spaces
 - For each dwelling containing at least 3 bedrooms – at least 1 parking space

Car parking for residential uses is to be provided in accordance with the minimum parking rates noted in the SEPP as summarised in Table 3. This demonstrates that the proposed residential car parking provision exceeds the minimum parking requirements for in-fill affordable housing noted in Part 2, Division 1 of the Housing SEPP 2021.

It is envisaged that a portion of the total parking allocation will include visitor parking (within the market housing development) to accommodate this user group travelling to the site. The relevant visitor parking rate under Bayside Council's controls is one space for every five apartments, requiring up to 45 spaces. Some or all of this visitor parking provision could be allocated within the development and still meet the minimum requirements of Part 2, Division 1 of the Housing SEPP 2021 for residents.

Table 3 Car parking summary

Land Use	Type		No. of units	Minimum Parking Rate	Min. No. of Spaces*	Parking provided
Residents	Non-Affordable Housing	1 bed	29	0.5 / unit	15	236
		2 bed	80	1.0 / unit	80	
		3/4 bed	31	1.5 / unit	47	
	Affordable Housing	1 bed	53	0.4 / unit	21	
		2 bed	27	0.5 / unit	14	
		3/4 bed	4	1.0 / unit	4	
		Total		224	-	

* Rounded to nearest whole number

3.5 Accessible car parking

The proposal provides for 26 accessible car parking spaces within the basement of the building. These accessible spaces have been designed in accordance with AS2890.6 or AS4299 including the provision of adjacent shared areas, wide 3.8m car spaces and clearance heights of 2.5m. 2 accessible parking spaces are allocated to visitors of the building.

3.6 Bicycle parking

The Bayside DCP outlines minimum bicycle parking requirements for residential developments - to be provided at the rate of 1 space for every dwelling.

The proposal complies with this requirement by providing a total of 224 bicycle parking spaces across the development, including 84 spaces within the social housing building and 140 spaces in the market housing building. Bicycle parking will be provided in the basement of both buildings, either in a dedicated bicycle parking room or within individual residential storage cages.

All bicycle parking spaces would be provided in compliance with the requirements of the Australian Standard AS2890.3.

3.7 Forecast traffic generation

The Transport for NSW Guide to Transport Impact Assessment (GTIA) document published in October 2024 outlines recommended vehicular trip rates for high density residential developments in urban areas with good access to public transport.

It should also be noted that the standard trip generation rates are based on typical rates of car parking (1 space per unit or greater) for build to sell apartments. The subject site will be partly dedicated to social housing and therefore a lower car parking rate, equivalent to approximately 0.50 spaces per unit, is to be in place. This lower car parking rate will reduce the extent of traffic generation compared to a typical build to sell apartment development. In this context the traffic generation rates adopted are as follows:

Social Housing

- AM Peak hour: 0.10 trips / dwelling
- PM Peak hour: 0.08 trips / dwelling

Market Housing

- AM Peak hour: 0.19 trips / dwelling
- PM Peak hour: 0.15 trips / dwelling

Based on the proposed development yield the following peak hour traffic generation could be expected:

- AM Peak hour: 35 vehicle trips
- PM Peak hour: 28 vehicle trips

3.8 Trip distribution

As a worst case scenario it is assumed all development traffic would utilise the adjacent Banks Avenue / Heffron Road signalised intersection to access the broader road network. The directional split assumptions based on current traffic flows are as follows:

- 40% of development traffic travels to and from the South
- 35% of development traffic travels to and from the West
- 25% of development traffic travels to and from the East

During the AM peak hour, the development trips are expected to be 80% outbound (away from the site) and 20% inbound (into the site). This is expected to be reversed during the PM peak hour.

3.9 Road network impacts

Based on the project level of traffic generation (see Section 3.7) and traffic distribution (see Section 3.8) the impact of the additional traffic movements associated with the proposal has been assessed. The outcomes of the traffic modelling are summarised in Table 4 and confirm that the proposal would not adversely impact the operation of the adjacent road network – with the key intersection closest to the site of Banks Avenue / Heffron Road retaining its current level of service.

No intersection works or upgrades are therefore required to facilitate the development of the subject site and this development could progress immediately without significantly impacting the surrounding road network.

