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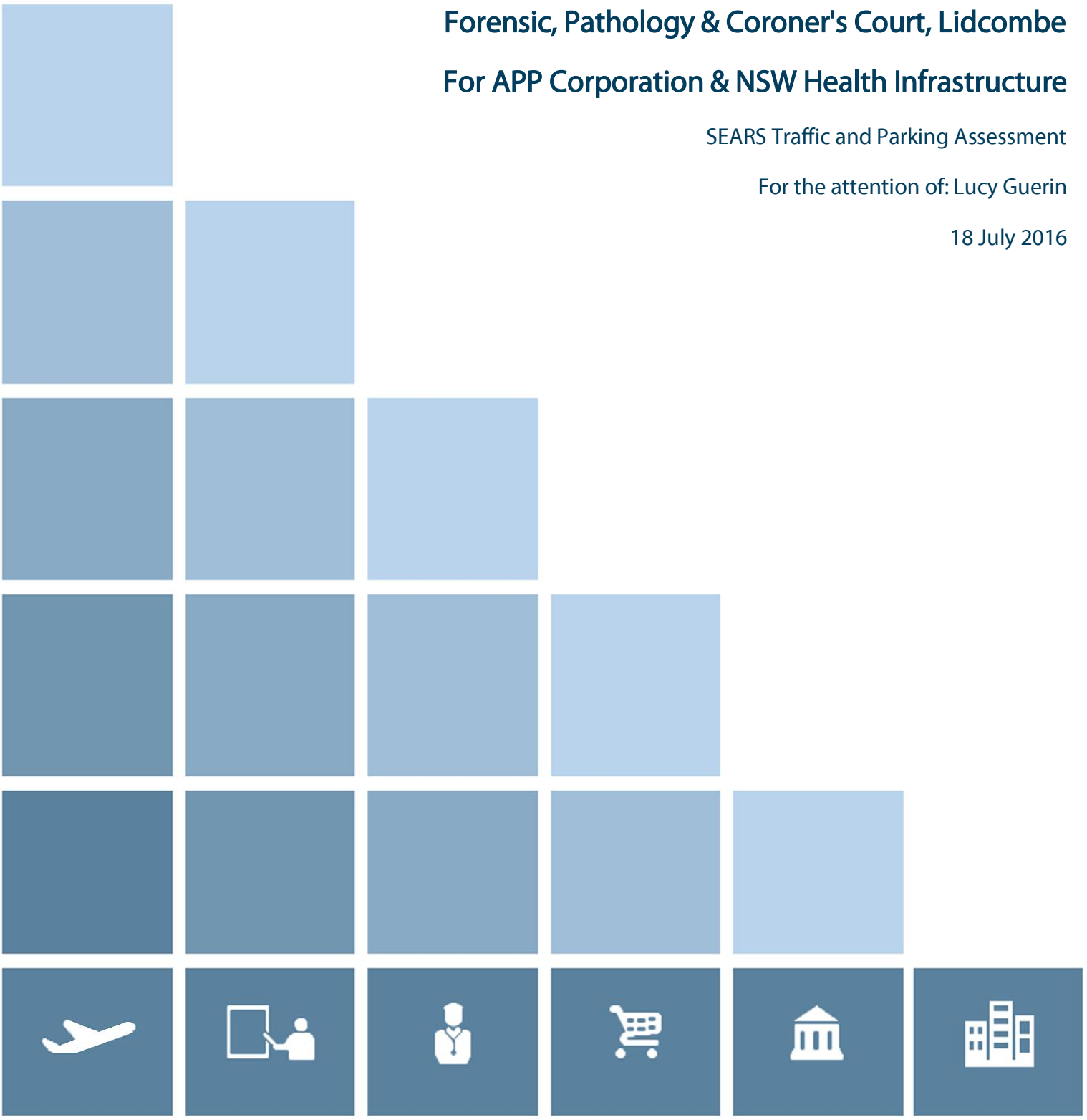
Forensic, Pathology & Coroner's Court, Lidcombe

For APP Corporation & NSW Health Infrastructure

SEARS Traffic and Parking Assessment

For the attention of: Lucy Guerin

18 July 2016



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1 Introduction

1.1 Project Summary

Parking and Traffic Consultants (PTC) has been engaged by Root Projects on behalf of NSW Health Infrastructure (HI) to prepare a parking and traffic assessment. This assessment is pursuant to a SEARSs development application to NSW Planning for the construction of a Forensic, Pathology and Coroners Court located on the corner of Joseph Street and Main Avenue, Lidcombe. The location of the site is shown in Figure 1.

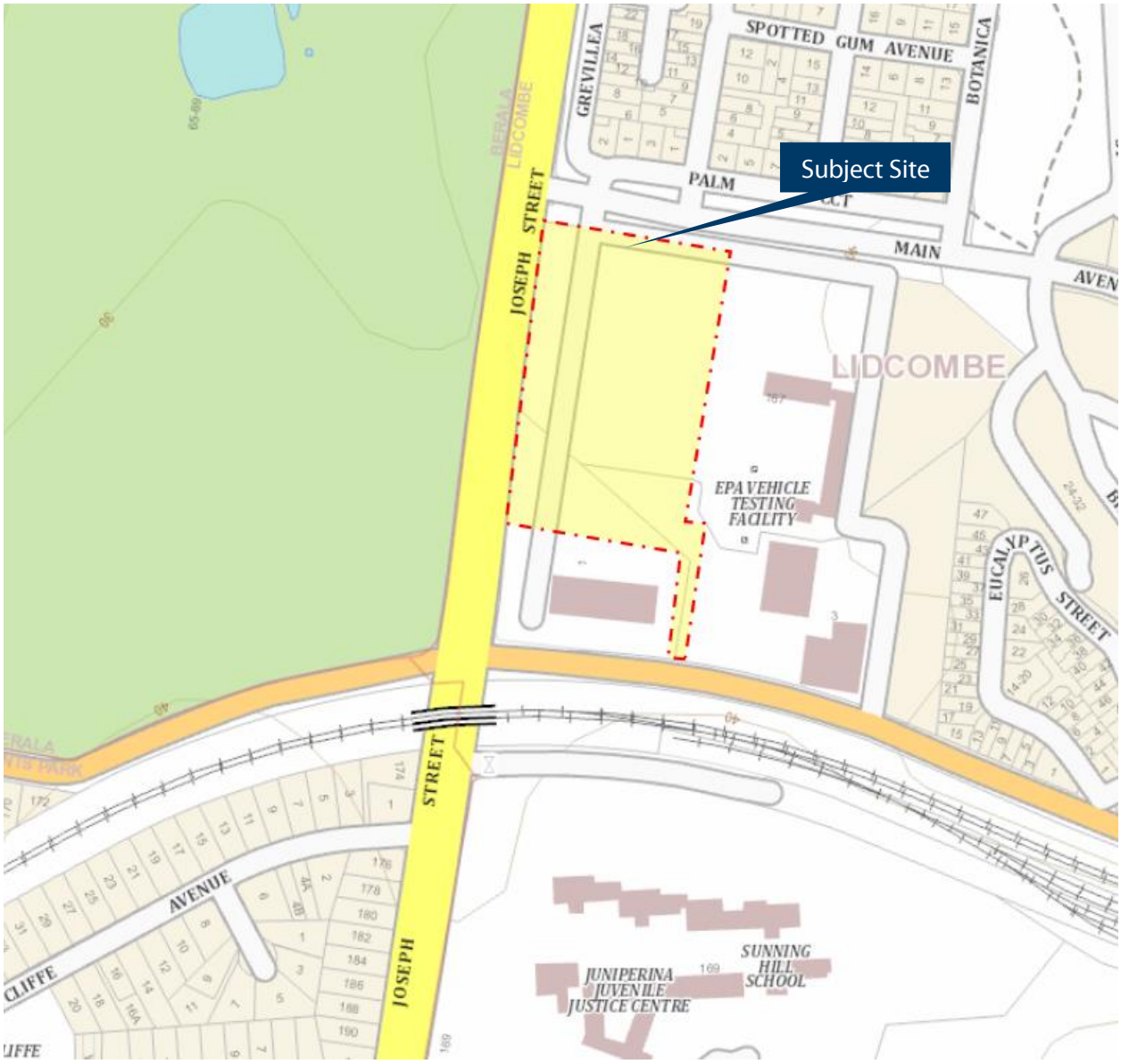


Figure 1 – Site Location

1.2 Purpose of this Report

This report presents the following considerations in relation to the Traffic and Parking Assessment of the proposal;

Section 2 - A description of the project,

Section 3 - A description of the road network serving the development property,

Section 4 - Determination of the traffic activity associated with the development proposal, and the adequacy of the surrounding road network,

Section 5 - Assessment of the proposed parking provision in the context of the relevant planning control requirements,

Section 6 - Assessment of the proposed car park, vehicular access and internal circulation arrangements in relation to compliance with the relevant standards, and

Section 7 - Construction traffic

Section 8 - Active travel

Section 9- Conclusion

1.3 Summary of Response to Secretary's Environmental Assessment Requirements (SEARs)

The table below provides a response to each of the SEAR application SSD 7545 issued on the 6 April 2016 relating to transport and accessibly and references the section within this Traffic and Parking Assessment where this information is provided.

Table 1 – Secretary's Environmental Assessment Requirements

No.	SEARs Key Issues	Comments and References
Item 5- Transport and Accessibility		
Item 5.1	The existing and proposed pedestrian and cycle movements within the vicinity of the site.	Refer to Section 3
Item 5.2	An estimate of the total, daily and peak hour trips generated by the proposal, including vehicle, public transport, pedestrian and cycle trips.	Refer to Section 4
Item 5.3	The adequacy of public transport to meet the likely future demand of the proposed development	Refer to Section 3 and 8
Item 5.4	Measures to promote travel choices that support the achievement of State targets. Such as a location specific sustainable travel plan	Refer to Section 8
Item 5.5	The daily and peak vehicle movements impact on nearby intersections including, Joseph Street/Weeroona Road, with consideration of the cumulative impacts from other approved developments in the vicinity and the need/associated funding of road improvement works (if required).	Refer to Section 4
Item 5.6	the proposed access arrangements and measures to mitigate any associated traffic impacts and impacts on public transport, pedestrian and cycle networks;	Refer to Section 6
Item 5.7	proposed car and bicycle parking provision, including consideration of the availability of public transport and the	Refer to Section 5.2

	requirements of the relevant parking codes and Australian Standards;	
Item 5.8	service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type and the likely arrival and departure times); and	Refer to Section 6
Item 5.9	traffic and transport impacts during construction and how these impacts will be mitigated for any associated traffic, pedestrian, cyclists, parking and public transport, including the preparation of a draft Construction Traffic Management Plan to demonstrate the proposed Management of the impact.	Refer to Section 7

2 Proposal

2.1 The Development Site

The site is located in the north-western corner of a property currently occupied by Health and Department of Environment Services. The overall property occupies an area of approximately 8 hectares and accommodates a number of buildings including the NSW Forensic & Analytical Science Service (FASS) building located centrally within the property and the former Mineral Resources Building (MRB), which is currently vacant.

Figure 2 – The Development Site

2.2 The Proposal

The existing NSW State Coroner's Court and Forensic Services building is located at 44-46 Parramatta Road, Glebe. It is understood the site "*has reached capacity and the end of its useful life, and can no longer meet current and future deliverables and Government objectives*"[1]; therefore a new Forensic Pathology and Coroner's Court (FPCC) building is to be developed on an existing NSW Health site at Lidcombe.

The purpose of this Assessment is to assess the traffic, parking and transport implications associated with the proposed impacts of the relocation of the FPCC personnel from Glebe to Lidcombe and associated works which include the construction of new building. It describes the impact of the proposed building and the surrounding road and parking network.

Details of the proposal are presented on the architectural drawings prepared by Silver Thomas Hanley and those illustrating the parking and access arrangements are included in Attachment 1.

2.3 Developments Proposed in the Vicinity

A high level review has been conducted of planned or approved development application proposals within proximity on Auburn City Council's website. The findings of this indicated that there are no planned or approved developments within proximity to this development that would result in increase in traffic using the Joseph Street/Weeroona Road intersection.

Public consultation has been undertaken with the landowners of Botanica Estate. Botanica Estate is located to the north of Main Avenue adjacent to the proposed public access into the FPCC. The owners have indicated that a Master Plan has been prepared to expand the site for additional residential lots. At the time of preparing this report, details of the Master Plan and the proposed lot yields were not available.

[1] *NSW Forensic Pathology Service & Coroner's Court of NSW Business Case Final 10th February 2014, page 9*

3 Existing Transport Facilities

3.1 External Road Hierarchy

The subject site is located approximately 14 kms east of Sydney CBD and is situated between Joseph Street, Main Avenue and Weeroona Road.

It has excellent road connections in all directions, making access by car (or motorcycle) relatively easy. It is serviced by the following major roads:

- North – M4 Western Motorway (M4), Parramatta Road & A6 (Joseph Street)
- South – Hume Highway, M5 & A6
- East – A22 (Hume Highway) & A34 (Milperra Road)
- West – A22 & M4

Figure 3 – External Road Hierarchy

The NSW administrative road hierarchy comprises the following road classifications, which align with the generic road hierarchy as follows:

- **State Roads** - Freeways, Motorways and Primary Arterials (RMS Managed)
- **Regional Roads** - Secondary or sub arterials (Council Managed, Part funded by the State)
- **Local Roads** - Collector and local access roads (Council Managed)

The key roads servicing the study area are described in Tables below.

Table 2 – Key Roads Servicing the Study Area

Joseph Street (A6)	
Road Classification	State Road – Arterial (A6)
Alignment	North-south. To the north, the A6 is referred to as Olympic Drive / St Hillers Road and Silverwater Road on approach to the Parramatta Road / M4 intersection.
Number of Lanes	3 x 3.0m travel lanes in each direction separated by a 4m wide median. The southbound lane provides an additional short ancillary right turn lane into Main Avenue.
Carriageway Type	Divided
Carriageway Width	22m consisting of 3m wide travel lanes.
Speed Limit	80kph
School Zone	No
Parking Controls	No parking permitted in each direction of travel.
Forms Site Frontage	Yes

Weeroona Road	
Road Classification	Regional Road
Alignment	East-West
Number of Lanes	1 x 3.0m wide travel lane and 3m wide shoulder in each direction.
Carriageway Type	Undivided
Carriageway Width	12m
Speed Limit	60kph
School Zone	No
Parking Controls	No Parking is permitted within the road shoulders in each direction of travel. The eastbound shoulder is provided as an 'advisory' bicycle lane.
Forms Site Frontage	Yes

Amy Street	
Road Classification	Regional Road
Alignment	East-West
Number of Lanes	2 x 3.0m wide travel lanes in each direction
Carriageway Type	undivided
Carriageway Width	12m
Speed Limit	60kph
School Zone	No
Parking Controls	No Parking is permitted within the road shoulders.
Forms Site Frontage	No

In addition to the key access routes illustrated above, the site is also served by a number of connecting local roads, which include:

- **Main Avenue –** The road is a classified local road with a sign posted speed limit of 50kph. The carriageway is generally 8m wide which accommodates one lane in each direction. The road bounds the site along the northern boundary and is directly accessible via a left slip lane from Joseph Street. Unrestricted parking is provided on both sides of the roadway.

- **East Street -** The road is classified as a regional road and is generally 12m wide which accommodates one 3m wide travel lane and a 3m wide shoulder in each direction of travel. The road has a sign posted speed limit of 60km/hr and connects directly with Weeroona Road to the south and continues in a north direction. Parking is permitted within parts of the road shoulders, and an 'advisory' bicycle lane is indicated through pavement markings.

3.2 Public Transport

The transport environment at the proposed site is served by multiple transport modes are potentially available to staff and public, including road, bus and heavy rail. The sub-sections below review these services and identify the adequacy of these services to meet the likely future demand of the proposed development.

