Bankstown Airport - Link Road Mixed Use Precinct

Transport Impact Assessment

Prepared for: Forge Venture Management

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Revision

Revision	Date	Comment	Prepared By	Approved By
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For and on behalf of

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Acknowledgment of Country

In the spirit of reconciliation, Stantec acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present, and extend that respect to all Aboriginal and Torres Strait Islander peoples.

Limitations

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1. Introduction

1.1 Background

Stantec has been engaged by Forge Venture Management (Forge), to undertake a traffic impact assessment of a proposed Bankstown airport mixed-use development on land located at lot 5012 DP 1176822.

The proposal is a development within the Airport that will provide a mix of commercial land uses designed to complement the airport and provide new retail, office and childcare opportunities for the local community at the periphery of the airport, as well as small-scale warehouse tenancies.

1.2 Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposed development, including consideration of the following:

- existing traffic and parking conditions surrounding the site
- suitability of the proposed parking in terms of supply (quantum) and layout
- service vehicle requirements
- pedestrian and bicycle requirements
- the traffic generating characteristics of the proposed development
- suitability of the proposed access arrangements for the site
- the transport impact of the development proposal on the surrounding road network.

1.3 References

In preparing this report, reference has been made to the following:

- Canterbury-Bankstown Development Control Plan (DCP) 2023
- Canterbury-Bankstown Local Environmental Plan (LEP) 2023
- TfNSW Guide to Traffic Generating Developments (October 2002)
- Transport for NSW Technical Direction: Updated Traffic Surveys (TDT 2013/ 04a)
- Bankstown Airport Masterplan 2019
- Australian Standard/ New Zealand Standard, Parking Facilities, Part 1: Off-Street Car Parking AS/NZS 2890.1:2004
- Australian Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities AS 2890.2:2018
- plans for the proposed development prepared by SBA, Drawing Number SK100, Revision F, dated 08 November 2023
- other documents and data as referenced in this report.

2. Strategic Context

2.1 Overview

The following key strategies and plans have and will continue to influence development opportunities in Bankstown Airport and surrounding areas, together with deliberate effects on future travel demand and mode splits for both workers and residents in particular.

2.2 Bankstown Airport Masterplan 2019

This Master Plan 2019 for Bankstown Airport is the principal planning document for the Airport. It describes future aviation operations, land use, facilities and infrastructure, and the management of environmental and noise impacts. Specific to traffic infrastructure, the Ground Transport Plan is a subsection of the masterplan and has been prepared to support the aims and objectives of the Master Plan 2019.

According to the Bankstown Airport Masterplan 2019, the ground transport plan aims to improve the accessibility of the airport by providing a range of transport options for passengers and employees. The plan includes the following initiatives:

- Road network improvements: The plan proposes to improve the road network around the airport by widening roads, adding new lanes, and improving intersections.
- Public transport: The plan aims to improve public transport options to the airport by increasing the frequency of bus services and improving the connectivity of the existing train stations.
- Cycling and walking: The plan proposes to improve the cycling and walking infrastructure around the airport by building new cycleways and footpaths.
- Car parking: The plan aims to provide additional car parking spaces for passengers and employees.

The Airport is heavily reliant on the road network with approximately 96% of all people travelling to the Airport doing so by car. Improvements to public transport, cycle ways and footpaths servicing the Airport will encourage more journeys to the Airport using these modes of travel.

Masterplan assessment has developed a traffic model using VISSIM software to assess the implications of potential development at the Airport during the first five years of this Master Plan 2019. The Airport and the surrounding road network are forecast to experience an increase in traffic demands due to local development and broader traffic growth associated with greater Western Sydney expansion. The traffic modelling has been used to inform the creation of the five-year GTP to optimise the use of existing transport infrastructure and increase its capacity where necessary to support growth.

Figure 2.1 (Table 9.6 of the master plan) identifies road and transport improvements for the five-year planning horizon, addressing both on- and off-airport projects. The five-year plan recommends the construction of a new internal connector road within the Commercial Zone, linking Milperra Road and Murray Jones Drive to Tower Road and Henry Lawson Drive. This would improve intersection operating conditions at the intersection of Henry Lawson Drive, Milperra Road and Newbridge Road.

Bankstown Airport will work closely with Transport for NSW (TfNSW) and Canterbury-Bankstown Council about timely improvements to off-airport road and transport improvement projects.

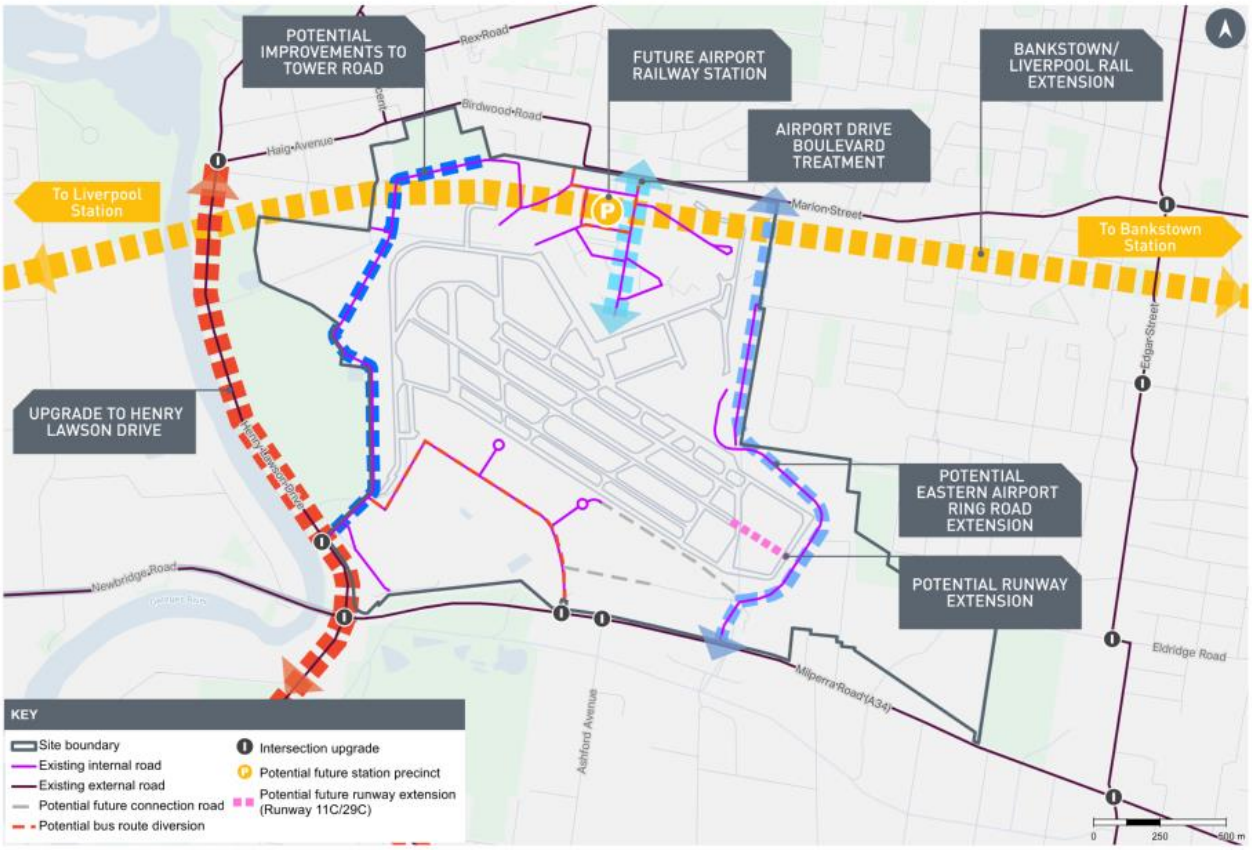
Figure 2.1: 5 Year Airport Development Program

Zone	Development	Trigger/Comment
COMMERCIAL ZONE	New internal collector road - Connecting Milperra Road/Murray Jones Drive intersection and Tower Road - To provide access to the proposed South-West Precinct commercial/ industrial estate	Under construction
EXTERNAL TO AIRPORT	Intersection upgrades and widening of roads surrounding Bankstown Airport Detailed description of potential road improvements included in Section 9.5. Key projects identified include: - Additional intersection capacity along Milperra Road (into Bankstown Airport) - Henry Lawson Drive between Milperra Road and Haig Avenue - duplication to two lanes in each direction	Subject to approvals and commercial demand
AIRPORT-WIDE	Improved wayfinding signage directing traffic into and around Bankstown Airport	Approved development

Source: Bankstown Airport Masterplan, 2019 (Table 9.6)

Road and transport improvements envisaged within this Master Plan's 20-year planning horizon show extended passenger rail between Bankstown and Liverpool CBDs. Active promotion of rail alignment on the northern boundary of Bankstown Airport with a station (bus-rail interchange) within the Airport land.

