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LINDFIELD VILLAGE HUB PLANNING PROPOSAL

TRANSPORT IMPACT ASSESSMENT

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Lindfield Village Hub Planning Proposal
Transport Impact Assessment

Ku-ring-gai Council

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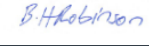
REV	DATE	DETAILS
A	14/06/19	Final report
B	02/10/19	Report to address KMC planning comments
C	11/10/19	Final report
D	15/06/20	Final report – with new appendix

	NAME	DATE	SIGNATURE
Prepared by:	Brigette Humphrey-Robinson	15/06/20	
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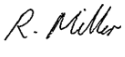
Approved by:	Ryan Miller	15/06/20	

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

1 INTRODUCTION

1.1 BACKGROUND

In 2016, Ku-ring-gai Council's Masterplan for the Lindfield Village Hub (LVH) redevelopment site was incorporated into Ku-ring-gai Council's Local Environment Plan (LEP) and Development Control Plan (DCP). However, recent changes to the regions strategic plans and policies has prompted Council to revisit the Masterplan and subsequently lodge a new planning proposal for the site.

The LVH development (located to the west of the Pacific Highway) would include the following:

- a library
- a community centre and large public open space
- retail precinct including a supermarket, specialty stores and restaurants and/or cafes
- residential buildings
- basement car park encompassing commuter car parking, parking to support the development and offset the loss of the existing parking on the site.

Ku-ring-gai Council engaged WSP to complete a transport impact assessment for the revised masterplan of the LVH development, to be included in the planning proposal.

1.2 SITE LOCATION AND CONTEXT

Lindfield is located within 10 kilometres of two Strategic Centres within the North District (Chatswood and Macquarie Park) and is a 30 to 40 minute trip to/from Sydney CBD via the existing T1 North Shore Line and the T9 Northern Line rail services. The suburb mostly comprises a residential population with some retail and employment uses, which is primarily centred within the local centre.

The LVH development would replace the existing Woodford Lane car park, located immediately west of the existing retail and commercial properties that front the Pacific Highway, to the south of Bent Street and north of Beaconsfield Parade, as shown in Figure 1.1.

The existing Woodford Lane car park accommodates 109 parking spaces including a mix of short-term and unrestricted parking (count provided by Council).

Figure 1.1 Lindfield Village Hub site location

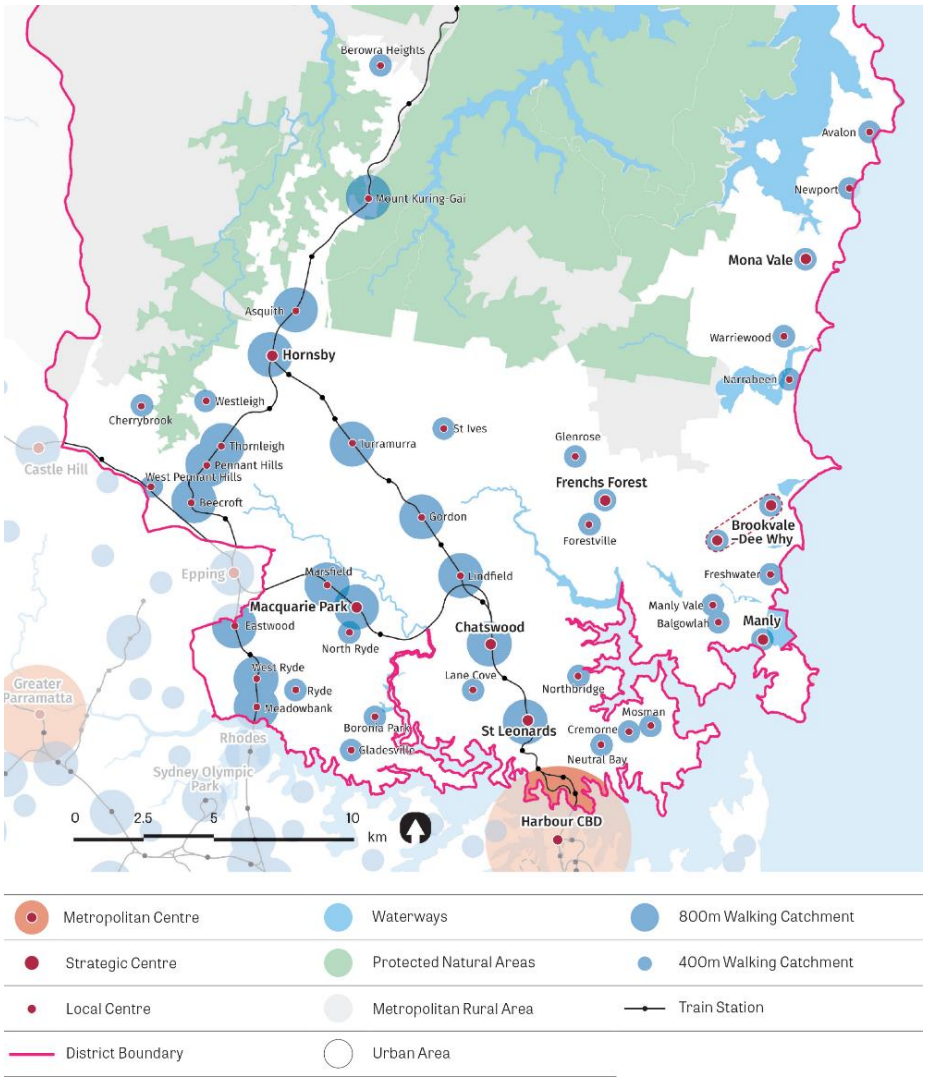
1.3 VISION FOR LINDFIELD

The Greater Sydney Commission's North District Plan identifies the need to design places for people and sets out the following planning priority:

> *Creating and renewing great places and local centres, and respecting the District's heritage*

Lindfield is identified as a Local Centre in the Northern District Plan (Figure 1.2) as it acts as a central hub for the community by accommodating an array of local shops and acting as a local transport interchange for bus and rail users.

The plan also encourages local councils to consider connectivity of the local centres with the surrounding residential land, where links for walking and cycling can help promote a healthy lifestyle.



Source: North District Plan, Greater Sydney Commission, 2018

Figure 1.2 Centres set out in the Northern District Plan

Activate Ku-ring-gai program is a Council-led program of urban renewal across the Local Government Area, informs the community needs and is consistent with Greater Sydney Commission's North District Plan. As part of this program, Council is planning to transform the Lindfield Local Centre into a vibrant mixed-use community via the development of existing council lands located on the east and west sides of the Local Centre into new developments with high-quality community facilities and civic spaces. The three identified developments include:

- Lindfield Village Hub – proposed mixed-use development of the Woodford Lane Car Park site on the western side of the centre
- Lindfield Village Green – approved transformation of the Tyron Road car park on the eastern side of the centre into a new public space
- Lindfield Village Living – planned residential development on the existing Lindfield Library site between the Pacific Highway and the existing railway line.

2 EXISTING TRANSPORT CONDITIONS

2.1 ROAD NETWORK

The Pacific Highway is aligned in a north-south direction, dividing the Lindfield Local Centre into two. Access to/from the Pacific Highway to either side of the local centre is provided by various intersections and relevant to this assessment are the following:

- Pacific Highway, Balfour Street and Havilah Road – signalised with no turn bans
- Pacific Highway and Bent Street – priority controlled T-intersection connecting with the west side only and permitting left-in and left-out only
- Pacific Highway and Tyron Place – priority controlled T-intersection connecting with the east side only and permitting left-in and left-out only
- Pacific Highway and signalised pedestrian crossing located adjacent to the Lindfield Railway Station
- Pacific Highway and Beaconsfield Parade – priority controlled T-intersection connecting with the west side only and permitting left-in and left-out only
- Pacific Highway and Strickland Avenue – priority controlled T-intersection connecting with the east side only with no turn bans.

Regionally, the Pacific Highway is a State Road that forms part of the M1 corridor, connecting the Gore Hill Freeway to the south with the M1 Motorway to the north.

Within the Lindfield Local Centre, the Pacific Highway generally has two traffic lanes in each direction, with kerbside parking lanes in sections. However, weekday peak directional clearways have been implemented providing three southbound lanes in the AM peak and three northbound lanes in the PM peak. All other surrounding roads within the centre are local roads.

2.1.1 TRAFFIC VOLUMES

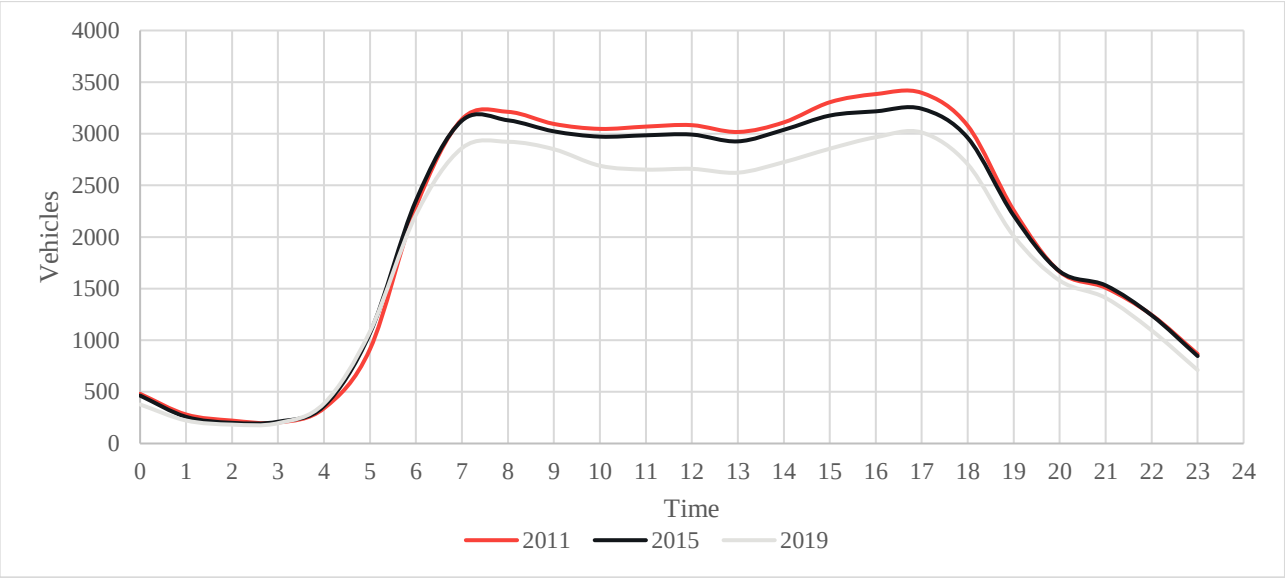
Ku-ring-gai Council provided WSP with traffic survey data that was collected on behalf of council in October 2018 at the key intersections listed in section 2.1. The peak periods identified in these counts were as follows:

- Weekday AM – 7:30am to 8:30am
- Weekday PM – 5:00pm to 6:00pm
- Saturday midday – 12:30pm to 1:30pm.

It is worth noting that the Saturday traffic survey was collected while rail replacement measures were in place. Given this circumstance, the operational assessment for the Saturday peak period is considered to be conservative.

The AM, PM and Saturday peak hourly traffic volumes at the surveyed intersections are included in Appendix A.

Historical traffic volume data along the Pacific Highway in Killara obtained from Roads and Maritime Services indicates that peak period traffic volumes along the Pacific Highway have declined since 2011 at an annual average rate of approximately one per cent, as illustrated in Figure 2.1.



Source: Roads and Maritime Services

Figure 2.1 Historical Pacific Highway traffic volumes

2.1.2 EXISTING INTERSECTION OPERATION

The operation of the study intersections has been assessed using the network function of the SIDRA Intersection modelling software, adopting the existing surveyed traffic volumes and noting that the signalised intersections in the study area are coordinated.

The SIDRA models were provided to WSP by Council and are understood to have been prepared by Roads and Maritime Services and PeopleTrans.

The Traffic Modelling Guidelines (Roads and Maritime Services, 2013) specifies that intersection operation is generally measured by degree of saturation, level of service and 95th percentile base of queue distance.

SIDRA Intersection measures these elements, with the intersection level of service being a measure of the average delay at the intersection, as defined by the criteria set out in Table 2.1.

Table 2.1 SIDRA Intersection level of service criteria

Level of service	Average delay (seconds per vehicle)	Criteria for traffic signals	Criteria for give way and stop signs
A	<14	Good operation	Good operation
B	15 to 28	Good operation with acceptable delays and spare capacity	Good operation with acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays	At capacity, requires other control mode
F	>70	Extra capacity required	At capacity, requires other control mode

Source: Adopted from Guide to Traffic Generating Developments (Roads and Maritime Services, 2002)

Table 2.2, Table 2.3 and Table 2.4 present a summary of the existing intersection operation of the key study intersections during the weekday AM, PM and Saturday peak hours with full results presented in Appendix A. It should be noted that the critical movement for level of service at a roundabout or priority-controlled intersection is the movement with the worst delay, whereas for a signalised intersection, the average movement delay and level of service over all movements should be adopted.

Table 2.2 Existing intersection operation – weekday AM peak

Intersection	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of service
			South	East	North	West	
Pacific Highway, Balfour Street and Havilah Road	0.84	25	98	82	325	76	B
Pacific Highway and Pedestrian Crossing	0.58	3	17	-	78	-	A
Pacific Highway and Strickland Avenue	1.41	>300	39	37	0	-	F

Table 2.3 Existing intersection operation – weekday PM peak

Intersection	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of service
			South	East	North	West	
Pacific Highway, Balfour Street and Havilah Road	0.92	31	14	82	248	77	C
Pacific Highway and Pedestrian Crossing	0.44	4	17	-	13	-	A
Pacific Highway and Strickland Avenue	>2	>300	20	152	0	-	F

Table 2.4 Existing intersection operation – Saturday peak

Intersection	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of service
			South	East	North	West	
Pacific Highway, Balfour Street and Havilah Road	0.90	31	100	82	340	65	C
Pacific Highway and Pedestrian Crossing	0.59	4	17	-	26	-	A
Pacific Highway and Strickland Avenue	>2	>300	14	96	0	-	F

The above tables indicate that in terms of level of service, the signalised intersection of the Pacific Highway, Balfour Street and Havilah Road is generally operating satisfactorily during all of the assessed peak periods, although it typically experiences lengthy vehicle queues on the north approach and it is generally approaching capacity (based on degree of saturation). It is also noted that vehicle queuing for the right turn movements on the north and south approaches can extend beyond the dedicated bays during the peak hours.

While on-site, we also noted that the eastbound and westbound drivers travelling in Balfour Street or Havilah Road at their intersection with the Pacific Highway have restricted sight lines due to a crest located in the middle of the intersection. This can affect the overall intersection operation with drivers being hesitant to make filter right turns.

The modelling shows that the mid-block signalised pedestrian crossing has negligible impact on peak period traffic flows, with average delays of less than five seconds for traffic at the crossing.

The modelling assessment also confirms site observations that vehicles turning right out of Strickland Avenue experience significant delays and limited opportunities to access the Pacific Highway during all three assessed peak periods. Overall, the intersection of the Pacific Highway and Strickland Avenue would operate with little delay to the primary traffic flow of the Pacific Highway. However, the lengthy delays for vehicles turning out of Strickland Avenue may result in road safety concerns associated with drivers selecting inappropriate gaps in traffic.

2.2 PUBLIC TRANSPORT SERVICES

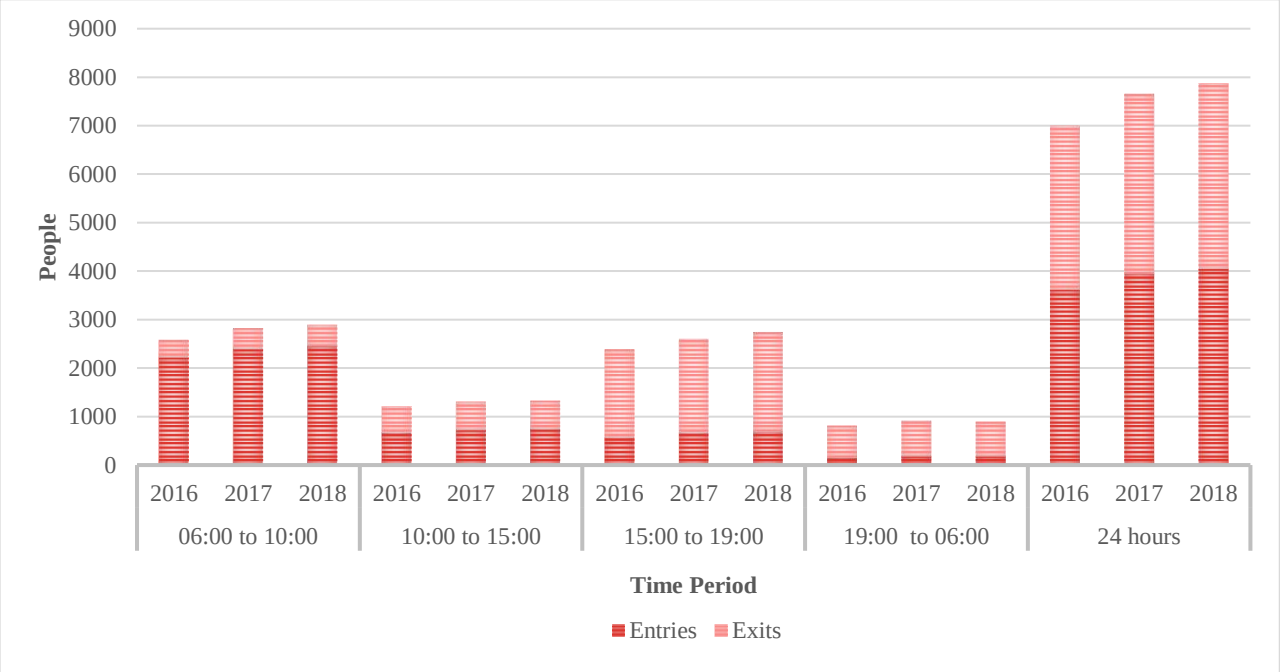
Lindfield Local Centre is well serviced by public transport including buses and rail.

2.2.1 RAIL

Lindfield Station is situated approximately 100 metres east of the LVH site and centrally within the Lindfield Local Centre. The station is served by the T1 North Shore Line and the T9 Northern Line, providing a direct link to Chatswood, North Sydney and the Sydney CBD to the south and Berowra and Hornsby to the north. Services operate at a frequency up to eight services an hour (during peak hours) per direction.

Access between the site and the station are facilitated by a signalised pedestrian crossing that links the east and west sides of the Pacific Highway.

Barrier counts for Lindfield Station, obtained from Transport for NSW indicate that station entry and exits have been increasing since 2016 during the on-peak and off-peak time periods, as shown in Figure 2.2.



Source: TfNSW Transport Performance and Analytics Train Station Entries and Exits Dataset

Figure 2.2 Lindfield station barrier counts

A review of Transport for NSW peak train load data for late 2018 (the latest data currently available) indicates that services on the T1 North Shore Line are operating with a maximum load capacity of approximately 150 percent on approach to Sydney CBD at Milsons Point in the AM peak hour and 121 percent travelling away from Sydney CBD at North Sydney in the PM peak hour. Beyond 135 percent, passengers experience crowding which is undesirable. Based on this criteria, it is apparent that the T1 North Shore Line is operating above capacity during the AM peak hour.

The recent opening of the Metro North West Line between Chatswood and the north west suburbs of Sydney is understood to have increased passenger demand for the T1 North Shore Line and the T9 Northern Line south of Chatswood. This is due to passengers using the Metro services having to transfer to/from the T1 and T9 services at Chatswood. Future stages of the Metro, particularly the Chatswood to Sydenham link are expected to lead to a further increase in demand. However, this increase in demand is likely to be fully off-set by the increased capacity of the north-south lines between Chatswood and the Sydney CBD. The Chatswood to Sydenham section of the Sydney Metro network is planned to be opened in 2024.

2.2.2 BUS

Two bus stops are located on the Pacific Highway and adjacent to Lindfield Station. The 565 Macquarie University to/from Chatswood service uses these bus stops, as well as the Nightride service to/from Sydney CBD. Further, the 556 bus to/from East Killara and the 558 bus to/from Chatswood use the Lindfield Avenue bus stops on the eastern side of Lindfield Station. This bus service typically runs at low frequencies of one or two services per hour.

A school bus uses the northbound Pacific Highway bus stop during the PM peak hour only, at 3:54pm.

2.3 PUBLIC TRANSPORT DEMAND AND CAPACITY

A site visit was conducted on the morning of Thursday 18 July 2019, to observe the demands and capacity of the train and bus services and facilities in Lindfield.

2.3.1.1 RAIL

The capacity of the trains arriving at the Lindfield Station platforms were dependent on the direction of travel. The southbound trains, heading towards the city, had significantly higher demand than the northbound trains. Citybound trains were observed to be operating with a seated capacity as low as 50 percent and a high of approximately 90 percent. Overall, the services had spare capacity. Passenger demand for the northbound trains was comparatively low with a maximum seating utilisation of between five and 10 percent.

During the morning peak period, up to 100 passengers were observed to board the citybound rail services. Approximately 20 passengers were observed to alight the northbound services, and no one alighted the southbound services.

The T1 North Shore Line services generally had higher patronage than the T9 Northern Line services, given the T9 Northern Line services start at Gordan, whereas the T1 North Shore Line services start at Hornsby or Berowra.

Passengers were generally observed to be spread out evenly along the platform, with some minor bunching near the stairs, at the southern end of the platform. Notwithstanding this, the bunching occurred where there was a higher level of spare capacity observed on the associated train services.

2.3.1.2 BUS

The buses operating along the Pacific Highway and Lindfield Avenue were observed to operate with high levels of spare capacity. Approximately 10-15 passengers were observed to alight each bus service along the Pacific Highway. Up to ten passengers were observed to alight the Lindfield Avenue bus services.

All passengers who were observed to alight the bus services appeared to access the station, indicating some level of bus-train interchange activity.

2.4 ACTIVE TRANSPORT FACILITIES

2.4.1 CYCLING

No formal cycling provisions are available within the Lindfield Local Centre. However, Council considers Lindfield Avenue on the east side of the local centre, as well as Balfour Street located to the north of the centre as 'useful unmarked' cycling routes.

2.4.2 WALKING

The existing pedestrian facilities within Lindfield Local Centre are shown in Figure 2.3.

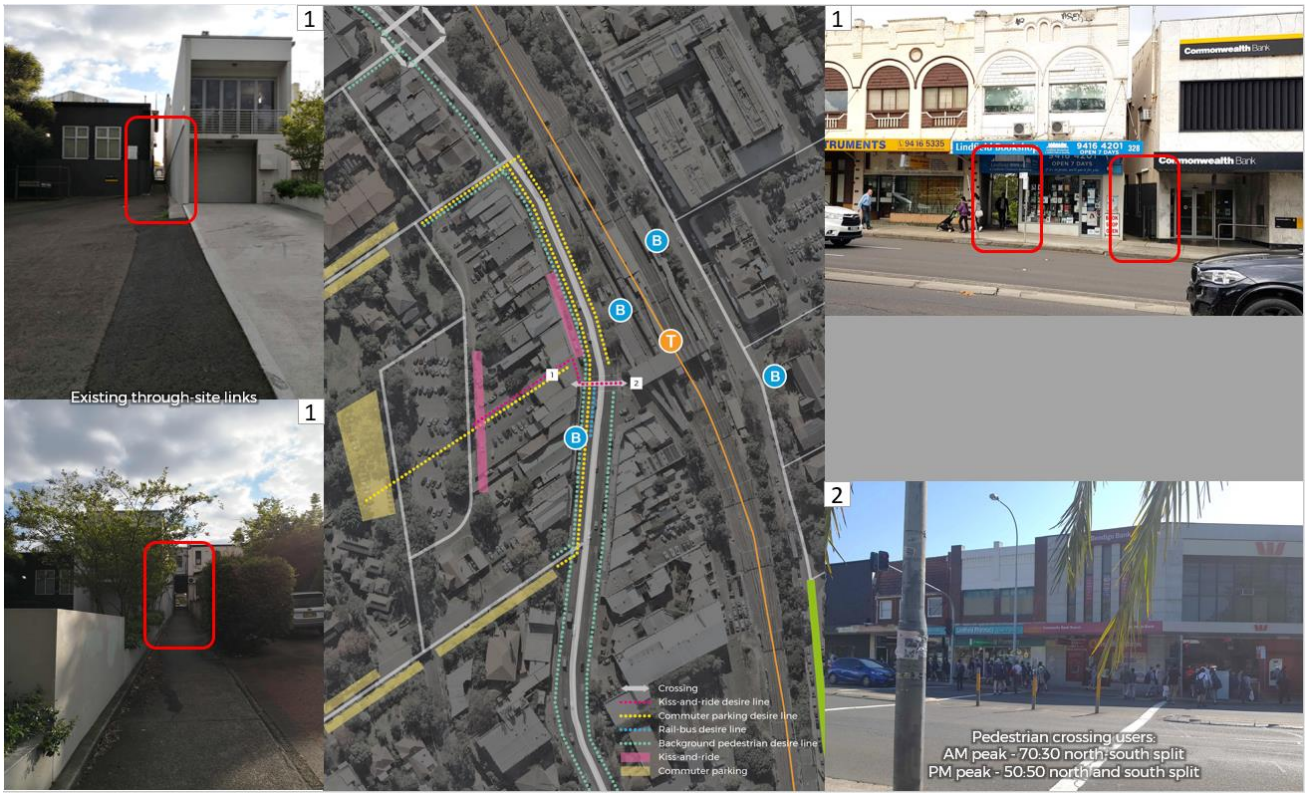


Figure 2.3 Existing pedestrian connections

High pedestrian activity within the Local Centre generally occurred along the Pacific Highway and Lindfield Avenue, with less activity along side streets. Footpaths are generally provided along both sides of most roads within the centre including 3.5 metre wide footpaths along both sides of the Pacific Highway, albeit with roadside furniture sometimes reducing this width.

The footpath along Pacific Highway is in relatively good condition although some areas experience significant grade changes. Whilst the existence of kerbside parking in sections on the Pacific Highway acts to provide a barrier between pedestrians and live traffic, the provision of peak directional Clearway restrictions leads to a loss of pedestrian amenity and perceived pedestrian safety during these periods of the day. This is particularly apparent given the 60km/h speed limit and the tendency of motorists to utilise the kerbside lane to by-pass queues in the adjacent lanes.

Within the Lindfield Local Centre, pedestrian crossings of the Pacific Highway are provided at the following two locations:

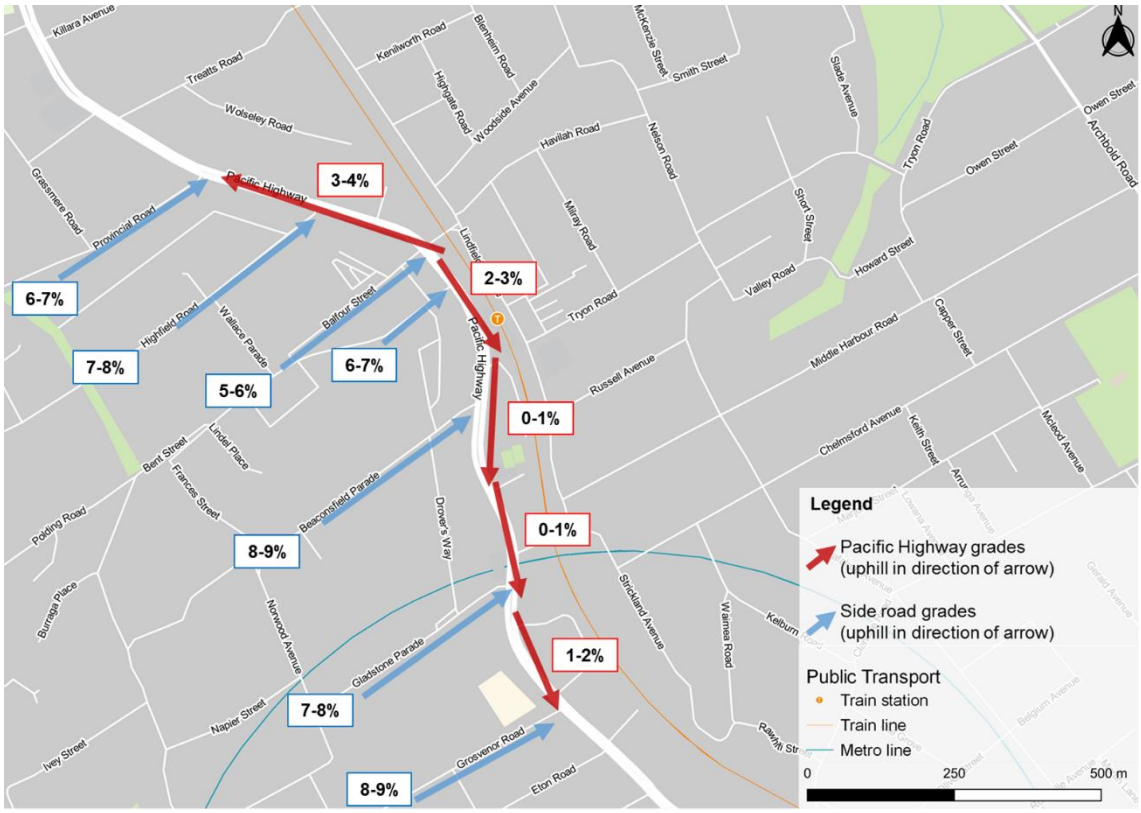
- signalised mid-block pedestrian crossing adjacent to the Lindfield Station
- signalised pedestrian crossings on all legs of the intersection of the Pacific Highway, Balfour Street and Havilah Road, approximately 190 metres north of the mid-block crossing.

Additional crossing opportunities exist to the north, at Highfield Road and Provincial Road. However, south of the Local Centre, crossing opportunities are limited, with the closest crossing at Grosvenor Road, nearly 600 metres south of Lindfield Station.

Two pedestrian through-site connections are currently provided between the existing Woodford Lane car park and the western side of the Pacific Highway, between the buildings that front Pacific Highway. However, these connections are narrow and typically unlit.

2.5 ROAD/FOOTPATH GRADES

A desktop analysis of grade changes along the Pacific Highway between Grosvenor Road and Provincial Road identified significant changes. The Pacific Highway grades range from -4 percent to 3 percent, with adjacent roads that intersect with the Pacific Highway having grades of between 5 percent and 10 percent slopes (towards the Pacific Highway), as shown in Figure 2.4. Due to these steep grades, walkability throughout the local centre and its surrounds can be difficult for less abled individuals including children, the elderly and disabled persons.



Source: Grade information extracted from Nearmap, 2019

Figure 2.4 Slope assessment of road network

2.5.1 CONSTRAINTS AND OPPORTUNITIES WITH EXISTING PEDESTRIAN CROSSING

On-site observations identified a range of benefits and constraints associated with the existing pedestrian environment and in particular crossing provisions of the Pacific Highway in Lindfield. These are discussed below:

Benefits:

- A large pedestrian area is provided outside the station to accommodate pedestrians waiting for the mid-block signals on the Pacific Highway during the afternoon peak period. This area was observed to accommodate more than 50 people leaving the station and crossing the Pacific Highway in a single pedestrian phase.
- At 7.5 metres wide, the existing mid-block pedestrian crossing is wider than the typical 6 metre width. This is presumably in recognition of the high pedestrian demand generated in the peak periods by the adjacent Railway Station.
- Pedestrian seating is located outside the station and near the mid-block pedestrian crossing which provides a resting spot for aged and mobility impaired persons waiting to cross the Pacific Highway between pedestrian phases.
- The existing mid-block pedestrian crossing location provides a direct connection to the Station for a variety of users including people who Kiss-and-Ride, use informal commuter parking, and those who interchange between the station and the Pacific Highway bus stop (west side) near the station.
- The mid-block pedestrian crossing generally slows down traffic, increasing the amenity for other road users, during the pedestrian phase and generally improving road safety.
- The walk and clearance time provided for pedestrians was observed to be sufficient to safely allow pedestrians to cross the Pacific Highway. This is important given the narrow width of the median and its inadequacy to safely cater for pedestrians to stand between opposing traffic flows.
- Drivers have good visibility of the mid-block pedestrian crossing in both directions given the crossings location on the apex of a bend.

Constraints and opportunities:

- High delays (in excess of 2 minutes) were observed for pedestrians waiting to cross the Pacific Highway at the mid-block pedestrian crossing and the crossings at the signalised intersection of the Pacific Highway and Havilah Road. This was occasionally observed to encourage unsafe pedestrian crossing behaviour (including crossing on red), particularly outside of peak hours where the gaps in traffic are more frequent. Decreasing the signal cycle time would significantly improve pedestrian amenity and inevitably lead to improved pedestrian adherence of the traffic signals.
- Pedestrians were observed to use the central median to store between the northbound and southbound traffic lanes, along Pacific Highway at the mid-block pedestrian crossing. As mentioned above, this median has insufficient width to safely accommodate this activity.
- Pedestrian and vehicle conflicts in Tyron Place were observed near the Pacific Highway, due to the wide road width (approximately 16 metres) and vehicles using Tyron Place as a pseudo station drop off and pick up point. This leads to vehicles making unsafe u-turns and three-point turns as well as double parking. Alternative Kiss-and-Ride arrangements for vehicles travelling southbound along the Pacific Highway should be investigated.
- Unlit, narrow and inactivated pedestrian connections within the Local Centre are undesirable for pedestrians (Tyron Place, Havilah Road underpass, through-site links on the west side of the Highway). Improved lighting, increased activation and potential widening where possible could improve the quality of these connections.
- Some uncontrolled mid-block crossing activity was observed near Beaconsfield Parade, indicating that this location is a pedestrian desire line.

2.6 PARK-AND-RIDE ACTIVITY

Unrestricted parking is prevalent in the immediate vicinity of the proposed Lindfield Village Hub and is heavily used by commuters. Based on recent site visits, most arrivals occur between 7:00am and 8:00am. However, departures during the PM are more evenly spread out across the afternoon.

The pedestrian desire lines associated with this commuter activity are shown in Figure 2.5

Figure 2.5 Commuter parking and associated pedestrian desire lines

2.7 KISS-AND-RIDE ACTIVITY

Kiss-and-Ride activity within the study area was observed to be largely generated by parents of school children and occurred at the following three main locations:

1 Tyron Place

2 Pacific Highway, northbound lanes only

3 Woodford Lane.

These locations of Kiss-and-Ride are detailed in Figure 2.6. However, it was observed that the volume of Kiss-and-Ride was much lower in the PM peak than the AM peak. During the PM peak children were observed to walk further afield, leading to a more evenly directional (north-south) distribution of pedestrians using the crossing.

