Kamira Court Precinct – Stage 2 (Building A + C) Mixed-Use Development

2021–7 (28) Traffic Impact Assessment

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Project Details	
Title	Traffic Impact Assessment – Ver 02
Project Type	High-Density Residential Development
Project Location	Kamira Avenue, Villawood NSW 2163
Client	Traders In Purple
Project Reference	2021 – 7 (28)
Relevant Council	Fairfield City Council
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1. Introduction

1.1 Overview

Traders in Purple (TIP) has commissioned Traffwise Consultants Pty Ltd (Traffwise) to undertake a Traffic Impact Assessment (TIA) study for the proposed Stage 2 ***(Building A + C),*** mixed-use development, as part of Kamira Court Precinct development plan in accordance with the Urban Framework Plan for Villawood Town Centre.

Figure 1 Villawood Town Centre
Source: Villawood Town Centre Development Control Plan 2020

1.2 Background

The Western City District Plan sets targets for infrastructure and community services, including transport, schools, health and community facilities, and recreation, to achieve the 40-year vision for Greater Sydney. The Council adopted the Villawood Town Centre Development Control Plan 2020 (DCP) to assist in achieving the District Plan's targets for Fairfield City Council and the desired economic growth.

Fairfield City Council (Council) commissioned an urban design study for the Villawood Town Centre in 2017. Based on the principles set out in the NSW Government's South West District Plan, the study identified key urban design, built form and place-making actions to improve the vitality and vibrancy of the Villawood Town Centre.

The Urban Design Study established an Urban Framework Plan to guide future development in the Town Centre. The desired redevelopment for Villawood describes providing new community facilities,

medium to high density, social, affordable and private housing, active safe streets and improved connections throughout the Town Centre.

As described in the DCP and shown in **Figure 2**, the Town Centre comprises the following two precincts:

- Business Precinct
- Residential Precinct

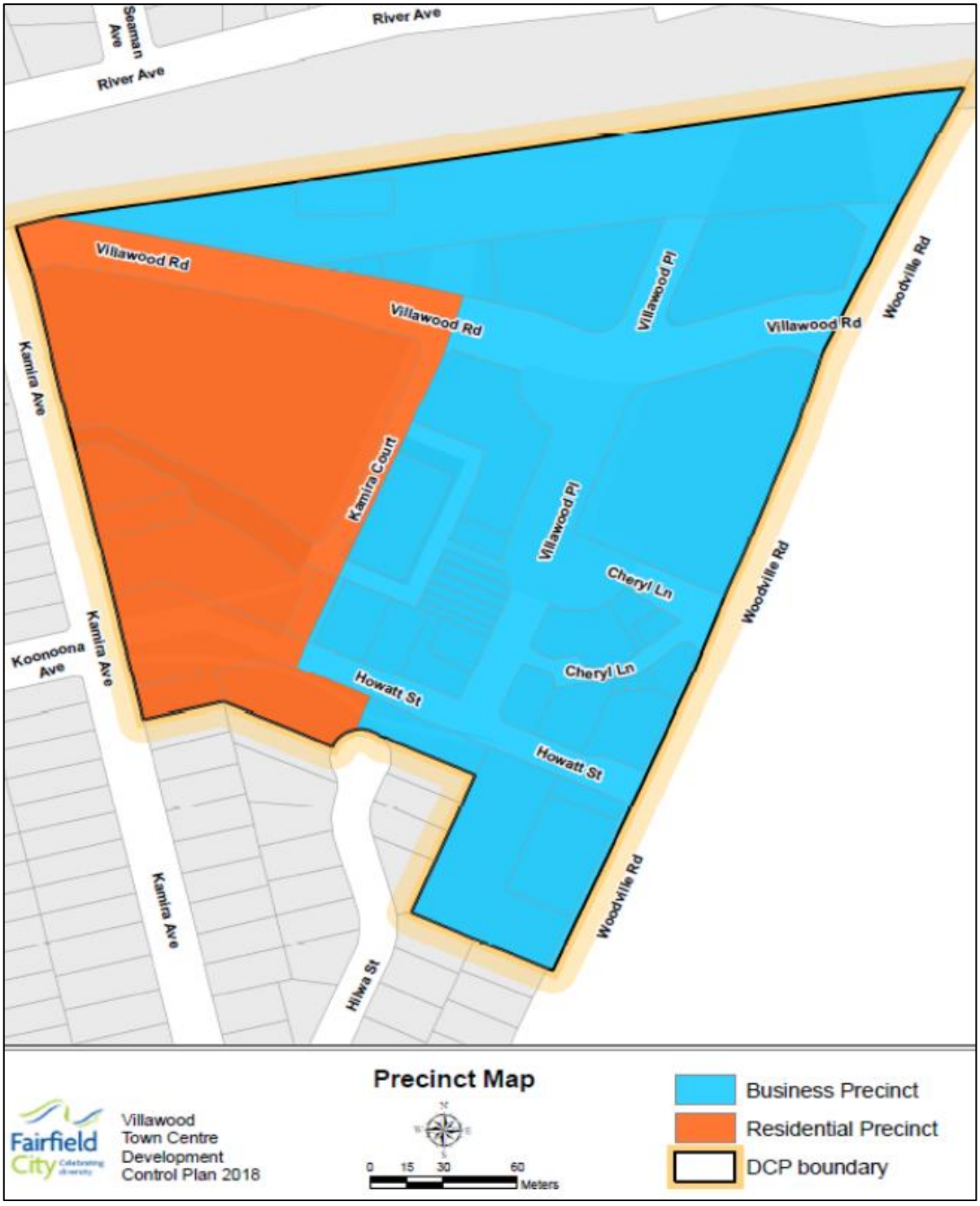

Figure 2 Villawood Town Centre – Precinct Plan
Source: Villawood Town Centre Development Control Plan 2020

The proposed Stage 2 ***(Building A + C)*** is part of the residential precinct development with an expected yield of residential units, a supermarket, retail, medical centre and a childcare facility. The details of the proposed development are provided in **Section 3**.

1.3 Broader Site Context

As described earlier, the proposed development site is part of the Villawood Town Centre located to the east of the Fairfield Local Government Area. The town centre is approximately two (2) km east of Fairfield and 10 km from both Parramatta ***(to the north)*** and Bankstown ***(to the east)***.

Figure 3 illustrates the district context plan of the Villawood Town Centre.

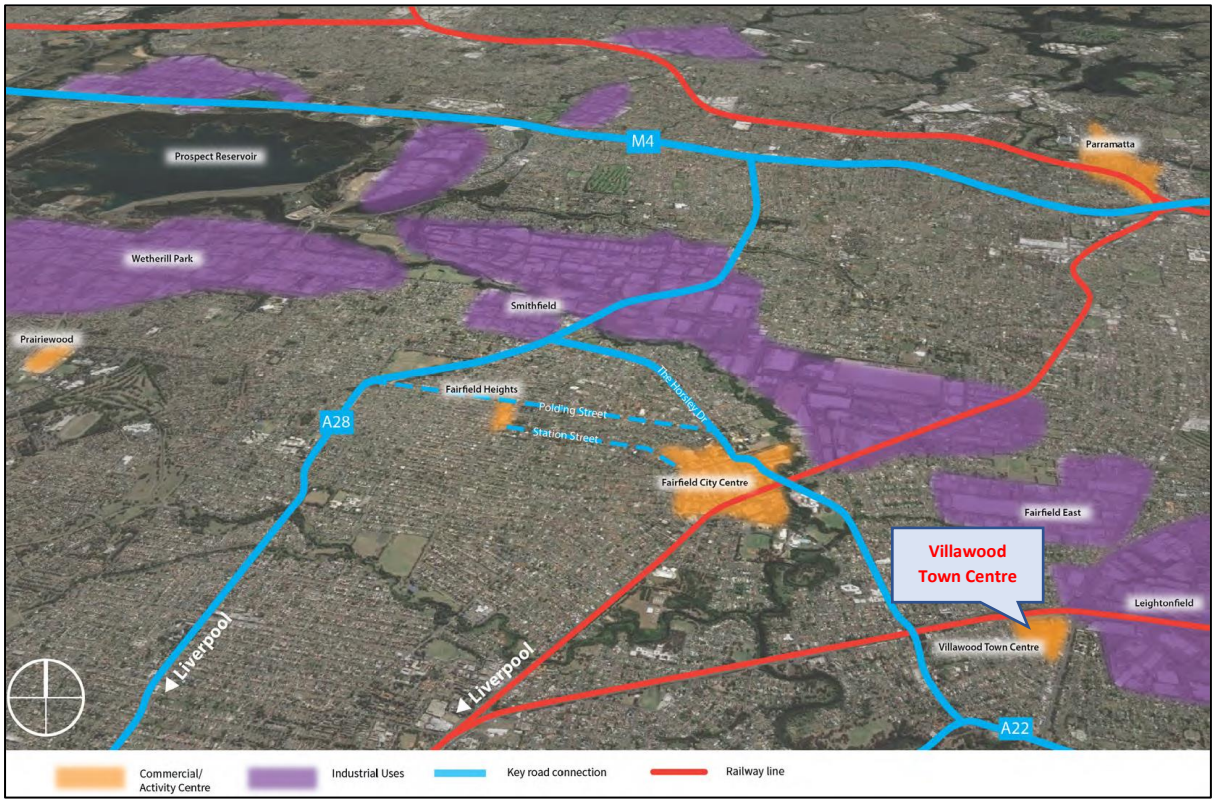

Figure 3 Villawood Town Centre – District Context
Source: Villawood Town Centre Urban Design Study – Fairfield City Council Website (Link, accessed on the 1st of May 2021)

1.4 Reference Documents/Websites

- Villawood Town Centre Urban Design Study
- Google Map and Google Traffic Map
- Google Earth Pro
- Fairfield Citywide Development Control Plan (DCP)
- Villawood Town Centre Development Control Plan 2020
- Information and Development Plans provided by the Architect/Client
- RMS Guide to Traffic Generating Developments (2002)
- RMS Guide to Traffic Generating Developments Updated Traffic Surveys (TDT 2013/04a)
- NSW Department of Planning and Environment's Apartment Design Guide July 2015
- Land and Housing Corporation Website
- RMS Traffic Modelling Guidelines (2013)
- Australian Standards - AS/NZS 2890.1:2004 and AS/NZS 2890.6:2009

1.5 Report Structure

- Section 1: **Introduction**
- Section 2: **Existing Conditions**
- Section 3: **Proposed Development**
- Section 4: **Traffic Assessment**
- Section 5: **Traffic Modelling and Potential Traffic Impacts**
- Section 6: **Parking Assessment**
- Section 7: **Findings**

2. Existing Conditions

2.1 Project Site Locality

The project site is located at the southwest corner of the Villawood Road and Kamira Court intersection. This parcel of the land is of the Kamira Court Residential Precinct, owned by Land and Housing Corporation ***(LAHC)***.

Figure 4 illustrates the locality of the project site and the surrounding road network.

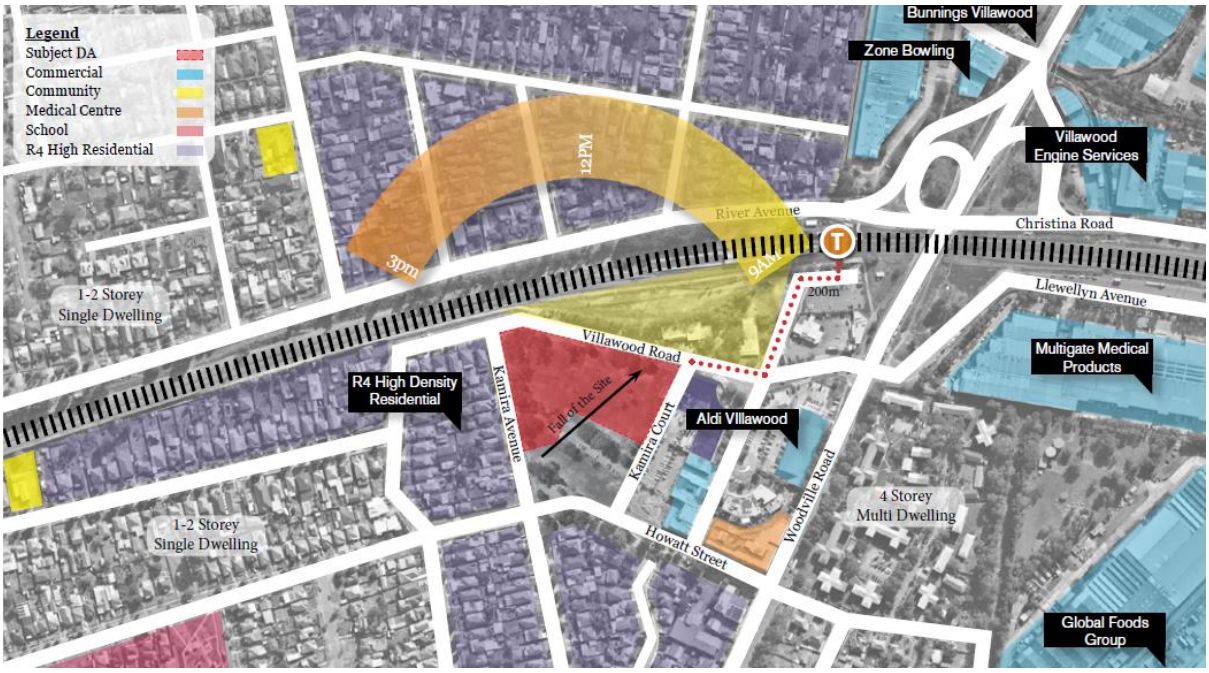

Figure 4 Project Site – Location and Surrounding Road Network
Source: DKO Architecture

2.2 Existing Condition

It is evident from **Figure 5** that the project site is vacant land with no existing development. **Figure 5** also shows that the project site is bounded by:

- Kamira Avenue and existing residential developments to the west
- Villawood Road and Villawood Station to the north
- Vacant land to the south for future development of Stage 1 (***Building B***) of Kamira Court Residential Precinct
- Residential and commercial development ***(47 Villawood Place)*** to the east.

Figure 5 Project Site – Existing Condition and Surrounding Land-Use
Source: Nearmap

2.3 Existing Access Provisions

At present, the project site has been fenced with an informal access point on Kamira Court, Villawood Road, and Kamira Avenue.

It is noted from the provided plans that the section of the Kamira Court running along the southern boundary of the project site will be demolished, and the primary vehicular access will be provided along the northern periphery on Villawood Road. (See **Section 5.10**)

2.4 Active Travel Opportunities

Figure 6 and **Figure 7** show the 10-minute walkability catchment and 15-minute cycling catchment of the proposed development site.

It is evident that residents of the proposed development would have the opportunity to walk and cycle to access many services in the vicinity, including the train station and bus stops.

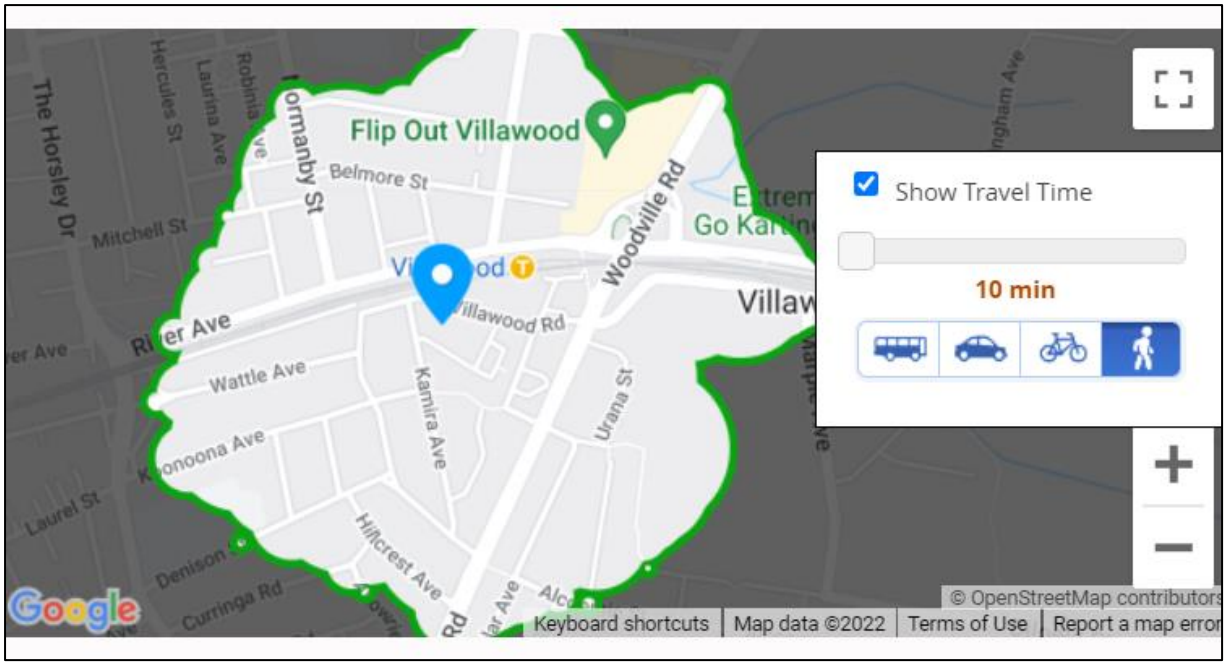

Figure 6 Project Site – Walkability Catchment
Source:https://www.walkscore.com/score/28-villawood-rd-villawood-nsw-australia ***(Accessed online on the 21st of November 2021)***

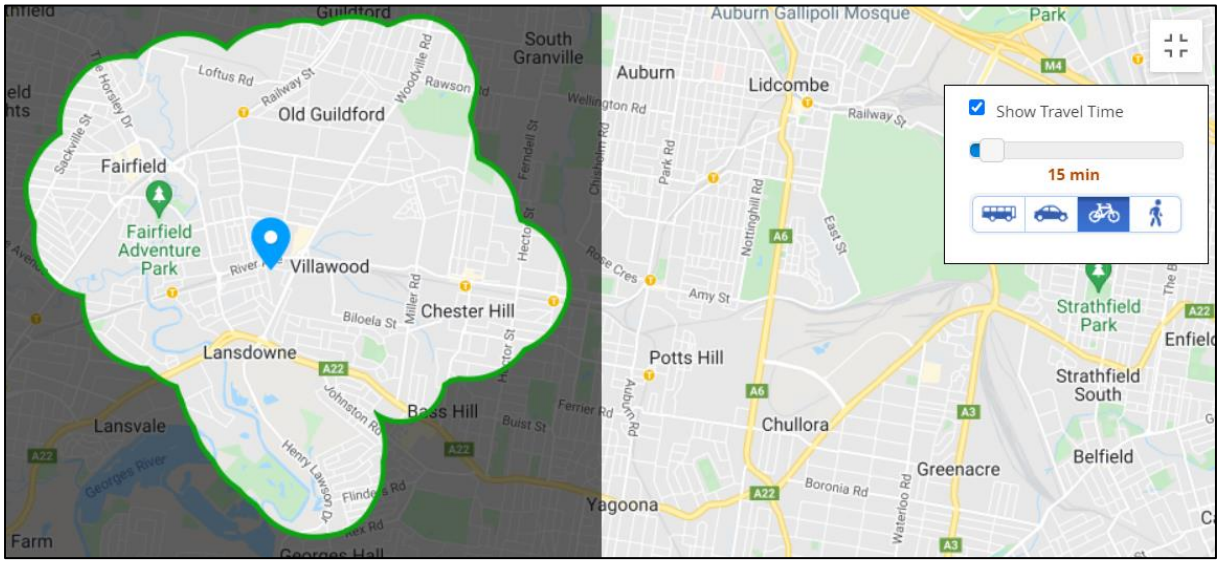

Figure 7 Project Site – Cycling Catchment
Source:https://www.walkscore.com/score/28-villawood-rd-villawood-nsw-australia ***(Accessed online on the 21st of November 2021)***

2.5 Public Transport Accessibility

The broader area of the Villawood Town Centre ***(including the project site)*** is well serviced by train and bus services providing access to Fairfield City Centre and other larger service and employment centres such as Liverpool, Parramatta CBD and the Sydney CBD.

2.4.1 Project Site – Existing Train Services

Figure 8 illustrates that the Villawood Station is in close proximity, i.e., within 350 metres of walking distance from the project site. The average walking time to the station would be only four minutes promoting active travel and less reliance on private vehicles.

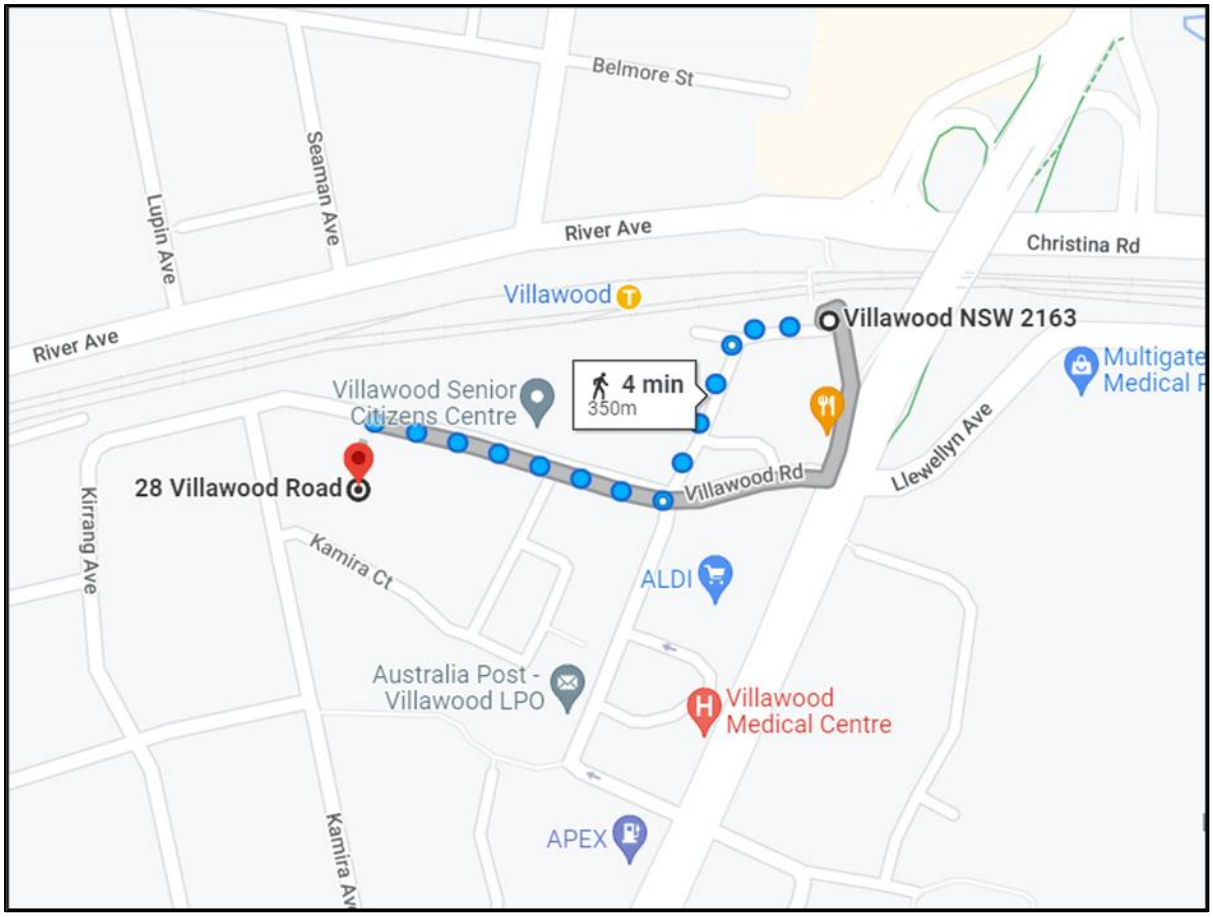

Figure 8 Project Site – Nearest Train Station
Source: Google Maps ***(Accessed online on the 3rd of April 2022)***

Villawood Station is serviced by the following three lines:

- Parramatta or Leppington to City **(T2)**
- City to Liverpool or Lidcombe via Bankstown **(T3)**
- Liverpool or Lidcombe to City via Bankstown **(T3)**

2.4.2 Project Site – Existing Bus Services

The project is well serviced by the existing bus routes with bus stops concentrated on River Avenue to the north of the Railway, Woodville Road and Villawood Place.

As evident from **Figure 9**, the nearest bus stop ***(Name:** Villawood Place Shops**, No:**2163165**)*** is located at a distance of only 240 metres from the project site with an average waking time of three minutes.

Table 1 summarises the key routes operating in the vicinity of the project site.

Table 1 Bus Route Summary

Road Name	Bus Routes Number	Route Description
Villawood Place	905 and S4	**905:** Bankstown to Fairfield **S4:** Chester Hill to Fairfield **907:** Bankstown to Parramatta **N50:** Liverpool to City Town Hall (Night Service) **4T3:** Liverpool to Bankstown (Train Replacement Bus Services)
Woodville Road	907, 905 and S4	
River Avenue	4T3, N50, S4	

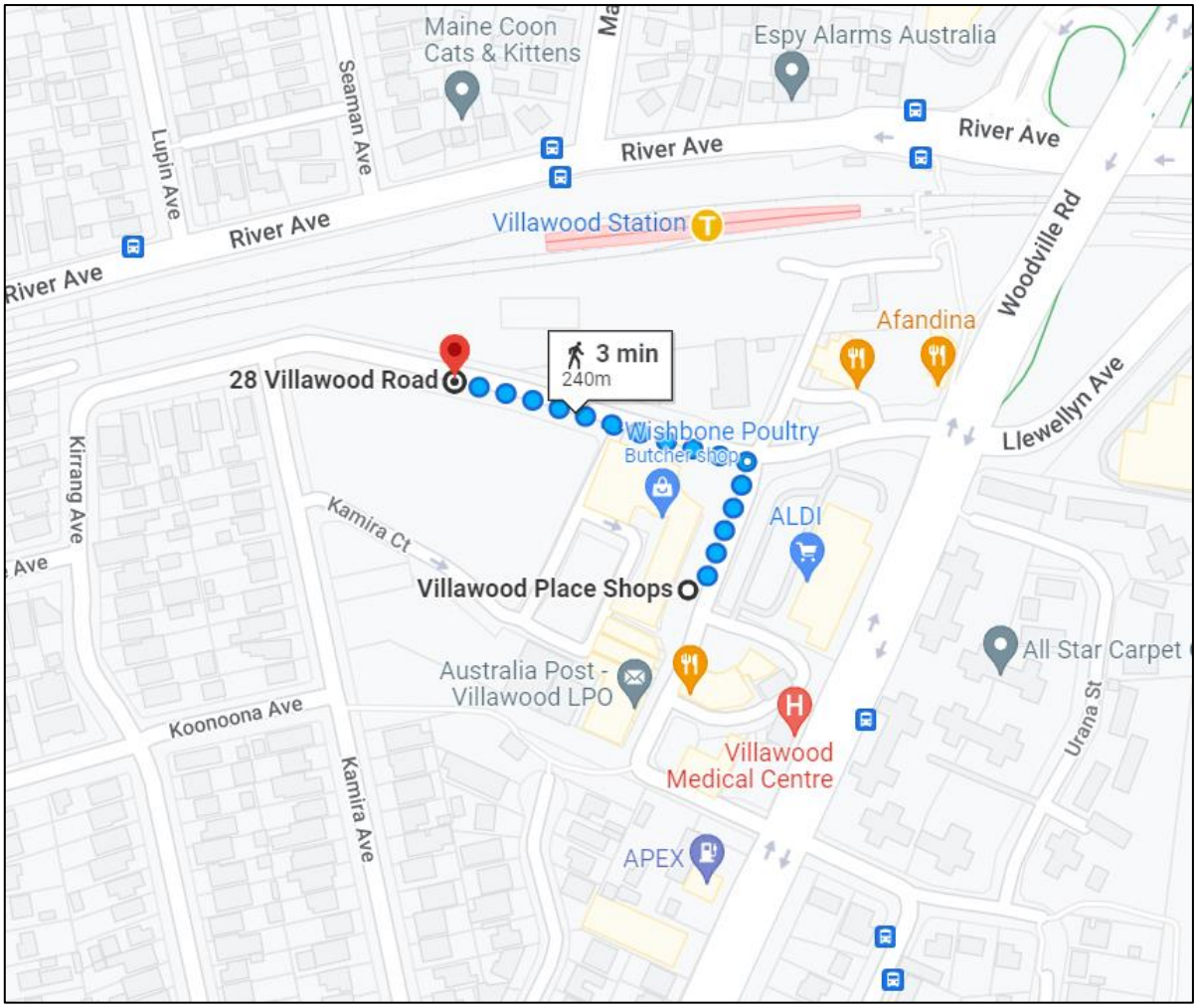

Figure 9 Project Site – Bus Stops and Walking Distance to the Nearest Stop
Source: Google Maps ***(Accessed online on the 3rd of April 2022)***

2.6 Existing Traffic Conditions

2.5.1 Based on Typical Traffic Trends

Traffwise has referred to the Google Typical Traffic Map to assess the existing traffic flow condition in the project site's vicinity. The typical traffic map considers historical traffic conditions on a road network at a particular time of a specific day to reflect an average traffic condition.

Figure 10 illustrates the typical traffic condition in the vicinity of the project site at 03:30 PM, and Weekday PM Peak Hour on Thursdays.

It is evident from the typical traffic map that the traffic flow condition on the existing road network is satisfactory. However, the map indicates congestion at the intersections on Woodville Road.

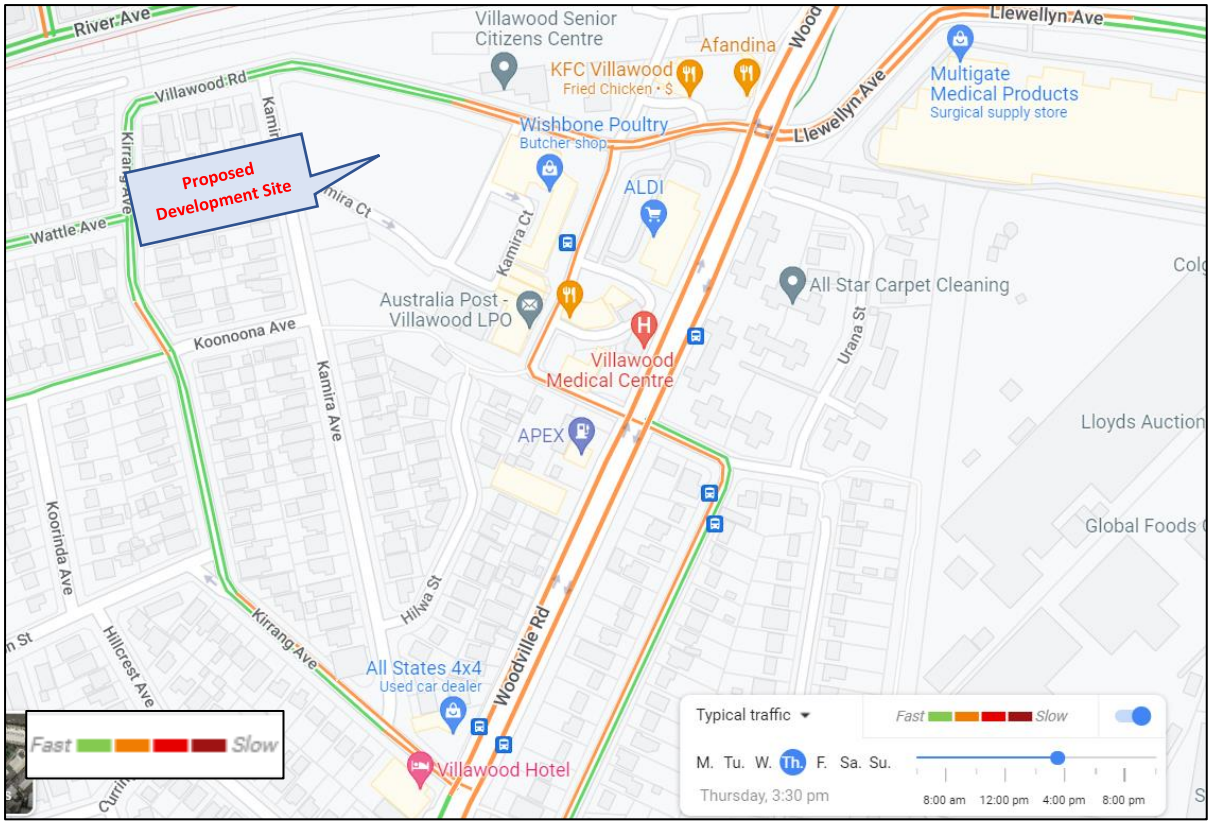

Figure 10 Existing Typical Traffic Flow Condition – PM Peak
Source: Google Live Traffic Maps (Accessed on 3rd April 2022)

2.5.2 Based on SIDRA Modelling

Please refer to **Section 5** for detailed results and analysis.

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3. Proposed Development

Traders in Purple are planning to submit a development application (DA) for the proposed mixed-use development of Stage 2 ***(Building A + C)*** within the Kamira Court Precinct area.

Figure 11 illustrates the perspective of the proposed development. The layout plans for each floor are provided in **Appendix A**.

Figure 11 Proposed Development – Perspective
Source: DKO Architecture (NSW) Pty Ltd

Based on the provided information, **Table 2** and **Table 3** summarise the yield for the residential and non-residential components in ***Building C*** and ***Building A***, respectively.

As evident, the proposed Building C development will comprise 64 residential units, a Child Care Centre with the capacity of 120 students and a Medical Centre.

Table 2 Proposed Development Yield – Stage 2 (Building C)

Residential Component	
Unit Type	**Number of Units**
1 Bed Unit	4
2 Bed Unit	50
3 Bed Unit	10
Total Number of Units	**64**
Non-Residential Component	
Child Care Centre	120 Students
Medical Centre	254 m^2 ***(Approx. 08 Consulting Rooms)***

The proposed Building A development will comprise 158 residential units, a supermarket and a retail area.

Table 3 Proposed Development Yield – Stage 2 (Building A)

Residential Component	
Unit Type	**Number of Units**
1 Bed Unit	24
2 Bed Unit	108
3 Bed Unit	26
Total Number of Units	**158**
Non-Residential Component	
Supermarket	1188 m^2
Retail	1263 m^2

Note:

Figure 3 shows that the project site is zoned R4 ***(High-Density Residential)*** in the Fairfield Local Environmental Plan 2013 (LEP).

TIP has already submitted a separate application proposing modification in the LEP to develop a supermarket and retail area in Building A as part of the Kamira Court Precinct development.

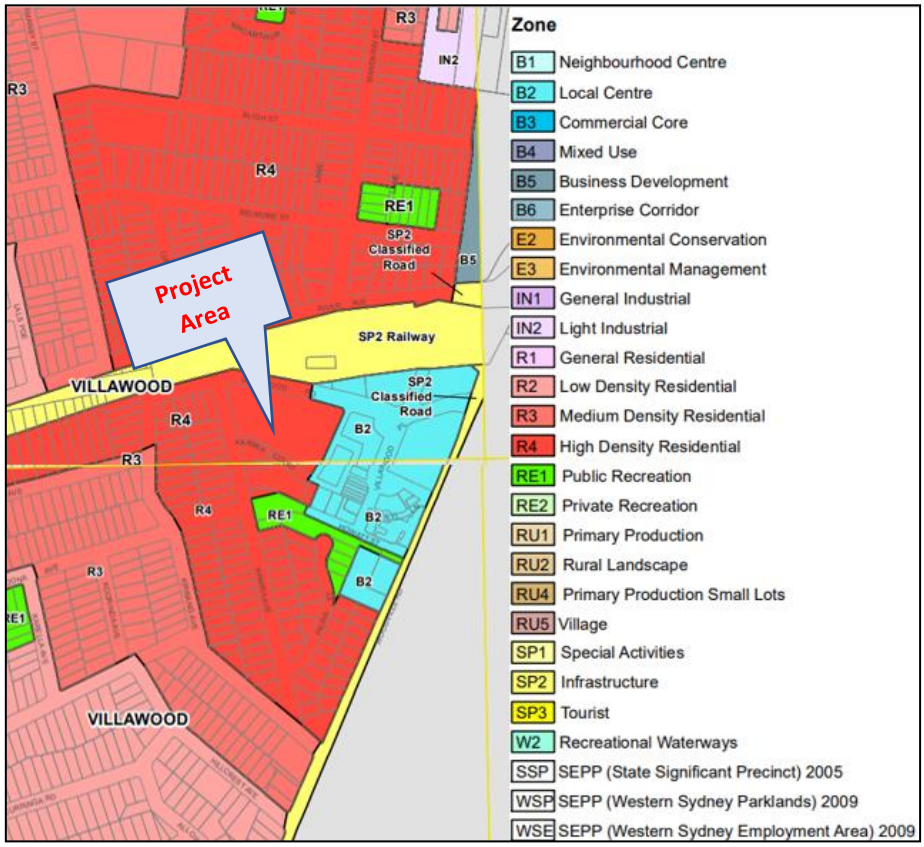


Figure 12 Project Site – Existing Zoning

Source: https://pp.planningportal.nsw.gov.au/publications/environmental-planning-instruments/fairfield-local-environmental-plan-2013

4. Traffic Assessment

4.1 Trip Generation Rates

Residential Component

As advised by Fairfield City Council, the trip generation rate of **0.3 trips per hour per unit** was adopted for both the AM and PM peak periods.

Supermarket

The RMS Guide to Traffic Generating Developments (2002) specifies Shopping Centre's trip generation rates average trip rates in the peak hours on a weekday evening and Saturday morning/afternoon.

The trip generation models for shopping centres consider the following land uses:

- ***A(S):*** *Slow Trade gross leasable floor area (Gross Leasable Floor Area in square metres) includes major department stores such as David Jones and Grace Bros., furniture, electrical and white goods stores.*
- ***A(F):*** *Faster Trade GLFA - includes discount department stores such as K-Mart and Target, together with larger specialist stores such as Fosseys.*
- ***A(SM):*** *Supermarket GLFA - includes stores such as Franklins and large fruit markets. A(SS): Specialty shops and secondary retail GLFA include specialty shops and take-away stores such as McDonalds. These stores are grouped as they tend to not be primary attractors to the centre.*
- ***A(OM):*** *Office, medical GLFA: includes medical centres and general business offices.*

Table 4 summarises the specified average trip rates for supermarkets.

Table 4 Trip Generation Rates – Supermarket

Thursday PM Peak (1 Hour) per 100 m^2 of GLFA	15.5
Friday PM Peak (1 Hour) per 100 m^2 of GLFA	13.8
Saturday Peak (1 Hour) per 100 m^2 of GLFA	14.7
Daily Trips per 100 m^2 of GLFA	121

Source: RMS Guide to Traffic Generating Developments (2002)

- The highest peak hour trip rate (15.5 per 100 m^2 of GLFA) has been adopted
- The RMS guide does not specify the trip rate for the weekday AM peak period. Therefore, it is assumed that trip generation in a typical weekday AM peak will be 25% of the PM peak period for this assessment. This will ensure conservative assessment.
- It is assumed that the daily trips from the proposed retail area would be ten (10) times the peak hour trip generation on a typical weekday.

Specialty Shops

The RMS Guide to Traffic Generating Developments (2002) specifies Specialty Shops' average trip rates. To ensure consistency with the adopted supermarket trip rates, **Table 5** summarises the adopted average trip rates for Specialty Shops on a typical Thursday evening peak.

Table 5 Trip Generation Rates – Speciality Shops

Thursday PM Peak (1 Hour) per 100 m^2 of GLFA	4.6

Source: RMS Guide to Traffic Generating Developments (2002)

To ensure robust and conservative assessment:

- The RMS guide does not specify the trip rate for the weekday AM peak period. Therefore, it is assumed that trip generation in a typical weekday AM peak will be 50% of the PM peak period for this assessment.
- It is assumed that the daily trips from the proposed retail area would be ten (10) times the peak hour trip generation on a typical weekday.

Child Care Centre

The trip generation rates for a Child Care Centre are specified in the RMS Guide to Traffic Generating Developments (2002).

The RMS guide specifies different trip rates for Pre-School, Long-Day Care and Before/After Care childcare facilities. The proposed childcare centre's exact use is not clear. Therefore, for the purposes of this assessment, the maximum trip generation rates have been adopted.

RMS guide specifies a maximum rate of 1.4 trips and 0.8 trips per child in a **two-hour** AM and **one-and-a-half-hour** PM peak period. However, to assess one-hour peak trip generation and to ensure conservative assessment, 75% of the specified trip rates have been adopted for one-hour peak period trip generation. The adopted trip rates are summarised in **Table 6**:

Table 6 Peak Hour Trip Generation Rates – Child Care Centre

Peak Period	Rates – RMS Guide	Rates Adopted
AM Peak	1.4 per child *(two-hour based)*	1 per child *(one-hour based)*
PM Peak	0.8 per child *(one and a half-hour based)*	0.6 per child *(one-hour based)*

*The daily trip generation of a maximum of four (04) trips per child was assumed, considering two drop-off trips **(one IN and one OUT)** and two pick-up trips **(one IN and one OUT)** on a typical day.*

Medical Centre

For medical centre, the traffic generation rates adopted for this analysis are sourced from RMS Trip Generation Surveys, Medical Centres Analysis Report ***(TEF Consulting, 2015)***. The medical centre trip rates adopted for this study are described in **Table 7**.

Table 7 Trip Generation Rates (Sydney Average) – Medical Centre

AM Peak (1 Hour) per Consulting Room	2.8
PM Peak (1 Hour) per Consulting Room	3.2
Daily Trips per Consulting Room	23.2

*Source: RMS Trip Generation Surveys, Medical Centres Analysis Report **(Table 3.2 (page 11), TEF Consulting, 2015)***

4.2 Proposed Stage 2 Development – Trip Generation

4.2.1 Building A Trip Generation

Table 8 summarises the detailed trip generation from Building A for each proposed land use based on the adopted trip rates described in **Section 4.1**. The total trip generation from the proposed Stage 2 development is summarised in **Table 10**.

Table 8 Trip Generation – Different Land-Uses (Building A)

Trip Generation - Building A | Stage 2					
Residential Component - High Density					
Unit Type	*Quantity*	*Number of Bedrooms*	*Trip Generation*		
1-Bed Unit	24	24	*Weekday AM Peak*	*Weekday PM Peak*	*Daily Trips*
2-Bed Unit	108	216			
3-Bed Unit	26	78			
Total Number of Units		158			
TOTAL TRIPS			47	47	395.0
IN			9	38	198
OUT			38	9	198
Supermarket					
Type	*GLFA m2*		*Weekday AM Peak*	*Weekday PM Peak*	*Daily Trips*
Supermarket	1188				
TOTAL TRIPS			46	184	1841
IN			23	92	921
OUT			23	92	921
Other Retail					
Type	*GLFA m2*		*Weekday AM Peak*	*Weekday PM Peak*	*Daily Trips*
Other Retail	1263				
TOTAL TRIPS			29	58	581
IN			15	29	290
OUT			15	29	290

4.2.2 Building C Trip Generation

Table 8 summarises the detailed trip generation from Building C for each proposed land use based on the adopted trip rates described in **Section 4.1**. The total trip generation from the proposed Stage 2 development is summarised in **Table 10**.