Figure 2.2: 20-Year Airport Development Strategy



Source: Bankstown Airport Masterplan, 2019 (Figure 9.2)

3. Existing Conditions

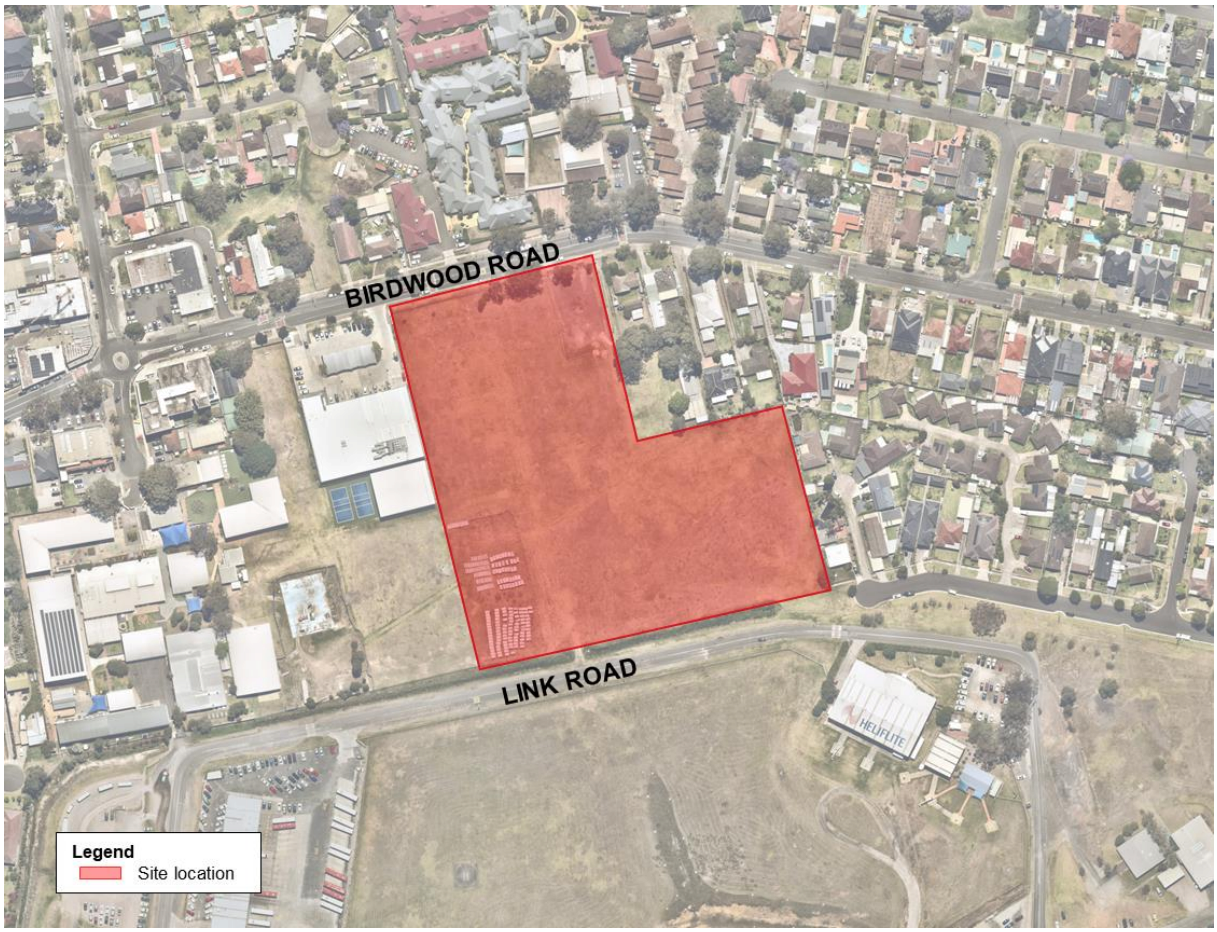
3.1 Location

The subject site is located at 185 Birdwood Road Bankstown Aerodrome NSW 2200. The site of approximately 31,100 sqm has a frontage of 115m to Birdwood Road and 200m to Link Road. The surrounding properties predominantly include mixed land uses, such as residential dwellings, private schools, and retail and commercial stores. The Bankstown Airport lies south of the proposed site, and an IGA supermarket is directly adjacent to the northwest corner of the proposed site, with Georges River Grammar School to the west of the site.

The site is currently zoned as SP2 Infrastructure– Road Infrastructure Facility in the Bankstown Local Environmental Plan 2023. The land presides on Birdwood Reserve, is presently undeveloped and has no current occupancies.

The location of the subject site and its surrounding environs is shown in Figure 3.1, while the LEP land use map is shown in Figure 3.2.

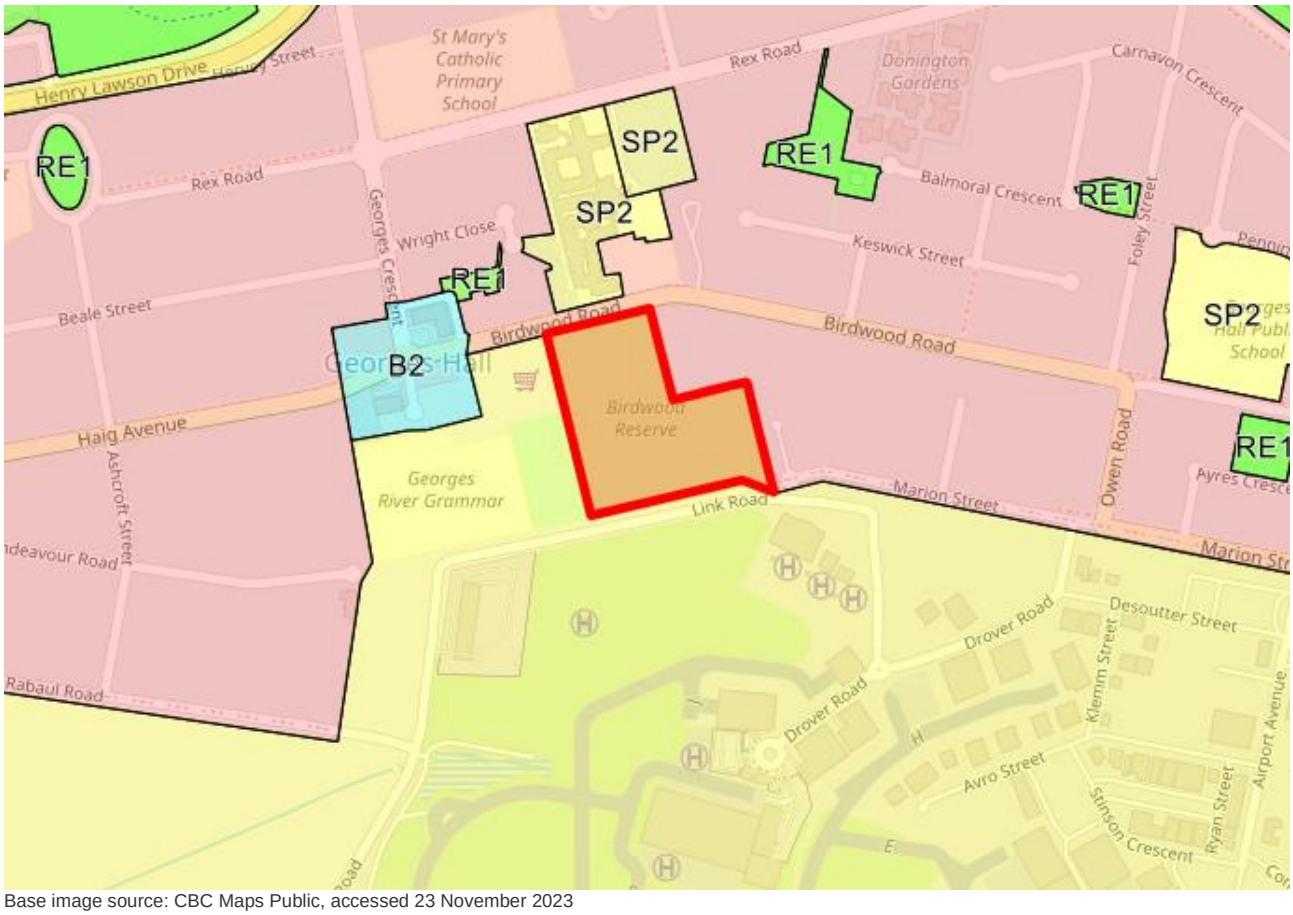
Figure 3.1: Subject Site and Its Environs



Base image source: Nearmap

Bankstown Airport is an airport and Business Park located in the City of Canterbury Bankstown Local Government Area, 22 kilometres from the central business district of Sydney. It is the second largest airport serving Sydney and is an attractive business location with a thriving Business Park.