Table 4 Forecast intersection performance

Peak Hour	Intersection Performance – Existing			Intersection Performance – Existing + Proposal		
	Level of Service	Degree of Saturation	Average Delay (s)	Level of Service	Degree of Saturation	Average Delay (s)
AM Peak Hour	B	0.85	21	B	0.86	22
PM Peak Hour	B	0.81	17	B	0.86	20

3.10 Public transport impacts

As previously noted in Section 2.3 the site benefits from a range of existing bus services that provide connectivity to key destinations such as Eastgardens, Redfern and the Sydney CBD. Future residents will benefit from this extensive network of services.

The additional public transport demands generated by the proposal are likely to amount to approximately 45 trips per hour based on trip generation rates noted in the GTIA. This level of additional public transport demand may equate to an additional 4-5 additional passengers per bus noting the current service levels in the area and could be comfortably accommodated. It is expected that bus service frequency will increase over time as additional residential accommodation projects come online.

4 Preliminary Construction Traffic Management Plan

4.1 Overview

For the purposes of the SSDA a preliminary Construction Traffic Management Plan (CTMP) has been prepared. This preliminary CTMP outlines the key principles for how construction may be carried out on the site, subject to further planning to be undertaken during subsequent stages of the project. As the project is early in the design phase details around construction timeframes, methodology and processes are not yet confirmed.

Prior to the commencement of construction for the site, a detailed CTMP will be prepared. This will be reinforced through an appropriately worded condition of consent, with the purpose of the CTMP to assess the proposed access and operation of construction traffic associated with the proposed development with respect to safety and capacity. The Contractor will be responsible for preparing the CTMP, ensuring the following are addressed:

- Proposed construction vehicle routes;
- Indicative construction programme;
- Expected construction vehicle types and volumes;
- Car parking arrangements and site access during construction; and
- Safety measures to minimise impacts to pedestrians and cyclists.

The Contractor will also be responsible for monitoring and coordinating all vehicles entering and exiting the site.

4.2 Working hours

Working hours will be confirmed at the time of the development of the detailed CPTMP however are envisaged to take place during the following hours:

- Monday to Friday: 7am – 6pm
- Saturday: 8am – 5pm
- Sunday / public holiday: No work

The appointed contractor will be responsible for instructing and controlling all subcontractors regarding the hours of work. Any work outside the approved construction hours would be subject to specific prior approval.

4.3 Construction traffic routes

The construction vehicles routes to be utilised for the construction of the subject site would be selected in order to:

- Maximise vehicle use to the State and Regional road network and limit the extent of travel on residential streets;
- Avoid impacting concurrent construction projects in the vicinity of the site; and
- Minimise impacts to the public transport network

The main construction access routes will be via the state road network including the Southern Cross Drive, Wentworth Avenue, Bunnerong Road and Anzac Parade as illustrated in Figure 13. The construction vehicle routes will be confirmed following the appointment of a contractor and advised to drivers as part of their site induction process.

These construction routes will be confirmed during the preparation of the detailed CPTMP developed prior to the commencement of construction.