Table 9 Trip Generation – Different Land-Uses (Building C)

Trip Generation - Building C | Stage 2					
Residential Component - High Density					
Unit Type	*Quantity*	*Number of Bedrooms*	*Trip Generation*		
1-Bed Unit	4	4	*Weekday AM Peak*	*Weekday PM Peak*	*Daily Trips*
2-Bed Unit	50	100			
3-Bed Unit	10	30			
Total Number of Units		64			
TOTAL TRIPS			19	19	160.0
IN			4	15	80
OUT			15	4	80
Child Care Centre					
Type	*Number of Students*		*Weekday AM Peak*	*Weekday PM Peak*	*Daily Trips*
Child Care Centre	120				
TOTAL TRIPS			120	72	480
IN			60	36	240
OUT			60	36	240
Medical Centre					
Type	*Consulting Rooms*		*Weekday AM Peak*	*Weekday PM Peak*	*Daily Trips*
Medical Centre	8				
TOTAL TRIPS			22	26	186
IN			11	13	93
OUT			11	13	93

4.2.3 Proposed Stage 2 – Trip Generation Summary

Table 10 summarises the expected trip generation from the proposed Stage 2 development. It is evident that the proposed land use mix is expected to generate 284 and 406 trips in the AM and PM peaks respectively.

Table 10 Total Trip Generation Summary

Total Peak Hour Trips – Stage 2			
Peak Period	**IN**	**Out**	**Total**
Weekday AM Peak	122	162	284
Weekday PM Peak	223	183	406

It is important to note that trip rates described in **Section 4.1** include both In and Out trips. The following typical IN and OUT trip ratios were adopted for this assessment:

For Residential Development: 20% IN and 80% OUT in AM Peak and opposite IN and OUT ratios in the PM Peak.

For Commercial Development: 50% IN and 50% OUT in both AM and PM peaks

It is important to note that **Stage 1 (Building B)** traffic was also considered for modelling ***With Development Traffic*** scenarios.

5. Traffic Modelling and Potential Traffic Impacts

Traffwise has carried out a Net Difference modelling of key intersections to assess the impacts of the proposed development traffic.

The following key intersections were assessed as part of the study:

1. Woodville Road/Kirrang Avenue
2. Woodville Road/Howatt Street/Binna Burra Street
3. Villawood Road/Villawood Place
4. Woodville Road / Villawood Road / Llewellyn Avenue
5. The Horsley Drive/River Avenue

The modelling files and results have already been reviewed by Council's traffic consultant ***(Stantec)***. As per Stantec's advice, Traffwise has developed a network model of the first four intersections, adopting existing and future traffic demand.

5.1 Mesoscopic Model Coverage – Project Site

Fairfield City Council (Council) has recently completed a mesoscopic modelling study for a broader area. **Figure 4** illustrates the study area of the mesoscopic model, which includes the project site.

Figure 13 Project Site – Mesoscopic Model Coverage
Source: Stantec/Council

As per the provided information, the mesoscopic model does not include any traffic generators associated with the projects site.

Which indicates that traffic demand has not been assigned to Kamira Court Precinct in Council's mesoscopic model.

5.2 Mesoscopic Model – Land Use Assumptions

Figure 5 shows the travel zone number 1215 of the mesoscopic model. This zone includes the Kamira Court Precinct site and covers an area bounded by River Avenue, Woodville Road, Kamira Avenue and a small section of Kirrang Avenue.

Figure 14 Travel Zone Number 1215
Source: Stantec/Council

As per the provided information, **Table 11** and **Table 12** summarise the employment and population forecast for the next twenty years (up to 2041).

Table 11 Employment Forecast

TZ16_CODE	TZ16_name	EMP_2021	EMP_2026	EMP_2031	EMP_2036	EMP_2041
1215	Villawood_Bunnings	122	141	151	157	166

Table 12 Population Forecast

TZ16_CODE	TZ16_name	ERP_2021	ERP_2026	ERP_2031	ERP_2036	ERP_2041
1215	Villawood_Bunnings	267	782	1022	1161	1474

It is evident that a significant increase (280%) in population is expected from 2021 to 2031, with a moderate rise in employment.

As described in **Section 5.1**, the above forecast doesn't include the development yield of the Kamira Court Precinct.

5.3 Existing Traffic Demand – Mesoscopic Model-Based

Council's traffic consultant has provided Link Volume Plots (LVP) for both 2021 and 2031 scenarios. The provided plots show one-hour traffic demand on the road network under AM and PM peak hours.

5.3.1 AM peak Demand

Figure 15 and **Figure 16** shows the AM peak LVP under the 2021 and 2031 scenario, respectively. It is noted that the traffic demand on key roads is expected to increase moderately in 2031, with evident high traffic flow on Woodville Road. The 2031 mesoscopic model for AM Peak period also indicates a significant increase in southbound traffic on Woodville Road.

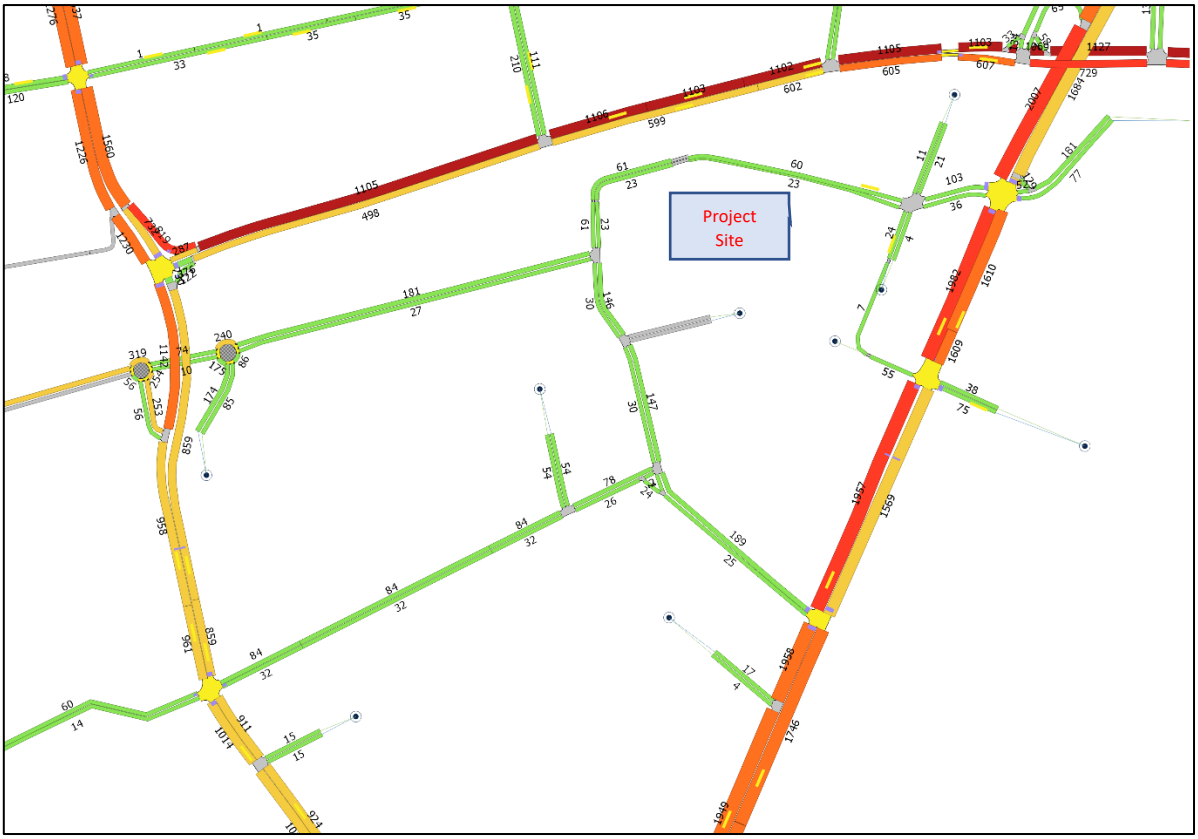


Figure 15 2020 AM Peak – Link Volume Plot
Source: Mesoscopic Model developed by Stantec/Council

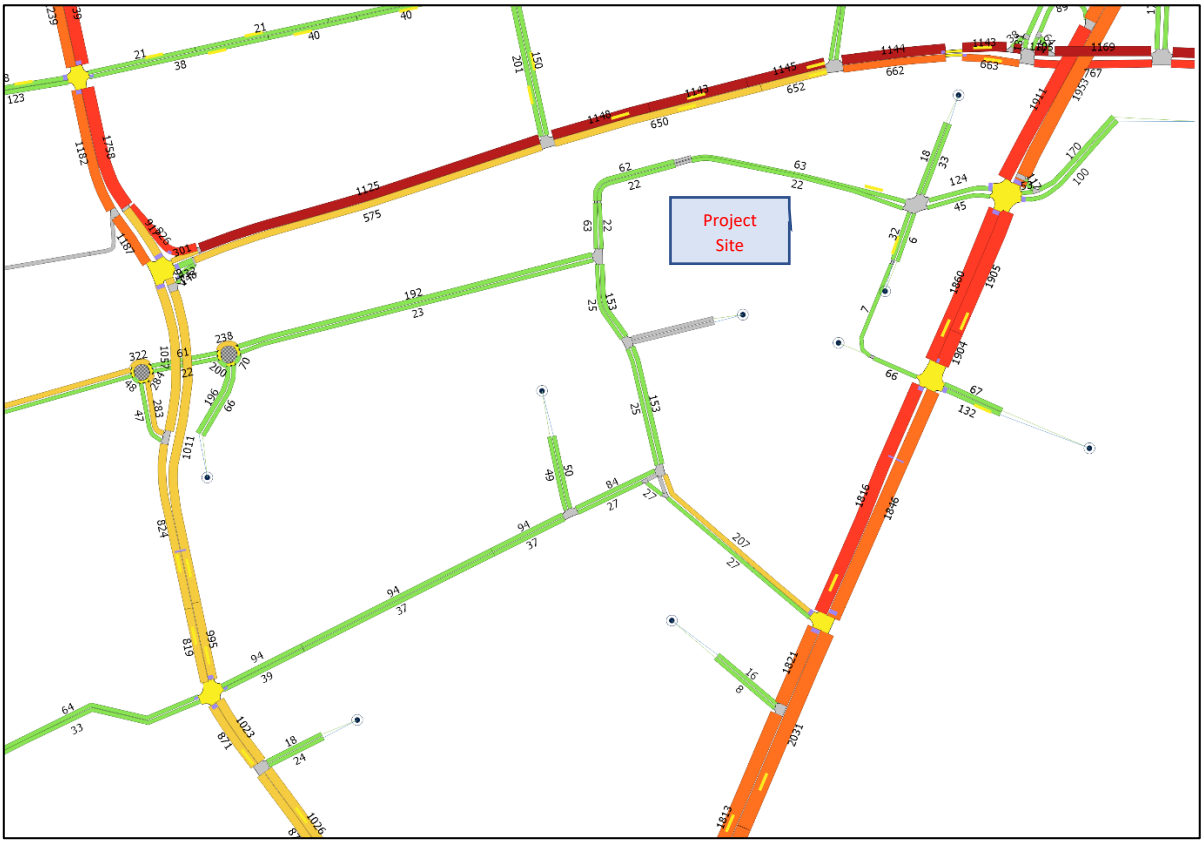


Figure 16 2031 AM Peak – Link Volume Plot
Source: Mesoscopic Model developed by Stantec/Council

5.3.2 PM peak Demand

Figure 17 and **Figure 18** shows the PM peak LVP under the 2021 and 2031 scenario, respectively. Like the traffic trends in the AM peak period, a moderate increase in the traffic demand on key roads is expected in the 2031 PM peak period.

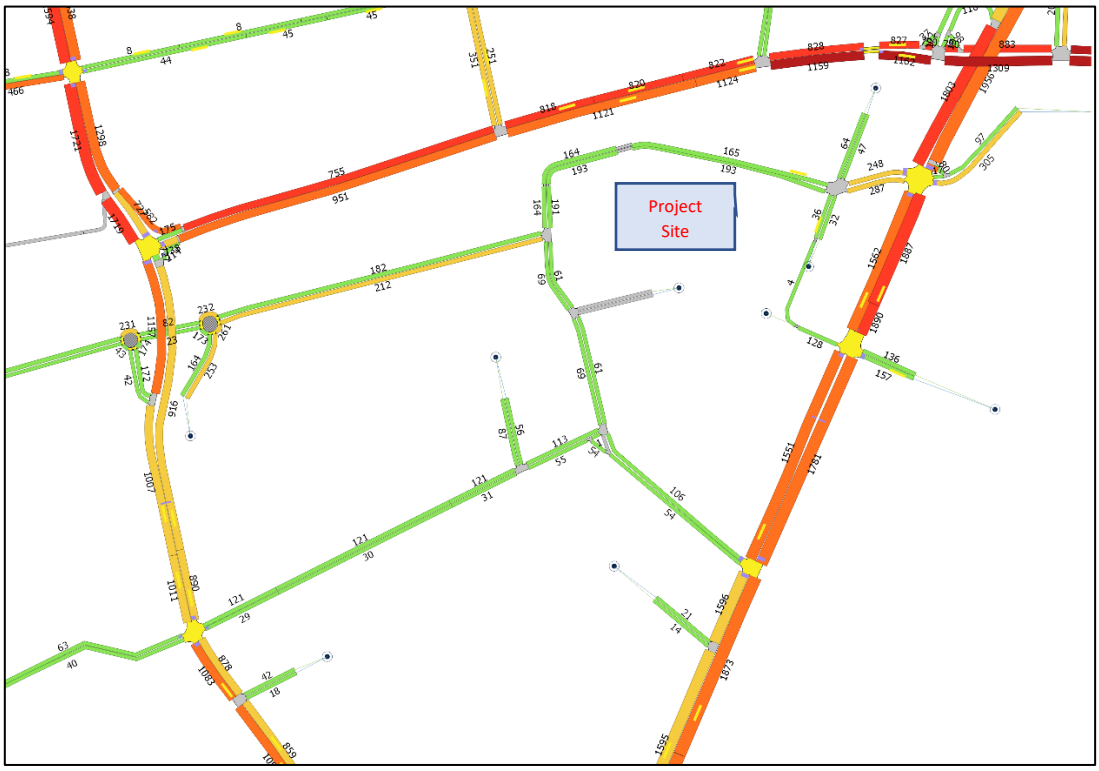


Figure 17 2020 PM Peak – Link Volume Plot
Source: Mesoscopic Model developed by Stantec/Council

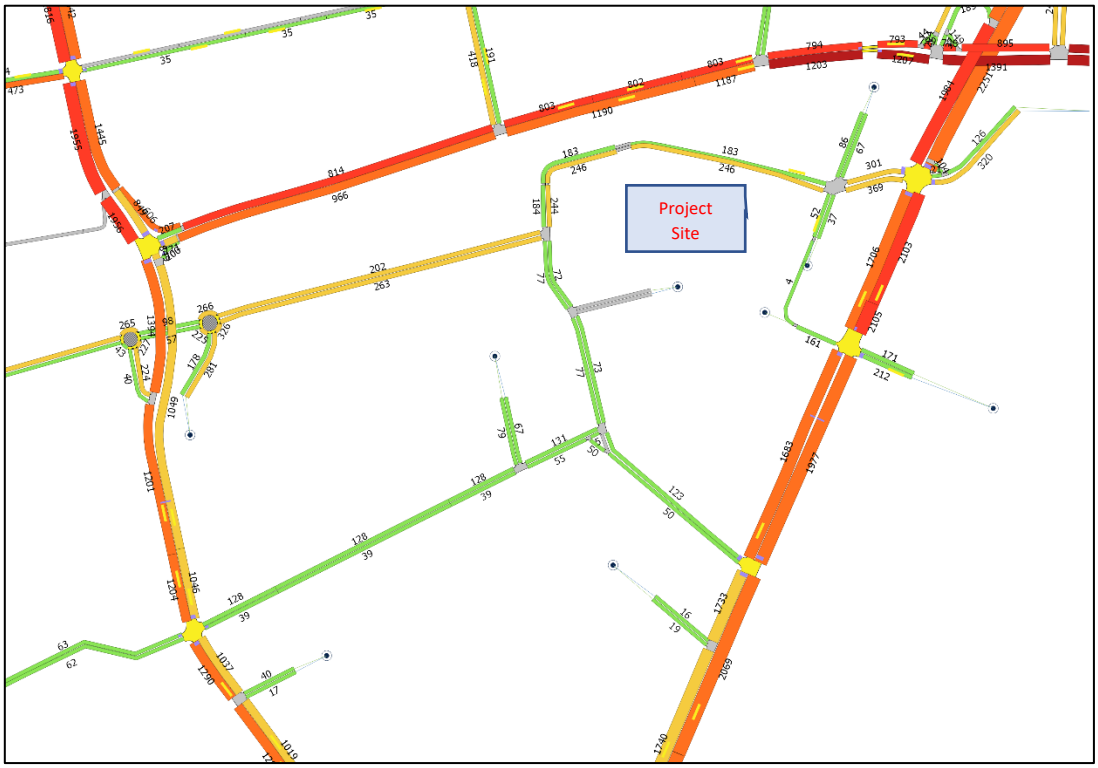


Figure 18 2031 PM Peak – Link Volume Plot
Source: Mesoscopic Model developed by Stantec/Council

5.4 Trip Distribution Trend – Mesoscopic Model-Based

Figure 19 to **Figure 22** show AM and PM peak trip distribution to and from travel zone number 1215. The trip distribution is based on provided Select Link Plots (SLP) extracted from the Council's mesoscopic model.

The available data for both peak periods indicate similar trip distribution trends in the 2021 and 2031 scenarios.

Figure 19 2020 AM Peak – Select Link Plots – Trip Distribution
Source: Mesoscopic Model developed by Stantec/Council

Figure 20 2031 AM Peak – Select Link Plots – Trip Distribution
Source: Mesoscopic Model developed by Stantec/Council

Figure 21 2020 PM Peak – Select Link Plots – Trip Distribution
Source: Mesoscopic Model developed by Stantec/Council

Figure 22 2031 PM Peak – Select Link Plots – Trip Distribution
Source: Mesoscopic Model developed by Stantec/Council

The analysis of the Council's model-based trip distribution trends in all peak periods shows a typical trip distribution from travel zone number 1215. **Figure 23** shows the typical trip distribution trends noting the following key points:

- **Two-thirdsrd** of the IN trips come from the south, with **50%** of those trips turning left on Howatt Street and **50%** on Villawood Road
- Around **60%** of OUT trips turn right on Woodville Road, travelling south

Figure 23 Typical Trip Distribution Trend

It is important to note that the Council's mesoscopic model doesn't include the following critical points related to Kamira Court Precinct:

- Howatt Street extension to the west and connection with Kamira Court and Kamira Avenue
- Access points of three buildings planned as part of the Kamira Court Precinct

The above points are expected to influence the distribution of trips generated by the developments in the Kamira Court Precinct. **Therefore, Traffwise has considered these points in the adopted trip distribution for all three buildings in Kamira Court Precinct.**

5.5 Key Intersection Demand Flow – Mesoscopic Model-Based

Figure 24 to **Figure 31** show the provided traffic flow demand at the following key intersections:

- Woodville Road/Kirrang Avenue
- Woodville Road/Howatt Street/Binna Burra Street
- Villawood Road/Villawood Place
- Woodville Road / Villawood Road / Llewellyn Avenue
- The Horsley Drive/River Avenue

The below figures reflect the model-based demand flow of cars and trucks *(heavy vehicles)* in the AM and PM peak periods, ***7:15 am – 8:15 am*** and ***3:15 pm – 4:15 pm,*** respectively.

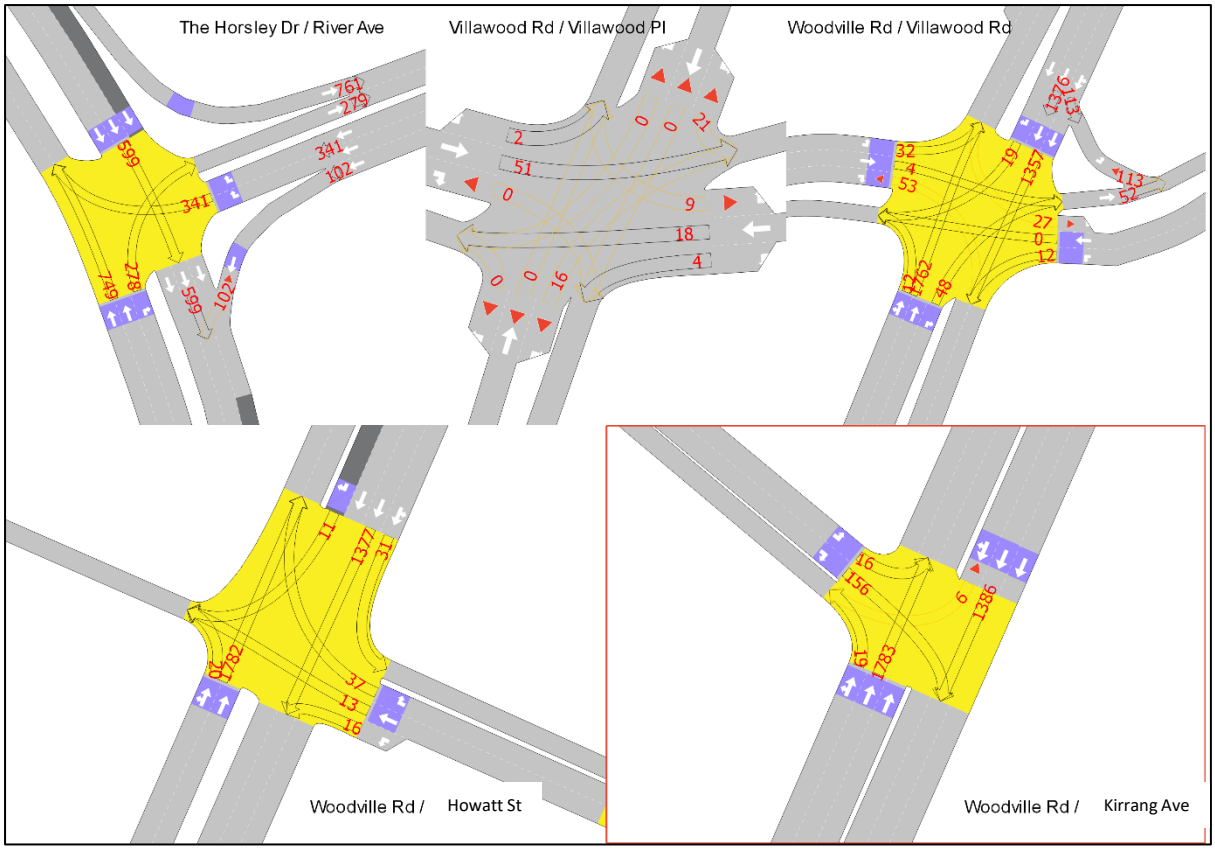


Figure 24 2020 AM Peak – Demand Flow at Key Intersections ***(Cars)***
Source: Mesoscopic Model developed by Stantec/Council

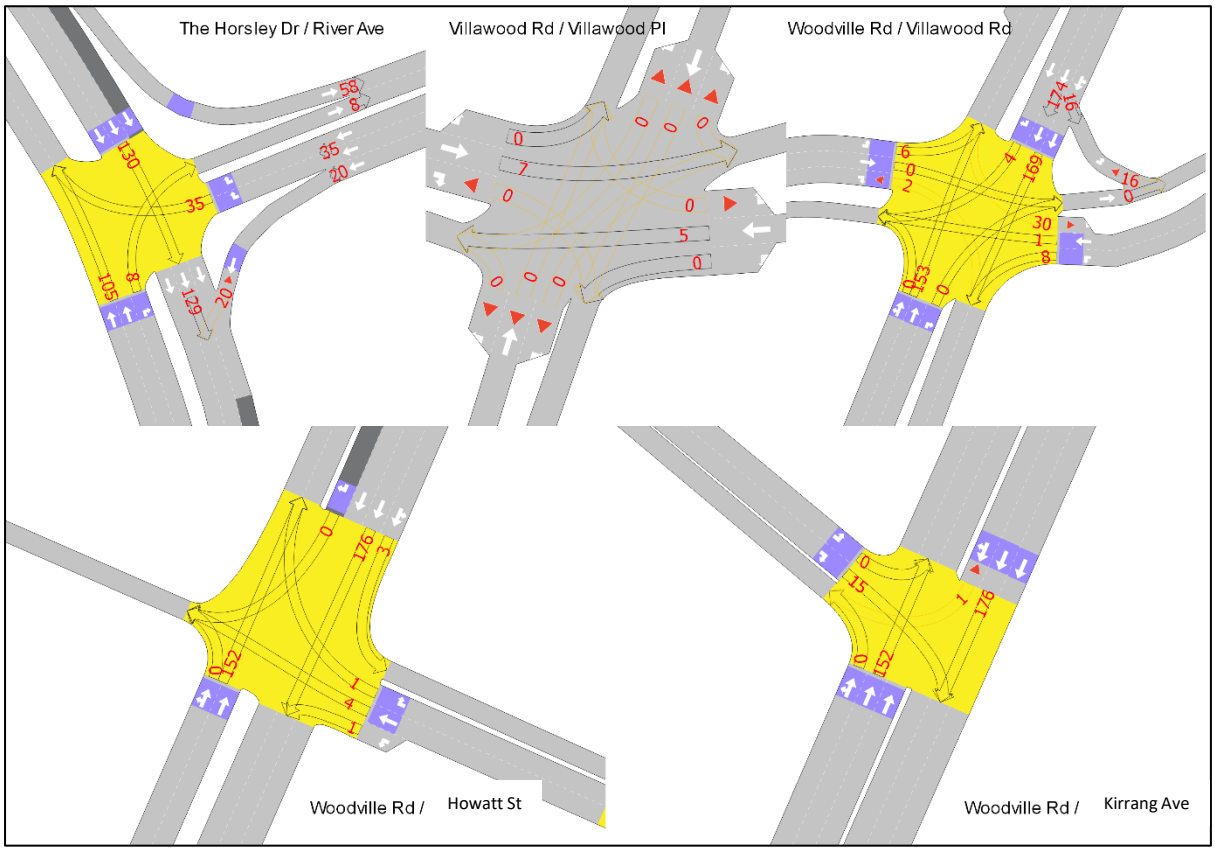


Figure 25 2020 AM Peak – Demand Flow at Key Intersections ***(Heavy Vehicles/Trucks)***
Source: Mesoscopic Model developed by Stantec/Council

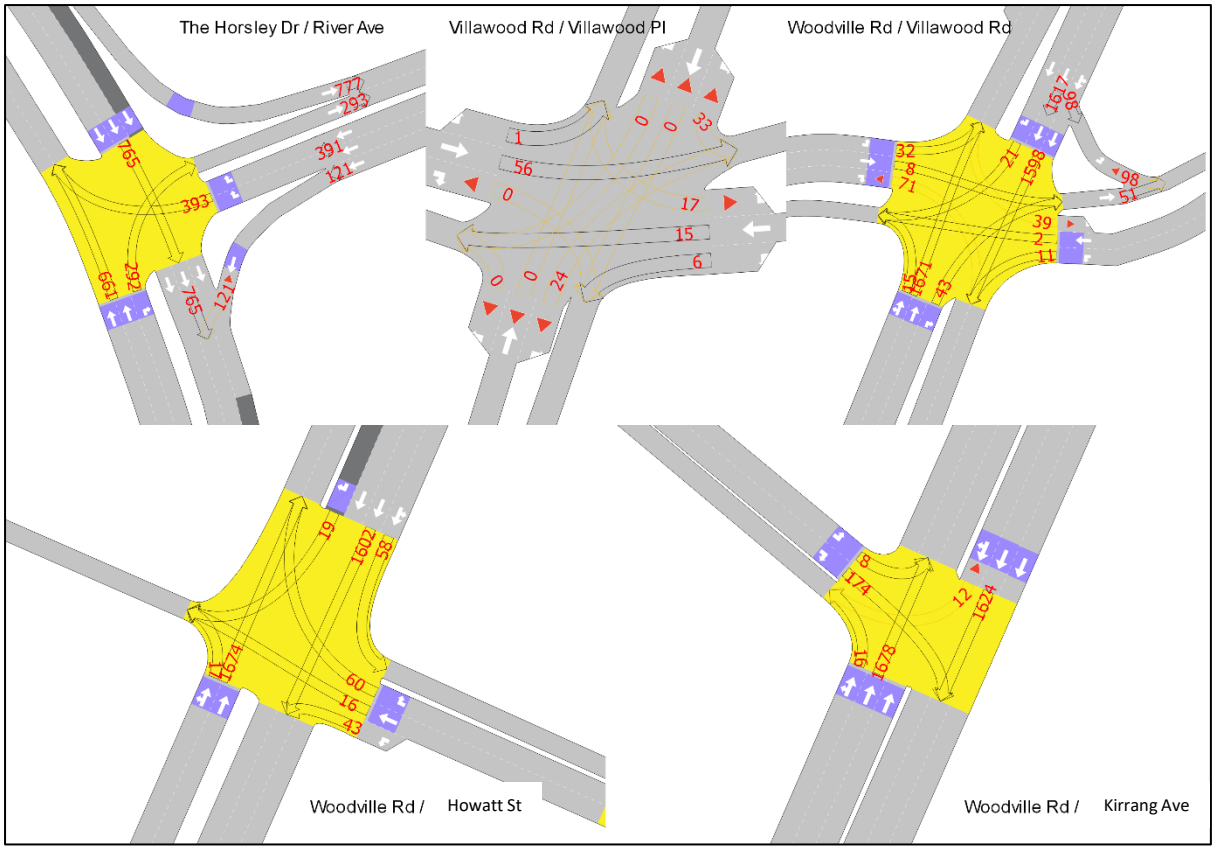


Figure 26 2031 AM Peak – Demand Flow at Key Intersections ***(Cars)***
Source: Mesoscopic Model developed by Stantec/Council

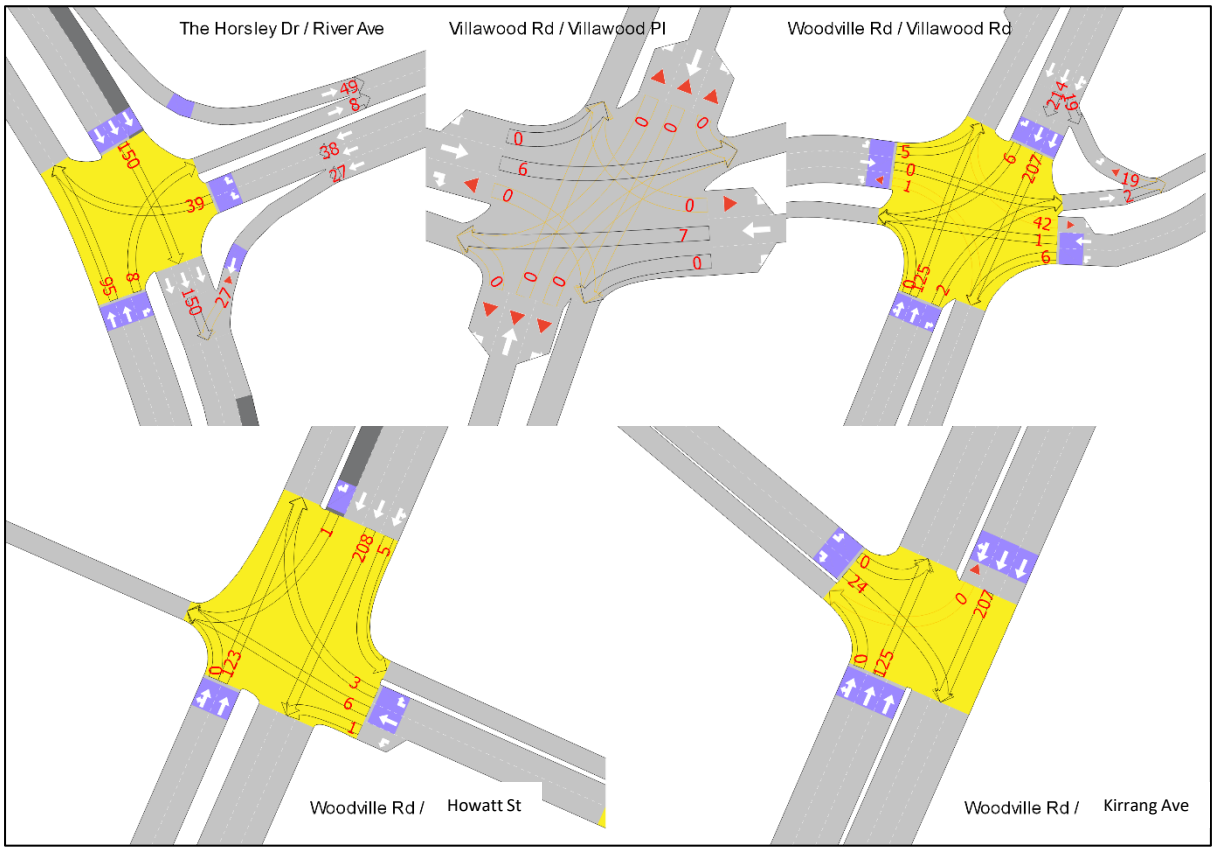


Figure 27 2031 AM Peak – Demand Flow at Key Intersections ***(Heavy Vehicles/Trucks)***
Source: Mesoscopic Model developed by Stantec/Council

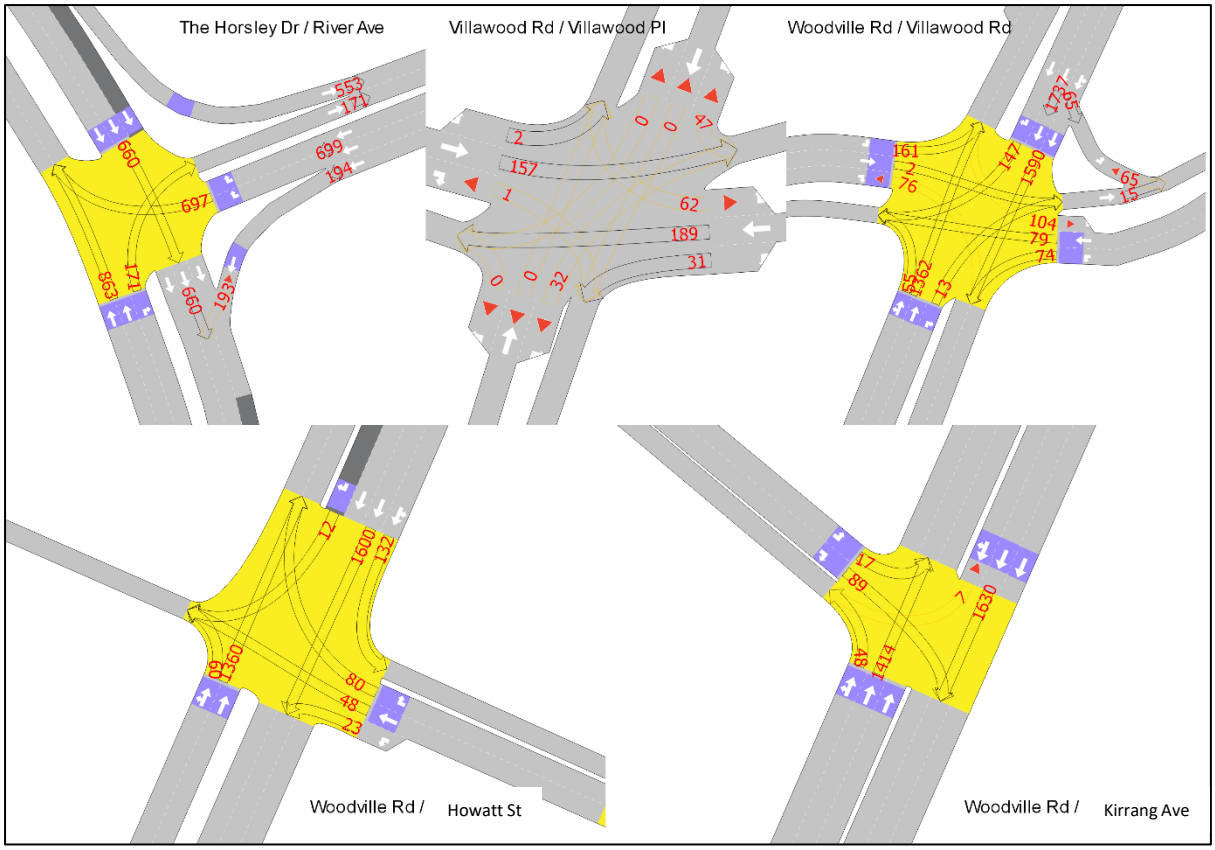


Figure 28 2020 PM Peak – Demand Flow at Key Intersections ***(Cars)***
Source: Mesoscopic Model developed by Stantec/Council

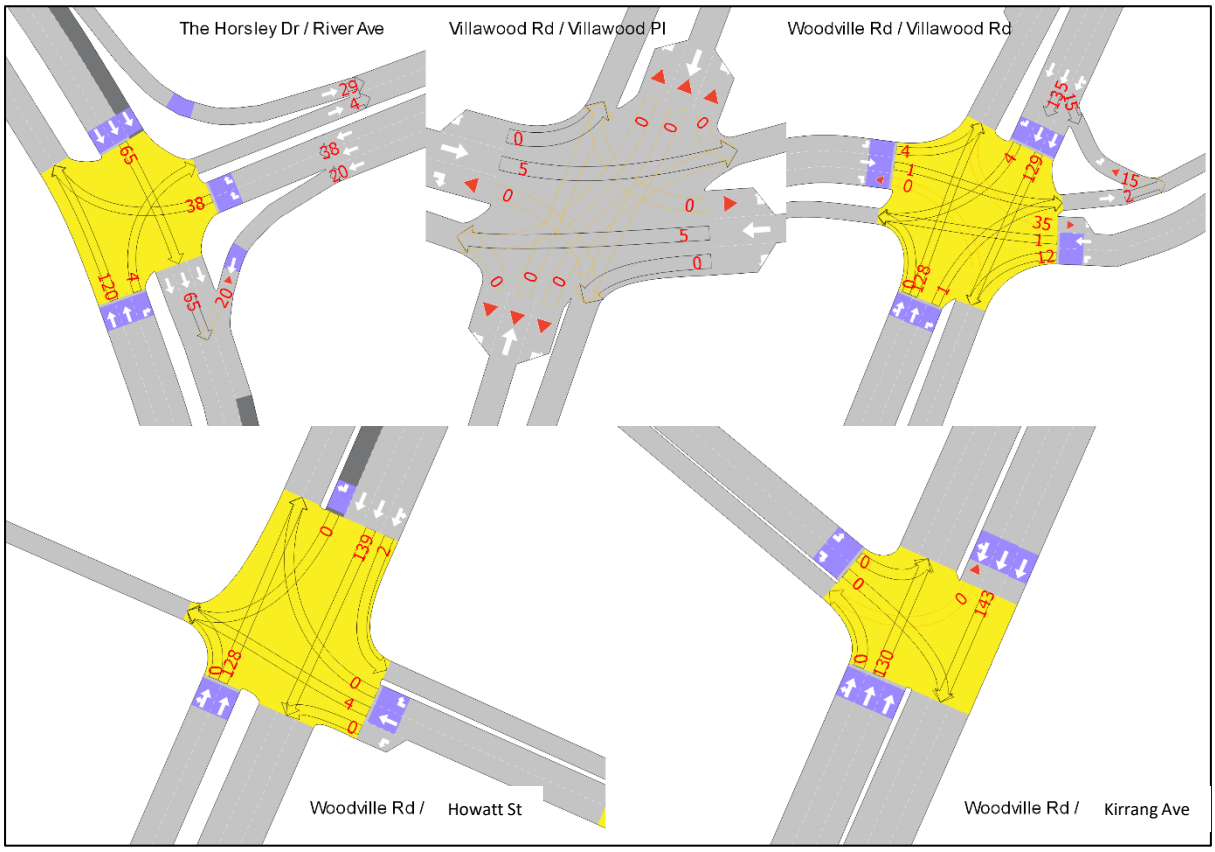


Figure 29 2020 PM Peak – Demand Flow at Key Intersections ***(Heavy Vehicles/Trucks)***
Source: Mesoscopic Model developed by Stantec/Council

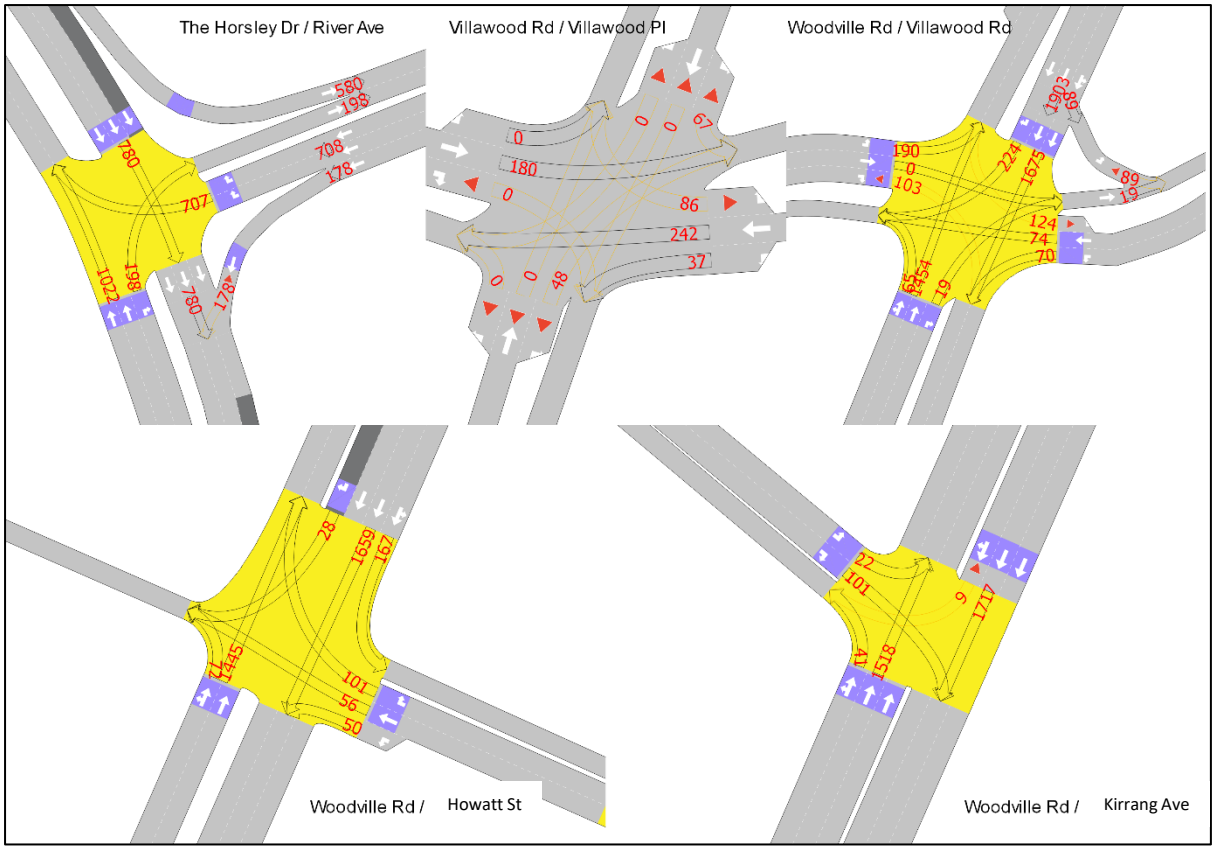


Figure 30 2031 PM Peak – Demand Flow at Key Intersections ***(Cars)***
Source: Mesoscopic Model developed by Stantec/Council

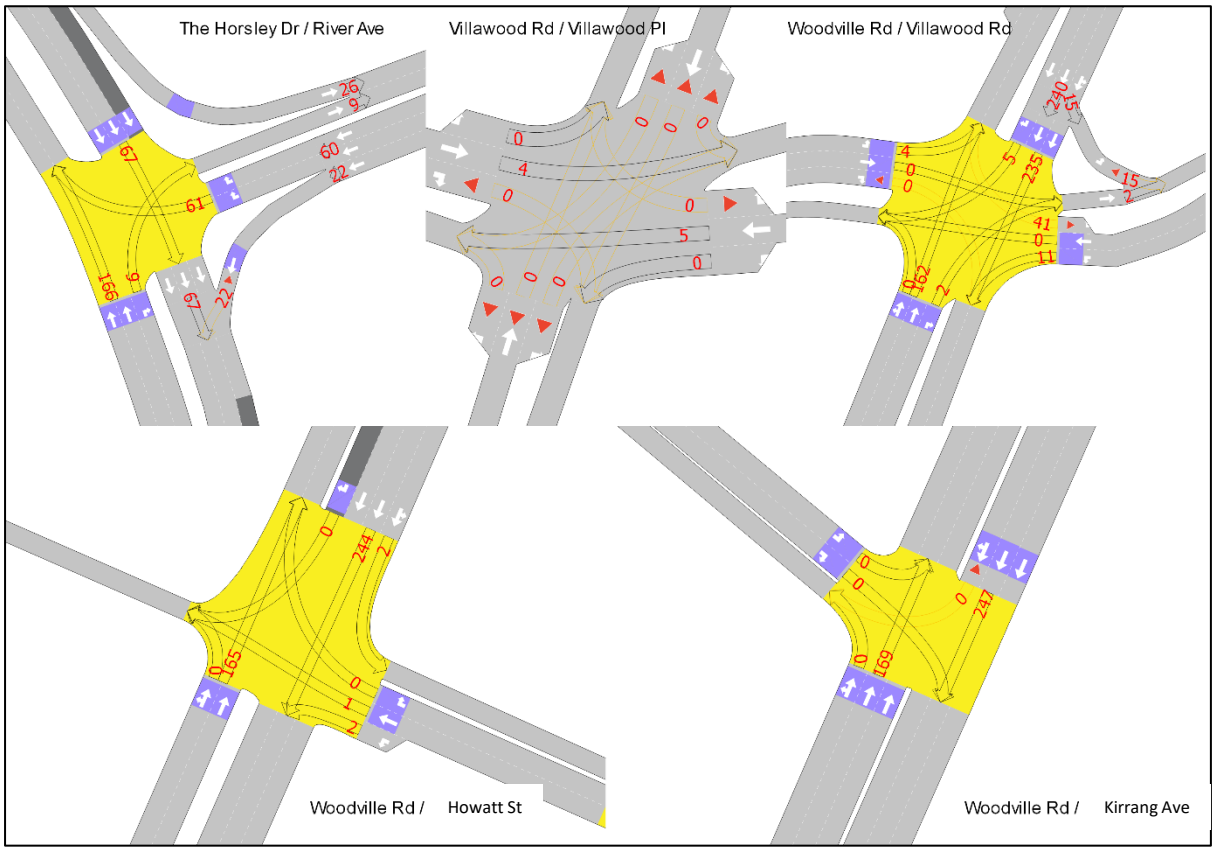
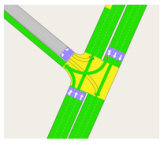
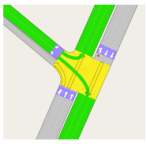


Figure 31 2031 PM Peak – Demand Flow at Key Intersections ***(Heavy Vehicles/Trucks)***
Source: Mesoscopic Model developed by Stantec/Council

5.6 Adopted Phasing

Figure 32 to **Figure 35** show the adopted phasing for key intersections that are signalised. The phase and cycle time details were provided by Council's traffic consultant (Stantec).