Figure 3.2: Bankstown Land Use Map



Base image source: CBC Maps Public, accessed 23 November 2023

3.2 Transport Network

3.2.1 Road Hierarchy

Roads are classified according to the functions they perform. The main purpose of defining a road's functional class is to provide a basis for establishing the policies that guide the management of the road according to their intended service or qualities.

In terms of functional road classification, State roads are strategically important as they form the primary network used for the movement of people and goods between regions, and throughout the State. Transport for NSW (TfNSW) is responsible for funding, prioritising and carrying out works on State roads. State roads generally include roads classified as freeways, state highways, and main roads under the Roads Act 1993, and the regulation to manage the road system is stated in the Australian Road Rules.

TfNSW defines four levels in a typical functional road hierarchy, ranking from high mobility and low accessibility, to high accessibility and low mobility. These road classes are:

- Arterial Roads – Controlled by TfNSW, typically no limit in flow and designed to carry vehicles long distances between regional centres.
- Sub-Arterial Roads – Managed by either Council or TfNSW under a joint agreement. Typically, their operating capacity ranges between 10,000 and 20,000 vehicles per day, and their aim is to carry through traffic between specific areas in a subregion or provide connectivity from arterial road routes (regional links).
- Collector Roads – Provide connectivity between local sites and the sub-arterial road network, and typically carry between 2,000 and 10,000 vehicles per day.
- Local Roads – Provide direct access to properties and the collector road system and typically carry between 500 and 4,000 vehicles per day.

3.2.2 Surrounding Road Network

Birdwood Road

Birdwood Road is a regional road that functions as a collector road, aligned in the east-west direction along the northern boundary of the site. The road connects to the state road of Henry Lawson Drive to the west and provides connectivity to the Bankstown train station to the east. Within the vicinity of the site, it is a two-way road with one lane configured in each direction, set within an approximately 12-metre-wide carriageway. Directly adjacent to the site, the road is a school zone with a posted speed limit of 40 kilometres per hour during school zone hours but otherwise has a posted speed limit of 50 kilometres per hour with kerbside parking on both sides of the road subject to various restrictions.

Link Road

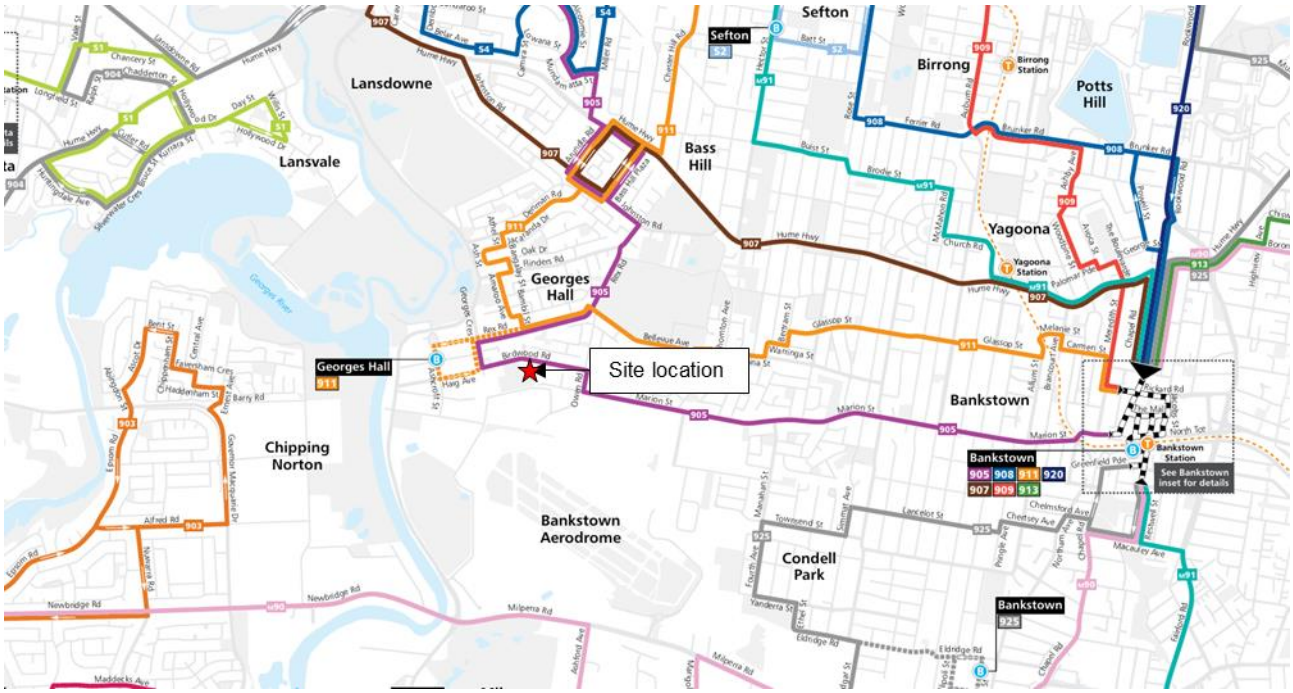
Link Road is a local road aligned in the east-west direction along the southern boundary of the site. The road provides connectivity throughout the Bankstown Aerodrome south of the site. It is a two-way road with one lane configured in each direction, set within an approximately 8-metre-wide carriageway. The road has a posted speed limit of 40 kilometres per hour with no kerbside parking provided.

3.3 Public Transport

One bus stop is located directly fronting the site and another is opposite the site. These bus stops service the 905 bus route.

Route 905 connects Fairfield to Bankstown, via Villawood, Chester Hill and the north of the Airport (Airport Business Zone). This route connects the north of the Airport with Bankstown Railway Station and its train services. The bus service follows Marion Street, along the Airport's northern boundary. Route 905 runs every 30 minutes outside peak times and every 15 minutes during the morning peak period and afternoon and early evening peak period.

Figure 3.3: Bus Routes Map



Base image source: TfNSW, accessed 23 November 2023

Bankstown Station is approximately four kilometres east of the site which is served by Sydney Trains T3 Bankstown line services.