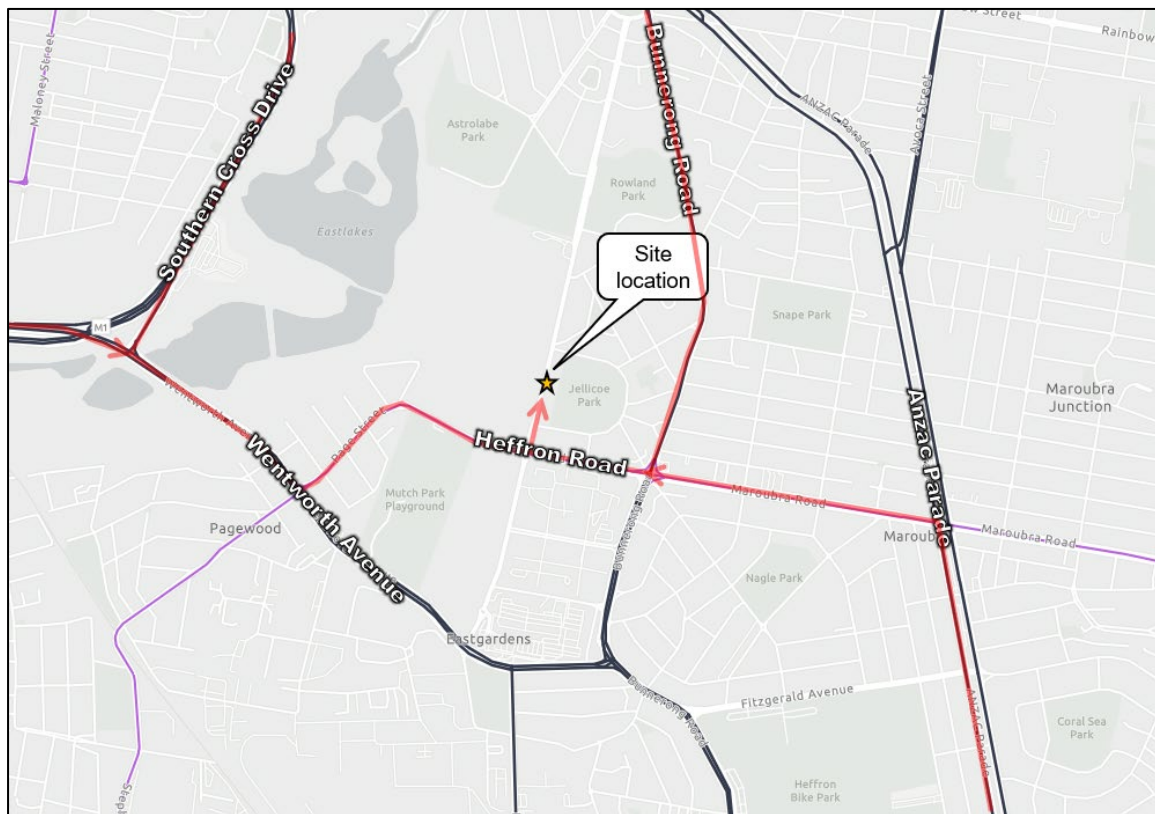


Figure 13 Potential construction vehicle routes

4.4 Construction vehicle volumes

The number of construction vehicles accessing the site on a typical day may be in the order of 20-30 vehicles. This figure will be confirmed following the appointment of a contractor and will form part of the detailed CPTMP to be prepared prior to the commencement of construction. It should be noted however that the level of construction vehicle traffic will be less than that generated during the operational phase of the project.

4.5 Works zones

During the construction a works zone may be established along the site frontage of Banks Avenue. This works zone would facilitate the lifting of materials onto the site and be supporting by a B Class Hoarding to enable pedestrian movements to safely occur. The requirement for this works zone would be confirmed at the time of the preparation of the detailed CPTMP.

4.6 Road closures and road occupancy

It is not anticipated that the works will necessitate the need for any road closures or occupation of roadways during the project. Should this need arise the appointed contractor would liaise closely with Council and TfNSW and schedule these works well in advance to minimise impacts to road users.

4.7 Size and type of vehicles

The site will have various types of construction vehicles accessing the site, including:

- 12.5m Heavy Rigid Vehicles (HRVs)
- 8.8m Medium Rigid Vehicles (MRVs)
- 6.5m Small Rigid Vehicles (SRVs);
- Utes/vans

4.8 Impacts to pedestrians

Temporary fencing and hoardings will be installed along the site frontage on Banks Avenue and Park Parade to maintain pedestrian movements and ensure the safety of pedestrians walking adjacent to the construction site. Footpaths will remain open at all times to pedestrians and therefore minimal impacts are anticipated.

Traffic controllers will be positioned at vehicle site access points to manage interactions between vehicles and pedestrians on the adjoining footpath. Traffic control plans for the site access points will be developed during the preparation of the detailed CPTMP (prior to the commencement of construction) which will

further detail management arrangements to be in place to ensure the safety of pedestrians in the area.

4.9 Cumulative construction impacts

There may be other construction projects occurring at the same as the proposed works at the site. Ongoing review of cumulative heavy vehicle traffic generation and coordination of heavy vehicle routes used by these projects will be undertaken on a regular basis between the appointed contractor, Council and TfNSW to minimise impacts on the road network. As other CTPMPs become available for adjacent projects, these will be reviewed by the contractor and discussions held with relevant stakeholders.

It is noted that the works at the site are anticipated to generate a relatively low level of construction vehicle activity of at most approximately 5 vehicles per hour. This volume of vehicles would not impact the operation of the surrounding road network.

4.10 Emergency vehicle access

Emergency vehicle access will be maintained at all times, or if necessary site personnel will grant access to emergency vehicles entering the site itself.