3.2.1 Bus Services

The site is served by four bus located approximately 350 metres from the site as shown in Figure 4 and are served by the following bus routes [2]:

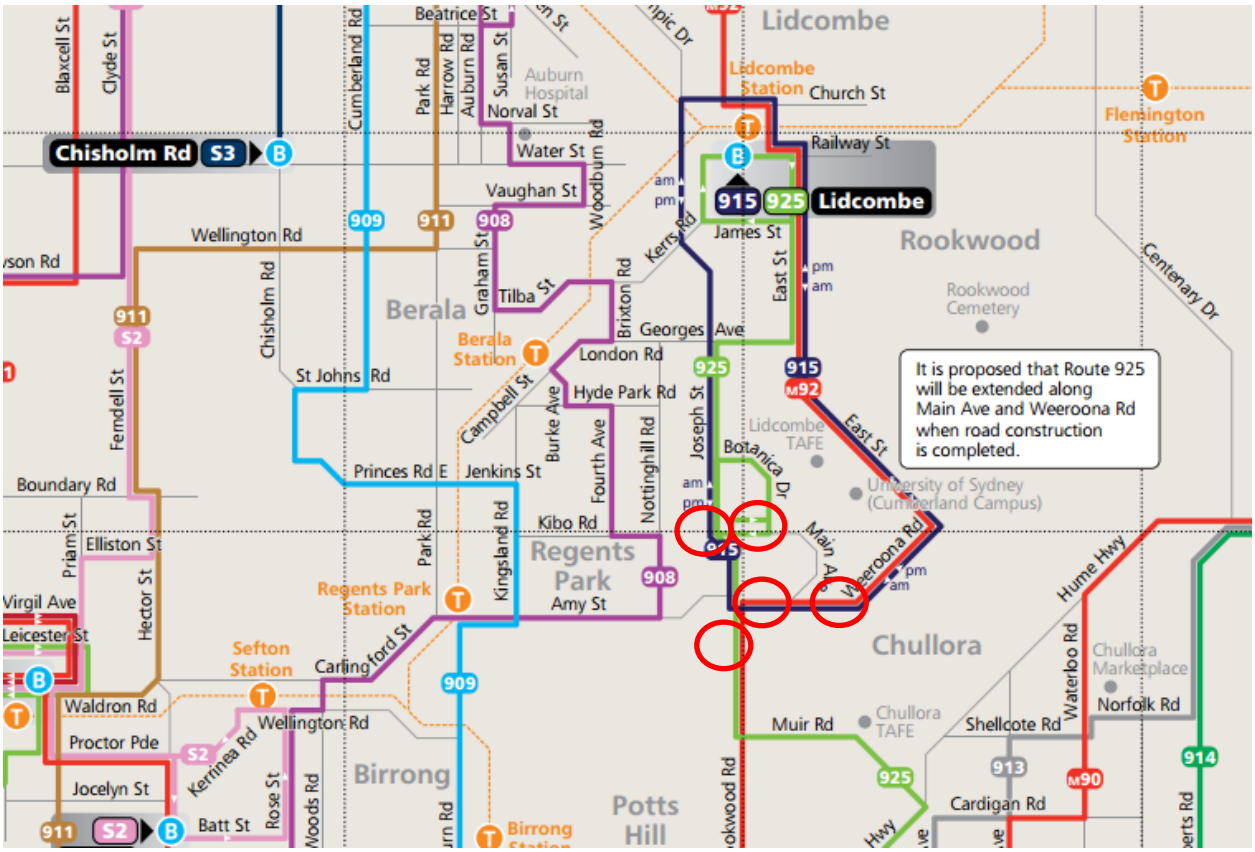


Figure 4 – Public Transport Services - Buses

The bus operator (Transdev) operates bus services within this region. As noted in Figure 4, Route 925 will be extended along Main Avenue and Weeroona Road when road construction is complete. Telephone

[2] *source: Transport Info website, Transdev http://www.transportnsw.info/*

discussion held with Transdev indicated that there is currently no timetabled change for this to occur, but will be undertaken in due course.

Table 3 – Bus routes servicing the site

Bus Route	From	To	Frequency (approx)	Services Operate Approx (Weekdays)	Services Operate Approx (Weekends)
925	East Hills	Lidcombe	Mon-Fri Every 30-60mins, Sat-Sun Every 60mins	6:11am - 20:23pm	7:03am - 18:03pm
925	Lidcombe	East Hills	Mon-Fri Every 30-60mins, Sat-Sun Every 60mins	6:45am - 20:47pm	7:27am - 18:27pm
908	Merrylands	Auburn	Mon-Fri Every 30-60mins, Sat-Sun Every 60mins	7:11am - 18:47pm	8:21am - 17:51pm
908	Auburn	Merrylands	Mon-Fri Every 30-60mins, Sat-Sun Every 60mins	6:28am - 18:12pm	8:08am - 17:08pm
M92	Sutherland	Parramatta	Mon-Fri Every 10-15mins, Sat-Sun Every 20mins	6:26am - 21:03pm	7:22am - 20:22pm
M92	Parramatta	Sutherland	Mon-Fri Every 10-15mins, Sat-Sun Every 20mins	6:43am - 21:09pm	7:16am - 20:16pm

3.2.2 Train Services

The site is located approximately 2kms from Lidcombe and Berala Railway Stations and approximately 1.7kms from Regents Park Railway Station as presented in the Figure 5 below, whilst the train services that operate from these station are presented in Table 4.

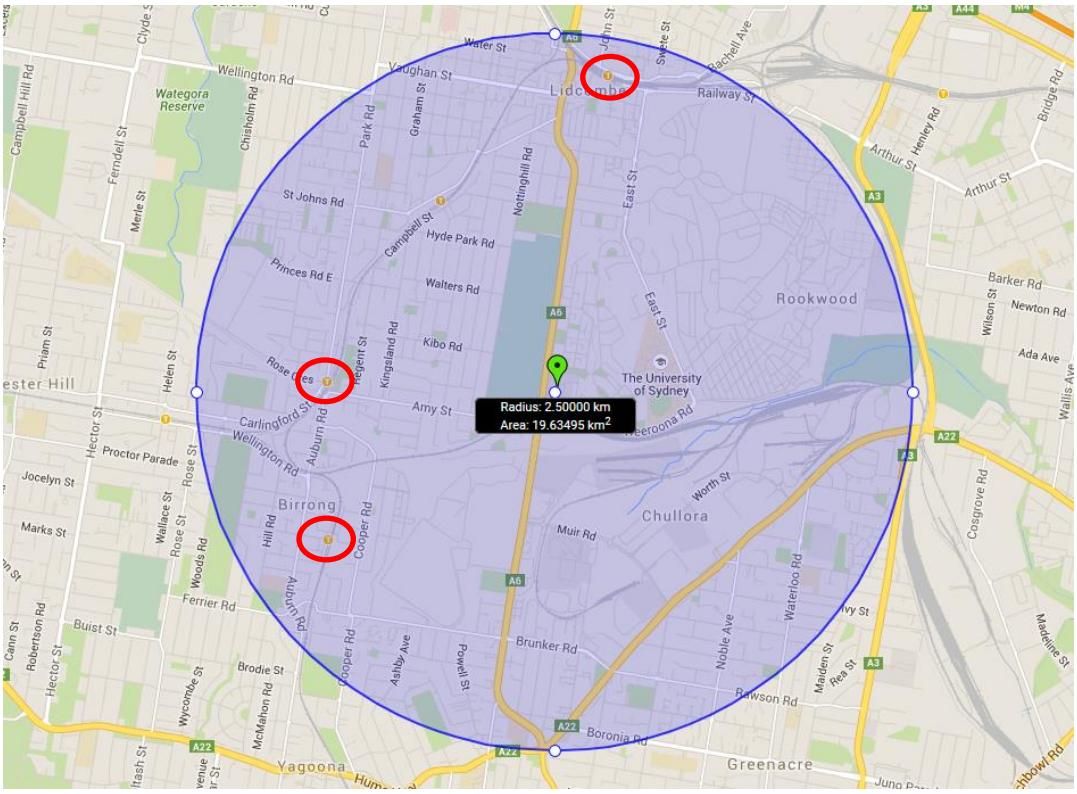


Figure 5 – Proximity of railway stations to the site

Table 4 – Heavy Rail services (Data Retrieved: 25/05/16)

Station	Train Line	From	To	Frequency (approx)	Services Operate Approx (Weekdays)	Services Operate Approx (Weekends)
Lidcombe	T1	Berowra	City	Mon-Fri Every 5-15mins, Sat-Sun Every 14-16mins	5:29am - 12:43am next day	5:11am - 1:25am next day
	T1	City	Berowra	Mon-Fri Every 5-15mins, Sat-Sun Every 14-16mins	4:02am - 12:13am next day	4:47am - 12:54am next day
	T2	Campbelltown	City	Mon-Fri Every 15-30mins, Sat-Sun Every 15mins	4:34am - 11:40pm	4:14am - 12:25am next day
	T2	City	Campbelltown	Mon-Fri Every 15-30mins, Sat-Sun Every 15mins	4:22am - 12:37am next day	4:55am - 1:34am next day
	T3	Lidcombe	City	Mon-Fri Every 15-30mins, Sat-Sun Every 30mins	4:26am - 12:44am next day	4:32am - 1:02am next day
	T3	City	Lidcombe	Mon-Fri Every 15-30mins, Sat-Sun Every 30mins	5:30am - 1:23am next day	5:15am - 1:59am next day
	T7	Lidcombe	Olympic Park	Mon-Sun Every 10mins	5:50am - 23:50pm	6:10am - 23:50pm
	T7	Olympic Park	Lidcombe	Mon-Sun Every 10mins	6:04am - 12:04am next day	6:24am - 23:44pm
Berala	T3	Lidcombe	City	Mon-Fri Every 15-30mins, Sat-Sun Every 30mins	4:29am - 12:47am next day	4:35am - 1:06am next day
	T3	City	Lidcombe	Mon-Fri Every 15-30mins, Sat-Sun Every 30mins	5:26am - 1:19am next day	5:11am - 1:56am next day
Regents Park	T3	Lidcombe	City	Mon-Fri Every 15-30mins, Sat-Sun Every 30mins	4:32am - 12:50am next day	4:38am - 1:08am next day
	T3	City	Lidcombe	Mon-Fri Every 15-30mins, Sat-Sun Every 30mins	5:23am - 1:16am next day	5:09am - 1:54am next day

3.2.3 Bicycle Network

Figure 6 identifies the available cycle paths around the proposed site. As shown, the cycle route connection to the site is reasonably accessible by bicycle from all directions, due to the good road network. In some cases cyclists are required to share the road with motor vehicles. Some of these roads are major arterial routes, which may deter some cyclists from using them.

The topography surrounding the site is relatively flat, which could make cycling an attractive option. However, cycling is only likely to be an attractive mode share for staff working at the site, and even then only for those staff that live within a relatively close distance.

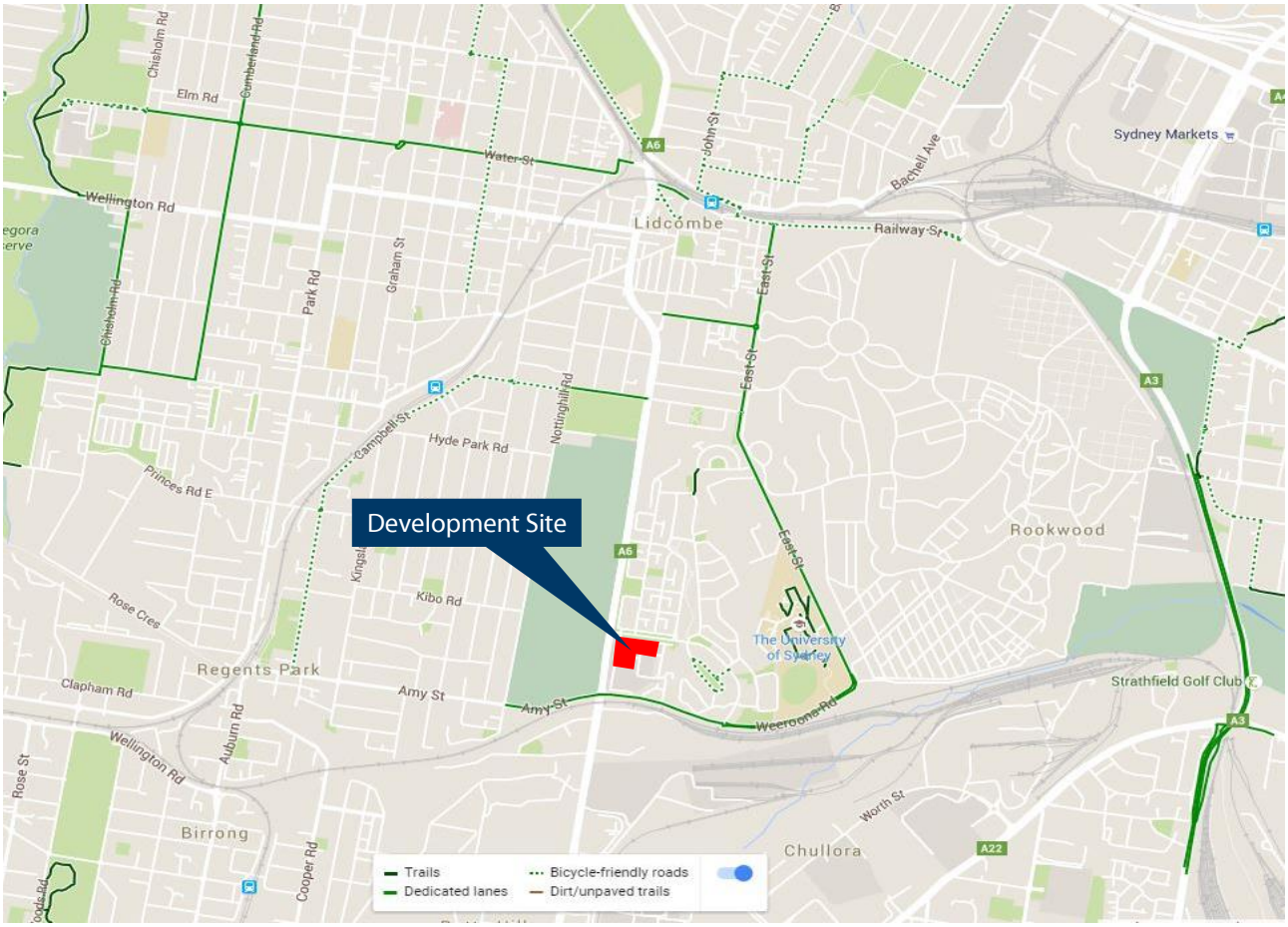


Figure 6 – Cycling paths around the site

3.2.4 Walking

As with cycling, walking is only likely to be an attractive option for people who live relatively close to the proposed site.

A reasonable volume of low-density residential development is located to the north, east and west of the site (the latter beyond Caernarvon Golf Course but still within reasonable walking distance[3]).

Walkers are only likely to be staff working at the site; however staff on early morning or late evening/night shifts would be unlikely to walk, for safety reasons, unless living in very close proximity to the proposed site (e.g. on the Botanica Estate adjacent to the site).

[3] *Approximately 1 – 1.5kms*

In the immediate proximity of the site the topography is relatively flat, potentially making walking an attractive option for those who live nearby.

3.3 Current Parking Provisions

During 2015 PTC prepared a study of the parking supply and demand within the FPCC. The study identified the existing parking supply and demand within a zone of influence of 500m. The findings of this assessment indicated that there is approximately 1,175 free on-street parking available surrounding the site.