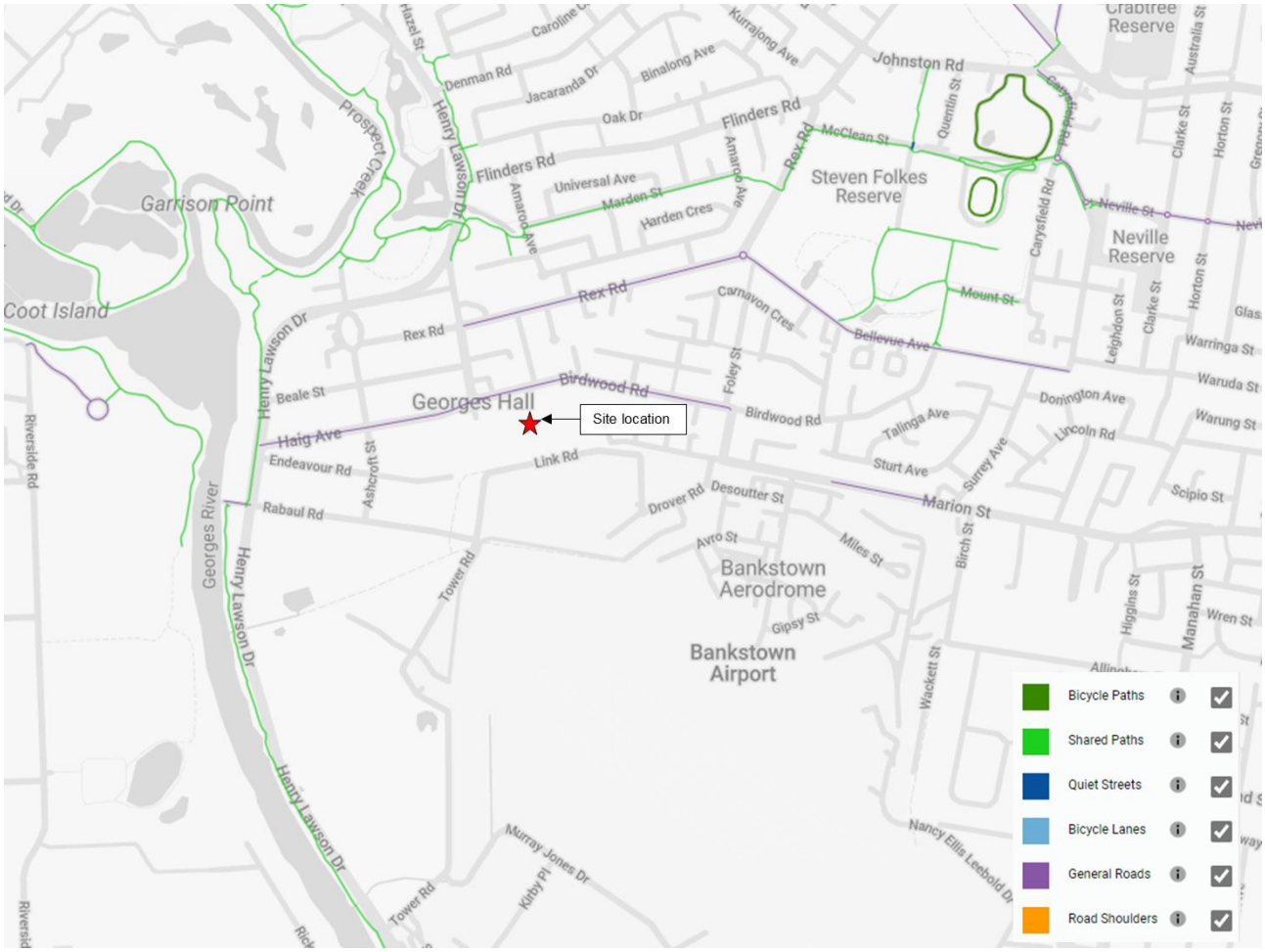
3.4 Pedestrian and Cycling Infrastructure

Birdwood Road has a dedicated footpath opposite the site in addition to a footpath adjacent to the site and fronting the IGA shopping centre. Birdwood Road also has a raised pedestrian crossing directly fronting the site, providing connectivity to locations directly opposite the site such as KU Georges Hall Preschool and Georges Hall Community Centre.

There are no footpaths provided on Link Road.

A regional off-road cycleway runs along the western side of Henry Lawson Drive and can be accessed via Birdwood Road as shown in Figure 3.4.

Figure 3.4: Cycleway Map

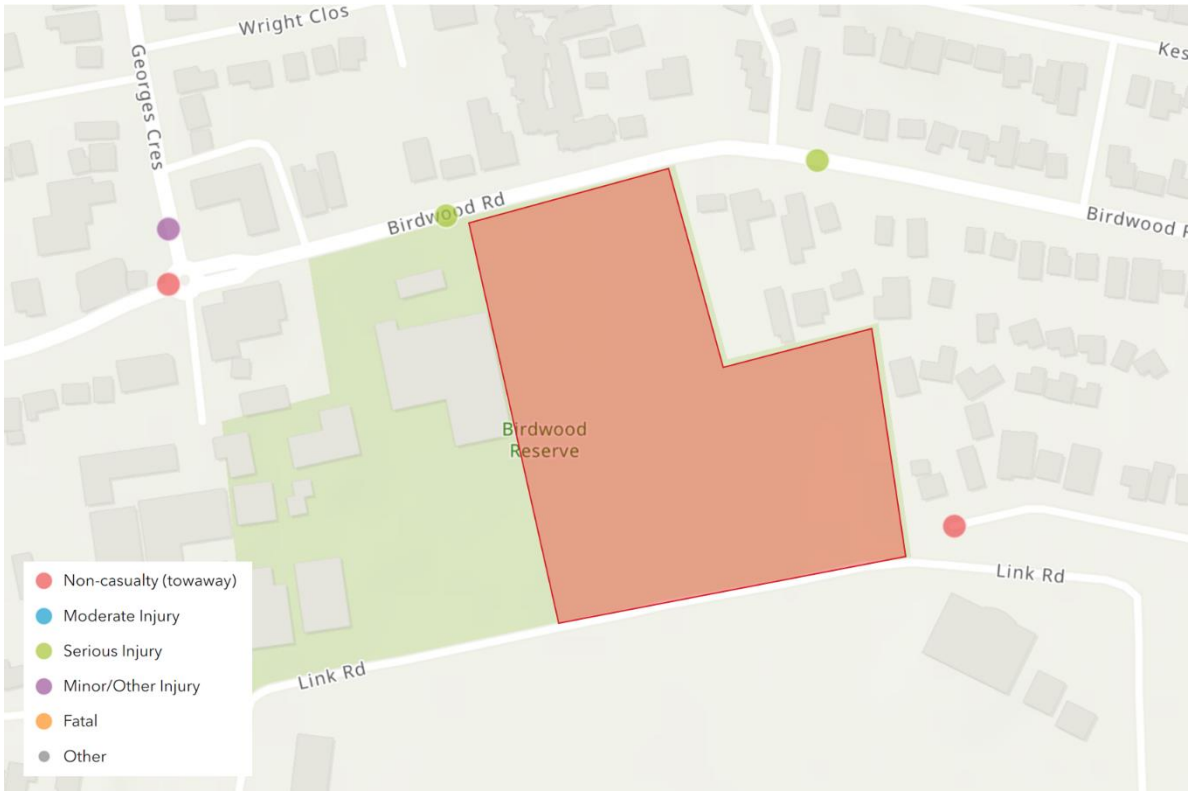


Base image source: TfNSW Cycleway Finder, accessed 23 November 2023

3.5 Crash History

An analysis the most recent five-year period of available crash data from 2018 to 2022 has been undertaken based on crash data provided by TfNSW for the roads surrounding the site. The locations and severity of the crash data for the five years is shown in Figure 3.5 and Table 3.1.

Figure 3.5: Crash data near the site (2018 to 2022)



Base image source: Transport for NSW, accessed 24 November 2023

Table 3.1 – Crash Incidents Between 2018 to 2022

Road	Number of Crashes	Number of People Injured	Number of Fatalities
Birdwood Road	2	4	0
Georges Crescent	2	1	0
Marion Street	1	0	0
Total	5	5	0

The following key statistics can be drawn from the crash data:

- No fatality was recorded during the five-year period surrounding the site.
- Both crashes on Birdwood Road resulted in serious injuries.
- All five incidents were the result of different types of crashes.
- Four out of the five crashes occurred during darkness hours.

Although the surrounding road network has recorded 5 incidents over the five-year period the data does not indicate any safety concern. Moreover, the development is not anticipated to materially change the types of vehicles or significantly increase traffic volumes at key intersections surrounding the site. Therefore, the proposal would not impact road safety surrounding the site.