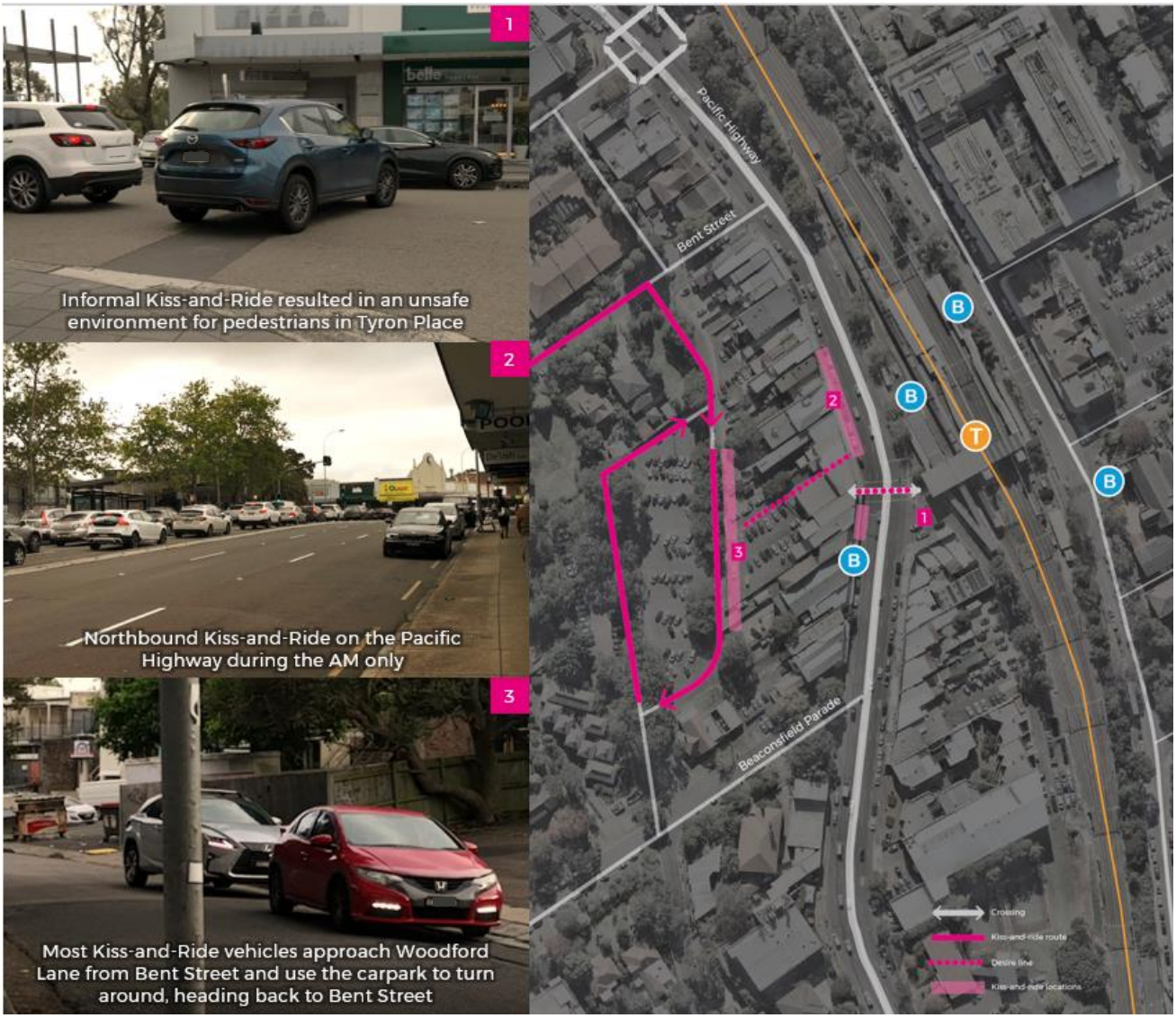


Figure 2.6 Observed Kiss-and-Ride activity and associated pedestrian desire lines

2.8 TAXI

One taxi rank is located on the western side of Lindfield Avenue. The taxi rank is approximately 30 metres in length and has capacity for five vehicles.

2.9 JOURNEY TO WORK

2.9.1 RESIDENTS OF LINDFIELD

Journey to work data was sourced from the 2016 Census. Five SA1 zones were identified (as shown in Figure 2.7) as being representative of the LVH study area and its immediate surrounds. Residents of LVH would likely have similar travel patterns to current residents of this area.

The journey to work data indicates that approximately 830 residents travel to work from the assessed zones.

Figure 2.7 Zones surrounding the LVH study area used for journey to work analysis

Residents of the area primarily travel to work by private vehicle (47 percent) or public transport (46 percent), as shown in Figure 2.8. However, the public transport mode share for residents is higher than the average public transport mode share for both the suburb of Lindfield (38 percent) and the Greater Metropolitan of Sydney (27 percent).

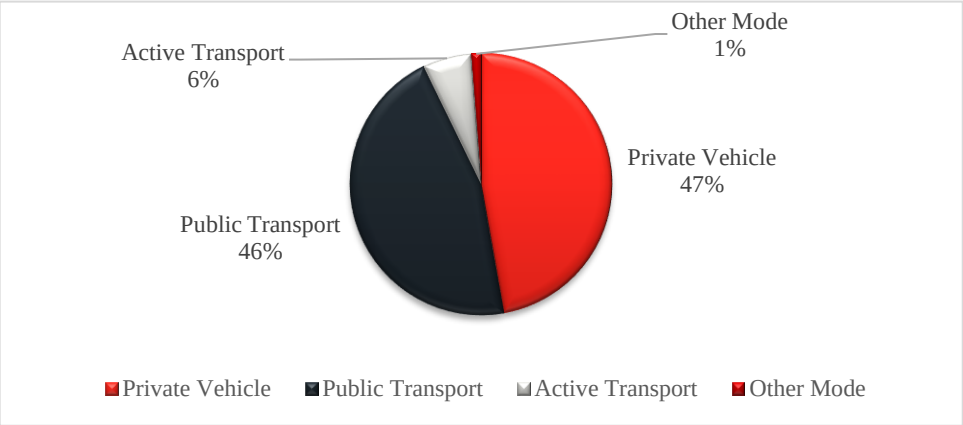


Figure 2.8 Journey to work mode share split for Lindfield residents

Sydney CBD is the primary destination for residents travelling to work (around 25 percent). For other residents, employment destinations are focused around the local area including Lindfield and Roseville, Chatswood, North Sydney, Macquarie Park and St Leonards, as shown in Figure 2.9.

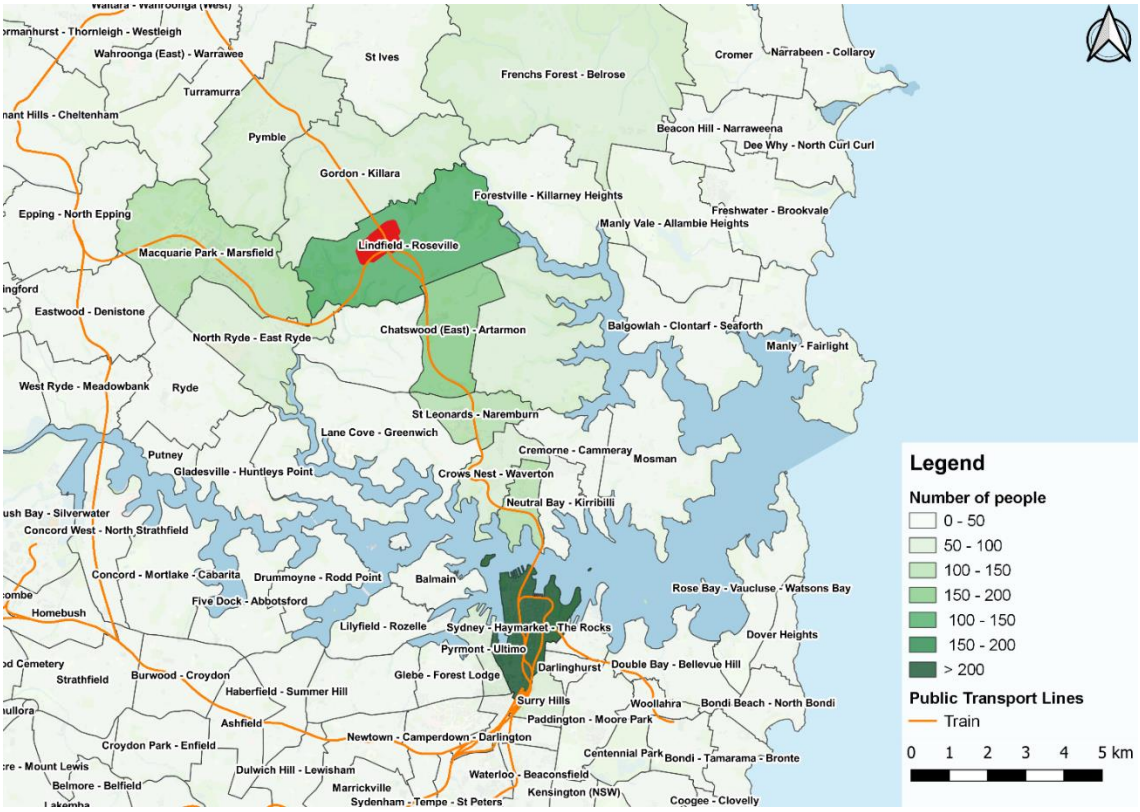


Figure 2.9 Destination of residents travelling to work

2.9.2 EMPLOYEES OF LINDFIELD

The journey to work information for employees can only be assessed based on a whole suburb (SA2 level data). Therefore, employees of the Lindfield and Roseville suburbs have been reviewed. The travel patterns of future employees of the retail, commercial and community uses of the LVH would likely be slightly more skewed to public transport than existing people working in this area, due to the sites' close proximity to Lindfield Station.

Employees of the area primarily travel to work by private vehicle (76 percent), with 18 percent using public transport and six percent using active transport modes, as shown in Figure 2.10.

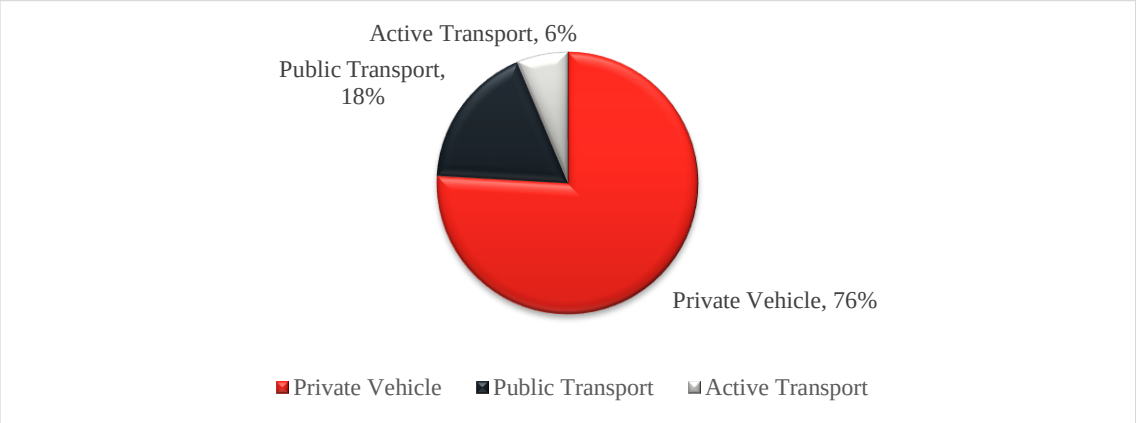


Figure 2.10 Journey to work mode share split for Lindfield and Roseville employees

Figure 2.11 indicatively shows that most of the Lindfield and Roseville employees reside in the nearby local areas, including Lindfield-Roseville (38 percent) Gordon-Killara (5 percent), St Ives (3 percent), Pymble (3 percent) and Turramurra (2 percent).

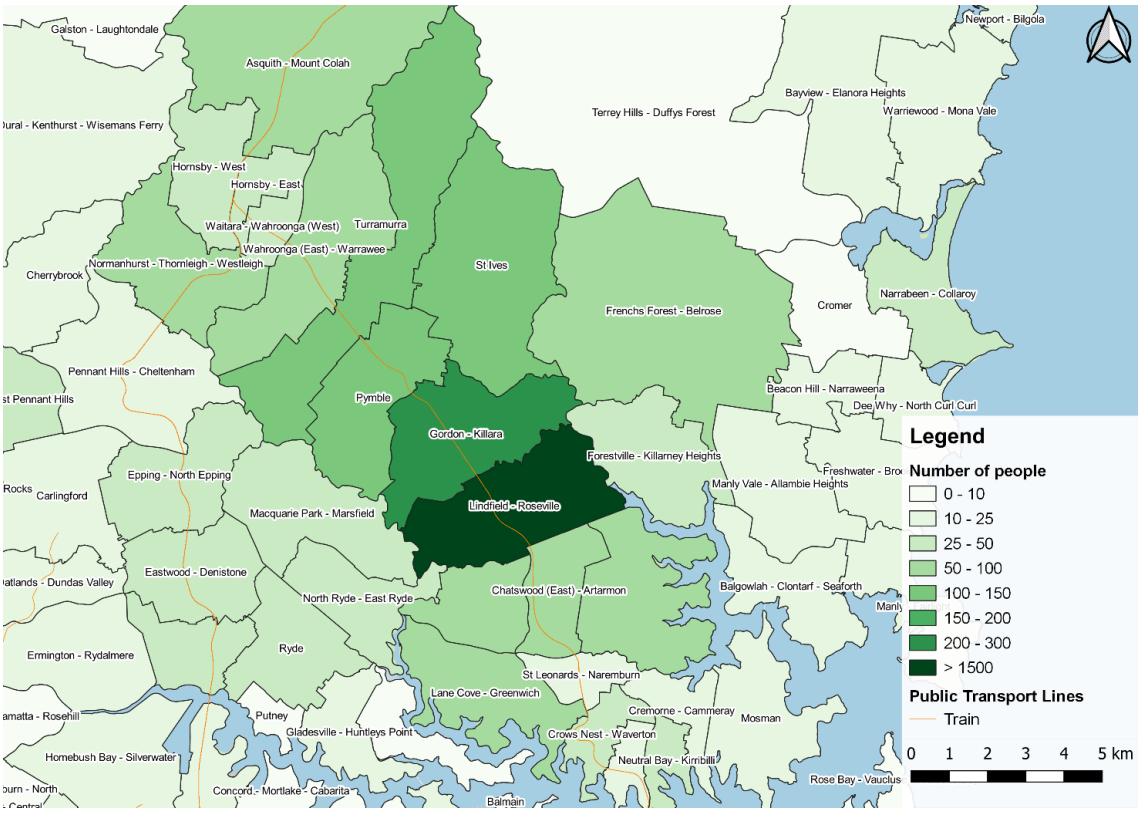


Figure 2.11 Origin of Lindfield-Roseville employees travelling to work

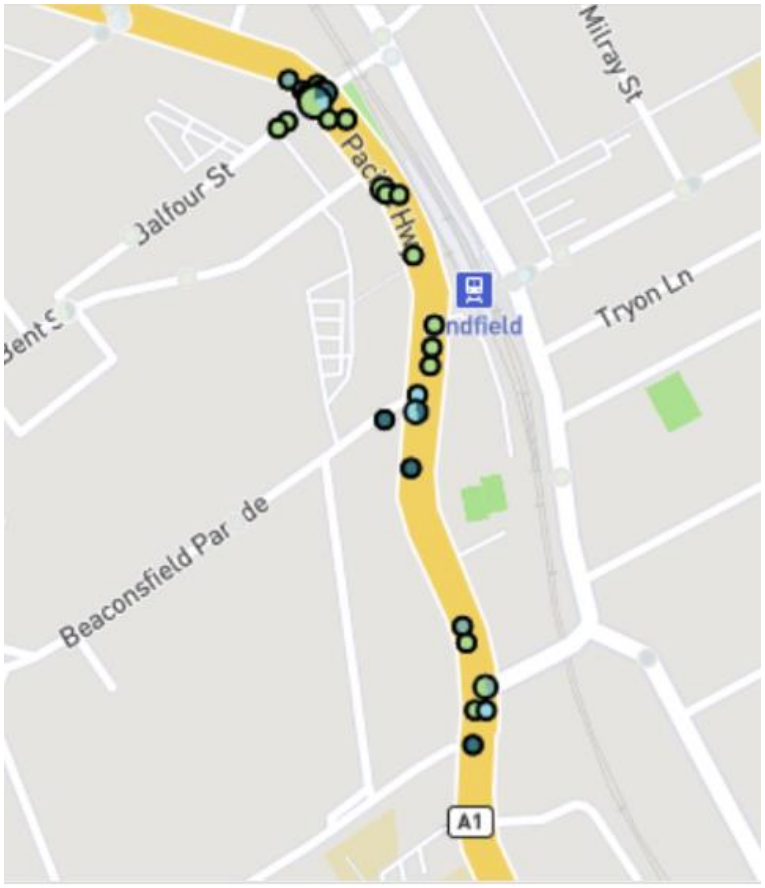
2.10 HISTORICAL CRASH DATA

Crash data obtained from Roads and Maritime Services indicates that there has been a total of 38 crashes on the Pacific Highway between Balfour Street and Gladstone Street between 2013 and 2017. The crash locations can be seen in Figure 2.12.

The majority of these crashes occurred at intersections including:

- 18 at the intersection of the Pacific Highway, Balfour Street and Havilah Road including 3 crashes involving pedestrians
- three occurred near the existing signalised pedestrian crossing. none involving pedestrians
- five occurred at or near the intersection of the Pacific Highway and Beaconsfield Parade
- seven occurred near the intersections of the Pacific Highway and Strickland Avenue and the Pacific Highway and Gladstone Parade.

In addition, five crashes occurred mid-block between the existing mid-block pedestrian crossing and the intersection of the Pacific Highway, Balfour Street and Havilah Road.



Source: *Roads and Maritime Services (2019)* *https://roadsafety.transport.nsw.gov.au/statistics/interactivecrashstats/lga_stats.html?tablga=4, visited on 30 July 2019*

Figure 2.12 Crash locations (2013 – 2017)

Notwithstanding the above, the number of crashes per year recorded along the Pacific Highway within the study area has declined significantly in the last 2 years (2016 and 2017) when compared to the previous three years (2013-2015). In 2017 there was only a single accident recorded in the study area, as shown in Table 2.5

Table 2.5 Historical crash data by year

Year	Number of crashes
2013	11
2014	10
2015	11
2016	5
2017	1
Total	38

Source: Roads and Maritime Services (2019) https://roadsafety.transport.nsw.gov.au/statistics/interactivecrashstats/lga_stats.html?tablga=4, visited on 30 July 2019

3 STRATEGIC PLANNING CONTEXT

3.1 LINDFIELD LOCAL CENTRE DCP

Ku-ring-gai Local Centres Development Control Plan (DCP) offers detailed guidance for developments within the Local Government Area, and particularly the Lindfield Local Centre. The DCP adopts a place-based approach for the planning of future development and helps ensure that they adhere to the Council's vision for the area. The DCP sets out a number of development goals for Lindfield, and these are as follows;

Local Centre Context:

1 *Create distinct precincts that provide a range of services, facilities and experiences*

2 *To create vibrant local centres with distinctive and memorable character*

3 *Provide opportunities for new specialty retail, cafes and restaurants to be located away from the Pacific Highway*

4 *To establish a new mixed use precinct on the western side of Lindfield focused around a new community hub and a new urban park*

5 *Encourage restaurants, cafes, outdoor dining and offices fronting on to rear lanes to contribute to increased activity and passive surveillance*

6 *Provide opportunities for new supermarkets to support and anchor the local centre*

7 *Promote ease of circulation and connectivity between the railway station and the local centre.*

Public Domain and Pedestrian Access:

1 *Increase pedestrian permeability of the local centre*

2 *Improve pedestrian amenity by providing continuous sun and rain protection to footpath areas*

3 *Provide a consistently high quality and visually pleasing streetscape environment*

4 *Improve and enhance accessibility to the commercial precinct particularly for pedestrians, pram walkers, people with disabilities, cyclists and public transport users*

5 *Improve commercial activity in the local centre by promoting street-level activity*

6 *Facilitate opportunities for outdoor dining in quiet locations away from the highway*

7 *Minimise the number of vehicle access points off streets and lanes by encouraging amalgamation of sites*

8 *Improve safety and passive surveillance of the public domain by encouraging street-level activity*

9 *Improve the overall pedestrian experience in the local centre, thereby promoting active living*

10 *Promote mid-block and through-site links as a way of improving permeability of the local centre.*

3.2 LINDFIELD LOCAL CENTRE TRANSPORT NETWORK MODEL STUDY

In 2013/14, PeopleTrans prepared the Lindfield Local Centre Transport Network Model Study Report – 2013/14 on behalf of Ku-ring-gai Council. The study identified a traffic management scheme for the Lindfield Local Centre which highlighted road network changes needed to support the forecast growth of the Lindfield Local Centre and its surrounds.

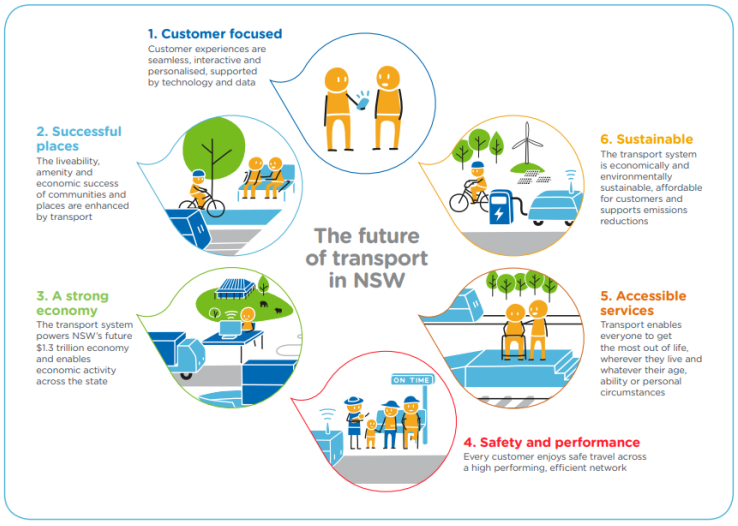
Following ongoing consultation with Roads and Maritime Services and other stakeholders, the traffic management scheme for Lindfield Local Centre was revised and several reiterations of the traffic management scheme were developed. The following road network changes were identified as being necessary to support the future growth of the Lindfield Local Centre:

- capacity upgrades to the intersection of the Pacific Highway, Balfour Street and Havilah Road including banning the right turn from Havilah Road to the Pacific Highway and extension of the right turn bay on the southern leg of the intersection
- new signals at the Pacific Highway and Beaconsfield Parade intersection
- new signals at the Pacific Highway and Strickland Avenue intersection
- capacity upgrades to the existing signalised intersection of the Pacific highway and Grosvenor Road
- conversion of Bent Lane to one-way southbound
- new traffic signals capacity improvements along Lindfield Avenue on the eastern side of the Lindfield Local Centre.

3.3 FUTURE TRANSPORT CONTEXT

3.3.1 FUTURE TRANSPORT 2056

The Future Transport 2056 strategy sets the 40-year vision, directions and framework for customer mobility in NSW. The strategy includes the Greater Sydney Services and Infrastructure Plan which aims to define the transport network required to achieve the desired service outcomes set out by the Greater Sydney Commission, in the Greater Sydney Regional Plan. Six key customer and network outcomes are identified as shown in Figure 3.1. These customer focused outcomes have been considered in preparing this transport impact assessment.



Source: Future Transport 2056, Transport for NSW, 2017

Figure 3.1 Future Transport's six state-wide outcomes

3.3.2 GREATER SYDNEY REGION PLAN

The Greater Sydney Region Plan, *A Metropolis of Three Cities* is built on a vision that most of Greater Sydney's residents live within 30 minutes of jobs, education, services and great places. These three cities will be supported by metropolitan, strategic and local centres which will provide infrastructure and services as well as entertainment and cultural facilities for residents. Further information on the accessibility of the site and therefore how the site aligns with the Plan are discussed in section 4.1.

The LVH is located within the North District Plan area of the Region Plan. The North District includes the broader Ku-ring-gai LGA, as well as LGA's across the north shore, from North Sydney and Mosman in the south to Hornsby and the City of Ryde to the North and West.

3.3.3 MOVEMENT AND PLACE CONSIDERATIONS

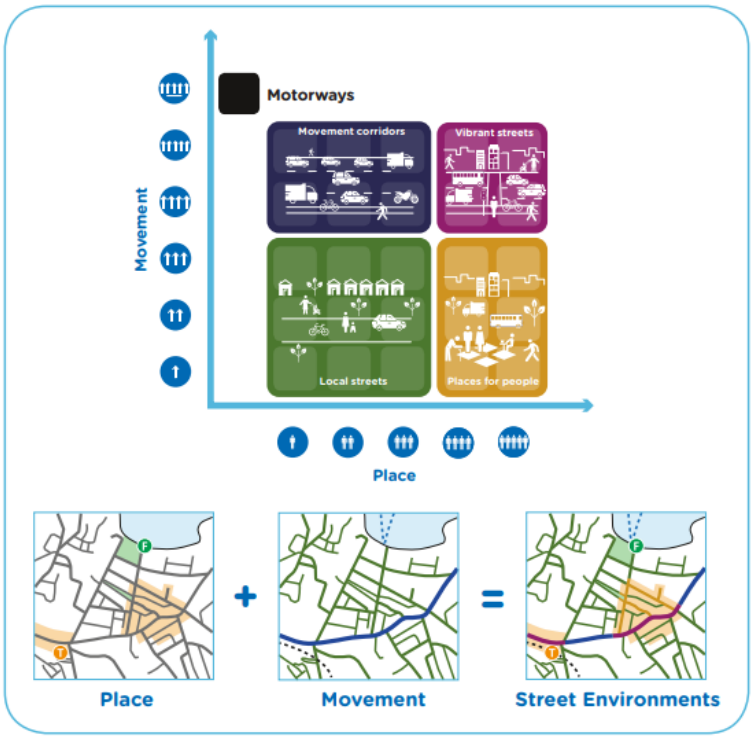
Discussed in both the Future Transport 2056 Strategy and the Greater Sydney Commissions Greater Sydney Regional Plan is the concept of a "Movement and Place" approach to road network planning. The Movement and Place Framework acknowledges that our road network performs a dual function – it moves people and goods and features destinations (or places) in their own right.

The Future Transport 2056 Strategy states:

"Roads through and around centres serve an important movement purpose, allowing people travel to and from the centre and move around easily within it. They also serve a place function by operating in a way that allows attractive places for people and strong local economies to develop and thrive."

The Greater Sydney Commission has established principles for making our places easier for walking and cycling. It is highlighted that a permeable and well-connected urban form is essential to support connectivity, accessibility and amenity of our centres.

Detailed in Figure 3.2 is the framework for strategically assessing and planning the road network.



Source: Future Transport 2056

Figure 3.2 Movement and Place framework

The roads within the Lindfield Local Centre roads are considered to have high place-oriented functions. However, roads such as the Pacific Highway and Lindfield Avenue would also need to facilitate high movement functions not only for traffic but for all road users, including bus, cyclist and pedestrian movement. Therefore, all road network planning within the Lindfield Local Centre needs to consider a balance between the place and movement needs across all modes.

As a local centre, the place significance along key roads will be sensitive to the Pacific Highway corridors road management practices. The future vision for the Lindfield Local Centre should recognise the need to apply this "movement and place" based concept to ensure the provision of services and facilities for local and surrounding communities. This should incorporate reducing or minimising the need for residents to drive to access these facilities and ensure traffic doesn't increase around the centres. Similarly, to ensure the high place function remains, active frontages and pedestrian dwelling opportunities to promote people activity should be encouraged.

3.3.3.1 FUTURE TRANSPORT – VISION FOR PACIFIC HIGHWAY

With consideration for the above, Future Transport 2056 highlights a future vision for the Pacific Highway. It calls for improved road connectivity to centres along the Pacific Highway corridor between the M1 Motorway (at Wahroonga) and the M2 Motorway (at Artarmon). The benefit of this plan is improving the movement function of the Pacific Highway corridor while balancing the need for convenient access and enhancing the attractiveness of places adjacent to the corridor. This will allow for the following customer outcomes;

- *Vibrant centres supported by streets that balance the need for convenient access while enhancing the attractiveness of our places*
- *Efficient, reliable and easy-to-understand journeys for customers, enabled by a simple hierarchy of services*
- *Efficient and reliable freight journeys supported by 24/7 rail access between key freight precincts with convenient access to centres*
- *A safe transport system for every customer with the aim for zero deaths or serious injuries on the network by 2056*
- *Transport services and infrastructure are delivered, operated and maintained in a way that is affordable for customers and the community.*

3.4 NORTHCONNEX

NorthConnex is a motorway tunnel that is currently under construction. Once completed in 2020, NorthConnex would link the M1 Motorway at Wahroonga to M2 Motorway at West Pennant Hills. The primary objective for NorthConnex is to remove approximately 5,000 trucks per day from Pennant Hills Road (to the north-west of Lindfield) and therefore improving the local communities located along Pennant Hills Road. The NorthConnex website also highlights that '*using NorthConnex as an alternative route to the CBD from the north avoids up to 40 traffic lights on the Pacific Highway'.*

Considering this, it is anticipated that NorthConnex could present the following benefits to the Pacific Highway corridor:

- reduced heavy vehicle volumes especially freight vehicles, where the cost of tolls and additional travel distance (up to 10km) at higher travel speeds along a Motorway could be lower than the cost of stop/start conditions (travel time, vehicle maintenance, fuel) along the Pacific Highway
- reduced regional through traffic between Sydney CBD and the M1 Pacific Motorway.

The above may see the opportunity for urban amenity improvements in the Lindfield Local Centre. More significantly it could potentially alter the future movement function of the section of the Pacific Highway in Lindfield from focussing on providing for current regional traffic movements to accommodating for future local traffic access in line with the objectives of Future Transport 2056.

Notwithstanding the above, it is noted that at this stage the benefits of NorthConnex on Pacific Highway have not yet been publicly quantified.

4 STRATEGIC SITE LOCATION

4.1 PUBLIC TRANSPORT CATCHMENT

The centres and precincts identified in the Greater Sydney Region Plan, *A Metropolis of Three Cities*, which are located within LVH's 30-minute public transport catchment are summarised in Table 4.1 and shown in Figure 4.1:

Table 4.1 Nearby centres and precincts

Metropolitan Centre	Health and education precinct	Strategic Centre	Local Centre
Harbour CBD	Macquarie Park St Leondards	Chatswood Epping Hornsby	Gordon Marsfield North Ryde Turramurra

As indicated above, the site is well placed, being adjacent to a high frequency public transport corridor which offers good accessibility to strategic employment centres. This is in line with the Greater Sydney Region Plan's vision that most of Greater Sydney's residents would live within 30 minutes of jobs and education.

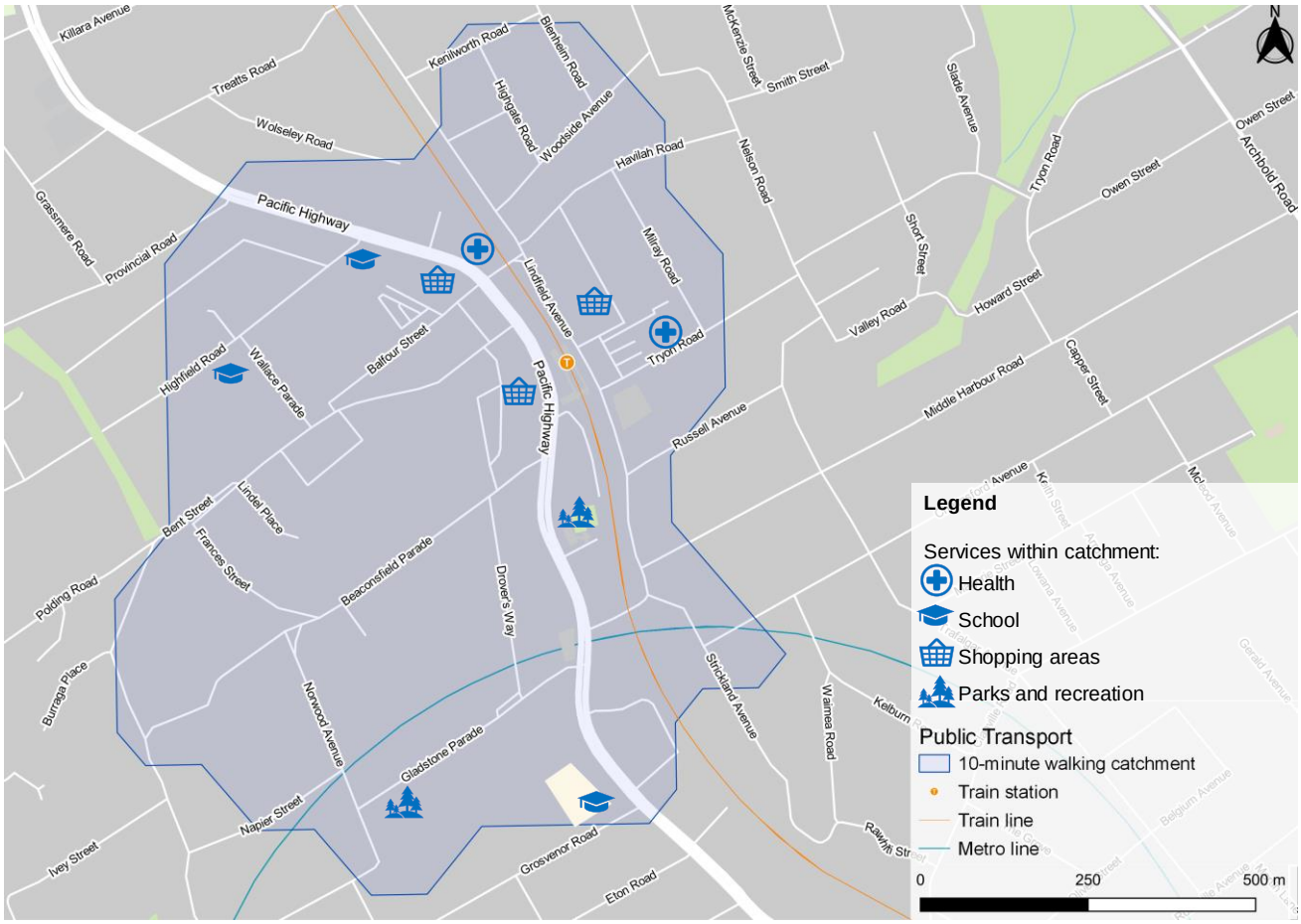
Source: North District Plan (Greater Sydney Commission, 2018)

Figure 4.1 Metropolitan and strategic centres within 30 minutes of LVH by public transport

4.2 PROXIMITY TO LOCAL SERVICES

Figure 4.2 shows the local services within a 10-minute walking catchment of the site. These include several schools, Lindfield Medical Practice as well as local shopping areas and supermarkets.