AM Peak	A	B
Phase Diagram		
Cycle Time (s)	140	
Phase Time (s)	125	15

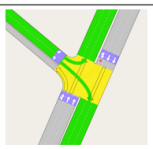
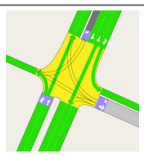
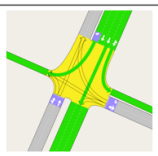
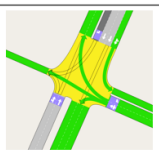
PM Peak	A	B
Phase Diagram		
Cycle Time (s)	140	
Phase Time (s)	122	18

Figure 32 Adopted Cycle and Phase Time – Woodville Road / Kirrang Avenue
Source: Stantec

AM Peak	A	C	D	E
Phase Diagram				
Cycle Time (s)	140			
Phase Time (s)	91	12	21	16

PM Peak	A	B	D	E
Phase Diagram				
Cycle Time (s)	140			
Phase Time (s)	69	12	35	24

Figure 33 Adopted Cycle and Phase Time – Woodville Road / Llewellyn Road / Villawood Road
Source: Stantec

AM Peak	A	B	C
Phase Diagram			
Cycle Time (s)	140		
Phase Time (s)	110	12	18

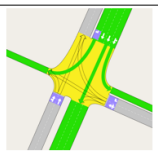
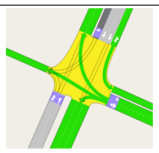
PM Peak	A	B	C
Phase Diagram			
Cycle Time (s)	140		
Phase Time (s)	106	12	22

Figure 34 Adopted Cycle and Phase Time – Woodville Road / Binna Nurra Street
Source: Stantec

AM Peak	A	B	C	D
Phase Diagram				
Cycle Time (s)	96			
Phase Time (s)	50	14	20	12

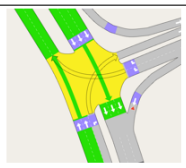
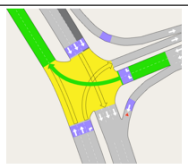
PM Peak	A	B	C	D
Phase Diagram				
Cycle Time (s)	117			
Phase Time (s)	57	16	32	12

Figure 35 Adopted Cycle and Phase Time – River Avenue and The Horsely Drive
Source: Stantec

5.7 Intersection Performance Criteria

The intersection performance criteria are based on the RMS Traffic Modelling Guidelines (2013). The capacity of the controlling intersections can largely determine the capacity of a road network. The key indicator of intersection performance Level of Service (LoS) is a delay, where results are placed on a continuum from 'A' to 'F', as summarised in **Table 13**.

Table 13 RMS Level of Service Criteria

LoS	Control delay per vehicle in seconds (d) (including geometric delay)
	All intersection types
A	d < 14
B	d < 15 to 28
C	d < 29 to 42
D	d < 43 to 56
E	d ≤ 57 to 70
F	d > 70

Source: RMS Traffic Modelling Guidelines (2013)

RMS Traffic Modelling Guidelines (2013) also state that the average movement delay and level of service overall movements should be taken for traffic signals. For roundabouts and priority control signals intersection (with Stop and Give Way signs or operating under the T-junction rule), the critical movement for the level of service assessment should be that with the worst movement delay.

5.8 Potential Traffic Impacts

As per the SIDRA modelling results, the proposed Stage 2 development is not expected to significantly impact the network performance, and key intersections are expected to operate at a similar level with and without the proposed development traffic.

The following sections describe the performance level of individual intersections in a network context:

5.8.1 Woodville Road and Villawood Road, and Llewellyn Avenue

AM Peak:

- The results indicate that the intersection is expected to operate at almost the same LoS of B in all scenarios.

PM Peak:

- In the 2020 PM peak scenario, the intersection is expected to operate the same LoS of "C" with a minimal increase in delay and degree of saturation.

- In the 2031 PM peak, the results indicate that the average delay will increase with development traffic. However, it is important to note that:
  - The LoS on Woodville Road approaches will remain at an acceptable level of "C" with a minimal increase in delay and degree of saturation.
  - The average queuing of vehicles on Woodville Road remains the same (i.e., 40.4 vehicles) in with and without development traffic scenarios.
  - The factor resulting in the increased delay of overall intersection is right to turn movement from Villawood Road, which has LoS "F" in both with and without development scenarios. Therefore, this will occur regardless of the development traffic, and minor changes in phrasing may improve the LoS for the right turning traffic from Villawood Road as well.

Site (Network Analysis) Performance - Hourly Values

Network ID	Site ID	Site Name	Dem. Flow (Tot) veh/h	Deg of Satn	Del (Wr. Mv.) sec	Del (Ctrl) sec	LOS	Back Que veh	Back Que m
Site Category: 2020 AM Peak Without Dev									
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4031	0.778	81.3	15.0	LOS B	25.7	196.9
Site Category: 2020 AM Peak With Dev									
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4189	0.844	88.0	14.7	LOS B	25.7	196.9
Site Category: 2031 AM Peak Without Dev									
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4235	0.895	81.9	20.1	LOS B	38.8	299.5
Site Category: 2031 AM Peak With Dev									
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4394	0.917	94.3	21.3	LOS B	38.8	299.5
Site Category: 2020 PM Peak Without Dev									
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4272	0.902	83.9	30.7	LOS C	30.9	231.9
Site Category: 2020 PM Peak With Dev									
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4492	0.947	95.8	38.2	LOS C	32.6	244.9
Site Category: 2031 PM Peak Without Dev									
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4803	1.917	875.8	66.3	LOS E	40.4	313.3
Site Category: 2031 PM Peak With Dev									
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	5012	2.456	1352.6	91.2	LOS F	40.4	313.3

5.8.2 Woodville Road and Howatt Street, and Binna Burra Street

AM Peak:

- The results indicate that the intersection is expected to operate at almost the same LoS "A" in all scenarios.

PM Peak:

- The intersection is expected to operate at an unsatisfactory LoS "F" in all PM peak scenarios even without the development traffic.

- The proposed development traffic will have minimal impact on delay and degree of saturation, as indicated in the results.

Site (Network Analysis) Performance - Hourly Values									
Network ID	Site ID	Site Name	Dem. Flow (Tot) veh/h	Deg of Satn	Del (Wr. Mv.) sec	Del (Ctrl) sec	LOS	Back Que veh	Back Que m
Site Category: 2020 AM Peak Without Dev									
N101	102	Woodville Road and Howatt Street and Binna Burra Street	3815	0.869	83.7	11.4	LOS A	35.0	261.7
Site Category: 2020 AM Peak With Dev									
N101	102	Woodville Road and Howatt Street and Binna Burra Street	3874	0.792	83.7	8.4	LOS A	25.9	193.6
Site Category: 2031 AM Peak Without Dev									
N101	102	Woodville Road and Howatt Street and Binna Burra Street	4038	0.724	85.2	8.9	LOS A	22.6	167.2
Site Category: 2031 AM Peak With Dev									
N101	102	Woodville Road and Howatt Street and Binna Burra Street	4080	0.730	85.2	8.7	LOS A	20.7	153.5
Site Category: 2020 PM Peak Without Dev									
N101	102	Woodville Road and Howatt Street and Binna Burra Street	3777	1.225	271.6	119.6	LOS F	36.1	270.0
Site Category: 2020 PM Peak With Dev									
N101	102	Woodville Road and Howatt Street and Binna Burra Street	3863	1.245	288.6	128.0	LOS F	36.2	270.0
Site Category: 2031 PM Peak Without Dev									
N101	102	Woodville Road and Howatt Street and Binna Burra Street	4202	1.341	373.7	163.3	LOS F	35.7	270.0
Site Category: 2031 PM Peak With Dev									
N101	102	Woodville Road and Howatt Street and Binna Burra Street	4288	1.361	392.6	173.8	LOS F	35.8	270.0

5.8.3 Woodville Road and Kirrang Avenue

AM and PM Peak:

The results indicate that the intersection is expected to operate at a satisfactory level of "B" or better in all AM and PM peak periods scenarios. It is evident that the proposed development traffic is not expected to have any material impact on the performance level in existing and future years.

Site (Network Analysis) Performance - Hourly Values									
Network ID	Site ID	Site Name	Dem. Flow (Tot) veh/h	Deg of Satn	Del (Wr. Mv.) sec	Del (Ctrl) sec	LOS	Back Que veh	Back Que m
Site Category: 2020 AM Peak Without Dev									
N101	103	Woodville Road and Kirrang Avenue	3905	0.901	85.0	10.8	LOS A	21.1	157.6
Site Category: 2020 AM Peak With Dev									
N101	103	Woodville Road and Kirrang Avenue	4088	0.884	77.9	13.1	LOS A	22.2	166.0
Site Category: 2031 AM Peak Without Dev									
N101	103	Woodville Road and Kirrang Avenue	4072	0.886	81.2	9.2	LOS A	13.5	100.1
Site Category: 2031 AM Peak With Dev									
N101	103	Woodville Road and Kirrang Avenue	4253	0.904	80.5	13.2	LOS A	16.6	122.8
Site Category: 2020 PM Peak Without Dev									
N101	103	Woodville Road and Kirrang Avenue	3661	0.802	68.5	6.9	LOS A	8.0	60.0
Site Category: 2020 PM Peak With Dev									
N101	103	Woodville Road and Kirrang Avenue	3940	0.882	81.4	14.2	LOS A	12.1	90.6
Site Category: 2031 PM Peak Without Dev									
N101	103	Woodville Road and Kirrang Avenue	4025	0.879	69.0	12.9	LOS A	29.5	224.0
Site Category: 2031 PM Peak With Dev									
N101	103	Woodville Road and Kirrang Avenue	4304	0.959	96.7	26.5	LOS B	33.7	255.7

5.8.4 The Horsley Drive and River Avenue

AM and PM Peak:

The results indicate that the intersection is expected to operate at a satisfactory level of "B" in all scenarios of AM and PM peak periods.

Site Performance - Hourly Values

Site ID	Site Name	Dem. Flow (Tot) veh/h	Deg of Satn	Del (Wr. Mv.) sec	Del (Ctrl) sec	LOS	Back Que veh	Back Que m
Site Category: 2020 AM Peak Without Dev								
104	The Horsley Drive and River Avenue	3354	0.643	46.8	18.4	LOS B	14.0	112.7
Site Category: 2020 AM Peak With Dev								
104	The Horsley Drive and River Avenue	3361	0.643	46.8	18.4	LOS B	14.0	113.0
Site Category: 2031 AM Peak Without Dev								
104	The Horsley Drive and River Avenue	3552	0.745	49.1	20.6	LOS B	19.1	152.3
Site Category: 2031 AM Peak With Dev								
104	The Horsley Drive and River Avenue	3556	0.747	49.1	20.6	LOS B	19.2	152.9
Site Category: 2020 PM Peak Without Dev								
104	The Horsley Drive and River Avenue	3596	0.642	40.5	25.0	LOS B	18.7	139.9
Site Category: 2020 PM Peak With Dev								
104	The Horsley Drive and River Avenue	3607	0.650	41.4	24.8	LOS B	18.9	138.5
Site Category: 2031 PM Peak Without Dev								
104	The Horsley Drive and River Avenue	4017	0.728	44.5	25.8	LOS B	25.6	201.1
Site Category: 2031 PM Peak With Dev								
104	The Horsley Drive and River Avenue	4025	0.728	44.5	25.8	LOS B	26.0	203.8

5.8.5 Villawood Road and Villawood Place

AM and PM Peak:

The results indicate that the proposed development is not expected to have a significant material impact on the performance level of this intersection.

Site Performance - Hourly Values

Site ID	Site Name	Dem. Flow (Tot) veh/h	Deg of Satn	Del (Wr. Mv.) sec	Del (Ctrl) sec	LOS	Back Que veh	Back Que m
Site Category: 2020 AM Peak Without Dev								
105	Villawood Road and Villawood Place	145	0.027	5.1	2.1	NA	0.1	0.9
Site Category: 2020 AM Peak With Dev								
105	Villawood Road and Villawood Place	305	0.052	6.3	1.2	NA	0.2	1.3
Site Category: 2031 AM Peak Without Dev								
105	Villawood Road and Villawood Place	179	0.038	5.2	2.6	NA	0.2	1.5
Site Category: 2031 AM Peak With Dev								
105	Villawood Road and Villawood Place	302	0.061	6.0	1.8	NA	0.3	2.1
Site Category: 2020 PM Peak Without Dev								
105	Villawood Road and Villawood Place	563	0.214	7.5	2.4	NA	1.2	8.9
Site Category: 2020 PM Peak With Dev								
105	Villawood Road and Villawood Place	782	0.283	10.6	2.5	NA	1.8	12.8
Site Category: 2031 PM Peak Without Dev								
105	Villawood Road and Villawood Place	711	0.285	9.0	2.9	NA	1.9	13.2
Site Category: 2031 PM Peak With Dev								
105	Villawood Road and Villawood Place	929	0.364	12.9	3.4	NA	3.1	22.0

Detailed Movement Summary results for each intersection under every scenario have been provided in Appendix C.

5.9 Public Transport Provisions

As described in **Section 2.5**, the proposed development site and the broader Villawood Town Centre is well serviced by the existing train and bus services providing access to Fairfield City Centre and other larger service and employment centres such as Liverpool, Parramatta CBD and the Sydney CBD.

The Villawood train station and the nearest bus stop on Villawood Place are located within 500 metres of walking distance with an average walking time of five minutes.

Please see **Section 2.5** for details regarding existing train services and bus routes.

The development will actively encourage alternate modes of transport to vehicles through the use of building signage and interior sign-board postings. Further, the created amenities in the retail, supermarket, and childcare, within Stage 2 will promote a walkable and accessible community for those residents of the project.

5.10 Proposed Access Arrangements

As per the provided plans, all vehicular access to parking areas and loading zones have been proposed along the northern boundary on Villawood Road. **Figure 36** shows the location of the proposed access point on Villawood Road.

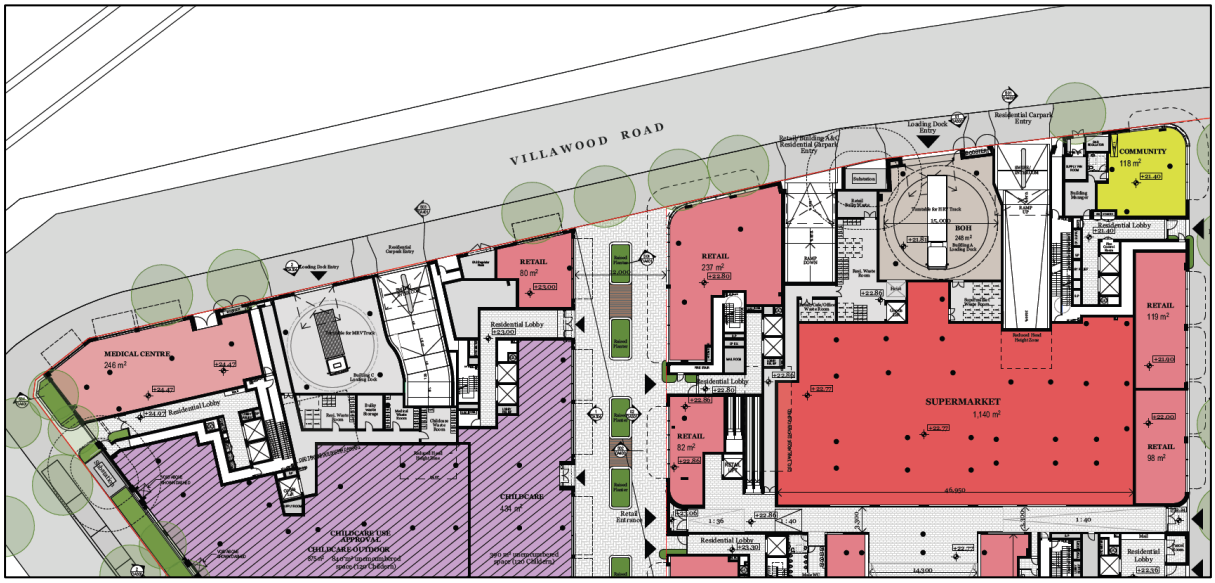


Figure 36 Proposed Access Points – Villawood Road
Source: DKO Architecture

5.11 Accessibility of Service Vehicle

Two separate loading zones have been proposed with turntables for Building A and C. The loading vehicles will access the loading zones from Villawood Road, as shown in **Figure 36**.

As per the provided information, HRV and MRV size trucks will use Building A and Building C loading zones, respectively.

6. Parking Assessment

6.1 Statutory Parking Requirements

6.1.1 Car Parking Requirements

As per the NSW Department of Planning and Environment's Apartment Design Guide July 2015,

- If the development is within 800 metres of a railway station or light rail stop in the Sydney Metropolitan Area, the minimum residents and visitors car parking rates specified in either RMS Guide to Traffic Generating Developments or the car parking requirement prescribed by the relevant Council can be used, whichever is less.

Noting that the proposed development site is located within 500 metres of the Villawood Train Station, the lessor residents and visitors parking rates specified in **Section 5.4.3** of the RMS Guide to Traffic Generating Developments (2002) were applicable. The RMS Guide's minimum parking rates for High-density residential flat buildings are:

- 0.4 spaces per 1-bedroom unit.
- 0.7 spaces per 2-bedroom unit.
- 1.2 spaces per 3-bedroom unit.
- 1 space per 7 units (visitor parking).

6.1.2 Car Parking Requirements – Non-Residential Component

As per the provided information, parking rates specified in Fairfield Citywide Development Control Plan have been adopted for Supermarket, Retail and Medical centre.

Whereas parking rates specified in NSW Child Care Planning Guideline (2017) have been adopted for the proposed Child Care Centre.

6.1.3 Car Parking Requirements – Bicycle and Motorcycles

The RMS Guide to Traffic Generating Developments (2002) and Fairfield Citywide Development Control Plan (DCP) do not provide bicycle and motorcycle parking rates for high-density residential development and other proposed land uses.

However, the architect has proposed bays for motorcycles and bicycles in both Buildings (A and C).

6.2 Parking Adequacy Review

As per the provided information,

Table 14 summarises the proposed parking provisions for the Stage 2 ***(Building A + C)*** development.

It is evident from **Table 14** and provided plans in **Appendix A** that:

- For the residential component in Building A, a total of 116 and 23 bays are required for residents and visitors, respectively. It is noted that:
  - 57 bays ***(incl. 03 accessible/adaptable)*** for residents are proposed in the basement
  - 45 residents ***(incl. 08 accessible/adaptable)*** and 23 visitors bays are proposed at Level 1
  - 75 residents ***(including 07 accessible/adaptable)*** are proposed at Level 2
  - 10 motorcycle and 23 bicycle parking bays are proposed for Building A

- For non-residential components ***(Supermarket and Retail)*** in Building A and the proposed medical centre in Building C, a total of 71 bays are required. It is noted that:

  - 114 bays ***(incl. 07 accessible/adaptable)*** are proposed in basement for above non-residential component

- For the residential components in Building C, a total of 49 and 09 bays are required for residents and visitors, respectively. It is noted that:

  - 24 residents ***(incl. 03 accessible/adaptable)*** and 08 visitors bays are proposed at Level 1
  - 36 residents ***(including 02 accessible/adaptable)*** are proposed at Level 2
  - 05 motorcycle and 10 bicycle parking bays are proposed for Building C

- For the proposed Childcare centre in Building C, a total of 17 bays are required. It is noted that:

  - 18 bays ***(incl. 02 accessible/adaptable)*** are proposed in the basement for the above non-residential component

Table 14 Proposed Car Parking Provisions

RMS Car Parking Rate - Building C						
Type	**Unit/Area**	**RMS Rate**		**Required**	**Proposed**	
1 Bed	4	0.4		2	Basement 1	
2 Bed	50	0.7		35	Ground Floor	0
3 Bed	10	1.2		12	Level 1	32
Vistor		1/7 unit		9	Level 2	36
Total				58	Total	68

RMS Car Parking Rate - Building A						
Type	**Unit/Area**	**RMS Rate**		**Required**	**Proposed**	
1 Bed	24	0.4		10	Basement 1	57
2 Bed	108	0.7		76	Ground Floor	0
3 Bed	26	1.2		31.2	Level 1	68
Vistor		1/7 unit		23	Level 2	75
Total				139	Total	200

TOTAL RESIDENTIAL			**197**		**268**

DCP Car Parking Rate - Commercial/Retail/Office						
Type	**Area (m2)**	**DCP Rate**		**Required**	**Proposed**	
Supermarket	1188	1/40 m2		30	Basement 1	
Retail	1263	1/40 m2		32	Basement 1	114
Medical	254	1/25 m2		10.16	Basement 1	
Total				71	Total	114

Childcare Guidelines Parking Rate - Childcare					
Type	**No. of Kids**	**Childcare Guideline Rate**	**Required**	**Proposed**	
Childcare	120	1/10 kids + 5 Staff	17	Basement 1	18
Total			17	Total	18

TOTAL COMMERCIAL/RETAIL/OFFICE			**88**		**132**

TOTAL CAR PARKING OVERALL			**285**		**400**

Considering the above points and details provided in **Table 14**, the proposed parking provisions are adequate and, in general, comply with the statutory requirements described in **Section 6.1**.

6.3 Parking Layout Review

The following points have been noted from the parking area plans designed by the architect and provided information:

- All 90° angle parking spaces for residential components have a minimum dimension of 5.4 m × 2.4 m with a minimum aisle width of 5.8 m, complying with Section 2.4.1 of the AS/NZS 2890.1:2004.
- All 90° angle parking spaces for non-residential components have a minimum dimension of 5.4 m × 2.6 m with a minimum aisle width of 6.2 m, complying with Section 2.4.1 of the AS/NZS 2890.1:2004.
- Few 90° disabled parking spaces have a minimum dimension of 5.4 m × 2.4 m and an adjoining shared space of the same dimension complying with Section 2.2.1 of the AS/NZS 2890.6:2009.
- Few 90° adaptable parking bay with dimension of 5.5m long × 3.8m wide (in total), in accordance with AS 4299—1995.
- All proposed ramps have a minimum width of 5.5 m, complying with Section 2.5.2 of the AS/NZS 2890.1:2004.
- As per the provided info by the Client, gradients on all ramps will be reviewed as part of the detailed design and ground clearance checks will be carried out as well.
- All bicycle parking spaces in the basement have dimensions of 2 m × 0.5 m.
- The architect has confirmed that the general ceiling height throughout the car parking area, including the parking spaces, complies with Section 2.4 of the AS/NZS 2890.6:2009.
- Traffic safety convex mirrors will be proposed at different locations to ensure safe movements within the parking area, including ramps.
- The plans designed by the architect indicate that at any time, only one vehicle would be able to circulate on Level 1 and Level 2 because of proposed sharp turns. However, considering it is residential parking, it is envisaged that most of the vehicles would be travelling in one direction in peak times. Thus, reducing the likelihood of two cars travelling in the opposite direction.

7. Findings

Traffwise Consultants Pty Ltd has been engaged by Traders in Purple to undertake a Traffic Impact Assessment study for the proposed Stage 2 ***(Building A + C)***, a mixed-use development. The proposed development is part of the Kamira Court Precinct and is in line with the Urban Framework Plan for Villawood Town Centre.

Based on the assessment and discussions presented within this report, the following key points are noted:

- The project site is located at the southwest corner of the Villawood Road and Kamira Court intersection. This parcel of the land is of the Kamira Court Residential Precinct, owned by Land and Housing Corporation.

- The broader area of the Villawood Town Centre ***(including the project site)*** is well serviced by train and bus services providing access to Fairfield City Centre and other larger service and employment centres such as Liverpool, Parramatta CBD and the Sydney CBD.

- The project site is located within 500 metres of walking distance to the Villawood Station and the nearest bus stop on Villawood Place.

- The proposed Stage 2 ***(Building A + C)*** development includes 222 high-density residential units, a supermarket, retail, medical centre and a childcare facility.

- The proposed land use mix as part of Stage 2 development is expected to generate 284 and 406 trips in the AM and PM peak, respectively.

- Considering the SIDRA modelling results, the proposed Stage 2 development is not expected to significantly impact the network performance, and key intersections are expected to operate at a similar level with and without the proposed development traffic.

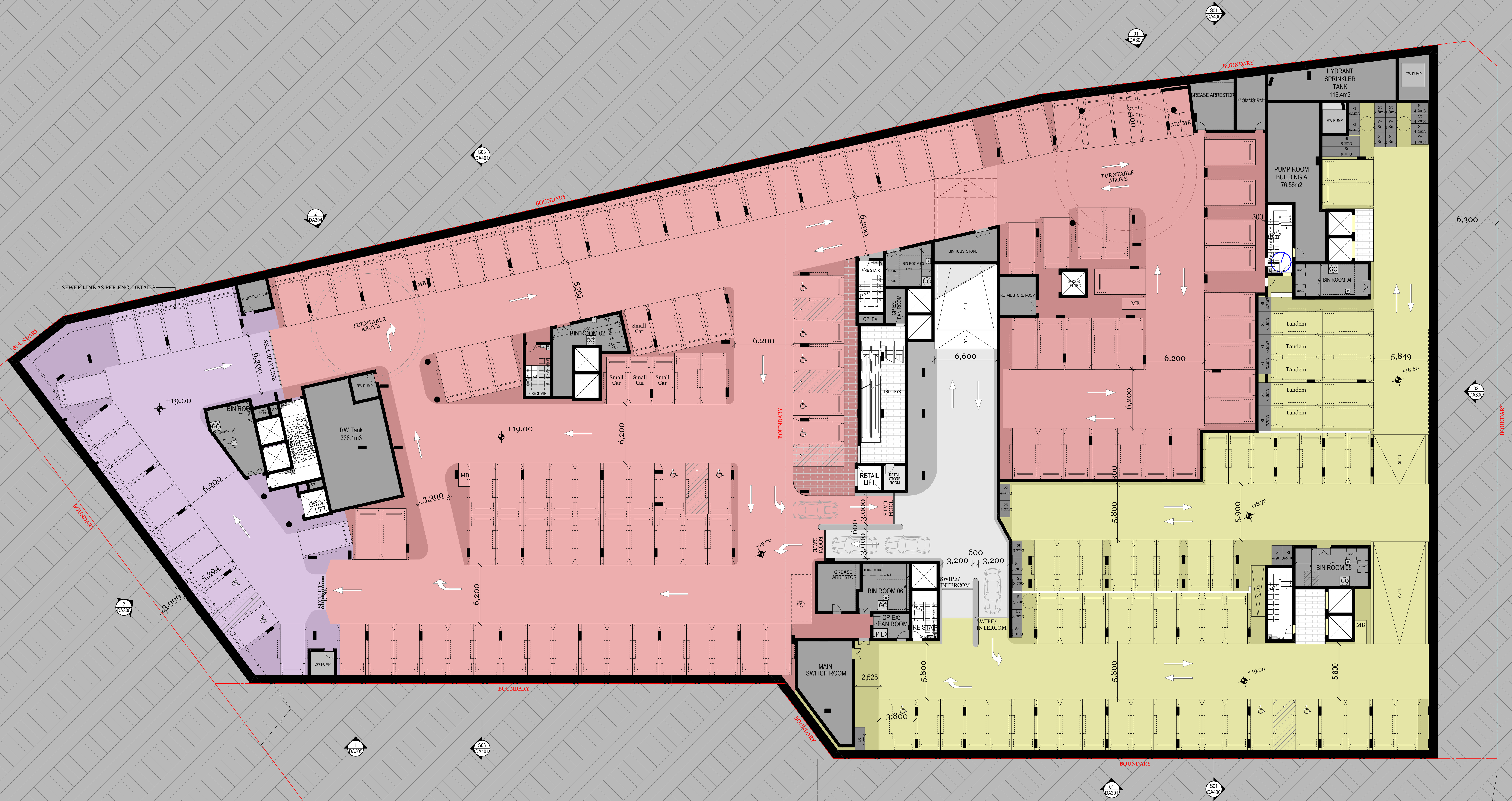
- A total of 268 car parking bays are proposed for the residential component and 132 for the non-residential component.

- The main access point for vehicles, including service vehicles, is proposed along the northern boundary on Villawood Road. However, the pedestrian would be able to access the development from all sides.

- Dimension of parking bays and aisle width generally complies with Australian Standards.

Appendix A

DEVELOPMENT PLANS



Parking Space

Childcare
18 car spaces
2 Accessible (incl.)

Retail, Medical & Supermarket
114 car spaces, 4 MB spaces
7 Accessible (incl.)

Residential
57 car spaces, 1 MB space
5 Tandem (incl.)
2 Accessible (incl.)
1 Adaptable (incl.)

Notes
ALL WORKS TO BE IN ACCORDANCE WITH AUTHORITY & STATUTORY APPROVALS.

ALL BOUNDARY INFORMATION TO BE CONFIRMED BY REGISTERED SURVEYOR BEFORE COMMENCING WORKS ON SITE.

REFER TO SITE SURVEY FOR ALL INFORMATION RELATING TO EXISTING SITE CONDITIONS.

REFER TO LANDSCAPE ARCHITECT'S DOCUMENTATION & ARBORIST REPORTS FOR ALL INFORMATION RELATING TO TREES AND THEIR RETENTION/REMOVAL AND NEW LANDSCAPE WORKS.

ALL DRAWINGS TO BE READ IN CONJUCTION WITH:
- ALL SPECIFICATIONS & SCHEDULES,
- ALL SPECIALIST CONSULTANTS DOCUMENTATION
- BASIX, NATHERS & SECTION J CERTIFICATES

MINOR CHANGES TO FORM & CONFIGURATION MAY BE REQUIRED AFTER DEVELOPMENT CONSENT WHEN DRAWINGS ARE PREPARED FOR CONSTRUCTION PURPOSES.

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0408 296 556

Rev	Date	By	Chk	Description
04	7/02/2022	TM MW		Issued to BCA, Traffic, Hydraulics and Mechanical
05	18/02/2022	TM MW	SO	Issued to Client for review
06	22/02/2022	TM MW	SO	Issued to Consultant
07	5/03/2022	TM MW	SO	Issued to client for sign off
A	15/03/2022	TM MW	SO	Issued for Draft DA Set

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NSW: Nominated Architects
Koos de Keijzer 5767
David Randerson 8542

DRAFT - FOR REVIEW

Project Name / Project Address	Villawood Stage 2 & 3, 2 Kamira Ave, Villawood, NSW 2163
Client	Traders in Purple
Project Number	00012870
Drawing Name	Basement Plan
Scale	1:250@A1
Date	February 2022
Drawing Number	**DA200**
Revision	**A**

Notes

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Rev	Date	By	Chk	Description
06	22/02/2022	TM MW	SO	Issued to Consultant
07	5/03/2022	TM MW	SO	Issued to client for sign off
08	9/03/2022	TM MW	SO	Issued to Traffic and Landscape
A - WIP	Work in Progress	TM MW	SO	Issued for Draft DA Set

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DRAFT - FOR REVIEW

Project Name	VILLAWOOD STAGE 2/3
Project Address	2 Kamira Ave, Villawood, NSW 2163
Client	Traders in Purple
Project Number	00012870
Drawing Name	Ground Floor Plan
Scale	@A1
Date	February 2022
Drawing Number	DA201
Revision	A - WIP

Legend

Adaptable Apartments

Livable Apartments

Building A Car Park

68 car spaces, 6 MB spaces, 13 bicycles,
7 Tandem (incl.)
2 Accessible (incl.) , 6 Adaptable (incl.)

Building C Car Park

32 car spaces, 2 MB spaces
1 Tandem (incl.)
3 Adaptable (incl.)

Notes

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DRAFT - FOR REVIEW

Project Name	Villawood Stage 2 & 3
Project Address	2 Kamira Ave, Villawood, NSW 2163
Client	Traders in Purple
Project Number	00012870
Drawing Name	Level 1 Plan
Scale	1:250@A1
Date	February 2022
Drawing Number	DA202
Revision	A

Legend

Adaptable Apartments

Livable Apartments

Building A Car Park

75 car spaces, 4 MB spaces, 10 bicycles,
9 Tandem (incl.)
1 Accessible (incl.) , 6 Adaptable (incl.)

Building C Car Park

36 car spaces, 3 MB spaces, 4 bicycles,
4 Tandem (incl.)
2 Adaptable (incl.)