4. Development Proposal

4.1 Land Uses

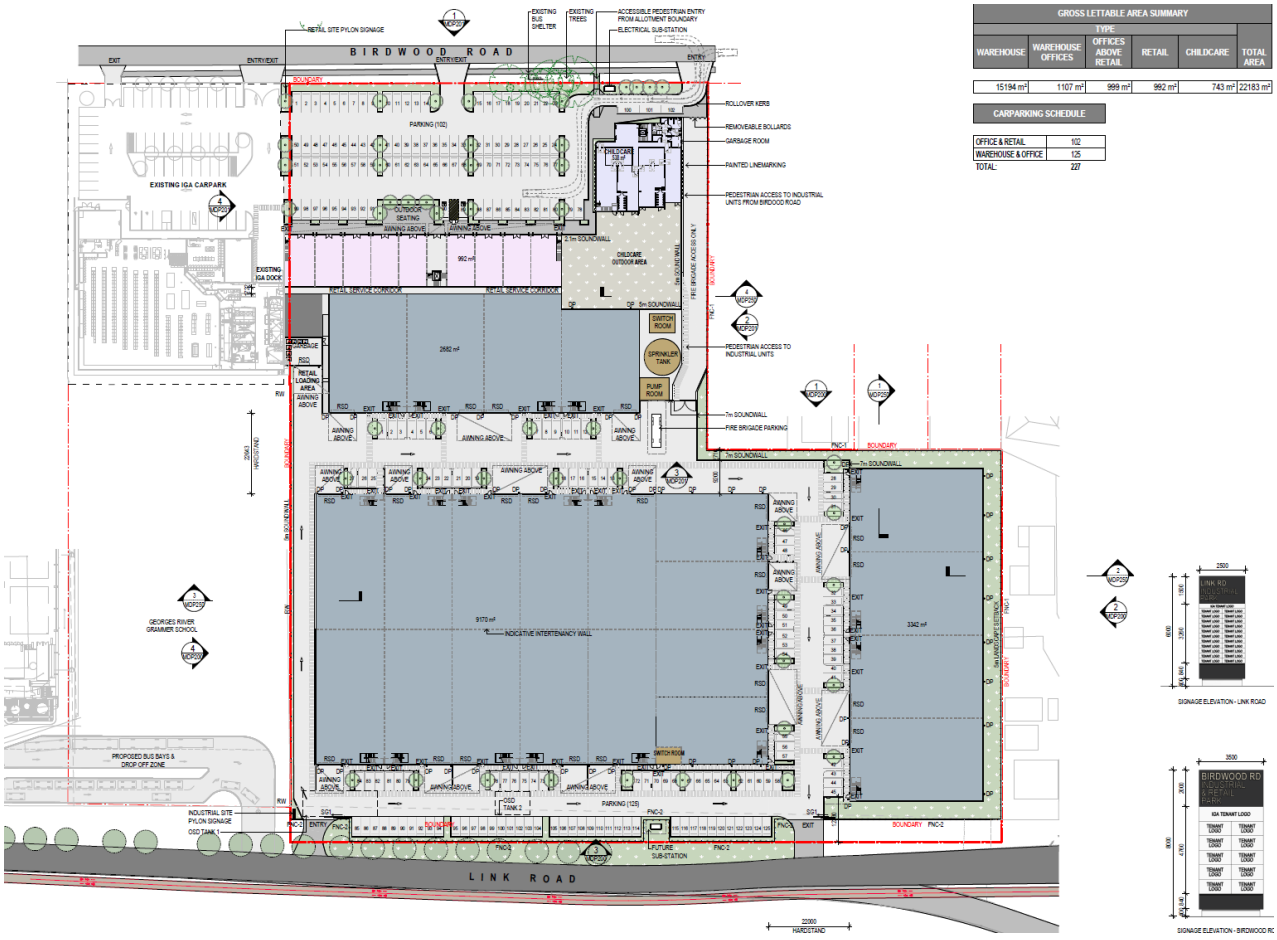
The proposal includes the construction of a mixed-use offering providing new retail, office and childcare opportunities for the local community at the periphery of the airport, as well as small-scale warehouse tenancies and premium smaller boutique warehouses to the south of the site.

A summary of the development yield is provided in Table 4.1 with the proposed ground floor plan shown in Figure 4.1.

Table 4.1: Development Schedule

Land Use	Size (Gross Lettable Area)
Warehouse	16,301 m^2 (including 1107 m^2 ancillary office)
Office	999 m^2
Childcare	743 m^2 (120 children)
Retail and Cafe	992 m^2 (70% retail and 30% café)

Figure 4.1: Proposed ground floor plan



Source: SBA Architects, Drawing Number MDP100, dated 5 November 2024

4.2 Vehicle Access

A total of four new proposed driveways are provided for vehicular entry/exit for the site. Two driveways pertaining to Birdwood Road servicing the childcare, retail offerings, and offices and two driveways pertaining to Link Road services the warehouses.

Birdwood Road

A one-way vehicular crossover is proposed on Birdwood Road in the northeast corner of the site for use by both light vehicles accessing the childcare drop off, at-grade car park and fire brigade vehicles accessing the south side of the site via the service road along the eastern boundary of the site.

A two-way vehicular crossover is also proposed on Birdwood Road, directly west of the one-way entrance. This crossover is intended to be used by light vehicles entering and exiting the site and circulating through the proposed at-grade carpark.

In addition, the proposed at-grade carpark will be directly connected to the existing IGA carpark to the west of the proposed site. The existing IGA carpark provides an entry/exit crossover on the northeast corner of the IGA, and a one-way exit driveway on the northwest corner of the IGA. With the existing IGA carpark intended to be connected to the proposed at-grade carpark, this provides additional circulation, car parking spaces and ingress/egress opportunities for the traffic generated from the proposed site.

Link Road

A one-way entry crossover is proposed on Link Road on the southwest corner of the site providing access to the warehouses to the south of the site, with a one-way exit crossover proposed on the southeast corner of the site. Both crossovers are expected to be used by service vehicles/light vehicles associated with staff parking intending to use the warehouses, with one-way clockwise circulation provided around the warehouses.

4.3 Car Parking and Loading

The proposed development will provide a total of 227 car parking spaces, the breakdown of car parking spaces is as follows:

- At-grade carpark and childcare drop-off accessed via Birdwood Road access: 102 spaces (including 3 spaces childcare drop off)
- Warehouse Staff carparking via Link Road access: 125 spaces

The retail loading area is provided on the western boundary of the site, adjacent to warehouse 1, and includes one loading bay suitable for accommodating service vehicles up to 12.5 metre HRV.

The individual warehouse units are serviced with vehicles up to 12.5 metre HRV. Vehicles would reverse into the roller shutter door and will be parked within the warehouse.

The suitability of the parking provision and layout is discussed in Section 5 of this report.

4.4 Pedestrian Access and Facilities

Pedestrian access to the childcare and retail offerings is proposed via Birdwood Road, with a pedestrian crossing provided adjacent to the two-way vehicular crossover. A pedestrian crossing is proposed near the childcare facility and connects with the external pedestrian walkways.

Pedestrian walkway is also proposed within the site and around the proposed warehouse. This provides internal connectivity for different parts of the site and ensure safe pedestrian movements within the site. Appropriate internal pedestrian crossing is also proposed as shown in Figure 4.1.

The development has been designed to ensure a high level of pedestrian permeability throughout the development with a pedestrian walkway provided throughout the site.

5. Car Parking

5.1 Car Parking Requirements

5.1.1 DCP Car Parking Requirements

The car parking provision requirements for different development types are set out in the *Canterbury-Bankstown Development Control Plan 2023.* As both Birdwood Road and Link Road provide separate access to the proposed land uses, a review of the car parking requirement rates for land uses served by the Birdwood Road Access and Link Road Access are summarised in Table 5.1 and Table 5.2 below.

Table 5.1: DCP 2023 Car Parking Requirements – Birdwood Road Access

Land Use	Gross Floor Area [1] (m^2)	DCP Car Parking Rate	DCP Car Parking Requirements
Office	999 m^2	1 car space per 40 m^2 gross floor area of the premises	25
Childcare	120 children	1 car space per 4 children	30
Cafe[2]	298m^2	0.15 car space per square metre in excess of 100m^2	30
Retail Shop[3]	694 m^2	1 car space per 40 m^2 of gross floor area	17
		Total	**102 spaces**

[1] The assumed Gross Lettable Area (GLA) equals to Gross Floor Area
[2] Assumed 30% of the total shop area (999m^2)
[3] Assumed 70% of the total shop area (992m^2)

The architectural plan shows the provision of 102 spaces, meeting the requirements specified by the council DCP.

Table 5.2: DCP 2023 Car Parking Requirements – Link Road Access

Land Use	Gross Floor Area [4] (m^2)	DCP Car Parking Rate	DCP Car Parking Requirements
Warehouse (including ancillary office)	16,301 m^2 140 estimated staff	1 car space per 300 m^2 gross floor area or 1 space for 2 staff	54 (based on GFA) or 70 (based on staff)
		Total	**54 spaces (based on GFA), or** **70 spaces (based on staff)**

[4] The assumed Gross Lettable Area (GLA) equals to Gross Floor Area

It is to be noted that a small office space is proposed for each of the warehouses to provide general administrative support to the warehouse and will not be separately leased as an independent office use. The office component is ancillary to the primary use of the land for a warehouse and will remain so in perpetuity. In this regard, reference is also made to the *TfNSW's Guideline to Traffic Generating Development (2002*) and *Bankstown Airport Urban Design Guideline (2015)* where the provision of 1 space per 300m^2 for the warehouse developments is based on the total warehouse GFA which may also include some ancillary office components.