The contractor will liaise with the NSW Police, Fire Brigade and emergency services agencies throughout construction and a 24-hour contact would be made available for 'out of hours' emergencies and access. The emergency services will be briefed as needed.

4.11 Mitigation measures

Mitigation measures will be adopted during construction to ensure traffic movements have minimal impact on surrounding land uses and the community in general, and would include the following:

- Trucks to minimise the use of local streets for access to the construction site;
- Trucks to enter and exit the site in a forward direction;
- Pedestrians near the ingress/egress points will not be held unnecessarily.
- At construction vehicle access/egress points, priority is to be given to trucks accessing the site over trucks egressing the site so as to have no impact to traffic flow on surrounding roads (unless exceptional circumstances do not permit)
- Trucks to not circulate on the road network to wait to enter the site (unless exceptional circumstances do not permit)
- Restrict construction vehicle activity to designated routes which do not utilise any local roads;

- Truck drivers will be advised of the designated truck routes to/ from the site;
- Construction access from the external road network to mainly occur at signalised intersection;
- Pedestrian movements adjacent the construction site will be managed and controlled by site personnel where required;
- Pedestrian warning signs and construction safety signs/devices to be utilised in the vicinity of the site and to be provided in accordance with WorkCover requirements;
- Construction activity to be carried out in accordance with approved hours of work;
- Truck loads would be covered during transportation off-site;
- Establishment and enforcement of appropriate on-site vehicle speed limits which would be reviewed depending on weather conditions or safety requirements;
- Activities related to the construction works would not impede traffic flow along adjacent roads;
- Materials would be delivered and spoil removed during standard construction hours;
- Construction vehicles not to queue on adjacent streets;
- During site induction, workers will be informed of the existing bus, train and metro network servicing the site;
- To support construction workers in utilising public transport, appropriate arrangements will be made for any equipment/ tool storage and drop-off requirements; and
- Development and enforcement of driver charter.

The appointed contractor will include the following in all subcontract procurement packages as part of a driver code of conduct:

- a copy of the approved truck routes as previously detailed in this document.
- the approved maximum truck size
- any other entry restrictions, or site access restrictions as agreed to by the authorities.

4.12 Site induction

All staff employed on the head contractor (including sub-contractors) would be required to undergo a site induction. The induction would include permitted access routes to and from the construction site for site staff and delivery vehicles, parking arrangements, as well as standard environmental, workplace health and safety, driver protocols and emergency procedures. The approved work hours must be included as part of this induction.

5 Summary

This transport impact assessment report has been prepared by JMT Consulting to support a State Significant Development Application (SSDA) for a residential development for the site at 68-80 Banks Avenue, Pagewood. Key findings of the assessment are as follows:

- The site is well located with respect to public transport services, with multiple bus routes and stops available within easy walking distance.
- Vehicles would access the site via separate driveways at the southern end northern ends of Park Parade for the social and market buildings respectively.
- The proposal includes a shared ground floor loading area accessed via Banks Avenue which can accommodate a range of vehicles including Council's 11m long waste collection vehicle.
- The internal on-site parking areas have been designed in accordance with the requirements of the relevant Australian Standards (AS2890.1 and AS2890.6).
- The proposal provides for on-site car parking generally consistent with the minimum requirements of the Housing SEPP 2021 for social housing developments and private housing within infill affordable housing developments.
- Traffic modelling confirms that the proposed development would not have a significant impact on the operation of the surrounding road network.
- A preliminary construction traffic management plan confirms that, subject to further detailed planning prior to the commencement of works on site, the construction of the site can be appropriately managed.

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

Appendix A: Traffic Modelling Outputs

Output produced by SIDRA INTERSECTION Version: 10.0.6.236

Site Scenario: 1 | Local Volumes

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
 Vehicle movement LOS values are based on average delay per movement.
 Intersection and Approach LOS values are based on average delay for all vehicle movements.
 Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
 Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
 Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
 HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
 Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- * Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Banks Avenue (S)												

P1 Full	4	4	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
East: Heffron Road (E)											
P2 Full	27	28	29.3	LOS C	0.1	0.1	0.92	0.92	183.1	200.0	1.09
North: Banks Avenue (N)											
P3 Full	2	2	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
West: Heffron Road (W)											
P4 Full	10	11	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
All Pedestrians	43	45	29.3	LOS C	0.1	0.1	0.92	0.92	183.1	200.0	1.09