DRAFT - FOR REVIEW

Notes
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Project Name Project Address	Villawood Stage 2 & 3 2 Kamira Ave, Villawood, NSW 2163
Client	Traders in Purple
Project Number	00012870
Drawing Name	Level 2 Plan
Scale	1:250@A1
Date	February 2022
Drawing Number	DA203
Revision	A

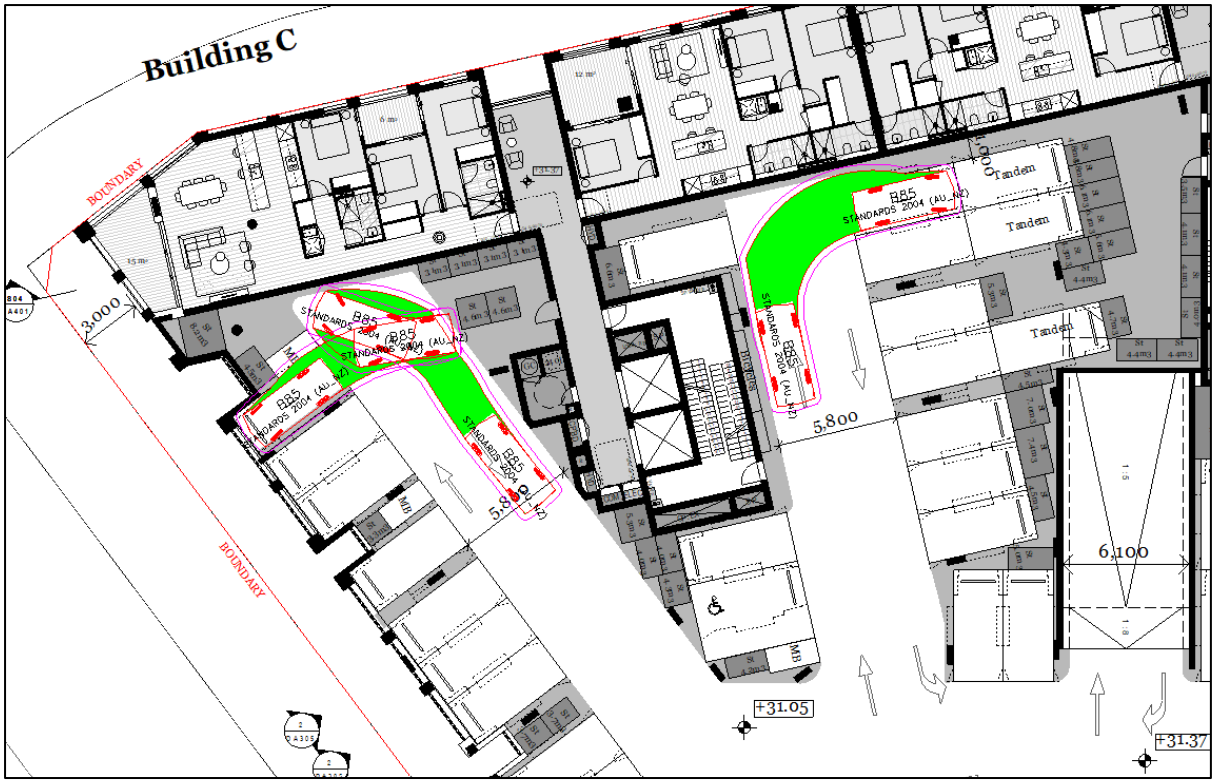
Appendix B

SWEPT PATH ASSESSMENT

(Not for Construction)

Level 2 – Building A - Swept Path Check of Few Bays

- Not For Construction
- Based on drawings provided by the Architect
- Autoturn Tool was used to carryout swept paths
- 300mm body clearance envelope was adopted
- The swept path drawings have been provided to Architect for info regarding minor changes required



Level 2 – Building C - Swept Path Check of Few Bays

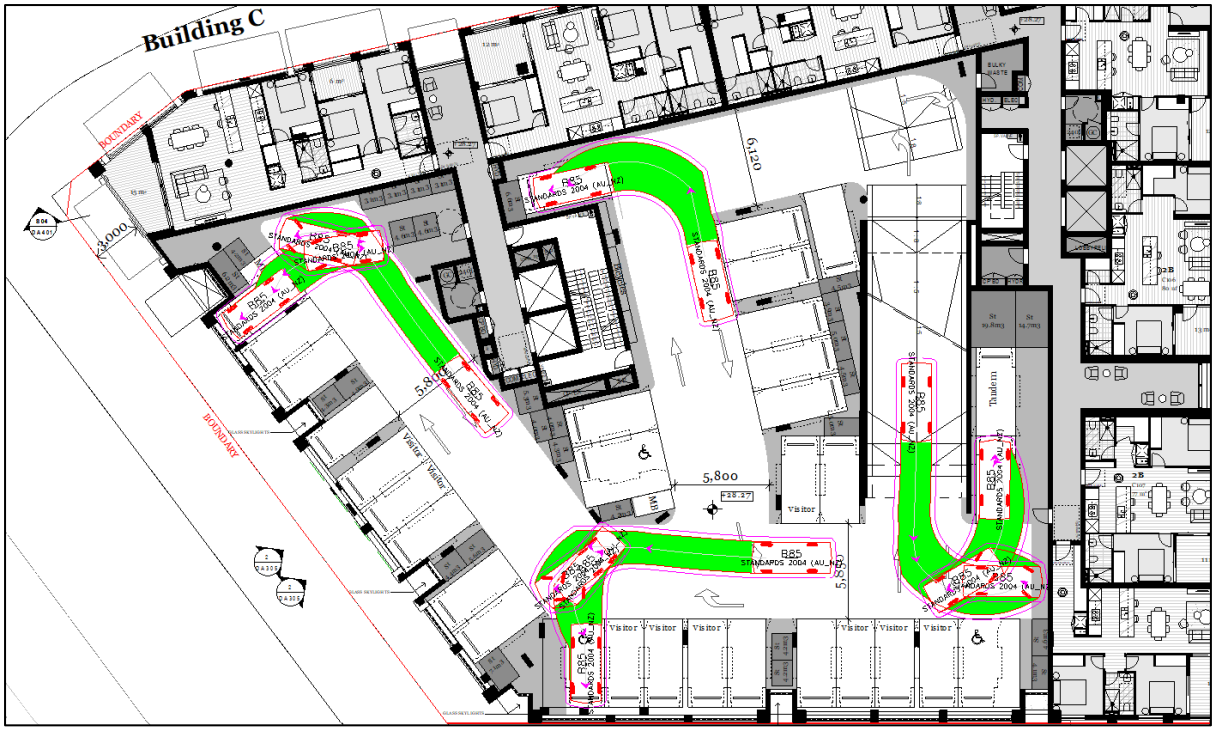
- Not For Construction
- Based on drawings provided by the Architect
- Autoturn Tool was used to carryout swept paths
- 300mm body clearance envelope was adopted
- The swept path drawings have been provided to Architect for info regarding minor changes required

Level 1 – Building A and C - Swept Path Check for Circulation (B99)

- Not For Construction
- Based on drawings provided by the Architect
- Autoturn Tool was used to carryout swept paths
- 300mm body clearance envelope was adopted
- The swept path drawings have been provided to Architect for info regarding minor changes required

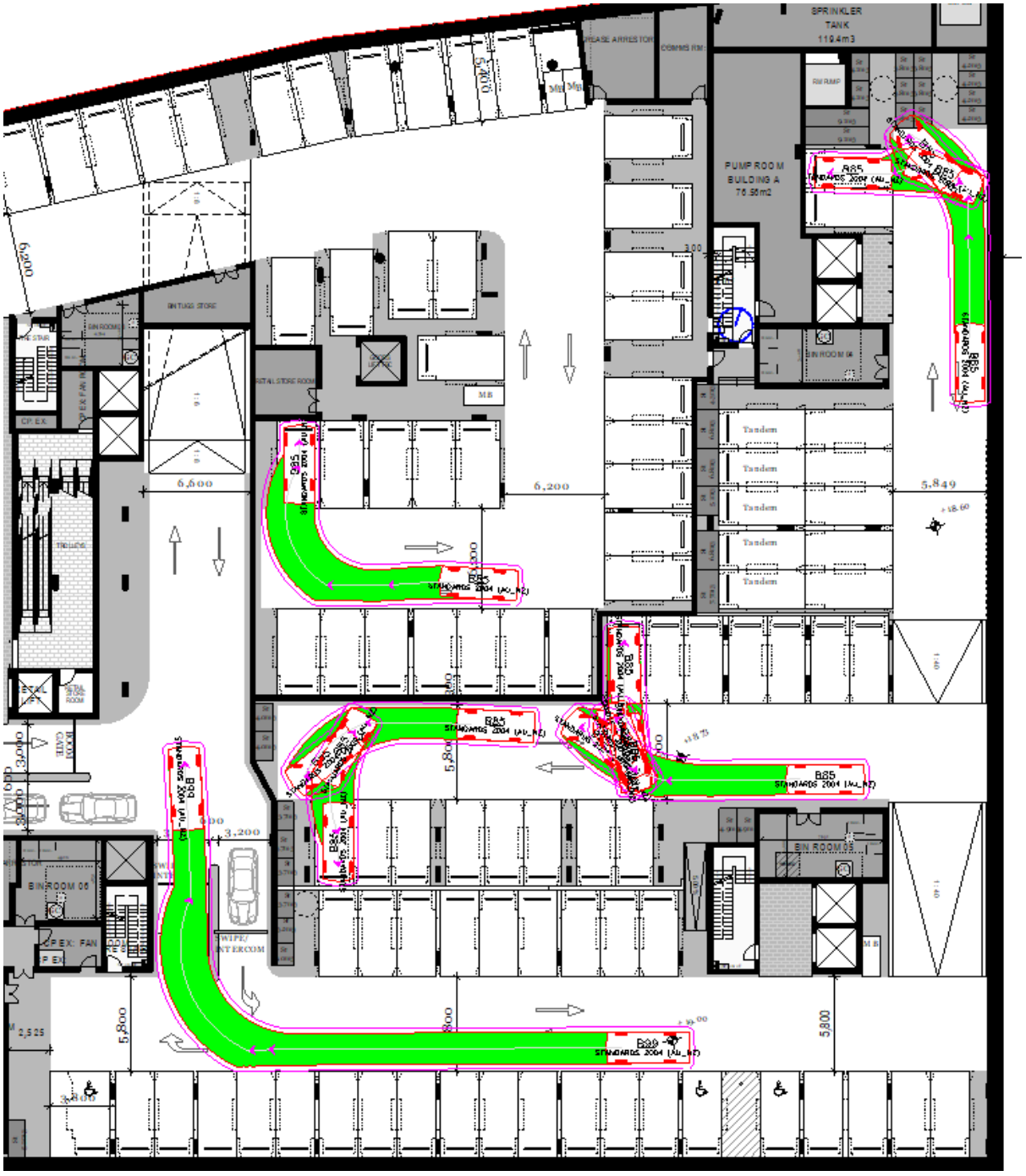
Level 1 – Building A - Swept Path Check for Few Bays (B85)

- Not For Construction
- Based on drawings provided by the Architect
- Autoturn Tool was used to carryout swept paths
- 300mm body clearance envelope was adopted
- The swept path drawings have been provided to Architect for info regarding minor changes required



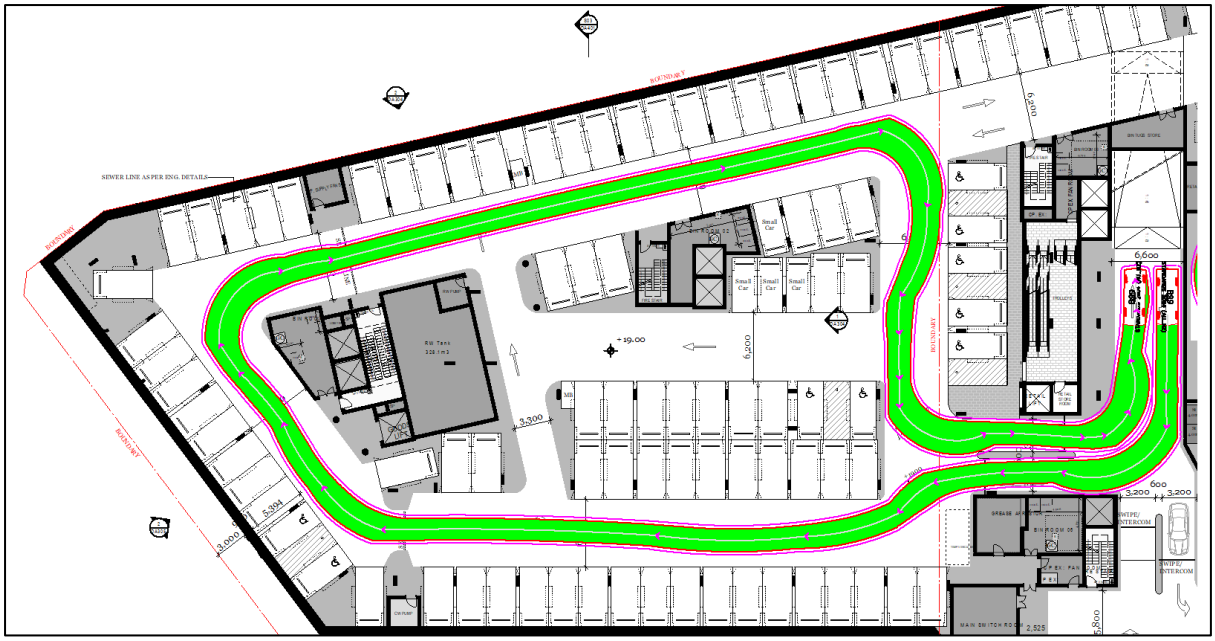
Level 1 – Building C - Swept Path Check for Few Bays (B85)

- Not For Construction
- Based on drawings provided by the Architect
- Autoturn Tool was used to carryout swept paths
- 300mm body clearance envelope was adopted
- The swept path drawings have been provided to Architect for info regarding minor changes required



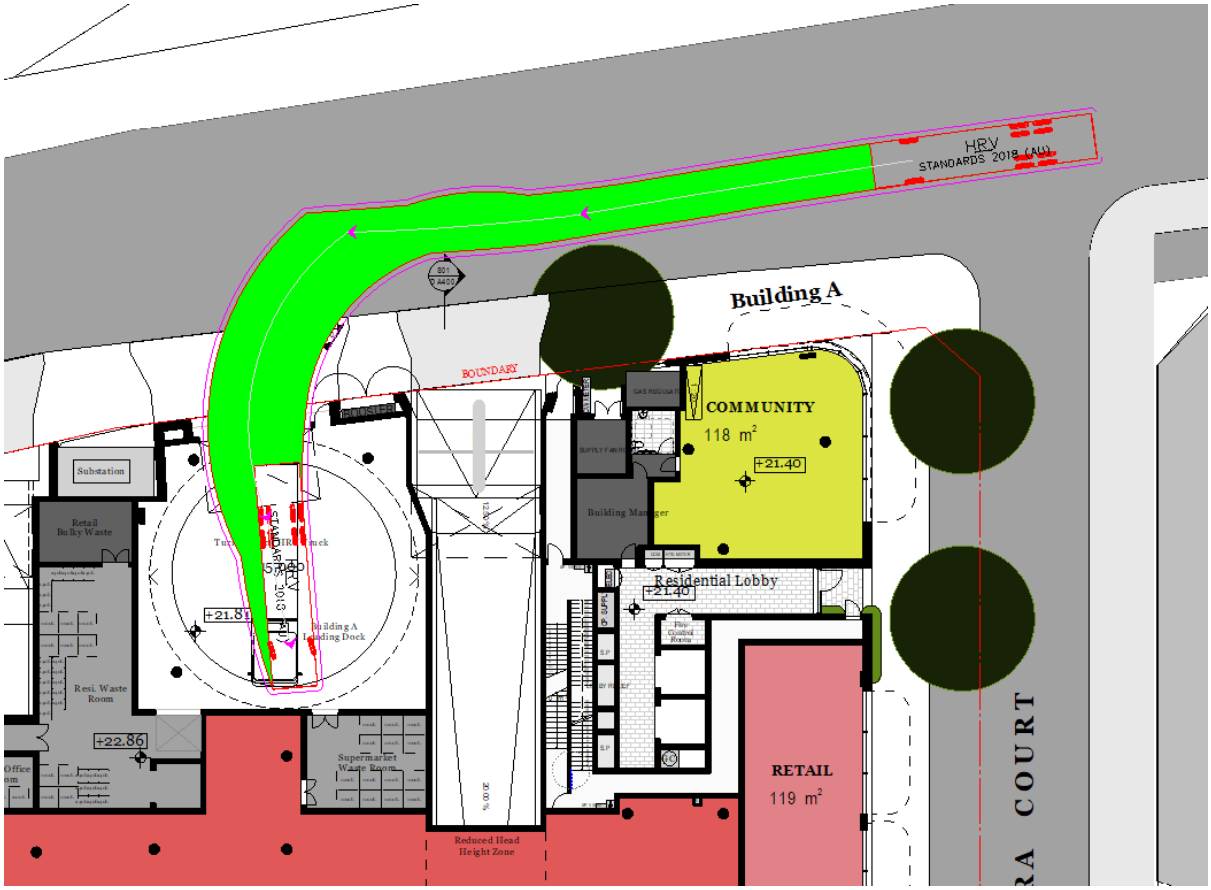
Basement – Swept Path Check for Few Bays (B85 and B99)

- Not For Construction
- Based on drawings provided by the Architect
- Autoturn Tool was used to carryout swept paths
- 300mm body clearance envelope was adopted
- The swept path drawings have been provided to Architect for info regarding minor changes required



Basement - Swept Path Check for Circulation (B99)

- Not For Construction
- Based on drawings provided by the Architect
- Autoturn Tool was used to carryout swept paths
- 300mm body clearance envelope was adopted
- The swept path drawings have been provided to Architect for info regarding minor changes required



Ground Floor - Swept Path Check for Entry to Loading Zone (HRV)

- Not For Construction
- Based on drawings provided by the Architect
- Autoturn Tool was used to carryout swept paths
- 300mm body clearance envelope was adopted
- The swept path drawings have been provided to Architect for info regarding minor changes required

Appendix C

SIDRA MODELLING RESULTS

PROJECT SUMMARY FOR NETWORK SITES

Project: Modelling of Intersections - Copy

Project Summary for selected Sites (Network Analysis).

Site (Network Analysis) Performance - Hourly Values									
Network ID	Site ID	Site Name	Dem. Flow (Tot) veh/h	Deg of Satn	Del (Wr. Mv.) sec	Del (Ctrl) sec	LOS	Back Que veh	Back Que m
Site Category: 2020 AM Peak Without Dev									
N101	103	Woodville Road and Kirrang Avenue	3905	0.901	85.0	10.8	LOS A	21.1	157.6
N101	105	Villawood Road and Villawood Place	145	0.027	5.1	2.1	NA	0.0	0.3
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4031	0.778	81.3	15.0	LOS B	25.7	196.9
N101	102	Woodville Road and Howatt Street and Binna Burra Street	3815	0.869	83.7	11.4	LOS A	35.0	261.7
Site Category: 2020 AM Peak With Dev									
N101	103	Woodville Road and Kirrang Avenue	4088	0.884	77.9	13.1	LOS A	22.2	166.0
N101	105	Villawood Road and Villawood Place	305	0.052	6.3	1.2	NA	0.1	0.4
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4189	0.844	88.0	14.7	LOS B	25.7	196.9
N101	102	Woodville Road and Howatt Street and Binna Burra Street	3874	0.792	83.7	8.4	LOS A	25.9	193.6
Site Category: 2031 AM Peak Without Dev									
N101	103	Woodville Road and Kirrang Avenue	4072	0.886	81.2	9.2	LOS A	13.5	100.1
N101	105	Villawood Road and Villawood Place	179	0.038	5.2	2.5	NA	0.1	0.5
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4235	0.895	81.9	20.1	LOS B	38.8	299.5
N101	102	Woodville Road and Howatt Street and Binna Burra Street	4038	0.724	85.2	8.9	LOS A	22.6	167.2
Site Category: 2031 AM Peak With Dev									
N101	103	Woodville Road and Kirrang Avenue	4253	0.904	80.5	13.2	LOS A	16.6	122.8
N101	105	Villawood Road and Villawood Place	302	0.061	6.0	1.8	NA	0.1	0.7
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4394	0.917	94.3	21.3	LOS B	38.8	299.5
N101	102	Woodville Road and Howatt Street and Binna Burra Street	4080	0.730	85.2	8.7	LOS A	20.7	153.5
Site Category: 2020 PM Peak Without Dev									
N101	103	Woodville Road and Kirrang Avenue	3661	0.802	68.5	6.9	LOS A	8.0	60.0
N101	105	Villawood Road and Villawood Place	563	0.212	6.8	2.4	NA	0.4	3.0
N101	101	Woodville Road and Villawood Road and	4272	0.902	83.9	30.7	LOS C	30.9	231.9

		Llewellyn Avenue							
N101	102	Woodville Road and Howatt Street and Binna Burra Street	3777	1.225	271.6	119.6	LOS F	36.1	270.0
Site Category: 2020 PM Peak With Dev									
N101	103	Woodville Road and Kirrang Avenue	3940	0.882	81.4	14.2	LOS A	12.1	90.6
N101	105	Villawood Road and Villawood Place	782	0.280	9.1	2.5	NA	0.6	4.4
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4492	0.947	95.8	38.2	LOS C	32.6	244.9
N101	102	Woodville Road and Howatt Street and Binna Burra Street	3863	1.245	288.6	128.0	LOS F	36.2	270.0
Site Category: 2031 PM Peak Without Dev									
N101	103	Woodville Road and Kirrang Avenue	4025	0.879	69.0	12.9	LOS A	29.5	224.0
N101	105	Villawood Road and Villawood Place	711	0.278	7.8	2.9	NA	4.8	34.4
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	4803	1.917	875.8	66.3	LOS E	40.4	313.3
N101	102	Woodville Road and Howatt Street and Binna Burra Street	4202	1.341	373.7	163.3	LOS F	35.7	270.0
Site Category: 2031 PM Peak With Dev									
N101	103	Woodville Road and Kirrang Avenue	4304	0.959	96.7	26.5	LOS B	33.7	255.7
N101	105	Villawood Road and Villawood Place	929	0.346	10.4	3.2	NA	12.4	87.5
N101	101	Woodville Road and Villawood Road and Llewellyn Avenue	5012	2.456	1352.6	91.2	LOS F	40.4	313.3
N101	102	Woodville Road and Howatt Street and Binna Burra Street	4288	1.361	392.6	173.8	LOS F	35.8	270.0

USER REPORT FOR NETWORK SITE

All Movement Classes

Project: Modelling of Intersections - Copy

Template: Default Site User Report

Site: 103 [Woodville Road and Kirrang Avenue (Site Folder: 2020 Scenario - AM Peak | Without Kamira Ave Traffic)]

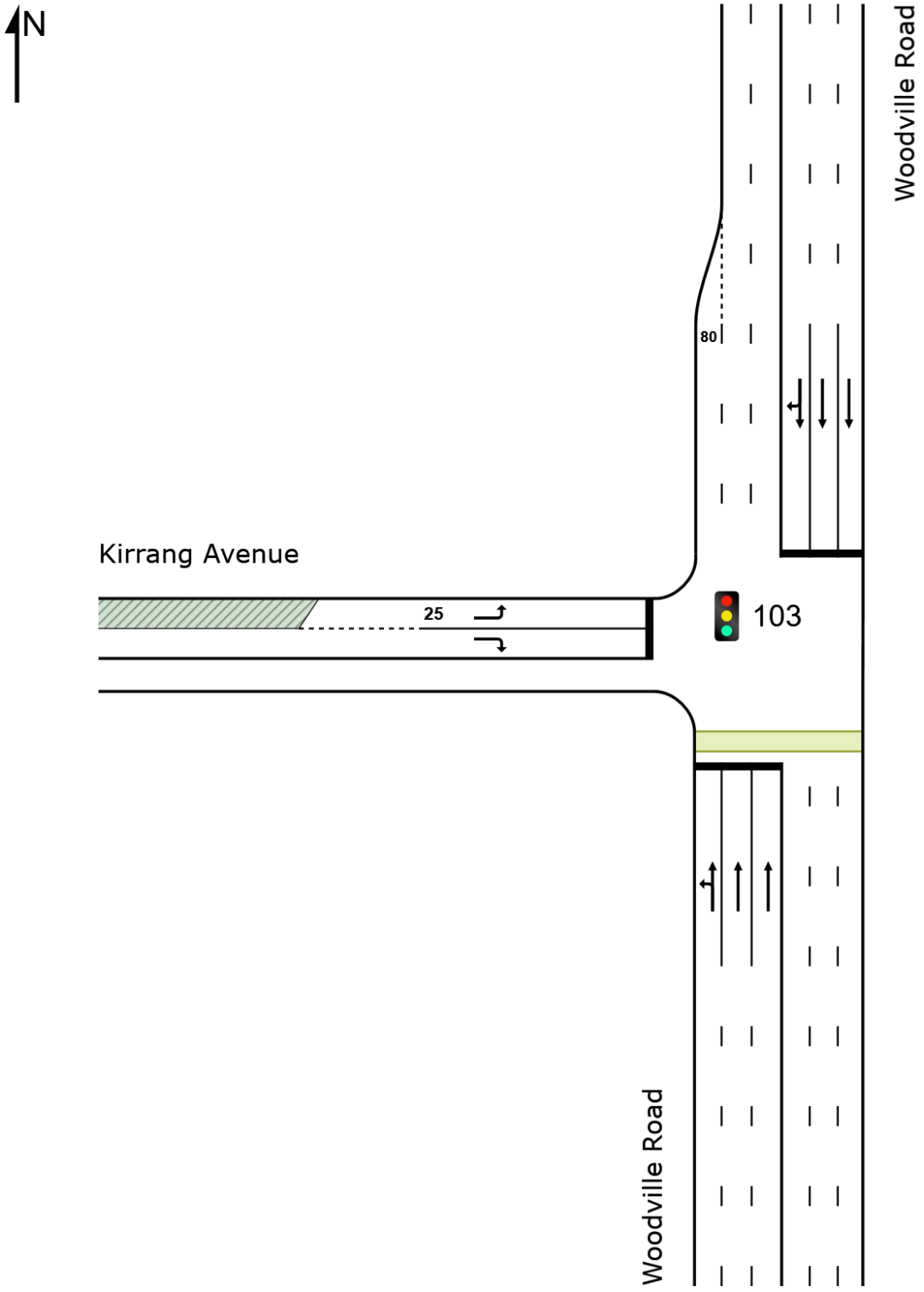
Network: 1 [2020 AM Peak Without Dev (Network Folder: AM Peak)]

Woodville Road and Kirrang Avenue
Site Category: 2020 AM Peak Without Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

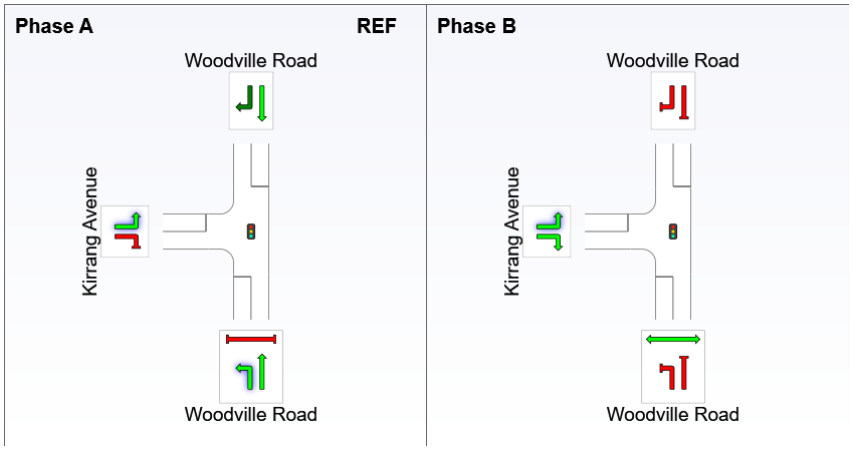
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


N
Woodville Road
80
Kirrang Avenue
25
103
Woodville Road

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
30	L2	20	0.0	20	0.0	0.369	10.0	LOS A	6.3	46.7	0.32	0.30	0.32	49.7
31	T1	2037	7.9	2037	7.9	* 0.836	11.0	LOS A	21.1	157.6	0.58	0.56	0.60	42.7
Approach		2057	7.8	2057	7.8	0.836	11.0	LOS A	21.1	157.6	0.58	0.56	0.59	42.8
North: Woodville Road														
25	T1	1644	11.3	1644	11.3	0.420	2.4	LOS A	3.6	27.8	0.14	0.13	0.14	56.7
26	R2	7	14.3	7	14.3	0.420	9.7	LOS A	3.6	27.8	0.20	0.19	0.20	48.5
Approach		1652	11.3	1652	11.3	0.420	2.4	LOS A	3.6	27.8	0.14	0.13	0.14	56.6
West: Kirrang Avenue														
27	L2	17	0.0	17	0.0	0.010	9.1	LOS A	0.0	0.2	0.09	0.55	0.09	44.1
29	R2	180	8.8	180	8.8	* 0.901	85.0	LOS F	8.6	64.7	1.00	0.99	1.37	22.2
Approach		197	8.0	197	8.0	0.901	78.5	LOS F	8.6	64.7	0.92	0.95	1.26	22.8
All Vehicles		3905	9.3	3905	9.3	0.901	10.8	LOS A	21.1	157.6	0.41	0.40	0.44	45.4

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94
All Pedestrians		53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94

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.

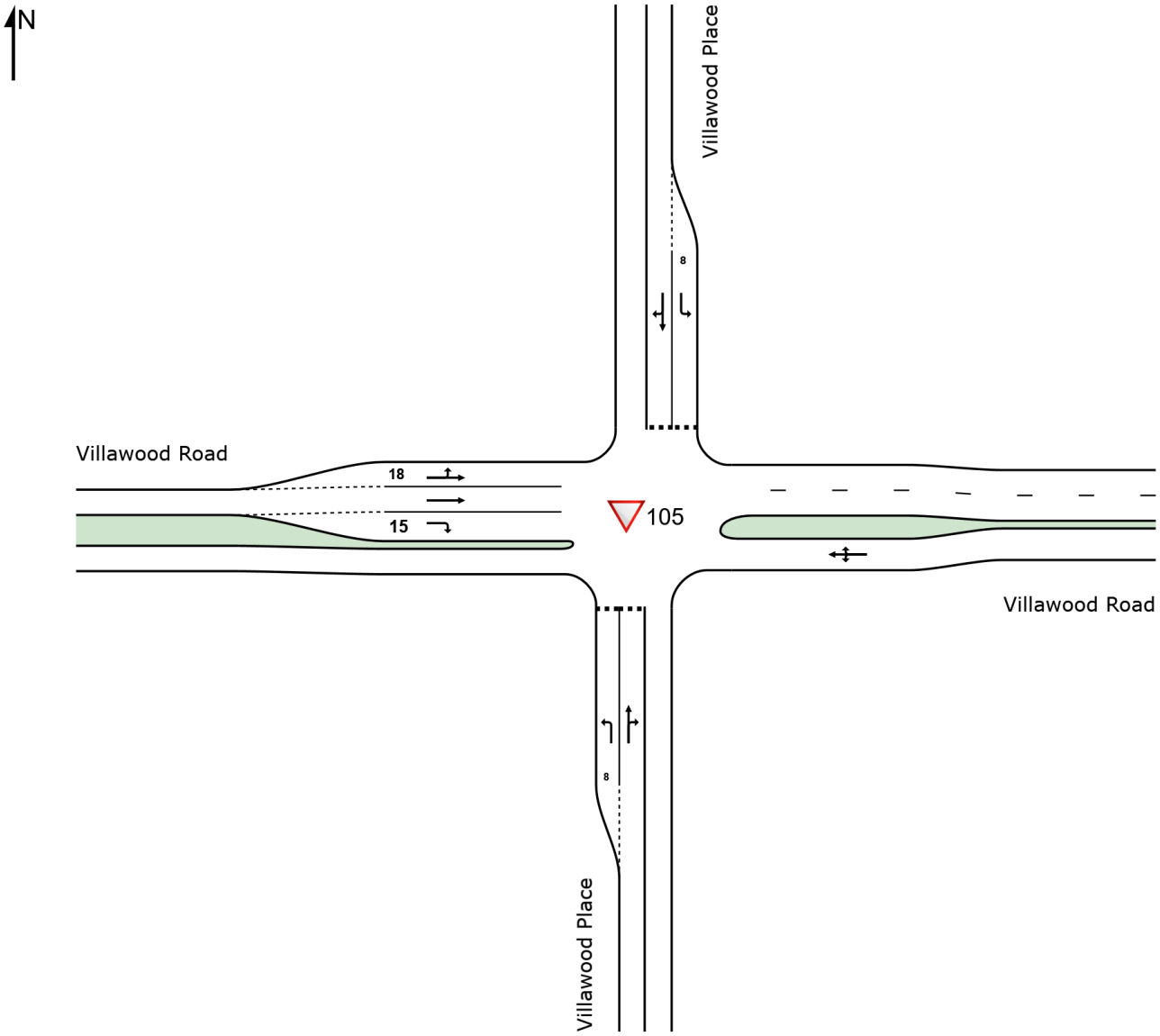
Site: 105 [Villawood Road and Villawood Place (Site Folder: 2020 Scenario - AM Peak | Without Kamira Ave Traffic)]

Network: 1 [2020 AM Peak Without Dev (Network Folder: AM Peak)]

Villawood Road and Villawood Place
Site Category: 2020 AM Peak Without Dev
Give-Way (Two-Way)

Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Villawood Place														
1	L2	1	0.0	1	0.0	0.001	4.6	LOS A	0.0	0.0	0.08	0.50	0.08	45.3
2	T1	1	0.0	1	0.0	0.012	4.3	LOS A	0.0	0.1	0.21	0.51	0.21	40.7
3	R2	17	0.0	17	0.0	0.012	4.9	LOS A	0.0	0.1	0.21	0.51	0.21	38.4
Approach		19	0.0	19	0.0	0.012	4.8	LOS A	0.0	0.1	0.20	0.51	0.20	39.4
East: Villawood Road														
4	L2	4	0.0	4	0.0	0.027	5.1	LOS A	0.0	0.3	0.10	0.19	0.10	44.2
5	T1	24	21.7	24	21.7	0.027	0.3	LOS A	0.0	0.3	0.10	0.19	0.10	47.4
6	R2	9	0.0	9	0.0	0.027	5.1	LOS A	0.0	0.3	0.10	0.19	0.10	40.5
Approach		38	13.9	38	13.9	0.027	2.0	NA	0.0	0.3	0.10	0.19	0.10	46.4
North: Villawood Place														
7	L2	22	0.0	22	0.0	0.018	4.8	LOS A	0.0	0.2	0.14	0.50	0.14	29.6
8	T1	1	0.0	1	0.0	0.002	4.2	LOS A	0.0	0.0	0.21	0.45	0.21	41.2
9	R2	1	0.0	1	0.0	0.002	4.8	LOS A	0.0	0.0	0.21	0.45	0.21	44.4
Approach		24	0.0	24	0.0	0.018	4.8	LOS A	0.0	0.2	0.15	0.49	0.15	32.7
West: Villawood Road														
10	L2	2	0.0	2	0.0	0.017	4.6	LOS A	0.0	0.0	0.00	0.04	0.00	48.8
11	T1	61	12.1	61	12.1	0.017	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	49.8
12	R2	1	0.0	1	0.0	0.001	4.8	LOS A	0.0	0.0	0.12	0.50	0.12	44.9
Approach		64	11.5	64	11.5	0.017	0.2	NA	0.0	0.0	0.00	0.03	0.00	49.6
All Vehicles		145	8.7	145	8.7	0.027	2.1	NA	0.0	0.3	0.08	0.21	0.08	46.3

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Woodville Road and Villawood Road and Llewellyn Avenue (Site Folder: 2020 Scenario - AM Peak | Without Kamira Ave Traffic)]

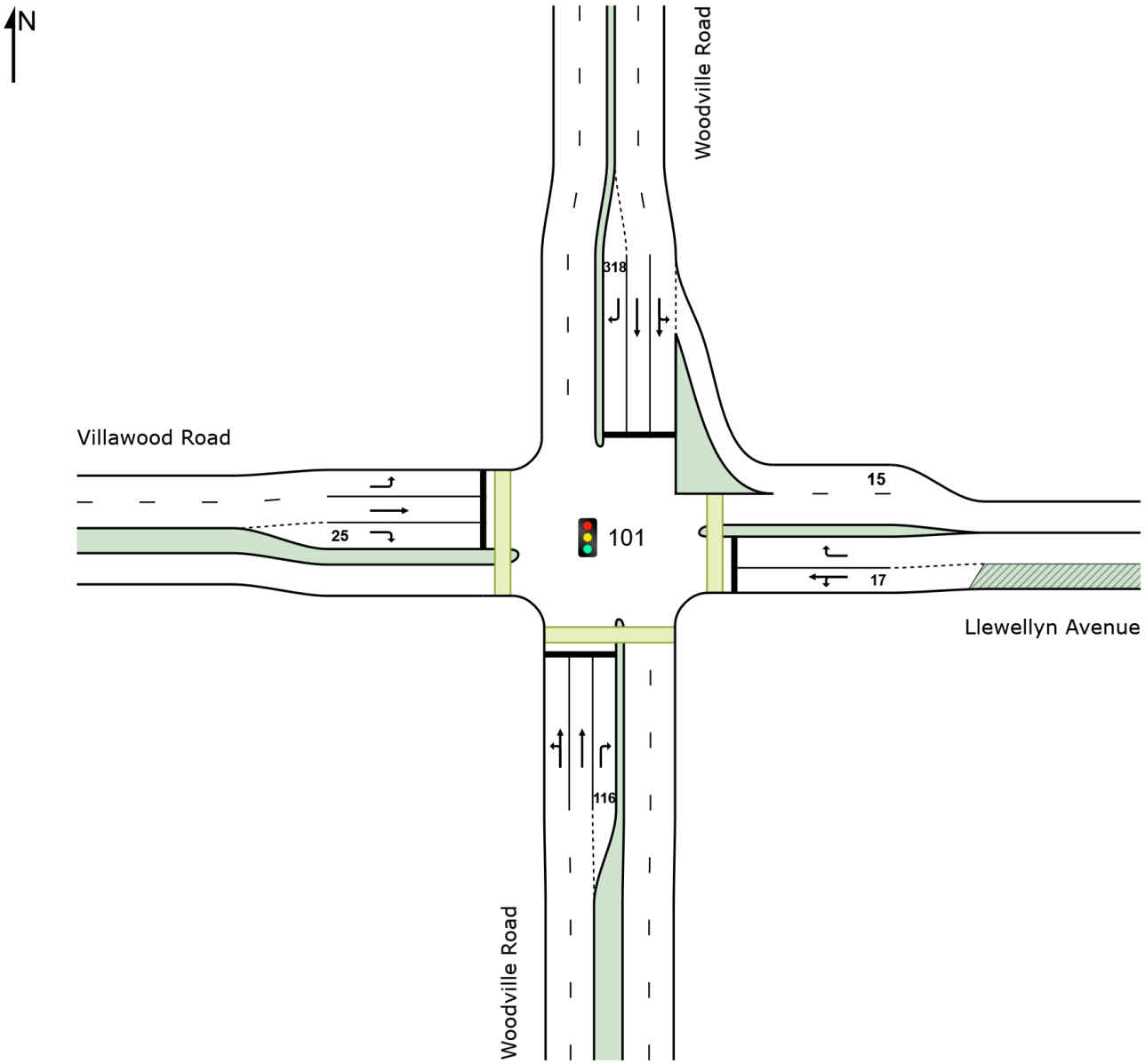
Network: 1 [2020 AM Peak Without Dev (Network Folder: AM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2020 AM Peak Without Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import
Reference Phase: Phase A
Input Phase Sequence: A, C, D, E
Output Phase Sequence: A, C, D, E

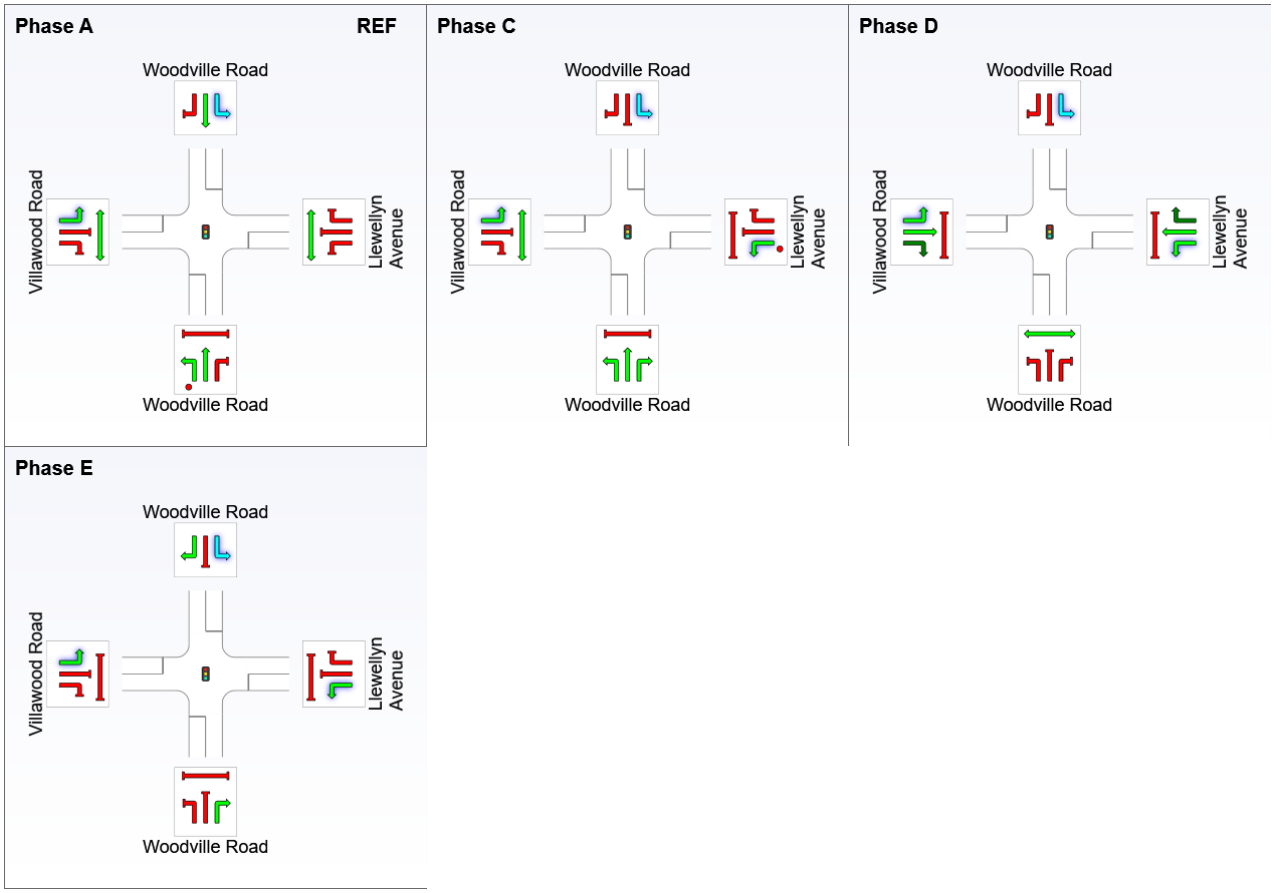
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	13	0.0	13	0.0	* 0.778	13.1	LOS A	17.5	130.7	0.47	0.43	0.47	36.5
31	T1	2016	8.0	2016	8.0	0.778	5.5	LOS A	17.5	130.7	0.36	0.34	0.36	53.3
32	R2	51	0.0	51	0.0	0.322	51.5	LOS D	1.7	12.1	1.00	0.74	1.00	23.9
Approach		2079	7.7	2079	7.7	0.778	6.7	LOS A	17.5	130.7	0.38	0.35	0.38	51.9
East: Llewellyn Avenue														
21	L2	21	40.0	21	40.0	0.073	49.4	LOS D	0.8	7.4	0.81	0.67	0.81	20.0
5	T1	2	50.0	2	50.0	0.073	44.5	LOS D	0.8	7.4	0.81	0.67	0.81	20.0
23	R2	60	52.6	60	52.6	* 0.451	69.8	LOS E	2.4	24.8	0.97	0.77	0.97	25.8
Approach		83	49.4	83	49.4	0.451	64.0	LOS E	2.4	24.8	0.93	0.74	0.93	24.7
North: Woodville Road														
24	L2	136	12.4	136	12.4	0.768	24.9	LOS B	25.7	196.9	0.77	0.74	0.77	42.6
25	T1	1606	11.1	1606	11.1	* 0.768	19.5	LOS B	25.7	196.9	0.78	0.73	0.78	37.7
9	R2	24	17.4	24	17.4	* 0.347	81.3	LOS F	1.1	8.5	1.00	0.71	1.00	17.6
Approach		1766	11.3	1766	11.3	0.768	20.7	LOS B	25.7	196.9	0.78	0.73	0.78	37.7
West: Villawood Road														
10	L2	40	15.8	40	15.8	0.026	4.9	LOS A	0.1	0.6	0.09	0.55	0.09	48.9
11	T1	4	0.0	4	0.0	0.019	59.1	LOS E	0.2	1.1	0.91	0.59	0.91	19.6
12	R2	58	3.6	58	3.6	0.433	73.8	LOS F	2.4	17.4	0.99	0.76	0.99	4.1
Approach		102	8.2	102	8.2	0.433	46.2	LOS D	2.4	17.4	0.64	0.67	0.64	17.0
All Vehicles		4031	10.2	4031	10.2	0.778	15.0	LOS B	25.7	196.9	0.57	0.53	0.57	43.2

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.5	218.8	0.94
East: Llewellyn Avenue											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94
West: Villawood Road											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.1	218.1	0.94
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94

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.