However, due to the location of the proposed development (being within the Bankstown Airport), it is anticipated that the majority of the warehouse users would be staff with very few visitors. Therefore, it is recommended to determine the parking requirement for the warehouse based on the number of staff which may provide a realistic understanding of the future car parking demand.

The architectural plan shows the provision of 125 spaces, which is a surplus of 55 car parking spaces of the requirement as specified by council DCP and thus complies.

5.1.2 Summary

- The proposed land uses served by Birdwood Road access (office, childcare and retail shop) include provision for 102 car parking which satisfies the parking requirements of Bankstown Council DCP and the Bankstown Airport Urban Design Guidelines.
- The proposed land uses served by Link Road access include an industrial warehouse which is not intended to offer any retail, and the office shall only be used by tenants of the warehouse and not be used as stand-alone offices. It is also recommended to determine the warehouse parking requirement based on the number of staff. However, the provision of 125 car parking spaces for the warehouse developments satisfies the parking requirements based on both GFA and the number of staff.

5.2 Accessible Parking

Accessible Parking rates for various land uses are set out in the *Building Code of Australia* (BCA) which has been prepared to outline the accessible parking requirements for the proposed development.

Table 5.3: Accessible Parking Requirements

Access	Land Use	BCA Class	BCA Accessible Parking Rate	Total Parking Requirements	Accessible Parking Requirements
Birdwood Road	Office/Retail/Cafe	6	1 space for every 50 car parking spaces.	72	2
	Childcare	9b	1 space for every 50 car parking spaces or part thereof.	30	1
Link Road	Industrial Warehouse	7	1 space for every 50 car parking spaces	70	2

Furthermore, the adopted BCA rates are generally consistent with Canterbury- Bankstown DCP. Hence the proposed development requires 5 accessible parking spaces. The proposed development will provide the required number of accessible parking spaces and thus would comply with the requirement.

5.3 Bicycle Parking

Bicycle parking rates for various land uses are set out in *DCP 2023* which has been prepared to outline the bicycle parking requirements for the proposed development.

Table 5.4: DCP 2023 Bicycle Parking Requirements – Birdwood Road Access

Land Use	Gross Floor Area[5] (m^2)	DCP Bicycle Parking Rate	DCP Bicycle Parking Requirements
Office	999 m^2	Staff: 1 space per 300m^2 gross floor area Visitors: 1 space per 500m^2 gross floor area over 1,000m^2	4 staff
Childcare	120 children/20 Staff	1 space per 4 staff	5 staff
Retail Shop	694 m^2	Staff: 1 space per 300m^2 gross floor area Visitors: 1 space per 500m^2 gross floor area over 1,000m^2	3 staff
Cafe	298m^2	Staff: 1 space per 100m^2 Visitors: 2 spaces	3 staff 2 visitors
		Total	**15 staff spaces and 2 visitor spaces**

[5] The assumed Gross Lettable Area (GLA) equals to Gross Floor Area

Table 5.5: DCP 2023 Bicycle Parking Requirements – Link Road Access

Land Use	No of Staff	DCP Bicycle Parking Rate	DCP Bicycle Parking Requirements
Warehouse (including ancillary office)	140 Staff	1 space per 20 staff	7

The DCP bicycle parking rates specify a total combined requirement of 26 bicycle spaces including 20 staff spaces and 6 visitor spaces for the tenancies.

Furthermore, the DCP states that for non-residential development that requires over ten staff bicycle parking spaces, one shower and change room are to be provided per ten staff bicycle parking spaces. This results in a requirement of 2 end-of-trip facilities (shower/ change room).

The bicycle parking spaces along with end-of-trip facilities will be provided in the design revisions.

5.4 Waste Collection

The waste collection arrangements are anticipated to align with the loading arrangements described above in Section 4.3. Retail waste will be collected from the retail loading area along the western boundary of the site, adjacent to warehouse 1. Waste from warehouse units will be stored in separate tenancies.

The proposed development is designed to accommodate an HRV vehicle (12.5m). As such, it is anticipated that the council's garbage collection truck (which a smaller than HRV) will be able to access the site to collect the garbage.

The waste collection arrangement and vehicle type will be detailed as part of the Waste Management Plan.

5.5 Layout Review

The site access, loading and car park layout have been reviewed against the requirements of the Australian Standard for Off Streetcar Parking (AS/NZS2890.1:2004, AS2890.2:2018, AS/NZS2890.6:2022). This assessment included a review of the following:

- bay and aisle width
- adjacent structures
- turnaround facilities
- circulation roads and ramps
- ramp grades
- height clearances
- internal queuing
- pick-up/set-down area
- parking for persons with disabilities
- motorcycle/motor scooter parking.

A summary of the layout review is provided below:

- Overall, the proposed car park accessed via Birdwood Road is laid out clearly with users able to enter and exit in a forward direction and circulate as necessary. The car park includes dedicated childcare set-down and pick-up spaces.
- Link Road access and the internal roads surrounding the warehouse are designed to accommodate vehicles up to 12.5m long HRV within the site and able to access different warehouses with one-way clockwise circulation provided around the warehouses. All internal and circulating roads are designed in accordance with the relevant Australian Standards. Some minor modifications to the kerbs could be required to ensure seamless turning for HRVs.
- Both Link Road and Birdwood Road access are designed to accommodate fire truck entry/exit to the site. Internal roads are designed with adequate widths to accommodate fire truck movements during emergencies. Further assessment of the fire truck operation using a performance-based solution will be undertaken by a fire consultant.
- A 'Stop' control is proposed on the southern internal road eastbound approach (adjacent to the Link Road exit) to reduce the conflict and enhance safety. A mirror is also proposed at this location to watch other vehicle movements while turning. Appropriate signage and line marking are recommended to clearly delineate the pedestrian movement area.

- All loading docks, including the retail loading area, are designed to accommodate HRV vehicles' entry in the reverse direction and exit in the forward direction.
- All parking bays are designed to satisfy the relevant off-street car parking requirements and comply with the relevant Australian Standards.

Swept paths have been completed at key locations to confirm access, independent movements and manoeuvring generally. These are included in Appendix A.

6. Operational Traffic Impact Assessment

6.1 Traffic Generation

6.1.1 Design Rates

Traffic generation rates for the proposed uses have been sourced from the *TfNSW Guide to Traffic Generating Developments 2002* (the Guide) and *Technical Direction: Updated Traffic Surveys (TDT 2013/ 04a)*. TfNSW recommends the following rates applicable to the proposed development:

- *Childcare Centre:*
  - *Morning Peak – 0.8 trips per child*
  - *Evening Peak – 0.7 trips per child*
- *Warehouse:*
  - *Peak hour vehicle trips = 0.5 per 100m^2 gross floor area*
- *Office:*
  - *Morning peak hour vehicle trips = 1.6 per 100 m^2 gross floor area*
  - *Evening peak hour vehicle trips = 1.2 per 100 m^2 gross floor area*
- *Retail Shop:*
  - *Evening peak hour= 4.6 vehicle trips per 100m^2 Gross Leasable Floor Area*
- *Restaurant/ Cafe:*
  - *Morning peak hour vehicle trips = 5 per 100 m^2 gross floor area*

Estimates of peak hour traffic volumes resulting from the proposal are set out in Table 6.1 and Table 6.2.

Table 6.1: Traffic Generation – Birdwood Road Access

Land Use	Gross Floor Area[6]	AM Peak Hour	PM Peak Hour
Office	999 m^2	16	12
Childcare	120 children	96	84
Retail Shop[7]	694 m^2	16	32
Cafe[7]	298m^2	15	7
	Total	**143**	**135**

[6] The assumption that the Gross Leasable Floor Area is equal to Gross Lettable Area
[7] The retail and traffic generation during the AM peak hour is assumed to be approximately 50% of the PM peak hour.

The traffic generation rates, when applied, result in the sum of 143 peak-hour trips in the morning and 135 peak-hour trips in the evening.

Table 6.2: Traffic Generation – Link Road Access

Land Use	Gross Floor Area8	AM Peak Hour	PM Peak Hour
Warehouse (including office)	16,301 m^2	82	82
	Total	**82**	**82**

[8] The assumption that the Gross Leasable Floor Area is equal to Gross Lettable Area

It is understood that the office is related to the warehouse component and is not considered a separate traffic-generating development. The traffic generation rates, when applied, result in the sum of 82 peak-hour trips in the morning and evening.