The site is well positioned, being nearby to most typical local services. However, the catchment analysis identifies a strong opportunity for increased recreational and community facilities and high quality places within the 10-minute walking catchment.

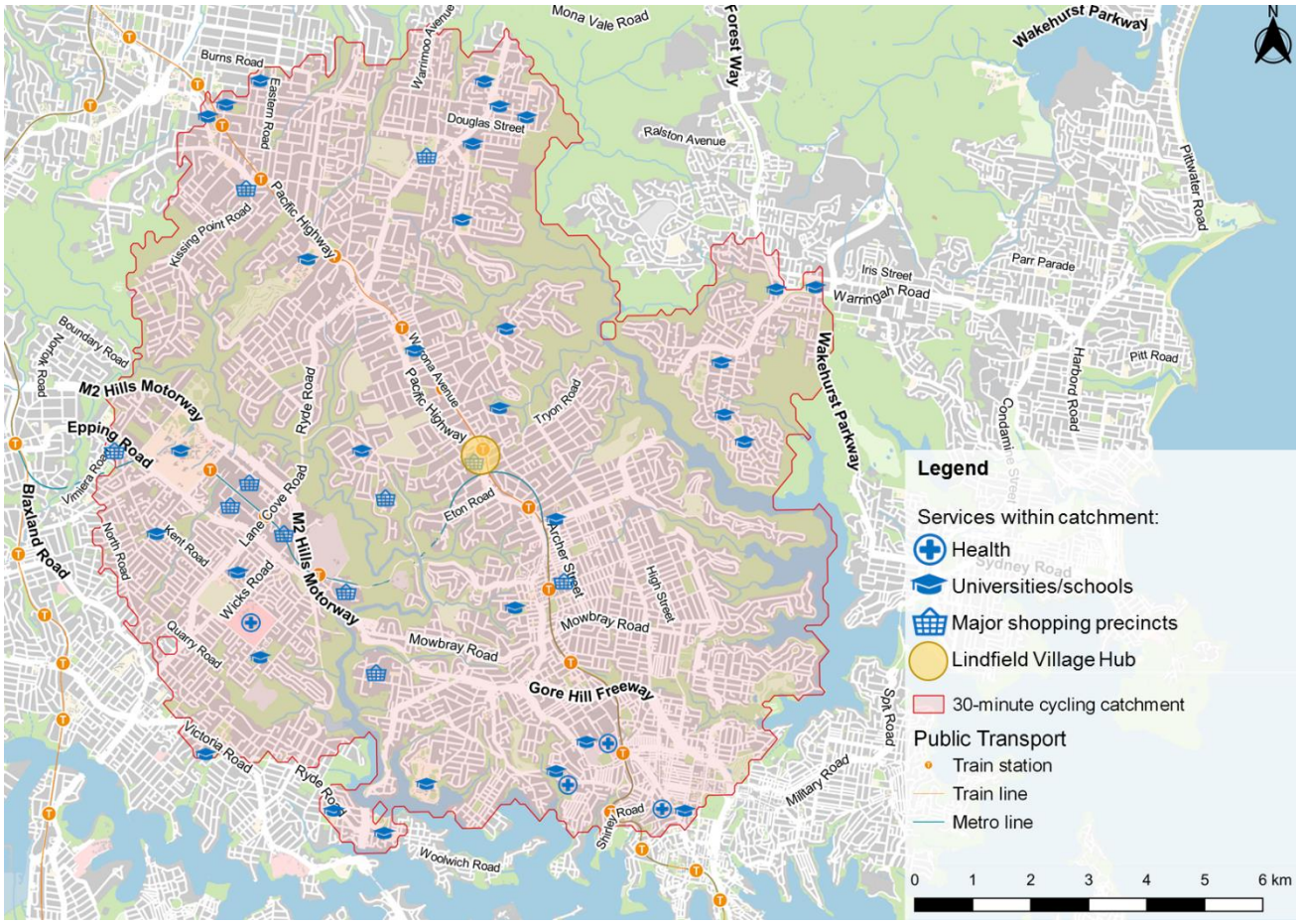


Source: Catchment information extracted from TravelTime platform, 2019

Figure 4.2 Local services within 10-minute walking catchment of LVH

4.3 CYCLING CATCHMENT

Figure 4.3 shows the productivity and liveability destinations within the 30-minute cycling catchment of LVH. These include major health, education and retail precincts. The main strategic centres accessible by cycling are Chatswood and Macquarie Park.



Source: Catchment information extracted from TravelTime platform, 2019

Figure 4.3 Local services and centres located within 30-minute cycling catchment of LVH

4.4 SUMMARY

In summary, the LVH site is strategically well positioned to accommodate a mixed-use development with high quality recreational and community uses as it is aligned with the objectives of the Lindfield Local Centre DCP, Future transport 2056 and the Greater Sydney Region Plan, based on the following:

- located within a 10-minute walking catchment of several local services including retail, supermarkets, educational and recreational
- located within 30-minutes of several employment, health and educational centres or precincts via public transport
- located within 30-minutes of several productivity and liveability destinations via cycling, as well as the Chatswood and Macquarie Park strategic centres.

With consideration for the above and the commentary included in section 2.4, future planning of the Lindfield Local Centre should seek opportunities to maximise the ability to walk and cycle to/from the above locations via improvements to the walking and cycling networks.

5 REVISED MASTERPLAN

5.1 LAND USES

The land uses proposed as part of the revised masterplan for the LVH site are consistent with the land uses approved in the original masterplan for the site. However, the revised masterplan includes a minor increase to retail uses, no commercial uses and the residential dwelling yield is proposed to increase by 63 units, as summarised in Table 5.1.

In addition, the number of commuter parking spaces to be included within this development would be 135 spaces, with the remaining 105 spaces that were requested by Transport for NSW to be included in another site on the east side of the local centre.

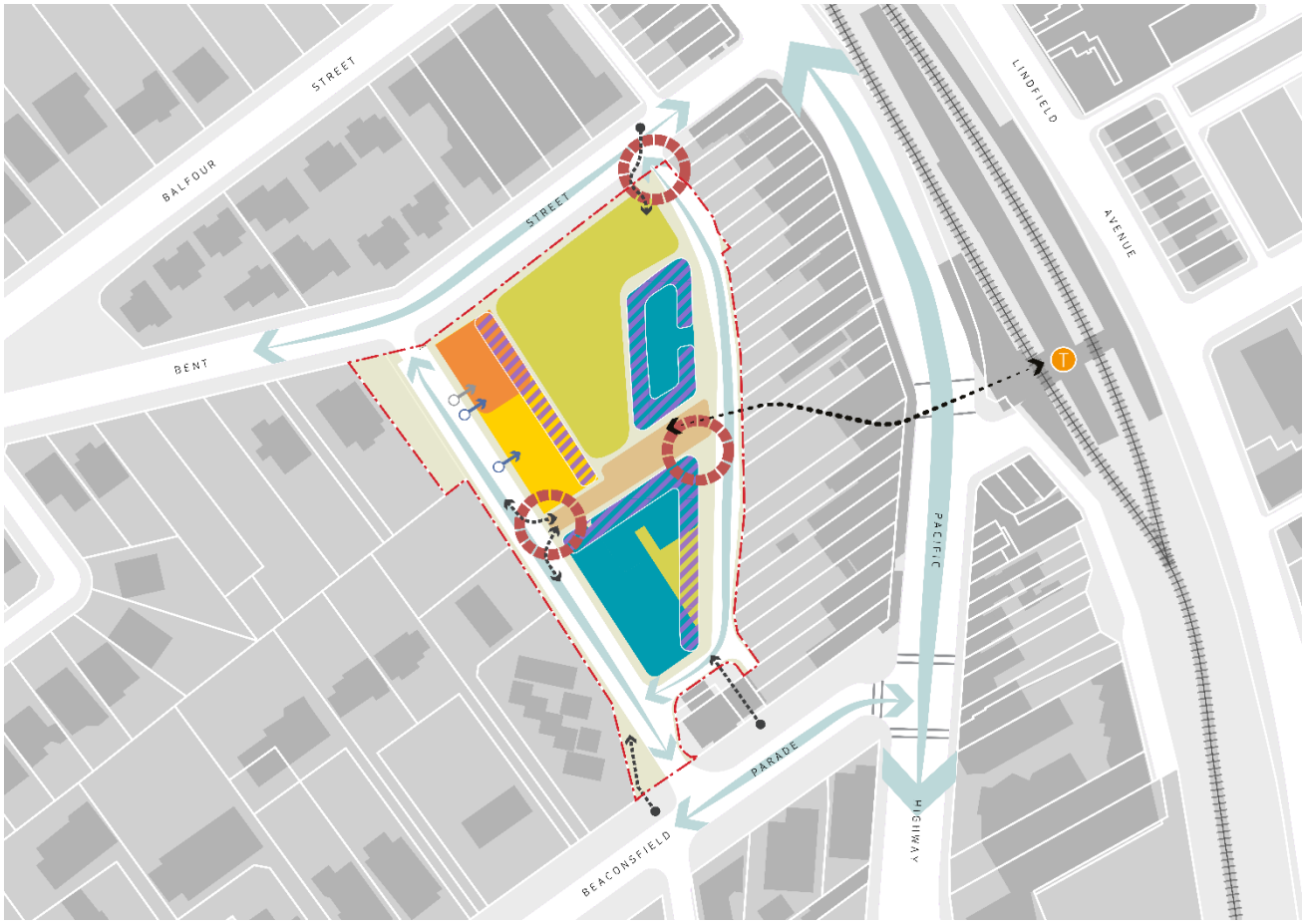
Table 5.1 Land use comparisons

Land use	Original masterplan scale/size	Revised masterplan scale/size	Difference
Community facilities	2,450m^2 GFA	2,450m^2 GFA	+0m^2 GFA
Major retail/supermarket	3,000m^2 GFA	4,650m^2 GFA	+1,650m^2 GFA
Specialty retail	2,000m^2 GFA	3,490m^2 GFA	+1,490m^2 GFA
Commercial	325m^2 GFA	0m^2 GFA	-325m^2 GFA
Childcare	530m^2 GFA	550m^2 GFA	+20m^2 GFA
Residential dwellings	95 units	158 units	+63 units
Commuter car parking for Transport for NSW	140 spaces	135 spaces	-5 spaces

5.2 INDICATIVE MASTERPLAN LAYOUT

The indicative layout plan for the site, as per the Allen Jack + Cottier Masterplan May 2019 is shown in Figure 5.1. As part of the development, the following transport related items are proposed:

- a new signalised intersection at the Pacific Highway and Beaconsfield Parade to allow vehicles to turn right out of Beaconsfield Parade and onto the Pacific Highway, heading southbound. No right turn from the highway.
- realignment of Drovers Way connecting Bent Street and Beaconsfield Parade
- conversion of Bent Lane to one-way southbound
- conversion of Bent Street to one-way eastbound north of Woodford Lane to allow left-turn out only onto the Pacific Highway (i.e. prohibition of the left-turn from the Pacific Highway into Bent Street).
- conversion of Woodford Lane to one-way southbound
- vehicle access to/from the site via the realigned Drovers Way
- on-street short-term parking in Drovers Way
- kerbside Kiss-and-Ride area and some short-term on-street parking in Woodford Lane
- approximately 740 basement car parking spaces including 135 commuter parking spaces on behalf of Transport for NSW and replacing majority of the parking supply in the existing Woodford Lane car park (some of these to be replaced on-street).

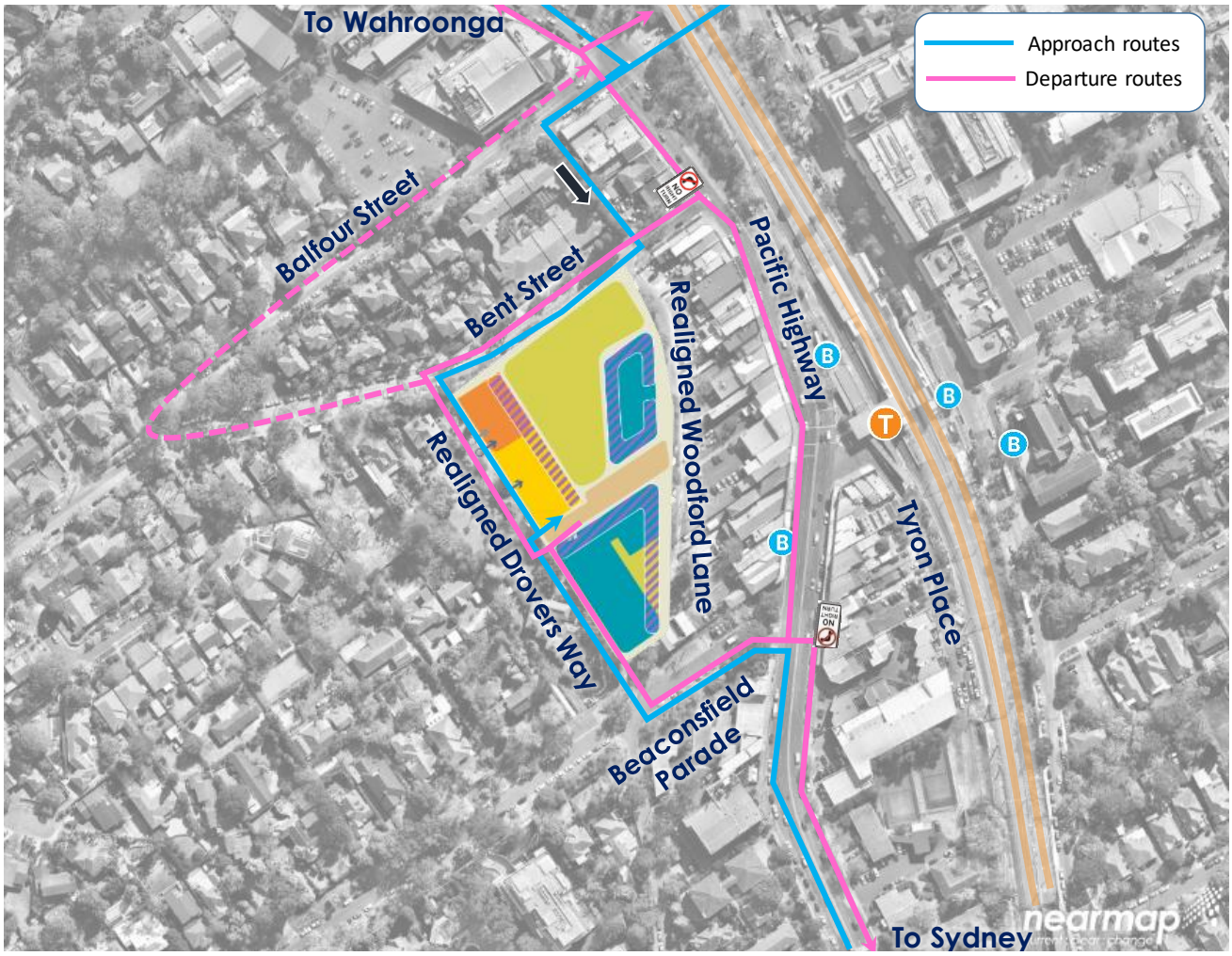


Source: *Allen Jack + Cottier*

Figure 5.1 Revised masterplan indicative site layout

5.3 VEHICLE ACCESS ROUTES

Based on the transport provisions discussed in section 5.2, vehicles accessing the site would generally use the intersections along the Pacific Highway at Beaconsfield Parade (left in), Bent Street (left-out) and Balfour Street (access available from all approaches). The anticipated vehicle access routes are indicatively shown in Figure 5.2.



Basemap source: *Nearmap and Allen Jack + Cottier*

Figure 5.2 Vehicle access routes

6 PARKING REQUIREMENTS

The car parking requirements for developments are typically defined by the Ku-ring-gai Local Centres Development Control Plan (DCP 2017) and the Guide to Traffic Generating Developments (Roads and Maritime Services, 2002).

For residential developments within 800 metres of a railway station, the NSW Governments State Environment Planning Policy No. 65 states that the minimum parking requirements for residents and visitors are the lesser of those set out in the Guide to Traffic Generating Developments or the local council requirements.

As such, the parking requirements for the proposed development are to be determined based on the requirements set out in the Guide to Traffic Generating Developments, as summarised in Table 6.1.

Table 6.1 Car parking requirements

Land use type	Units of measurement	Rate	Size	Required number of spaces
Residential	Number of 1 bedroom units	0.6 spaces per 1 bedroom unit	54	32
	Number of 2 bedroom units	0.9 spaces per 2 bedroom units	80	71
	Number of 3+ bedroom units	1.4 spaces per 3+ bedroom units	24	34
	Total number of units	1 spaces per 5 units for visitors	158	31
Major retail	GLFA	4.2m^2 per 100m^2 GLFA	4,650m^2	195
Specialty retail	GLFA	4.5m^2 per 100m^2 GLFA	2,530m^2	114
Community facilities (treated as office)	GFA	2.5 spaces per 100m^2	2,450m^2	61
Childcare centre (60 children capacity)	GFA	1 car space per 10 children (1)	550m^2	6
Total number of spaces required				**544**

(1) from the NSW Department of Planning Childcare Guideline August 2017, noting location within 400 metres of a station

Table 6.1 indicates that the development requires a minimum of 544 parking spaces for the proposed uses, with the following breakdown:

- 137 spaces for residents and 31 spaces for visitors
- 309 spaces for retail uses
- 61 spaces for community facilities
- 6 spaces for the childcare centre.

In addition to the above, Council has committed to providing 135 commuter parking spaces within the basement car park on behalf of Transport for NSW as well as replacing the existing 109 on-site spaces either in the basement car park or along the new (or realigned) roads.

As such, the LVH development would need to provide 788 spaces within the basement car park and/or on-street.

It is noted that given the proximity of LVH in relation to Lindfield Station, this parking provision should be treated as a maximum for the site to encourage public transport and active transport modes.

7 TRAFFIC IMPACT ASSESSMENT

This section of the report outlines the traffic impact assessment for the proposed development, including the estimated, traffic generation, the traffic distribution and assignment and the expected intersection operation. The assumptions used in this section of the report were largely developed by PeopleTrans as part of their recent work for Ku-rin-gai Council.

7.1 TRAFFIC GENERATION

Traffic generation rates for the proposed development have been sourced from the Guide to Traffic Generating Developments (Roads and Maritime Services, 2002) and the Guide to Traffic Generating Developments Updated traffic surveys (Roads and Maritime Services, 2013) for each of the assessed peak hours, as summarised in Table 7.1.

Table 7.1 Adopted traffic generation rates for weekday AM, PM and Saturday peak hours

Land use type	Weekday AM peak hour	Weekday PM peak hour	Saturday peak hour
Residential	0.19 trips per unit	0.15 trips per unit	0.15 trips per unit
Supermarket retail	6.9 trips per 100m^2 GLFA (50% of the PM rate)	13.8 trips per 100m^2 GLFA	14.7 trips per 100m^2 GLFA
Faster trade retail	1.15 trips per 100m^2 GLFA (50% of the PM rate)	2.3 trips per 100m^2 GLFA	1.3 trips per 100m^2 GLFA
Specialty retail	2.8 trips per 100m^2 GLFA (50% of the PM rate)	5.6 trips per 100m^2 GLFA	10.7 trips per 100m^2 GLFA
Community facilities (adopting the office rate)	1.6 trips per 100m^2 GFA	1.2 trips per 100m^2 GFA	1.2 trips per 100m^2 GFA
Childcare centre (60 children capacity)	0.8 trips per student 7:00am-9:00am peak period 70% during the peak hour	0.7 trips per student 4:00pm-6:00pm peak 70% during the peak hour	Not applicable
Commuter parking	0.5 trips per space	0.25 trips per space	Not applicable

It is noted that the adopted traffic generation rates are considered to be conservative (high), given the sites proximity to high frequency public transport. Should measures to reduce private vehicle usage (as discussed in section 8.3), be implemented, the traffic generation for the development would likely be reduced.

Adopting the above rates, the estimated traffic generation during weekday AM, PM and Saturday peak hours are summarised in Table 7.2, with further information included in Appendix B.

Table 7.2 Traffic generation for weekday AM, PM and Saturday peak hours

Land use type	Size	Weekday AM peak hour (vehicles)	Weekday PM peak hour (vehicles)	Saturday peak hour (vehicles)
Residential	158 units	30	24	24
Supermarket retail (1)	3,800m^2 GFA (2)	210	420	447
Faster trade retail (1)	850m^2 GFA (2)	8	16	9
Specialty retail (1)	3,492m^2 GFA (2,530 GLFA)	57	113	217
Community facilities	2,450m^2 GFA	39	30	29
Childcare centre	60 children	34	30	0
Commuter parking	135 spaces	68	34	0
	Total	**446**	**667**	**726**

(1) Includes a 20% reduction for linked multiple-purpose trips per RMS guidelines

(2) The project team advised that there would be limited difference between the GFA and GLFA for the supermarket and faster trade uses.

In addition, the adopted directional splits are summarised in summarised in Table 7.3.

Table 7.3 Directional split assumptions

Land use type	AM peak hour		PM peak hour		Saturday peak hour	
	In	Out	In	Out	In	Out
Residential	20%	80%	60%	40%	50%	50%
Retail	50%	20%	50%	50%	50%	50%
Community facilities	50%	50%	50%	50%	50%	50%
Childcare centre	55%	45%	45%	55%	-	-
Commuter parking	100%	0%	0%	100%	-	-

7.2 DISTRIBUTION AND ASSIGNMENT

Considering the 2016 census data, existing traffic data, the existing and planned road network, the location of the site relative to the Pacific Highway and the access routes discussed in section 5.3, the directional distribution and assignment assumptions for the peak hourly traffic generation are summarised in Table 7.4.

Table 7.4 Trip distribution and assignment assumptions

Use	North	East	South	West
Residential	20%	-	80%	-
Retail	60%	10%	25%	5%
Community facilities	60%	10%	25%	5%
Childcare centre	60%	10%	25%	5%
Commuter parking	55%	25%	15%	5%

7.3 FUTURE INTERSECTION OPERATION

The site generated peak hourly traffic volumes, the assignment and distribution assumptions summarised above and background growth to the turning movements at all intersections have been applied to assess the operational performance of the intersections for the expected year of opening of 2024 and plus 10 years (2034). For comparative purposes, the future year conditions without the development have also been included in the assessment.

The future year base conditions have been estimated by applying an annual compound growth of 2 percent per year to all turning movements at each intersection. However, this growth was not applied to the through movements along the Pacific Highway, noting the observed annual decrease in traffic volumes (see section 2.1.1).

7.3.1 YEAR OF DEVELOPMENT OPENING (2024)

The modelling results for the AM, PM and Saturday peak hours in 2024 are discussed below and summarised in Table 7.5 to Table 7.7 for both the without development and with development conditions.

2024 without the LVH development

The modelling for 2024 without the development indicates the following:

- The intersection of the Pacific Highway, Balfour Street and Havilah Road would continue to operate at or near capacity during all peak hours with some marginal increases to vehicle queuing and average vehicle delay of the intersection.
- The intersection of the Pacific Highway and Beaconsfield Parade would operate well, with minimal delay and vehicle queues noting it currently has a left-in and left-out arrangement.
- The intersection of the Pacific Highway and Strickland Avenue would continue to experience extensive delays for vehicles entering the Pacific Highway.

It is understood that the signalisation of Strickland Avenue at the Pacific Highway as proposed in the Lindfield Local Centre Transport Network Model Study Report is likely to be undertaken in the near future to improve access between the Pacific Highway and the east side of the Local Centre. These signals have been assumed in the post-development modelling to enable an assessment of the impact of the LVH development on a new signalised intersection at this location.

2024 with the LVH development

The modelling results for 2024 with the development and including a new signalised intersection at Beaconsfield Parade and Strickland Avenue (as well as all items discussed in section 5.2) indicates the following:

- The overall operation of the intersection of the Pacific Highway, Balfour Street and Havilah Road would deteriorate during all peak hours. This is generally due to increased demand for the right turn from the Pacific Highway to Balfour Street, which is currently exceeding the available capacity (a 25 metre right turn bay).
- A new signalised intersection at the intersection of the Pacific Highway and Beaconsfield Parade would operate satisfactorily with a level of service of C or better during all peak hours.
- A new signalised intersection at the intersection of the Pacific Highway and Strickland Avenue would operate satisfactorily with a level of service of A or B during all peak hours.

Based on the above, modifications to the intersection of the Pacific Highway, Balfour Street and Havilah Road would be required to support the cumulative impacts of the LVH development and surrounding growth.

2024 with the LVH development plus further intersection modifications

The following options that are consistent with the Lindfield Local Centre traffic management scheme as discussed in section 3.2 were tested at the intersection of the Pacific Highway, Balfour Street and Havilah Road:

- extension of the right turn on the north approach to approximately 90 metres
- banning of the right turn from Havilah Road (assuming most vehicles would continue straight to Balfour Street and then using Highfield Road to turn onto the Pacific Highway).

The modelling results for 2024 with the LVH development and the above intersection modifications are summarised in Table 7.5 to Table 7.7. The results show that with the abovementioned modifications the intersection of the Pacific Highway, Balfour Street and Havilah Road would operate at a similar level of service to todays' conditions in 2024 during the weekday AM and PM peak hours. However, on a Saturday, the right turn from the Pacific Highway to Balfour Street would experience increased delays and vehicle queuing.

Summary

The signalised intersection of the Pacific Highway, Balfour Street and Havilah Road would continue to operate above capacity in 2024 with or without the development including demand for the right turn on the north approach of the intersection that exceeds the available right turn bay length. Therefore, the Pacific Highway, Balfour Street and Havilah Road would require modifications in the future.

Banning the right turn from Havilah Road at the intersection would improve the current road safety conditions, noting the restricted sight lines from this approach that were discussed in section 2.1.2 and the number of crashes that have occurred historically at this location, as discussed in 2.10. Therefore, the right turn ban is likely to be needed in the future with or without the LVH development.

Further, the right turn demand currently exceeds the current right turn bay length on the north approach to the intersection and therefore it currently needs to be extended to cater for this demand. Further lengthening would be needed to cater for increased demand associated with the cumulative demands of the LVH and adjacent developments.

Table 7.5 Intersection operation – 2024 future year weekday AM peak

Intersection	2024 without development or intersection modifications							2024 with development and new signals at Beaconsfield and Strickland							2024 with development and intersection improvements						
	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of service	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of service	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of service
			South	East	North	West				South	East	North	West				South	East	North	West	
Pacific Highway, Balfour Street and Havilah Road	0.95	28	98	82	333	95	B	1.27	52	98	82	420	70	D	0.89	31	98	82	357	76	C
Pacific Highway and Pedestrian Crossing	0.58	3	17	-	98	-	A	0.96	34	16	-	196	-	C	0.57	2	16	-	35	-	A
Pacific Highway and Beaconsfield Parade	0.06	8	0	-	0	2	A	0.84	12	76	-	123	119	A	0.63	9	217	-	39	104	A
Pacific Highway and Strickland Avenue	1.58	>300	70	45	0	-	F	0.68	11	62	150	147	-	A	0.75	13	157	153	226	-	A

Table 7.6 Intersection operation – 2024 future year weekday PM peak

Intersection	2024 without development or intersection modifications							2024 with development and new signals at Beaconsfield and Strickland							2024 with development and intersection improvements						
	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of Service	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of Service	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of Service
			South	East	North	West				South	East	North	West				South	East	North	West	
Pacific Highway, Balfour Street and Havilah Road	1.033	38	98	82	243	92	C	1.69	105	98	82	550	76	F	1.07	36	98	82	283	117	C
Pacific Highway and Pedestrian Crossing	0.45	6	17	-	17	-	A	0.39	1	16	-	6	-	A	0.44	1	16	-	20	-	A
Pacific Highway and Beaconsfield Parade	0.35	12	0	-	0	3	A	0.58	17	161	-	114	123	B	0.81	33	266	-	122	93	C
Pacific Highway and Strickland Avenue	>2	>300	25	179	0	-	F	0.70	17	248	85	170	-	B	0.89	10	119	84	82	-	A

Table 7.7 Intersection operation – 2024 future year Saturday peak

Intersection	2024 without development or intersection modifications							2024 with development and new signals at Beaconsfield and Strickland							2024 with development and intersection improvements						
	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of Service	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of Service	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of service
			South	East	North	West				South	East	North	West				South	East	North	West	
Pacific Highway, Balfour Street and Havilah Road	0.99	37	98	82	368	74	C	2.12	132	98	82	698	54	F	1.24	47	98	82	382	68	D
Pacific Highway and Pedestrian Crossing	0.67	4	17	-	24	-	A	1.01	31	16	-	12	-	C	0.57	2	16	-	53	-	A
Pacific Highway and Beaconsfield Parade	0.07	8	10	-	0	2	A	0.75	10	143	-	105	153	A	0.73	14	131	-	122	150	A
Pacific Highway and Strickland Avenue	>2	>300	29	110	0	-	F	0.60	15	65	106	214	-	B	0.60	15	80	106	200	-	B

7.3.2 YEAR OF DEVELOPMENT OPENING PLUS 10 YEARS (2034)

The intersection operation modelling results for the AM, PM and Saturday peak hours, 10 years post-development (2034) are summarised in Table 7.8 to Table 7.10. The results show that despite the proposed modifications to the intersection of the Pacific Highway, Balfour Street and Havilah Road, the intersection operation would continue to get worse in the future due to growth of the surrounding area.

It is noted that by banning the right turn from Havilah Road to the Pacific Highway, the modelling assumes that most of these vehicles would instead continue through to Balfour Street and then using the local road network to the north to regain access to the Pacific Highway. However, as this intersection performance deteriorates over time, it is expected that vehicles would prefer to travel further north to access the Pacific Highway from the east at locations such as Killara or Gordon depending on their destinations. Alternatively, people may prefer to use public transport modes, where possible. Therefore, it is recommended that future planning for the local centre consider improvements to existing alternative accesses between the east side of the Local Centre and the Pacific Highway as well as measures to encourage alternative to driving during peak periods.

Table 7.8 Intersection operation – 2034 future year weekday AM peak

Intersection	2034 without development or intersection modifications							2034 with development and all intersection improvements						
	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of service	Degree of saturation	Average delay (seconds)	95th percentile queue (m)				Level of service
			South	East	North	West				South	East	North	West	
Pacific Highway, Balfour Street and Havilah Road	0.92	34	98	82	405	111	C	0.95	44	98	82	440	101	D
Pacific Highway and Pedestrian Crossing	0.57	3	16	-	92	-	A	0.78	2	16	-	20	-	A
Pacific Highway and Beaconsfield Parade	0.45	8	0	-	0	2	A	0.70	9	224	-	60	113	A
Pacific Highway and Strickland Avenue	1.93	>300	215	65	0	-	F	0.85	16	192	195	302	-	B

Table 7.9 Intersection operation – 2034 future year weekday PM peak

Intersection	2034 without development or intersection modifications							2034 with development and all intersection improvements						
	Degree of saturation	Average delay (seconds)	95th Percentile Queue (m)				Level of service	Average delay (seconds)	Average Delay (seconds)	95th percentile queue (m)				Level of service
			South	East	North	West				South	East	North	West	
Pacific Highway, Balfour Street and Havilah Road	1.25	57	98	82	262	128	D	1.36	61	98	82	417	233	E
Pacific Highway and Pedestrian Crossing	0.44	4	16	-	23	-	A	0.44	1	16	-	22	-	A
Pacific Highway and Beaconsfield Parade	0.35	12	0	-	0	3	A	0.81	35	268	-	122	100	C
Pacific Highway and Strickland Avenue	>2	>300	42	233	0	-	F	0.82	11	96	101	109	-	A

Table 7.10 Intersection operation – 2034 future year Saturday peak

Intersection	2034 without development or intersection modifications							2034 with development and all intersection improvements						
	Degree of saturation	Average delay (seconds)	95th Percentile Queue (m)				Level of service	Average delay (seconds)	Average Delay (seconds)	95th percentile queue (m)				Level of service
			South	East	North	West				South	East	North	West	
Pacific Highway, Balfour Street and Havilah Road	1.19	56	98	82	378	95	D	1.45	72	98	82	526	67	F
Pacific Highway and Pedestrian Crossing	0.72	3.4	16	-	33	-	A	0.58	2	16	-	68	-	A
Pacific Highway and Beaconsfield Parade	0.43	8	0	-	0	2	A	0.74	15	146	-	122	162	B
Pacific Highway and Strickland Avenue	>2	>300	58	114	0	-	F	0.60	17	93	133	206	-	B

8 PUBLIC AND ACTIVE TRANSPORT ASSESSMENT

8.1 PUBLIC TRANSPORT DEMANDS

8.1.1 ASSUMPTIONS

The potential demand for public transport generated by the proposed LVH development for residents and employees has been developed based on the 2016 journey to work mode shares for the local area, as discussed in section 2.9 and a range of other assumptions as documented in Table 8.1.

Table 8.1 Assumptions for the public transport demand assessment

Assumption	Value/rate	Source
Average number of people per dwelling	2.6	2016 Census Summary, Australian Bureau of Statistics
Working population as proportion of total population	0.54	Inferred from 2016 Journey to Work statistics for employment in Lindfield and surrounds
Number of employees: Retail use Community use	 1 employee per 50m^2 1 employee per 100m^2	

8.1.2 RESIDENT DEMAND

Approximately 410 residents are expected to live within the 158 dwellings in LVH (as per section 5.1). It is expected on average, 220 of these residents would commute to work during the morning peak period. Adopting the 2016 journey to work statistics (section 2.9.1), approximately 100 residents may travel to work via train (approximately 45% of residents) and the occasional (less than 1) resident (less than 1% of residents) would use the bus, during the peak period.

8.1.3 EMPLOYEE DEMAND

Approximately 205 employees are expected to work within the LVH retail and community spaces. The same number of employees are assumed to commute to work during the morning peak period. Adopting the 2016 journey to work statistics (section 2.9.2), approximately 35 employees may commute to LVH via train (approximately 17% of employees) and less than five via bus (approximately 2% of employees) during the peak period.

8.1.4 PUBLIC TRANSPORT IMPACT

Based on the above calculations, there may be 140 additional customers utilising public transport services in Lindfield to travel to and from work during each peak period. Majority of these customers (approximately 135 per peak period) are likely to use Lindfield Station (and the T1 North Shore Line).