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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 Site: [1 (3)] AM Existing + Proposal (Folder1)

New Site

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 70.0 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total HV] veh/h %		Arrival Flows [Total HV] veh/h %		Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. Dist] veh m		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Banks Avenue (S)															
1	L2	All MCs	17	0.0	17	0.0	0.171	34.2	LOS C	1.6	11.0	0.90	0.70	0.90	38.9
2	T1	All MCs	158	1.3	158	1.3	0.688	32.7	LOS C	5.4	39.3	0.98	0.83	1.09	38.2
3	R2	All MCs	25	25.0	25	25.0	0.688	48.7	LOS D	5.4	39.3	1.00	0.86	1.14	36.2
Approach			200	4.2	200	4.2	0.688	34.9	LOS C	5.4	39.3	0.98	0.82	1.08	38.0
East: Heffron Road (E)															
4	L2	All MCs	91	7.0	91	7.0	0.431	11.3	LOS A	8.6	61.7	0.50	0.49	0.50	51.9
5	T1	All MCs	578	1.5	578	1.5	0.776	7.2	LOS A	8.6	61.7	0.60	0.58	0.65	49.8
6	R2	All MCs	86	0.0	86	0.0	0.776	67.8	LOS E	7.6	53.5	1.00	0.95	1.24	36.6
Approach			755	2.0	755	2.0	0.776	14.6	LOS B	8.6	61.7	0.63	0.61	0.70	48.0
North: Banks Avenue (N)															
7	L2	All MCs	82	3.8	82	3.8	0.745	40.3	LOS C	7.8	56.0	1.00	0.90	1.17	36.6
8	T1	All MCs	136	1.6	136	1.6	* 0.745	34.0	LOS C	7.8	56.0	1.00	0.90	1.17	37.7
9	R2	All MCs	101	2.1	101	2.1	0.787	46.3	LOS D	3.9	27.7	1.00	0.90	1.35	33.3
Approach			319	2.3	319	2.3	0.787	39.5	LOS C	7.8	56.0	1.00	0.90	1.22	35.9
West: Heffron Road (W)															
10	L2	All MCs	243	0.9	243	0.9	0.196	10.2	LOS A	3.1	21.8	0.40	0.69	0.40	49.6
11	T1	All MCs	875	2.8	875	2.8	0.860	19.7	LOS B	31.4	225.0	0.92	0.96	1.07	44.2
12	R2	All MCs	25	0.0	25	0.0	* 0.860	95.1	LOS F	31.4	225.0	0.92	0.96	1.07	42.8
Approach			1143	2.3	1143	2.3	0.860	19.3	LOS B	31.4	225.0	0.81	0.90	0.93	45.2
All Vehicles			2417	2.4	2417	2.4	0.860	21.8	LOS B	31.4	225.0	0.79	0.80	0.91	43.8

Arrival Values used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- * Critical Movement (Signal Timing)

Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Banks Avenue (S)												

P1 Full	4	4	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
East: Heffron Road (E)											
P2 Full	27	28	29.3	LOS C	0.1	0.1	0.92	0.92	183.1	200.0	1.09
North: Banks Avenue (N)											
P3 Full	2	2	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
West: Heffron Road (W)											
P4 Full	10	11	29.3	LOS C	0.0	0.0	0.91	0.91	183.1	200.0	1.09
All Pedestrians	43	45	29.3	LOS C	0.1	0.1	0.92	0.92	183.1	200.0	1.09

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Output produced by SIDRA INTERSECTION Version: 10.0.6.236

Site Scenario: 1 | Local Volumes

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- * Critical Movement (Signal Timing)

Pedestrian Movement Performance												
Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped	Dist]			sec	m	m/sec
South: Banks Avenue (S)												

P1 Full	10	11	26.8	LOS C	0.0	0.0	0.91	0.91	180.6	200.0	1.11
East: Heffron Road (E)											
P2 Full	33	35	26.8	LOS C	0.1	0.1	0.91	0.91	180.7	200.0	1.11
North: Banks Avenue (N)											
P3 Full	8	8	26.8	LOS C	0.0	0.0	0.91	0.91	180.6	200.0	1.11
West: Heffron Road (W)											
P4 Full	3	3	26.8	LOS C	0.0	0.0	0.91	0.91	180.6	200.0	1.11
All Pedestrians	54	57	26.8	LOS C	0.1	0.1	0.91	0.91	180.7	200.0	1.11