3.4 Summary of Public Transport and Accessibility

In reviewing the availability of public transport connections to the stations it is understood only Lidcombe Station is linked to the site by a 'door-to-door' bus route (925). Regents Park and Berala Stations can be accessed via bus route 908, however users have to walk approximately 850m to the site after alighting from the bus at the corner of Amy Street and Clucas Road. These services operate relatively early in the morning and late in the evening during the peak change over periods.

Due to the abundant level of free parking within proximity to the proposed site, there is a high propensity for the public and staff to drive to work rather than utilise public transport.

3.5 Existing Traffic Volumes

Typical daily traffic volumes are not presented in this Assessment as the road network has been assessed on the basis of the peak traffic activity. In this regard, the modelling and projected traffic activity has been established to include the key morning and afternoon periods, which represents the peak loads and therefore worst case scenarios.

To identify the existing traffic conditions, video survey counts were undertaken in proximity to the FPCC at the following locations illustrated in Figure 7.

Figure 7 – Traffic Intersection Surveys

These surveys were undertaken on Wednesday, 18 May 2016 between 6:00am and 8:00am and 2:30pm and 4:30pm. These periods were selected in order to identify the morning and afternoon peaks associated with the peak arrivals and departures from the site identified in the Parking Study. The traffic data collected established that the peak periods at the following intersections were as follows:

- **1. Botanica Dr / Joseph St**
  - Morning peak – 06.30 to 07.30 (4,531 vehicles)
  - Afternoon peak – 15.30 to 16.30 (4,622 vehicles)
- **2. Main Ave / Joseph St**
  - Morning peak – 06.30 to 07.30 (4,394 vehicles)
  - Afternoon peak – 15.30 to 16.30 (4,467 vehicles)

- **3. Joseph St / Weeroona Rd**
  - Morning peak – 07.00 to 08.00 (5,314 vehicles)
  - Afternoon peak – 15.30 to 16.30 (5,622 vehicles)
- **4. Main Ave / Botanica Dr**
  - Morning peak – 07.00 to 08.00 (95 vehicles)
  - Afternoon peak – 15.30 to 16.30 (109 vehicles)
- **5. Weeroona Rd / Main Ave**
  - Morning peak – 07.00 to 08.00 (506 vehicles)
  - Afternoon peak – 15.30 to 16.30 (546 vehicles)

The peak hour survey results of these surveys are provided in Attachment 2.

3.6 Intersection Modelling

In order to confirm the current operation of the intersection, an assessment has been undertaken using the SIDRA Intersection Network modelling software (Version 6.1), which presents a range of performance indicators (Level of Service, Average Delay, etc).

Typically there are three performance indicators used to summarise the performance of an intersection, being:

- Degree of Saturation – The total usage of the intersection expressed as a factor of 1 with 1 representing 100% use/saturation. (e.g. 0.8=80% saturation)
- Average Delay- The average delay encountered by all vehicles passing through the intersection. It is often important to review the average delay of each approach as a side road could have a long delay time, while the large free flowing major traffic will provide an overall low average delay.
- Level of Service (LoS) - This is a categorization of average delay, intended for simple reference. The RMS adopts the following bands:

Table 5 – Level of Service Bands

LoS	Ave.Del.in Seconds		Definition
A	0.00	14.50	Good Operation
B	14.50	28.50	Good with acceptable delays and spare capacity
C	28.50	42.50	Satisfactory
D	42.50	56.50	Operating near capacity
E	56.50	70.50	At Capacity; at signal, incidents will cause excessive delays
F	70.50	Infinity	Operating beyond capacity

For a robust traffic assessment, the peak intersection volumes have been adopted for each individual intersection. A summary of the SIDRA results is presented in the following tables.

Table 6 – Existing SIDRA Modelling Results

Period	Intersection	Deg. of Sat.	Average Delay (sec)	Level of Service
AM Peak	Weeroona Road and Joseph Street	1.080	103.2	F
	Weeroona Road and Main Avenue	0.209	5.5	A
	Main Avenue and Botanica Drive	0.069	8.0	A*
	Main Avenue and Joseph Street	0.028	5.0	A*
	Botanica Drive and Joseph Street	0.877	21.9	A
PM Peak	Weeroona Road and Joseph Street	1.037	55.0	D
	Main Avenue and Joseph Street	0.259	5.2	A
	Botanica Drive and Joseph Street	0.078	15.4	C
	Weeroona Road and Main Avenue	0.019	5.1	C
	Main Avenue and Botanica Drive	0.874	19.5	B

* for priority controlled intersections, results are reported for the approach with the greatest delay

Based on the traffic volumes, the results indicate the intersections of:

- Main Avenue and Weeroona Road,
- Main Avenue and Botanica Drive, and
- Main Avenue and Joseph Street
- Botanica Drive and Joseph Street

Provide an acceptable level of service ranging between A to B during the peak AM and PM Peaks. This indicates that the intersections are providing a satisfactory level of service with minimal delay.

In regards to the intersection of Weeroona Road and Joseph Street, the results indicate the intersection currently operates beyond its practical capacity where the average delay exceeds 70 seconds during the AM Peak.

4 Development Traffic Assessment

4.1 Traffic Generation

Typically, the traffic activity associated with a development or land-use can be derived through reference to published data, for example the RMS Guide to Traffic Generating Developments, or the Institute of Traffic Engineering, US data. This form of traffic projection is useful where the development has unrestrained on-site parking provision. Due to the unique services the proposed site will offer, the traffic activity associated with the proposal has been derived using a first principles approach by reviewing the anticipated peak parking demand generated by the site.

To estimate the anticipated peak traffic demand associated with the unique site facility usages, reference is made to the Parking Demand investigation prepared by PTC in December 2015. The study presented a conservative estimate of parking demand, assuming full utilisation of all facilities at one time which involves the operation all 4 proposed courts (Refer to Section 5.1).

This study identified that that the maximum parking demand at any time would be in the order of **183 parking spaces**. This consisted of:

- 87 staff parking spaces (the pathology department, counsellors and magistrate and coroners court staff)
- 71 public parking spaces (relative and friend viewings and public court attendance); and
- 24 other parking spaces (Couriers/Engineers, Police and others).

As identified in Section 5, a total of 188 parking spaces, plus 3 pickup and drop off spaces are provided within the design scheme.

To determine the peak traffic demand generated by the site during the peak arrival and departure periods associated with the site, various user groups arrive and depart site at different times of the day. Further details are provided below.

The above traffic generation excludes service vehicles greater than a small courier vehicle. It is understood, the same number of service vehicles would access the new site in the future. This consists of:

- Waste vehicles service the site every second day.
- Smaller trucks delivering linen and consumable items throughout the week.

It is estimated that up to 10 service vehicles may access spread throughout the week and would occur outside of the peak access periods.

4.1.1 Staff and other users Peak Access

Access for all staff and other users including the Police, Couriers and Engineers would be from Weeroona Road via a new internal roadway aligned along the western side of the FASS compound.

Peak hour arrival and departures associated with Staff and other users is based on data supplied by the FPCC. From this data, it has been established that peak traffic demand occurs as employees would arrive 1 hour prior to their shift commencing and departure 1 hour after.

Therefore Staff and other users will arrive and depart site during the following periods:

- AM Peak – 6:30am to 7:30am
- PM Peak – 3:00pm to 4:00pm

The following peak traffic movements utilising the Weeroona Road entry are as follows:

- AM Peak – 93 vehicles arrive, 3 vehicles depart = **96 two-way vehicle trips**
- PM Peak – 6 vehicles arrive, 56 vehicles depart = **62 two-way vehicle trips**

4.1.2 Public Peak Access

The public access into the site will be provided via Main Avenue. No open access is provided from Weeroona Road into the public car park.

Similarly, the calculated traffic demand associated with those utilising the Public Access form Main Avenue is based on Data supplied by the FPCC. To provide a robust assessment, it has been assumed that the public would arrive and the part during the staff peak access periods, however it understood that these are typically spread throughout the day.

The following peak arrivals and departures arriving and departing from the Main Avenue entry are as follows:

- AM Peak – 59 vehicles arrive, 0 vehicles depart = **59 two-way vehicle trips**
- PM Peak – 14 vehicles arrive, 59 vehicles depart = **73 two-way vehicle trips**

4.1.3 Overall Traffic Generation

The SEARs (Item 5.2 Transport and Accessibility) require details of daily and peak hour trips generated by the project. As set out in Section 4.1.1 and 4.1.2 the combined staff, other and public component of the development is assumed to generate a morning peak of **155 two-way vehicles** trips and an afternoon peak of **135 two-way vehicle** trips at most.

The worst case daily traffic flows generated by the development is in the order of **346 two-way vehicle trips**. This assumes that all 4 courts are in session at one time which generates up to 45 one-way vehicle trips arriving/departing at the public car park during each peak periods. In reality, the operation of the courts does not form part of the typical daily operation of the site, as these events are likely to occur only 3 times a month.

4.2 Traffic Distribution

Due to the various uses on site, the public and staff car park areas are separated within the design.

The public car park is provided within the northern side of the development site with a singular access and egress driveway located on the Main Avenue frontage.

The staff car park is provided within the southern side of the development site with a singular access and egress driveways located on the Weeroona Road frontage.

In distributing staff, other and public traffic across the road network, it is assumed that road users would predominantly utilise the shortest route available to the closest state/regional road. The assumed access and egress to the development is presented in Figure 8.

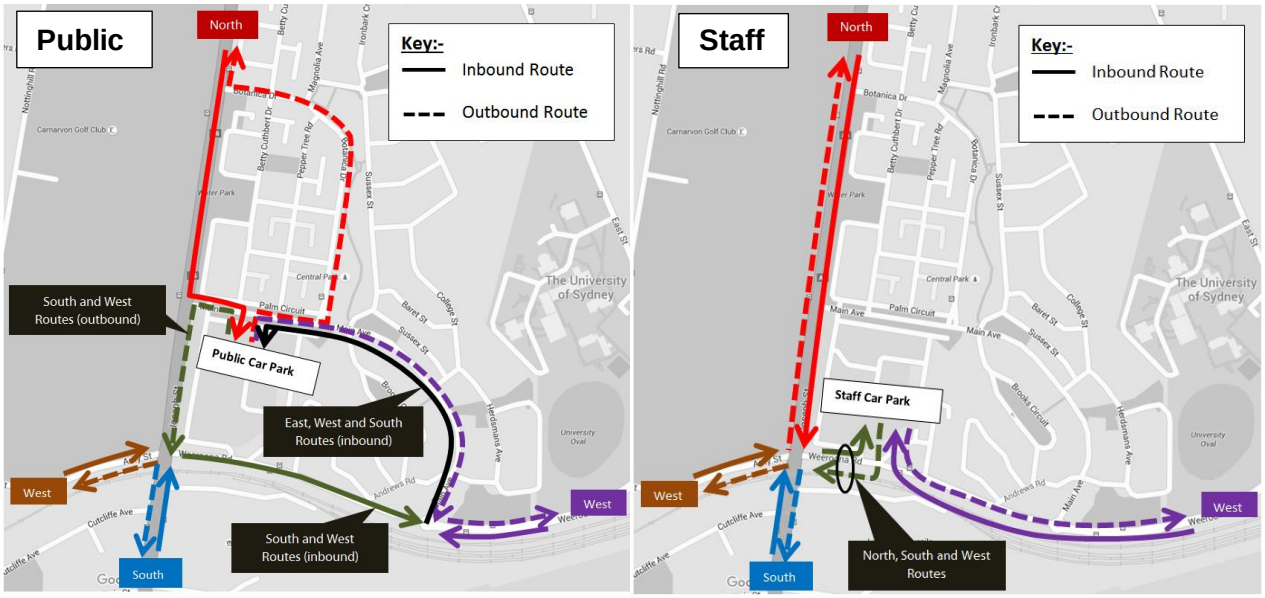


Figure 8 – Assumed Access and Egress

The origin and destination of the additional vehicle trips have been derived based on the inbound and outbound flows from the key access points into the road network during the different peak periods are presented in Table 7.

Table 7 – Origin and destination arriving and departing the site

		Morning Peak		Afternoon Peak	
Origin	Destination	Access (Inbound)	Egress (Outbound)	Access (Inbound)	Egress (Outbound)
North	The Proposed Site	30%	52%	49%	30%
South		57%	34%	8%	12%
East		2%	6%	37%	55%
West		11%	7%	6%	2%

Based on these assumptions and the projected traffic activity, the projected traffic volumes have been applied to the road network are provided within Attachment 3.

4.3 Background Traffic

In order to assess the sole impact associated with the project, a sensitivity assessment of the background traffic growth has been undertaken at 5 and 10 years with and without development. This adopted an annual growth rate of 1.2% applied all roads surveyed.

A 1.2% growth rate has adopted as this represents the growth in the 5 year (2011-2016) historical Average Annual Daily Traffic (AADT) volumes referenced from a RMS permanent count stations located on Joseph Street, south of the intersection between Weeroona Avenue and Joseph Street.

4.4 Traffic Modelling Scenarios

In order to assess the potential traffic impact associated with the proposal and the impacts of background traffic growth, a number of modelling scenarios have been developed and modelled in SIDRA Intersection 6.1. The assessment scenarios are summarised in the following table:

Scenario	Year	Network description
1a	2016	As existing – do nothing
1b	2021	As existing – do nothing – 1.2% Growth
1c	2026	As existing – do nothing – 1.2% Growth
2a	2016	As existing - 2016 post development
2b	2021	2021 base demand (1.2% p.a. growth) + 2016 post development
2c	2026	2026 base demand (1.2% p.a. growth) + 2016 post development

The above scenarios were developed in consultation between HI, PTC and APP to ensure that modelling identifies all likely impacts resulting from the increase and redistribution of traffic activity around the proposed facility as a consequence of the Proposal.

4.5 Intersection Modelling

The projected traffic volumes have been applied to the four surveyed intersections and intersection modelling has been undertaken using SIDRA Intersection Modelling software and the level of service results are summarised in Table 8.

Table 8 – Summary of SIDRA Outputs

Period	Intersection	Existing Network			Future Network + Post Development		
		2016 (1a)	2021 (1b)	2026 (1c)	2016 (2a)	2021 (2b)	2026 (2c)
AM Peak	Weeroona Road and Joseph Street	E	F	F	E	F	F
	Main Avenue and Joseph Street*	A	A	A	A	A	A
	Main Avenue and Botanica Drive	B	B	B	B	B	B
	Weeroona Road and Main Avenue*	A	A	A	A	A	A
	Botanica Drive and Joseph Street	A	A	A	A	A	A
PM Peak	Weeroona Road and Joseph Street	F	F	F	F	F	F
	Main Avenue and Joseph Street*	B	B	B	B	B	B
	Main Avenue and Botanica Drive	A	A	A	B	B	B
	Weeroona Road and Main Avenue*	A	A	A	A	A	A
	Botanica Drive and Joseph Street	A	A	A	A	A	A

(*) Results reported for the approach experiencing the greatest average delay

The intersection modelling indicates that, during the morning and afternoon peak periods, the intersections of:

- Main Avenue and Weeroona Road,
- Main Avenue and Botanica Drive, and

- Main Avenue and Joseph Street
- Botanica Drive and Joseph Street

would continue to operate similar to the existing situation. In this regard, the development proposal would not cause any detrimental impact on the operation of the road network at these intersections in the context of the existing traffic activity. The traffic distribution assumes between 131-135 total trips would utilise the Joseph Street and Weeroona Avenue intersection to access the FPCC site during the peak hour periods. As such this intersection would experience the greatest increase in average delay. The SIDRA detailed results associated with this intersection are presented in Table 9.