Site: 102 [Woodville Road and Howatt Street and Binna Burra Street (Site Folder: 2020 Scenario - AM Peak | Without Kamira Ave Traffic)]

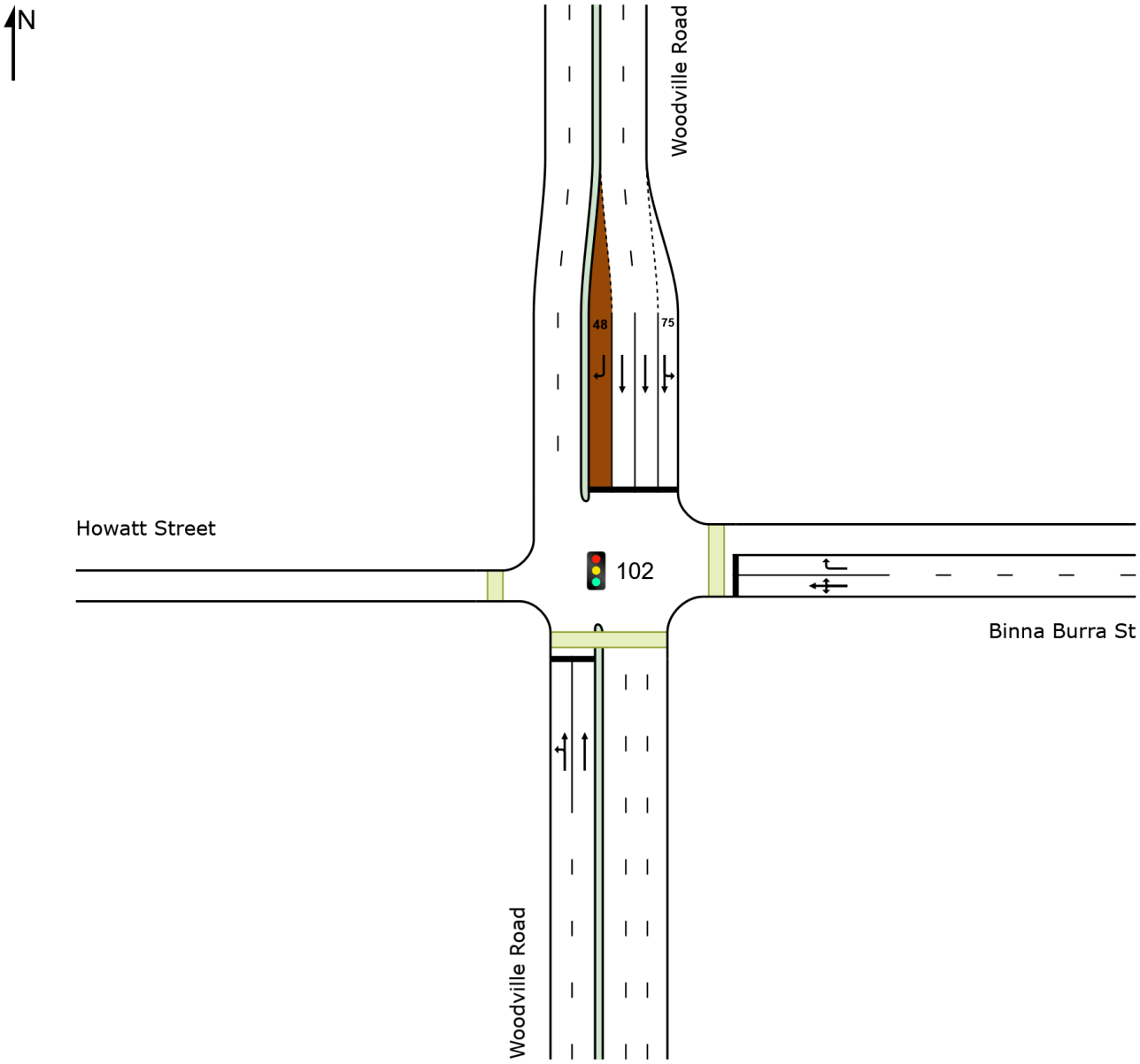
Network: 1 [2020 AM Peak Without Dev (Network Folder: AM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2020 AM Peak Without Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

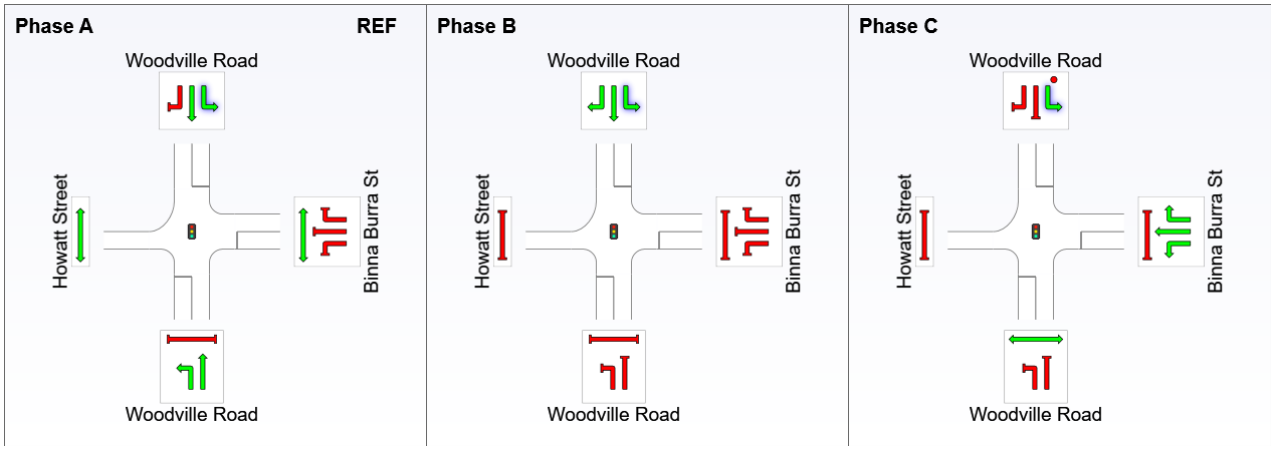
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	21	0.0	21	0.0	0.869	25.1	LOS B	30.1	224.7	0.82	0.80	0.85	23.3
31	T1	2036	7.9	2036	7.9	* 0.869	17.2	LOS B	35.0	261.7	0.82	0.78	0.83	29.8
Approach		2057	7.8	2057	7.8	0.869	17.3	LOS B	35.0	261.7	0.82	0.78	0.83	29.6
East: Binna Burra St														
21	L2	18	5.9	18	5.9	0.206	66.8	LOS E	1.5	11.4	0.95	0.72	0.95	3.5
5	T1	18	23.5	18	23.5	* 0.206	63.0	LOS E	1.5	11.4	0.95	0.72	0.95	6.6
23	R2	40	2.6	40	2.6	0.206	66.7	LOS E	1.5	10.8	0.95	0.73	0.95	3.5
Approach		76	8.3	76	8.3	0.206	65.8	LOS E	1.5	11.4	0.95	0.73	0.95	4.2
North: Woodville Road														
24	L2	36	8.8	36	8.8	0.389	6.5	LOS A	1.3	10.2	0.06	0.09	0.06	25.4
25	T1	1635	11.3	1635	11.3	0.389	1.1	LOS A	2.0	15.6	0.08	0.08	0.08	54.4
9	R2	12	100.0	12	100.0	* 0.253	83.7	LOS F	0.5	6.7	1.00	0.69	1.00	9.1
Approach		1682	11.9	1682	11.9	0.389	1.8	LOS A	2.0	15.6	0.09	0.09	0.09	50.5
All Vehicles		3815	9.6	3815	9.6	0.869	11.4	LOS A	35.0	261.7	0.50	0.48	0.50	33.2

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	231.3	217.2	0.94
East: Binna Burra St											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	226.9	211.4	0.93
West: Howatt Street											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	222.7	206.0	0.92
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	227.0	211.5	0.93

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.

USER REPORT FOR NETWORK SITE

All Movement Classes

Project: Modelling of Intersections - Copy

Template: Default Site User Report

Site: 103 [Woodville Road and Kirrang Avenue (Site Folder: 2020 Scenario - AM Peak | With Kamira Ave Traffic)]

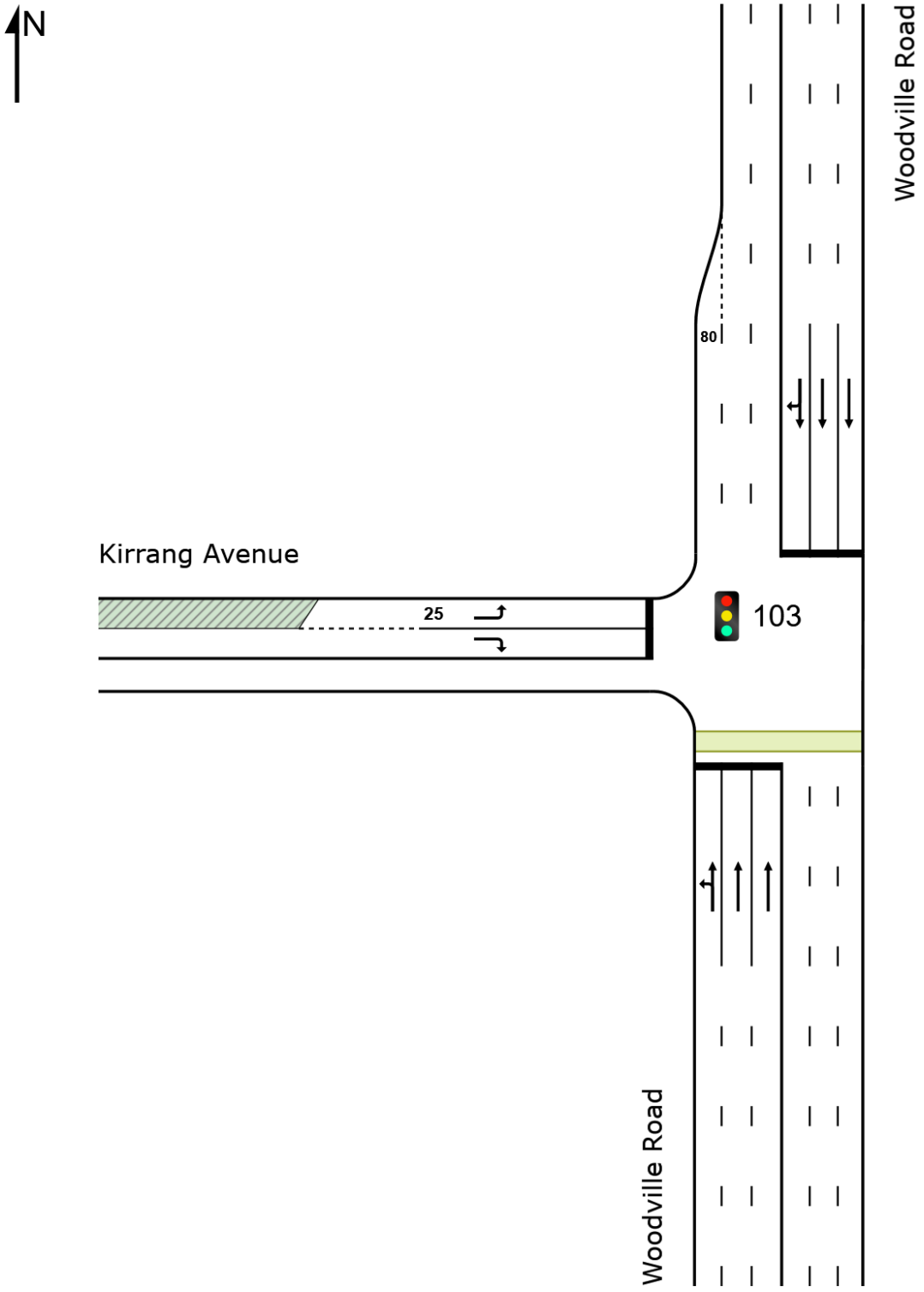
Network: 2 [2020 AM Peak With Dev (Network Folder: AM Peak)]

Woodville Road and Kirrang Avenue
Site Category: 2020 AM Peak With Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

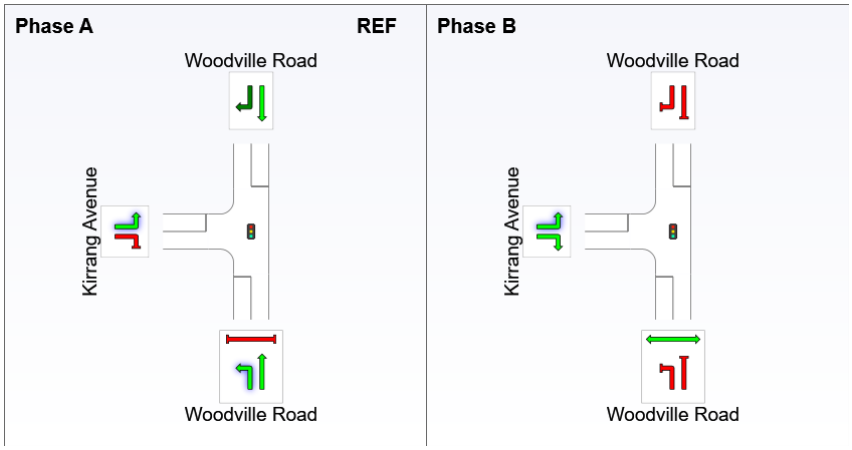
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


N
Woodville Road
80
Kirrang Avenue
25
103
Woodville Road

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
30	L2	80	0.0	80	0.0	0.359	12.2	LOS A	6.9	50.7	0.38	0.40	0.38	47.6
31	T1	2055	7.8	2055	7.8	* 0.814	12.0	LOS A	22.2	166.0	0.65	0.62	0.65	41.0
Approach		2135	7.5	2135	7.5	0.814	12.0	LOS A	22.2	166.0	0.64	0.61	0.64	41.4
North: Woodville Road														
25	T1	1675	11.1	1675	11.1	0.455	4.6	LOS A	5.6	43.0	0.23	0.21	0.23	53.9
26	R2	7	14.3	7	14.3	0.455	12.7	LOS A	5.6	43.0	0.30	0.28	0.30	46.2
Approach		1682	11.1	1682	11.1	0.455	4.6	LOS A	5.6	43.0	0.23	0.21	0.23	53.9
West: Kirrang Avenue														
27	L2	17	0.0	17	0.0	0.010	8.6	LOS A	0.0	0.2	0.09	0.55	0.09	44.1
29	R2	255	6.2	255	6.2	* 0.884	77.9	LOS F	11.8	87.1	1.00	0.97	1.27	23.3
Approach		272	5.8	272	5.8	0.884	73.6	LOS F	11.8	87.1	0.94	0.94	1.20	23.7
All Vehicles		4088	8.9	4088	8.9	0.884	13.1	LOS A	22.2	166.0	0.49	0.47	0.51	43.0

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94
All Pedestrians		53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94

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.

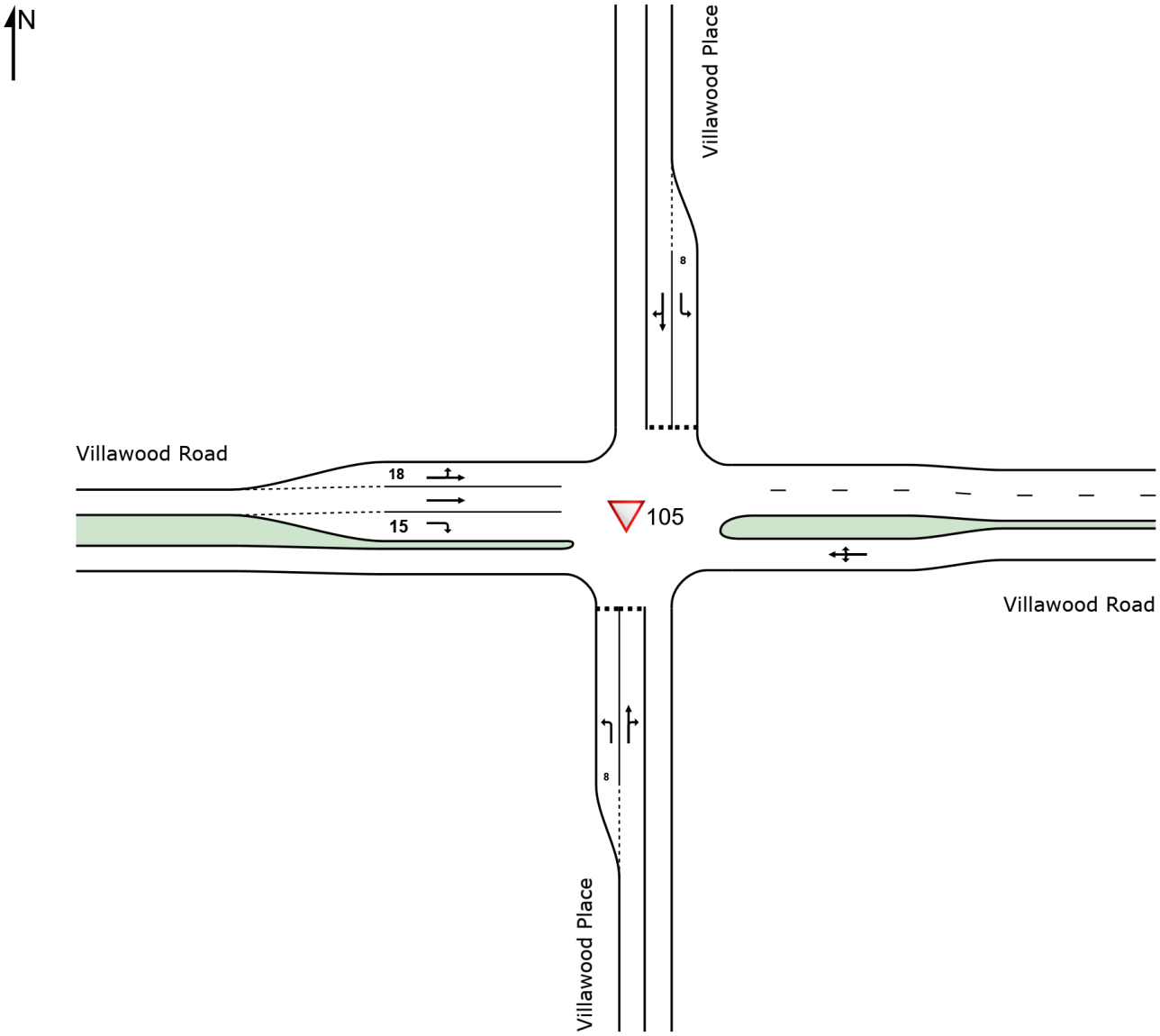
Site: 105 [Villawood Road and Villawood Place (Site Folder: 2020 Scenario - AM Peak | With Kamira Ave Traffic)]

Network: 2 [2020 AM Peak With Dev (Network Folder: AM Peak)]

Villawood Road and Villawood Place
Site Category: 2020 AM Peak With Dev
Give-Way (Two-Way)

Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Villawood Place														
1	L2	1	0.0	1	0.0	0.001	4.8	LOS A	0.0	0.0	0.15	0.48	0.15	45.0
2	T1	1	0.0	1	0.0	0.014	5.3	LOS A	0.0	0.2	0.33	0.54	0.33	40.1
3	R2	17	0.0	17	0.0	0.014	5.3	LOS A	0.0	0.2	0.33	0.54	0.33	37.6
Approach		19	0.0	19	0.0	0.014	5.3	LOS A	0.0	0.2	0.32	0.53	0.32	38.7
East: Villawood Road														
4	L2	4	0.0	4	0.0	0.052	6.1	LOS A	0.1	0.4	0.10	0.09	0.10	45.7
5	T1	71	7.5	71	7.5	0.052	0.5	LOS A	0.1	0.4	0.10	0.09	0.10	48.4
6	R2	9	0.0	9	0.0	0.052	6.3	LOS A	0.1	0.4	0.10	0.09	0.10	42.9
Approach		84	6.3	84	6.3	0.052	1.4	NA	0.1	0.4	0.10	0.09	0.10	48.0
North: Villawood Place														
7	L2	22	0.0	22	0.0	0.020	5.2	LOS A	0.0	0.2	0.26	0.52	0.26	28.5
8	T1	1	0.0	1	0.0	0.002	5.3	LOS A	0.0	0.0	0.35	0.47	0.35	40.3
9	R2	1	0.0	1	0.0	0.002	5.2	LOS A	0.0	0.0	0.35	0.47	0.35	43.8
Approach		24	0.0	24	0.0	0.020	5.2	LOS A	0.0	0.2	0.27	0.51	0.27	31.7
West: Villawood Road														
10	L2	2	0.0	2	0.0	0.047	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	49.0
11	T1	175	4.2	175	4.2	0.047	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.9
12	R2	1	0.0	1	0.0	0.001	5.0	LOS A	0.0	0.0	0.20	0.49	0.20	44.7
Approach		178	4.1	178	4.1	0.047	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.8
All Vehicles		305	4.1	305	4.1	0.052	1.2	NA	0.1	0.4	0.07	0.10	0.07	48.2

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Woodville Road and Villawood Road and Llewellyn Avenue (Site Folder: 2020 Scenario - AM Peak | With Kamira Ave Traffic)]

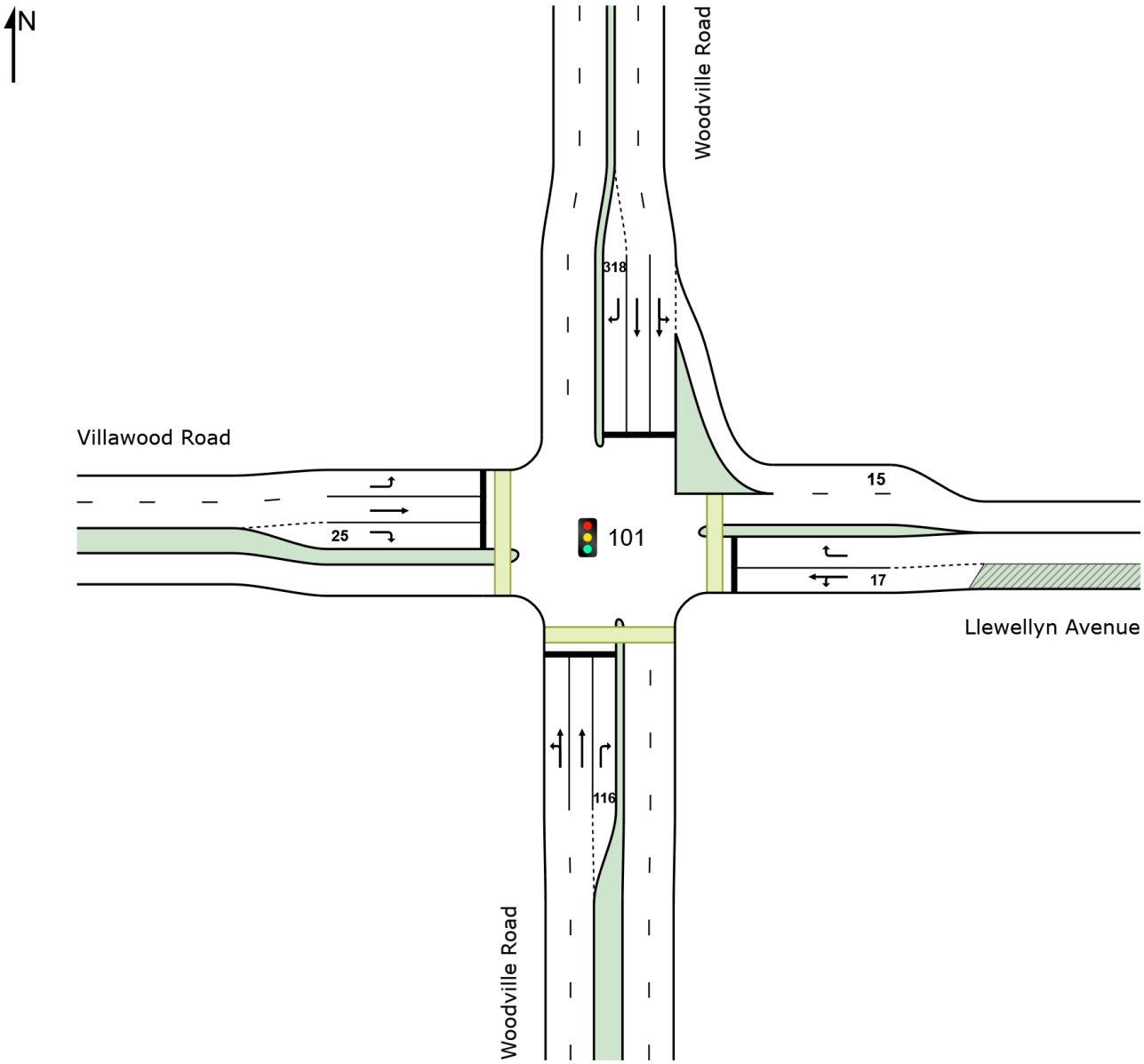
Network: 2 [2020 AM Peak With Dev (Network Folder: AM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2020 AM Peak With Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import - Import
Reference Phase: Phase A
Input Phase Sequence: A, C, D, E
Output Phase Sequence: A, C, D, E

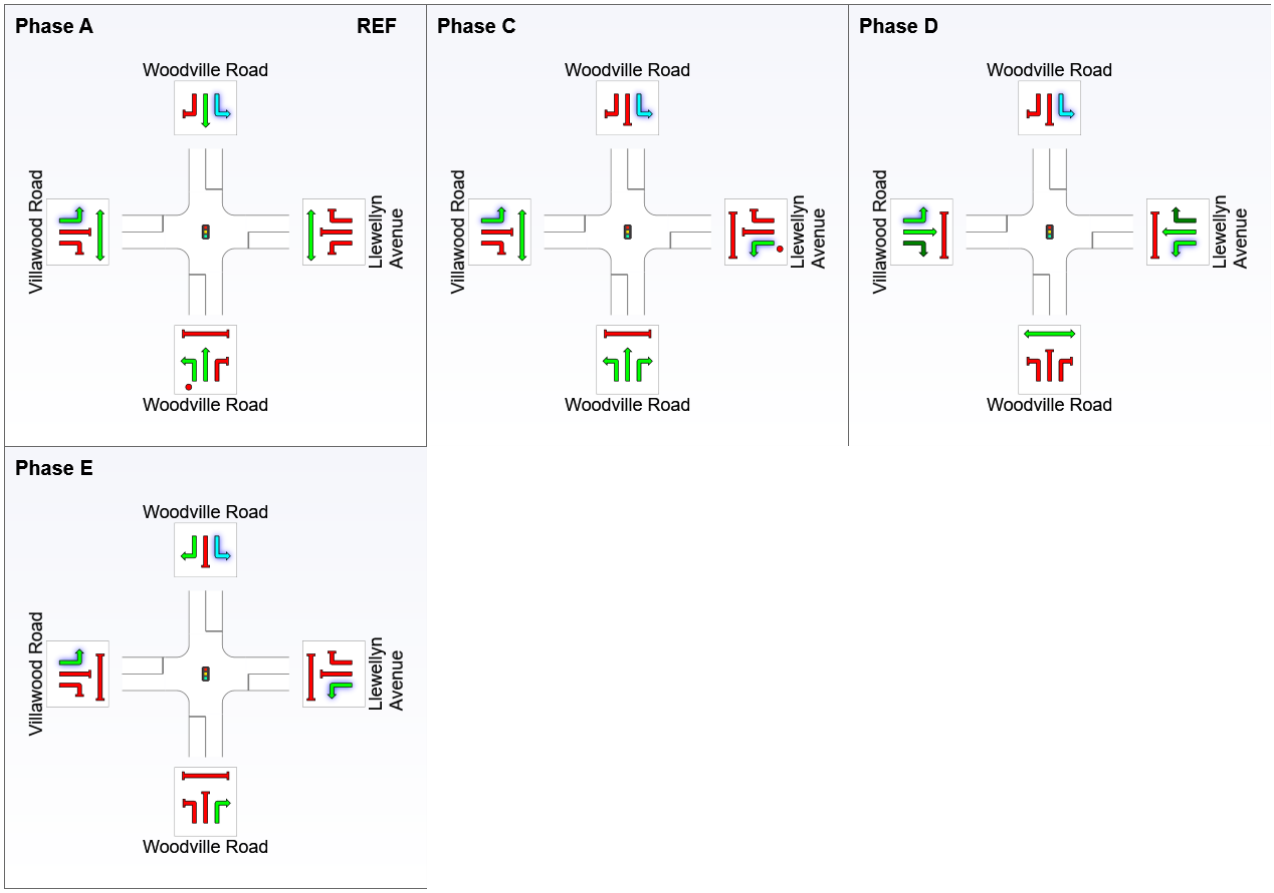
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	17	0.0	17	0.0	* 0.780	6.8	LOS A	3.9	29.4	0.11	0.11	0.11	54.0
31	T1	2016	8.0	2016	8.0	0.780	2.4	LOS A	10.1	75.2	0.19	0.18	0.19	56.8
32	R2	51	0.0	51	0.0	0.322	51.5	LOS D	1.7	12.1	1.00	0.74	1.00	23.9
Approach		2083	7.7	2083	7.7	0.780	3.6	LOS A	10.1	75.2	0.20	0.19	0.20	55.2
East: Llewellyn Avenue														
21	L2	21	40.0	21	40.0	0.086	51.9	LOS D	0.9	8.2	0.83	0.67	0.83	19.6
5	T1	4	25.0	4	25.0	0.086	46.9	LOS D	0.9	8.2	0.83	0.67	0.83	19.6
23	R2	60	52.6	60	52.6	* 0.487	70.4	LOS E	2.5	25.0	0.98	0.77	0.98	25.7
Approach		85	48.1	85	48.1	0.487	64.7	LOS E	2.5	25.0	0.93	0.74	0.93	24.5
North: Woodville Road														
24	L2	136	12.4	136	12.4	0.768	24.9	LOS B	25.7	196.9	0.77	0.74	0.77	42.6
25	T1	1606	11.1	1606	11.1	* 0.768	19.5	LOS B	25.7	196.9	0.78	0.73	0.78	37.7
9	R2	63	6.7	63	6.7	* 0.844	88.0	LOS F	3.0	21.9	1.00	0.90	1.40	16.6
Approach		1805	11.0	1805	11.0	0.844	22.3	LOS B	25.7	196.9	0.79	0.74	0.80	36.7
West: Villawood Road														
10	L2	115	5.5	115	5.5	0.070	4.9	LOS A	0.2	1.7	0.10	0.55	0.10	49.5
11	T1	9	0.0	9	0.0	0.042	59.6	LOS E	0.4	2.5	0.92	0.63	0.92	19.5
12	R2	92	2.3	92	2.3	0.682	76.6	LOS F	4.0	28.3	1.00	0.83	1.10	4.0
Approach		216	3.9	216	3.9	0.682	37.7	LOS C	4.0	28.3	0.52	0.67	0.56	22.4
All Vehicles		4189	9.8	4189	9.8	0.844	14.7	LOS B	25.7	196.9	0.49	0.46	0.49	43.3

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.5	218.8	0.94
East: Llewellyn Avenue											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94
West: Villawood Road											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.1	218.1	0.94
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94

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.

Site: 102 [Woodville Road and Howatt Street and Binna Burra Street (Site Folder: 2020 Scenario - AM Peak | With Kamira Ave Traffic)]

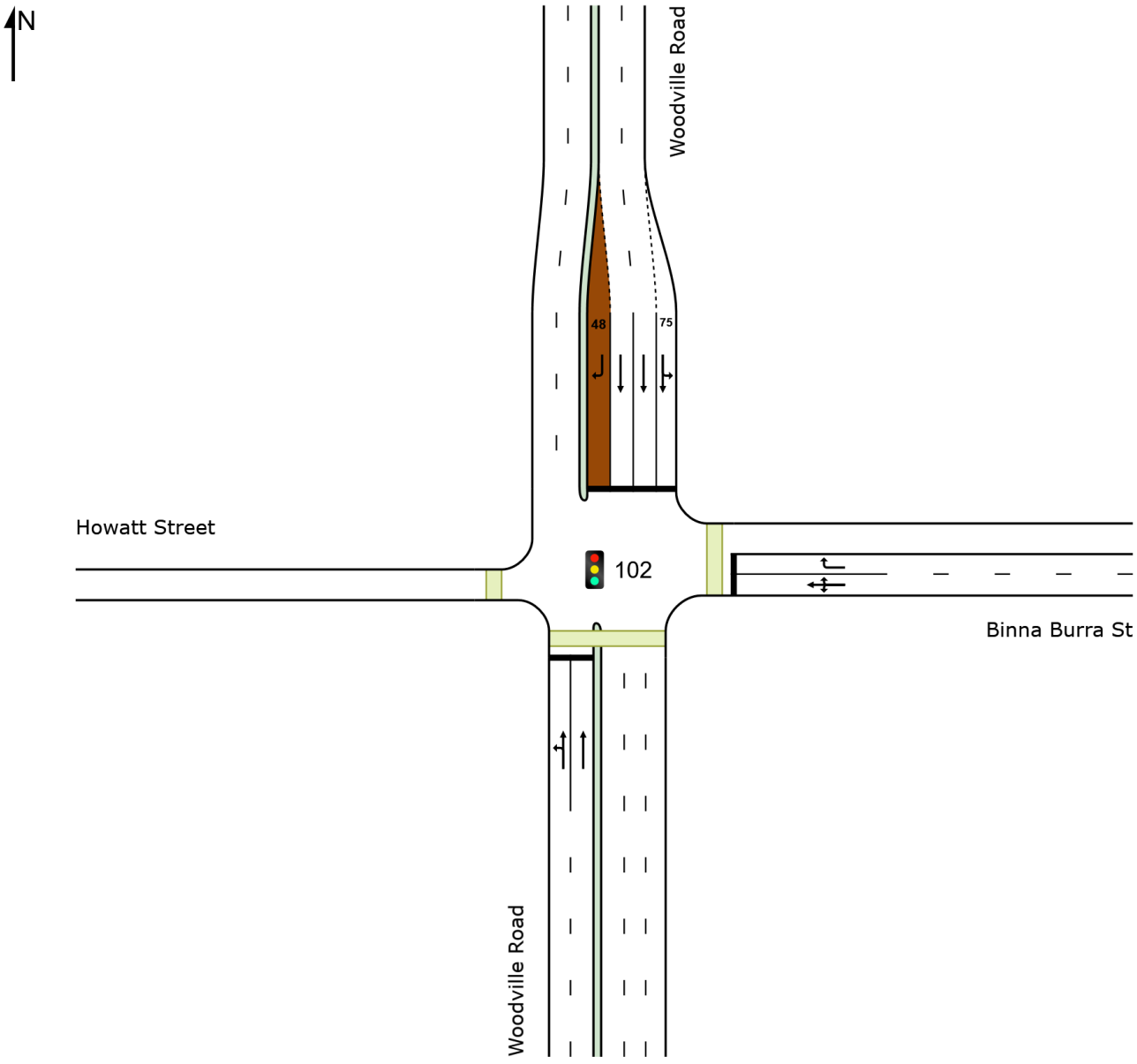
Network: 2 [2020 AM Peak With Dev (Network Folder: AM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2020 AM Peak With Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

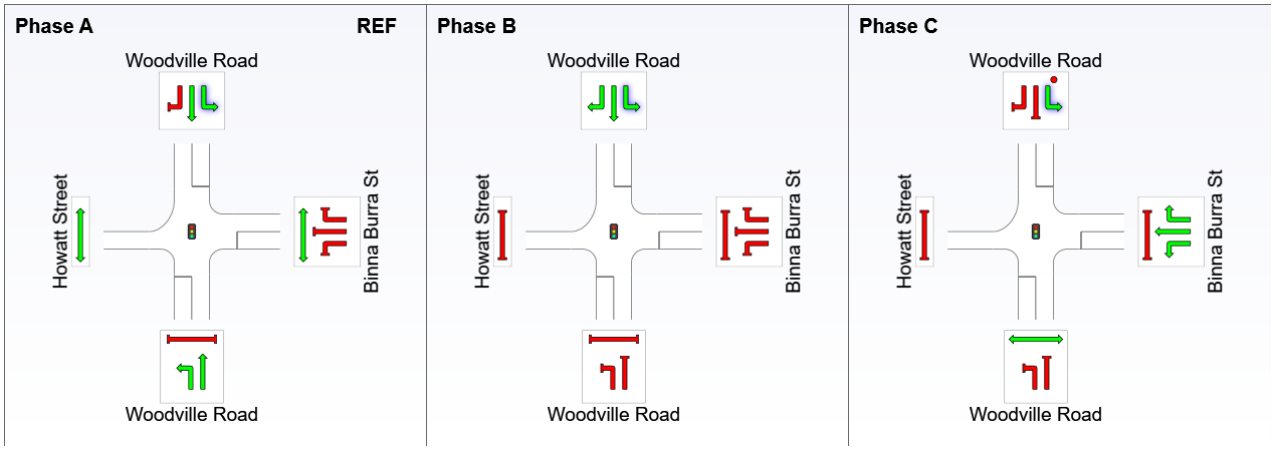
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	37	0.0	37	0.0	0.792	17.2	LOS B	25.6	191.2	0.66	0.63	0.66	27.3
31	T1	2039	7.8	2039	7.8	* 0.792	11.6	LOS A	25.9	193.6	0.66	0.63	0.66	35.5
Approach		2076	7.7	2076	7.7	0.792	11.7	LOS A	25.9	193.6	0.66	0.63	0.66	35.2
East: Binna Burra St														
21	L2	18	5.9	18	5.9	0.213	66.8	LOS E	1.5	11.9	0.95	0.72	0.95	3.5
5	T1	19	22.2	19	22.2	* 0.213	63.0	LOS E	1.5	11.9	0.95	0.72	0.95	6.6
23	R2	42	2.5	42	2.5	0.213	66.7	LOS E	1.6	11.2	0.95	0.73	0.95	3.4
Approach		79	8.0	79	8.0	0.213	65.9	LOS E	1.6	11.9	0.95	0.73	0.95	4.3
North: Woodville Road														
24	L2	41	7.7	41	7.7	0.397	6.5	LOS A	1.4	10.8	0.07	0.10	0.07	25.3
25	T1	1666	11.1	1666	11.1	0.397	1.0	LOS A	1.6	12.4	0.07	0.08	0.07	54.8
9	R2	12	100.0	12	100.0	* 0.253	83.7	LOS F	0.5	6.7	1.00	0.69	1.00	9.1
Approach		1719	11.6	1719	11.6	0.397	1.7	LOS A	1.6	12.4	0.08	0.08	0.08	50.7
All Vehicles		3874	9.5	3874	9.5	0.792	8.4	LOS A	25.9	193.6	0.41	0.39	0.41	37.4

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	231.3	217.2	0.94
East: Binna Burra St											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	226.9	211.4	0.93
West: Howatt Street											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	222.7	206.0	0.92
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	227.0	211.5	0.93

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.

USER REPORT FOR NETWORK SITE

All Movement Classes

Project: Modelling of Intersections - Copy

Template: Default Site User Report

Site: 103 [Woodville Road and Kirrang Avenue (Site Folder: 2020 Scenario - PM Peak | Without Kamira Ave Traffic)]

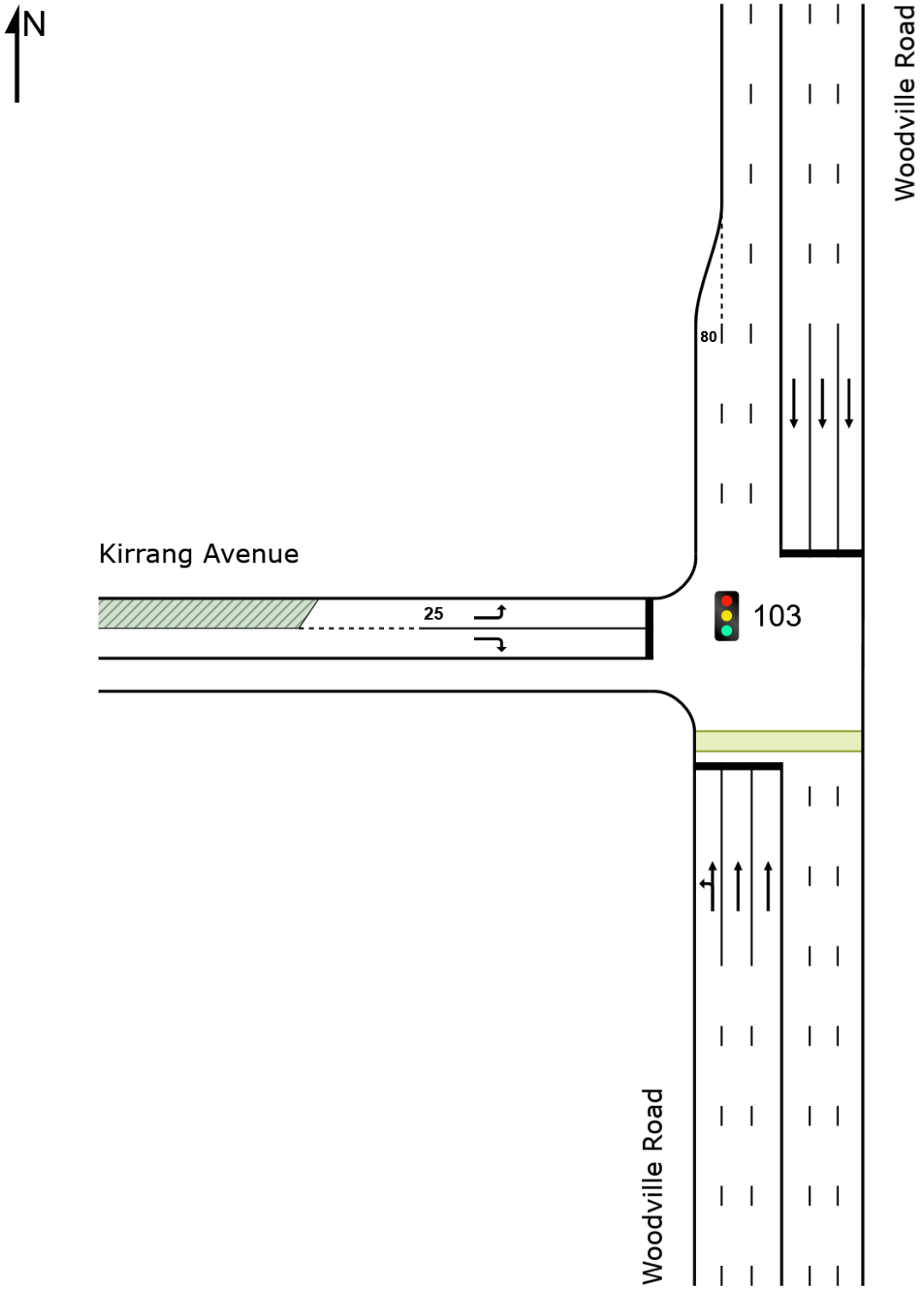
Network: 5 [2020 PM peak Without Dev (Network Folder: PM Peak)]

Woodville Road and Kirrang Avenue
Site Category: 2020 PM Peak Without Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

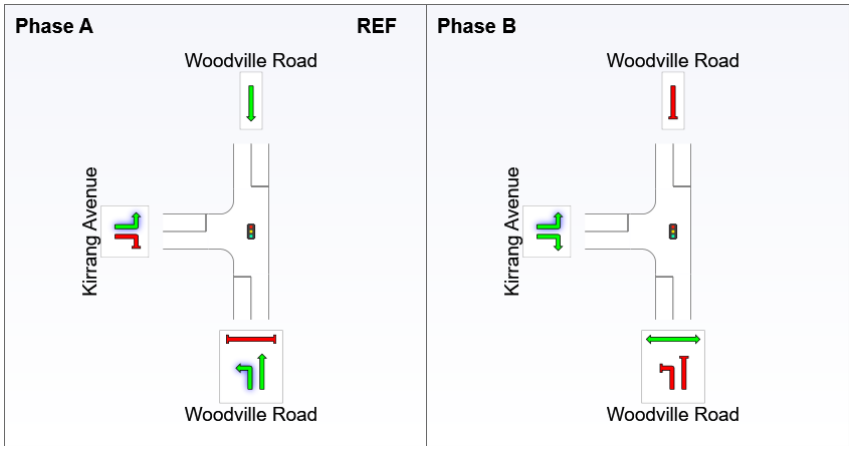
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


N
Woodville Road
80
Kirrang Avenue
25
103
Woodville Road

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
30	L2	51	0.0	51	0.0	0.354	9.6	LOS A	3.9	28.9	0.30	0.31	0.30	49.7
31	T1	1625	8.4	1625	8.4	* 0.802	9.5	LOS A	8.0	60.0	0.52	0.51	0.54	44.0
Approach		1676	8.2	1676	8.2	0.802	9.5	LOS A	8.0	60.0	0.52	0.50	0.53	44.3
North: Woodville Road														
25	T1	1874	8.0	1874	8.0	0.434	1.5	LOS A	3.6	26.8	0.10	0.09	0.10	57.9
Approach		1874	8.0	1874	8.0	0.434	1.5	LOS A	3.6	26.8	0.10	0.09	0.10	57.9
West: Kirrang Avenue														
27	L2	18	0.0	18	0.0	0.011	7.0	LOS A	0.2	1.1	0.09	0.55	0.09	44.1
29	R2	94	0.0	94	0.0	* 0.448	68.5	LOS E	3.8	26.3	0.98	0.78	0.98	25.1
Approach		112	0.0	112	0.0	0.448	58.6	LOS E	3.8	26.3	0.84	0.74	0.84	26.2
All Vehicles		3661	7.8	3661	7.8	0.802	6.9	LOS A	8.0	60.0	0.31	0.30	0.32	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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94
All Pedestrians		53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94

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.