As discussed in section 2.3, there is spare capacity on rail services at Lindfield during the peak periods. Outbound services were observed to have plenty of spare capacity, while citybound services were operating at up to 90 percent seated capacity. Subsequently, the additional 135 customers spread over the peak period are unlikely to cause (or significantly worsen) congestion at Lindfield Station.

As discussed in 2.2, the introduction of Sydney Metro between Chatswood and Sydenham would increase capacity of the north-south lines between Chatswood and the Sydney CBD. This increased capacity would offset the increased demand generated by LVH at downstream locations, such as North Sydney.

It is noted the above analysis only accounts for journey to work trips, and does not include other trip purposes including retail, recreational and education trips. However, during the peak periods these other trip purposes generally represent a small proportion of trips compared to work commuters.

8.2 BICYCLE PARKING REQUIREMENTS

The bicycle parking requirements for the development as per the Ku-ring-gai Local Centres Development Control Plan (DCP 2017) are set out in Table 8.2.

Table 8.2 Bicycle parking requirements

Land use type	Units of measurement	Rate	Size	Minimum number of bicycle spaces required
High density residential	Number of units	1 space per 5 units for residents	158 units	31
		1 space per 10 units for visitors		16
Retail	GFA	1 bicycle storage locker per 600m^2 GFA for staff	8,142m^2 GFA	14
		1 bicycle space per 2,500m^2 GFA for visitors		3
Total				**64**

Based on the above, the development should include a minimum of 64 bicycle spaces, including a mixture of secure spaces for residents and employees and easily accessible spaces for visitors. This bicycle parking provision should be considered as a minimum provision. Any additional bicycle parking would assist in encouraging cycling and reducing reliance on private vehicles for residents, employees and visitors to the site and the broader Lindfield Local Centre.

Further, end-of-trip facilities should also be considered for use by employees of the proposed retail and community uses.

8.3 REDUCING RELIANCE ON PRIVATE VEHICLES

Whilst commercial office-related vehicle trips are generally the sector which generates the highest volume of traffic, for the LVH to be sustainable and successful in supporting the scale of development proposed, travel demand management (TDM) should be applied to reduce reliance on private vehicle (particularly single-occupancy).

TDM for the development should be considered within the masterplan development controls, and local planning instruments, in the following ways:

Provide a mixed-use community

The location of the proposed mixed use development takes advantage of the established nearby area including providing walkable access to local services, schools and parks as discussed in section 4.2. In addition, the location of residences in the vicinity of retail and some employment increases the potential for trip containment within the Lindfield Local Centre.

Provide new residents and employees with a transport package including information and discounts

To reduce the level of private car usage in favour of more sustainable modes of travel such as walking, cycling and public transport, a travel plan should be prepared and given to future residents and employees of LVH. These personalised sustainable transport strategies assist in modifying travel behaviour through communicating relevant travel choice information to the community. They include:

— travel access guides for residents

— workplace travel plans for employees.

The supplied information should be maintained and updated, so that the people living and working in LVH actually receive up-to-date information.

Limit parking provision

Parking is one of the most challenging aspects of any transit oriented design. Over provision of parking discourages public transport use. An appropriate amount of short-stay parking is needed to support the retail activity. Where possible, opportunities to limit the amount of parking provided by sharing parking between the various uses and/or reducing the parking provision for residents should be considered. As discussed in section 6, the parking provisions set out in this report should be treated as a maximum number of spaces and where possible, the number of spaces provided in the next phase of LVH's design should be reduced.

The parking provisions should ideally cater for people who choose this location because of its sustainable transport options and do not need a car, or to pay for a car space, i.e. some dwellings are built without parking spaces.

Other measures

Table 8.3 includes a range of other measures which could be considered for the LVH development to reduce the reliance on private vehicles by future residents, employees and visitors, as well as minimising the overall impact of the proposed car park on the surrounding network.

Table 8.3 Identified measures to reduce private vehicle use and parking impacts

Measure	Description
Car share provisions	Provide capacity for car share facilities in the basement car park (e.g. GoGet) for use by residents and employees and on-street for use of visitors to reduce the need for residents and employees to own a car and/or drive during peak periods. use over private vehicles. *Smarter Parking (NRMA, 2019)* indicates that *one shared vehicle removes around 10 private vehicles from public roads*
Ride share provisions	Provide capacity for ride share facilities on-street to reduce the need for residents and employees to own a car, though making it accessible to ride-share, particularly during off-peak periods.
Park-and-ride	Opal users can park in commuter car parks and tap on at stations to access free parking promoting use of public transport rather than private vehicles for journeys to work.
Smart parking	Implement a real time app for the proposed commuter and public parking to reduce unnecessary traffic circulation and congestion, reduce the time needed to find a space and improve the turnover of the spaces provided

8.4 REDUCING VEHICLE EMISSIONS

In line with the future thinking objectives of Future Transport 2056 and the North District Plan, the proposed basement car park should consider measures that reduce vehicle emissions such as the following:

- providing electric vehicle charging points within the car park, if possible
- installing the relevant electric circuitry within the car park to allow for future provision of charging points, if required
- ensure that the basement car park can continue to be used by future vehicle types, the proposed development

8.5 ADAPTABLE BASEMENT

The potential for the proposed basement car park to be fully or partially adapted for different users in the future should be considered during the LVH's subsequent design phases. Future proofing the car park for non-transport related uses could require extensive design changes such, as increased floor to floor heights, specific placement of columns and space proofing for an increased number of lifts, as well as increased number of utilities and facilities.

Other examples of uses that have been retrofitted into other basement car parks without the need for extensive design considerations include bike hubs, urban farms, yoga studios and other facilities that require limited light and ventilation.

Given the sites proximity to public transport, the basement car park is well positioned to be transformed into a large bicycle hub that could support not only the development but also the broader Local Centre.

Notwithstanding the above, flexibility within the car park design would encourage a more sustainable future for the car park, while maintain longevity in the future, where the certainty of private vehicle use and trends associated with new vehicle technological advancements are largely unknown.

8.6 MOVEMENT AND PLACE CONSIDERATIONS

Currently there is limited place function on either Woodford Lane or Drovers Way. Woodford Lane principally provides rear access to properties and is characterised by long driveways with single access to shops.

Drovers Way is a one-way route within the Woodford Road car park site. Together with Woodford Lane, the two links provide the perimeter road of the car park site. No significant place making features currently exist on either road.

Increasing the place function of streets immediately adjacent to the LVH is critical in developing an attractive hub for all users and customers. A higher place function results in an increased destination value of an area, helping to achieve the desired vibrant environment.

For streets close to and including the area bounded by the Pacific Highway, Balfour Street, the realigned Drovers Way and Beaconsfield Parade, the following high-level strategies may be useful in improving and/or increasing place function:

- Implementing a kerbside parking strategy to provide the right type of parking for each street. Appropriate placement and type of parking could encourage people to come, stay and go, as required. This may include time-limited on-street parking or public car parks, in addition to commuter, private car parks and loading zones.
- Increase the quantity of bicycle parking spaces across the area, to increase availability and further encourage cycling for short-trips to and from the LVH.
- Introduce lower vehicle speeds through installation of shared zones, local area traffic management, high pedestrian activity areas and other similar traffic calming measures. Reducing vehicle speeds in pedestrian heavy areas can improve pedestrian and cyclist comfort levels, perceived safety concerns and encourage walking and cycling.

- Increase the number of pedestrian and cyclist connections across the Pacific Highway.
- Create safe, secure and spacious environments for pedestrians to encourage foot traffic and street level activity and therefore resulting in greater lengths of stay. This may include providing wider footpaths, where possible to encourage outdoor dining areas, as well as public seating to promote more pedestrian activity.
- Increase appeal of the environment by creating a "nicer place to be" including providing trees, parklets, park benches and green spaces.

8.7 PEDESTRIAN ACCESS CONSIDERATIONS

Given the existing constraints at the intersection of the Pacific Highway, Balfour Road and Havilah Road, all traffic volumes generated by the site would not be able to use this intersection to access the site. Therefore, a new signalised intersection at Beaconsfield Parade is required.

While the new signals at the intersection of the Pacific Highway and Beaconsfield Parade would increase pedestrian crossing opportunities across the Pacific Highway, the signals would be located approximately 100 metres[1] south of the existing mid-block signalised pedestrian crossing near Lindfield Railway Station. In this regard, it is noted that the Traffic Signal Design Guidelines (Roads and Maritime Services, 2008) states:

> *A signalised mid-block marked foot crossing must be avoided within 130m of an adjacent signalised intersection. This is to avoid unintended and possibly misinterpreted sighting of the adjacent intersection signals. It is also to keep the total number of signal sites to a manageable level and avoid unnecessary impact on the overall network performance. It is expected that pedestrians will not consider it too onerous to walk 130m to a signalised intersection.*

On the above basis, we have investigated several options and their implications for the primary users of the existing signalised pedestrian crossing. These options are illustrated in Figure 8.1 and described below:

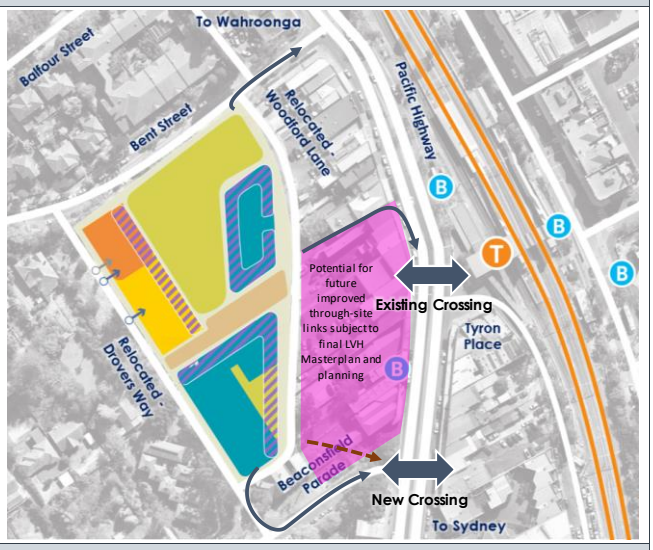
- **Option 1** – deliver a new signalised intersection (including pedestrian crossings) at the Pacific Highway and Beaconsfield Parade and maintain the existing signalised intersection at its current location
- **Option 2** – remove the existing signalised pedestrian crossing and replace with new signals at the intersection of Pacific Highway and Beaconsfield Parade
- **Option 3** – relocate the existing mid-block pedestrian crossing to approximately 130 metres north of the new signalised intersection at Pacific Highway and Beaconsfield Parade
- **Option 4** – replace the existing mid-block pedestrian crossing with a new bridge that links the station concourse with the west side of the Pacific Highway

The above options are compared in Table 8.4 with respect to safety, impacts and amenity for the user groups including consideration for the grade changes that would need to be climbed, as well as impacts to property including potential property acquisition. This comparison is based on the Allen Jack + Cottier indicative masterplan May 2019 and current location of key destinations for pedestrians including the bus stops and through site links between the Pacific Highway and Woodford Lane car park. The final analysis would depend on the adopted masterplan.

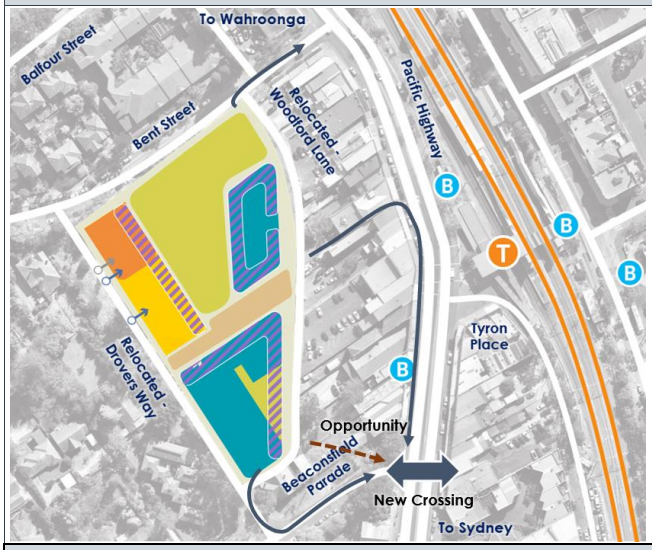
[1] Distance between signals measures as stop line to stop line

Existing

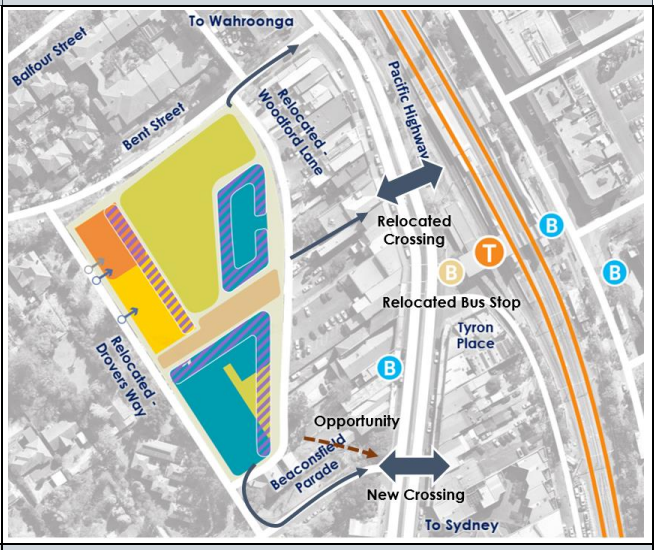
Option 1



Option 2



Option 3



Option 4

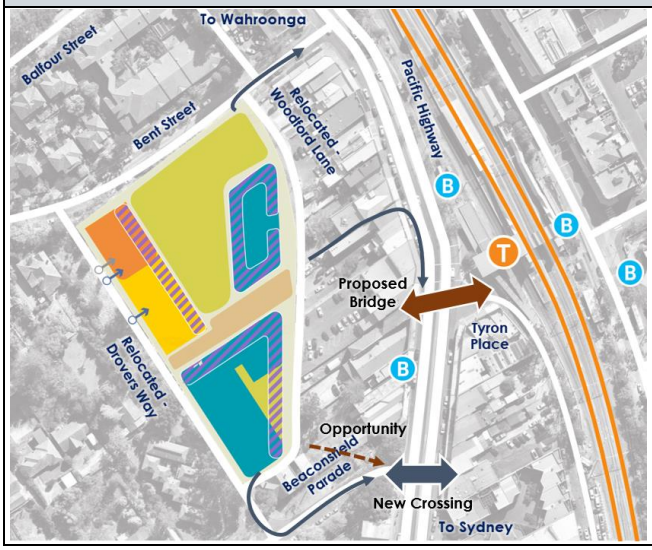


Figure 8.1 Summary pedestrian flow and crossing options

Table 8.4 Comparison of alternative crossing options

Scenario (see above)	Safety for all users	AMENITY AND IMPACT ON USER GROUPS					Property impacts	Average score	Feasibility of implementation
		Pacific Highway traffic	Park-and-Ride	Kiss-and-Ride	Pedestrians (LVH)	Pedestrians (general)			
Option 1	3	3	3	3	4	4	3	3.3	Requires measures to minimise the risk of driver confusion due to the proximity of signals (<130m). These measures are typically implemented at similar locations across Sydney.
Option 2	1	3	1	1	2	1	3	1.7	Requires physical measures (including fencing) to prevent jay-walking along the primary desire line to/from station
Option 3	2	3	3	3	3	2	3	2.7	Requires property acquisition and additional civil works to increase the footpath width on the eastern side of Pacific Highway and provide adequate sight lines for northbound motorists on the Pacific Highway of the relocated crossing Requires physical measures (including fencing) to prevent jay-walking along the primary desire line to/from station
Option 4	4	3	2	2	2	2	2	2.4	Requires physical measures (including fencing) to prevent jay-walking along the primary desire line to/from station

Rating	1. Significantly poor outcome	2. Poor outcome	3. Neutral or unchanged	4. Improved outcome	5. Significantly improvement outcome

Based on the findings presented in Table 8.4, it is evident that Option 1 (maintain existing mid-block pedestrian crossing with new signalised intersection) ranks highest with respect to the criteria considered. It is noted that Option 2, 3 and 4 may result in a hostile road environment due to the requirement for pedestrian fencing which segregates the eastern and western sides of the Lindfield local centre. Option 4 requires an extensive system of stairs and/or lifts and ramps. The fencing would presumably be located over the length of the median between Balfour Street and the new signals at Beaconsfield Street to avoid alienation of the kerbs for Bus Zones, parking, servicing etc. The provision of fencing over such a length on what is a relatively narrow width also creates a potentially hazardous situation for motorists on the Pacific Highway in the event that a wayward vehicle causes damage and intrusion of the fence into the adjacent traffic lane. Option 2, 3 and to a less extent Option 4 will encourage unsafe pedestrian crossing over the fencing.

Option 1 improves the existing permeability of the road environment, which promotes the ease of pedestrian movements between the station and the local centre street-level activity, maintains the place-based function of local centre street environments and minimises visual impact on the streetscape. Whilst it is acknowledged that the proximity of existing mid-block signalised crossing does not satisfy the 130 metre distance set out in the Traffic Signal Design Guidelines, the following comments in support of retention of the crossing are made:

- There are numerous examples of closely spaced signalised intersections (less than 130 metres apart) throughout Sydney, including on the Pacific Highway at nearby Gordon, where a signalised pedestrian crossing was installed at Moree Street less than 130 metres from two existing signalised intersections at St John Avenue and Dumaresq Street to improve road safety, despite a pedestrian bridge being located 65 metres from the crossing
- Mitigation measures are available to minimise the risk of driver confusion. These are commonly provided at closely spaced intersections including at the Pacific Highway in Gordon. These measures include:
  - Use of 300 millimetre lanterns for the displays to motorists approaching the initial intersection
  - The angling down of relevant signal lanterns at the second signalised facility
  - The appropriate / strategic use of mast arm signal displays to minimise any potential for ‘see through’ misinterpretation of the immediate approach signal displays
  - The provision of horizontal louvres placed on the green lenses to reduce their visibility from upstream intersections
  - operating the two signals from a single traffic controller.

Based on the above, Option 1 which includes a new signalised intersection (including pedestrian crossings) at the intersection of the Pacific Highway and Beaconsfield Parade and maintains the existing signalised intersection at its current location, is preferred.

Further, significant safety benefits can be achieved by reducing the cycle time for the existing pedestrian signals and adjacent intersections at certain times of the day and therefore decreasing the time that pedestrians need to wait at the crossing and minimising the level of jay-walking or mid-block crossing activity. The existing pedestrian crossing is allocated approximately 10 minutes of pedestrian crossing time in every hour, with the remainder being given to through traffic along the Pacific Highway. It is appreciated that this would have an impact on traffic along the Pacific Highway particularly during peak periods. However, the impacts to traffic outside of peak hours are expected to be less significant and this also the periods when pedestrians are more likely to misjudge the gaps in traffic and jay-walk. Further, any reduction in signal timing along the Lindfield Local Centre section of the Pacific Highway would demonstrate a willingness to deliver on the strategy set out in Future Transport 2056 with respect to balancing the need for convenient access while enhancing the attractive of the Lindfield Local Centre. Increasing the green time at certain times of the day will also assist the less mobile and those with young children to feel more at ease in making the crossing.

9 CONCLUSIONS

In 2016, Ku-ring-gai Council's Masterplan for the Lindfield Village Hub (LVH) redevelopment site was incorporated into Ku-ring-gai Council's Local Environment Plan (LEP) and Development Control Plan (DCP). However, recent changes to the regions strategic plans and policies has prompted Council to revisit the Masterplan and subsequently lodge a new planning proposal for the site, which would include a library, a community centre and large public open space, retail stores, residential buildings and basement car park.

Access to/from the site would generally be available from the Pacific Highway via a new signalised intersection at Beaconsfield Parade, left-out at Bent Street and the existing signalised intersection at Balfour Street and Haviland Road.

Based on the Roads and Maritime Services Guide to Traffic Generating Developments, the LVH development would generate the need for 544 parking spaces in addition to the replacement of existing parking spaces and provision of 135 commuter parking spaces for Transport for NSW.

Traffic modelling was completed along the Pacific Highway for the existing conditions, 2024 (year of development opening) and 2034 with and without the development. The modelling results indicate the following:

Existing conditions

The existing intersection of the Pacific Highway and Balfour Street/Havilah Road currently experience lengthy vehicle queues and delays on some approaches during the weekday and Saturday peak periods. However, overall the intersection operates satisfactorily.

The intersection of the Pacific Highway and Strickland Avenue experiences lengthy delays on Strickland Avenue.

2024 without the LVH development

The intersection of the Pacific Highway, Balfour Street and Havilah Road would continue to operate at or near capacity during all peak hours with some marginal increases to vehicle queuing and the average delay of the intersection. As proposed in the Lindfield Local Centre traffic management scheme, the right turn from Havilah Road to the Pacific Highway could be banned to gain some capacity at the intersection without the need for physical works.

The intersection of the Pacific Highway and Strickland Avenue would continue to experience lengthy delays on Strickland Avenue. Therefore, it would need to be signalised to safely accommodate vehicle access to/from Strickland Avenue and the eastern side of Lindfield Local Centre.

2024 with the LVH development

The LVH (and background growth from development in the area) would increase demand for the right turn into Balfour Street from the Pacific Highway. Therefore, the right turn bay would need to be extended to cater for this increased demand.

The cumulative impacts of the banned right turn from Havilah Road onto the Pacific Highway and an increased right turn bay from the Pacific Highway to Balfour Street would allow the intersection of the Pacific Highway, Balfour Street and Havilah Road to continue to operate as per existing conditions in 2024. However, the intersection would further deteriorate in 2034. Notwithstanding this, it is expected that drivers would prefer to travel further north to access the Pacific Highway from the east at locations such as Killara or Gordon depending on their destinations rather than using Balfour Street and the local road network to the west, as was conservatively assessed.

The intersection of the Pacific Highway and Beaconsfield Parade requires signalisation as part of the LVH to enable right turn movements onto the Pacific Highway from the development. Other vehicles may also use this access, reducing the number of vehicles that turn right out of Balfour Street.

Any further intersection improvements as per the Lindfield Local Centre traffic management scheme would assist to further improve the intersection of the Pacific Highway, Balfour Street and Havilah Road.

Several opportunities exist for improving pedestrian connectivity across the Pacific Highway. It is acknowledged that the proximity of the new signalised intersection at Beaconsfield Parade to the existing mid-block signalised crossing does not satisfy the 130 metre distance set out in the Traffic Signal Design Guidelines. However, providing both signals improves the existing permeability of the road environment for pedestrians, which promotes the ease of pedestrian movements between the station and the local centre street-level activity. It also maintains the place-based function of the Local Centre street environments and minimises visual impact on the streetscape. Mitigation measures are available and widely used at locations across Sydney to minimise the risk of driver confusion at closely spaced signals.

The development would likely generate around 140 additional customers utilising public transport services in Lindfield to travel to and from work during each weekday peak period. Majority of these customers are likely to use the rail services at Lindfield Station. This increased public transport demand could be accommodated by the public transport network.

The development should include a minimum of 64 bicycle spaces, including a mixture of secure spaces for residents and employees and easily accessible spaces for visitors. End-of-trip facilities should also be provided to encourage active transport modes for residents and employees.

Travel demand management measures should be considered for the development including a site specific travel plan, limiting parking provision and accommodating ride-sharing and car sharing on-site. Additionally, measures to reduce vehicle emissions such as providing electric vehicle charging points should be encouraged.

APPENDIX A

SIDRA INTERSECTION RESULTS

APPENDIX A-1
EXISTING CONDITIONS

MOVEMENT SUMMARY

Site: 1 [1. Pac-Balfour_2018_AM_Existing]

Network: 1 [Lindfield_2018 AM_Existing]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing AM peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	40	2.6	40	2.6	0.116	15.5	LOS B	2.5	18.3	0.31	0.39	0.31	38.3
2	T1	1167	6.0	1165	6.0	0.578	13.8	LOS A	13.3	97.9	0.43	0.40	0.43	31.3
3	R2	77	4.1	77	4.1	0.531	83.4	LOS F	5.8	41.9	1.00	0.77	1.00	3.1
Approach		1284	5.8	1282[N1]	5.8	0.578	18.0	LOS B	13.3	97.9	0.46	0.42	0.46	27.2
East: Balfour Street														
4	L2	19	16.7	19	16.7	0.838	78.4	LOS F	11.0	81.6	1.00	0.96	1.20	3.2
5	T1	79	1.3	79	1.3	0.838	74.6	LOS F	11.0	81.6	1.00	0.96	1.20	17.4
6	R2	112	8.5	112	8.5	0.838	78.4	LOS F	11.0	81.6	1.00	0.96	1.20	9.6
Approach		209	6.5	209	6.5	0.838	77.0	LOS F	11.0	81.6	1.00	0.96	1.20	12.5
North: Pacific Highway														
7	L2	171	1.2	171	1.2	0.748	25.7	LOS B	45.0	320.5	0.76	0.73	0.76	21.2
8	T1	2443	2.4	2443	2.4	0.748	19.1	LOS B	45.4	324.4	0.73	0.68	0.73	22.5
9	R2	126	7.5	126	7.5	0.672	67.1	LOS E	7.2	53.7	1.00	0.90	1.35	21.8
Approach		2740	2.5	2740	2.5	0.748	21.7	LOS B	45.4	324.4	0.74	0.70	0.76	22.3
West: Balfour Street														
10	L2	46	0.0	46	0.0	0.072	39.1	LOS C	2.2	15.6	0.70	0.70	0.70	28.2
11	T1	83	0.0	83	0.0	0.700	66.5	LOS E	10.8	75.8	0.99	0.85	1.05	17.7
12	R2	68	1.5	68	1.5	0.700	71.1	LOS F	10.8	75.8	0.99	0.85	1.05	17.7
Approach		198	0.5	198	0.5	0.700	61.7	LOS E	10.8	75.8	0.92	0.81	0.96	19.9
All Vehicles		4432	3.6	4429[N1]	3.6	0.838	25.0	LOS B	45.4	324.4	0.68	0.63	0.70	22.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	66.4	LOS F	0.2	0.2	0.94	0.94
P2	East Full Crossing	53	11.6	LOS B	0.1	0.1	0.39	0.39
P3	North Full Crossing	53	66.4	LOS F	0.2	0.2	0.94	0.94
P4	West Full Crossing	53	16.8	LOS B	0.1	0.1	0.47	0.47
All Pedestrians		211	40.3	LOS E			0.69	0.69

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

MOVEMENT SUMMARY

Site: 1 [1.Pac-Balfour_2018_PM_Existing]

Network: N101 [Lindfield_2018 PM_Existing]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing PM peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	85	0.0	84	0.0	0.617	27.6	LOS B	13.8	97.9	0.73	0.68	0.73	31.8
2	T1	1833	2.0	1813	2.0	0.617	20.7	LOS B	13.8	97.9	0.63	0.58	0.63	25.3
3	R2	98	2.2	97	2.2	0.397	74.8	LOS F	6.9	49.4	1.00	0.79	1.00	3.5
Approach		2016	1.9	1994 N1	1.9	0.617	23.6	LOS B	13.8	97.9	0.65	0.59	0.65	23.6
East: Balfour Street														
4	L2	21	0.0	21	0.0	0.889	85.0	LOS F	11.5	81.6	1.00	1.02	1.29	2.9
5	T1	83	0.0	83	0.0	0.889	81.2	LOS F	11.5	81.6	1.00	1.02	1.29	16.5
6	R2	115	2.8	115	2.8	0.889	85.0	LOS F	11.5	81.6	1.00	1.02	1.29	9.0
Approach		219	1.4	219	1.4	0.889	83.5	LOS F	11.5	81.6	1.00	1.02	1.29	11.8
North: Pacific Highway														
7	L2	219	0.0	219	0.0	0.221	25.0	LOS B	8.3	57.9	0.56	0.73	0.56	19.2
8	T1	1305	2.3	1305	2.3	0.650	23.3	LOS B	34.7	247.7	0.72	0.66	0.72	20.0
9	R2	99	2.1	99	2.1	0.920	95.3	LOS F	8.2	58.2	0.96	1.00	1.51	17.5
Approach		1623	1.9	1623	1.9	0.920	27.9	LOS B	34.7	247.7	0.72	0.69	0.75	19.4
West: Balfour Street														
10	L2	73	2.9	73	2.9	0.120	41.3	LOS C	3.6	26.0	0.73	0.72	0.73	27.5
11	T1	100	0.0	100	0.0	0.717	66.3	LOS E	10.9	76.5	0.98	0.85	1.05	17.9
12	R2	55	0.0	55	0.0	0.717	70.8	LOS F	10.9	76.5	0.98	0.85	1.05	17.9
Approach		227	0.9	227	0.9	0.717	59.4	LOS E	10.9	76.5	0.90	0.81	0.95	20.6
All Vehicles		4085	1.8	4063 N1	1.8	0.920	30.5	LOS C	34.7	247.7	0.71	0.67	0.74	20.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	65.5	LOS F	0.2	0.2	0.94	0.94
P2	East Full Crossing	53	16.8	LOS B	0.1	0.1	0.47	0.47
P3	North Full Crossing	53	65.5	LOS F	0.2	0.2	0.94	0.94
P4	West Full Crossing	53	17.8	LOS B	0.1	0.1	0.49	0.49
All Pedestrians		211	41.4	LOS E			0.71	0.71

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

MOVEMENT SUMMARY

Site: 1 [1.Pac-Balfour_2018_SAT_Existing]

Network: N101 [Lindfield_2018 SAT_Existing]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing SAT peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	41	0.0	41	0.0	0.158	18.6	LOS B	4.5	32.1	0.40	0.42	0.40	36.6
2	T1	1627	2.4	1618	2.4	0.792	20.1	LOS B	13.7	97.9	0.63	0.58	0.63	25.8
3	R2	117	0.9	116	0.9	0.497	76.7	LOS F	8.4	59.4	1.00	0.80	1.00	3.4
Approach		1785	2.2	1775[N1]	2.3	0.792	23.7	LOS B	13.7	97.9	0.65	0.59	0.65	23.1
East: Balfour Street														
4	L2	48	0.0	48	0.0	0.900	86.9	LOS F	11.5	81.6	1.00	1.03	1.32	2.8
5	T1	67	0.0	67	0.0	0.900	83.0	LOS F	11.5	81.6	1.00	1.03	1.32	16.2
6	R2	109	2.9	109	2.9	0.900	86.9	LOS F	11.5	81.6	1.00	1.03	1.32	8.8
Approach		225	1.4	225	1.4	0.900	85.7	LOS F	11.5	81.6	1.00	1.03	1.32	10.3
North: Pacific Highway														
7	L2	165	0.6	165	0.6	0.185	23.0	LOS B	6.7	47.2	0.53	0.69	0.53	20.6
8	T1	1655	2.4	1655	2.4	0.780	25.0	LOS B	47.6	339.8	0.80	0.75	0.80	19.0
9	R2	92	1.1	92	1.1	0.392	71.5	LOS F	6.3	44.3	0.96	0.78	0.96	21.0
Approach		1912	2.1	1912	2.1	0.780	27.1	LOS B	47.6	339.8	0.79	0.74	0.79	19.4
West: Balfour Street														
10	L2	45	0.0	45	0.0	0.076	42.1	LOS C	2.3	15.8	0.73	0.70	0.73	27.3
11	T1	60	0.0	60	0.0	0.668	68.2	LOS E	9.2	64.1	0.99	0.83	1.03	17.4
12	R2	68	0.0	68	0.0	0.668	72.7	LOS F	9.2	64.1	0.99	0.83	1.03	17.4
Approach		174	0.0	174	0.0	0.668	63.2	LOS E	9.2	64.1	0.92	0.80	0.95	19.7
All Vehicles		4096	2.1	4086[N1]	2.1	0.900	30.4	LOS C	47.6	339.8	0.74	0.69	0.76	19.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	66.4	LOS F	0.2	0.2	0.94	0.94
P2	East Full Crossing	53	15.9	LOS B	0.1	0.1	0.46	0.46
P3	North Full Crossing	53	66.4	LOS F	0.2	0.2	0.94	0.94
P4	West Full Crossing	53	16.8	LOS B	0.1	0.1	0.47	0.47
All Pedestrians		211	41.4	LOS E			0.70	0.70

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

MOVEMENT SUMMARY

Site: 4 [4. Pac-Ped_2018_AM_Existing]

Network: 1 [Lindfield_2018 AM_Existing]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing AM peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1320	5.7	1318	5.6	0.401	4.8	LOS A	2.2	16.3	0.32	0.29	0.32	12.0
Approach		1320	5.7	1318[N1]	5.6	0.401	4.8	LOS A	2.2	16.3	0.32	0.29	0.32	12.0
North: Pacific Highway														
8	T1	2617	2.5	2617	2.5	0.573	1.9	LOS A	12.9	91.9	0.13	0.12	0.13	48.5
Approach		2617	2.5	2617	2.5	0.573	1.9	LOS A	12.9	91.9	0.13	0.12	0.13	48.5
All Vehicles		3937	3.6	3934[N1]	3.6	0.573	2.8	LOS A	12.9	91.9	0.19	0.18	0.19	39.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 4 [4.Pac-Ped_2018_PM_Existing]

Network: N101 [Lindfield_2018 PM_Existing]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing PM peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1988	1.9	1963	1.9	0.440	5.1	LOS A	2.3	16.3	0.34	0.31	0.34	11.5
Approach		1988	1.9	1963[N1]	1.9	0.440	5.1	LOS A	2.3	16.3	0.34	0.31	0.34	11.5
North: Pacific Highway														
8	T1	1372	2.3	1372	2.3	0.300	0.7	LOS A	1.8	12.6	0.04	0.04	0.04	55.4
Approach		1372	2.3	1372	2.3	0.300	0.7	LOS A	1.8	12.6	0.04	0.04	0.04	55.4
All Vehicles		3360	2.0	3335[N1]	2.1	0.440	3.3	LOS A	2.3	16.3	0.22	0.20	0.22	32.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 4 [4.Pac-Ped_2018_SAT_Existing]

Network: N101 [Lindfield_2018 SAT_Existing]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing SAT peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1765	2.3	1755	2.3	0.587	5.5	LOS A	2.3	16.3	0.37	0.34	0.37	10.7
Approach		1765	2.3	1755[N1]	2.3	0.587	5.5	LOS A	2.3	16.3	0.37	0.34	0.37	10.7
North: Pacific Highway														
8	T1	1788	2.1	1788	2.1	0.391	1.1	LOS A	3.6	25.5	0.07	0.07	0.07	52.3
Approach		1788	2.1	1788	2.1	0.391	1.1	LOS A	3.6	25.5	0.07	0.07	0.07	52.3
All Vehicles		3554	2.2	3543[N1]	2.2	0.587	3.3	LOS A	3.6	25.5	0.22	0.20	0.22	34.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 7 [7. Pac-Strickland_2018_AM_Existing]