Table 9 – SIDRA Results Associated with the intersection of Weeroona Road and Joseph Street

Period		Existing Network (No Development)			Existing Network + Post Development		
		2016 (1a)	2021 (1b)	2026 (1c)	2016 (2a)	2021 (2b)	2026 (2c)
AM Peak	**Deg. of Sat.**	0.994	1.055	1.120	1.018	1.065	1.129
	Average Delay (sec)	67.8	93.6	126.4	70.4	101.2	136.1
	Level of Service	E	F	F	E	F	F
PM Peak	**Deg. of Sat.**	0.982	1.051	1.124	1.010	1.094	1.145
	Average Delay (sec)	76.2	95.3	126.7	89.7	117.5	168.8
	Level of Service	F	F	F	F	F	F

An analysis of the results indicates that all intersections would continue operate beyond its practical capacity where the average delay exceeds 70 seconds during both peak periods with and without development. When an intersection operates at a level of Service F, a small increase in traffic entering the intersection would result in the average delay increasing at an exponential rate.

4.6 Road Network Improvements

Typically, the traffic impact associated with a development is measured against existing road conditions and, if a negative impact is likely, road or intersection works may be required to counter this impact, i.e. to retain the current road conditions following the completion of the development.

The analysis has been undertaken based on a worse case assessment whereby all potential FPCC traffic arrive and depart the site. It has assumed all potential FPCC traffic would arrive and depart the site during the key site peak periods, where in reality the FPCC traffic . The modelled scenario 2a demonstrated that the road network would continue to operate with similar levels of average delay capacity following the completion of the FPCC, if background growth is not included. Incorporating the background growth (1.2%) modelled as 2b and 2c, the results show that the road network will still continue to operate well, with the exception of the intersection between Weeroona Road and Joseph Street. The results indicate that traffic demand at this intersection is already experiencing excessive delays with a level of service F.

Concern has been raised regarding the potential rat running through the Botanica Estate adjacent to the public access off Main Avenue from users departing the of the FPCC. Consideration could be given to restricting the exiting to a left in/left out arrangement within the public car park by means of a central median along Main Avenue. However, this would restrict public access to and from the opposite roadway leading from the Botanica Estate wanting to turn right towards Joseph Street. Further stakeholder and public consultation is being required to determine what options that would be suitable to mitigate these impacts.

To mitigate the need for a praised central median, the design may consider incorporating wayfinding guidance signage within the property boundary on exit. The provision of way-finding signage would direct and reinforce drivers to utilise the most suitable route of travel to access the greater road network.

5 Parking Provision

5.1 Car Parking Provision

Car park rates required for a variety of commercial land uses are outlined in Table 6 within Section 5.1.4 of the Auburn Council DCP. However due to the unique operational requirements for the proposed facilities, a separate parking demand study was prepared to established the future operational requirements of the Pathology and Coroners Court. The study did not benchmark the existing site parking and traffic requirements due to the different operational environment.

In summary, the study concluded that the FPCC would require a minimum of 183 parking spaces[4] to accommodate the anticipated parking demand generated by the uses and the number of employees/visitors to the site. This requirement was estimated using user group information supplied by the Forensic Pathology, Coroners' Court and Counsellors. Where information was not available, data from other comparable health-related sites and from onsite observations was adopted. Details relating to the calculation of parking demand associated with the site have been adopted from the PTC Parking Demand Study, which suggests a maximum parking demand of 183 parking spaces.

The proposal will provide **188 parking spaces** (plus 3 pickup/drop off spaces) for the various user groups, which exceeds the minimum spaces required. The breakdown in anticipated peak parking demand and parking allocation for the various user groups provided within the design is presented in Table 9.

Table 10 – Car Parking Provision

User Group	User Group Type	No People	Peak Demand for Parking	Parking Provision in Design
Staff	Pathology Day Shift & Administration	38	37	**87 + 6 = 93 Spaces**
	Pathology Afternoon Shift	5	5	
	Pathology Night Shift	2	-	
	Counsellors	6	6	
	Magistrates	5	5	
	Coroner's Court Staff	35	35	
	Sub-Total Staff	**91**	**88**	
Other (Back of House)	Funeral directors	15	4	**12 + 12 = 24 Spaces**
	Couriers	10	3	
	Engineers	2	1	
	Police & security	14	14	
	Coroner's court other	10	3	
	Sub-Total Other	**51**	**24**	
Public	Relatives & friends attending viewings	112	28	**71 + 3 drop off spaces**
	Public attending court	90	43	
	Sub-Total Public	***202***	***71***	
All Users		***Total***	***183***	**188 + 3 drop off spaces**

[4] *Refer to Appendix A and B of the PTC Parking Demand Report*

5.2 Bicycle Parking Provision

Bicycle parking is an important element in encouraging active travel as part of the journey to work. To promote active transport, the Auburn DCP requires all developments with a total gross floor area exceeding 100m^2. In selecting an appropriate rate for bicycle spaces, reference is made to Section 5.1.4 of the DCP, which outlines car parking for commercial developments. In reference to this section, it has been assessed that the site primarily operates as a Business and Office Premises. A Business and Office Premises requires the provision of bicycle spaces on site at a rate of 1 bicycle space per 10 employees which is a minimum requirement. It is understood the proposed site would accommodate up to 91 employees at any one time, Therefore the minimum number of bicycle spaces is as follows:

- 91 employees / (1 bicycle space per 10 employees) = 9.1 bicycle spaces

The design provides eleven bicycle spaces provided within an enclosed room within the design.

The DCP does not identify bicycle parking provisions to visitors, as such a provision of 2 bicycle racks have been provided within the design to assist with promoting alternative active travel options to the site.

6 Access and Car Park Assessment

6.1 Vehicular Access

Vehicular access is provided via two new dreiveway and an existing egress as illustrated in Figure 17 and are as follows: being:

- Access to the public parking is proposed via a 3.6 metre one-way access which provides access from Main Avenue (local road).
- Egress from the public car park will be via an existing egress onto Main Avenue.
- Access and egress to the staff section of the development is proposed via a 6.5 metre wide road which provides access from Weeroona Road (Arterial Road).

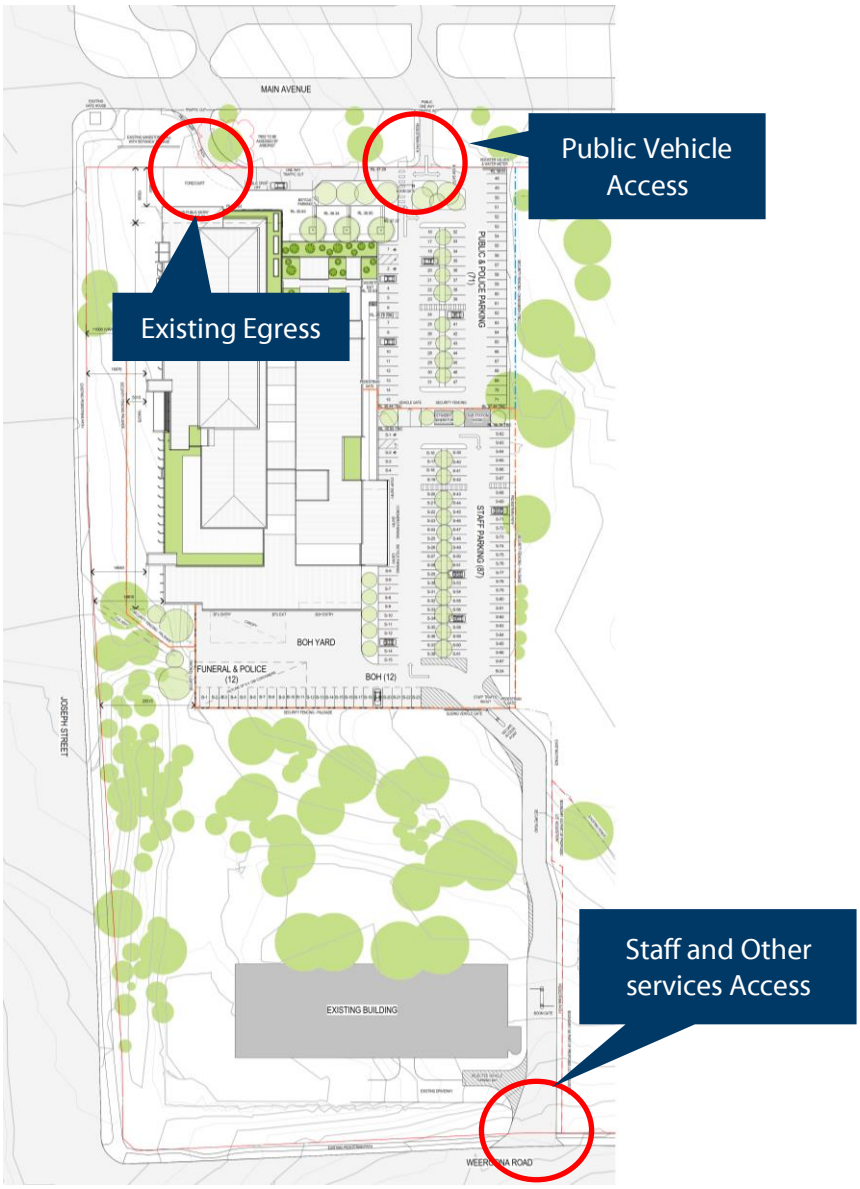


Figure 9 – Site Access Road

According to AS2890.1, Section 3.2, the public access facility which provides 71 parking spaces (Class 3 spaces) can be categorised as a Category 2 parking facility which requires a combined entry and exit driveway width of 6.0 to 9.0 metres. The proposed public driveway is provided with a separate entry and exit access each approximately 3.6m wide.

In respect to the Staff access facility which provides 117 parking spaces (mixture of Class 1A and 3), it can be categorised as a Category 4 parking facility. This requires a separated entry/exit access width each ranging between 6.0 metre to 9.0 metres with a 1 to 3 driveway separator in between.

The proposed staff driveway currently shows a 13.0 metre wide driveway which addresses the provisions of AS2890.1. The proposed access permits an occasional truck (larger than 12.5m long) to access the site.

As required by the Security consultant, all access points leading into the public and staff parking areas require a secure access which may be provided in the form of a boomgate or security fence. This is provided in the design as follows:

- Weeroona Road frontage, two secure vehicle access points are required as part of the proposal. This is provided as a boom gate adjacent to access from Weerona Road, whilst the second secure access is provided south of the security fence into the staff parking area.
- Main Avenue frontage - boom gate at entry and exit points from the public parking area.

To accommodate the above requirements, the driveway access widths within both public and staff car parks have been reviewed with swept path analysis computer program and are considered adequate to allow vehicles to pass unobstructed with appropriate clearances.

6.2 Sight Distance

The sight distance requirements are described in Section 3.2 of AS2890.1 and are prescribed on the basis of the sign posted speed limit or 85th percentile vehicle speeds along the frontage road. The access road will be subject to a posted speed limit of 60kph, which requires a desirable visibility distance of 55 metres and a minimum distance of 35 metres.

Both access driveways are located on a straight section of the access road, where unobstructed visibility is available. It is considered that implementation of a 'No Parking' restriction along the access road will further assist in the visibility, while also maintaining appropriate traffic movements.

6.3 Car Park Arrangement

The car park access arrangement, internal circulation and parking layouts have been designed in accordance with the requirements of Section 2 of AS2890.1. Table 1.1 of AS2890.1 presents a number of classifications applicable to different land-uses. There are various user classes across the development site.

Class 3 Facility – Public and Other

Class 1A Facility – Staff

Parking space dimensions and associated aisle widths for each classification are presented in Table 2.2 of AS2890.1. The design requirements for each facility noted above are as follows:

- **Class 3 Parking facility (User Groups: Public, other (i.e. Back of House))**
  - Space dimension 2.6 x 5.4 metres

- Access aisle width of 5.8 metres.

- **Class 1A Parking facility (User Groups: Coroner and Pathology Staff)**
  - Space dimension 2.4 x 5.4 metres
  - Access aisle width of 5.8 metres.

An assessment of all elements of the car park has been undertaken including aisle extensions and in this regard, the car park design complies with the requirements of AS2890.1.

Included within the parking arrangements is the provision of four (4) accessible spaces. The accessible spaces have been assessed against the requirements within AS2890.6:2009, which requires the following dimensions an accessible space dimension of 2.4 x 5.4 metres with a shared space of 2.4 metres width adjacent to any space. An assessment of theses spaces has been undertaken and in this regard, the accessible spaces comply with the requirements of AS2890.6:2009.

6.4 Internal Circulation

According to AS2890.1, a minimum width of 5.5m is required for two-way movement on straight sections of roadways. Within the public car park roadway aisles is 5.8 metres, whereas the staff car park areas adopts an aisle roadway is 6.2 metres. Both car park meet the minimum requirements of the standard.

To reduce potential movement conflicts at the entry/exit access into the car park, a one-way clockwise car park circulation has been adopted. To further assist with access, it has been recommended that entering vehicles are provided with priority over those circulating the car park.

In this regard, the access widths within both public and staff car parks have been reviewed with swept path analysis computer program and are considered adequate to allow vehicles to pass unobstructed with appropriate clearances. The required line marking and signage requirements to illustrate the priority of movements within the car park area would need to be considered as part of the detail design process.

The swept path analysis is shown on the plans in Attachment 4.

6.5 Servicing

The design allows for various forms of service vehicle access. All service vehicle access/egress will be via Weeroona Road and the road way can accommodate a Heavy Rigid Vehicle (12.5m in length). The road way is to be controlled by 'no parking' restriction along its whole length. As a minimum, one way shuttle access will be maintained along the road way, during any on street servicing process.

- Refuse vehicles – Refuse collection is to be undertaken 'on street' on the southern kerb adjacent to the general waste store room. This is expected to be a on a weekly basis, with a short waiting time to undertake the loading process. Vehicle 'warning lights' would be in operation during the process to alert other road users.

- Building servicing – Servicing of the building is to be undertaken within the proposed loading dock adjacent to the body transfer unit. Access to the loading dock is to be via a reverse manoeuvre and egress by a forward movement, to limit potential conflicts with other road users.

- Funeral Directors – A body transfer unit has been provided within the design to allows a Port-Cohere pick up and drop off accommodating up to two vehicles for a vehicle hearses or two typical NSW ambulance vehicles.

- Emergency procedures - The design accommodates a 19m semi-trailer that may access the site in the event of an emergency. Swept paths show that a 19m semi-trailer is able to enter and exit via the Weeroona Road. This assumes that the staff car park will be empty to provide sufficient turning area.

The swept path analysis for these operations is presented on plans in Attachment 4.

7 Construction Traffic during Construction Stages

A Construction Traffic Management Plan (TMP) identifies potential road network and parking impacts during construction and how these impacts will be mitigated. It is proposed that a full CTMP will be developed following the engagement of Project contractor(s), whereby accurate construction traffic and parking demands and impact mitigation strategies will be developed and implemented.

A preliminary review of available routes and access/egress into the site has been undertaken and is provided below.

7.1 Construction Vehicle Types

The construction project will involve the use of a number of different vehicle types in relation to the various tasks involved. The project involves the construction of a warehouse facility and additional roadworks which will require delivery of various materials including reinforcement, concrete, asphaltic concrete, road pavement, concrete kerb and gutter and footpaths and drainage. This requires delivery of building and pavement materials and will typically involve the use of a vehicle type up to a 'Articulated Vehicle" (19m in length) and "truck and trailer" combination (20m in length), as well as concrete agitators for the delivery of concrete to a pump location. Other deliveries to the site will involve a mix of small trucks and vans.

Any oversized vehicle that is required to travel to the site will be dealt with separately, with the submission of required permits to and subsequent approval by Auburn City Council and RMS prior to any delivery.

7.2 Construction Vehicle Routes and Access

The site is located within the suburb of Lidcombe and is bounded to the north by low density residential housing. Whilst to the west and south of the site are major regional transport routes (road and rail). The existing and future road access into the proposed development is situated to the north off Main Avenue (Local road) and to the south off Weeroona Road (Regional Road).