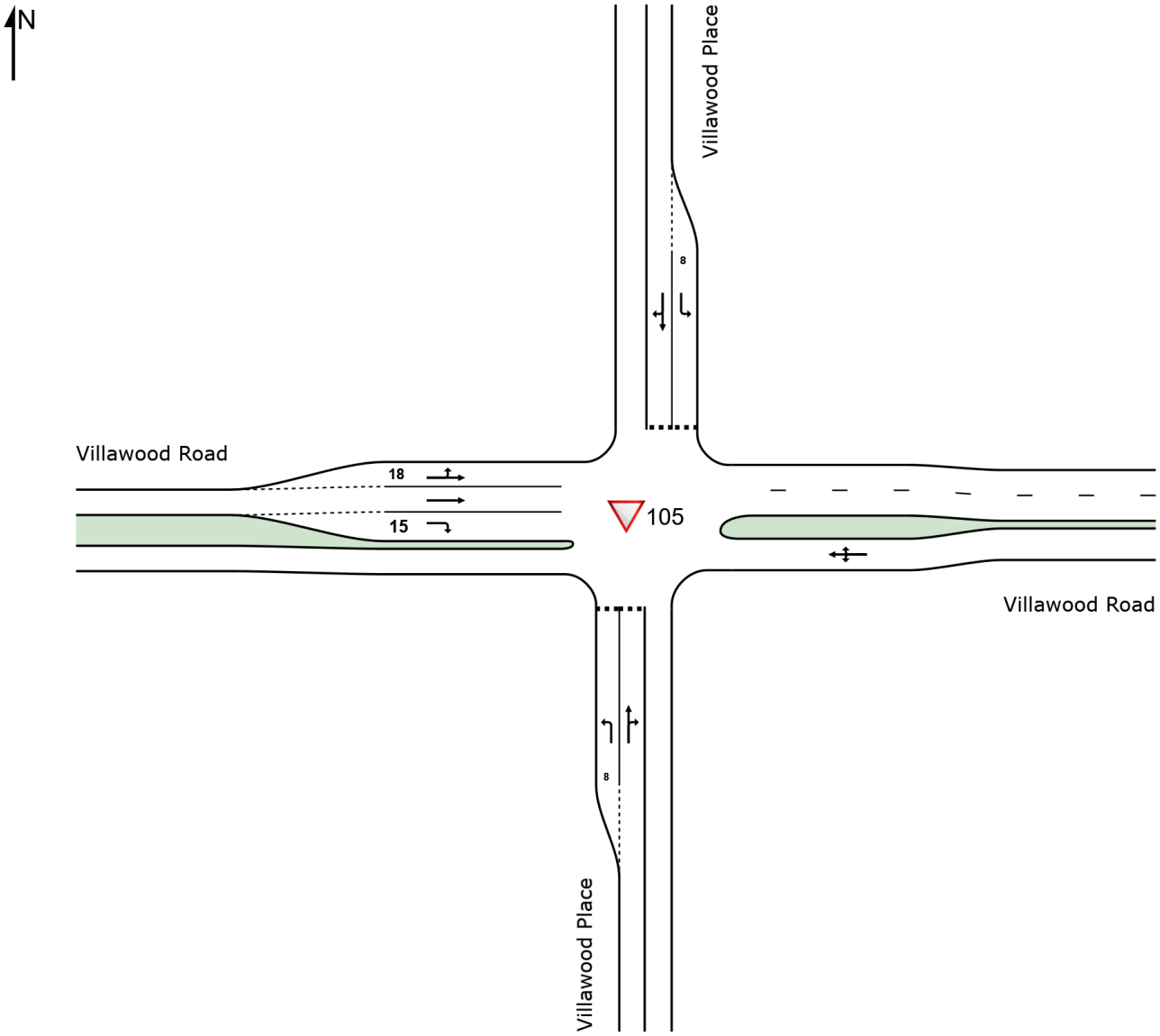
Site: 105 [Villawood Road and Villawood Place (Site Folder: 2020 Scenario - PM Peak | Without Kamira Ave Traffic)]

Network: 5 [2020 PM peak Without Dev (Network Folder: PM Peak)]

Villawood Road and Villawood Place
Site Category: 2020 PM Peak Without Dev
Give-Way (Two-Way)

Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Villawood Place														
1	L2	1	0.0	1	0.0	0.001	5.3	LOS A	0.0	0.0	0.28	0.47	0.28	44.7
2	T1	1	0.0	1	0.0	0.032	6.8	LOS A	0.1	0.4	0.44	0.60	0.44	39.5
3	R2	34	0.0	34	0.0	0.032	6.1	LOS A	0.1	0.4	0.44	0.60	0.44	36.9
Approach		36	0.0	36	0.0	0.032	6.1	LOS A	0.1	0.4	0.43	0.60	0.43	37.5
East: Villawood Road														
4	L2	33	0.0	32	0.0	0.212	6.4	LOS A	0.4	3.0	0.18	0.17	0.18	43.3
5	T1	204	2.6	203	2.6	0.212	1.0	LOS A	0.4	3.0	0.18	0.17	0.18	46.8
6	R2	65	0.0	65	0.0	0.212	6.6	LOS A	0.4	3.0	0.18	0.17	0.18	39.2
Approach		302	1.7	300 N1	1.8	0.212	2.8	NA	0.4	3.0	0.18	0.17	0.18	45.8
North: Villawood Place														
7	L2	49	0.0	49	0.0	0.043	5.2	LOS A	0.1	0.4	0.26	0.53	0.26	28.5
8	T1	1	0.0	1	0.0	0.003	6.8	LOS A	0.0	0.0	0.47	0.50	0.47	39.5
9	R2	1	0.0	1	0.0	0.003	5.8	LOS A	0.0	0.0	0.47	0.50	0.47	43.3
Approach		52	0.0	52	0.0	0.043	5.3	LOS A	0.1	0.4	0.27	0.53	0.27	30.1
West: Villawood Road														
10	L2	2	0.0	2	0.0	0.045	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	49.0
11	T1	171	3.1	171	3.1	0.045	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.9
12	R2	1	0.0	1	0.0	0.001	6.2	LOS A	0.0	0.0	0.38	0.49	0.38	44.0
Approach		174	3.0	174	3.0	0.045	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.8
All Vehicles		563	1.9	561 N1	1.9	0.212	2.4	NA	0.4	3.0	0.15	0.18	0.15	46.2

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

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.

Site: 101 [Woodville Road and Villawood Road and Llewellyn Avenue (Site Folder: 2020 Scenario - PM Peak | Without Kamira Ave Traffic)]

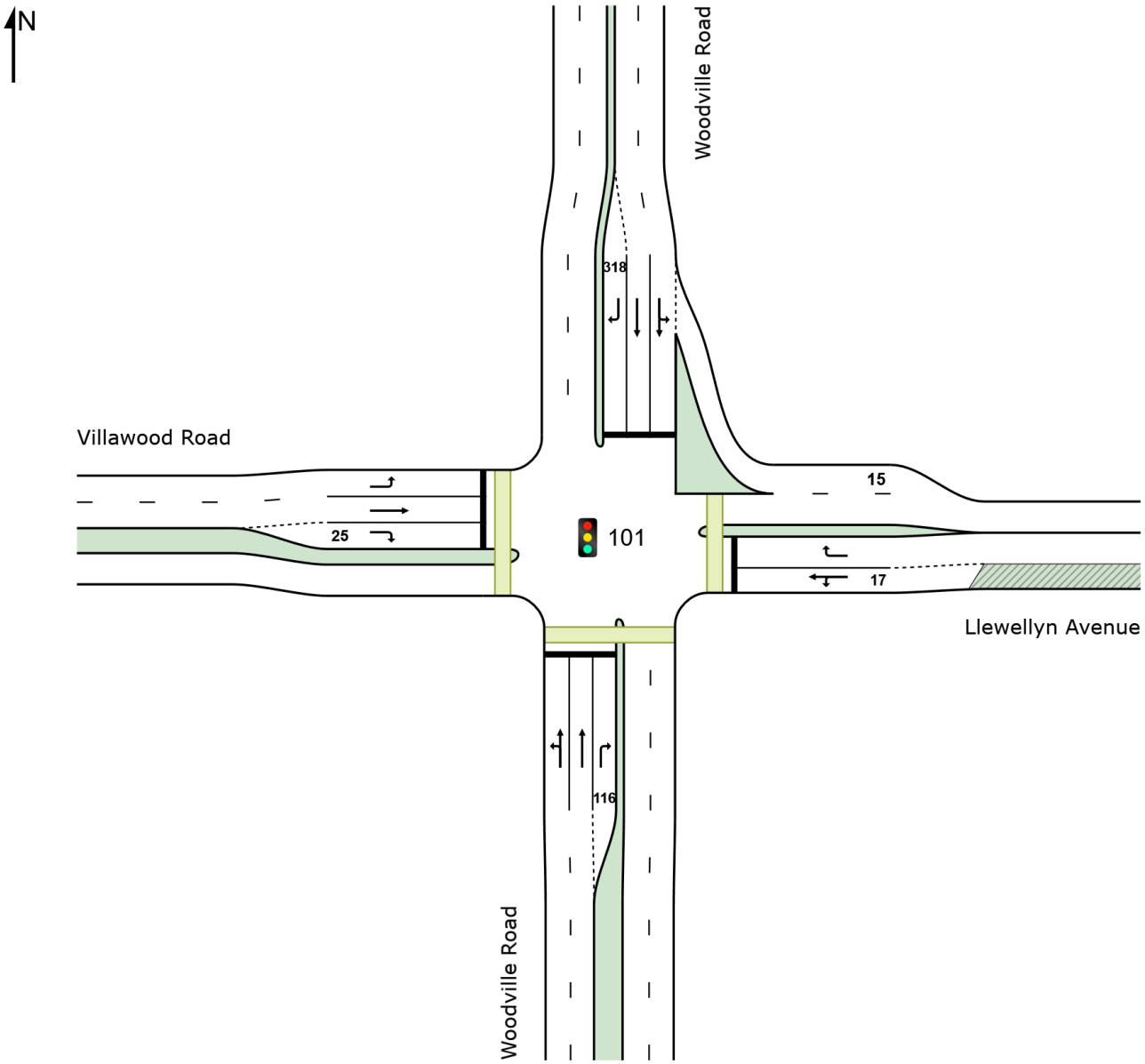
Network: 5 [2020 PM peak Without Dev (Network Folder: PM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2020 PM Peak Without Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default
Reference Phase: Phase A
Input Phase Sequence: A, B, D, E
Output Phase Sequence: A, B, D, E

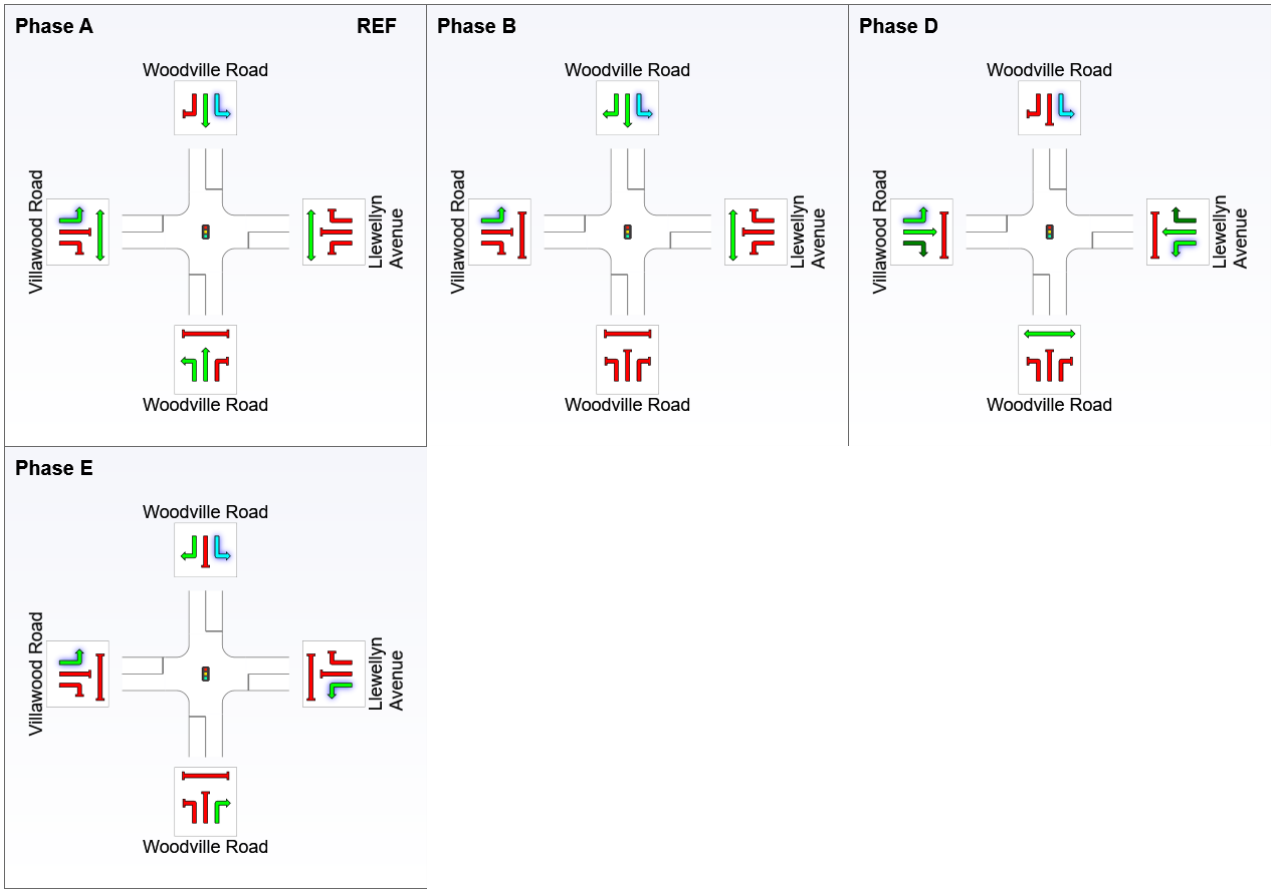
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	58	0.0	54	0.0	0.821	36.5	LOS C	24.2	181.0	0.90	0.83	0.90	16.5
31	T1	1568	8.6	1460	8.6	0.821	30.9	LOS C	24.2	181.0	0.90	0.83	0.91	35.3
32	R2	15	7.1	14	7.1	0.184	79.6	LOS F	0.6	4.4	0.99	0.69	0.99	18.4
Approach		1641	8.3	1528 N1	8.2	0.821	31.6	LOS C	24.2	181.0	0.90	0.83	0.91	34.6
East: Llewellyn Avenue														
21	L2	91	14.0	91	14.0	0.778	59.5	LOS E	6.7	50.2	0.90	0.86	1.05	18.2
5	T1	84	1.3	84	1.3	0.778	54.8	LOS D	6.7	50.2	0.90	0.86	1.05	18.2
23	R2	146	25.2	146	25.2	* 0.902	83.9	LOS F	7.0	59.9	0.95	1.04	1.41	23.6
Approach		321	15.7	321	15.7	0.902	69.4	LOS E	7.0	59.9	0.92	0.94	1.22	21.4
North: Woodville Road														
24	L2	84	18.8	84	18.8	0.838	27.9	LOS B	30.9	231.9	0.86	0.81	0.86	41.3
25	T1	1809	7.5	1809	7.5	* 0.838	22.4	LOS B	30.9	231.9	0.86	0.81	0.86	35.8
9	R2	159	2.6	159	2.6	* 0.827	50.0	LOS D	5.0	35.7	1.00	0.89	1.23	24.1
Approach		2053	7.6	2053	7.6	0.838	24.8	LOS B	30.9	231.9	0.87	0.82	0.89	34.9
West: Villawood Road														
10	L2	174	2.4	174	2.4	0.104	4.9	LOS A	0.3	2.5	0.10	0.56	0.10	49.6
11	T1	3	33.3	3	33.3	0.009	45.9	LOS D	0.1	0.9	0.81	0.53	0.81	22.7
12	R2	80	0.0	80	0.0	0.389	65.6	LOS E	3.1	22.0	0.96	0.77	0.96	4.6
Approach		257	2.0	257	2.0	0.389	24.3	LOS B	3.1	22.0	0.38	0.63	0.38	30.5
All Vehicles		4272	8.1	4159 N1	8.4	0.902	30.7	LOS C	30.9	231.9	0.86	0.82	0.89	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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.5	218.8	0.94
East: Llewellyn Avenue											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94
West: Villawood Road											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.1	218.1	0.94
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94

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.

Site: 102 [Woodville Road and Howatt Street and Binna Burra Street (Site Folder: 2020 Scenario - PM Peak | Without Kamira Ave Traffic)]

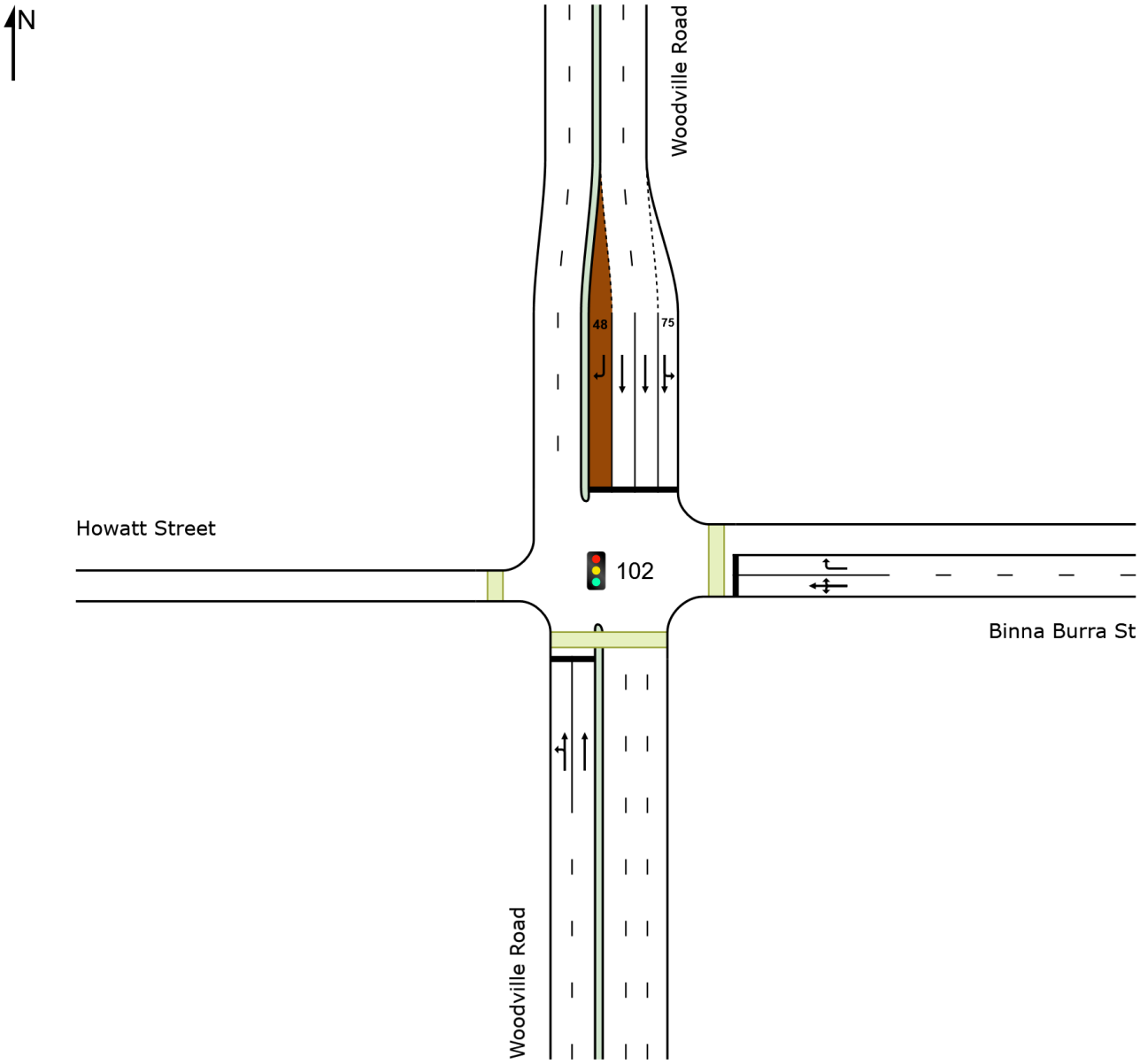
Network: 5 [2020 PM peak Without Dev (Network Folder: PM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2020 PM Peak Without Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

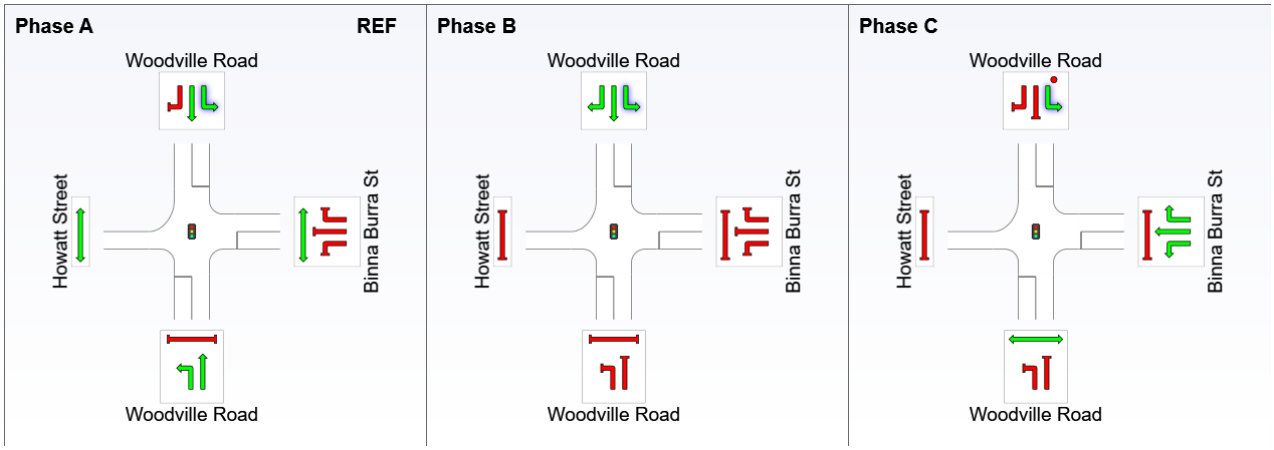
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	63	0.0	63	0.0	1.225	271.6	LOS F	36.1	270.0	1.00	2.03	2.40	4.2
31	T1	1566	8.6	1566	8.6	* 1.225	266.5	LOS F	36.1	270.0	1.00	2.05	2.40	3.5
Approach		1629	8.3	1629	8.3	1.225	266.7	LOS F	36.1	270.0	1.00	2.05	2.40	3.6
East: Binna Burra St														
21	L2	24	0.0	24	0.0	0.642	71.8	LOS F	4.3	31.1	1.00	0.82	1.05	3.3
5	T1	55	7.7	55	7.7	* 0.642	67.9	LOS E	4.3	31.1	1.00	0.82	1.05	6.3
23	R2	84	0.0	84	0.0	0.642	73.8	LOS F	4.3	31.1	1.00	0.83	1.09	3.2
Approach		163	2.6	163	2.6	0.642	71.5	LOS F	4.3	31.1	1.00	0.83	1.07	4.3
North: Woodville Road														
24	L2	141	1.5	141	1.5	0.448	7.3	LOS A	3.3	24.7	0.14	0.24	0.14	24.2
25	T1	1831	8.0	1831	8.0	0.448	1.9	LOS A	3.6	26.8	0.14	0.16	0.14	50.2
9	R2	13	100.0	13	100.0	* 0.276	83.9	LOS F	0.6	7.4	1.00	0.70	1.00	9.1
Approach		1984	8.1	1984	8.1	0.448	2.8	LOS A	3.6	26.8	0.15	0.17	0.15	44.3
All Vehicles		3777	7.9	3777	7.9	1.225	119.6	LOS F	36.1	270.0	0.55	1.01	1.16	6.1

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	231.3	217.2	0.94
East: Binna Burra St											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	226.9	211.4	0.93
West: Howatt Street											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	222.7	206.0	0.92
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	227.0	211.5	0.93

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.

USER REPORT FOR NETWORK SITE

All Movement Classes

Project: Modelling of Intersections - Copy

Template: Default Site User Report

Site: 103 [Woodville Road and Kirrang Avenue (Site Folder: 2020 Scenario - PM Peak | With Kamira Ave Traffic)]

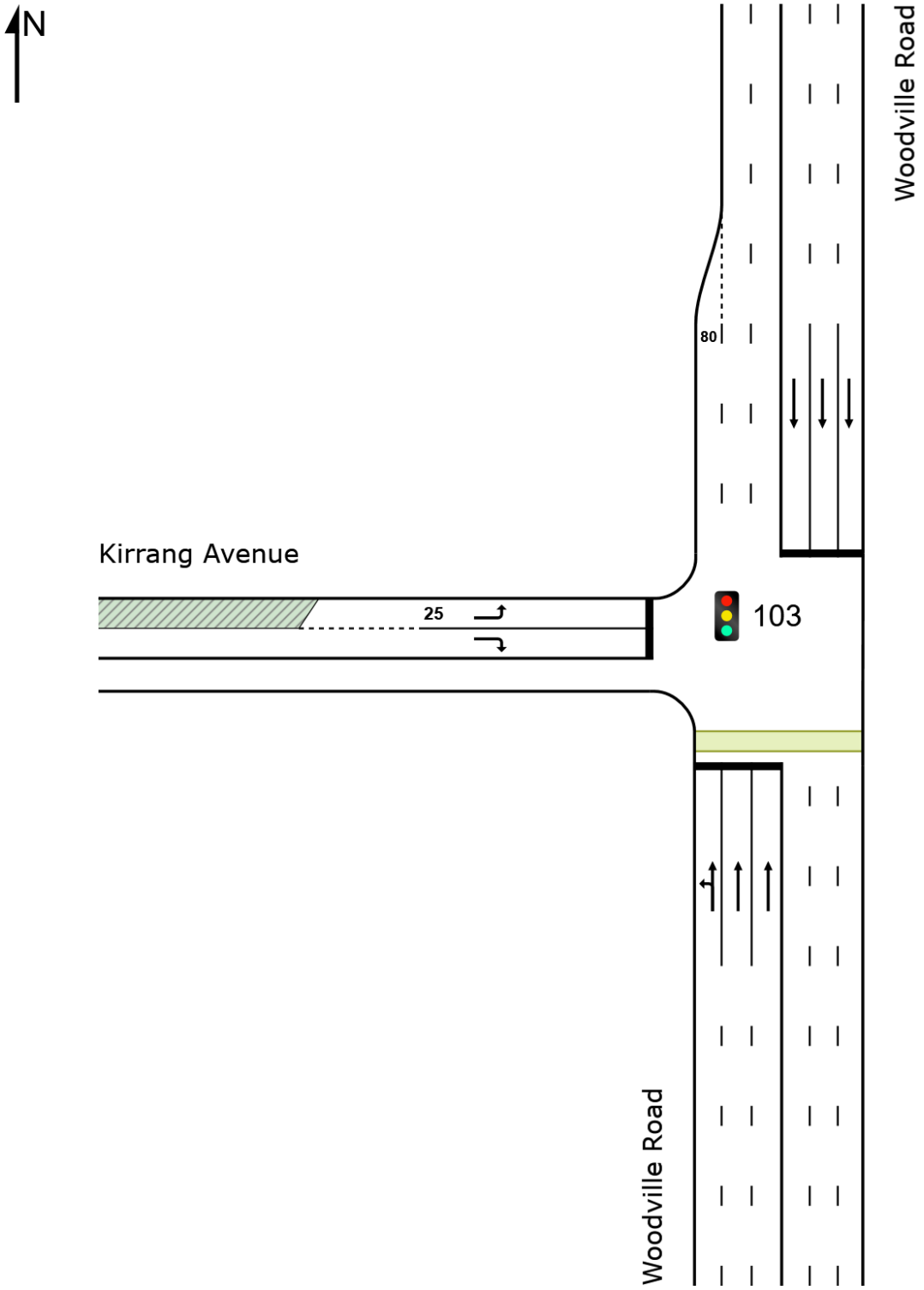
Network: 6 [2020 PM Peak With Dev (Network Folder: PM Peak)]

Woodville Road and Kirrang Avenue
Site Category: 2020 PM Peak With Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

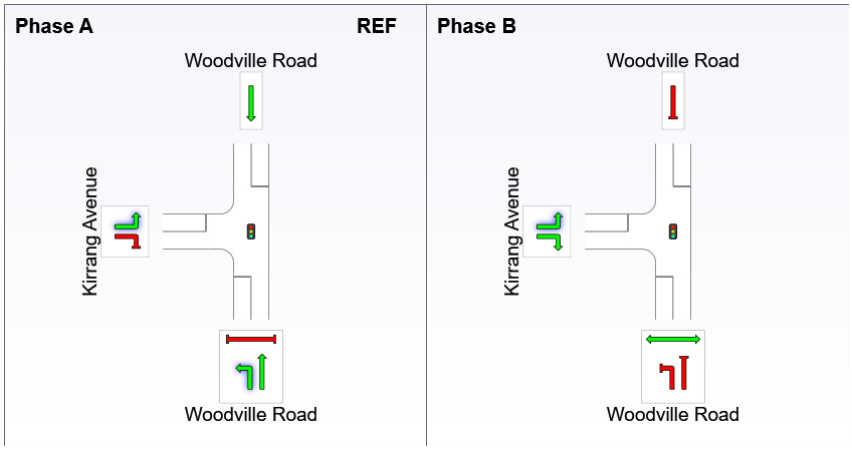
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


N
Woodville Road
80
Kirrang Avenue
25
103
Woodville Road

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
30	L2	173	0.0	173	0.0	0.389	9.8	LOS A	5.3	38.7	0.31	0.41	0.31	48.6
31	T1	1673	8.2	1673	8.2	* 0.882	22.7	LOS B	12.1	90.6	0.64	0.71	0.74	31.4
Approach		1845	7.4	1845	7.4	0.882	21.5	LOS B	12.1	90.6	0.61	0.68	0.70	33.6
North: Woodville Road														
25	T1	1902	7.9	1902	7.9	0.440	1.0	LOS A	2.9	21.9	0.07	0.07	0.07	58.5
Approach		1902	7.9	1902	7.9	0.440	1.0	LOS A	2.9	21.9	0.07	0.07	0.07	58.5
West: Kirrang Avenue														
27	L2	18	0.0	18	0.0	0.011	7.1	LOS A	0.2	1.7	0.09	0.55	0.09	44.1
29	R2	175	0.0	175	0.0	* 0.876	81.4	LOS F	8.1	56.6	1.00	0.96	1.31	22.8
Approach		193	0.0	193	0.0	0.876	74.5	LOS F	8.1	56.6	0.92	0.92	1.20	23.4
All Vehicles		3940	7.3	3940	7.3	0.882	14.2	LOS A	12.1	90.6	0.37	0.40	0.42	42.4

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94
All Pedestrians		53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94

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.

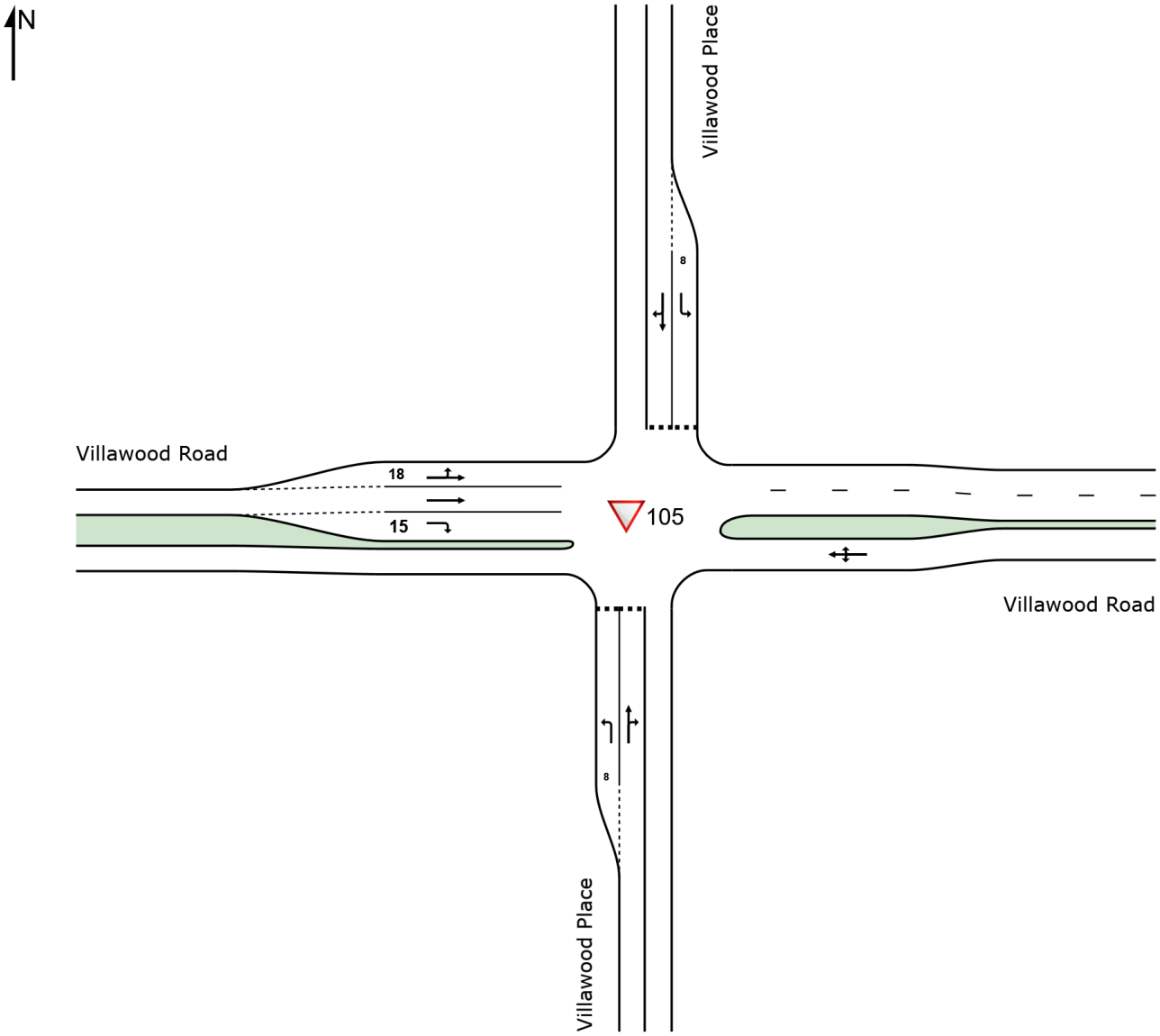
Site: 105 [Villawood Road and Villawood Place (Site Folder: 2020 Scenario - PM Peak | With Kamira Ave Traffic)]

Network: 6 [2020 PM Peak With Dev (Network Folder: PM Peak)]

Villawood Road and Villawood Place
Site Category: 2020 PM Peak With Dev
Give-Way (Two-Way)

Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Villawood Place														
1	L2	1	0.0	1	0.0	0.001	5.7	LOS A	0.0	0.0	0.35	0.48	0.35	44.4
2	T1	1	0.0	1	0.0	0.039	9.1	LOS A	0.1	0.4	0.52	0.67	0.52	38.3
3	R2	34	0.0	34	0.0	0.039	7.0	LOS A	0.1	0.4	0.52	0.67	0.52	35.5
Approach		36	0.0	36	0.0	0.039	7.1	LOS A	0.1	0.4	0.52	0.66	0.52	36.2
East: Villawood Road														
4	L2	33	0.0	32	0.0	0.280	8.3	LOS A	0.6	4.4	0.26	0.14	0.26	42.4
5	T1	306	1.7	304	1.7	0.280	1.8	LOS A	0.6	4.4	0.26	0.14	0.26	46.3
6	R2	65	0.0	65	0.0	0.280	8.8	LOS A	0.6	4.4	0.26	0.14	0.26	37.9
Approach		404	1.3	400 N1	1.3	0.280	3.4	NA	0.6	4.4	0.26	0.14	0.26	45.5
North: Villawood Place														
7	L2	49	0.0	49	0.0	0.049	5.7	LOS A	0.1	0.5	0.35	0.57	0.35	27.8
8	T1	1	0.0	1	0.0	0.003	9.1	LOS A	0.0	0.0	0.56	0.56	0.56	37.6
9	R2	1	0.0	1	0.0	0.003	6.6	LOS A	0.0	0.0	0.56	0.56	0.56	42.0
Approach		52	0.0	52	0.0	0.049	5.8	LOS A	0.1	0.5	0.36	0.57	0.36	29.2
West: Villawood Road														
10	L2	2	0.0	2	0.0	0.075	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	49.1
11	T1	287	1.8	287	1.8	0.075	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
12	R2	1	0.0	1	0.0	0.002	7.1	LOS A	0.0	0.0	0.46	0.51	0.46	43.4
Approach		291	1.8	291	1.8	0.075	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.9
All Vehicles		782	1.3	778 N1	1.4	0.280	2.5	NA	0.6	4.4	0.18	0.14	0.18	46.4

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.
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.
Delay Model: SIDRA Standard (Geometric Delay is included).
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.

Site: 101 [Woodville Road and Villawood Road and Llewellyn Avenue (Site Folder: 2020 Scenario - PM Peak | With Kamira Ave Traffic)]

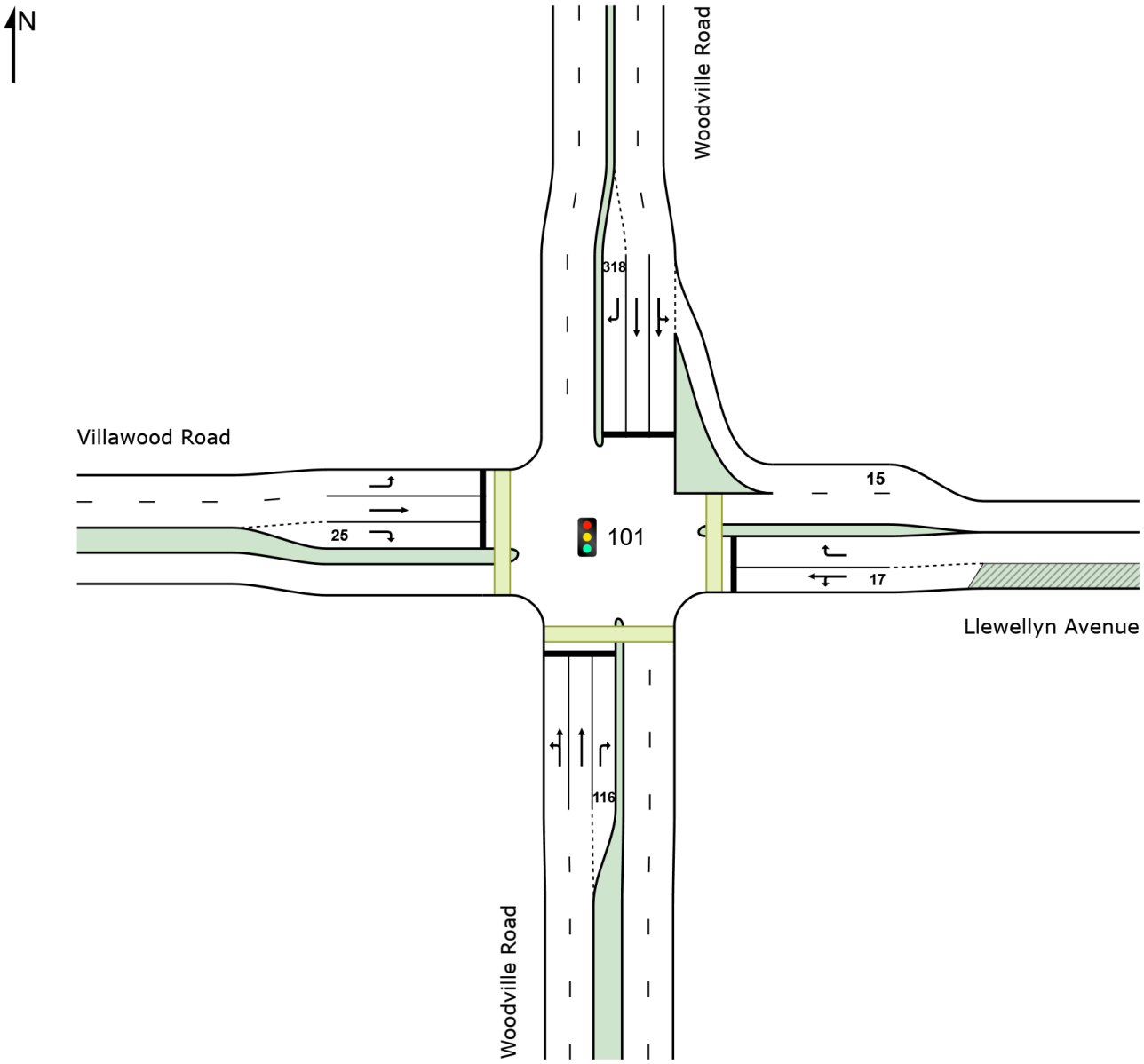
Network: 6 [2020 PM Peak With Dev (Network Folder: PM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2020 PM Peak With Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import
Reference Phase: Phase A
Input Phase Sequence: A, B, D, E
Output Phase Sequence: A, B, D, E

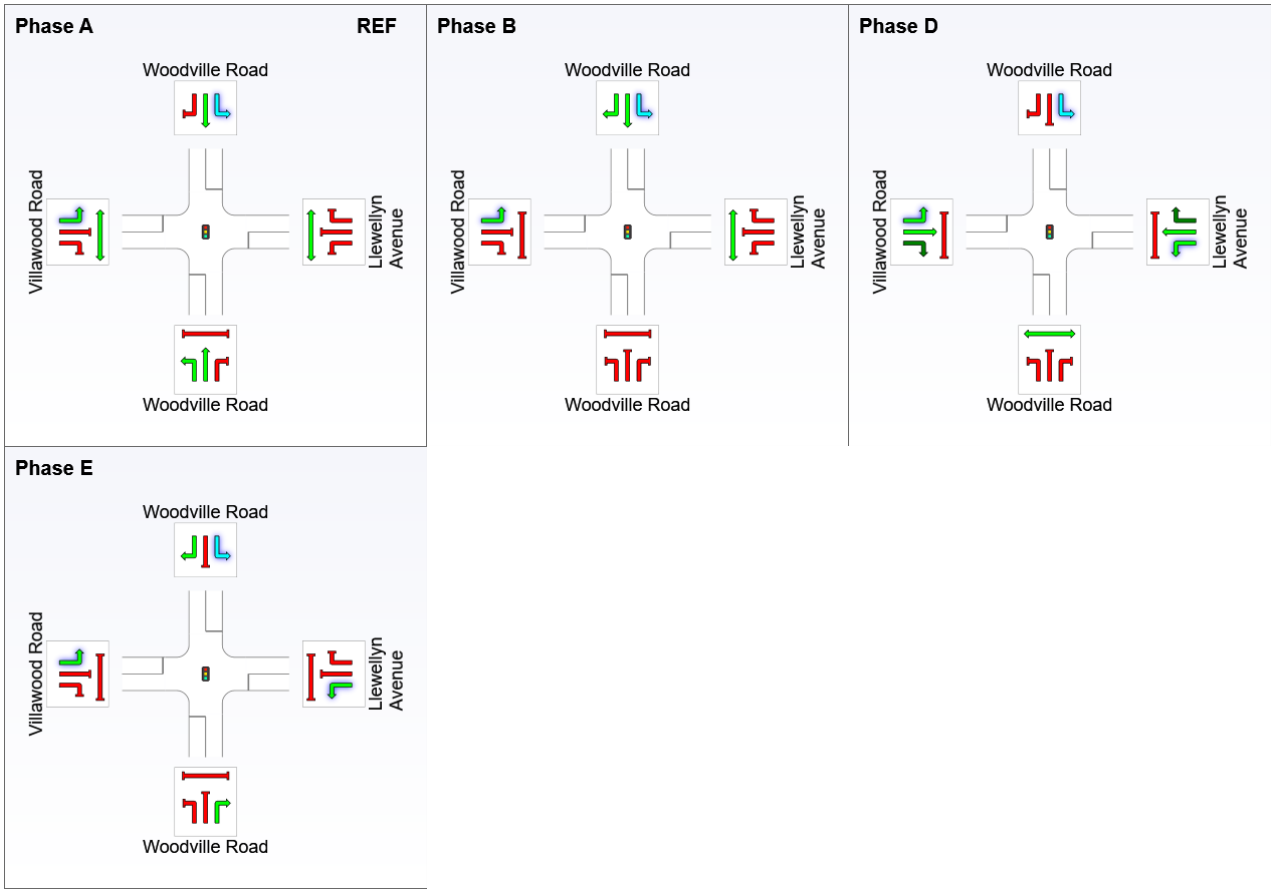
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	71	0.0	65	0.0	0.888	49.6	LOS D	24.2	181.0	0.98	0.97	1.07	12.7
31	T1	1568	8.6	1435	8.6	* 0.888	44.7	LOS D	24.2	181.0	0.98	0.97	1.07	29.8
32	R2	15	7.1	13	7.1	0.155	77.8	LOS F	0.6	4.2	0.99	0.69	0.99	18.7
Approach		1654	8.2	1513 N1	8.2	0.888	45.2	LOS D	24.2	181.0	0.98	0.97	1.07	29.2
East: Llewellyn Avenue														
21	L2	91	14.0	91	14.0	0.806	61.2	LOS E	7.1	52.7	0.89	0.89	1.09	17.9
5	T1	89	1.2	89	1.2	0.806	56.5	LOS E	7.1	52.7	0.89	0.89	1.09	17.9
23	R2	146	25.2	146	25.2	* 0.938	95.8	LOS F	7.6	64.9	0.96	1.10	1.53	21.9
Approach		326	15.5	326	15.5	0.938	75.4	LOS F	7.6	64.9	0.92	0.98	1.29	20.3
North: Woodville Road														
24	L2	84	18.8	84	18.8	0.858	30.6	LOS C	32.6	244.9	0.89	0.85	0.90	40.0
25	T1	1809	7.5	1809	7.5	0.858	25.2	LOS B	32.6	244.9	0.90	0.85	0.91	34.1
9	R2	244	1.7	244	1.7	* 0.947	65.3	LOS E	9.0	63.6	1.00	1.01	1.44	20.4
Approach		2138	7.3	2138	7.3	0.947	30.0	LOS C	32.6	244.9	0.91	0.86	0.97	32.0
West: Villawood Road														
10	L2	253	1.7	253	1.7	0.150	4.9	LOS A	0.5	3.7	0.11	0.56	0.11	49.7
11	T1	7	14.3	7	14.3	0.019	45.1	LOS D	0.2	1.9	0.81	0.55	0.81	22.9
12	R2	114	0.0	114	0.0	0.539	67.0	LOS E	4.6	31.9	0.98	0.80	0.98	4.5
Approach		374	1.4	374	1.4	0.539	24.6	LOS B	4.6	31.9	0.39	0.63	0.39	30.5
All Vehicles		4492	7.7	4351 N1	8.0	0.947	38.2	LOS C	32.6	244.9	0.89	0.89	0.98	29.4

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.5	218.8	0.94
East: Llewellyn Avenue											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94
West: Villawood Road											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.1	218.1	0.94
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94

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.