6.2 Impacts on Surrounding Roads

Reference has been made to the *Bankstown Airport 2019 Masterplan* which assumed a total of 20,000m^2 of commercial land use (neighbourhood shopping centre) development on the subject site. The Masterplan assessment included detailed traffic modelling using VISSIM microsimulation software to assess the implications of the potential development of the airport. Based on this proposed development, there is considered to be no additional consequential impact on the

findings of the 2019 masterplan traffic and transport assessment based on what was assessed as a part of the masterplan.

6.3 Impacts on Adjacent Bus Bays

This proposed bus bay on the neighbouring grammar school located on the west of Link Road entry access is not anticipated to have any impacts on the Link Road site access. It is understood that the site access gates will be left open during business hours. This will allow all trucks to enter the site from Link Road without the requirement of waiting and hence, there will be no queues extending outside the property boundary. Further appropriate separation from the adjacent driveway is to be provided (5m) which enables an HRV to turn left into the site without the driveway splay extending onto the adjacent site frontage.

It is also recommended to minimize any HRV movements on Link Road during school drop off/pick up time to avoid any potential conflicts and enhance safety. Consideration should also be given to the operation of Bankstown Bus Depot and potential impacts on HRV movements along Link Road. This can be undertaken through the preparation of an operational traffic management plan once the individual tenants and their operations are known.

7. Overview Construction Traffic Management Plan

7.1 Overview

This section seeks to provide an overview of the Construction Pedestrian and Traffic Management Plan (CPTMP) initiatives to be implemented as part of the construction works associated with the proposed development.

Specifically, this overview of CPTMP considers the following:

- construction site access arrangements
- anticipated truck volumes during the construction stages
- truck routes to/ from the site
- requirements for works zones
- pedestrian and cyclist access
- site personnel parking
- traffic control measures
- overview of CPTMP requirements.

7.2 Principles of Traffic Management

The general principles of traffic management during construction activities are as follows:

- minimise the impact on pedestrian and cyclist movements
- maintain appropriate public transport access
- minimise the loss of on-street parking
- minimise the impact on adjacent and surrounding buildings
- maintain access to/ from adjacent buildings
- restrict construction vehicle movements to designated routes to/ from the site
- manage and control construction vehicle activity near the site
- Carry out construction activity in accordance with approved hours of works.

7.3 Work Hours

The works will be carried out during normal construction hours unless otherwise permitted. Indicative work hours are as follows:

- Weekdays: 7:00am – 5:00pm
- Saturdays: 8:00am – 12:00pm
- Sundays and public holidays: no work permitted.

Workers would be advised of the approved work hours during induction. Any works outside of the approved work hours would be subject to specific prior approval from the appropriate authorities (i.e., Canterbury Bankstown Council's Out-Of-Hours Work Application). Such works may include delivery of cranes, large plant or equipment required on the site that require oversize vehicle access.

7.4 Site Access and Loading

Construction vehicle access is anticipated to be primarily provided from Link Road. All loading is expected to take place within the bounds of the site. Should a works zone be required, an application will be made to the relevant authorities prior to commencement of works.

As part of the detailed CPTMP, Traffic Guidance Schemes (previously referred to as Traffic Control Plans) will be prepared in accordance with the principles of the Traffic Control at Work Sites manual (TfNSW, 2022). The Traffic Guidance Schemes primarily show where construction signs will be located at specific locations (such as uncontrolled intersections) along the approved truck routes to warn other road users of the increase in construction vehicle movements.

Access to the neighbouring sites by emergency vehicles would not be affected by the works as the road and footpath frontages would be unaffected. Emergency protocols on the site would include a requirement for site personnel to assist with emergency access from the street. All truck movements to the site and/or incident point would be suspended and cleared.

7.5 Construction Staff Parking

It is assumed there will be up to [50] workers on-site at any given time during peak activities. Parking for workers will generally be provided on site. Workers will be strongly encouraged to use public transport or carpool. During site induction, workers will be informed of the existing bus network servicing the site.

7.6 Heavy Vehicle Traffic Generation

There will be various types of construction vehicles accessing the site during construction. The largest of these vehicles will include:

- concrete trucks
- concrete pump and boom vehicles
- mobile cranes
- excavators and bulldozers
- rigid trucks, truck and dog combinations and articulated vehicles.

Most construction traffic will be associated with the removal of spoil, concrete pours and general delivery of materials and equipment. These activities will occur within the designated construction zone during each stage.

It is assumed that works could generate up to [5] construction vehicle movements per hour during any peak period. This equates to one vehicle every 12 minutes. Construction vehicle movements will be minimised/ avoided during peak hours where possible.

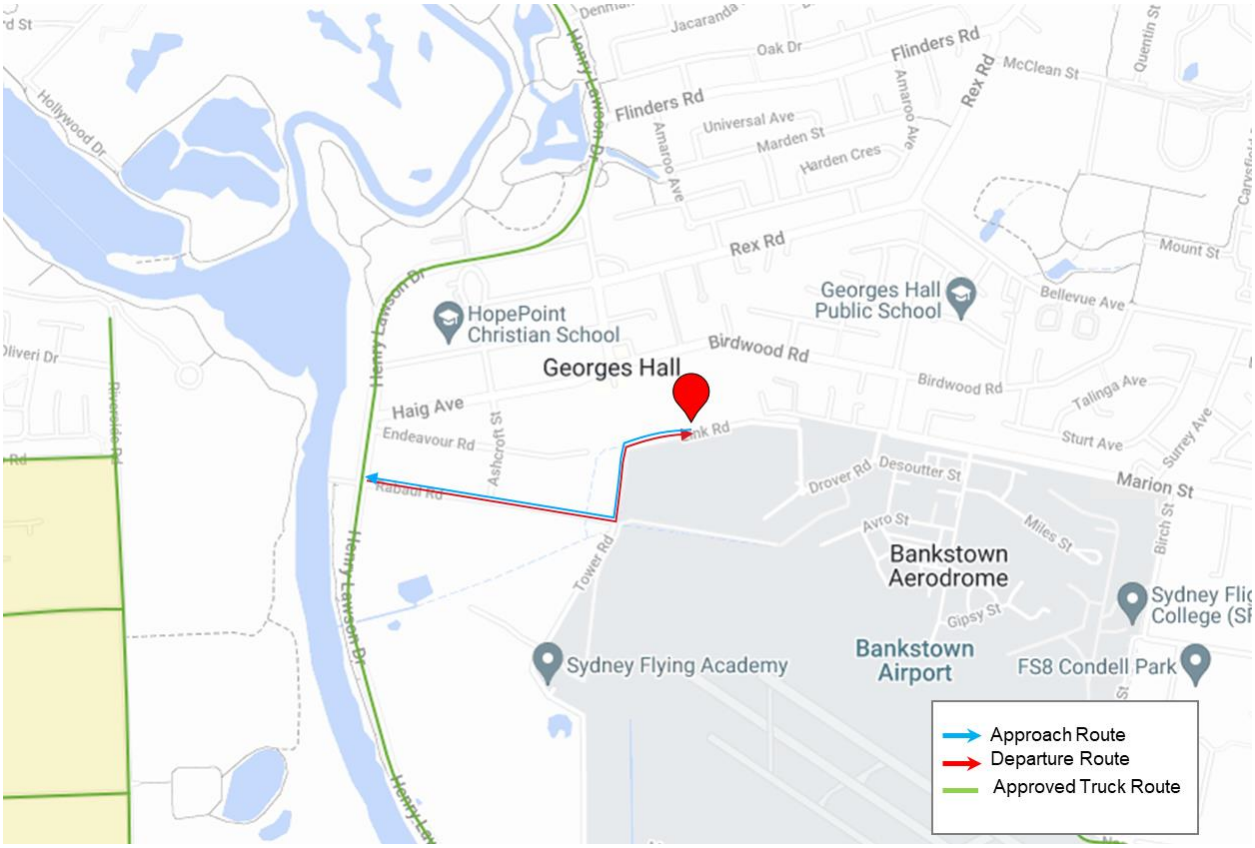
Given the expected low construction traffic volumes and the proximity of the site to the arterial road network, it is anticipated that the construction traffic will not have a significant impact on the surrounding road network.

7.7 Heavy Vehicle Access Routes

Heavy vehicle movements would be restricted to designated routes and confined to the arterial road network wherever feasible. Truck routes to/ from the site have been identified with the aim of providing the most direct routes to/ from the site as well as minimising the impact of heavy vehicles on local roads.