Therefore the proposed construction vehicle routes should have regard for the surrounding traffic arrangements in the vicinity of the site.

In reviewing the existing land uses, it is envisaged that all construction vehicles would enter and exit via the southern access leading from Weeroona Road as it benefits from access from all directions. The use of the access to the north should be limited only to small site vehicles due to its proximity to residential land uses.

A potential construction vehicle access and egress route that may serve the site is presented in Figure 10. All vehicles are to enter and exit the site in a forward direction from and onto the public roadway. To ensure all vehicles enter and exit in a forward direction, an area within the confines of the construction site should be identified to permit a 19m articulate vehicle and/or rigid truck and trailer to turn around.

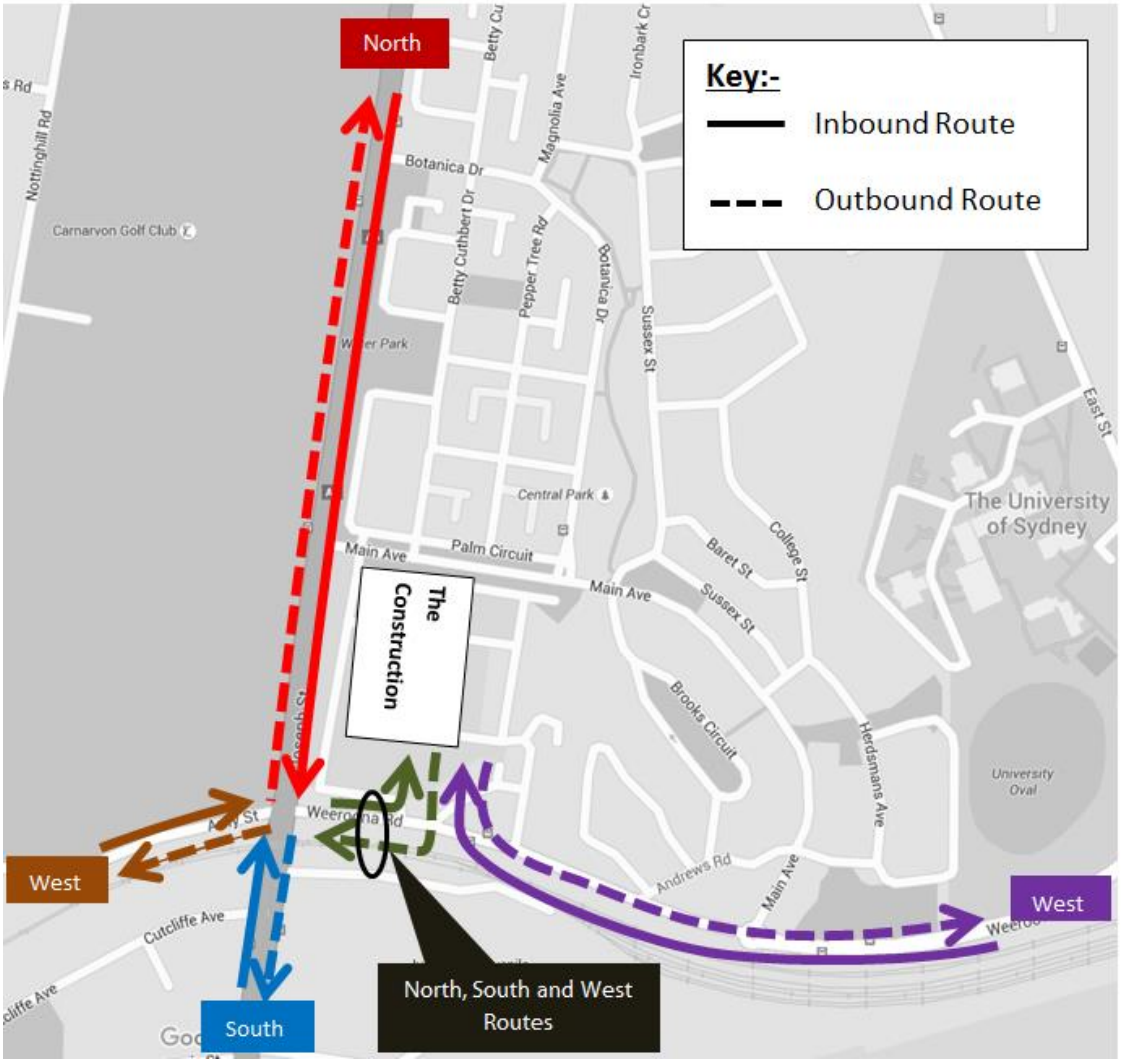


Figure 10 – Construction Vehicle Route Plan

7.3 Construction Traffic Activity

It is however anticipated that the construction traffic activity will be spread throughout each day outside of the key road network periods.

The number of truck movements generated by the construction works is not known as this is dependent on the final building scheme. Details of proposed number of heavy vehicle movements generated by the construction works will be provided at a later design stage once the proposed design layout has been agreed with all stakeholders.

Subsequent to this, the TMP will be updated to incorporate the anticipated volumes in order to assess whether the construction work would cause any notable impact upon the capacity or operation of the road network.

7.4 Traffic Management

Vehicles will be permitted to travel past the work site on Main Avenue and Weerona Road. Traffic signage should be implemented along these routes in accordance with a Traffic Control Plan (TCP) developed in accordance with RMS Traffic Control at Works Sites and AS1742.3 – Traffic Control for Works on Roads to advising motorists of changes in road network or vehicle movements to/from the site.

7.5 Pedestrian and Cyclist Management

Site access will be restricted to authorised personnel only. Pedestrian access to and around the site is to be maintained at all times. It is anticipated the pedestrian activity in public areas surrounding the site will be low due to the isolated nature of the surrounding properties and no formalised pedestrian facilities connecting directly into the site. A pedestrian access path will be provide from the site compound to the construction areas for workers and approved visitors.

7.6 Road Closures

Road Closures as not anticipated as part of this project.

7.7 Works Zones

On-street works zones are not anticipated on the public road network.

7.8 Special Deliveries

Special deliveries are expected for the delivery of oversized mobile cranes. Specific TCP's and applications will be made by the specialist contractor for these operations.

7.9 Staff Parking

During the works the number of the workers on site will vary throughout the various construction stages. Details of the anticipated number construction workers on site will be provided at a later design stage once the proposed design layout has been agreed with all stakeholders.

Subsequent to this, the TMP will be updated to incorporate the anticipated number of construction works on site. This information would be used to establish the required size of on-street parking required within the site.

The availability of parking on-site should be restricted to encourage, contractors and site personnel would be encourage to adopt car-pooling and public transport.

8 Active Travel

8.1 Sustainable Transport Initiatives

As established in section 3 of the report, access by public transport is provided via bus route 908 which connects to Regents Park and Berala Stations can be accessed, These services operate relatively early in the morning and late in the evening during the peak change over periods and may be suitable for staff and members of the public to access the site.

As initial steps in promoting more sustainable transport options to and from the FPCC, other active transport modes should be considered such as cycling. As part of this Project includes the following:

- End-of-Trip facilities (showers and lockers) ;
- A bike storage room accommodating 10 bicycle rails ;
- two (2) bike racks with the ability to hold four bicycles within the public car park.

8.2 Travel Access Guides/ Workplace Transport Plans

The core principle in reducing the demand for car parking spaces (specifically for Staff) is to introduce and promote alternative travel options. The attractiveness of adopting active travel to and from site is dependent on the availability of the rail, bus, cycle and pedestrian network near the FPCC.

Travel plans should aim to:

- Encourage visitors to use more sustainable travel options to get to Hospitals;
- Encourage staff living close to the site to adopt healthy transport choices such as walking and cycling where this is a realistic option;
- Explore car parking needs with Public Transport providers, which may include consideration of park and ride schemes;
- Pursue opportunities for sharing vehicles or transport not only for staff but to explore innovative solutions to minimise journeys;
- Consider journey management and distance covered;
- Encourage health, health related and government occupants of the FPCC to develop and implement sustainable travel plans for their staff, patients and visitors.

Furthermore, there are other methods of shifting the number of staff accessing work by incentivising and increasing the use of carpooling, cycling, park and ride. However these forms of transport need to be supported by an incentivised system to make these forms of access more desirable than driving.

As established in Section 3.2.1, there is a proposal to extent bus route 925 extend along Main Avenue and Weeroona Road. In order to provide increased opportunities to utilise public transport to and from the site, it is recommended that as part of the bus stop review, a bus stop should be considered adjacent to the public access.

9 Conclusion

In summary, Parking and Traffic Consultants assisted the design team to develop eight (8) options during the concept design phase in which option 1 was identified as the preferred option and has been used as part of the Schematic Design Phase for assessment.

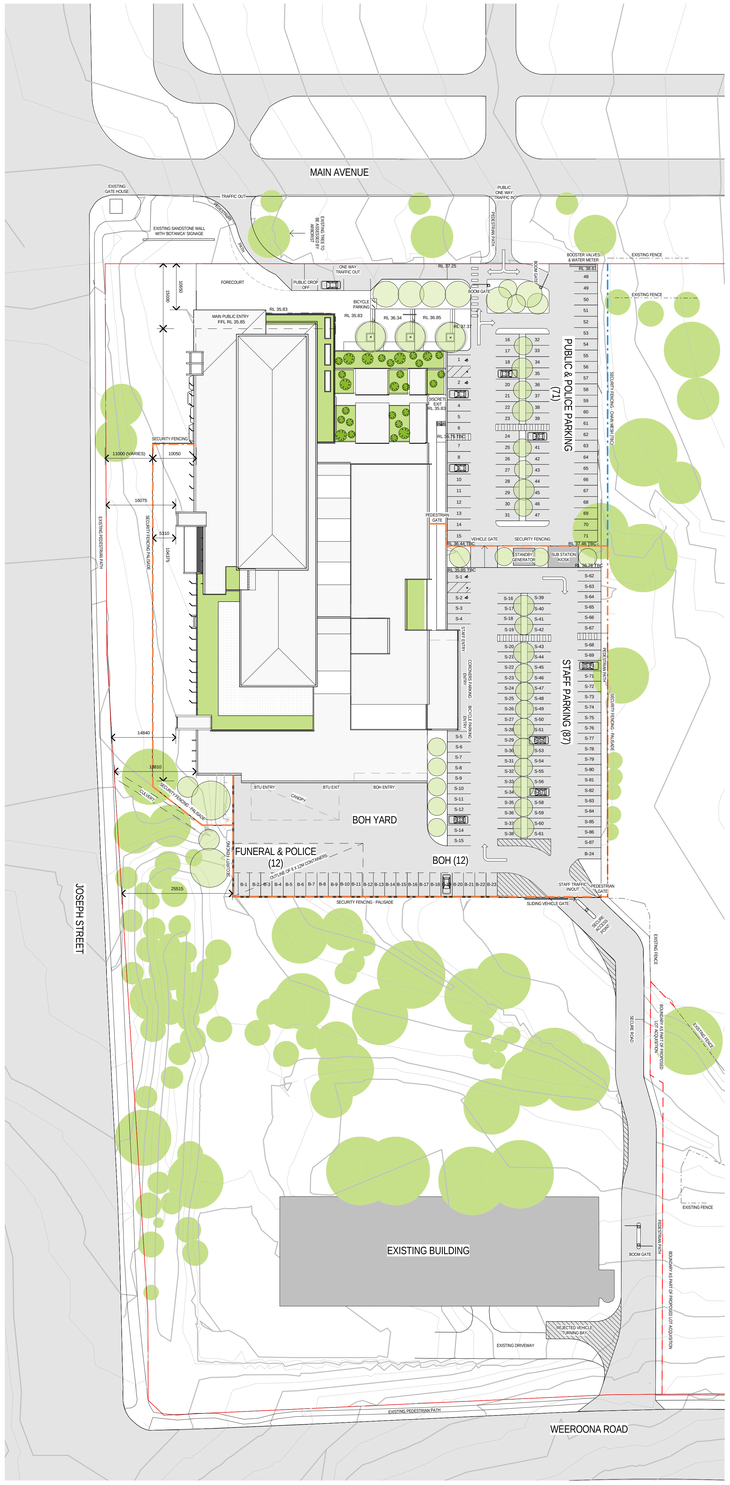
The traffic activity associated with the development generating an additional 155 two-way vehicle trips in the AM Peak and 135 two-way vehicle trips will not have any detrimental impact on the operation of the surrounding road network.

The proposed parking provision of 188 spaces (plus 3 drop off spaces) on site which addresses the maximum parking demand that may be generated by the site which is 183 spaces.

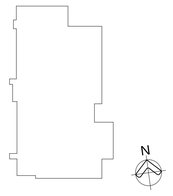
In order to promote active travel to the site, a provision of 10 bicycle parking spaces provided within a secure room for staff, whilst and additional 2 bicycle rails are provided for the public.

The parking and vehicular access arrangements have been designed in accordance with the relevant standard, being AS2890.1, AS2890.2 and AS2890.6.

Attachment 1 – Architectural Drawings



KEY PLAN



REV	DESCRIPTION	DRN	DATE

DIMENSIONS

USE FIGURED DIMENSIONS, DO NOT SCALE. CONTRACTORS MUST VERIFY ALL DIMENSIONS ON THE SITE BEFORE COMMENCING ANY WORK OR MAKING ANY SHOP DRAWING WHICH MUST BE SUBMITTED AND REVIEWED BEFORE MANUFACTURE.

FIXTURES, FITTINGS & EQUIPMENT SPECIFICATIONS

SUBSTITUTE FF&E EQUIPMENT SPECIFICATIONS
THE FIT-OUT DESIGN AND DOCUMENTATION HAS BEEN COMPLETED ON THE BASIS OF FF&E AND EQUIPMENT ADVISED TO THIS OFFICE AT THE TIME OF BRIEFING THE DESIGN. THE DESIGN PROVISIONS FOR FF&E AND EQUIPMENT INCORPORATES SPATIAL ALLOCATIONS, SERVICING, LOADING AND ACCESS CLEARANCES AND WHERE APPROPRIATE SERVICES REQUIREMENTS, HAVING DUE REGARD FOR SURROUNDING FIXTURES AND FITTINGS. IT SHOULD BE NOTED THAT SUBSTITUTE FF&E OR EQUIPMENT WITH ALTERNATE SPECIFICATIONS SHOULD NOT BE PROCURED PRIOR TO VALIDATING THOSE SPECIFICATIONS AGAINST THE ITEM CONTROL SCHEDULE AND DESIGN PROVISIONS IN THE MODEL. THIS OFFICE ACCEPTS NO RESPONSIBILITY FOR THE PROCUREMENT OF SUBSTITUTE FF&E AND EQUIPMENT WHICH HAS NOT BEEN REVIEWED AND VALIDATED AGAINST THE ORIGINAL DESIGN PROVISIONS.