Network: 1 [Lindfield_2018 AM_Existing]

19S0090-Lindfield
Pacific Highway / Strickland Street
Existing AM peak hour
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1251	5.6	1251	5.6	0.332	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	40.0
3	R2	131	2.4	131	2.4	0.894	76.5	LOS F	5.5	39.0	0.98	1.53	2.53	19.2
Approach		1381	5.3	1381	5.3	0.894	7.3	NA	5.5	39.0	0.09	0.14	0.24	32.0
East: Strickland Avenue														
4	L2	295	0.4	295	0.4	0.450	10.8	LOS A	2.9	20.5	0.61	0.81	0.75	32.4
6	R2	8	25.0	8	25.0	1.404	1004.6	LOS F	4.3	36.5	1.00	1.20	1.65	1.6
Approach		303	1.0	303	1.0	1.404	38.5	LOS C	4.3	36.5	0.62	0.82	0.78	20.9
North: Pacific Highway														
7	L2	62	1.7	62	1.7	0.443	3.4	LOS A	0.0	0.0	0.00	0.04	0.00	40.0
8	T1	2407	2.6	2407	2.6	0.443	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	39.8
Approach		2469	2.6	2469	2.6	0.443	0.1	NA	0.0	0.0	0.00	0.01	0.00	39.8
All Vehicles		4154	3.3	4154	3.3	1.404	5.3	NA	5.5	39.0	0.08	0.11	0.14	33.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [7.Pac-Strickland_2018_PM_Existing]

Network: N101 [Lindfield_2018 PM_Existing]

19S0090-Lindfield
Pacific Highway / Strickland Street
Existing PM peak hour
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	2002	2.1	1996	2.1	0.519	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	218	0.5	217	0.5	0.574	19.0	LOS B	2.8	19.8	0.80	1.03	1.20	38.9
Approach		2220	1.9	2214 N1	1.9	0.574	1.9	NA	2.8	19.8	0.08	0.10	0.12	53.1
East: Strickland Avenue														
4	L2	202	1.0	202	1.0	0.209	7.0	LOS A	1.3	9.0	0.50	0.60	0.50	42.1
6	R2	29	0.0	29	0.0	3.406	2495.7	LOS F	21.7	151.8	1.00	1.46	2.89	0.7
Approach		232	0.9	232	0.9	3.406	323.7	LOS F	21.7	151.8	0.56	0.71	0.80	4.7
North: Pacific Highway														
7	L2	57	0.0	57	0.0	0.242	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	57.0
8	T1	1338	2.4	1338	2.4	0.242	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.2
Approach		1395	2.3	1395	2.3	0.242	0.2	NA	0.0	0.0	0.00	0.02	0.00	58.9
All Vehicles		3846	2.0	3840 N1	2.0	3.406	20.7	NA	21.7	151.8	0.08	0.11	0.12	27.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 7 [7.Pac-Strickland_2018_SAT_Existing]

Network: N101 [Lindfield_2018 SAT_Existing]

19S0090-Lindfield
Pacific Highway / Strickland Street
Existing SAT peak hour
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1719	2.1	1719	2.1	0.447	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	181	0.0	181	0.0	0.662	27.6	LOS B	3.2	22.3	0.89	1.12	1.49	34.7
Approach		1900	1.9	1900	1.9	0.662	2.7	NA	3.2	22.3	0.08	0.11	0.14	51.3
East: Strickland Avenue														
4	L2	232	0.0	232	0.0	0.270	8.2	LOS A	1.7	11.7	0.60	0.67	0.60	41.0
6	R2	17	0.0	17	0.0	2.807	2158.3	LOS F	13.6	95.1	1.00	1.30	2.27	0.7
Approach		248	0.0	248	0.0	2.807	154.0	LOS F	13.6	95.1	0.62	0.71	0.71	8.7
North: Pacific Highway														
7	L2	52	2.0	52	2.0	0.311	5.6	LOS A	0.0	0.0	0.00	0.05	0.00	57.1
8	T1	1740	2.2	1740	2.2	0.311	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.4
Approach		1792	2.2	1792	2.2	0.311	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.2
All Vehicles		3940	1.9	3940	1.9	2.807	11.1	NA	13.6	95.1	0.08	0.10	0.11	35.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX A-2
2024 WITHOUT DEVELOPMENT

MOVEMENT SUMMARY

Site: 1 [1. Pac-Balfour_2024_AM_Base]

Network: 1 [Lindfield_2024 AM_Base]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing AM peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network Site User-Given Phase Times)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	45	2.3	45	2.3	0.117	15.5	LOS B	2.5	18.4	0.31	0.40	0.31	38.2
2	T1	1167	6.0	1165	6.0	0.584	13.8	LOS A	13.3	97.9	0.44	0.40	0.44	31.3
3	R2	86	3.7	86	3.6	0.595	83.9	LOS F	6.5	47.0	1.00	0.78	1.01	3.1
Approach		1299	5.8	1296[N1]	5.7	0.595	18.6	LOS B	13.3	97.9	0.47	0.43	0.47	26.8
East: Balfour Street														
4	L2	21	15.0	21	15.0	0.950	99.9	LOS F	11.1	81.6	1.00	1.11	1.44	2.5
5	T1	88	1.2	88	1.2	0.950	96.1	LOS F	11.1	81.6	1.00	1.11	1.44	14.8
6	R2	125	8.4	125	8.4	0.950	99.9	LOS F	11.1	81.6	1.00	1.11	1.44	7.8
Approach		235	6.3	235	6.3	0.950	98.5	LOS F	11.1	81.6	1.00	1.11	1.44	10.3
North: Pacific Highway														
7	L2	192	1.1	192	1.1	0.758	26.0	LOS B	46.1	328.4	0.77	0.74	0.77	21.0
8	T1	2443	2.4	2443	2.4	0.758	19.2	LOS B	46.7	333.2	0.73	0.69	0.73	22.3
9	R2	142	7.4	142	7.4	0.755	71.3	LOS F	8.3	61.9	1.00	0.95	1.47	21.0
Approach		2777	2.5	2777	2.5	0.758	22.4	LOS B	46.7	333.2	0.75	0.71	0.77	22.0
West: Balfour Street														
10	L2	53	0.0	53	0.0	0.082	39.3	LOS C	2.5	17.8	0.70	0.70	0.70	28.2
11	T1	94	0.0	94	0.0	0.862	78.2	LOS F	13.5	94.8	1.00	1.00	1.28	16.0
12	R2	77	1.4	77	1.4	0.862	82.8	LOS F	13.5	94.8	1.00	1.00	1.28	16.0
Approach		223	0.5	223	0.5	0.862	70.6	LOS F	13.5	94.8	0.93	0.93	1.14	18.3
All Vehicles		4534	3.6	4531[N1]	3.6	0.950	27.6	LOS B	46.7	333.2	0.69	0.66	0.74	20.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	66.4	LOS F	0.2	0.2	0.94	0.94
P2	East Full Crossing	53	11.6	LOS B	0.1	0.1	0.39	0.39
P3	North Full Crossing	53	66.4	LOS F	0.2	0.2	0.94	0.94
P4	West Full Crossing	53	16.8	LOS B	0.1	0.1	0.47	0.47
All Pedestrians		211	40.3	LOS E			0.69	0.69

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

MOVEMENT SUMMARY

Site: 1 [1.Pac-Balfour_2024_PM_Base]

Network: N101 [Lindfield_2024 PM_Base]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing PM peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	96	0.0	95	0.0	0.630	28.4	LOS B	13.8	97.9	0.74	0.70	0.74	31.3
2	T1	1833	2.0	1810	2.0	0.630	21.5	LOS B	13.8	97.9	0.64	0.59	0.64	24.7
3	R2	109	1.9	108	1.9	0.443	75.2	LOS F	7.8	55.2	1.00	0.80	1.00	3.4
Approach		2038	1.9	2012[N1]	1.9	0.630	24.7	LOS B	13.8	97.9	0.67	0.61	0.67	23.0
East: Balfour Street														
4	L2	24	0.0	24	0.0	1.033	140.4	LOS F	11.5	81.6	1.00	1.28	1.71	1.8
5	T1	94	0.0	94	0.0	1.033	136.5	LOS F	11.5	81.6	1.00	1.28	1.71	11.3
6	R2	128	2.5	128	2.5	1.033	140.4	LOS F	11.5	81.6	1.00	1.28	1.71	5.7
Approach		246	1.3	246	1.3	1.033	138.9	LOS F	11.5	81.6	1.00	1.28	1.71	7.7
North: Pacific Highway														
7	L2	109	0.0	109	0.0	0.153	24.2	LOS B	5.5	38.8	0.54	0.64	0.54	20.4
8	T1	1305	2.3	1305	2.3	0.644	23.4	LOS B	34.0	242.8	0.72	0.66	0.72	19.8
9	R2	112	1.9	112	1.9	1.003	133.5	LOS F	11.5	82.0	1.00	1.12	1.78	13.8
Approach		1526	2.1	1526	2.1	1.003	31.5	LOS C	34.0	242.8	0.73	0.69	0.78	18.1
West: Balfour Street														
10	L2	81	2.6	81	2.6	0.131	40.7	LOS C	4.0	28.8	0.73	0.72	0.73	27.6
11	T1	113	0.0	113	0.0	0.816	71.4	LOS F	13.0	91.1	0.99	0.94	1.18	17.0
12	R2	62	0.0	62	0.0	0.816	75.9	LOS F	13.0	91.1	0.99	0.94	1.18	17.0
Approach		256	0.8	256	0.8	0.816	62.8	LOS E	13.0	91.1	0.91	0.87	1.04	20.0
All Vehicles		4066	1.8	4041[N1]	1.8	1.033	36.7	LOS C	34.0	242.8	0.72	0.70	0.80	18.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	64.5	LOS F	0.2	0.2	0.93	0.93
P2	East Full Crossing	53	17.3	LOS B	0.1	0.1	0.48	0.48
P3	North Full Crossing	53	64.5	LOS F	0.2	0.2	0.93	0.93
P4	West Full Crossing	53	18.3	LOS B	0.1	0.1	0.49	0.49
All Pedestrians		211	41.2	LOS E			0.71	0.71

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

MOVEMENT SUMMARY

Site: 1 [1.Pac-Balfour_2024_SAT_Base]

Network: N101 [Lindfield_2024 SAT_Base]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing SAT peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	46	0.0	46	0.0	0.166	20.2	LOS B	4.7	33.7	0.42	0.44	0.42	35.5
2	T1	1627	2.4	1616	2.4	0.831	22.7	LOS B	13.7	97.9	0.67	0.62	0.68	24.0
3	R2	132	0.8	131	0.8	0.907	86.3	LOS F	10.3	72.5	1.00	0.91	1.26	3.0
Approach		1805	2.2	1793[N1]	2.2	0.907	27.3	LOS B	13.7	97.9	0.69	0.64	0.71	21.1
East: Balfour Street														
4	L2	55	0.0	55	0.0	0.978	110.9	LOS F	11.5	81.6	1.00	1.15	1.52	2.2
5	T1	76	0.0	76	0.0	0.978	107.0	LOS F	11.5	81.6	1.00	1.15	1.52	13.6
6	R2	123	2.6	123	2.6	0.978	110.9	LOS F	11.5	81.6	1.00	1.15	1.52	7.1
Approach		254	1.2	254	1.2	0.978	109.7	LOS F	11.5	81.6	1.00	1.15	1.52	8.4
North: Pacific Highway														
7	L2	186	0.6	186	0.6	0.195	24.7	LOS B	7.1	49.8	0.55	0.72	0.55	19.4
8	T1	1655	2.4	1655	2.4	0.823	27.8	LOS B	51.4	367.4	0.85	0.79	0.85	17.7
9	R2	103	1.0	103	1.0	0.987	120.4	LOS F	9.7	68.5	0.96	1.09	1.71	14.9
Approach		1944	2.1	1944	2.1	0.987	32.4	LOS C	51.4	367.4	0.83	0.80	0.87	17.2
West: Balfour Street														
10	L2	51	0.0	51	0.0	0.080	40.0	LOS C	2.5	17.2	0.71	0.70	0.71	28.0
11	T1	67	0.0	67	0.0	0.728	69.1	LOS E	10.4	73.1	0.99	0.87	1.09	17.2
12	R2	77	0.0	77	0.0	0.728	73.7	LOS F	10.4	73.1	0.99	0.87	1.09	17.2
Approach		195	0.0	195	0.0	0.728	63.3	LOS E	10.4	73.1	0.92	0.83	0.99	19.6
All Vehicles		4198	2.0	4186[N1]	2.0	0.987	36.3	LOS C	51.4	367.4	0.79	0.75	0.85	17.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	64.5	LOS F	0.2	0.2	0.93	0.93
P2	East Full Crossing	53	17.3	LOS B	0.1	0.1	0.48	0.48
P3	North Full Crossing	53	64.5	LOS F	0.2	0.2	0.93	0.93
P4	West Full Crossing	53	18.3	LOS B	0.1	0.1	0.49	0.49
All Pedestrians		211	41.2	LOS E			0.71	0.71

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

MOVEMENT SUMMARY

Site: 4 [4. Pac-Ped_2024_AM_Base]

Network: 1 [Lindfield_2024 AM_Base]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing AM peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1320	5.7	1317	5.6	0.401	4.8	LOS A	2.2	16.3	0.32	0.29	0.32	12.0
Approach		1320	5.7	1317[N1]	5.6	0.401	4.8	LOS A	2.2	16.3	0.32	0.29	0.32	12.0
North: Pacific Highway														
8	T1	2617	2.5	2617	2.5	0.573	2.0	LOS A	13.8	98.4	0.13	0.12	0.13	48.0
Approach		2617	2.5	2617	2.5	0.573	2.0	LOS A	13.8	98.4	0.13	0.12	0.13	48.0
All Vehicles		3937	3.6	3933[N1]	3.6	0.573	2.9	LOS A	13.8	98.4	0.19	0.18	0.19	39.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 4 [4.Pac-Ped_2024_PM_Base]

Network: N101 [Lindfield_2024 PM_Base]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing PM peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1988	1.9	1955	1.9	0.445	5.2	LOS A	2.3	16.3	0.35	0.32	0.35	11.3
Approach		1988	1.9	1955[N1]	1.9	0.445	5.2	LOS A	2.3	16.3	0.35	0.32	0.35	11.3
North: Pacific Highway														
8	T1	1372	2.3	1371	2.3	0.300	0.8	LOS A	2.4	17.1	0.05	0.04	0.05	54.7
Approach		1372	2.3	1371[N1]	2.3	0.300	0.8	LOS A	2.4	17.1	0.05	0.04	0.05	54.7
All Vehicles		3360	2.0	3326[N1]	2.1	0.445	3.4	LOS A	2.4	17.1	0.22	0.20	0.22	32.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 4 [4.Pac-Ped_2024_SAT_Base]

Network: N101 [Lindfield_2024 SAT_Base]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing SAT peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1765	2.3	1753	2.3	0.670	5.4	LOS A	2.3	16.3	0.36	0.33	0.36	10.9
Approach		1765	2.3	1753[N1]	2.3	0.670	5.4	LOS A	2.3	16.3	0.36	0.33	0.36	10.9
North: Pacific Highway														
8	T1	1788	2.1	1788	2.1	0.391	1.1	LOS A	3.4	24.0	0.07	0.07	0.07	52.3
Approach		1788	2.1	1788	2.1	0.391	1.1	LOS A	3.4	24.0	0.07	0.07	0.07	52.3
All Vehicles		3554	2.2	3541[N1]	2.2	0.670	3.3	LOS A	3.4	24.0	0.22	0.20	0.22	34.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 6 [6. Pac-Beaconsfield_2024_AM_Base]

Network: 1 [Lindfield_2024 AM_Base]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
Existing AM peak hour
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	46	4.5	46	4.5	0.062	5.6	LOS A	0.0	0.0	0.00	0.24	0.00	55.0
2	T1	1241	5.9	1238	5.8	0.311	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.5
Approach		1287	5.8	1284[N1]	5.8	0.311	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.0
North: Pacific Highway														
8	T1	2552	2.4	2552	2.4	0.443	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		2552	2.4	2552	2.4	0.443	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Beaconsfield Parade														
10	L2	61	3.4	61	3.4	0.056	7.9	LOS A	0.2	1.5	0.17	0.90	0.17	41.7
Approach		61	3.4	61	3.4	0.056	7.9	LOS A	0.2	1.5	0.17	0.90	0.17	41.7
All Vehicles		3900	3.5	3897[N1]	3.5	0.443	0.2	NA	0.2	1.5	0.00	0.02	0.00	58.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 6 [6.Pac-Beaconsfield_2024_PM_Base]

Network: N101 [Lindfield_2024 PM_Base]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
Existing PM peak hour
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	82	0.0	81	0.0	0.346	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	57.0
2	T1	1952	1.9	1918	2.0	0.346	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.1
Approach		2034	1.9	1998 N1	1.9	0.346	0.2	NA	0.0	0.0	0.00	0.02	0.00	58.9
North: Pacific Highway														
8	T1	1366	2.5	1366	2.5	0.324	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1366	2.5	1366	2.5	0.324	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Beaconsfield Parade														
10	L2	64	0.0	64	0.0	0.130	11.8	LOS A	0.4	2.7	0.56	1.00	0.56	38.8
Approach		64	0.0	64	0.0	0.130	11.8	LOS A	0.4	2.7	0.56	1.00	0.56	38.8
All Vehicles		3464	2.1	3428 N1	2.1	0.346	0.4	NA	0.4	2.7	0.01	0.03	0.01	57.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 6 [6.Pac-Beaconsfield_2024_SAT_Base]

Network: N101 [Lindfield_2024 SAT_Base]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
Existing SAT peak hour
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	62	0.0	62	0.0	0.082	5.5	LOS A	0.0	0.0	0.00	0.23	0.00	55.2
2	T1	1685	2.3	1673	2.3	0.411	0.0	LOS A	1.4	10.1	0.00	0.01	0.00	59.4
Approach		1747	2.2	1734[N1]	2.2	0.411	0.2	NA	1.4	10.1	0.00	0.02	0.00	59.0
North: Pacific Highway														
8	T1	1791	2.1	1791	2.1	0.423	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1791	2.1	1791	2.1	0.423	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Beaconsfield Parade														
10	L2	73	0.0	73	0.0	0.067	7.9	LOS A	0.2	1.7	0.20	0.89	0.20	41.6
Approach		73	0.0	73	0.0	0.067	7.9	LOS A	0.2	1.7	0.20	0.89	0.20	41.6
All Vehicles		3611	2.1	3598[N1]	2.1	0.423	0.3	NA	1.4	10.1	0.00	0.03	0.00	57.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 7 [7. Pac-Strickland_2024_AM_Base]

Network: 1 [Lindfield_2024 AM_Base]

19S0090-Lindfield
Pacific Highway / Strickland Street
Existing AM peak hour
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1251	5.6	1251	5.6	0.524	2.4	LOS A	5.2	37.8	0.18	0.00	0.20	36.5
3	R2	146	2.2	146	2.2	1.012	120.9	LOS F	10.0	71.1	1.00	2.00	3.88	14.7
Approach		1397	5.2	1397	5.2	1.012	14.8	NA	10.0	71.1	0.27	0.21	0.58	26.6
East: Strickland Avenue														
4	L2	332	0.3	332	0.3	0.532	11.5	LOS A	3.7	25.7	0.62	0.85	0.84	32.0
6	R2	9	22.2	9	22.2	1.579	1121.8	LOS F	5.4	44.7	1.00	1.23	1.77	1.4
Approach		341	0.9	341	0.9	1.579	42.4	LOS C	5.4	44.7	0.63	0.86	0.86	19.7
North: Pacific Highway														
7	L2	69	1.5	69	1.5	0.459	3.4	LOS A	0.0	0.0	0.00	0.04	0.00	40.0
8	T1	2407	2.6	2407	2.6	0.459	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	39.8
Approach		2477	2.5	2477	2.5	0.459	0.1	NA	0.0	0.0	0.00	0.01	0.00	39.8
All Vehicles		4215	3.3	4215	3.3	1.579	8.4	NA	10.0	71.1	0.14	0.15	0.26	30.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

MOVEMENT SUMMARY

Site: 7 [7.Pac-Strickland_2024_PM_Base]

Network: N101 [Lindfield_2024 PM_Base]

19S0090-Lindfield
Pacific Highway / Strickland Street
Existing PM peak hour
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	2002	2.1	1992	2.1	0.518	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	245	0.4	244	0.4	0.648	20.6	LOS B	3.5	24.8	0.83	1.09	1.37	38.0
Approach		2247	1.9	2236 N1	1.9	0.648	2.3	NA	3.5	24.8	0.09	0.12	0.15	52.1
East: Strickland Avenue														
4	L2	227	0.9	227	0.9	0.234	7.0	LOS A	1.5	10.3	0.50	0.60	0.50	42.1
6	R2	34	0.0	34	0.0	3.901	2912.1	LOS F	25.6	178.9	1.00	1.48	2.97	0.6
Approach		261	0.8	261	0.8	3.901	381.9	LOS F	25.6	178.9	0.57	0.71	0.82	4.1
North: Pacific Highway														
7	L2	64	0.0	64	0.0	0.244	5.6	LOS A	0.0	0.0	0.00	0.08	0.00	56.9
8	T1	1338	2.4	1337	2.4	0.244	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.1
Approach		1402	2.3	1401 N1	2.3	0.244	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.8
All Vehicles		3911	1.9	3898 N1	1.9	3.901	27.0	NA	25.6	178.9	0.09	0.13	0.14	23.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 7 [7.Pac-Strickland_2024_SAT_Base]

Network: N101 [Lindfield_2024 SAT_Base]

19S0090-Lindfield
Pacific Highway / Strickland Street
Existing SAT peak hour
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1719	2.1	1719	2.1	0.447	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	204	0.0	204	0.0	0.750	31.4	LOS C	4.2	29.1	0.92	1.20	1.78	33.2
Approach		1923	1.9	1923	1.9	0.750	3.4	NA	4.2	29.1	0.10	0.13	0.19	49.7
East: Strickland Avenue														
4	L2	261	0.0	261	0.0	0.303	8.3	LOS A	1.9	13.5	0.61	0.68	0.61	40.9
6	R2	19	0.0	19	0.0	3.137	2415.9	LOS F	15.7	109.9	1.00	1.32	2.34	0.7
Approach		280	0.0	280	0.0	3.137	171.2	LOS F	15.7	109.9	0.63	0.72	0.72	8.0
North: Pacific Highway														
7	L2	58	1.8	58	1.8	0.312	5.6	LOS A	0.0	0.0	0.00	0.06	0.00	57.0
8	T1	1740	2.2	1740	2.2	0.312	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.3
Approach		1798	2.2	1798	2.2	0.312	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.1
All Vehicles		4001	1.9	4001	1.9	3.137	13.7	NA	15.7	109.9	0.09	0.12	0.14	32.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

APPENDIX A-3
2024 WITH DEVELOPMENT

MOVEMENT SUMMARY

Site: 1 [1. Pac-Balfour_2024_AM_Dev_B]

Network: 1 [Lindfield_2024_AM_Dev_B]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing AM peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	45	2.3	45	2.3	0.168	29.5	LOS C	4.6	33.7	0.53	0.53	0.53	30.4
2	T1	1285	5.5	1285	5.5	0.842	35.5	LOS C	13.4	97.9	0.78	0.73	0.82	17.9
3	R2	95	3.3	95	3.3	0.522	81.7	LOS F	7.1	50.9	1.00	0.79	1.00	3.2
Approach		1425	5.2	1425	5.2	0.842	38.4	LOS C	13.4	97.9	0.79	0.73	0.82	16.9
East: Balfour Street														
4	L2	21	15.0	21	15.0	1.269	321.4	LOS F	11.1	81.6	1.00	1.82	2.55	0.8
5	T1	107	1.0	107	1.0	1.269	317.5	LOS F	11.1	81.6	1.00	1.82	2.55	5.5
6	R2	125	8.4	125	8.4	1.269	321.4	LOS F	11.1	81.6	1.00	1.82	2.55	2.6
Approach		254	5.8	254	5.8	1.269	319.7	LOS F	11.1	81.6	1.00	1.82	2.55	3.7
North: Pacific Highway														
7	L2	192	1.1	192	1.1	0.903	36.0	LOS C	58.9	419.7	0.83	0.83	0.88	16.1
8	T1	2443	2.4	2443	2.4	0.903	31.0	LOS C	58.9	419.7	0.76	0.77	0.84	16.2
9	R2	300	3.5	300	3.5	0.940	67.3	LOS E	19.7	141.8	0.95	0.99	1.33	21.7
Approach		2935	2.4	2935	2.4	0.940	35.1	LOS C	58.9	419.7	0.78	0.80	0.89	17.5
West: Balfour Street														
10	L2	53	0.0	53	0.0	0.059	26.4	LOS B	2.0	14.0	0.56	0.67	0.56	32.9
11	T1	94	0.0	94	0.0	0.787	73.9	LOS F	9.9	70.1	1.00	0.91	1.18	16.7
12	R2	39	2.7	39	2.7	0.787	78.5	LOS F	9.9	70.1	1.00	0.91	1.18	16.7
Approach		185	0.6	185	0.6	0.787	61.4	LOS E	9.9	70.1	0.88	0.84	1.01	20.1
All Vehicles		4799	3.4	4799	3.4	1.269	52.1	LOS D	58.9	419.7	0.80	0.83	0.96	13.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	12.0	LOS B	0.1	0.1	0.40	0.40
P3	North Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	27.7	LOS C	0.1	0.1	0.61	0.61
All Pedestrians		211	44.6	LOS E			0.73	0.73

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.

MOVEMENT SUMMARY

Site: 1 [1.Pac-Balfour_2024_PM_Dev_B]

Network: N101 [Lindfield_2024_PM_Dev_B]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing PM peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	96	0.0	81	0.0	0.605	28.0	LOS B	13.8	97.9	0.73	0.68	0.73	31.6
2	T1	2054	1.7	1744	1.9	0.605	20.2	LOS B	13.8	97.9	0.61	0.56	0.61	25.6
3	R2	131	1.6	111	1.8	0.324	73.1	LOS F	8.0	57.0	1.00	0.80	1.00	3.5
Approach		2280	1.7	1936[N1]	1.8	0.605	23.6	LOS B	13.8	97.9	0.64	0.58	0.64	23.5
East: Balfour Street														
4	L2	24	0.0	24	0.0	1.502	520.2	LOS F	11.5	81.6	1.00	2.21	3.21	0.5
5	T1	109	0.0	109	0.0	1.502	516.3	LOS F	11.5	81.6	1.00	2.21	3.21	3.5
6	R2	128	2.5	128	2.5	1.502	520.2	LOS F	11.5	81.6	1.00	2.21	3.21	1.6
Approach		262	1.2	262	1.2	1.502	518.6	LOS F	11.5	81.6	1.00	2.21	3.21	2.3
North: Pacific Highway														
7	L2	246	0.0	246	0.0	0.252	25.9	LOS B	9.6	67.3	0.58	0.74	0.58	18.7
8	T1	1305	2.3	1305	2.3	0.749	24.8	LOS B	43.5	310.7	0.76	0.69	0.76	19.1
9	R2	315	0.7	315	0.7	1.685	684.6	LOS F	78.1	549.6	1.00	1.97	3.62	3.3
Approach		1866	1.7	1866	1.7	1.685	136.2	LOS F	78.1	549.6	0.78	0.91	1.22	6.3
West: Balfour Street														
10	L2	81	2.6	81	2.6	0.128	40.0	LOS C	4.0	28.5	0.72	0.72	0.72	27.9
11	T1	113	0.0	113	0.0	0.828	75.6	LOS F	10.9	76.4	1.00	0.95	1.24	16.5
12	R2	31	0.0	31	0.0	0.828	80.1	LOS F	10.9	76.4	1.00	0.95	1.24	16.5
Approach		224	0.9	224	0.9	0.828	63.3	LOS E	10.9	76.4	0.90	0.87	1.05	20.0
All Vehicles		4633	1.6	4288[N1]	1.7	1.685	104.9	LOS F	78.1	549.6	0.73	0.84	1.07	8.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	17.3	LOS B	0.1	0.1	0.48	0.48
P3	North Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	18.3	LOS B	0.1	0.1	0.49	0.49
All Pedestrians		211	43.5	LOS E			0.72	0.72

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

MOVEMENT SUMMARY

Site: 1 [1.Pac-Balfour_2024_SAT_Dev_B]

Network: N101 [Lindfield_2024_SAT_Dev_B]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing SAT peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	46	0.0	46	0.0	0.179	19.6	LOS B	5.2	36.7	0.43	0.45	0.43	35.9
2	T1	1861	2.1	1861	2.1	0.897	32.5	LOS C	13.7	97.9	0.75	0.75	0.81	19.1
3	R2	149	0.7	149	0.7	0.986	110.0	LOS F	13.6	95.6	1.00	0.99	1.46	2.4
Approach		2057	1.9	2057	1.9	0.986	37.9	LOS C	13.7	97.9	0.76	0.76	0.85	16.9
East: Balfour Street														
4	L2	55	0.0	55	0.0	1.384	418.8	LOS F	11.5	81.6	1.00	1.99	2.90	0.6
5	T1	95	0.0	95	0.0	1.384	415.0	LOS F	11.5	81.6	1.00	1.99	2.90	4.3
6	R2	123	2.6	123	2.6	1.384	418.8	LOS F	11.5	81.6	1.00	1.99	2.90	2.0
Approach		273	1.2	273	1.2	1.384	417.5	LOS F	11.5	81.6	1.00	1.99	2.90	2.5
North: Pacific Highway														
7	L2	186	0.6	186	0.6	0.206	22.8	LOS B	7.6	53.2	0.53	0.69	0.53	20.8
8	T1	1655	2.4	1655	2.4	0.870	29.4	LOS C	59.8	426.7	0.83	0.79	0.86	17.0
9	R2	336	0.3	336	0.3	2.120	1069.5	LOS F	99.5	698.1	1.00	2.26	4.31	2.2
Approach		2177	1.9	2177	1.9	2.120	189.2	LOS F	99.5	698.1	0.83	1.01	1.36	4.6
West: Balfour Street														
10	L2	51	0.0	51	0.0	0.085	42.2	LOS C	2.5	17.8	0.73	0.71	0.73	27.3
11	T1	67	0.0	67	0.0	0.674	71.9	LOS F	7.7	54.2	1.00	0.83	1.07	16.9
12	R2	39	0.0	39	0.0	0.674	76.4	LOS F	7.7	54.2	1.00	0.83	1.07	16.9
Approach		157	0.0	157	0.0	0.674	63.5	LOS E	7.7	54.2	0.91	0.79	0.96	19.9
All Vehicles		4663	1.8	4663	1.8	2.120	131.6	LOS F	99.5	698.1	0.81	0.95	1.21	6.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	15.4	LOS B	0.1	0.1	0.45	0.45
P3	North Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	16.4	LOS B	0.1	0.1	0.47	0.47
All Pedestrians		211	42.6	LOS E			0.71	0.71

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.