Site: 102 [Woodville Road and Howatt Street and Binna Burra Street (Site Folder: 2020 Scenario - PM Peak | With Kamira Ave Traffic)]

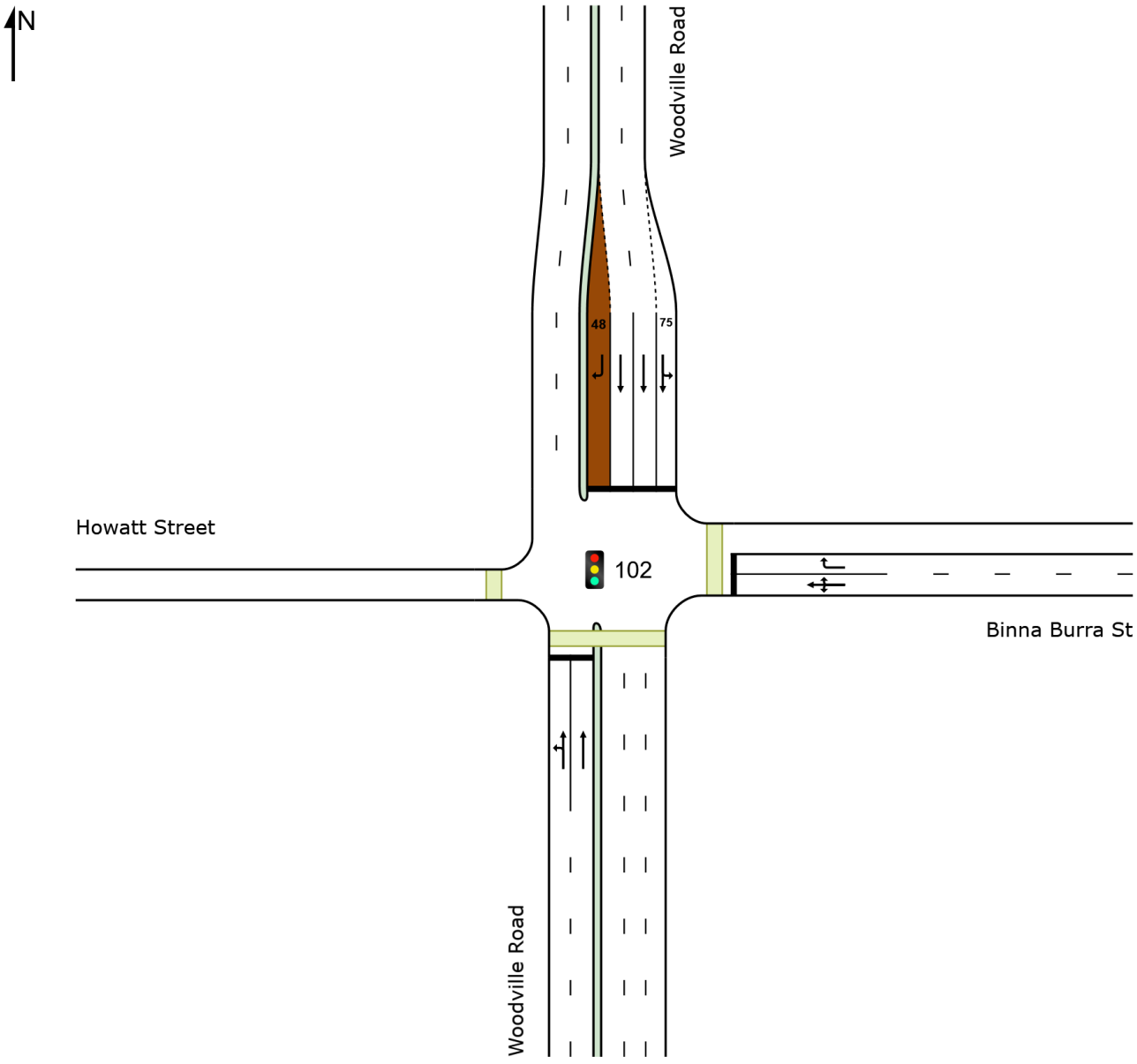
Network: 6 [2020 PM Peak With Dev (Network Folder: PM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2020 PM Peak With Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

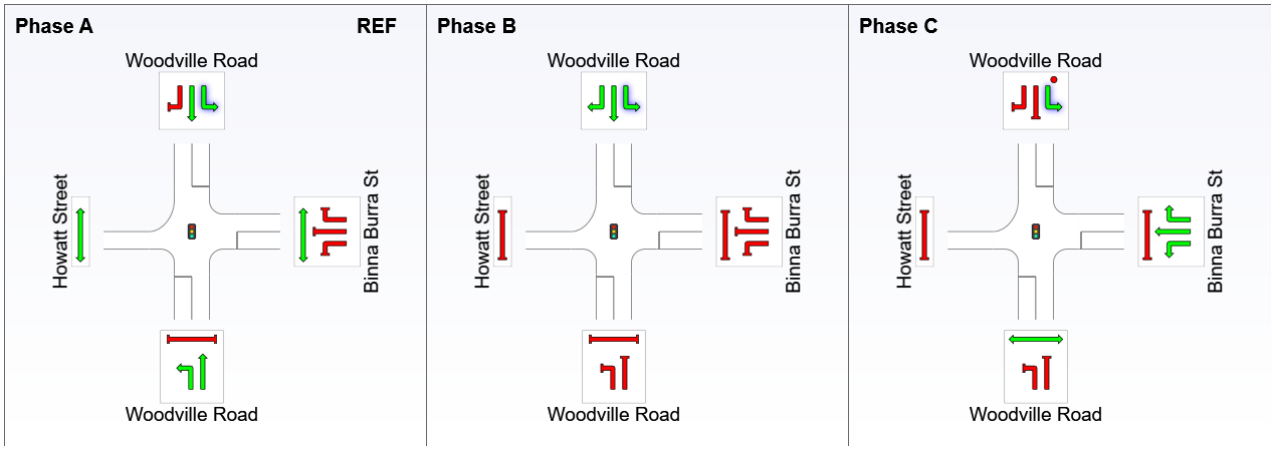
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	102	0.0	102	0.0	1.245	288.6	LOS F	36.2	270.0	1.00	2.06	2.47	3.9
31	T1	1574	8.6	1574	8.6	* 1.245	283.7	LOS F	36.2	270.0	1.00	2.10	2.48	3.3
Approach		1676	8.0	1676	8.0	1.245	284.0	LOS F	36.2	270.0	1.00	2.09	2.48	3.4
East: Binna Burra St														
21	L2	24	0.0	24	0.0	0.671	72.5	LOS F	4.5	32.4	1.00	0.84	1.07	3.3
5	T1	56	7.5	56	7.5	* 0.671	68.7	LOS E	4.5	32.4	1.00	0.84	1.07	6.2
23	R2	89	0.0	89	0.0	0.671	74.6	LOS F	4.5	32.4	1.00	0.85	1.12	3.1
Approach		169	2.5	169	2.5	0.671	72.3	LOS F	4.5	32.4	1.00	0.84	1.10	4.2
North: Woodville Road														
24	L2	145	1.4	145	1.4	0.455	7.6	LOS A	3.9	28.8	0.16	0.25	0.16	24.0
25	T1	1860	7.9	1860	7.9	0.455	2.2	LOS A	4.3	31.9	0.16	0.18	0.16	49.1
9	R2	13	100.0	13	100.0	* 0.276	83.9	LOS F	0.6	7.4	1.00	0.70	1.00	9.1
Approach		2018	8.0	2018	8.0	0.455	3.1	LOS A	4.3	31.9	0.17	0.19	0.17	43.5
All Vehicles		3863	7.8	3863	7.8	1.245	128.0	LOS F	36.2	270.0	0.57	1.04	1.21	5.8

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	231.3	217.2	0.94
East: Binna Burra St											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	226.9	211.4	0.93
West: Howatt Street											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	222.7	206.0	0.92
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	227.0	211.5	0.93

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.

USER REPORT FOR NETWORK SITE

All Movement Classes

Project: Modelling of Intersections - Copy

Template: Default Site User Report

Site: 103 [Woodville Road and Kirrang Avenue (Site Folder: 2031 Scenario - AM Peak | Without Kamira Ave Traffic)]

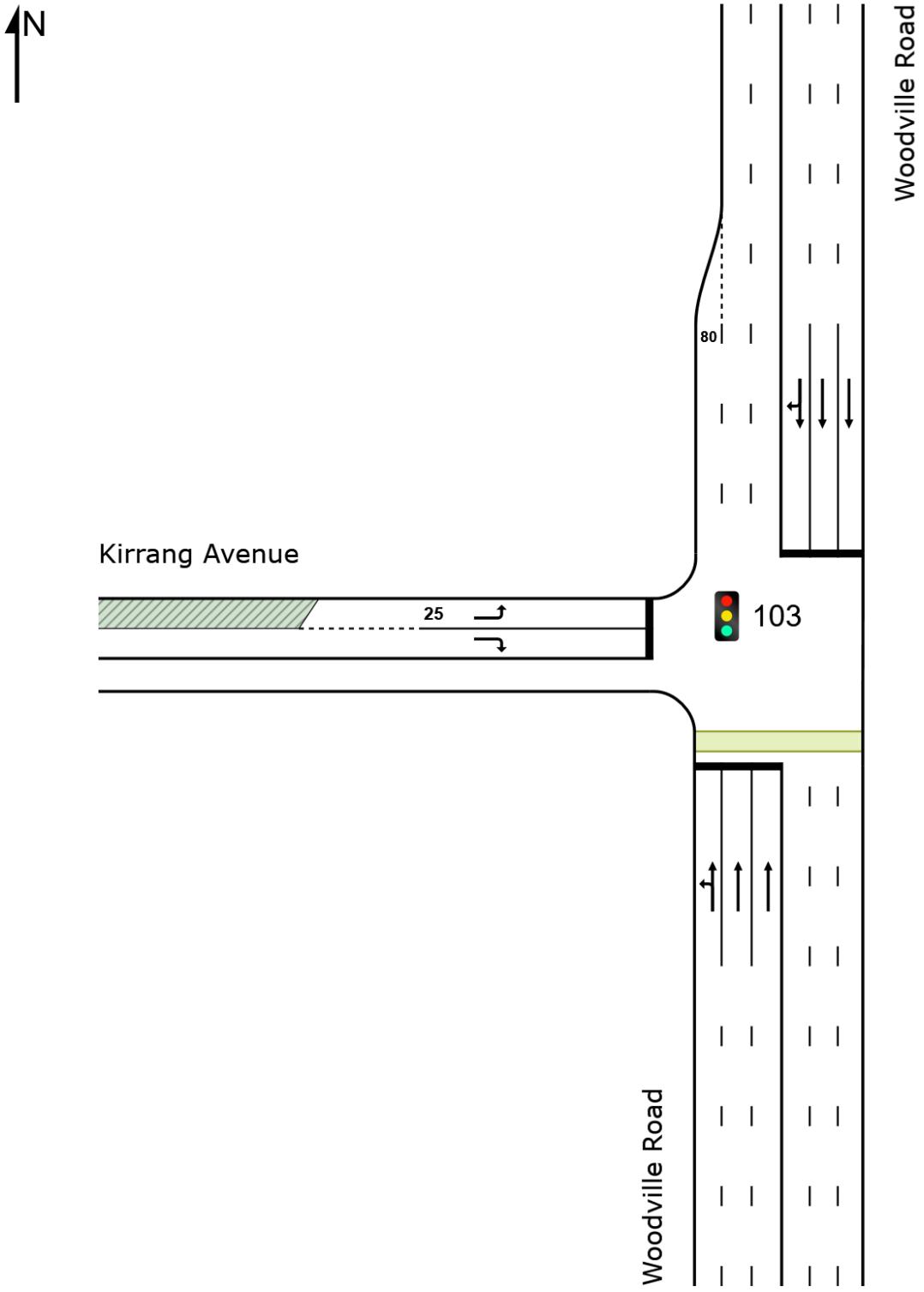
Network: 3 [2031 AM Peak Without Dev (Network Folder: AM Peak)]

Woodville Road and Kirrang Avenue
Site Category: 2031 AM Peak Without Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

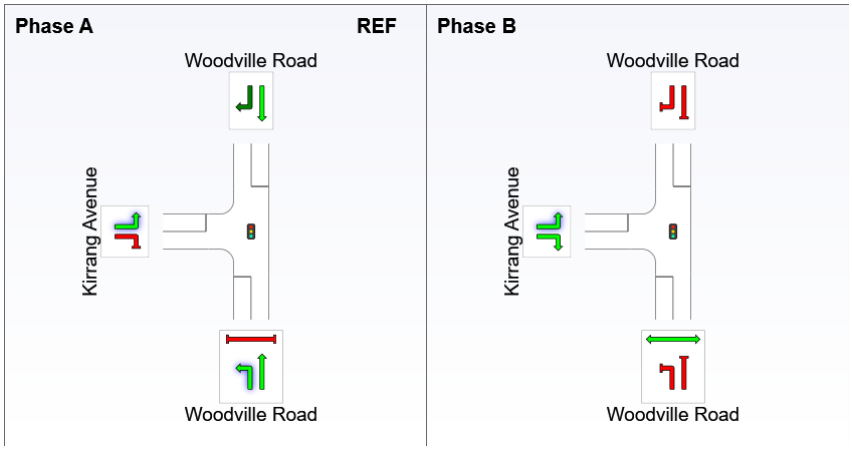
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


N
Woodville Road
80
Kirrang Avenue
25
103
Woodville Road

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
30	L2	17	0.0	17	0.0	0.265	10.4	LOS A	4.3	31.9	0.31	0.29	0.31	49.4
31	T1	1898	6.9	1898	6.9	0.600	7.3	LOS A	13.5	100.1	0.43	0.41	0.43	47.1
Approach		1915	6.9	1915	6.9	0.600	7.3	LOS A	13.5	100.1	0.43	0.40	0.43	47.1
North: Woodville Road														
25	T1	1927	11.3	1927	11.3	0.510	3.2	LOS A	7.0	53.5	0.20	0.18	0.20	55.6
26	R2	13	0.0	13	0.0	* 0.510	8.3	LOS A	3.5	26.9	0.17	0.16	0.17	49.8
Approach		1940	11.2	1940	11.2	0.510	3.2	LOS A	7.0	53.5	0.20	0.18	0.20	55.6
West: Kirrang Avenue														
27	L2	8	0.0	8	0.0	0.005	7.8	LOS A	0.0	0.1	0.09	0.54	0.09	44.1
29	R2	208	12.1	208	12.1	* 0.886	81.2	LOS F	9.8	75.7	1.00	0.97	1.31	22.7
Approach		217	11.7	217	11.7	0.886	78.4	LOS F	9.8	75.7	0.96	0.96	1.26	23.0
All Vehicles		4072	9.2	4072	9.2	0.886	9.2	LOS A	13.5	100.1	0.35	0.33	0.36	47.1

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94
All Pedestrians		53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94

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.

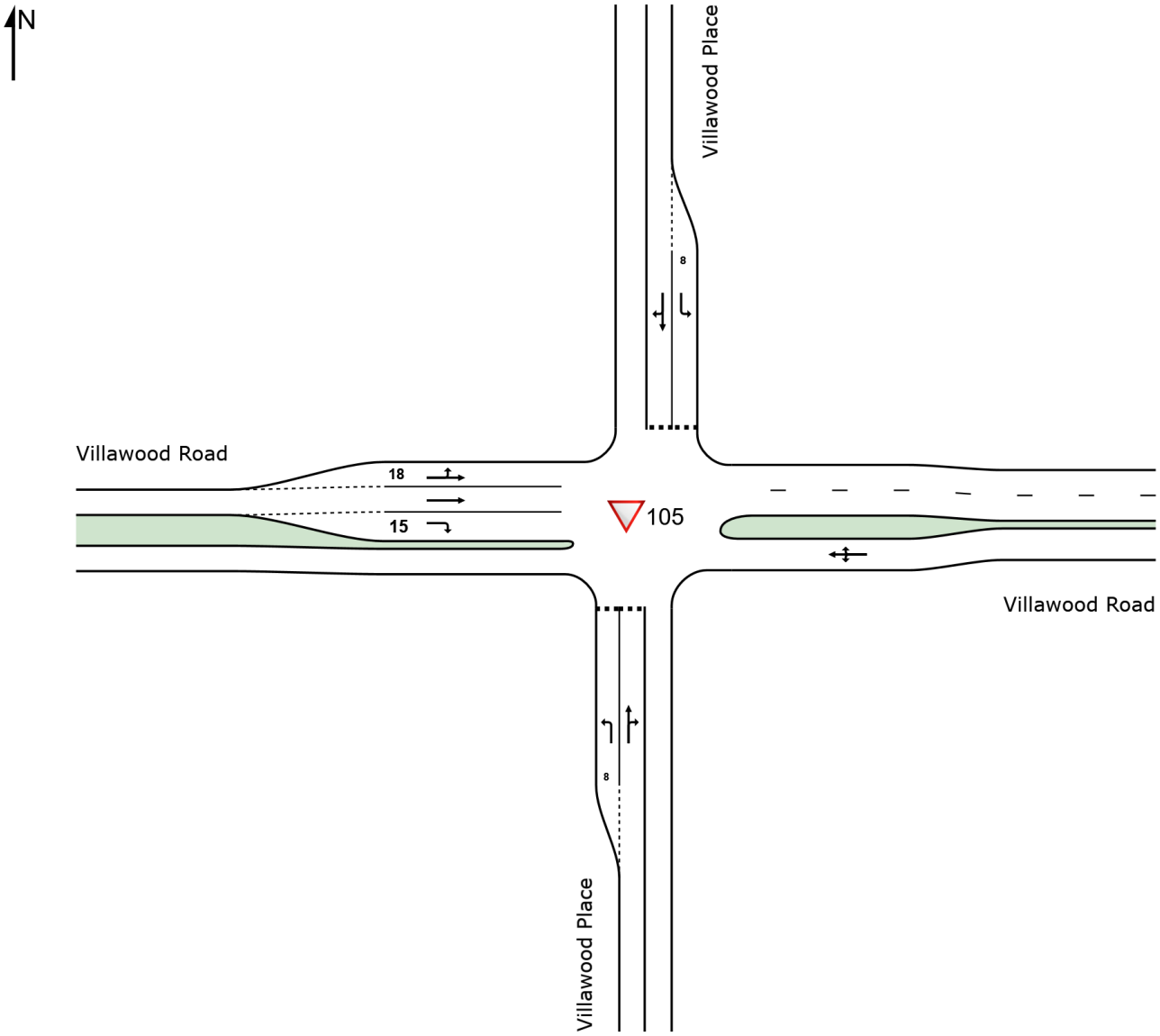
Site: 105 [Villawood Road and Villawood Place (Site Folder: 2031 Scenario - AM Peak | Without Kamira Ave Traffic)]

Network: 3 [2031 AM Peak Without Dev (Network Folder: AM Peak)]

Villawood Road and Villawood Place
Site Category: 2031 AM Peak Without Dev
Give-Way (Two-Way)

Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Villawood Place														
1	L2	1	0.0	1	0.0	0.001	4.6	LOS A	0.0	0.0	0.08	0.50	0.08	45.3
2	T1	1	0.0	1	0.0	0.018	4.3	LOS A	0.0	0.2	0.23	0.52	0.23	40.6
3	R2	25	0.0	25	0.0	0.018	5.0	LOS A	0.0	0.2	0.23	0.52	0.23	38.2
Approach		27	0.0	27	0.0	0.018	4.9	LOS A	0.0	0.2	0.22	0.52	0.22	39.0
East: Villawood Road														
4	L2	6	0.0	6	0.0	0.038	5.1	LOS A	0.1	0.5	0.13	0.26	0.13	42.6
5	T1	23	31.8	23	31.8	0.038	0.4	LOS A	0.1	0.5	0.13	0.26	0.13	46.4
6	R2	18	0.0	18	0.0	0.038	5.2	LOS A	0.1	0.5	0.13	0.26	0.13	38.2
Approach		47	15.6	47	15.6	0.038	2.8	NA	0.1	0.5	0.13	0.26	0.13	44.3
North: Villawood Place														
7	L2	35	0.0	35	0.0	0.028	4.8	LOS A	0.0	0.3	0.15	0.50	0.15	29.5
8	T1	1	0.0	1	0.0	0.002	4.3	LOS A	0.0	0.0	0.22	0.45	0.22	41.1
9	R2	1	0.0	1	0.0	0.002	4.8	LOS A	0.0	0.0	0.22	0.45	0.22	44.3
Approach		37	0.0	37	0.0	0.028	4.8	LOS A	0.0	0.3	0.15	0.50	0.15	31.7
West: Villawood Road														
10	L2	1	0.0	1	0.0	0.018	4.6	LOS A	0.0	0.0	0.00	0.02	0.00	49.0
11	T1	65	9.7	65	9.7	0.018	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	49.9
12	R2	1	0.0	1	0.0	0.001	4.8	LOS A	0.0	0.0	0.12	0.50	0.12	44.9
Approach		67	9.4	67	9.4	0.018	0.2	NA	0.0	0.0	0.00	0.02	0.00	49.7
All Vehicles		179	7.6	179	7.6	0.038	2.5	NA	0.1	0.5	0.10	0.26	0.10	45.0

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Woodville Road and Villawood Road and Llewellyn Avenue (Site Folder: 2031 Scenario - AM Peak | Without Kamira Ave Traffic)]

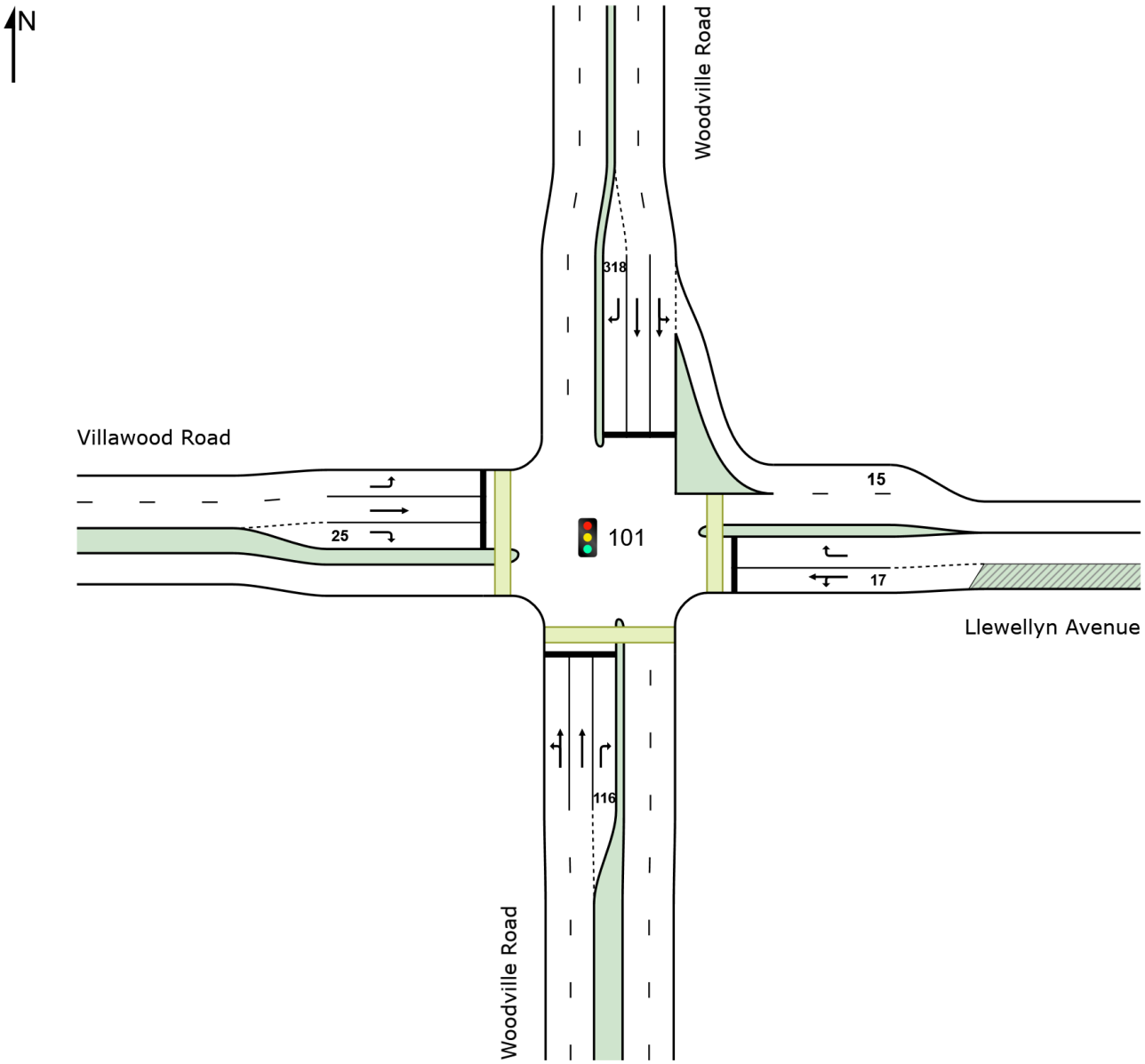
Network: 3 [2031 AM Peak Without Dev (Network Folder: AM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2031 AM Peak Without Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import - Import
Reference Phase: Phase A
Input Phase Sequence: A, C, D, E
Output Phase Sequence: A, C, D, E

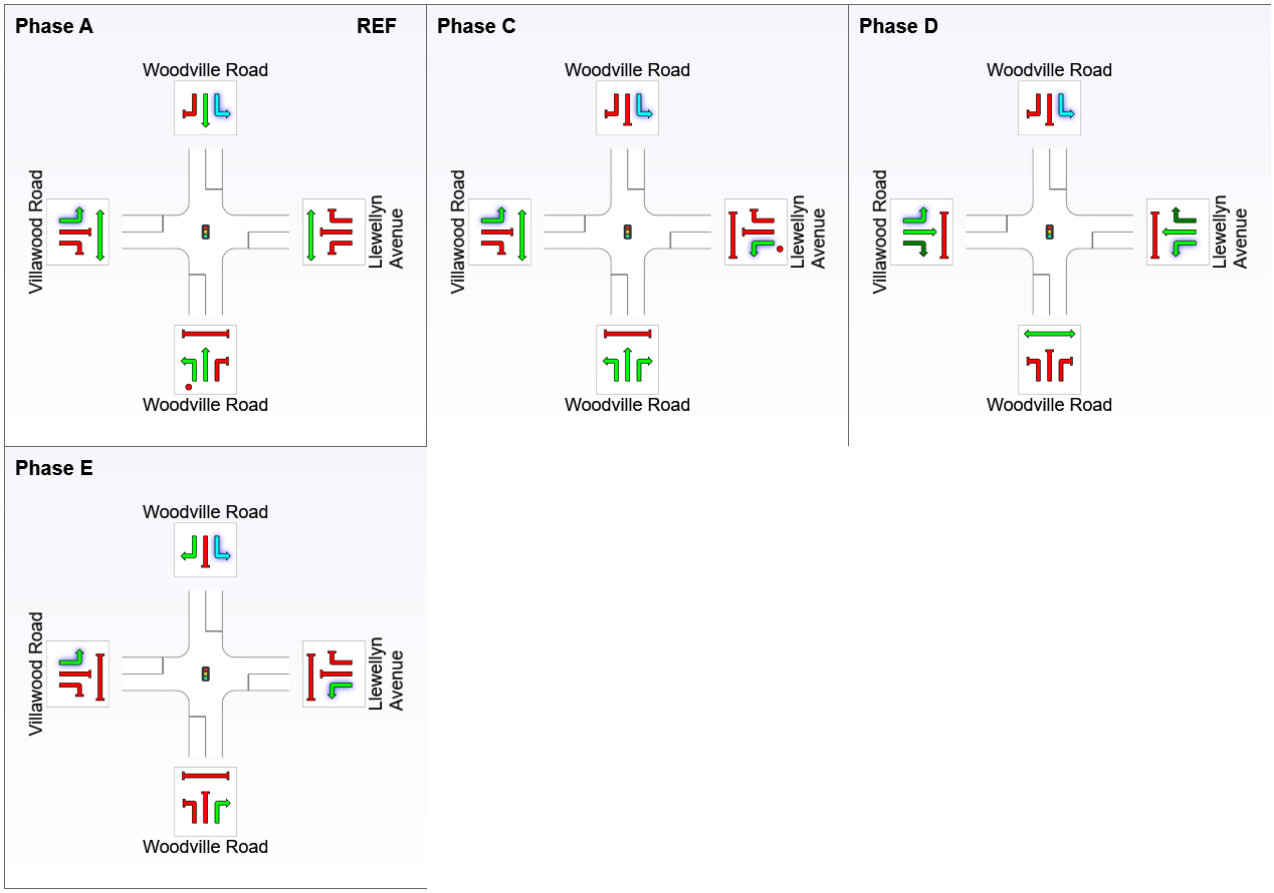
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	16	0.0	16	0.0	* 0.727	7.2	LOS A	4.4	32.6	0.13	0.12	0.13	52.2
31	T1	1891	7.0	1891	7.0	0.727	3.3	LOS A	10.9	81.0	0.22	0.21	0.22	55.8
32	R2	47	4.4	47	4.4	0.312	51.6	LOS D	1.6	11.8	1.00	0.74	1.00	23.8
Approach		1954	6.8	1954	6.8	0.727	4.5	LOS A	10.9	81.0	0.23	0.22	0.23	54.3
East: Llewellyn Avenue														
21	L2	18	35.3	18	35.3	0.069	51.5	LOS D	0.7	6.7	0.83	0.67	0.83	19.6
5	T1	3	33.3	3	33.3	0.069	46.6	LOS D	0.7	6.7	0.83	0.67	0.83	19.6
23	R2	85	51.9	85	51.9	* 0.651	72.5	LOS F	3.6	36.4	1.00	0.83	1.07	25.3
Approach		106	48.5	106	48.5	0.651	68.2	LOS E	3.6	36.4	0.96	0.80	1.02	24.6
North: Woodville Road														
24	L2	123	16.2	123	16.2	0.895	35.0	LOS C	38.8	299.5	0.92	0.91	0.97	38.1
25	T1	1900	11.5	1900	11.5	* 0.895	29.6	LOS C	38.8	299.5	0.92	0.91	0.98	31.7
9	R2	28	22.2	28	22.2	* 0.420	81.9	LOS F	1.3	10.5	1.00	0.72	1.00	17.5
Approach		2052	11.9	2052	11.9	0.895	30.6	LOS C	38.8	299.5	0.93	0.91	0.98	31.9
West: Villawood Road														
10	L2	39	13.5	39	13.5	0.025	4.9	LOS A	0.1	0.6	0.09	0.55	0.09	49.0
11	T1	8	0.0	8	0.0	0.038	59.5	LOS E	0.3	2.2	0.92	0.62	0.92	19.5
12	R2	76	1.4	76	1.4	0.562	74.7	LOS F	3.2	22.7	1.00	0.77	1.00	4.0
Approach		123	5.1	123	5.1	0.562	51.6	LOS D	3.2	22.7	0.71	0.69	0.71	14.7
All Vehicles		4235	10.3	4235	10.3	0.895	20.1	LOS B	38.8	299.5	0.60	0.58	0.63	39.3

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.5	218.8	0.94
East: Llewellyn Avenue											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94
West: Villawood Road											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.1	218.1	0.94
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94

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.

Site: 102 [Woodville Road and Howatt Street and Binna Burra Street (Site Folder: 2031 Scenario - AM Peak | Without Kamira Ave Traffic)]

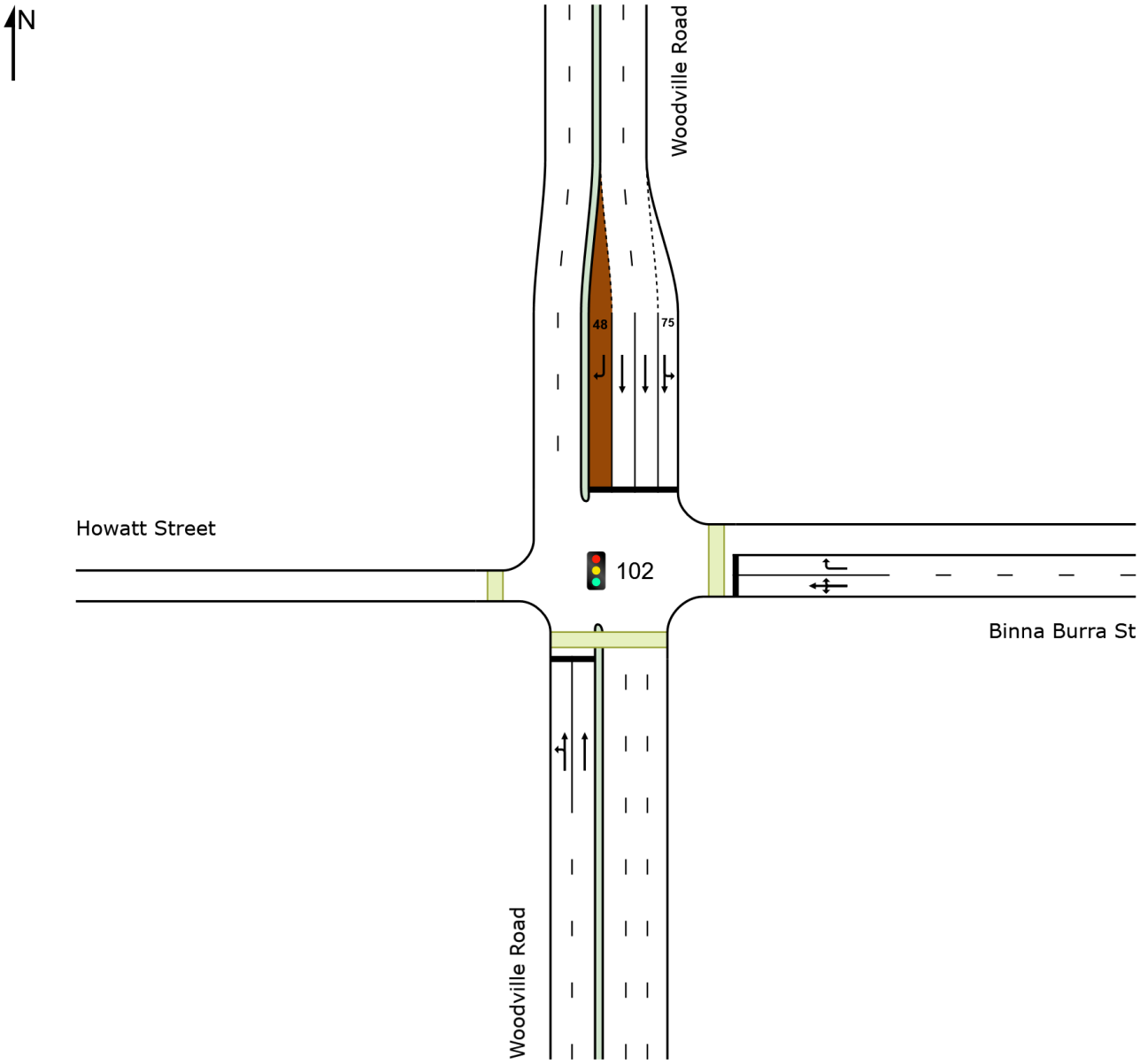
Network: 3 [2031 AM Peak Without Dev (Network Folder: AM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2031 AM Peak Without Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

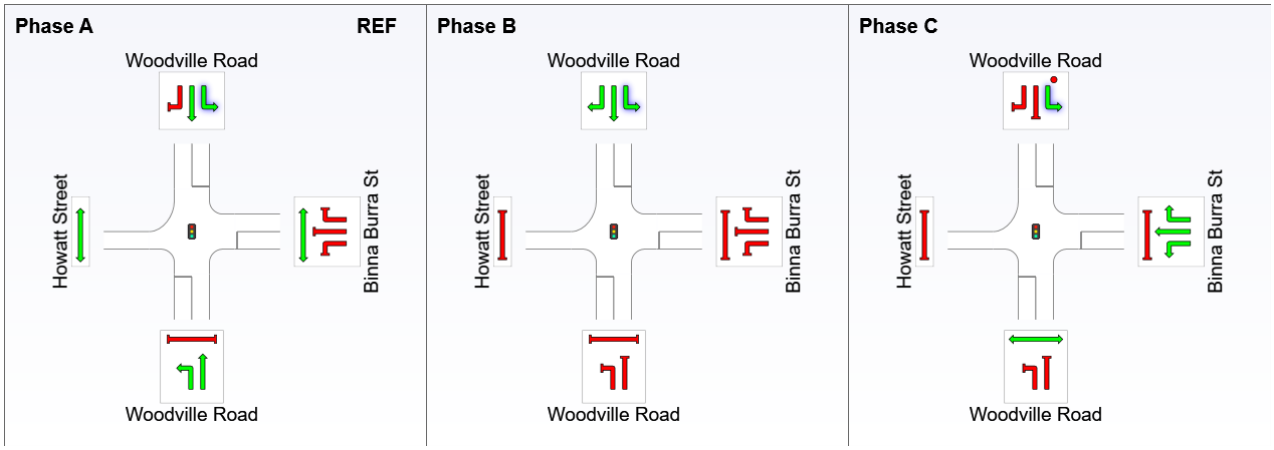
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance														
Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	18	0.0	18	0.0	0.724	17.2	LOS B	22.3	165.3	0.63	0.59	0.63	27.3
31	T1	1892	6.8	1892	6.8	* 0.724	11.7	LOS A	22.6	167.2	0.63	0.59	0.63	35.5
Approach		1909	6.8	1909	6.8	0.724	11.7	LOS A	22.6	167.2	0.63	0.59	0.63	35.4
East: Binna Burra St														
21	L2	46	2.3	46	2.3	0.377	68.3	LOS E	2.8	21.3	0.97	0.76	0.97	3.4
5	T1	23	27.3	23	27.3	* 0.377	64.5	LOS E	2.8	21.3	0.97	0.76	0.97	6.4
23	R2	66	4.8	66	4.8	0.358	68.1	LOS E	2.7	19.3	0.97	0.76	0.97	3.4
Approach		136	7.8	136	7.8	0.377	67.6	LOS E	2.8	21.3	0.97	0.76	0.97	3.9
North: Woodville Road														
24	L2	66	7.9	66	7.9	0.459	6.4	LOS A	1.5	11.7	0.06	0.11	0.06	25.3
25	T1	1905	11.5	1905	11.5	0.459	1.1	LOS A	2.6	20.0	0.08	0.09	0.08	54.1
9	R2	21	100.0	21	100.0	* 0.460	85.2	LOS F	1.0	12.5	1.00	0.72	1.01	9.0
Approach		1993	12.3	1993	12.3	0.460	2.1	LOS A	2.6	20.0	0.09	0.10	0.09	48.4
All Vehicles		4038	9.5	4038	9.5	0.724	8.9	LOS A	22.6	167.2	0.37	0.35	0.37	36.1

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	231.3	217.2	0.94
East: Binna Burra St											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	226.9	211.4	0.93
West: Howatt Street											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	222.7	206.0	0.92
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	227.0	211.5	0.93

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.