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PROJECT MANAGER

CLIENT

PROJECT

NSW Forensic Pathology & Coroners Court

Corner of Joseph St and Main Av
Lidcombe NSW 2141

DRAWING TITLE

LOCATION AND SITE PLAN

SCALE	DATE	DRAWN BY	CHECKED
1 : 500@A0	12/07/16	Author	Checker

PROJECT No	DRAWING No	REVISION
10249	130276-HI-AR-DWG-1010	

Attachment 2 – Existing Traffic Counts (Morning and Afternoon Peak)

2016 Traffic Intersection Volumes PM Peak (0yrs of traffic growth)

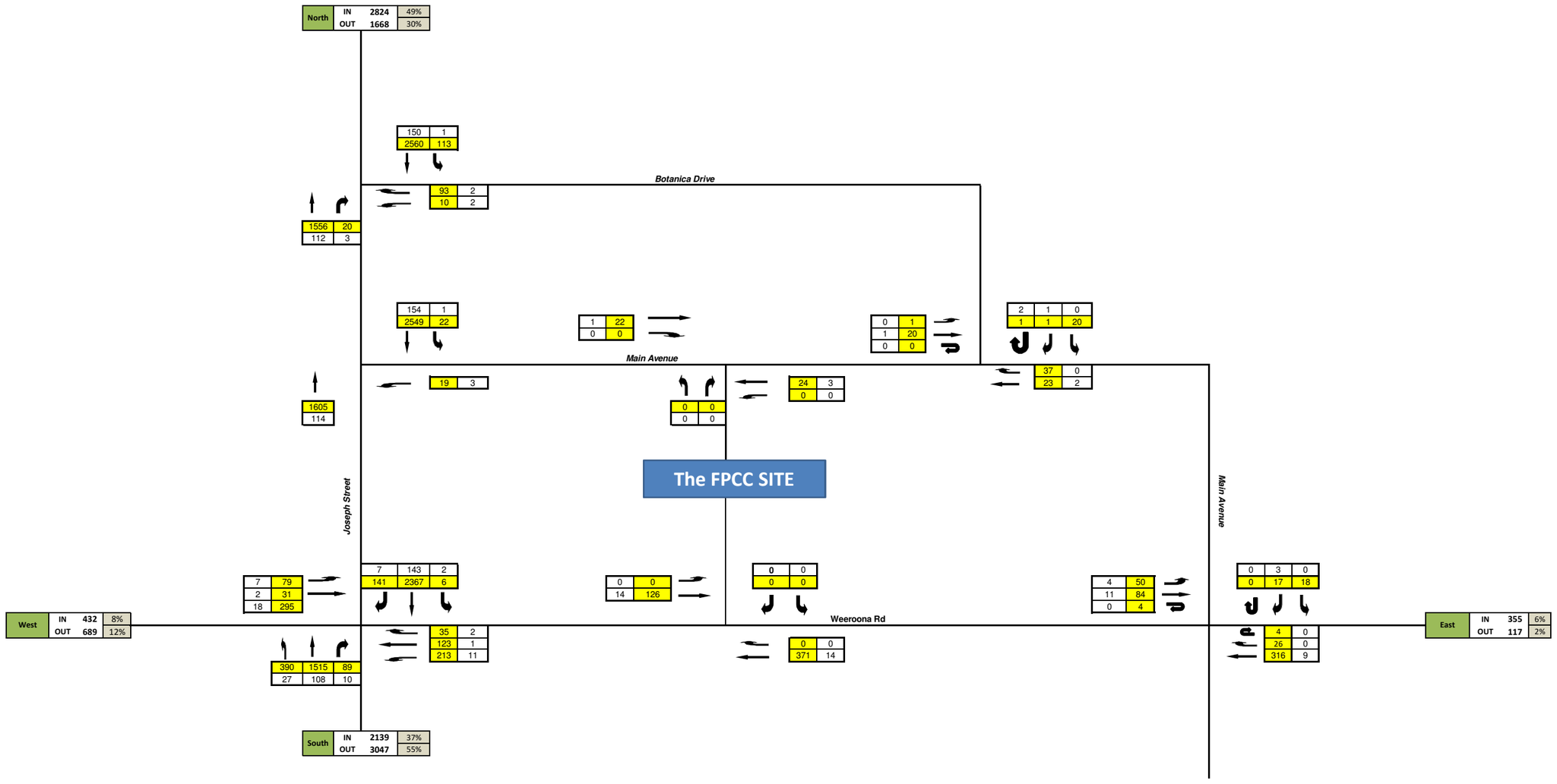
PM Peak	
XX	Proposed Traffic
XX	Existing Traffic (LV)
XX	Existing Traffic (HV)
2016	Year
1%	Annual Road Traffic Growth
0	No. Years of Growth (from Opening)

3:30 to 4:30PM (Peak Period)

Traffic volumes are total aggregate volumes accounting for both light vehicles and heavy vehicles.

We have ingnored the difference in volumes between the two intersections. It has been assumed network modelling will correct this.

Traffic Distribution for FPCC Site



2016 Traffic Intersection Volumes (existing traffic) AM Peak

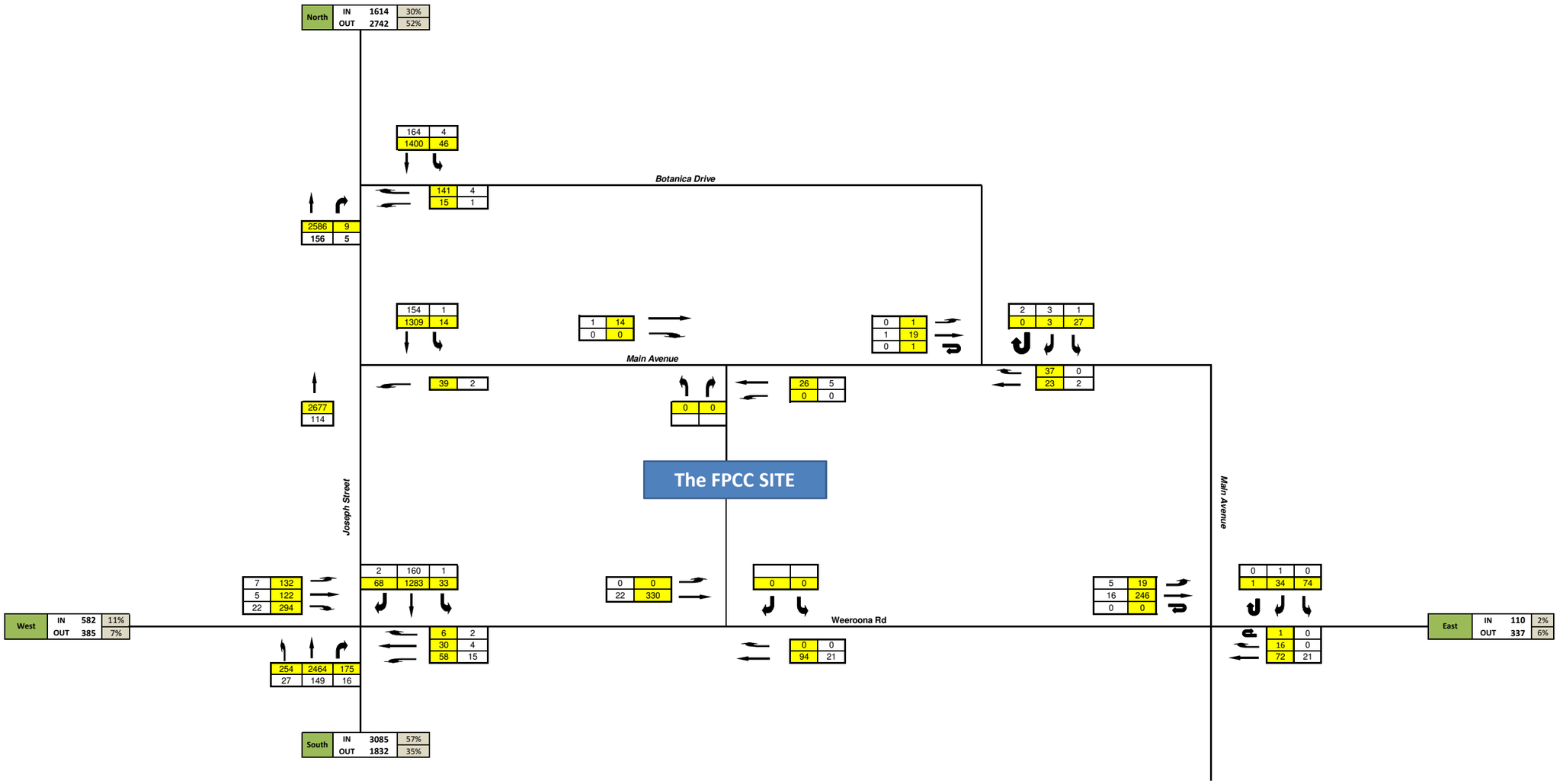
XX	Proposed Traffic
XX	Existing Traffic (LV)
XX	Existing Traffic (HV)
2016	Year

AM Peak
Traffic Growth

7:00 to 8:00am (Peak Period)
Traffic volumes are total aggregate volumes accounting for both light vehicles and heavy vehicles.
We have ingnored the difference in volumes between the two intersections. It has been assumed network modelling will correct this.

Traffic Distribution for FPCC Site

POST



2016 Traffic Intersection Volumes (existing traffic) PM Peak

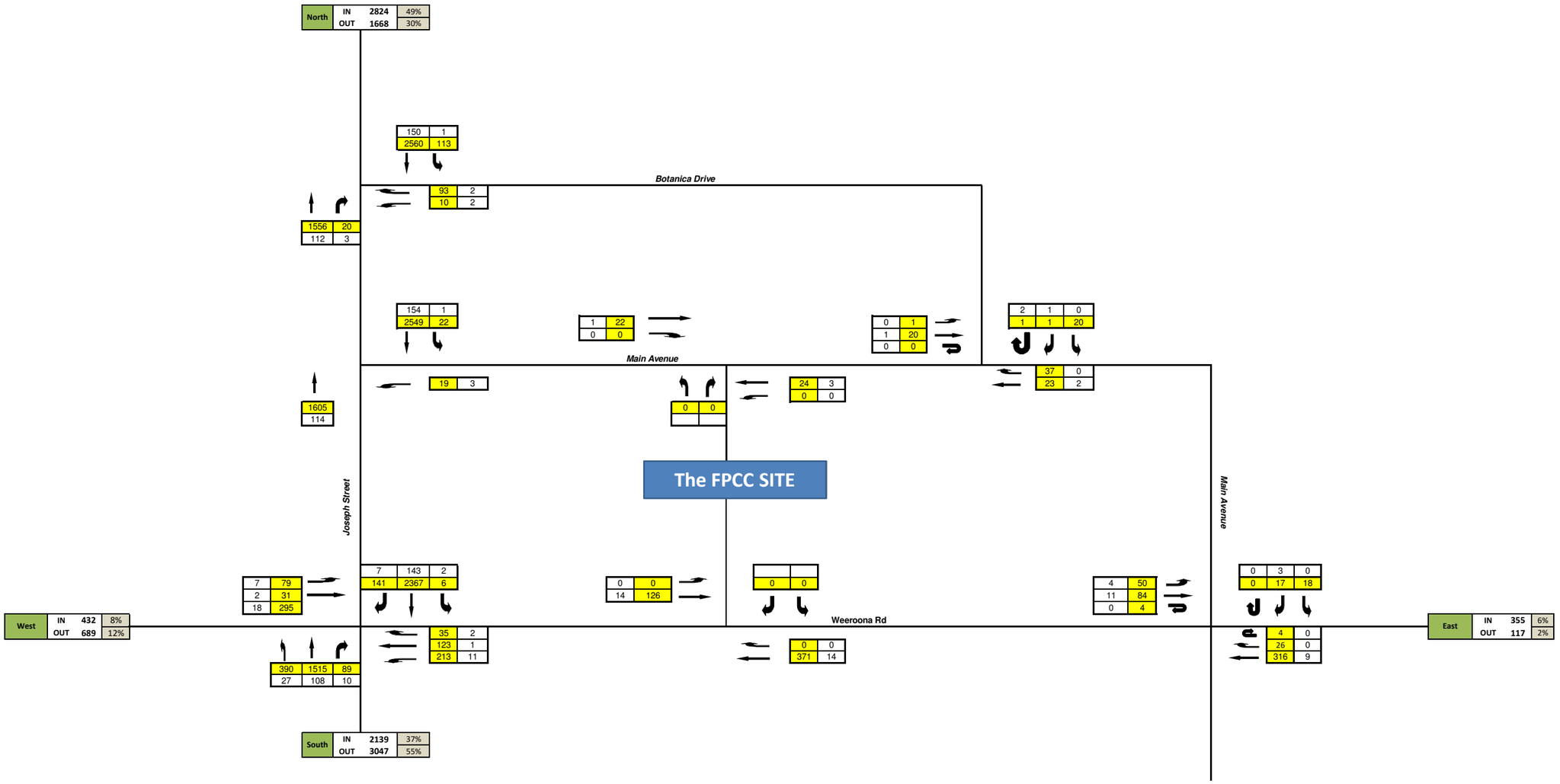
XX	Proposed Traffic
XX	Existing Traffic (LV)
XX	Existing Traffic (HV)
2016	Year

PM Peak
Traffic Growth

3:30 to 4:30PM (Peak Period)
Traffic volumes are total aggregate volumes accounting for both light vehicles and heavy vehicles.
We have ingnored the difference in volumes between the two intersections. It has been assumed network modelling will correct this.

Traffic Distribution for FPCC Site

POST



Attachment 3 – Development Traffic Distributions (Morning and Afternoon Peak)

2016 Traffic Intersection Volumes (Development Only - Public + Staff) AM Peak

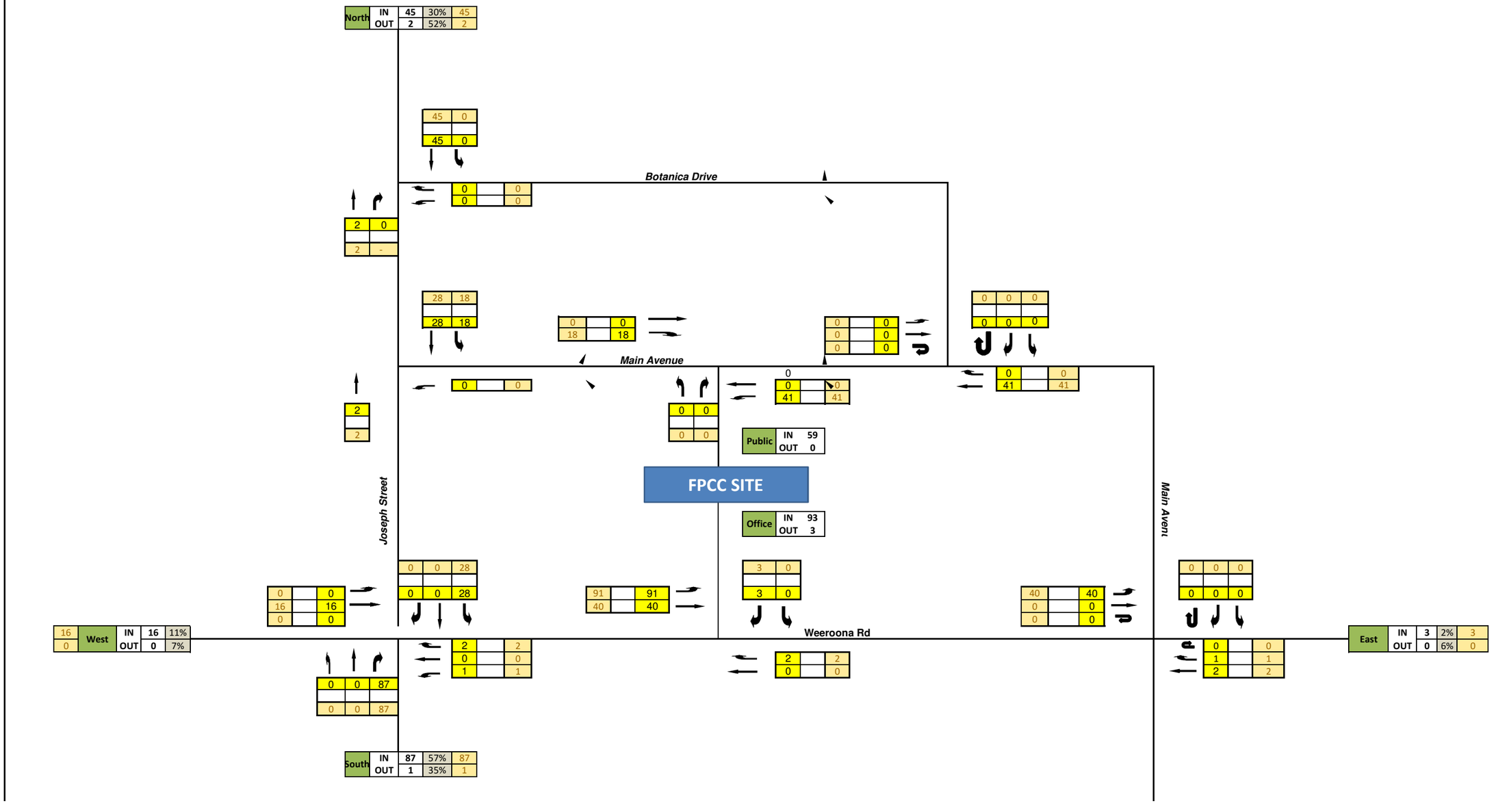
AM Peak

XX	**Total additional traffic**
XX	**Additional Traffic (LV)**
XX	**Additional Traffic (HV)**
2016	Year

7:00 to 8:00am (Peak Period)

Traffic volumes are total aggregate volumes accounting for both light vehicles and heavy vehicles.
We have ingnored the difference in volumes between the two intersections. It has been assumed network modelling will correct this.