Figure 7.1 provides a summary of the anticipated construction vehicle routes to/ from the site. Truck drivers will be advised of the designated truck routes to/ from the site.

Figure 7.1: Construction Vehicle Route



7.8 Pedestrian and Cyclist Access

Overall, it is not expected that pedestrians or cyclists would be impacted by the construction works. Alternative pedestrian routes would be established to divert pedestrians/ cyclists to use alternative footpaths on the other side of the road if and as required.

7.9 Overview of CPTMP Requirements

This section provides an overview of the CPTMP initiatives that would be implemented for the construction of the project. A detailed CPTMP would be completed prior to commencement of construction to cover the following additional information:

- Description of construction activities and duration.
- Approved construction work hours.
- Detailed assessment of construction traffic impacts including any cumulative impacts.
- Swept path analysis of heavy vehicle access to the site and works zone.
- Detailed assessment of on-street parking impacts.
- Emergency vehicle access and impacts to public transport services.
- Traffic Guidance Scheme(s).
- Contact details of key project personnel.

8. Overview Green Travel Plan

8.1 Introduction

8.1.1 Travel Plan Framework

Transport is a necessary part of life, but it has economic, public health and environmental consequences. The transport sector is one of the fastest growing emissions sectors in Australia, and therefore is one of the key opportunities for reducing greenhouse gases. As well as delivering better environmental outcomes, providing a range of travel choices with a focus on walking, cycling and public transport will have major public health benefits and will ensure a strong and prosperous community.

The physical infrastructure being provided as part of the development is only part of the solution. A green travel plan (GTP) will ensure that the transport infrastructure, services and policies both within and external to the site are tailored to the users and co-ordinated to achieve the most sustainable outcome possible.

8.1.2 What is a GTP?

A GTP is a package of measures aimed at promoting sustainable travel and reducing reliance on the private car. It is not designed to be 'anti-car' however will encourage and support people's aspirations for carrying out their daily business in a more sustainable way. Travel plans can provide both:

- measures which restrict car use (disincentives or 'sticks')
- measures which encourage or support sustainable travel, reduce the need to travel or make travelling more efficient (incentives or 'carrots').

The travel plan would promote the use of transport, other than the private car, provide choice for staff to travel to and from the site, which is more sustainable and environmentally friendly.

Indeed, there are a range of "non-car" transport options that are available at the site which have been described in this report.

Given the developments aim to reduce private travel to the site, the implementation of a GTP would be beneficial.

8.2 Key Objectives

The aim of the GTP is to bring about better transport arrangements for living and working at the site. The key objectives of the Travel Plan are:

- to encourage walking
- to encourage cycling
- to encourage the use of public transport
- to reduce the use of the car, in particular single car occupancy
- where it is necessary to use the car, encourage more efficient use.

It is the intention therefore that the travel plan will deliver the following benefits:

- enable higher public and active travel mode share targets to be achieved
- contribute to greenhouse gas emission reductions and carbon footprint minimisation
- contribute to healthy living for all
- contribute to social equity and reduction in social exclusion
- improve knowledge and contribute to learning.

8.3 Site Specific Measures

The location of the site, in terms of its proximity to a wide range of sustainable transport including bus and train services is a key consideration for development in the precinct. A GTP will put in place measures to raise awareness and further influence the travel patterns of people travelling to/ from the site with a view to encouraging modal shift away from cars.

The following potential measures and initiatives could be implemented to encourage more sustainable travel modes:

1. Provide a Travel Access Guide (TAG) which would be provided to all staff and publicly available to all visitors. The document would be based on facilities available at the site and include detail on the surrounding public transport services and active transport initiatives. The TAG would be updated as the surrounding transport environment changes.
2. Providing public transport information boards/ apps to inform staff and visitors of alternative transport options (the format of such information boards would be based upon the TAG).
3. Providing a car sharing pod(s) on-site or nearby and promoting the availability of car sharing pods for trips that require the use of private vehicles.
4. Providing bicycle facilities including secure bicycle parking for staff, bicycle racks/ rails for visitors and shower and change room facilities.
5. Encouraging staff that drive to work and park on surrounding roads to carpool through creation of a carpooling club or registry/ forum.
6. Regularly promoting ride/ walk to work days.
7. Providing a regular newsletter to all staff members bringing the latest news on sustainable travel initiatives in the area.

8.3.1 Travel Access Guide

A TAG provides information to staff and visitors on how to travel to the site using sustainable transport modes such as walking and public transport. The information is presented visually in the format of a map (or app) showing the site location and nearby transport modes highlighting available pedestrian and cycle routes. The information is usually presented as a brochure (or app) to be included in a welcome pack or on the back of company stationery and business cards.

8.3.2 Information and Communication

Several opportunities exist to provide staff and visitors with information about nearby transport options. Connecting staff and visitors with information would help to facilitate journey planning and increase their awareness of convenient and inexpensive transport options which support change in travel behaviour. These include:

- Transport NSW provides bus, train and ferry routes, timetables and journey planning through their Transport Info website: http://www.transportnsw.info

In addition, connecting staff and visitors via social media may provide a platform to informally pilot new programs or create travel-buddy networks and communication.

8.3.3 Monitoring of the GTP

There is no standard methodology for monitoring the GTP, but it is suggested that it be monitored to ensure that it is achieving the desired benefits and modify it if required. It will not be possible at this stage to state what additional modifications might be made as this will be dependent upon the particular circumstances prevailing at that time.

The GTP should be monitored on a regular basis, e.g. yearly, by carrying out travel surveys. Travel surveys will allow the most effective initiatives of the GTP to be identified, and conversely less effective initiatives can be modified or replaced to ensure the best outcomes are achieved. It will clearly be important to understand people's reasons for travelling the way they do, any barriers to changing their behaviour, and their propensity to change.

To ensure the successful implementation of the GTP, a Travel Plan Coordinator (TPC) should be appointed to ensure the successful implementation of the GTP. This could be the building manager or a member of the body corporate.

8.4 Summary

The proposed development would be able to develop and utilise a travel plan to actively promote increased use of sustainable transport modes. Although it is difficult to predict what measures might be achievable, the above measures provide a framework for the site and implementation of a future travel plan.

9. Conclusion

Stantec has been engaged by Forge Venture Management (Forge), to undertake a traffic impact assessment of a proposed Bankstown airport mixed-use development on land located at lot 5012 DP 1176822.

Based on the analysis and discussions presented within this report, the following conclusions are made:

- The proposal is a development within the Airport that will provide a mix of commercial land uses designed to complement the airport and provide new retail, office and childcare opportunities for the local community at the periphery of the airport, as well as small scale warehouse tenancies.
- Two vehicular crossovers are proposed on Birdwood Road for vehicles intending to visit the childcare or retail tenancies. One of these crossovers is a two-way entry/exit and the other is a one-way exit driveway. Two vehicular crossovers are also proposed on Link Road for vehicles intending to use the warehouses. One of these crossovers is a two-way entry/exit and the other is a one-way exit driveway.
- The proposed parking provision satisfies the parking requirements of relevant standards, including Canterbury – Bankstown DCP 2023.
- The proposed development is required to provide a minimum of 26 bicycle parking spaces.
- All internal roads and parking bays are designed in accordance with the relevant Australian Standards (AS2890.1-6) and to accommodate the relevant largest vehicles.
- A 'Stop' control is proposed on the southern internal road eastbound approach (adjacent to the Link Road exit) to reduce the of conflict and enhance safety. A mirror is also proposed at this location to watch other vehicle movements while turning. Appropriate signage and line marking are recommended to clearly delineate the pedestrian movement area.
- The Birdwood Road Access associated tenancies are anticipated to generate up to 143 and 135 vehicle trips in the morning and afternoon peak, respectively. The Link Road Access associated tenancies are anticipated to generate up to 82 vehicle trips in the morning and afternoon peak.
- Bankstown Airport 2019 Masterplan assumed a total of 20,000m^2 of commercial land use (neighbourhood shopping centre) development on which the subject site. The Masterplan assessment included detailed traffic modelling using VISSIM microsimulation software to assess the implications of the potential development of the airport. Based on this proposed development, there is considered to be no additional consequential impact on the findings of the 2019 masterplan traffic and transport assessment based on what was assessed as a part of the masterplan assessment.
- Overall, the proposed development is well-considered and can be supported from a transport and parking perspective.

Appendix A. Compliance Review and Swept Paths

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