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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Site: [1 (4)] PM Existing + Proposal (Folder1)

New Site

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 65.0 seconds (Site User-Given Cycle Time)

Vehicle Movement Performance																
Mov ID	Turn	Mov Class	Demand Flows		Arrival Flows		Deg. Satn	Aver. Delay	Level of Service	95% Back Of Queue		Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed	
			[Total HV]	[Total HV]	[Total HV]	[Total HV]				[Veh. veh	Dist] m				km/h	
South: Banks Avenue (S)																
1	L2	All MCs	37	2.9	37	2.9	0.132	31.8	LOS C	1.1	7.9	0.89	0.72	0.89	38.5	
2	T1	All MCs	101	0.0	101	0.0	0.531	29.2	LOS C	3.9	27.4	0.98	0.77	0.98	39.4	
3	R2	All MCs	24	0.0	24	0.0	0.531	42.4	LOS C	3.9	27.4	0.98	0.77	0.98	38.3	
Approach			162	0.6	162	0.6	0.531	31.8	LOS C	3.9	27.4	0.96	0.76	0.96	39.1	
East: Heffron Road (E)																
4	L2	All MCs	161	0.0	161	0.0	0.356	11.0	LOS A	6.3	44.7	0.48	0.54	0.48	51.4	
5	T1	All MCs	701	1.8	701	1.8	0.641	9.4	LOS A	12.1	85.8	0.71	0.67	0.71	49.1	
6	R2	All MCs	46	0.0	46	0.0	0.641	68.8	LOS E	12.1	85.8	0.86	0.76	0.86	45.1	
Approach			908	1.4	908	1.4	0.641	12.7	LOS A	12.1	85.8	0.68	0.65	0.68	49.3	
North: Banks Avenue (N)																
7	L2	All MCs	106	1.0	106	1.0	0.669	35.9	LOS C	6.6	46.4	0.99	0.85	1.08	37.9	
8	T1	All MCs	108	0.0	108	0.0	* 0.669	29.9	LOS C	6.6	46.4	0.99	0.85	1.08	38.8	
9	R2	All MCs	97	0.0	97	0.0	0.669	41.1	LOS C	3.7	25.6	1.00	0.84	1.16	35.3	
Approach			312	0.3	312	0.3	0.669	35.4	LOS C	6.6	46.4	0.99	0.85	1.11	37.4	
West: Heffron Road (W)																
10	L2	All MCs	149	0.7	149	0.7	0.185	10.3	LOS A	2.8	19.8	0.42	0.58	0.42	50.8	
11	T1	All MCs	829	1.4	829	1.4	0.856	18.3	LOS B	26.9	191.0	0.89	0.95	1.05	44.4	
12	R2	All MCs	49	4.3	49	4.3	* 0.856	69.8	LOS E	26.9	191.0	0.94	0.99	1.11	42.3	
Approach			1028	1.4	1028	1.4	0.856	19.6	LOS B	26.9	191.0	0.83	0.90	0.96	45.1	
All Vehicles			2411	1.2	2411	1.2	0.856	19.9	LOS B	26.9	191.0	0.80	0.79	0.87	44.9	

Arrival values used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

- * Critical Movement (Signal Timing)

Mov ID	Crossing	Input Vol.	Dem. Flow	Aver. Delay	Level of Service	AVERAGE BACK OF QUEUE		Prop. Qued	Eff. Stop Rate	Travel Time	Travel Dist.	Aver. Speed
		ped/h	ped/h	sec		[Ped ped	Dist] m			sec	m	m/sec
South: Banks Avenue (S)												

P1	Full	10	11	26.8	LOS C	0.0	0.0	0.91	0.91	180.6	200.0	1.11
East: Heffron Road (E)												
P2	Full	33	35	26.8	LOS C	0.1	0.1	0.91	0.91	180.7	200.0	1.11
North: Banks Avenue (N)												
P3	Full	8	8	26.8	LOS C	0.0	0.0	0.91	0.91	180.6	200.0	1.11
West: Heffron Road (W)												
P4	Full	3	3	26.8	LOS C	0.0	0.0	0.91	0.91	180.6	200.0	1.11
All		54	57	26.8	LOS C	0.1	0.1	0.91	0.91	180.7	200.0	1.11
Pedestrians												

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)

Pedestrian movement LOS values are based on average delay per pedestrian movement.

Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

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