Traffic Distribution for FPCC Site



2016 Traffic Intersection Volumes (Existing + Development) AM Peak

AM Peak

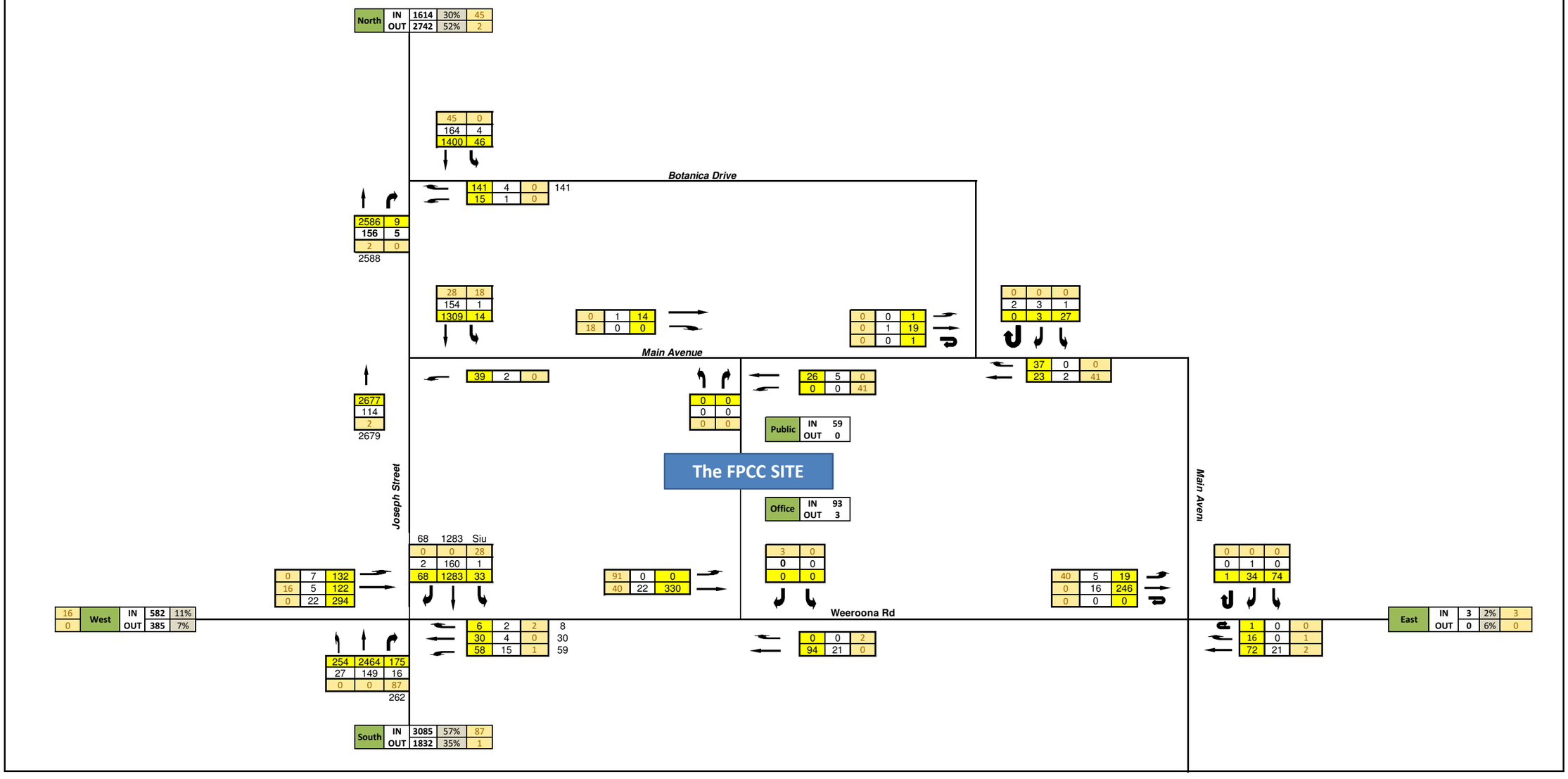
XX	Additional Development Traffic
XX	Existing Traffic (LV)
XX	Existing Traffic (HV)
2016	Year

1% Annual Road Traffic Growth
0 No. Years of Growth (from Opening)

7:00 to 8:00am (Peak Period)
Traffic volumes are total aggregate volumes accounting for both light vehicles and heavy vehicles.
We have ingnored the difference in volumes between the two intersections. It has been assumed network modelling will correct this.

Traffic Distribution for FPCC Site

POST



2021 Traffic Intersection Volumes (Existing + Development) AM Peak

AM Peak

XX	Proposed Traffic
XX	Existing Traffic (LV)
XX	Existing Traffic (HV)
2021	Year
1%	Annual Road Traffic Growth
5	No. Years of Growth (from Opening)

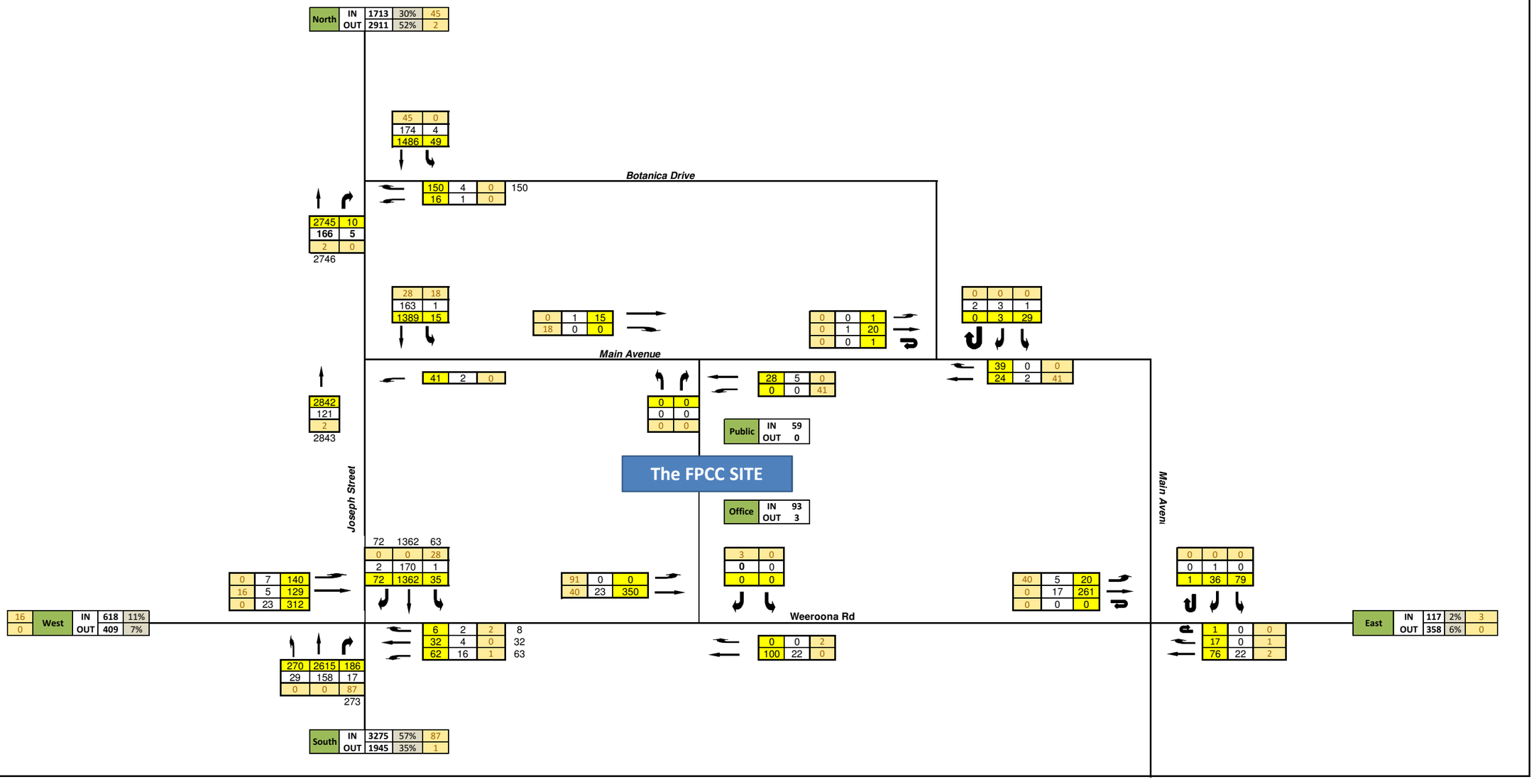
7:00 to 8:00am (Peak Period)

Traffic volumes are total aggregate volumes accounting for both light vehicles and heavy vehicles.

We have ingnored the difference in volumes between the two intersections. It has been assumed network modelling will correct this.

Traffic Distribution for FPCC Site

POST



2026 Traffic Intersection Volumes (Existing + Development) AM Peak

AM Peak

XX	Proposed Traffic
XX	Existing Traffic (LV)
XX	Existing Traffic (HV)
2026	Year
1.2%	Annual Road Traffic Growth
10	No. Years of Growth (from Opening)

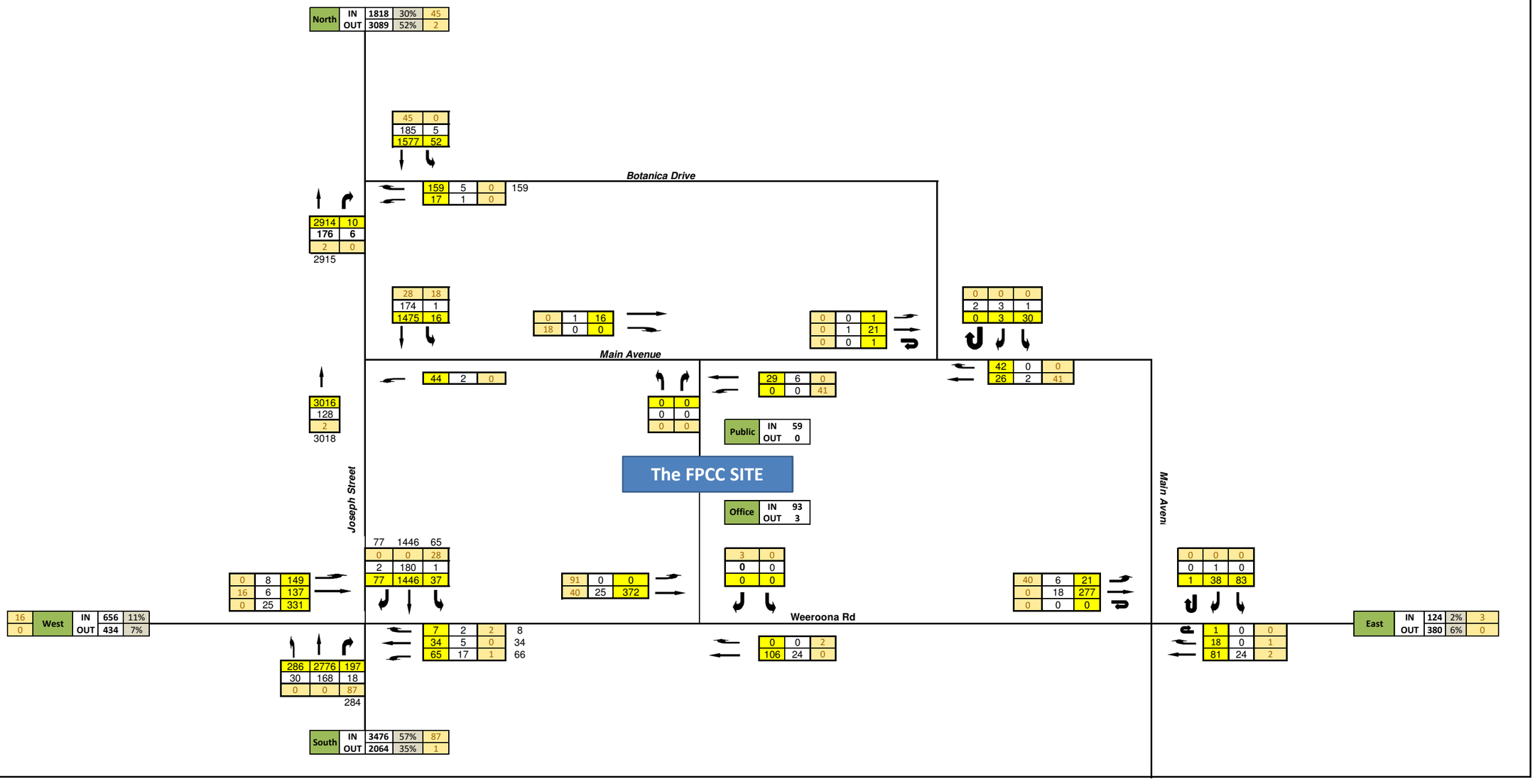
7:00 to 8:00am (Peak Period)

Traffic volumes are total aggregate volumes accounting for both light vehicles and heavy vehicles.

We have ingnored the difference in volumes between the two intersections. It has been assumed network modelling will correct this.