MOVEMENT SUMMARY

Site: 4 [4. Pac-Ped_2024_AM_Dev_B]

Network: 1 [Lindfield_2024_AM_Dev_B]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing AM peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1356	5.5	1356	5.5	0.756	7.1	LOS A	2.2	16.3	0.48	0.43	0.48	8.7
Approach		1356	5.5	1356	5.5	0.756	7.1	LOS A	2.2	16.3	0.48	0.43	0.48	8.7
North: Pacific Highway														
8	T1	2579	2.6	2193	2.6	0.961	50.8	LOS D	27.4	195.8	0.23	0.43	0.51	8.0
Approach		2579	2.6	2193[N1]	2.6	0.961	50.8	LOS D	27.4	195.8	0.23	0.43	0.51	8.0
All Vehicles		3935	3.6	3549[N1]	4.0	0.961	34.1	LOS C	27.4	195.8	0.32	0.43	0.50	8.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 4 [4.Pac-Ped_2024_PM_Dev_B]

Network: N101 [Lindfield_2024_PM_Dev_B]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing PM peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	2058	1.8	1770	2.0	0.386	1.5	LOS A	2.3	16.3	0.09	0.09	0.09	26.4
Approach		2058	1.8	1770[N1]	2.0	0.386	1.5	LOS A	2.3	16.3	0.09	0.09	0.09	26.4
North: Pacific Highway														
8	T1	1341	2.4	1333	2.4	0.292	0.5	LOS A	0.9	6.3	0.03	0.03	0.03	56.5
Approach		1341	2.4	1333[N1]	2.4	0.292	0.5	LOS A	0.9	6.3	0.03	0.03	0.03	56.5
All Vehicles		3399	2.0	3103[N1]	2.2	0.386	1.1	LOS A	2.3	16.3	0.07	0.06	0.07	47.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 4 [4.Pac-Ped_2018_2024_SAT_Dev_B]

Network: N101 [Lindfield_2024_SAT_Dev_B]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing SAT peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1839	2.2	1839	2.2	1.005	59.0	LOS E	2.3	16.3	0.36	0.58	0.67	1.2
Approach		1839	2.2	1839	2.2	1.005	59.0	LOS E	2.3	16.3	0.36	0.58	0.67	1.2
North: Pacific Highway														
8	T1	1749	2.1	1734	2.1	0.379	0.6	LOS A	1.7	12.1	0.04	0.04	0.04	55.6
Approach		1749	2.1	1734 N1	2.1	0.379	0.6	LOS A	1.7	12.1	0.04	0.04	0.04	55.6
All Vehicles		3588	2.1	3573 N1	2.2	1.005	30.7	LOS C	2.3	16.3	0.20	0.31	0.36	7.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 6SIG [6SIG. Pac-Beacon_2024_AM_Dev_B]

Network: 1 [Lindfield_2024_AM_Dev_B]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	133	1.6	133	1.6	0.164	8.0	LOS A	2.0	14.1	0.16	0.43	0.16	47.1
2	T1	1241	5.9	1241	5.9	0.819	6.6	LOS A	10.3	75.9	0.21	0.22	0.23	41.6
Approach		1374	5.4	1374	5.4	0.819	6.8	LOS A	10.3	75.9	0.20	0.24	0.22	42.8
North: Pacific Highway														
8	T1	2513	2.4	2268	2.4	0.523	7.8	LOS A	17.1	122.4	0.44	0.41	0.44	23.6
Approach		2513	2.4	2268[N1]	2.4	0.523	7.8	LOS A	17.1	122.4	0.44	0.41	0.44	23.6
West: Beaconsfield Street														
10	L2	98	2.2	98	2.2	0.839	79.9	LOS F	16.7	118.6	1.00	0.92	1.19	15.9
12	R2	118	0.9	118	0.9	0.839	79.9	LOS F	16.7	118.6	1.00	0.92	1.19	15.9
Approach		216	1.5	216	1.5	0.839	79.9	LOS F	16.7	118.6	1.00	0.92	1.19	15.9
All Vehicles		4102	3.4	3858[N1]	3.6	0.839	11.5	LOS A	17.1	122.4	0.39	0.38	0.40	29.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	105	69.4	LOS F	0.4	0.4	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		158	69.4	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 6SIG [6SIG. Pac-Beacon_2024_PM_Dev_B]

Network: N101 [Lindfield_2024_PM_Dev_B]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	196	0.0	173	0.0	0.548	21.1	LOS B	20.9	148.3	0.52	0.56	0.56	39.4
2	T1	1952	1.9	1724	2.1	0.548	15.7	LOS B	22.6	161.4	0.52	0.50	0.53	29.6
Approach		2147	1.8	1897[N1]	1.9	0.548	16.2	LOS B	22.6	161.4	0.52	0.50	0.53	31.3
North: Pacific Highway														
8	T1	1336	2.6	1328	2.6	0.582	9.4	LOS A	15.9	114.1	0.35	0.32	0.35	21.1
Approach		1336	2.6	1328[N1]	2.6	0.582	9.4	LOS A	15.9	114.1	0.35	0.32	0.35	21.1
West: Beaconsfield Street														
10	L2	134	0.0	134	0.0	0.539	52.9	LOS D	17.6	123.1	0.90	0.82	0.90	20.6
12	R2	153	0.0	153	0.0	0.539	52.9	LOS D	17.6	123.1	0.90	0.82	0.90	20.6
Approach		286	0.0	286	0.0	0.539	52.9	LOS D	17.6	123.1	0.90	0.82	0.90	20.6
All Vehicles		3769	1.9	3511[N1]	2.1	0.582	16.6	LOS B	22.6	161.4	0.49	0.46	0.49	27.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	105	69.4	LOS F	0.4	0.4	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		158	69.4	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 6SIG [6SIG. Pac-Beacon_2024_SAT_Dev_B]

Network: N101 [Lindfield_2024_SAT_Dev_B]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	192	0.0	192	0.0	0.150	7.5	LOS A	1.5	10.8	0.13	0.57	0.13	46.1
2	T1	1685	2.3	1685	2.3	0.751	5.4	LOS A	20.0	143.0	0.28	0.26	0.28	44.5
Approach		1877	2.1	1877	2.1	0.751	5.6	LOS A	20.0	143.0	0.26	0.30	0.26	44.9
North: Pacific Highway														
8	T1	1752	2.2	1737	2.2	0.698	4.2	LOS A	14.7	104.9	0.22	0.20	0.22	32.9
Approach		1752	2.2	1737[N1]	2.2	0.698	4.2	LOS A	14.7	104.9	0.22	0.20	0.22	32.9
West: Beaconsfield Street														
10	L2	146	0.0	146	0.0	0.750	64.0	LOS E	21.9	153.0	0.99	0.87	1.02	18.4
12	R2	168	0.0	168	0.0	0.750	64.0	LOS E	21.9	153.0	0.99	0.87	1.02	18.4
Approach		315	0.0	315	0.0	0.750	64.0	LOS E	21.9	153.0	0.99	0.87	1.02	18.4
All Vehicles		3943	1.9	3928[N1]	2.0	0.751	9.7	LOS A	21.9	153.0	0.30	0.30	0.30	34.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	105	69.4	LOS F	0.4	0.4	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		158	69.4	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 7SIG [7.Pac-Strickland_2024_AM_Dev_B]

Network: 1 [Lindfield_2024_AM_Dev_B]

19S0090-Lindfield
Pacific Highway / Strickland Street
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1319	5.3	1319	5.3	0.456	3.4	LOS A	8.5	62.4	0.19	0.18	0.19	35.2
3	R2	146	2.2	146	2.2	0.501	14.2	LOS A	3.2	23.0	0.40	0.69	0.55	33.5
Approach		1465	5.0	1465	5.0	0.501	4.5	LOS A	8.5	62.4	0.21	0.23	0.23	34.8
East: Strickland Avenue														
4	L2	332	0.3	332	0.3	0.678	55.2	LOS D	21.4	150.3	0.94	0.84	0.94	18.3
6	R2	27	7.7	27	7.7	0.101	62.3	LOS E	1.7	12.9	0.89	0.71	0.89	17.1
Approach		359	0.9	359	0.9	0.678	55.7	LOS D	21.4	150.3	0.94	0.83	0.94	18.2
North: Pacific Highway														
7	L2	79	1.3	73	1.3	0.684	11.2	LOS A	17.9	127.6	0.35	0.35	0.35	35.9
8	T1	2477	2.5	2304	2.5	0.684	8.3	LOS A	20.6	146.9	0.36	0.34	0.36	29.5
Approach		2556	2.5	2378 N1	2.5	0.684	8.4	LOS A	20.6	146.9	0.36	0.34	0.36	30.0
All Vehicles		4380	3.2	4202 N1	3.3	0.684	11.1	LOS A	21.4	150.3	0.36	0.34	0.36	28.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 7SIG [7.Pac-Strickland_2024_PM_Dev_B]

Network: N101 [Lindfield_2024_PM_Dev_B]

19S0090-Lindfield
Pacific Highway / Strickland Street
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	2102	2.0	1882	2.1	0.696	6.7	LOS A	34.7	247.5	0.45	0.43	0.45	31.4
3	R2	245	0.4	219	0.5	0.393	17.9	LOS B	10.4	72.8	0.92	0.85	0.92	32.1
Approach		2347	1.8	2101[N1]	1.9	0.696	7.9	LOS A	34.7	247.5	0.50	0.47	0.50	31.6
East: Strickland Avenue														
4	L2	227	0.9	227	0.9	0.342	40.6	LOS C	12.0	84.5	0.78	0.76	0.78	21.3
6	R2	49	0.0	49	0.0	0.210	67.4	LOS E	3.3	23.0	0.94	0.74	0.94	16.3
Approach		277	0.8	277	0.8	0.342	45.4	LOS D	12.0	84.5	0.81	0.76	0.81	20.2
North: Pacific Highway														
7	L2	84	0.0	84	0.0	0.510	28.2	LOS B	21.5	152.7	0.65	0.61	0.65	29.3
8	T1	1440	2.2	1433	2.2	0.510	24.8	LOS B	23.9	170.2	0.67	0.61	0.67	19.5
Approach		1524	2.1	1517[N1]	2.1	0.510	25.0	LOS B	23.9	170.2	0.67	0.61	0.67	20.5
All Vehicles		4148	1.8	3895[N1]	1.9	0.696	17.2	LOS B	34.7	247.5	0.59	0.54	0.59	25.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 7SIG [7.Pac-Strickland_2024_SAT_Dev_B]

Network: N101 [Lindfield_2024_SAT_Dev_B]

19S0090-Lindfield
Pacific Highway / Strickland Street
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1831	2.0	1831	2.0	0.599	1.4	LOS A	7.1	50.6	0.10	0.09	0.10	37.9
3	R2	204	0.0	204	0.0	0.465	32.1	LOS C	9.3	64.9	0.84	0.89	1.00	27.6
Approach		2035	1.8	2035	1.8	0.599	4.4	LOS A	9.3	64.9	0.17	0.17	0.19	34.8
East: Strickland Avenue														
4	L2	261	0.0	261	0.0	0.451	47.3	LOS D	15.1	105.9	0.85	0.79	0.85	19.8
6	R2	38	0.0	38	0.0	0.161	66.8	LOS E	2.5	17.5	0.93	0.72	0.93	16.4
Approach		299	0.0	299	0.0	0.451	49.8	LOS D	15.1	105.9	0.86	0.78	0.86	19.3
North: Pacific Highway														
7	L2	77	1.4	76	1.4	0.591	24.3	LOS B	28.3	201.5	0.68	0.63	0.68	30.7
8	T1	1852	2.0	1837	2.1	0.591	21.5	LOS B	30.1	214.1	0.69	0.63	0.69	20.9
Approach		1928	2.0	1913[N1]	2.0	0.591	21.6	LOS B	30.1	214.1	0.69	0.63	0.69	21.7
All Vehicles		4262	1.8	4247[N1]	1.8	0.599	15.4	LOS B	30.1	214.1	0.45	0.42	0.46	26.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	69.3	LOS F			0.96	0.96

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.

APPENDIX A-4
2024 WITH DEVELOPMENT AND INTERSECTION MODIFICATIONS

MOVEMENT SUMMARY

Site: 1 [1. Pac-Balfour_2024_AM_Dev_G]

Network: 1 [Lindfield_2024_AM_Dev_G]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing AM peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	45	2.3	45	2.3	0.161	29.1	LOS C	5.0	36.2	0.57	0.56	0.57	30.6
2	T1	1309	5.6	1309	5.6	0.803	33.0	LOS C	13.3	97.9	0.82	0.75	0.83	18.9
3	R2	95	3.3	95	3.3	0.870	89.4	LOS F	7.6	54.6	1.00	0.90	1.30	2.9
Approach		1449	5.4	1449	5.4	0.870	36.6	LOS C	13.3	97.9	0.83	0.75	0.85	17.5
East: Balfour Street														
4	L2	21	15.0	21	15.0	0.644	64.4	LOS E	11.1	81.6	0.98	0.82	0.98	4.1
5	T1	201	4.7	201	4.7	0.644	60.5	LOS E	11.1	81.6	0.98	0.82	0.98	20.3
Approach		222	5.7	222	5.7	0.644	60.9	LOS E	11.1	81.6	0.98	0.82	0.98	19.2
North: Pacific Highway														
7	L2	192	1.1	192	1.1	0.787	27.3	LOS B	49.4	352.0	0.80	0.77	0.80	20.2
8	T1	2443	2.4	2443	2.4	0.787	20.1	LOS B	50.0	357.3	0.75	0.71	0.75	21.7
9	R2	300	3.5	300	3.5	0.887	54.4	LOS D	17.4	125.1	1.00	0.94	1.23	24.5
Approach		2935	2.4	2935	2.4	0.887	24.1	LOS B	50.0	357.3	0.78	0.73	0.81	22.3
West: Balfour Street														
10	L2	53	0.0	53	0.0	0.063	28.7	LOS C	2.1	14.8	0.59	0.68	0.59	32.0
11	T1	94	0.0	94	0.0	0.885	84.4	LOS F	10.8	76.0	1.00	1.02	1.37	15.3
12	R2	39	2.7	39	2.7	0.885	88.9	LOS F	10.8	76.0	1.00	1.02	1.37	15.3
Approach		185	0.6	185	0.6	0.885	69.5	LOS E	10.8	76.0	0.88	0.92	1.15	18.7
All Vehicles		4792	3.4	4792	3.4	0.887	31.3	LOS C	50.0	357.3	0.81	0.75	0.84	20.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	65.5	LOS F	0.2	0.2	0.94	0.94
P2	East Full Crossing	53	12.0	LOS B	0.1	0.1	0.40	0.40
P3	North Full Crossing	53	65.5	LOS F	0.2	0.2	0.94	0.94
P4	West Full Crossing	53	25.3	LOS C	0.1	0.1	0.58	0.58
All Pedestrians		211	42.1	LOS E			0.71	0.71

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.

MOVEMENT SUMMARY

Site: 1 [1.Pac-Balfour_2024_PM_Dev_G]

Network: N101 [Lindfield_2024_PM_Dev_G]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing PM peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	96	0.0	88	0.0	0.630	28.6	LOS C	13.8	97.9	0.74	0.70	0.74	31.3
2	T1	2086	1.8	1918	1.9	0.630	10.5	LOS A	13.8	97.9	0.37	0.34	0.37	35.3
3	R2	131	1.6	120	1.7	0.409	76.1	LOS F	8.8	62.2	1.00	0.80	1.00	3.4
Approach		2313	1.7	2126[N1]	1.8	0.630	14.9	LOS B	13.8	97.9	0.42	0.38	0.42	30.2
East: Balfour Street														
4	L2	24	0.0	24	0.0	0.731	69.1	LOS E	11.5	81.6	1.00	0.87	1.04	3.8
5	T1	206	1.5	206	1.5	0.731	65.2	LOS E	11.5	81.6	1.00	0.87	1.04	19.3
Approach		231	1.4	231	1.4	0.731	65.6	LOS E	11.5	81.6	1.00	0.87	1.04	18.2
North: Pacific Highway														
7	L2	246	0.0	246	0.0	0.252	25.9	LOS B	9.6	67.3	0.58	0.74	0.58	18.7
8	T1	1305	2.3	1305	2.3	0.708	24.3	LOS B	39.6	282.9	0.75	0.68	0.75	19.4
9	R2	315	0.7	315	0.7	1.064	159.0	LOS F	36.6	257.7	1.00	1.19	1.78	11.9
Approach		1866	1.7	1866	1.7	1.064	47.2	LOS D	39.6	282.9	0.77	0.77	0.90	15.3
West: Balfour Street														
10	L2	81	2.6	81	2.6	0.131	40.7	LOS C	4.0	28.8	0.73	0.72	0.73	27.6
11	T1	113	0.0	113	0.0	1.067	159.7	LOS F	16.7	116.7	1.00	1.31	1.93	9.3
12	R2	31	0.0	31	0.0	1.067	164.3	LOS F	16.7	116.7	1.00	1.31	1.93	9.3
Approach		224	0.9	224	0.9	1.067	117.3	LOS F	16.7	116.7	0.90	1.10	1.49	13.0
All Vehicles		4634	1.6	4447[N1]	1.7	1.067	36.3	LOS C	39.6	282.9	0.62	0.61	0.71	19.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	68.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	17.3	LOS B	0.1	0.1	0.48	0.48
P3	North Full Crossing	53	68.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	18.3	LOS B	0.1	0.1	0.49	0.49
All Pedestrians		211	43.1	LOS E			0.72	0.72

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.

MOVEMENT SUMMARY

Site: 1 [1.Pac-Balfour_2024_SAT_Dev_G]

Network: N101 [Lindfield_2024_SAT_Dev_G]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing SAT peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	46	0.0	46	0.0	0.180	10.9	LOS A	2.6	18.7	0.20	0.27	0.20	42.4
2	T1	1892	2.1	1892	2.1	0.899	15.2	LOS B	13.7	97.9	0.40	0.41	0.45	29.9
3	R2	149	0.7	149	0.7	1.012	128.7	LOS F	13.9	97.9	1.00	1.03	1.54	2.0
Approach		2087	2.0	2087	2.0	1.012	23.2	LOS B	13.9	97.9	0.44	0.46	0.52	23.3
East: Balfour Street														
4	L2	55	0.0	55	0.0	0.693	71.9	LOS F	11.5	81.6	1.00	0.84	1.03	3.5
5	T1	127	2.5	127	2.5	0.693	68.0	LOS E	11.5	81.6	1.00	0.84	1.03	18.7
Approach		182	1.7	182	1.7	0.693	69.2	LOS E	11.5	81.6	1.00	0.84	1.03	15.3
North: Pacific Highway														
7	L2	186	0.6	186	0.6	0.194	21.7	LOS B	7.0	49.3	0.51	0.69	0.51	21.4
8	T1	1655	2.4	1655	2.4	0.817	23.3	LOS B	52.7	376.4	0.79	0.73	0.79	19.9
9	R2	336	0.3	336	0.3	1.236	293.1	LOS F	54.4	381.8	1.00	1.46	2.41	7.1
Approach		2177	1.9	2177	1.9	1.236	64.7	LOS E	54.4	381.8	0.80	0.84	1.01	11.6
West: Balfour Street														
10	L2	51	0.0	51	0.0	0.089	43.7	LOS D	2.6	18.1	0.75	0.71	0.75	26.8
11	T1	67	0.0	67	0.0	0.962	103.7	LOS F	9.6	67.5	1.00	1.10	1.62	13.2
12	R2	39	0.0	39	0.0	0.962	108.3	LOS F	9.6	67.5	1.00	1.10	1.62	13.2
Approach		157	0.0	157	0.0	0.962	85.5	LOS F	9.6	67.5	0.92	0.98	1.34	16.4
All Vehicles		4603	1.9	4603	1.9	1.236	46.8	LOS D	54.4	381.8	0.64	0.67	0.80	15.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	14.6	LOS B	0.1	0.1	0.44	0.44
P3	North Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	15.4	LOS B	0.1	0.1	0.45	0.45
All Pedestrians		211	42.1	LOS E			0.70	0.70

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.

MOVEMENT SUMMARY

Site: 4 [4. Pac-Ped_2024_AM_Dev_G]

Network: 1 [Lindfield_2024_AM_Dev_G]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing AM peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1387	5.6	1387	5.6	0.568	2.6	LOS A	2.2	16.3	0.16	0.14	0.16	19.1
Approach		1387	5.6	1387	5.6	0.568	2.6	LOS A	2.2	16.3	0.16	0.14	0.16	19.1
North: Pacific Highway														
8	T1	2579	2.6	2579	2.6	0.565	0.9	LOS A	4.9	35.2	0.06	0.06	0.06	54.0
Approach		2579	2.6	2579	2.6	0.565	0.9	LOS A	4.9	35.2	0.06	0.06	0.06	54.0
All Vehicles		3966	3.6	3966	3.6	0.568	1.5	LOS A	4.9	35.2	0.10	0.09	0.10	47.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 4 [4.Pac-Ped_2024_PM_Dev_G]

Network: N101 [Lindfield_2024_PM_Dev_G]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing PM peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	2091	1.8	1917	1.9	0.418	0.7	LOS A	2.3	16.3	0.05	0.04	0.05	38.2
Approach		2091	1.8	1917[N1]	1.9	0.418	0.7	LOS A	2.3	16.3	0.05	0.04	0.05	38.2
North: Pacific Highway														
8	T1	1341	2.4	1339	2.4	0.439	0.9	LOS A	2.8	19.9	0.06	0.05	0.06	53.5
Approach		1341	2.4	1339[N1]	2.4	0.439	0.9	LOS A	2.8	19.9	0.06	0.05	0.06	53.5
All Vehicles		3432	2.0	3257[N1]	2.1	0.439	0.8	LOS A	2.8	19.9	0.05	0.05	0.05	49.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 4 [4.Pac-Ped_2018_2024_SAT_Dev_G]

Network: N101 [Lindfield_2024_SAT_Dev_G]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing SAT peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1866	2.2	1866	2.2	0.560	1.6	LOS A	2.3	16.3	0.11	0.10	0.11	25.6
Approach		1866	2.2	1866	2.2	0.560	1.6	LOS A	2.3	16.3	0.11	0.10	0.11	25.6
North: Pacific Highway														
8	T1	1749	2.1	1749	2.1	0.573	1.6	LOS A	7.4	52.6	0.10	0.10	0.10	49.9
Approach		1749	2.1	1749	2.1	0.573	1.6	LOS A	7.4	52.6	0.10	0.10	0.10	49.9
All Vehicles		3616	2.2	3616	2.2	0.573	1.6	LOS A	7.4	52.6	0.11	0.10	0.11	44.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 6SIG [6SIG. Pac-Beacon_2024_AM_Dev_G]

Network: 1 [Lindfield_2024_AM_Dev_G]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	133	1.6	133	1.6	0.104	8.2	LOS A	1.6	11.5	0.20	0.59	0.20	45.6
2	T1	1273	6.0	1273	6.0	0.519	13.3	LOS A	29.5	216.8	0.62	0.57	0.62	32.4
Approach		1405	5.5	1405	5.5	0.519	12.8	LOS A	29.5	216.8	0.58	0.57	0.58	34.8
North: Pacific Highway														
8	T1	2513	2.4	2513	2.4	0.617	1.2	LOS A	5.5	39.3	0.07	0.07	0.07	48.5
Approach		2513	2.4	2513	2.4	0.617	1.2	LOS A	5.5	39.3	0.07	0.07	0.07	48.5
West: Beaconsfield Street														
10	L2	98	2.2	98	2.2	0.629	65.6	LOS E	14.7	104.0	0.98	0.83	0.98	18.1
12	R2	118	0.9	118	0.9	0.629	65.6	LOS E	14.7	104.0	0.98	0.83	0.98	18.1
Approach		216	1.5	216	1.5	0.629	65.6	LOS E	14.7	104.0	0.98	0.83	0.98	18.1
All Vehicles		4134	3.4	4134	3.4	0.629	8.5	LOS A	29.5	216.8	0.29	0.28	0.29	32.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	105	69.4	LOS F	0.4	0.4	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		158	69.4	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 6SIG [6SIG. Pac-Beacon_2024_PM_Dev_G]

Network: N101 [Lindfield_2024_PM_Dev_G]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	198	0.0	183	0.0	0.805	34.0	LOS C	34.7	245.9	0.81	0.77	0.84	33.3
2	T1	1984	2.0	1833	2.1	0.805	29.0	LOS C	37.3	265.8	0.81	0.74	0.82	20.8
Approach		2182	1.8	2015[N1]	1.9	0.805	29.5	LOS C	37.3	265.8	0.81	0.75	0.82	22.7
North: Pacific Highway														
8	T1	1336	2.6	1334	2.6	0.792	38.6	LOS C	17.1	122.4	0.95	0.86	0.95	7.0
Approach		1336	2.6	1334[N1]	2.6	0.792	38.6	LOS C	17.1	122.4	0.95	0.86	0.95	7.0
West: Beaconsfield Street														
10	L2	134	0.0	134	0.0	0.341	32.6	LOS C	13.3	93.0	0.69	0.76	0.69	26.7
12	R2	153	0.0	153	0.0	0.341	32.6	LOS C	13.3	93.0	0.69	0.76	0.69	26.7
Approach		286	0.0	286	0.0	0.341	32.6	LOS C	13.3	93.0	0.69	0.76	0.69	26.7
All Vehicles		3804	1.9	3635[N1]	2.0	0.805	33.0	LOS C	37.3	265.8	0.85	0.79	0.86	18.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	105	69.4	LOS F	0.4	0.4	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		158	69.4	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 6SIG [6SIG. Pac-Beacon_2024_SAT_Dev_G]

Network: N101 [Lindfield_2024_SAT_Dev_G]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	192	0.0	192	0.0	0.144	7.0	LOS A	1.2	8.6	0.11	0.58	0.11	46.5
2	T1	1716	2.3	1716	2.3	0.721	4.7	LOS A	18.4	131.4	0.24	0.23	0.24	46.0
Approach		1907	2.1	1907	2.1	0.721	4.9	LOS A	18.4	131.4	0.23	0.27	0.23	46.1
North: Pacific Highway														
8	T1	1752	2.2	1752	2.2	0.705	14.3	LOS A	17.2	122.4	0.56	0.52	0.56	15.7
Approach		1752	2.2	1752	2.2	0.705	14.3	LOS A	17.2	122.4	0.56	0.52	0.56	15.7
West: Beaconsfield Street														
10	L2	146	0.0	146	0.0	0.728	62.2	LOS E	21.4	150.1	0.98	0.86	0.99	18.7
12	R2	168	0.0	168	0.0	0.728	62.2	LOS E	21.4	150.1	0.98	0.86	0.99	18.7
Approach		315	0.0	315	0.0	0.728	62.2	LOS E	21.4	150.1	0.98	0.86	0.99	18.7
All Vehicles		3974	2.0	3974	2.0	0.728	13.6	LOS A	21.4	150.1	0.44	0.42	0.44	29.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	105	69.4	LOS F	0.4	0.4	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		158	69.4	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 7SIG [7.Pac-Strickland_2024_AM_Dev_G]

Network: 1 [Lindfield_2024_AM_Dev_G]

19S0090-Lindfield
Pacific Highway / Strickland Street
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1319	5.3	1319	5.3	0.544	5.9	LOS A	21.4	156.9	0.39	0.36	0.39	32.2
3	R2	146	2.2	146	2.2	0.458	25.9	LOS B	5.0	35.5	0.59	0.79	0.81	29.4
Approach		1465	5.0	1465	5.0	0.544	7.9	LOS A	21.4	156.9	0.41	0.40	0.43	31.5
East: Strickland Avenue														
4	L2	332	0.3	332	0.3	0.753	56.4	LOS D	21.8	153.0	0.94	0.85	0.97	18.1
6	R2	59	8.9	59	8.9	0.253	67.1	LOS E	3.9	29.6	0.94	0.75	0.94	16.4
Approach		391	1.6	391	1.6	0.753	58.0	LOS E	21.8	153.0	0.94	0.84	0.97	17.8
North: Pacific Highway														
7	L2	79	1.3	79	1.3	0.748	9.8	LOS A	16.3	116.5	0.30	0.31	0.30	36.6
8	T1	2477	2.5	2477	2.5	0.748	7.9	LOS A	31.6	225.7	0.37	0.35	0.37	29.9
Approach		2556	2.5	2556	2.5	0.748	8.0	LOS A	31.6	225.7	0.36	0.35	0.36	30.4
All Vehicles		4412	3.2	4412	3.2	0.753	12.4	LOS A	31.6	225.7	0.43	0.41	0.44	27.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 7SIG [7.Pac-Strickland_2024_PM_Dev_G]

Network: N101 [Lindfield_2024_PM_Dev_G]

19S0090-Lindfield
Pacific Highway / Strickland Street
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	2102	2.0	1944	2.1	0.889	6.6	LOS A	16.8	119.4	0.16	0.17	0.19	31.6
3	R2	245	0.4	227	0.5	0.385	9.2	LOS A	4.6	32.6	0.45	0.64	0.45	35.7
Approach		2347	1.8	2171[N1]	1.9	0.889	6.8	LOS A	16.8	119.4	0.19	0.22	0.21	32.5
East: Strickland Avenue														
4	L2	227	0.9	227	0.9	0.336	39.8	LOS C	11.9	83.6	0.77	0.76	0.77	21.5
6	R2	82	1.3	82	1.3	0.491	68.9	LOS E	5.6	39.5	0.96	0.76	0.96	16.1
Approach		309	1.0	309	1.0	0.491	47.5	LOS D	11.9	83.6	0.82	0.76	0.82	19.8
North: Pacific Highway														
7	L2	84	0.0	84	0.0	0.518	9.7	LOS A	7.9	56.0	0.24	0.27	0.24	36.5
8	T1	1440	2.2	1438	2.2	0.518	7.1	LOS A	11.3	80.7	0.26	0.25	0.26	30.6
Approach		1524	2.1	1522[N1]	2.1	0.518	7.2	LOS A	11.3	80.7	0.26	0.25	0.26	31.3
All Vehicles		4181	1.8	4003[N1]	1.9	0.889	10.1	LOS A	16.8	119.4	0.27	0.27	0.28	29.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 7SIG [7.Pac-Strickland_2024_SAT_Dev_G]

Network: N101 [Lindfield_2024_SAT_Dev_G]

19S0090-Lindfield
Pacific Highway / Strickland Street
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1831	2.0	1831	2.0	0.599	2.6	LOS A	11.3	80.2	0.18	0.17	0.18	36.2
3	R2	204	0.0	204	0.0	0.465	31.4	LOS C	10.1	70.7	0.92	0.93	1.07	27.8
Approach		2035	1.8	2035	1.8	0.599	5.5	LOS A	11.3	80.2	0.25	0.24	0.27	33.8
East: Strickland Avenue														
4	L2	261	0.0	261	0.0	0.453	47.3	LOS D	15.1	105.9	0.85	0.79	0.85	19.8
6	R2	68	1.5	68	1.5	0.294	68.3	LOS E	4.6	32.7	0.95	0.76	0.95	16.2
Approach		329	0.3	329	0.3	0.453	51.7	LOS D	15.1	105.9	0.87	0.79	0.87	18.9
North: Pacific Highway														
7	L2	77	1.4	77	1.4	0.593	20.9	LOS B	23.1	164.2	0.55	0.52	0.55	31.8
8	T1	1852	2.0	1852	2.0	0.593	19.4	LOS B	28.1	200.2	0.59	0.55	0.59	21.9
Approach		1928	2.0	1928	2.0	0.593	19.5	LOS B	28.1	200.2	0.59	0.55	0.59	22.7
All Vehicles		4293	1.8	4293	1.8	0.599	15.3	LOS B	28.1	200.2	0.45	0.42	0.46	26.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	69.3	LOS F			0.96	0.96

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.

APPENDIX A-5
2034 WITHOUT DEVELOPMENT

MOVEMENT SUMMARY

Site: 1 [1. Pac-Balfour_2034_AM_Base]

Network: 1 [Lindfield_2034 AM_Base]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing AM peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	55	1.9	55	1.9	0.145	23.5	LOS B	3.6	25.8	0.43	0.50	0.43	33.1
2	T1	1167	6.0	1163	6.0	0.725	23.9	LOS B	13.3	97.9	0.63	0.57	0.63	23.2
3	R2	105	4.0	105	3.9	0.871	90.8	LOS F	8.3	60.3	1.00	0.87	1.21	2.9
Approach		1327	5.7	1322[N1]	5.6	0.871	29.2	LOS C	13.3	97.9	0.65	0.59	0.66	20.4
East: Balfour Street														
4	L2	26	16.0	26	15.8	0.917	87.3	LOS F	11.1	81.6	1.00	1.05	1.32	2.9
5	T1	108	1.0	107	1.0	0.917	83.5	LOS F	11.1	81.6	1.00	1.05	1.32	16.2
6	R2	153	8.3	150	8.2	0.917	87.3	LOS F	11.1	81.6	1.00	1.05	1.32	8.7
Approach		287	6.2	282[N1]	6.2	0.917	85.9	LOS F	11.1	81.6	1.00	1.05	1.32	11.5
North: Pacific Highway														
7	L2	235	1.3	235	1.3	0.850	33.1	LOS C	55.4	395.2	0.90	0.86	0.90	17.2
8	T1	2443	2.4	2443	2.4	0.850	26.5	LOS B	56.7	404.7	0.86	0.80	0.86	18.1
9	R2	173	7.3	173	7.3	0.831	50.3	LOS D	9.1	67.4	1.00	0.90	1.21	25.5
Approach		2851	2.6	2851	2.6	0.850	28.5	LOS B	56.7	404.7	0.87	0.81	0.89	19.1
West: Balfour Street														
10	L2	63	0.0	63	0.0	0.076	29.5	LOS C	2.6	18.1	0.60	0.68	0.60	31.7
11	T1	114	0.0	114	0.0	0.841	71.7	LOS F	15.8	111.2	1.00	0.97	1.20	16.9
12	R2	94	1.1	94	1.1	0.841	76.2	LOS F	15.8	111.2	1.00	0.97	1.20	16.9
Approach		271	0.4	271	0.4	0.841	63.4	LOS E	15.8	111.2	0.90	0.90	1.06	19.5
All Vehicles		4736	3.6	4726[N1]	3.6	0.917	34.1	LOS C	56.7	404.7	0.82	0.77	0.86	18.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	60.0	LOS E	0.2	0.2	0.90	0.90
P2	East Full Crossing	53	15.0	LOS B	0.1	0.1	0.45	0.45
P3	North Full Crossing	53	60.0	LOS E	0.2	0.2	0.90	0.90
P4	West Full Crossing	53	24.7	LOS C	0.1	0.1	0.57	0.57
All Pedestrians		211	39.9	LOS D			0.70	0.70

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

MOVEMENT SUMMARY

Site: 1 [1.Pac-Balfour_2034_PM_Base]

Network: N101 [Lindfield_2034 PM_Base]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing PM peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	117	0.0	114	0.0	0.634	29.1	LOS C	13.8	97.9	0.75	0.71	0.75	31.0
2	T1	1833	2.0	1783	2.0	0.634	21.8	LOS B	13.8	97.9	0.65	0.59	0.65	24.5
3	R2	135	2.3	131	2.4	0.916	89.1	LOS F	10.5	74.8	1.00	0.91	1.28	2.9
Approach		2084	1.9	2028[N1]	1.9	0.916	26.5	LOS B	13.8	97.9	0.67	0.62	0.69	22.0
East: Balfour Street														
4	L2	28	0.0	28	0.0	1.248	304.1	LOS F	11.5	81.6	1.00	1.76	2.47	0.8
5	T1	114	0.0	114	0.0	1.248	300.2	LOS F	11.5	81.6	1.00	1.76	2.47	5.8
6	R2	158	2.7	158	2.7	1.248	304.1	LOS F	11.5	81.6	1.00	1.76	2.47	2.7
Approach		300	1.4	300	1.4	1.248	302.6	LOS F	11.5	81.6	1.00	1.76	2.47	3.8
North: Pacific Highway														
7	L2	301	0.0	301	0.0	0.308	26.6	LOS B	12.2	85.2	0.60	0.75	0.60	18.4
8	T1	1305	2.3	1305	2.3	0.674	24.1	LOS B	36.6	261.5	0.74	0.67	0.74	19.5
9	R2	136	2.3	136	2.3	1.229	293.5	LOS F	21.9	156.2	1.00	1.44	2.52	7.1
Approach		1742	1.9	1742	1.9	1.229	45.5	LOS D	36.6	261.5	0.74	0.75	0.85	13.7
West: Balfour Street														
10	L2	100	3.2	100	3.2	0.187	41.2	LOS C	5.0	36.2	0.74	0.73	0.74	27.5
11	T1	137	0.0	137	0.0	0.939	90.5	LOS F	18.3	127.8	1.00	1.13	1.44	14.5
12	R2	75	0.0	75	0.0	0.939	95.0	LOS F	18.3	127.8	1.00	1.13	1.44	14.5
Approach		312	1.0	312	1.0	0.939	75.8	LOS F	18.3	127.8	0.92	1.00	1.21	17.8
All Vehicles		4438	1.8	4381[N1]	1.8	1.248	56.5	LOS D	36.6	261.5	0.74	0.78	0.92	13.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	62.7	LOS F	0.2	0.2	0.92	0.92
P2	East Full Crossing	53	17.3	LOS B	0.1	0.1	0.48	0.48
P3	North Full Crossing	53	62.7	LOS F	0.2	0.2	0.92	0.92
P4	West Full Crossing	53	18.3	LOS B	0.1	0.1	0.49	0.49
All Pedestrians		211	40.3	LOS E			0.70	0.70

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

MOVEMENT SUMMARY

Site: 1 [1.Pac-Balfour_2034_SAT_Base]

Network: N101 [Lindfield_2034 SAT_Base]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing SAT peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	57	0.0	56	0.0	0.169	20.3	LOS B	4.7	33.4	0.42	0.47	0.42	35.3
2	T1	1627	2.4	1616	2.4	0.844	24.0	LOS B	13.7	97.9	0.68	0.64	0.69	23.2
3	R2	160	0.7	159	0.7	1.109	188.3	LOS F	13.9	97.9	1.00	1.17	1.88	1.4
Approach		1844	2.2	1831 N1	2.2	1.109	38.2	LOS C	13.9	97.9	0.70	0.68	0.79	16.5
East: Balfour Street														
4	L2	66	0.0	66	0.0	1.167	237.1	LOS F	11.5	81.6	1.00	1.55	2.18	1.0
5	T1	93	0.0	93	0.0	1.167	233.2	LOS F	11.5	81.6	1.00	1.55	2.18	7.2
6	R2	151	2.8	151	2.8	1.167	237.1	LOS F	11.5	81.6	1.00	1.55	2.18	3.4
Approach		309	1.4	309	1.4	1.167	235.9	LOS F	11.5	81.6	1.00	1.55	2.18	4.1
North: Pacific Highway														
7	L2	226	0.5	226	0.5	0.232	25.7	LOS B	8.7	61.3	0.58	0.74	0.58	18.8
8	T1	1655	2.4	1655	2.4	0.834	28.1	LOS B	52.8	377.0	0.86	0.79	0.86	17.5
9	R2	125	0.8	125	0.8	1.194	265.4	LOS F	19.1	134.5	1.00	1.40	2.42	7.7
Approach		2006	2.0	2006	2.0	1.194	42.7	LOS D	52.8	377.0	0.84	0.82	0.93	14.1
West: Balfour Street														
10	L2	62	0.0	62	0.0	0.098	40.2	LOS C	3.0	21.3	0.72	0.71	0.72	27.9
11	T1	82	0.0	82	0.0	0.833	73.8	LOS F	13.4	94.1	1.00	0.96	1.22	16.5
12	R2	94	0.0	94	0.0	0.833	78.3	LOS F	13.4	94.1	1.00	0.96	1.22	16.5
Approach		238	0.0	238	0.0	0.833	66.8	LOS E	13.4	94.1	0.93	0.90	1.09	19.0
All Vehicles		4398	1.9	4385 N1	1.9	1.194	55.7	LOS D	52.8	377.0	0.80	0.82	0.97	12.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	62.7	LOS F	0.2	0.2	0.92	0.92
P2	East Full Crossing	53	17.3	LOS B	0.1	0.1	0.48	0.48
P3	North Full Crossing	53	62.7	LOS F	0.2	0.2	0.92	0.92
P4	West Full Crossing	53	18.3	LOS B	0.1	0.1	0.49	0.49
All Pedestrians		211	40.3	LOS E			0.70	0.70

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

MOVEMENT SUMMARY

Site: 4 [4. Pac-Ped_2034_AM_Base]

Network: 1 [Lindfield_2034 AM_Base]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing AM peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1320	5.7	1315	5.6	0.400	4.8	LOS A	2.2	16.3	0.32	0.29	0.32	12.0
Approach		1320	5.7	1315[N1]	5.6	0.400	4.8	LOS A	2.2	16.3	0.32	0.29	0.32	12.0
North: Pacific Highway														
8	T1	2617	2.5	2616	2.5	0.573	1.8	LOS A	13.3	95.3	0.12	0.11	0.12	48.8
Approach		2617	2.5	2616[N1]	2.5	0.573	1.8	LOS A	13.3	95.3	0.12	0.11	0.12	48.8
All Vehicles		3937	3.6	3931[N1]	3.6	0.573	2.8	LOS A	13.3	95.3	0.19	0.17	0.19	40.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 4 [4.Pac-Ped_2034_PM_Base]

Network: N101 [Lindfield_2034 PM_Base]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing PM peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1988	1.9	1930	1.9	0.437	5.0	LOS A	2.3	16.3	0.34	0.31	0.34	11.5
Approach		1988	1.9	1930[N1]	1.9	0.437	5.0	LOS A	2.3	16.3	0.34	0.31	0.34	11.5
North: Pacific Highway														
8	T1	1372	2.3	1366	2.3	0.299	1.1	LOS A	3.2	22.6	0.07	0.06	0.07	52.7
Approach		1372	2.3	1366[N1]	2.3	0.299	1.1	LOS A	3.2	22.6	0.07	0.06	0.07	52.7
All Vehicles		3360	2.0	3296[N1]	2.1	0.437	3.4	LOS A	3.2	22.6	0.23	0.21	0.23	32.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 4 [4.Pac-Ped_2034_SAT_Base]

Network: N101 [Lindfield_2034 SAT_Base]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing SAT peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1765	2.3	1752	2.3	0.719	5.3	LOS A	2.3	16.3	0.36	0.33	0.36	11.0
Approach		1765	2.3	1752[N1]	2.3	0.719	5.3	LOS A	2.3	16.3	0.36	0.33	0.36	11.0
North: Pacific Highway														
8	T1	1788	2.1	1779	2.1	0.388	1.5	LOS A	4.6	32.8	0.09	0.09	0.09	50.5
Approach		1788	2.1	1779[N1]	2.1	0.388	1.5	LOS A	4.6	32.8	0.09	0.09	0.09	50.5
All Vehicles		3554	2.2	3531[N1]	2.2	0.719	3.4	LOS A	4.6	32.8	0.23	0.21	0.23	34.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 6 [6. Pac-Beaconsfield_2034_AM_Base]

Network: 1 [Lindfield_2034 AM_Base]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
Existing AM peak hour
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	57	5.6	57	5.5	0.062	5.6	LOS A	0.0	0.0	0.00	0.29	0.00	54.3
2	T1	1229	5.0	1224	4.9	0.309	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.4
Approach		1286	5.0	1281[N1]	4.9	0.309	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.8
North: Pacific Highway														
8	T1	2575	3.3	2574	3.3	0.449	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		2575	3.3	2574[N1]	3.3	0.449	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Beaconsfield Parade														
10	L2	76	4.2	76	4.2	0.068	7.9	LOS A	0.3	1.8	0.15	0.91	0.15	41.7
Approach		76	4.2	76	4.2	0.068	7.9	LOS A	0.3	1.8	0.15	0.91	0.15	41.7
All Vehicles		3937	3.9	3931[N1]	3.9	0.449	0.2	NA	0.3	1.8	0.00	0.03	0.00	57.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 6 [6.Pac-Beaconsfield_2034_PM_Base]

Network: N101 [Lindfield_2034 PM_Base]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
Existing PM peak hour
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	100	0.0	97	0.0	0.345	5.6	LOS A	0.0	0.0	0.00	0.09	0.00	56.8
2	T1	1952	1.9	1892	2.0	0.345	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	59.0
Approach		2052	1.8	1989[N1]	1.9	0.345	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.7
North: Pacific Highway														
8	T1	1366	2.5	1361	2.6	0.323	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1366	2.5	1361[N1]	2.6	0.323	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Beaconsfield Parade														
10	L2	78	0.0	78	0.0	0.139	11.6	LOS A	0.5	3.2	0.55	0.99	0.55	39.0
Approach		78	0.0	78	0.0	0.139	11.6	LOS A	0.5	3.2	0.55	0.99	0.55	39.0
All Vehicles		3496	2.1	3428[N1]	2.1	0.345	0.4	NA	0.5	3.2	0.01	0.04	0.01	57.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 6 [6.Pac-Beaconsfield_2034_SAT_Base]

Network: N101 [Lindfield_2034 SAT_Base]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
Existing SAT peak hour
Site Category: (None)
Stop (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	75	0.0	74	0.0	0.083	5.5	LOS A	0.0	0.0	0.00	0.28	0.00	54.8
2	T1	1685	2.3	1672	2.3	0.414	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.4
Approach		1760	2.2	1746[N1]	2.2	0.414	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.8
North: Pacific Highway														
8	T1	1791	2.1	1781	2.1	0.421	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
Approach		1791	2.1	1781[N1]	2.1	0.421	0.0	NA	0.0	0.0	0.00	0.00	0.00	59.9
West: Beaconsfield Parade														
10	L2	88	0.0	88	0.0	0.080	7.8	LOS A	0.3	2.1	0.19	0.89	0.19	41.7
Approach		88	0.0	88	0.0	0.080	7.8	LOS A	0.3	2.1	0.19	0.89	0.19	41.7
All Vehicles		3639	2.1	3616[N1]	2.1	0.421	0.3	NA	0.3	2.1	0.00	0.03	0.00	57.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 7 [7. Pac-Strickland_2034_AM_Base]

Network: 1 [Lindfield_2034 AM_Base]

19S0090-Lindfield
Pacific Highway / Strickland Street
Existing AM peak hour
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1251	5.6	1251	5.6	0.541	7.1	LOS A	6.8	49.6	0.19	0.00	0.28	31.0
3	R2	179	2.4	179	2.4	1.277	306.4	LOS F	30.0	214.6	1.00	3.46	8.06	7.3
Approach		1429	5.2	1429	5.2	1.277	44.6	NA	30.0	214.6	0.29	0.43	1.25	16.0
East: Strickland Avenue														
4	L2	404	0.3	404	0.3	0.720	14.3	LOS A	6.0	42.4	0.64	1.01	1.12	30.6
6	R2	12	27.3	12	27.3	1.930	1350.9	LOS F	7.4	64.2	1.00	1.30	1.95	1.1
Approach		416	1.0	416	1.0	1.930	51.5	LOS D	7.4	64.2	0.65	1.02	1.14	17.7
North: Pacific Highway														
7	L2	85	1.2	85	1.2	0.491	3.5	LOS A	0.0	0.0	0.00	0.05	0.00	39.9
8	T1	2407	2.6	2407	2.6	0.491	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	39.7
Approach		2493	2.5	2492[N1]	2.5	0.491	0.2	NA	0.0	0.0	0.00	0.02	0.00	39.8
All Vehicles		4338	3.3	4338	3.3	1.930	19.7	NA	30.0	214.6	0.16	0.25	0.52	23.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 7 [7.Pac-Strickland_2034_PM_Base]

Network: N101 [Lindfield_2034 PM_Base]

19S0090-Lindfield
Pacific Highway / Strickland Street
Existing PM peak hour
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	2002	2.1	1972	2.0	0.512	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.8
3	R2	299	0.4	294	0.4	0.803	27.0	LOS B	5.9	41.8	0.90	1.28	1.99	35.0
Approach		2301	1.8	2266 N1	1.8	0.803	3.5	NA	5.9	41.8	0.12	0.17	0.26	49.4
East: Strickland Avenue														
4	L2	278	1.1	278	1.1	0.295	7.4	LOS A	1.9	13.5	0.55	0.63	0.55	41.7
6	R2	40	0.0	40	0.0	5.236	4090.4	LOS F	33.2	232.7	1.00	1.46	2.91	0.4
Approach		318	1.0	318	1.0	5.236	521.1	LOS F	33.2	232.7	0.60	0.73	0.84	3.1
North: Pacific Highway														
7	L2	78	0.0	78	0.0	0.267	5.6	LOS A	0.0	0.0	0.00	0.09	0.00	56.8
8	T1	1338	2.4	1333	2.4	0.267	0.0	LOS A	0.0	0.0	0.00	0.03	0.00	58.9
Approach		1416	2.2	1411 N1	2.2	0.267	0.3	NA	0.0	0.0	0.00	0.03	0.00	58.6
All Vehicles		4035	1.9	3995 N1	1.9	5.236	43.6	NA	33.2	232.7	0.11	0.16	0.21	17.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

MOVEMENT SUMMARY

Site: 7 [7.Pac-Strickland_2034_SAT_Base]

Network: N101 [Lindfield_2034 SAT_Base]

19S0090-Lindfield
Pacific Highway / Strickland Street
Existing SAT peak hour
Site Category: (None)
Giveway / Yield (Two-Way)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1719	2.1	1719	2.1	0.612	1.4	LOS A	5.9	42.2	0.24	0.00	0.25	55.2
3	R2	248	0.0	248	0.0	0.915	49.0	LOS D	8.2	57.2	0.97	1.54	3.01	27.4
Approach		1967	1.8	1967	1.8	0.915	7.4	NA	8.2	57.2	0.33	0.20	0.60	42.6
East: Strickland Avenue														
4	L2	318	0.0	318	0.0	0.365	8.6	LOS A	2.6	18.5	0.63	0.70	0.66	40.6
6	R2	23	0.0	23	0.0	2.573	1861.7	LOS F	16.2	113.7	1.00	1.39	2.56	0.9
Approach		341	0.0	341	0.0	2.573	134.5	LOS F	16.2	113.7	0.65	0.75	0.79	9.8
North: Pacific Highway														
7	L2	71	1.5	70	1.5	0.313	5.6	LOS A	0.0	0.0	0.00	0.07	0.00	56.9
8	T1	1740	2.2	1731	2.2	0.313	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.2
Approach		1811	2.2	1801 N1	2.2	0.313	0.2	NA	0.0	0.0	0.00	0.02	0.00	58.9
All Vehicles		4119	1.8	4110 N1	1.8	2.573	14.8	NA	16.2	113.7	0.21	0.17	0.35	32.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

APPENDIX A-6
2034 WITH DEVELOPMENT

MOVEMENT SUMMARY

Site: 1 [1. Pac-Balfour_2034_AM_Dev_G]

Network: 1 [Lindfield_2034_AM_Dev_G]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing AM peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	55	1.9	55	1.9	0.179	33.5	LOS C	5.7	41.1	0.67	0.63	0.67	28.6
2	T1	1323	5.6	1323	5.6	0.896	51.5	LOS D	13.4	97.9	0.93	0.94	1.05	13.6
3	R2	114	2.8	114	2.8	0.780	82.7	LOS F	8.7	62.1	1.00	0.85	1.14	3.2
Approach		1492	5.2	1492	5.2	0.896	53.3	LOS D	13.4	97.9	0.93	0.92	1.04	13.2
East: Balfour Street														
4	L2	26	16.0	26	15.8	0.647	60.6	LOS E	11.1	81.6	0.96	0.82	0.96	4.3
5	T1	242	4.8	237	4.7	0.647	56.8	LOS E	11.1	81.6	0.96	0.82	0.96	21.0
Approach		268	5.9	263[N1]	5.8	0.647	57.2	LOS E	11.1	81.6	0.96	0.82	0.96	19.9
North: Pacific Highway														
7	L2	235	1.3	235	1.3	0.877	37.1	LOS C	60.7	433.0	0.93	0.90	0.96	15.7
8	T1	2443	2.4	2443	2.4	0.877	30.8	LOS C	61.6	440.2	0.88	0.84	0.91	16.3
9	R2	331	3.8	331	3.8	0.946	66.0	LOS E	20.8	150.4	1.00	1.00	1.36	22.0
Approach		3008	2.4	3008	2.4	0.946	35.2	LOS C	61.6	440.2	0.89	0.86	0.96	17.6
West: Balfour Street														
10	L2	63	0.0	63	0.0	0.069	25.4	LOS B	2.4	16.5	0.55	0.67	0.55	33.4
11	T1	114	0.0	114	0.0	0.949	97.5	LOS F	14.3	101.0	1.00	1.13	1.51	13.8
12	R2	47	2.2	47	2.2	0.949	102.1	LOS F	14.3	101.0	1.00	1.13	1.51	13.8
Approach		224	0.5	224	0.5	0.949	78.2	LOS F	14.3	101.0	0.87	1.00	1.24	17.3
All Vehicles		4993	3.4	4987[N1]	3.4	0.949	43.7	LOS D	61.6	440.2	0.91	0.88	1.00	16.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	60.9	LOS F	0.2	0.2	0.90	0.90
P2	East Full Crossing	53	15.4	LOS B	0.1	0.1	0.45	0.45
P3	North Full Crossing	53	60.9	LOS F	0.2	0.2	0.90	0.90
P4	West Full Crossing	53	28.9	LOS C	0.1	0.1	0.62	0.62
All Pedestrians		211	41.5	LOS E			0.72	0.72

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.

MOVEMENT SUMMARY

Site: 1 [1.Pac-Balfour_2034_PM_Dev_G]

Network: N101 [Lindfield_2034_PM_Dev_G]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing PM peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	117	0.0	105	0.0	0.625	28.5	LOS B	13.8	97.9	0.74	0.70	0.74	31.3
2	T1	2093	1.8	1884	1.9	0.625	10.7	LOS A	13.8	97.9	0.37	0.35	0.37	34.9
3	R2	155	2.0	139	2.1	0.940	95.2	LOS F	11.6	82.8	1.00	0.94	1.33	2.8
Approach		2364	1.7	2128[N1]	1.8	0.940	17.1	LOS B	13.8	97.9	0.43	0.40	0.46	28.2
East: Balfour Street														
4	L2	28	0.0	28	0.0	0.781	69.0	LOS E	11.5	81.6	1.00	0.91	1.08	3.8
5	T1	248	1.3	248	1.3	0.781	65.2	LOS E	11.5	81.6	1.00	0.91	1.08	19.4
Approach		277	1.1	277	1.1	0.781	65.6	LOS E	11.5	81.6	1.00	0.91	1.08	18.3
North: Pacific Highway														
7	L2	301	0.0	301	0.0	0.308	26.6	LOS B	12.2	85.2	0.60	0.75	0.60	18.4
8	T1	1305	2.3	1305	2.3	0.713	24.4	LOS B	40.1	286.3	0.75	0.68	0.75	19.3
9	R2	335	0.9	335	0.9	1.296	343.9	LOS F	59.0	416.6	1.00	1.54	2.61	6.2
Approach		1941	1.7	1941	1.7	1.296	79.8	LOS F	59.0	416.6	0.77	0.84	1.05	10.0
West: Balfour Street														
10	L2	100	3.2	100	3.2	0.195	41.2	LOS C	5.0	36.2	0.74	0.73	0.74	27.5
11	T1	137	0.0	137	0.0	1.362	395.9	LOS F	33.3	233.2	1.00	1.83	2.87	4.2
12	R2	38	0.0	38	0.0	1.362	400.4	LOS F	33.3	233.2	1.00	1.83	2.87	4.2
Approach		275	1.1	275	1.1	1.362	267.4	LOS F	33.3	233.2	0.90	1.43	2.10	6.6
All Vehicles		4857	1.6	4621[N1]	1.7	1.362	61.2	LOS E	59.0	416.6	0.64	0.68	0.84	13.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	65.5	LOS F	0.2	0.2	0.94	0.94
P2	East Full Crossing	53	17.3	LOS B	0.1	0.1	0.48	0.48
P3	North Full Crossing	53	65.5	LOS F	0.2	0.2	0.94	0.94
P4	West Full Crossing	53	18.3	LOS B	0.1	0.1	0.49	0.49
All Pedestrians		211	41.6	LOS E			0.71	0.71

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.

MOVEMENT SUMMARY

Site: 1 [1.Pac-Balfour_2034_SAT_Dev_G]

Network: N101 [Lindfield_2034_SAT_Dev_G]

19S0090-Lindfield
Pacific Highway / Balfour Street
Existing SAT peak hour
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	57	0.0	57	0.0	0.180	10.6	LOS A	2.6	18.7	0.19	0.30	0.19	42.5
2	T1	1899	2.1	1899	2.1	0.898	12.7	LOS A	13.7	97.9	0.31	0.33	0.36	32.6
3	R2	179	0.6	179	0.6	1.216	277.1	LOS F	13.9	97.9	1.00	1.34	2.27	0.9
Approach		2135	1.9	2135	1.9	1.216	34.8	LOS C	13.9	97.9	0.36	0.42	0.51	17.4
East: Balfour Street														
4	L2	66	0.0	66	0.0	1.094	179.4	LOS F	11.5	81.6	1.00	1.50	1.91	1.4
5	T1	223	1.4	223	1.4	1.094	175.6	LOS F	11.5	81.6	1.00	1.50	1.91	9.2
Approach		289	1.1	289	1.1	1.094	176.4	LOS F	11.5	81.6	1.00	1.50	1.91	7.7
North: Pacific Highway														
7	L2	226	0.5	226	0.5	0.211	21.4	LOS B	7.7	54.3	0.51	0.72	0.51	21.3
8	T1	1655	2.4	1655	2.4	0.814	22.1	LOS B	52.8	377.1	0.77	0.71	0.77	20.7
9	R2	359	0.3	359	0.3	1.453	477.7	LOS F	75.0	526.0	1.00	1.74	3.06	4.6
Approach		2240	1.8	2240	1.8	1.453	95.0	LOS F	75.0	526.0	0.78	0.88	1.11	8.5
West: Balfour Street														
10	L2	62	0.0	62	0.0	0.114	45.6	LOS D	3.3	22.9	0.77	0.72	0.77	26.3
11	T1	82	0.0	82	0.0	0.741	70.8	LOS F	9.5	66.5	1.00	0.88	1.12	17.1
12	R2	47	0.0	47	0.0	0.741	75.3	LOS F	9.5	66.5	1.00	0.88	1.12	17.1
Approach		192	0.0	192	0.0	0.741	63.7	LOS E	9.5	66.5	0.92	0.83	1.00	19.8
All Vehicles		4856	1.8	4856	1.8	1.453	72.2	LOS F	75.0	526.0	0.62	0.71	0.89	11.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	13.7	LOS B	0.1	0.1	0.43	0.43
P3	North Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P4	West Full Crossing	53	14.6	LOS B	0.1	0.1	0.44	0.44
All Pedestrians		211	41.7	LOS E			0.70	0.70

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.

MOVEMENT SUMMARY

Site: 4 [4. Pac-Ped_2034_AM_Dev_G]

Network: 1 [Lindfield_2034_AM_Dev_G]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing AM peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1394	5.6	1394	5.6	0.778	2.0	LOS A	2.2	16.3	0.12	0.11	0.12	22.5
Approach		1394	5.6	1394	5.6	0.778	2.0	LOS A	2.2	16.3	0.12	0.11	0.12	22.5
North: Pacific Highway														
8	T1	2571	2.6	2569	2.6	0.563	0.7	LOS A	2.8	19.7	0.05	0.05	0.05	55.2
Approach		2571	2.6	2569[N1]	2.6	0.563	0.7	LOS A	2.8	19.7	0.05	0.05	0.05	55.2
All Vehicles		3964	3.6	3962[N1]	3.6	0.778	1.1	LOS A	2.8	19.7	0.07	0.07	0.07	49.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 4 [4.Pac-Ped_2034_PM_Dev_G]

Network: N101 [Lindfield_2034_PM_Dev_G]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing PM peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	2097	1.8	1884	1.9	0.411	0.7	LOS A	2.3	16.3	0.05	0.04	0.05	37.3
Approach		2097	1.8	1884[N1]	1.9	0.411	0.7	LOS A	2.3	16.3	0.05	0.04	0.05	37.3
North: Pacific Highway														
8	T1	1334	2.4	1324	2.4	0.435	1.0	LOS A	3.0	21.5	0.06	0.06	0.06	53.2
Approach		1334	2.4	1324[N1]	2.4	0.435	1.0	LOS A	3.0	21.5	0.06	0.06	0.06	53.2
All Vehicles		3431	2.0	3208[N1]	2.2	0.435	0.8	LOS A	3.0	21.5	0.05	0.05	0.05	49.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 4 [4.Pac-Ped_2018_2034_SAT_Dev_G]

Network: N101 [Lindfield_2034_SAT_Dev_G]

19S0090-Lindfield
Pacific Highway / Pedestrian Crossing
Existing SAT peak hour
Site Category: (None)
Pedestrian Crossing (Signals) - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1877	2.2	1877	2.2	0.579	1.8	LOS A	2.3	16.3	0.12	0.11	0.12	24.0
Approach		1877	2.2	1877	2.2	0.579	1.8	LOS A	2.3	16.3	0.12	0.11	0.12	24.0
North: Pacific Highway														
8	T1	1741	2.1	1735	2.1	0.569	2.1	LOS A	9.6	68.1	0.14	0.13	0.14	47.1
Approach		1741	2.1	1735[N1]	2.1	0.569	2.1	LOS A	9.6	68.1	0.14	0.13	0.14	47.1
All Vehicles		3618	2.2	3612[N1]	2.2	0.579	2.0	LOS A	9.6	68.1	0.13	0.12	0.13	41.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		53	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 6SIG [6SIG. Pac-Beacon_2034_AM_Dev_G]

Network: 1 [Lindfield_2034_AM_Dev_G]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	143	2.2	143	2.2	0.109	7.3	LOS A	1.0	7.4	0.12	0.57	0.12	46.3
2	T1	1279	5.9	1279	5.9	0.543	13.7	LOS A	30.4	223.6	0.59	0.54	0.59	31.9
Approach		1422	5.6	1422	5.6	0.543	13.0	LOS A	30.4	223.6	0.54	0.54	0.54	34.6
North: Pacific Highway														
8	T1	2504	2.4	2502	2.4	0.690	1.8	LOS A	8.3	59.6	0.10	0.09	0.10	44.3
Approach		2504	2.4	2502[N1]	2.4	0.690	1.8	LOS A	8.3	59.6	0.10	0.09	0.10	44.3
West: Beaconsfield Street														
10	L2	112	2.8	112	2.8	0.703	62.8	LOS E	15.9	113.2	0.96	0.83	0.98	18.6
12	R2	126	0.8	126	0.8	0.703	62.7	LOS E	15.9	113.2	0.96	0.83	0.98	18.6
Approach		238	1.8	238	1.8	0.703	62.8	LOS E	15.9	113.2	0.96	0.83	0.98	18.6
All Vehicles		4164	3.4	4162[N1]	3.4	0.703	9.1	LOS A	30.4	223.6	0.30	0.29	0.30	32.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	105	69.4	LOS F	0.4	0.4	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		158	69.4	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 6SIG [6SIG. Pac-Beacon_2034_PM_Dev_G]

Network: N101 [Lindfield_2034_PM_Dev_G]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	216	0.0	194	0.0	0.806	35.6	LOS C	34.8	246.9	0.83	0.78	0.86	32.6
2	T1	1991	2.0	1792	2.1	0.806	30.4	LOS C	37.6	267.7	0.82	0.75	0.83	20.2
Approach		2206	1.8	1986[N1]	1.9	0.806	30.9	LOS C	37.6	267.7	0.82	0.76	0.83	22.2
North: Pacific Highway														
8	T1	1328	2.6	1319	2.6	0.811	40.7	LOS C	17.1	122.4	0.95	0.86	0.96	6.7
Approach		1328	2.6	1319[N1]	2.6	0.811	40.7	LOS C	17.1	122.4	0.95	0.86	0.96	6.7
West: Beaconsfield Street														
10	L2	147	0.0	147	0.0	0.361	32.3	LOS C	14.3	100.0	0.69	0.76	0.69	26.8
12	R2	160	0.0	160	0.0	0.361	32.3	LOS C	14.3	100.0	0.69	0.76	0.69	26.8
Approach		307	0.0	307	0.0	0.361	32.3	LOS C	14.3	100.0	0.69	0.76	0.69	26.8
All Vehicles		3842	1.9	3613[N1]	2.0	0.811	34.6	LOS C	37.6	267.7	0.86	0.80	0.87	17.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	105	69.4	LOS F	0.4	0.4	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		158	69.4	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 6SIG [6SIG. Pac-Beacon_2034_SAT_Dev_G]

Network: N101 [Lindfield_2034_SAT_Dev_G]

19S0090-Lindfield
Pacific Highway / Beaconsfield Parade
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
1	L2	205	0.0	205	0.0	0.149	6.8	LOS A	1.1	8.0	0.10	0.58	0.10	46.6
2	T1	1723	2.3	1723	2.3	0.744	5.0	LOS A	20.5	146.2	0.26	0.25	0.26	45.3
Approach		1928	2.1	1928	2.1	0.744	5.2	LOS A	20.5	146.2	0.24	0.28	0.24	45.6
North: Pacific Highway														
8	T1	1743	2.2	1738	2.2	0.714	16.1	LOS B	17.2	122.4	0.60	0.55	0.60	14.4
Approach		1743	2.2	1738[N1]	2.2	0.714	16.1	LOS B	17.2	122.4	0.60	0.55	0.60	14.4
West: Beaconsfield Street														
10	L2	162	0.0	162	0.0	0.743	61.4	LOS E	23.1	161.8	0.98	0.86	1.00	18.9
12	R2	177	0.0	177	0.0	0.743	61.3	LOS E	23.1	161.8	0.98	0.86	1.00	18.9
Approach		339	0.0	339	0.0	0.743	61.3	LOS E	23.1	161.8	0.98	0.86	1.00	18.9
All Vehicles		4011	1.9	4005[N1]	1.9	0.744	14.7	LOS B	23.1	161.8	0.46	0.45	0.46	28.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P3	North Full Crossing	105	69.4	LOS F	0.4	0.4	0.96	0.96
P4	West Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		158	69.4	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 7SIG [7.Pac-Strickland_2034_AM_Dev_G]

Network: 1 [Lindfield_2034_AM_Dev_G]

19S0090-Lindfield
Pacific Highway / Strickland Street
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1319	5.3	1319	5.3	0.499	8.4	LOS A	26.3	192.4	0.53	0.49	0.53	29.9
3	R2	179	2.4	179	2.4	0.435	37.4	LOS C	7.2	51.6	0.73	0.87	1.00	26.2
Approach		1498	4.9	1498	4.9	0.499	11.8	LOS A	26.3	192.4	0.56	0.53	0.59	28.8
East: Strickland Avenue														
4	L2	404	0.3	404	0.3	0.845	57.6	LOS E	27.8	195.4	0.92	0.90	1.04	17.8
6	R2	67	9.4	67	9.4	0.290	67.5	LOS E	4.5	34.1	0.94	0.76	0.94	16.3
Approach		472	1.6	472	1.6	0.845	59.0	LOS E	27.8	195.4	0.93	0.88	1.02	17.6
North: Pacific Highway														
7	L2	94	1.1	94	1.1	0.847	11.5	LOS A	19.5	139.4	0.37	0.38	0.38	35.8
8	T1	2477	2.5	2476	2.5	0.847	10.7	LOS A	42.2	301.6	0.52	0.49	0.52	27.5
Approach		2571	2.5	2570[N1]	2.5	0.847	10.7	LOS A	42.2	301.6	0.51	0.49	0.52	28.1
All Vehicles		4540	3.2	4540	3.2	0.847	16.1	LOS B	42.2	301.6	0.57	0.54	0.59	25.8

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 7SIG [7.Pac-Strickland_2034_PM_Dev_G]

Network: N101 [Lindfield_2034_PM_Dev_G]

19S0090-Lindfield
Pacific Highway / Strickland Street
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	2100	2.0	1887	2.1	0.820	2.5	LOS A	13.6	96.8	0.18	0.16	0.18	36.3
3	R2	299	0.4	268	0.4	0.429	15.1	LOS B	9.0	63.5	0.67	0.76	0.71	33.2
Approach		2399	1.8	2156 N1	1.9	0.820	4.1	LOS A	13.6	96.8	0.24	0.24	0.24	35.3
East: Strickland Avenue														
4	L2	278	1.1	278	1.1	0.384	37.9	LOS C	14.3	101.2	0.76	0.76	0.76	22.0
6	R2	96	1.1	96	1.1	0.547	69.5	LOS E	6.6	46.4	0.97	0.77	0.97	16.0
Approach		374	1.1	374	1.1	0.547	46.0	LOS D	14.3	101.2	0.81	0.77	0.81	20.1
North: Pacific Highway														
7	L2	98	0.0	97	0.0	0.549	15.2	LOS B	13.4	95.0	0.40	0.41	0.40	34.0
8	T1	1438	2.2	1429	2.2	0.549	11.8	LOS A	15.2	108.5	0.40	0.37	0.40	26.6
Approach		1536	2.1	1526 N1	2.1	0.549	12.0	LOS A	15.2	108.5	0.40	0.38	0.40	27.6
All Vehicles		4308	1.8	4056 N1	1.9	0.820	10.9	LOS A	15.2	108.5	0.35	0.34	0.35	29.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	69.3	LOS F			0.96	0.96

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.

MOVEMENT SUMMARY

Site: 7SIG [7.Pac-Strickland_2034_SAT_Dev_G]

Network: N101 [Lindfield_2034_SAT_Dev_G]

19S0090-Lindfield
Pacific Highway / Strickland Street
AM OPT1
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 150 seconds (Network User-Given Cycle Time)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	95% Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Pacific Highway														
2	T1	1831	2.0	1831	2.0	0.604	2.8	LOS A	13.0	92.6	0.19	0.17	0.19	35.9
3	R2	248	0.0	248	0.0	0.568	38.6	LOS C	12.2	85.5	0.94	0.98	1.18	25.9
Approach		2079	1.7	2079	1.7	0.604	7.1	LOS A	13.0	92.6	0.28	0.27	0.31	32.4
East: Strickland Avenue														
4	L2	318	0.0	318	0.0	0.593	48.1	LOS D	18.9	132.5	0.88	0.81	0.88	19.6
6	R2	80	1.3	80	1.3	0.326	67.7	LOS E	5.4	38.1	0.95	0.76	0.95	16.3
Approach		398	0.3	398	0.3	0.593	52.0	LOS D	18.9	132.5	0.89	0.80	0.89	18.9
North: Pacific Highway														
7	L2	88	1.2	88	1.2	0.603	21.9	LOS B	23.9	170.4	0.57	0.55	0.57	31.5
8	T1	1852	2.0	1846	2.1	0.603	20.3	LOS B	29.0	206.3	0.61	0.56	0.61	21.5
Approach		1940	2.0	1934 N1	2.0	0.603	20.4	LOS B	29.0	206.3	0.61	0.56	0.61	22.3
All Vehicles		4417	1.7	4411 N1	1.7	0.604	17.0	LOS B	29.0	206.3	0.48	0.45	0.49	25.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network 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.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
P2	East Full Crossing	53	69.3	LOS F	0.2	0.2	0.96	0.96
All Pedestrians		105	69.3	LOS F			0.96	0.96

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.

APPENDIX B

TRAFFIC GENERATION CLARIFICATION

Our ref: PS111983-TAP-LTR-004-RevA Response to Request for Clarifications

Your ref: PS111983

By email
jbyrnes@kmc.nsw.gov.au

9 April 2020

Juliet Byrnes
Project Leader - Major Projects
Ku-ring-gai Council
818 Pacific Highway
GORDON NSW 2072

Dear Juliet

Lindfield Village Hub Response to Traffic Engineer Clarifications

We understand that Council's Strategic Traffic Engineer reviewed the WSP Transport Impact Assessment that we prepared in May 2019 for the Lindfield Village Hub planning proposal and has requested some clarifications. These clarifications are set out in the meeting agenda package for The Ku-Ring-Gai Local Planning Panel Meeting, 6 April 2020.

In this regard, we are pleased to provide you with the enclosed responses.

Please get in contact if you have any queries.