Traffic Distribution for FPCC Site

POST



2016 Traffic Intersection Volumes (Development Only - Public + Staff) PM Peak

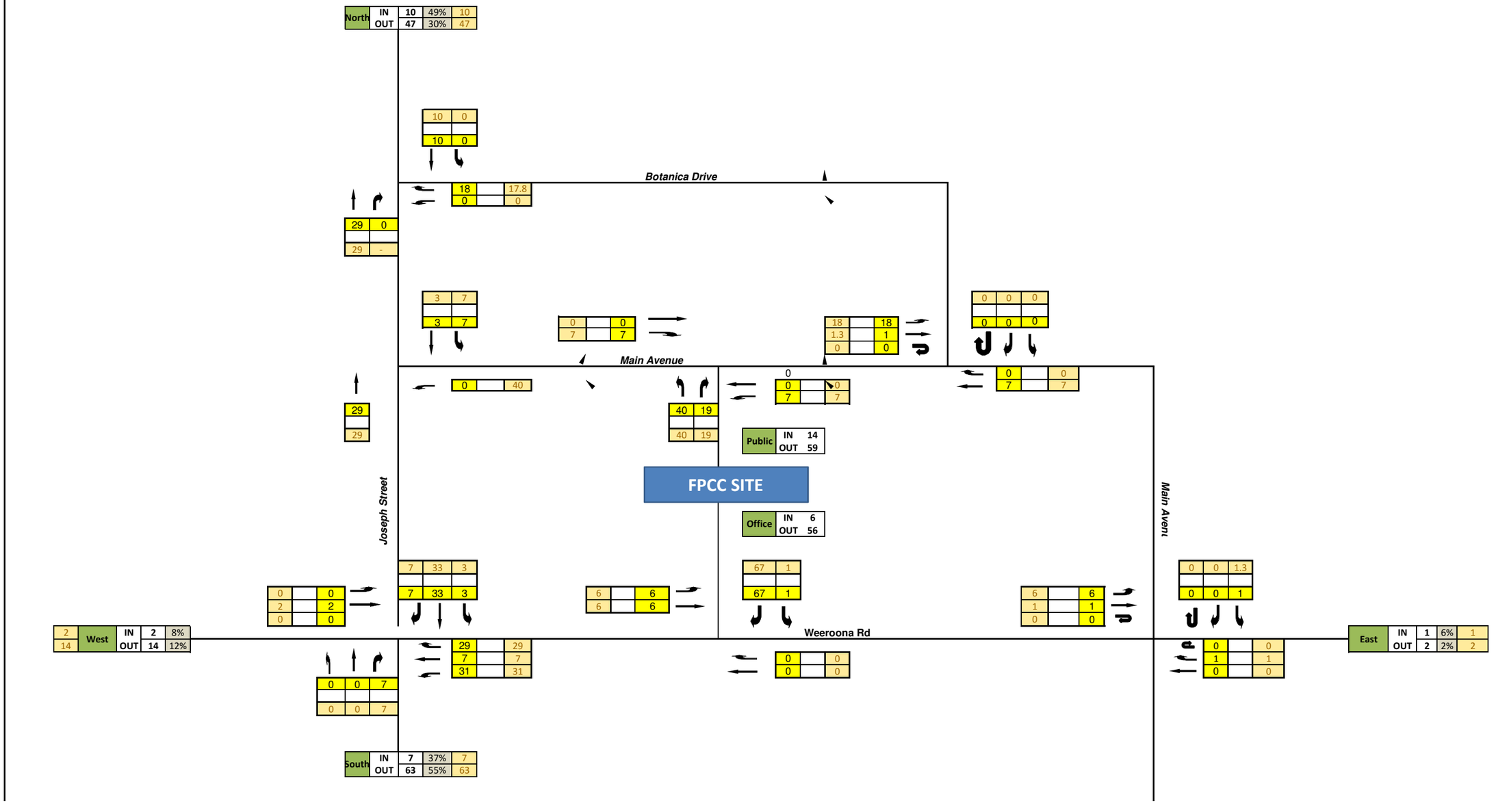
PM Peak

XX	**Total additional traffic**
XX	**Additional Traffic (LV)**
XX	**Additional Traffic (HV)**
2016	Year

3:30 to 4:30PM (Peak Period)

Traffic volumes are total aggregate volumes accounting for both light vehicles and heavy vehicles.
We have ingnored the difference in volumes between the two intersections. It has been assumed network modelling will correct this.

Traffic Distribution for FPCC Site



2016 Traffic Intersection Volumes (Existing + Development) PM Peak

PM Peak

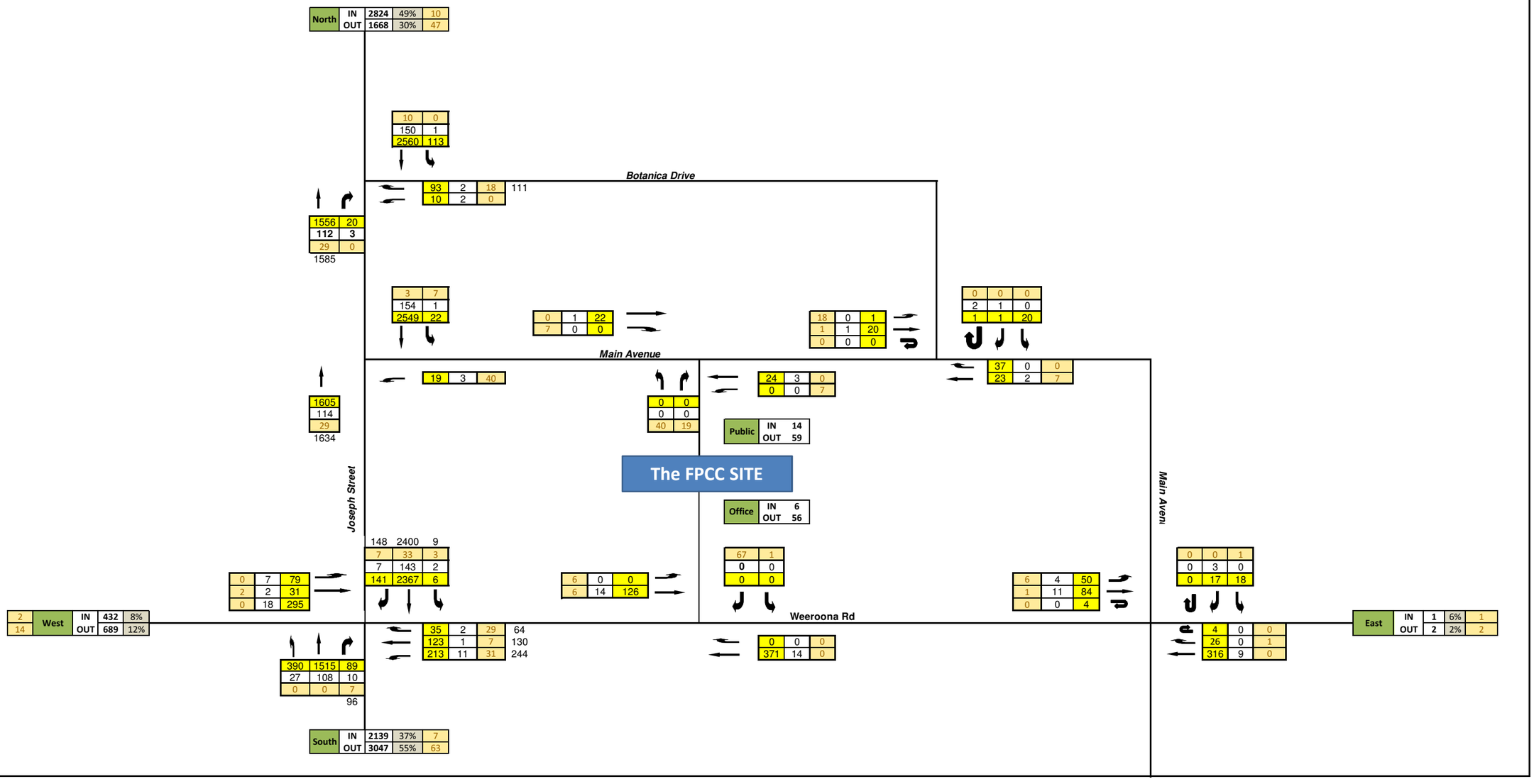
XX	Additional Development Traffic
XX	Existing Traffic (LV)
XX	Existing Traffic (HV)
2016	Year

1% Annual Road Traffic Growth
0 No. Years of Growth (from Opening)

3:30 to 4:30PM (Peak Period)
Traffic volumes are total aggregate volumes accounting for both light vehicles and heavy vehicles.
We have ingnored the difference in volumes between the two intersections. It has been assumed network modelling will correct this.

Traffic Distribution for FPCC Site

POST



2021 Traffic Intersection Volumes (Existing + Development) PM Peak

PM Peak

XX	Proposed Traffic
XX	Existing Traffic (LV)
XX	Existing Traffic (HV)
2021	Year
1%	Annual Road Traffic Growth
5	No. Years of Growth (from Opening)

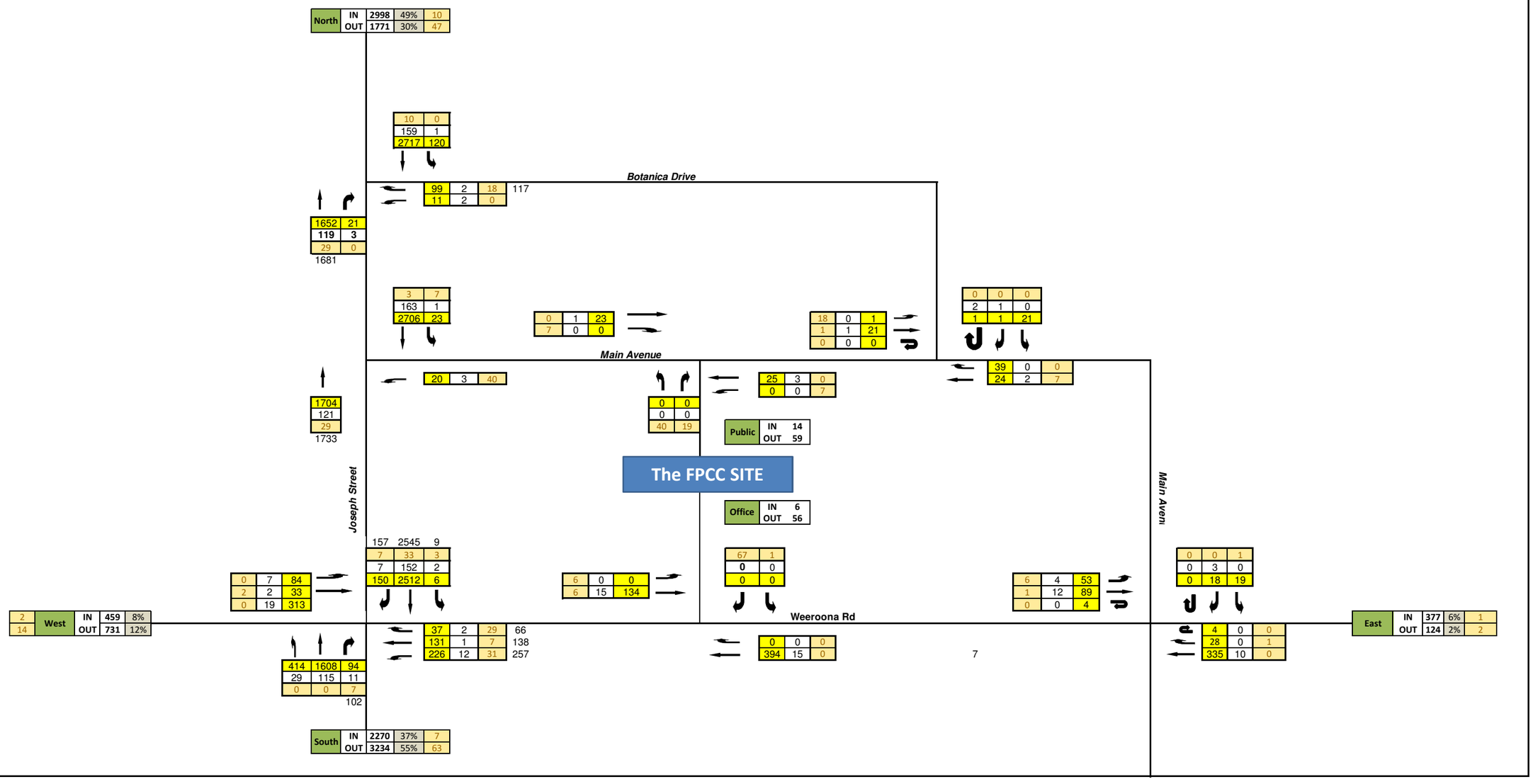
3:30 to 4:30PM (Peak Period)

Traffic volumes are total aggregate volumes accounting for both light vehicles and heavy vehicles.

We have ingnored the difference in volumes between the two intersections. It has been assumed network modelling will correct this.

Traffic Distribution for FPCC Site

POST



2026 Traffic Intersection Volumes (Existing + Development) PM Peak

PM Peak

XX	Proposed Traffic
XX	Existing Traffic (LV)
XX	Existing Traffic (HV)
2026	Year
1.2%	Annual Road Traffic Growth
10	No. Years of Growth (from Opening)

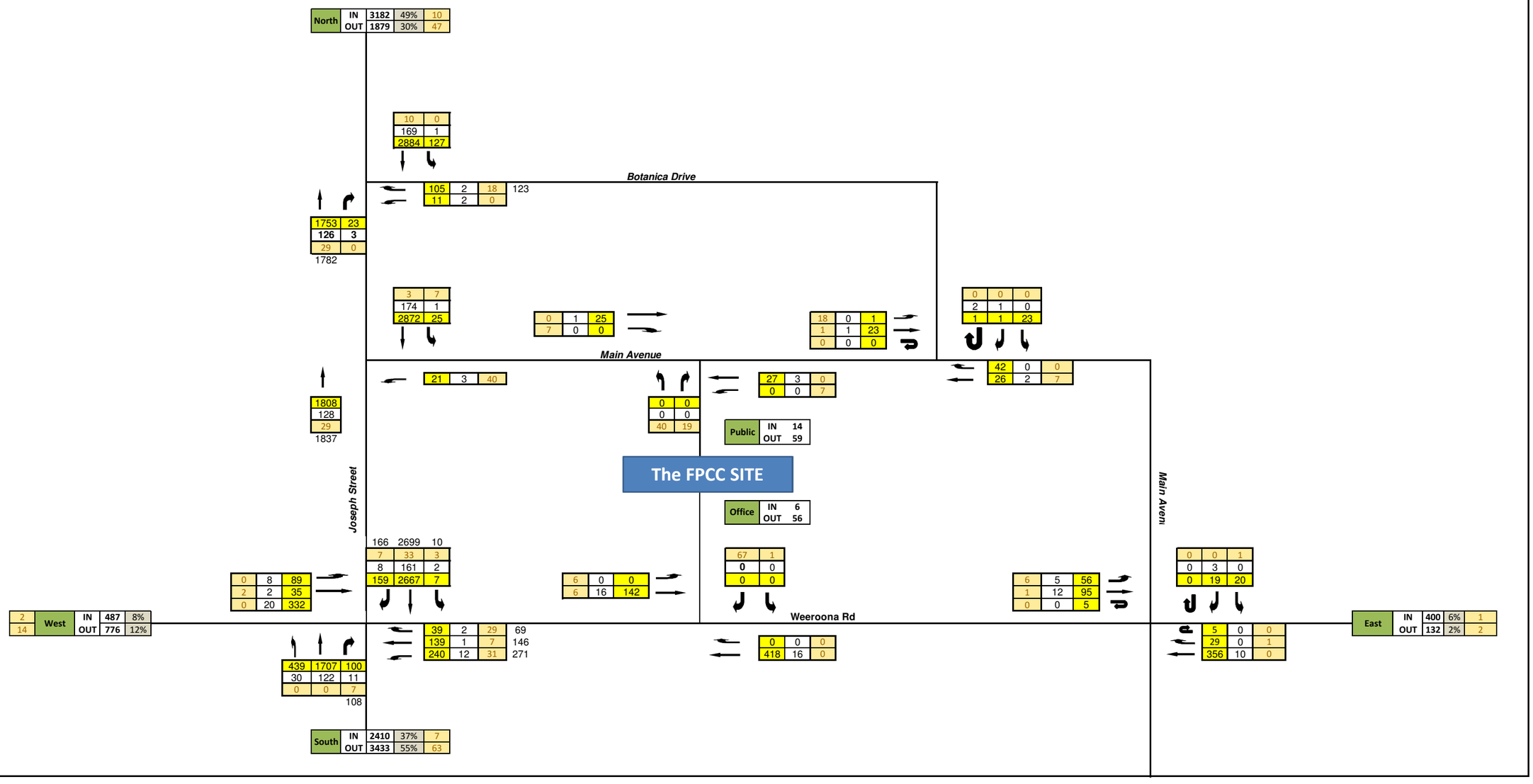
3:30 to 4:30PM (Peak Period)

Traffic volumes are total aggregate volumes accounting for both light vehicles and heavy vehicles.

We have ingnored the difference in volumes between the two intersections. It has been assumed network modelling will correct this.

Traffic Distribution for FPCC Site

POST



Attachment 4 – Swept Paths