Yours sincerely

B. Humphrey-Robinson

Brigette Humphrey-Robinson
Senior Traffic Engineer

Encl: Response to Traffic Engineer Clarifications

RESPONSE TO KMC PLANNING REQUEST FOR FURTHER INFORMATION

The following comments were provided by Councils strategic traffic engineer:

> *1. The calculated traffic generations for the specialty retail uses in Table 7.2 appear not to be based on the relevant traffic generation rate in Table 7.1. This needs to be recalculated and updated in the table.*
>
> *2. For the AM peak hour traffic generation rate for retail uses noted in Table 7.1, the 50% reduction to the AM peak hour traffic generation rate appears to have been applied to the resulting traffic generations in Table 7.2. This needs to be recalculated and updated.*
>
> *3. The footnote to Table 7.2 suggests that the traffic generation from retail uses has been reduced by 20%, to allow for linked multiple-purpose trips as suggested in Transport for NSW/RMS guidelines. However, this discount appears to have not been applied to the weekday PM peak hour and Saturday peak hour traffic generations. This needs to be recalculated and updated.*

In response to these comments,

- The traffic generations presented in Table 7.2 of WSP's transport assessment use the generation rates in Table 7.1. The rates have been applied to GLFA rather than GFA which was shown in Table 7.2. Transport for NSW/RMS guidelines *(Guide to Traffic Generating Developments)* bases retail traffic generation rates on GFLA as it provides a better indication of traffic generation than gross floor area.
- The applied AM peak hour traffic generation rate for retail uses was based on a 50% of the PM peak hour traffic generation rate. This was applied as the retail trade is significantly less during the AM peak hour than the PM peak hour.
- The traffic generation from retail uses has been reduced by 20%, to allow for linked multiple-purpose trips as suggested in Transport for NSW/RMS guidelines. This was applied to all the retail uses in each of the peak periods.

Table 1 includes a summary of the adopted traffic generations, highlighting how the above factors were applied. This should clarify the points that have been raised.

Table 1 Retail traffic generation for weekday AM, PM and Saturday peak hours

Peak	Use	GFA (m^2)	GLFA (m^2) (1)	Traffic generation rate per 100m^2 GLFA	Traffic generation without considering linked trips	Trip generation considering linked trips
AM	Supermarket	3,800	3,800	6.9	262.2	210
	Faster trade	850	850	1.15	9.8	8
	Specialty	3,492	2,530	2.8	70.8	57
PM	Supermarket	3,800	3,800	13.8	524.4	420
	Faster trade	850	850	2.3	19.55	16
	Specialty	3,492	2,530	5.6	141.68	113
Weekend	Supermarket	3,800	3,800	14.7	558.6	447
	Faster trade	850	850	1.3	11.05	9
	Specialty	3,492	2,530	10.7	270.71	217

(1) The project team advised that there would be limited difference between the GFA and GLFA for the supermarket and faster trade uses.

In addition to the above, Council has also made the below request.

4. A link diagram, showing existing and future intersection movement counts, should be provided as part of Section 7.2, for transparency.

The existing and future traffic counts are attached including:

- Attachment A - existing traffic counts for the AM, PM and weekend peak periods
- Attachment B – future 2024 counts for the AM, PM and weekend peak periods (per the transport assessment)
- Attachment C – future 2034 counts for the AM, PM and weekend peak periods (per the transport assessment).

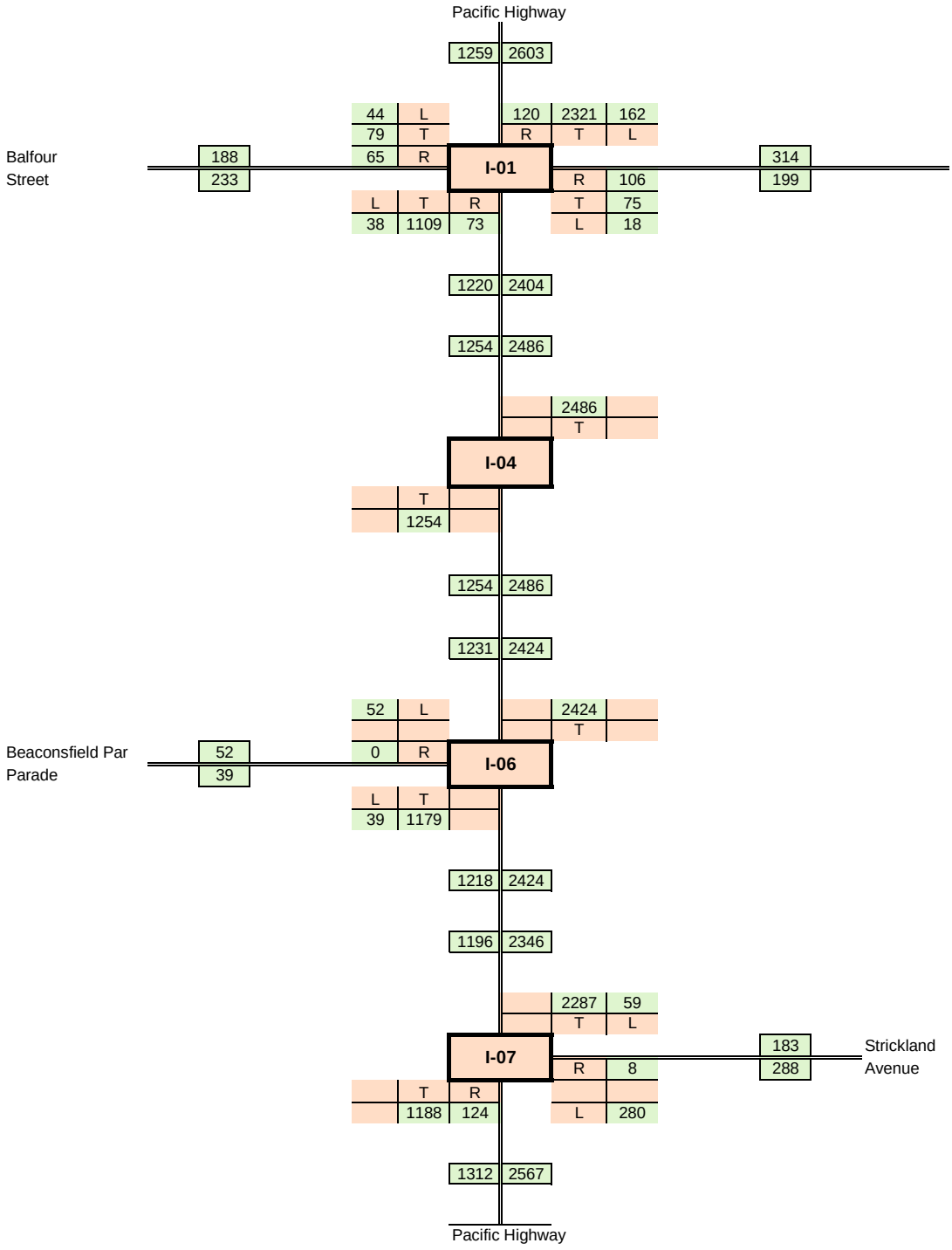
It is noted that further traffic assessment work has been completed since the transport assessment report delivered in 2019, as requested by council. These included testing different traffic distribution scenarios, testing unsignalised and signalised intersections at Strickland Avenue and details regarding the banned right turn at Havilah Road. The traffic movement diagrams for these can also be provided, if required.

ATTACHMENT A
EXISTING COUNTS

PS111983 Lindfield Village
Base Network

Year	Sc	Peak	Veh
2018	EX	AM	Total

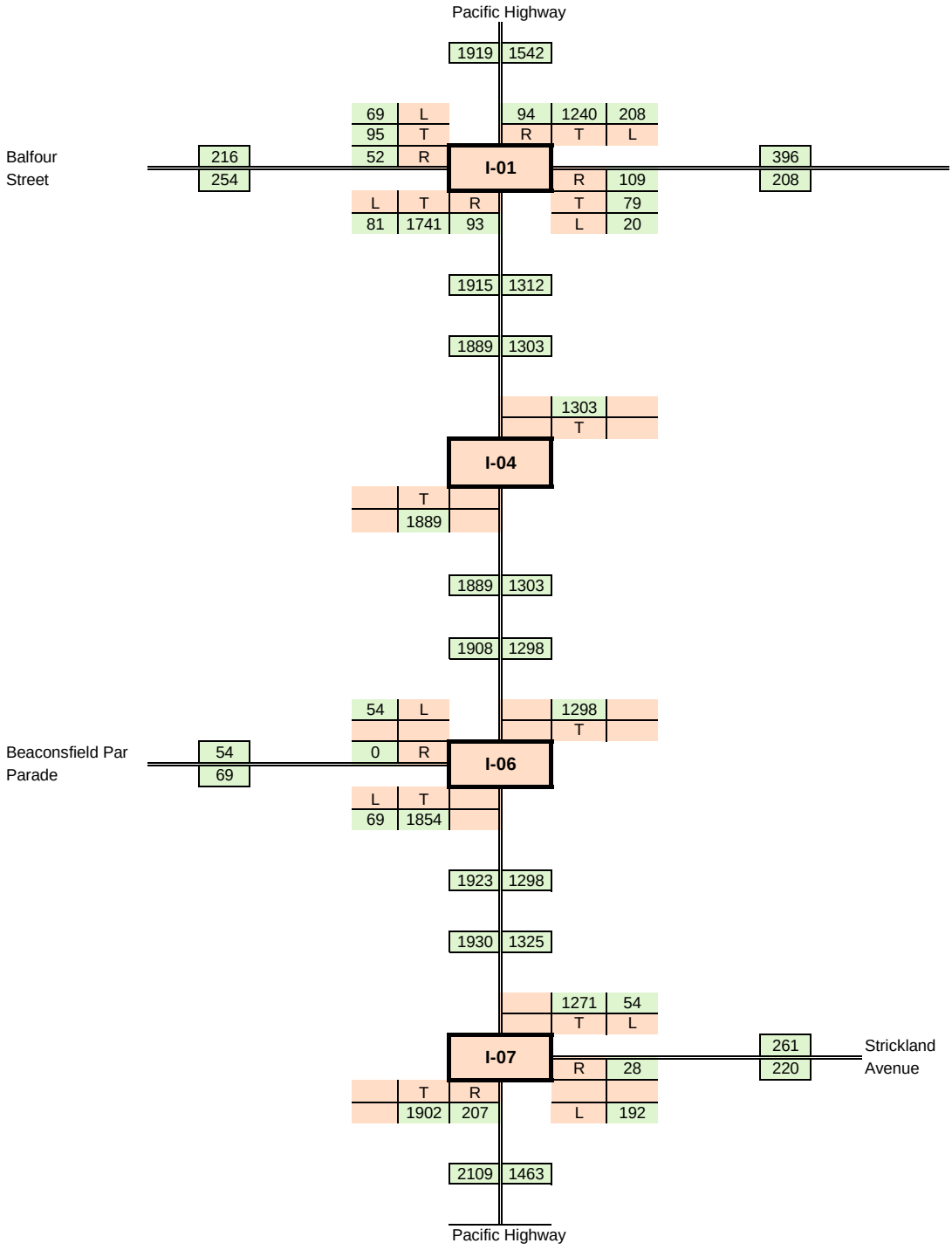
2018-EX-AM-Total



PS111983 Lindfield Village
Base Network

Year	Sc	Peak	Veh
2018	EX	PM	Total

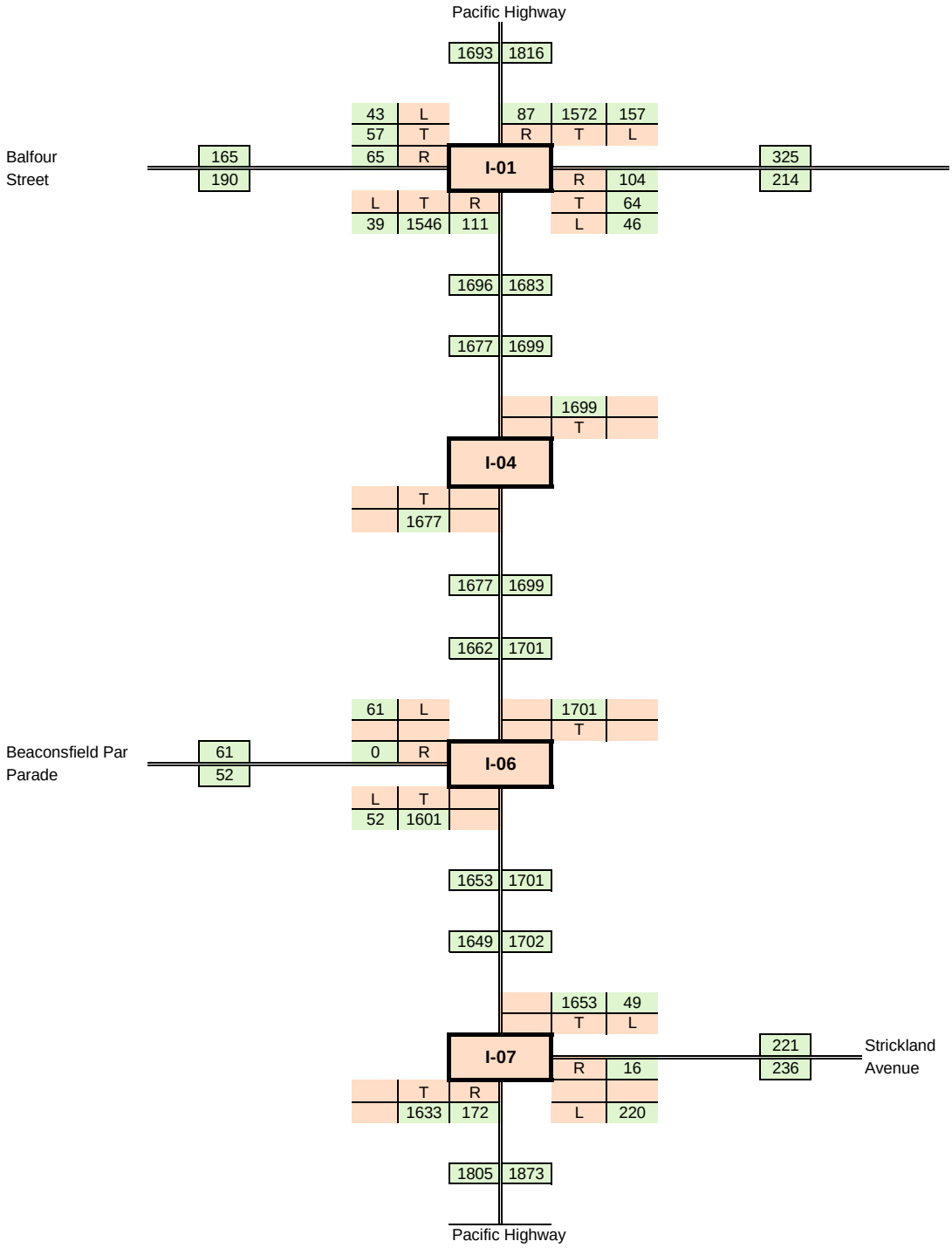
2018-EX-PM-Total



PS111983 Lindfield Village
Base Network

Year	Sc	Peak	Veh
2018	EX	SAT	Total

2018-EX-SAT-Total

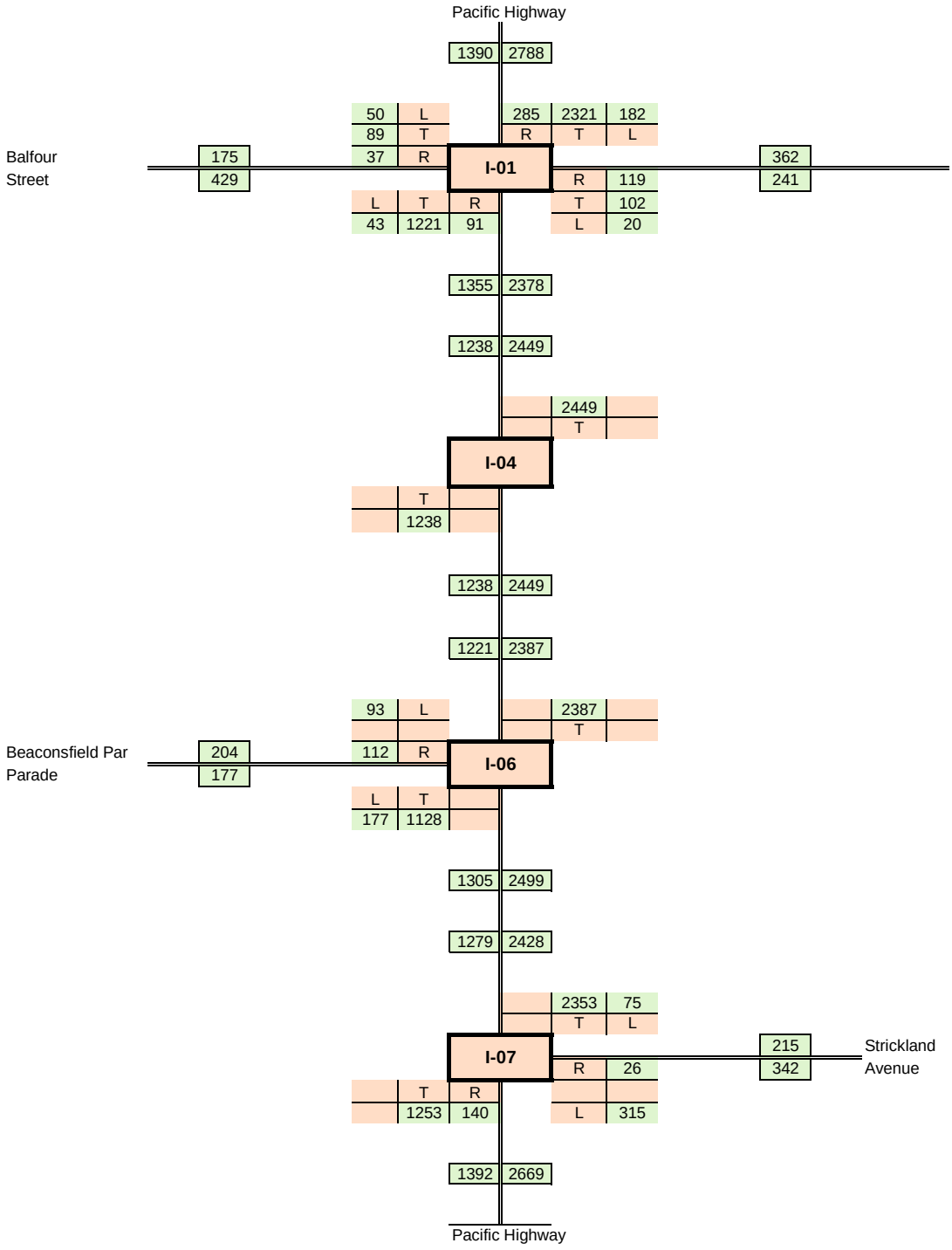


ATTACHMENT B
FUTURE 2024 COUNTS

PS111983 Lindfield Village
Base Network

Year	Sc	Peak	Veh
2024	with-Dev-Redist-Sce1	AM	Total

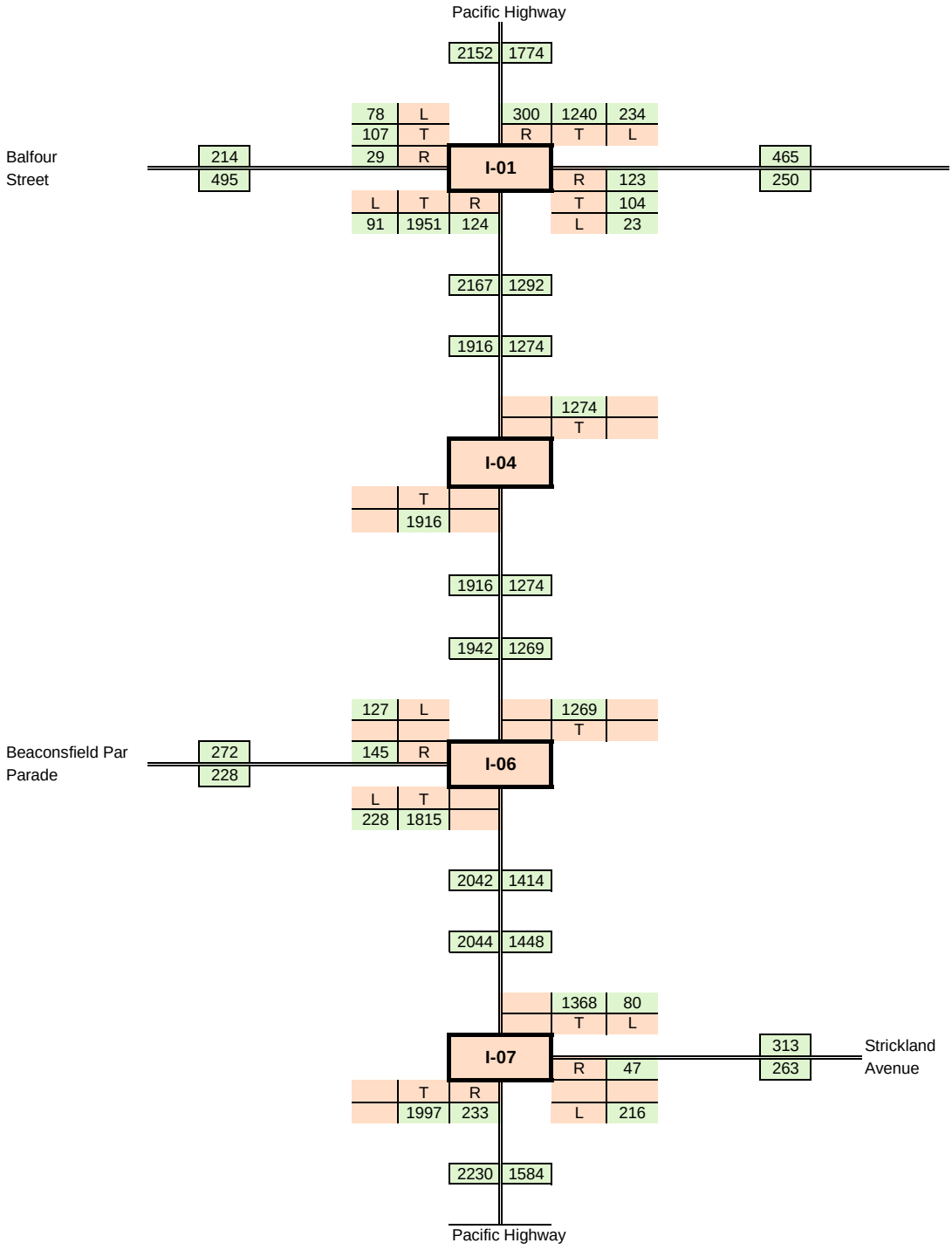
2024-with-Dev-Redist-Sce1-AM-Total



PS111983 Lindfield Village
Base Network

Year	Sc	Peak	Veh
2024	with-Dev-Redist-Sce1	PM	Total

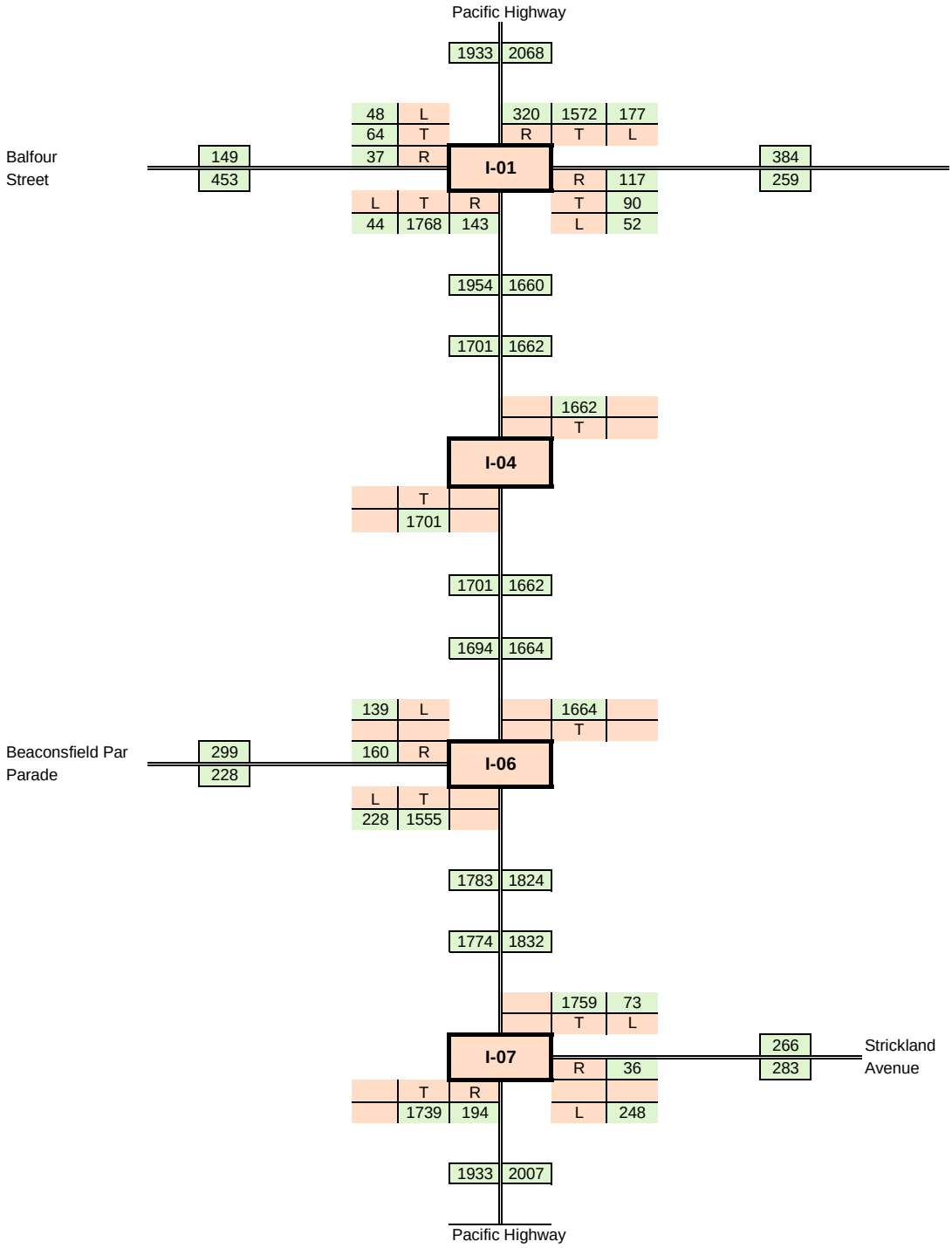
2024-with-Dev-Redist-Sce1-PM-Total



PS111983 Lindfield Village
Base Network

Year	Sc	Peak	Veh
2024	with-Dev-Redist-Sce1	SAT	Total

2024-with-Dev-Redist-Sce1-SAT-Total

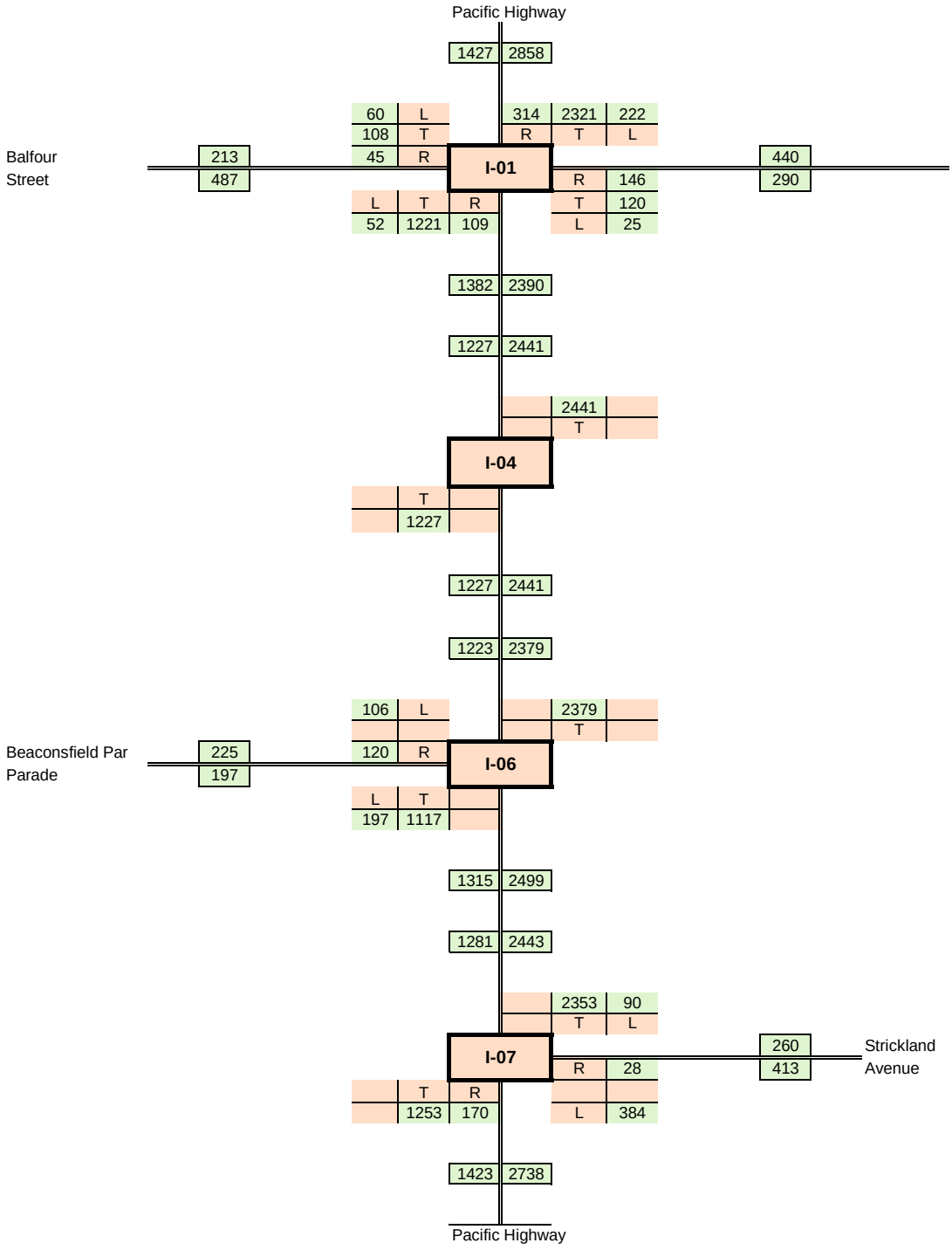


ATTACHMENT C
FUTURE 2034 COUNTS

PS111983 Lindfield Village
Base Network

Year	Sc	Peak	Veh
2034	with-Dev-Redist-Sce1	AM	Total

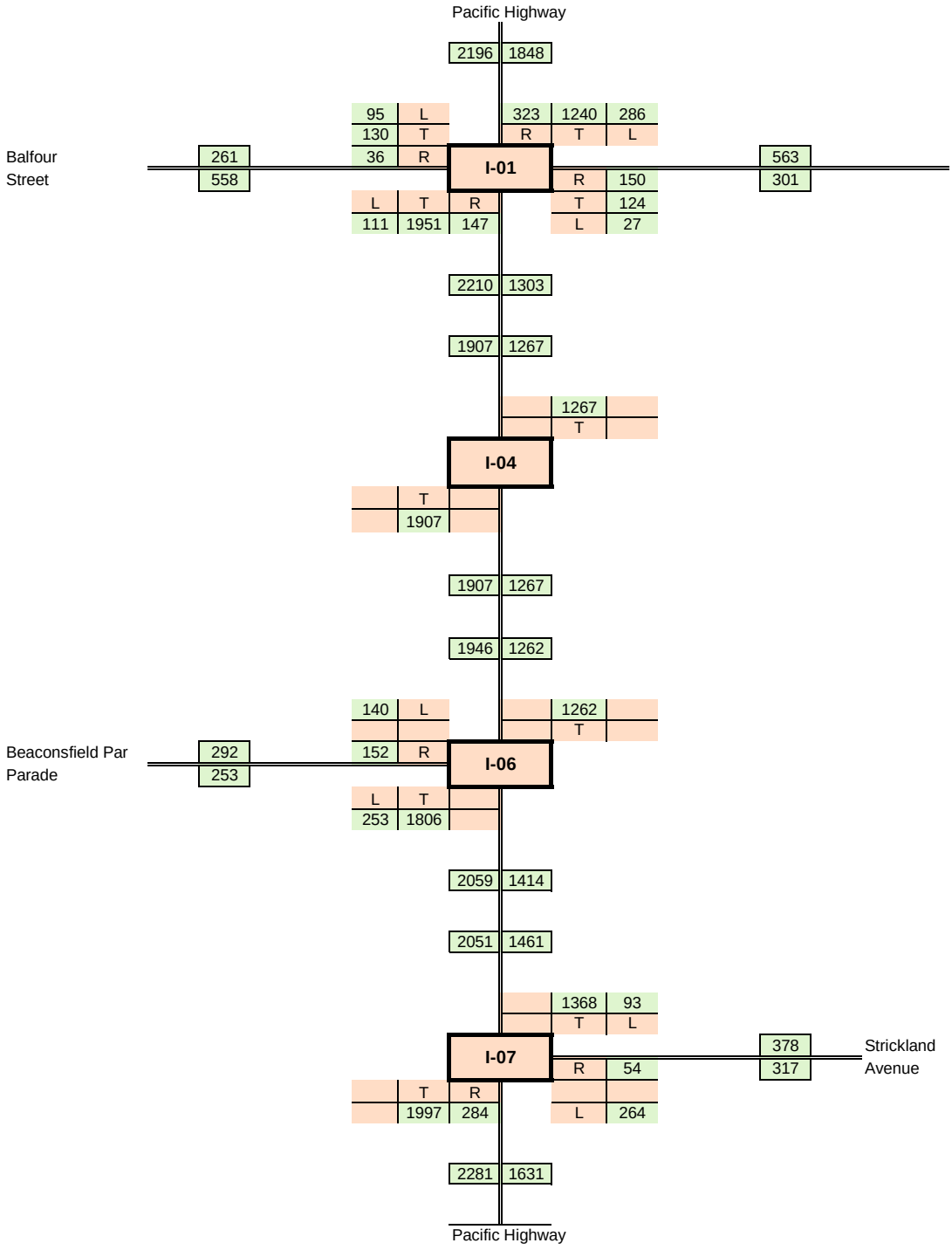
2034-with-Dev-Redist-Sce1-AM-Total



PS111983 Lindfield Village
Base Network

Year	Sc	Peak	Veh
2034	with-Dev-Redist-Sce1	PM	Total

2034-with-Dev-Redist-Sce1-PM-Total



PS111983 Lindfield Village
Base Network

Year	Sc	Peak	Veh
2034	with-Dev-Redist-Sce1	SAT	Total

2034-with-Dev-Redist-Sce1-SAT-Total