USER REPORT FOR NETWORK SITE

All Movement Classes

Project: Modelling of Intersections - Copy

Template: Default Site User Report

Site: 103 [Woodville Road and Kirrang Avenue (Site Folder: 2031 Scenario - AM Peak | With Kamira Ave Traffic)]

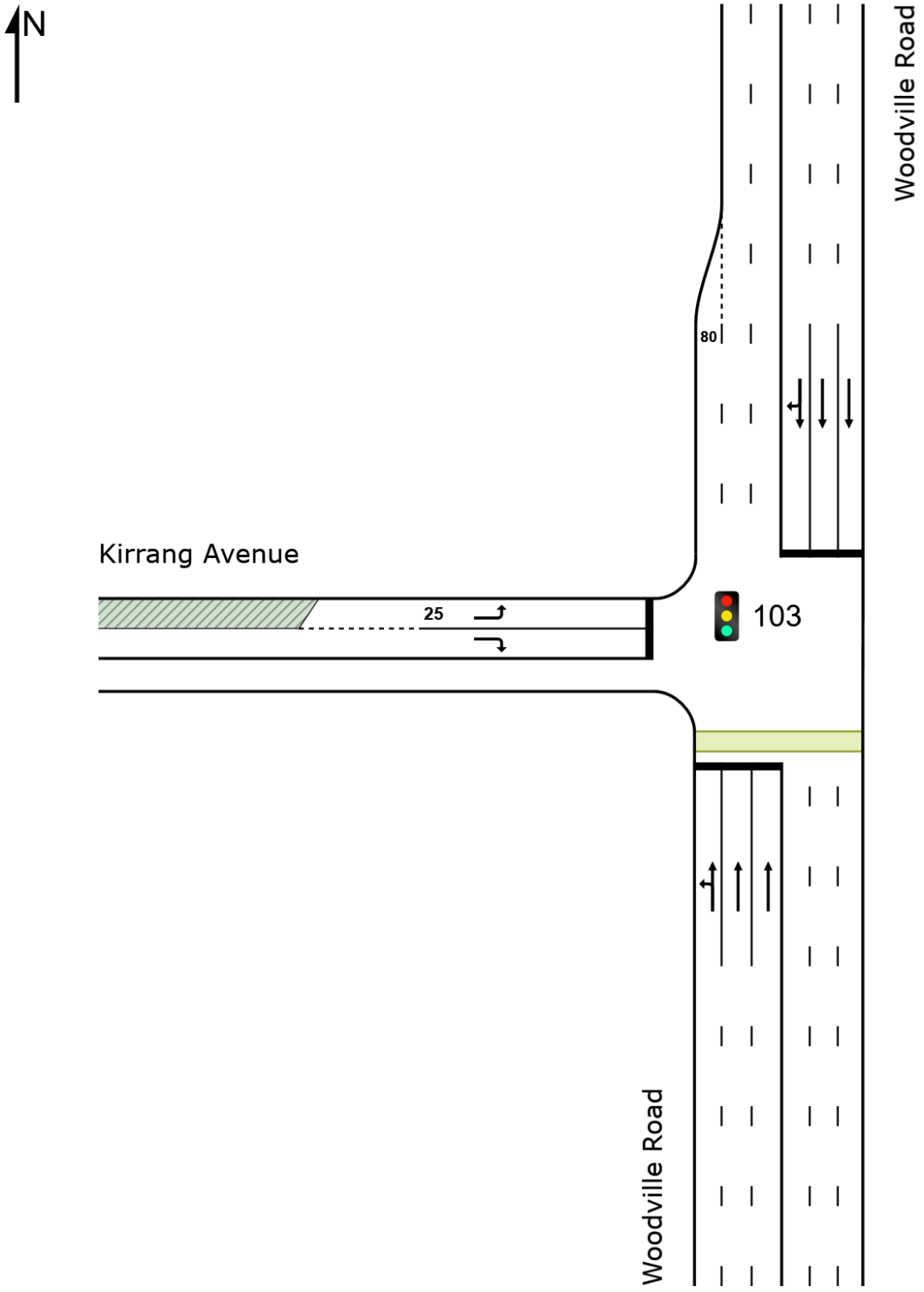
Network: 4 [2031 AM Peak With Dev (Network Folder: AM Peak)]

Woodville Road and Kirrang Avenue
Site Category: 2031 AM Peak With Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

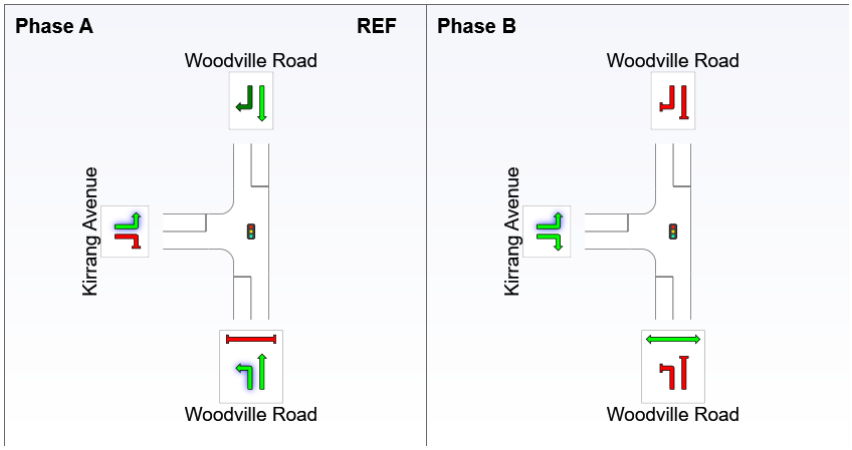
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


N
Woodville Road
80
Kirrang Avenue
25
103
Woodville Road

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
30	L2	77	0.0	77	0.0	0.274	12.3	LOS A	5.0	36.5	0.36	0.40	0.36	47.3
31	T1	1914	6.9	1914	6.9	0.621	9.9	LOS A	16.6	122.8	0.51	0.49	0.51	43.2
Approach		1991	6.6	1991	6.6	0.621	10.0	LOS A	16.6	122.8	0.51	0.48	0.51	43.5
North: Woodville Road														
25	T1	1958	11.1	1958	11.1	0.549	6.7	LOS A	10.2	78.1	0.34	0.31	0.34	51.5
26	R2	13	0.0	13	0.0	* 0.549	12.8	LOS A	7.3	56.1	0.34	0.32	0.34	46.2
Approach		1971	11.1	1971	11.1	0.549	6.7	LOS A	10.2	78.1	0.34	0.31	0.34	51.5
West: Kirrang Avenue														
27	L2	8	0.0	8	0.0	0.005	7.8	LOS A	0.0	0.1	0.09	0.54	0.09	44.1
29	R2	283	8.9	283	8.9	* 0.904	80.5	LOS F	13.6	102.2	1.00	0.99	1.30	22.9
Approach		292	8.7	292	8.7	0.904	78.4	LOS F	13.6	102.2	0.97	0.97	1.27	23.1
All Vehicles		4253	8.8	4253	8.8	0.904	13.2	LOS A	16.6	122.8	0.46	0.44	0.48	43.1

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94
All Pedestrians		53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94

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.

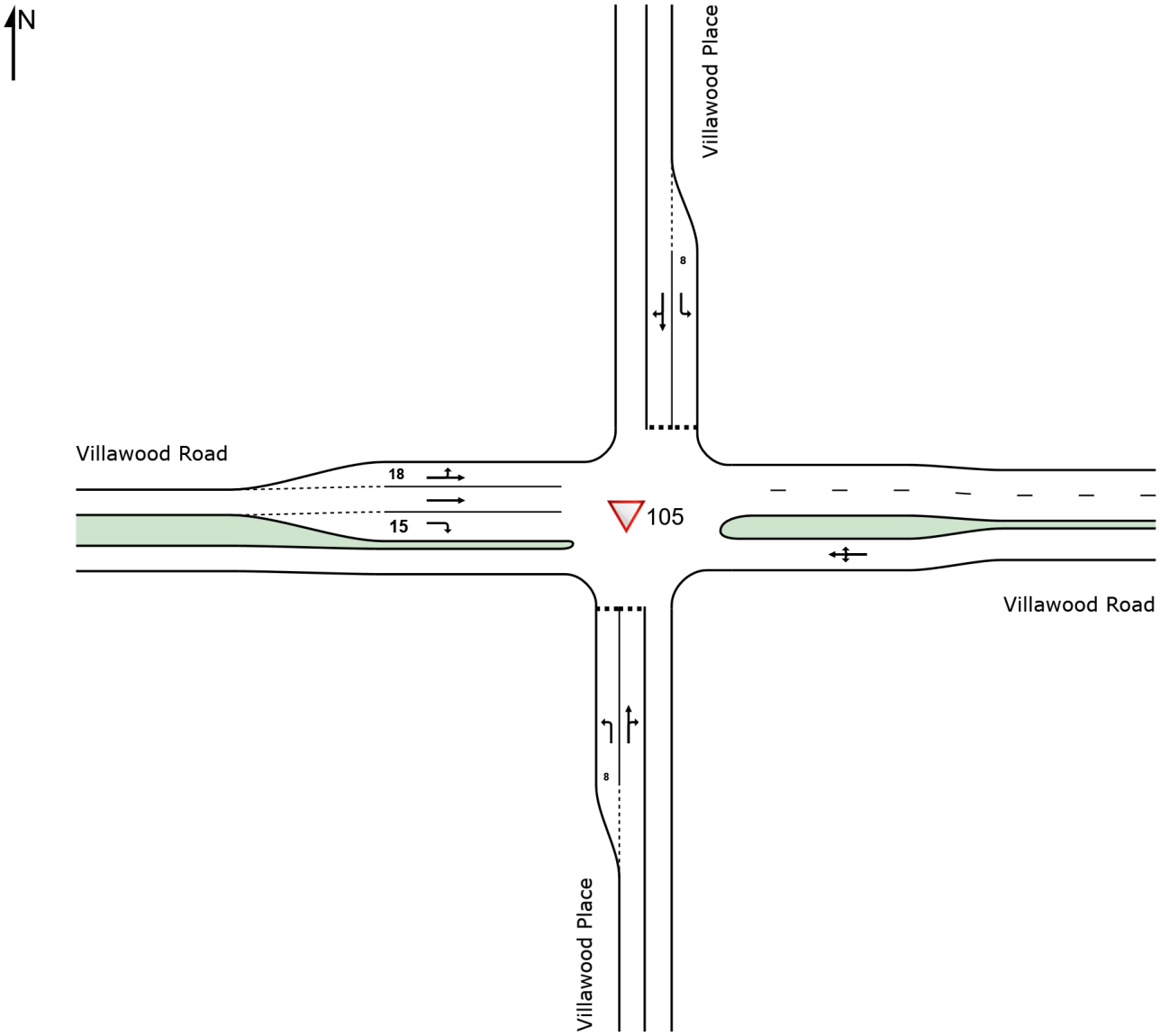
Site: 105 [Villawood Road and Villawood Place (Site Folder: 2031 Scenario - AM Peak | With Kamira Ave Traffic)]

Network: 4 [2031 AM Peak With Dev (Network Folder: AM Peak)]

Villawood Road and Villawood Place
Site Category: 2031 AM Peak With Dev
Give-Way (Two-Way)

Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Villawood Place														
1	L2	1	0.0	1	0.0	0.001	4.8	LOS A	0.0	0.0	0.14	0.48	0.14	45.1
2	T1	1	0.0	1	0.0	0.020	5.2	LOS A	0.0	0.2	0.32	0.54	0.32	40.1
3	R2	25	0.0	25	0.0	0.020	5.3	LOS A	0.0	0.2	0.32	0.54	0.32	37.6
Approach		27	0.0	27	0.0	0.020	5.3	LOS A	0.0	0.2	0.31	0.54	0.31	38.4
East: Villawood Road														
4	L2	6	0.0	6	0.0	0.061	5.9	LOS A	0.1	0.7	0.14	0.15	0.14	44.3
5	T1	63	11.7	63	11.7	0.061	0.7	LOS A	0.1	0.7	0.14	0.15	0.14	47.5
6	R2	18	0.0	18	0.0	0.061	6.0	LOS A	0.1	0.7	0.14	0.15	0.14	40.7
Approach		87	8.4	87	8.4	0.061	2.1	NA	0.1	0.7	0.14	0.15	0.14	46.7
North: Villawood Place														
7	L2	35	0.0	35	0.0	0.030	5.1	LOS A	0.0	0.3	0.24	0.52	0.24	28.7
8	T1	1	0.0	1	0.0	0.002	5.1	LOS A	0.0	0.0	0.33	0.46	0.33	40.4
9	R2	1	0.0	1	0.0	0.002	5.2	LOS A	0.0	0.0	0.33	0.46	0.33	43.9
Approach		37	0.0	37	0.0	0.030	5.1	LOS A	0.0	0.3	0.24	0.51	0.24	30.9
West: Villawood Road														
10	L2	1	0.0	1	0.0	0.039	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	49.1
11	T1	148	4.3	148	4.3	0.039	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	49.9
12	R2	1	0.0	1	0.0	0.001	5.0	LOS A	0.0	0.0	0.19	0.49	0.19	44.7
Approach		151	4.2	151	4.2	0.039	0.1	NA	0.0	0.0	0.00	0.01	0.00	49.9
All Vehicles		302	4.5	302	4.5	0.061	1.8	NA	0.1	0.7	0.10	0.16	0.10	47.1

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.

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 101 [Woodville Road and Villawood Road and Llewellyn Avenue (Site Folder: 2031 Scenario - AM Peak | With Kamira Ave Traffic)]

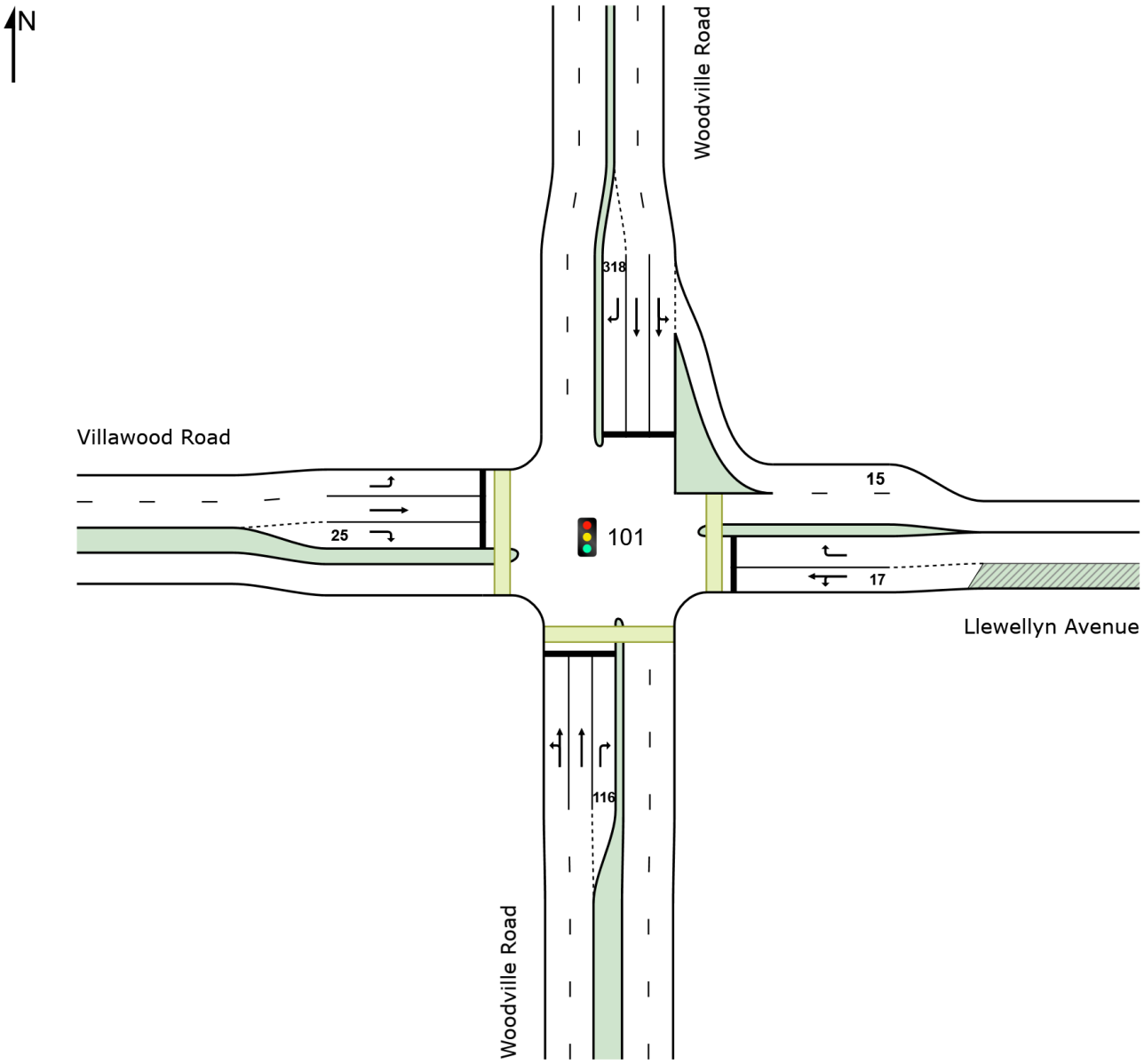
Network: 4 [2031 AM Peak With Dev (Network Folder: AM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2031 AM Peak With Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import - Import
Reference Phase: Phase A
Input Phase Sequence: A, C, D, E
Output Phase Sequence: A, C, D, E

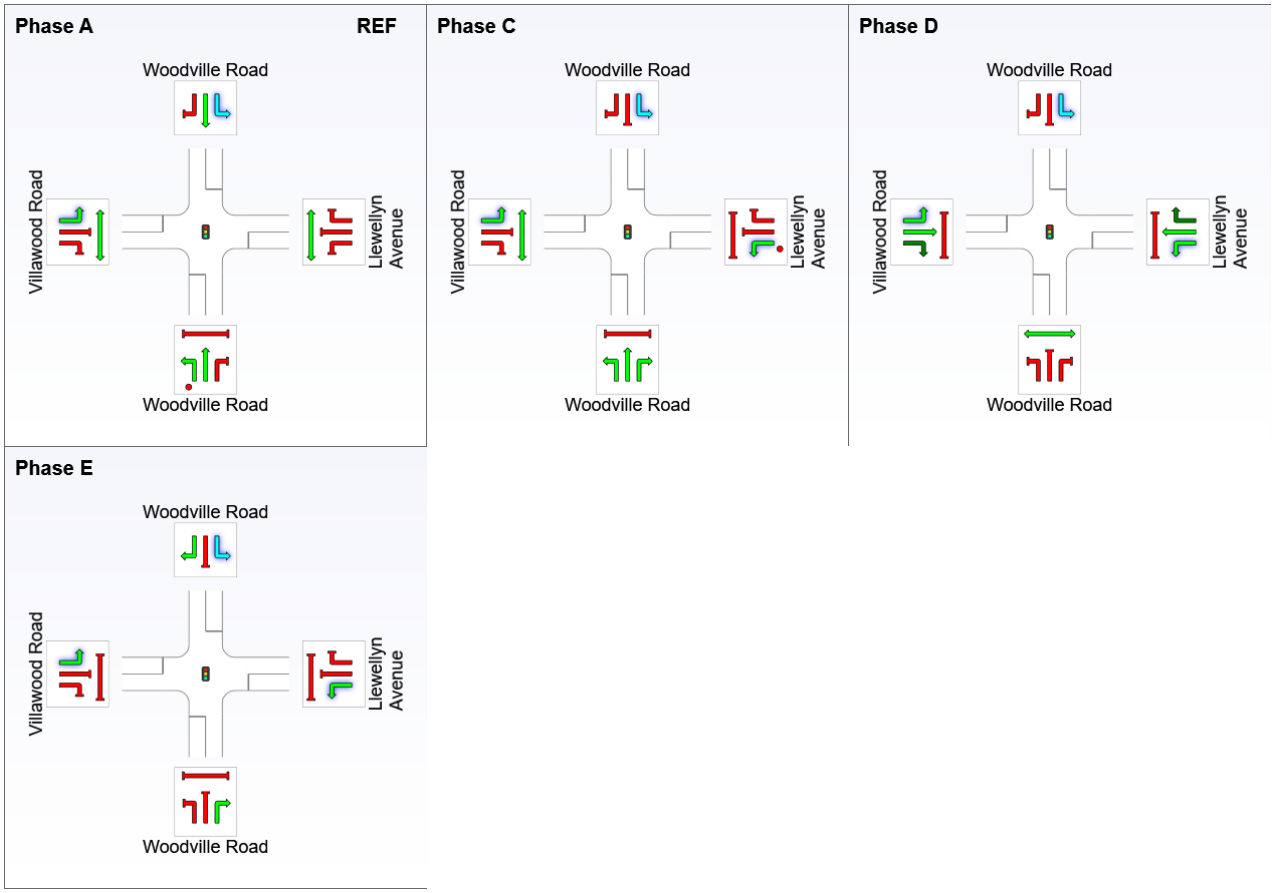
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	20	0.0	20	0.0	* 0.729	7.3	LOS A	4.6	34.4	0.13	0.13	0.13	51.7
31	T1	1891	7.0	1891	7.0	0.729	3.3	LOS A	10.9	81.0	0.22	0.21	0.22	55.8
32	R2	47	4.4	47	4.4	0.312	51.6	LOS D	1.6	11.8	1.00	0.74	1.00	23.8
Approach		1958	6.8	1958	6.8	0.729	4.5	LOS A	10.9	81.0	0.24	0.22	0.24	54.2
East: Llewellyn Avenue														
21	L2	18	35.3	18	35.3	0.082	54.1	LOS D	0.8	7.4	0.85	0.67	0.85	19.1
5	T1	5	20.0	5	20.0	0.082	49.3	LOS D	0.8	7.4	0.85	0.67	0.85	19.1
23	R2	85	51.9	85	51.9	* 0.701	74.4	LOS F	3.7	37.3	1.00	0.86	1.14	25.0
Approach		108	47.6	108	47.6	0.701	69.8	LOS E	3.7	37.3	0.97	0.82	1.08	24.2
North: Woodville Road														
24	L2	123	16.2	123	16.2	0.895	35.0	LOS C	38.8	299.5	0.92	0.91	0.97	38.1
25	T1	1900	11.5	1900	11.5	* 0.895	29.6	LOS C	38.8	299.5	0.92	0.91	0.98	31.7
9	R2	67	9.4	67	9.4	* 0.917	94.3	LOS F	3.3	25.0	1.00	0.97	1.58	15.8
Approach		2091	11.7	2091	11.7	0.917	32.0	LOS C	38.8	299.5	0.93	0.91	0.99	31.3
West: Villawood Road														
10	L2	114	4.6	114	4.6	0.069	4.9	LOS A	0.2	1.6	0.10	0.55	0.10	49.5
11	T1	14	0.0	14	0.0	0.061	59.9	LOS E	0.5	3.6	0.92	0.64	0.92	19.5
12	R2	109	1.0	109	1.0	0.824	81.4	LOS F	5.0	35.1	1.00	0.92	1.28	3.7
Approach		237	2.7	237	2.7	0.824	43.4	LOS D	5.0	35.1	0.56	0.73	0.69	19.8
All Vehicles		4394	9.9	4394	9.9	0.917	21.3	LOS B	38.8	299.5	0.60	0.59	0.64	38.4

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.5	218.8	0.94
East: Llewellyn Avenue											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94
West: Villawood Road											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.1	218.1	0.94
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94

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.

Site: 102 [Woodville Road and Howatt Street and Binna Burra Street (Site Folder: 2031 Scenario - AM Peak | With Kamira Ave Traffic)]

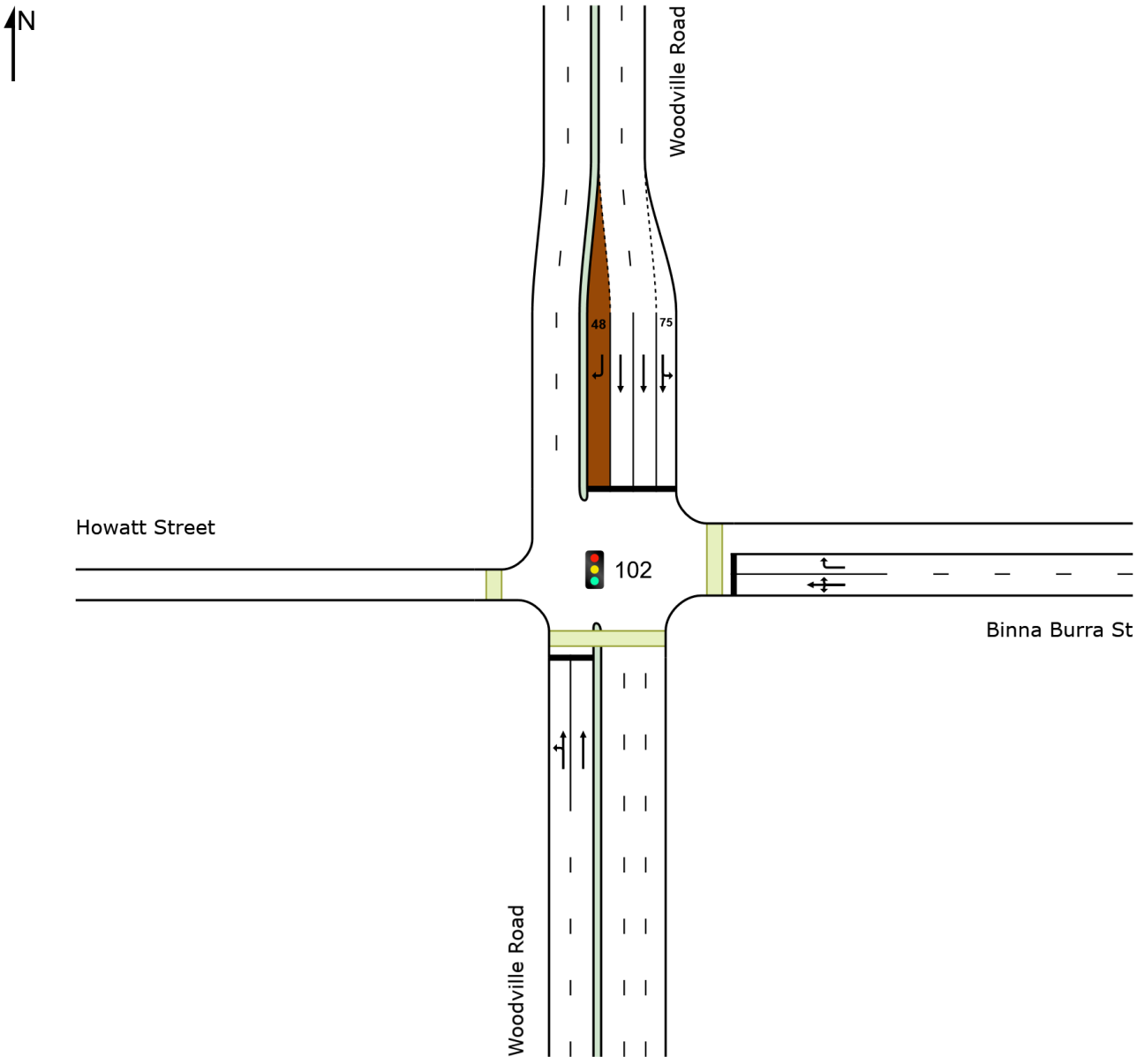
Network: 4 [2031 AM Peak With Dev (Network Folder: AM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2031 AM Peak With Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

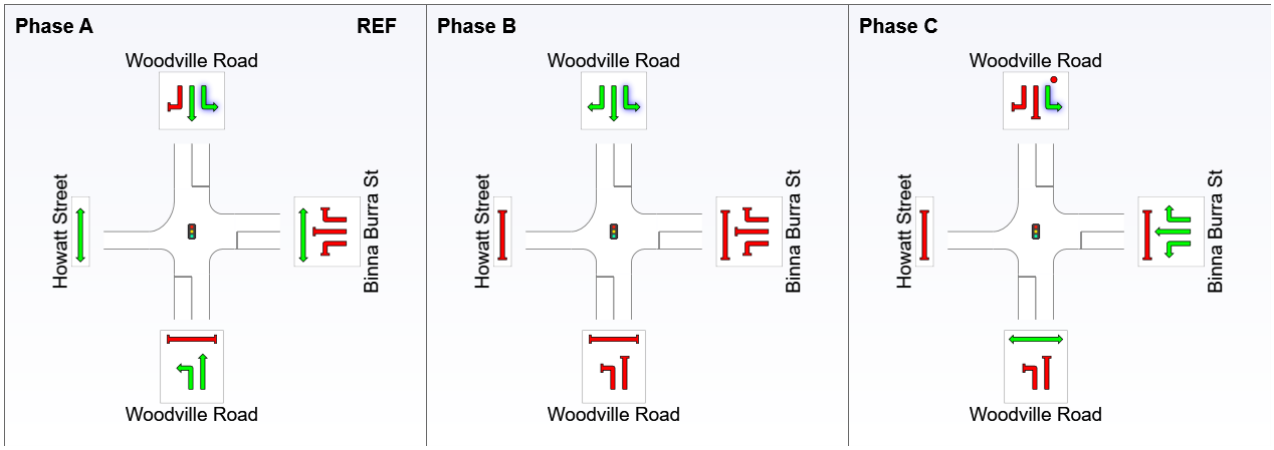
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	31	0.0	31	0.0	0.730	17.0	LOS B	20.5	151.7	0.57	0.54	0.57	27.4
31	T1	1894	6.8	1894	6.8	* 0.730	11.4	LOS A	20.7	153.5	0.57	0.54	0.57	35.8
Approach		1924	6.7	1924	6.7	0.730	11.5	LOS A	20.7	153.5	0.57	0.54	0.57	35.5
East: Binna Burra St														
21	L2	46	2.3	46	2.3	0.382	68.4	LOS E	2.8	21.6	0.97	0.76	0.97	3.4
5	T1	24	26.1	24	26.1	* 0.382	64.5	LOS E	2.8	21.6	0.97	0.76	0.97	6.4
23	R2	68	4.6	68	4.6	0.369	68.2	LOS E	2.7	19.9	0.97	0.76	0.97	3.4
Approach		139	7.6	139	7.6	0.382	67.6	LOS E	2.8	21.6	0.97	0.76	0.97	3.9
North: Woodville Road														
24	L2	68	7.7	68	7.7	0.464	6.4	LOS A	1.5	11.2	0.06	0.11	0.06	25.3
25	T1	1927	11.4	1927	11.4	0.464	0.9	LOS A	2.0	15.3	0.07	0.08	0.07	54.8
9	R2	21	100.0	21	100.0	* 0.460	85.2	LOS F	1.0	12.5	1.00	0.72	1.01	9.0
Approach		2017	12.2	2017	12.2	0.464	2.0	LOS A	2.0	15.3	0.08	0.09	0.08	48.9
All Vehicles		4080	9.4	4080	9.4	0.730	8.7	LOS A	20.7	153.5	0.34	0.32	0.34	36.2

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	231.3	217.2	0.94
East: Binna Burra St											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	226.9	211.4	0.93
West: Howatt Street											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	222.7	206.0	0.92
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	227.0	211.5	0.93

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.

USER REPORT FOR NETWORK SITE

All Movement Classes

Project: Modelling of Intersections - Copy

Template: Default Site User Report

Site: 103 [Woodville Road and Kirrang Avenue (Site Folder: 2031 Scenario - PM Peak | Without Kamira Ave Traffic)]

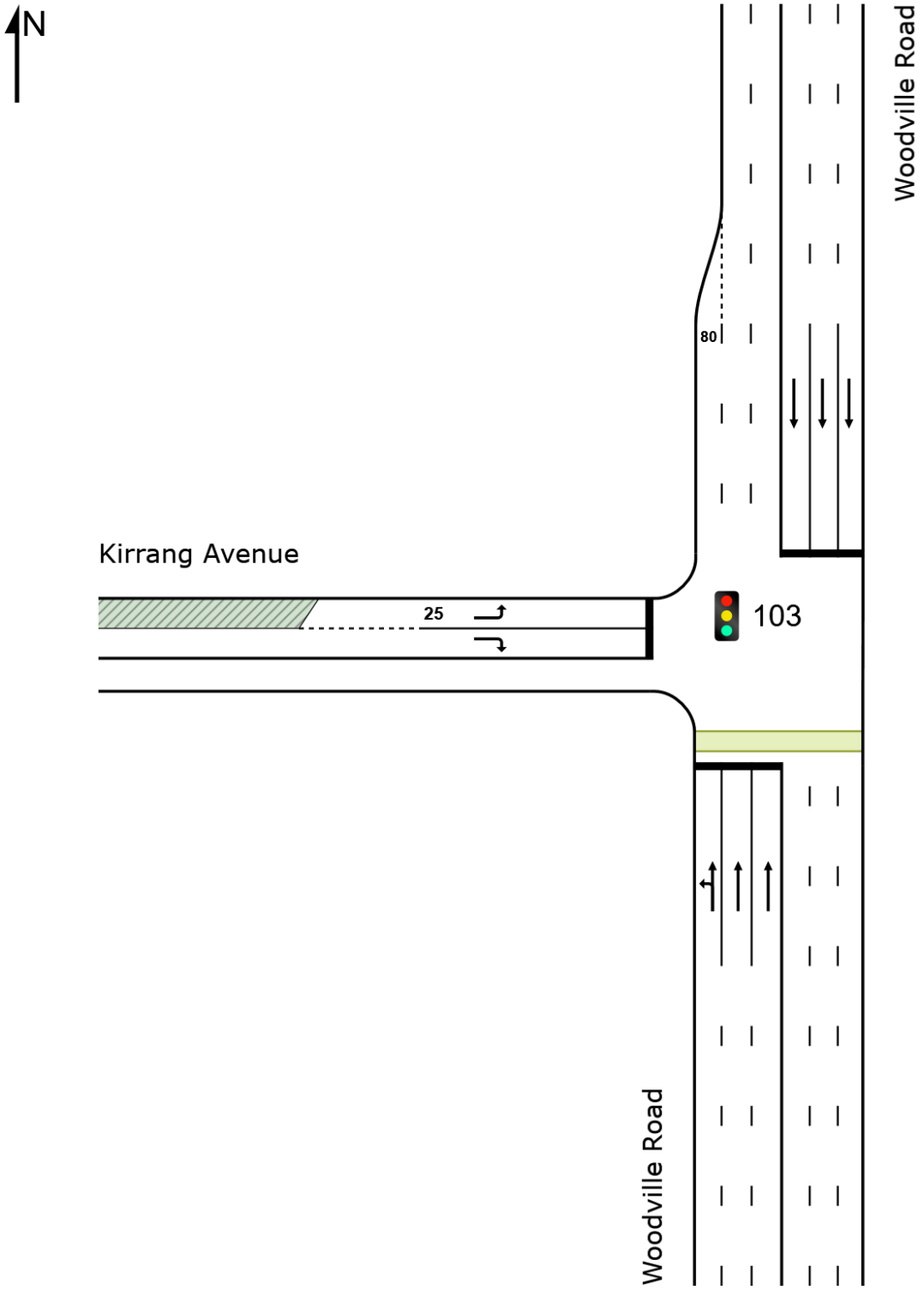
Network: 7 [2031 PM Peak Without Dev (Network Folder: PM Peak)]

Woodville Road and Kirrang Avenue
Site Category: 2031 PM Peak Without Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import - Import
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

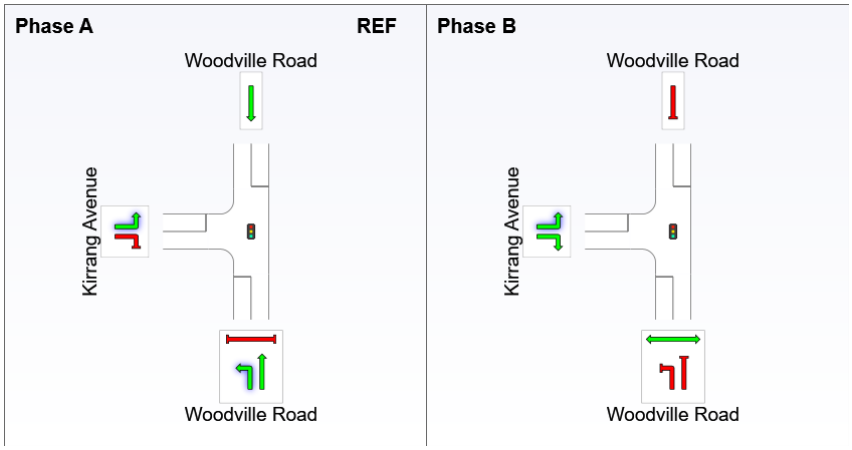
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


N
Woodville Road
80
Kirrang Avenue
25
103
Woodville Road

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
30	L2	43	0.0	43	0.0	0.388	9.8	LOS A	13.6	102.8	0.31	0.32	0.31	49.6
31	T1	1776	10.0	1776	10.0	* 0.879	21.3	LOS B	29.5	224.0	0.62	0.66	0.70	32.7
Approach		1819	9.8	1819	9.8	0.879	21.0	LOS B	29.5	224.0	0.61	0.65	0.69	33.3
North: Woodville Road														
25	T1	2077	12.5	2029	12.8	0.484	2.6	LOS A	6.2	48.5	0.18	0.17	0.18	56.4
Approach		2077	12.5	2029 N1	12.8	0.484	2.6	LOS A	6.2	48.5	0.18	0.17	0.18	56.4
West: Kirrang Avenue														
27	L2	23	0.0	23	0.0	0.014	7.6	LOS A	0.6	4.3	0.09	0.55	0.09	44.1
29	R2	106	0.0	106	0.0	* 0.518	69.0	LOS E	4.3	30.1	0.99	0.79	0.99	25.0
Approach		129	0.0	129	0.0	0.518	58.0	LOS E	4.3	30.1	0.83	0.74	0.83	26.2
All Vehicles		4025	10.9	3977 N1	11.0	0.879	12.9	LOS A	29.5	224.0	0.40	0.41	0.44	43.6

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94
All Pedestrians		53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94

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.

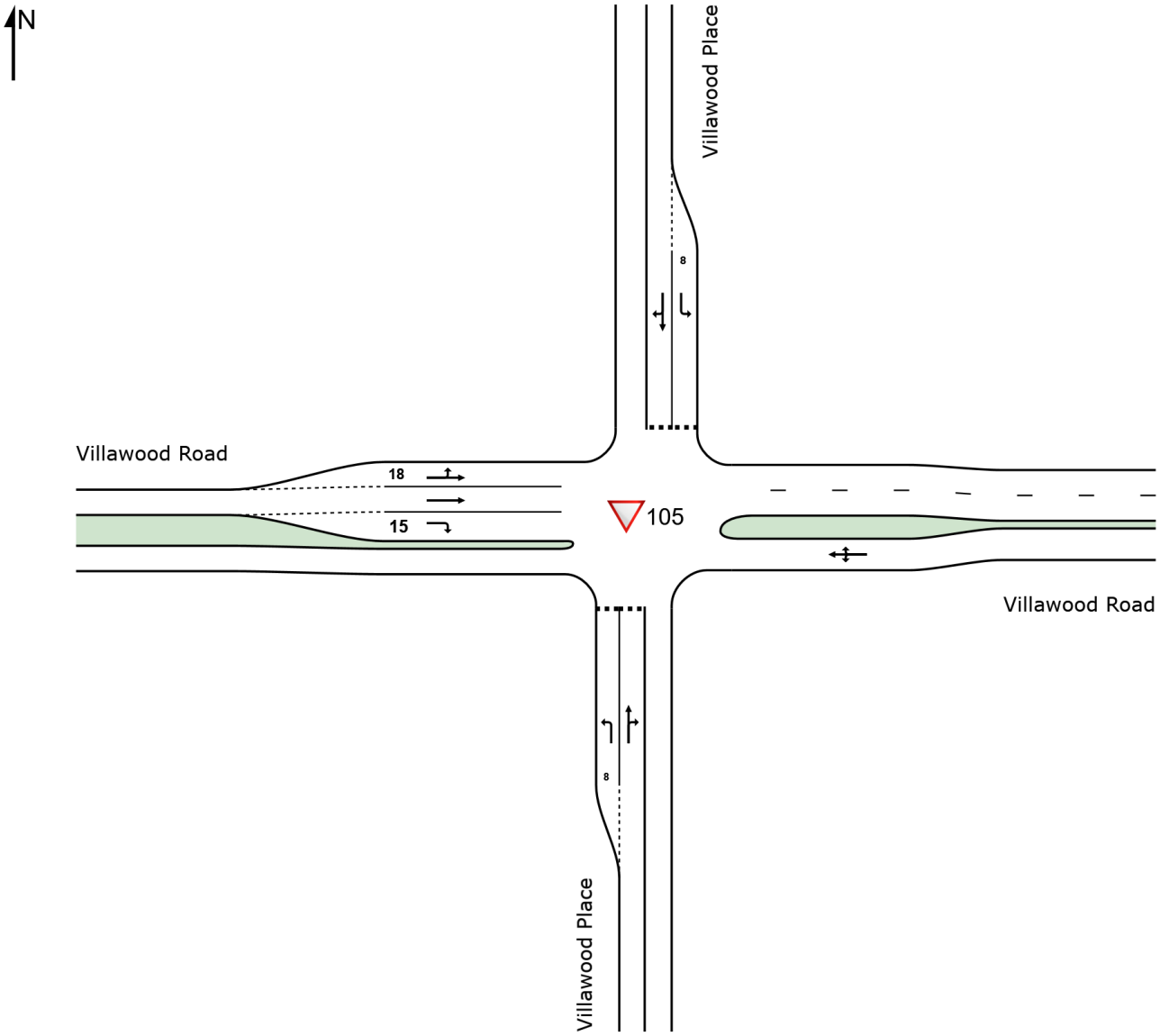
Site: 105 [Villawood Road and Villawood Place (Site Folder: 2031 Scenario - PM Peak | Without Kamira Ave Traffic)]

Network: 7 [2031 PM Peak Without Dev (Network Folder: PM Peak)]

Villawood Road and Villawood Place
Site Category: 2031 PM Peak Without Dev
Give-Way (Two-Way)

Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Villawood Place														
1	L2	1	0.0	1	0.0	0.001	5.5	LOS A	0.0	0.0	0.32	0.48	0.32	44.5
2	T1	1	0.0	1	0.0	0.104	7.8	LOS A	2.5	17.5	0.49	0.68	0.49	38.9
3	R2	51	0.0	51	0.0	0.104	6.6	LOS A	2.5	17.5	0.49	0.68	0.49	36.1
Approach		53	0.0	53	0.0	0.104	6.6	LOS A	2.5	17.5	0.49	0.67	0.49	36.6
East: Villawood Road														
4	L2	39	0.0	38	0.0	0.278	6.9	LOS A	0.6	4.4	0.23	0.18	0.23	42.6
5	T1	260	2.0	253	2.1	0.278	1.4	LOS A	0.6	4.4	0.23	0.18	0.23	46.4
6	R2	91	0.0	88	0.0	0.278	7.1	LOS A	0.6	4.4	0.23	0.18	0.23	38.1
Approach		389	1.4	380[N1]	1.4	0.278	3.3	NA	0.6	4.4	0.23	0.18	0.23	45.2
North: Villawood Place														
7	L2	71	0.0	71	0.0	0.063	5.3	LOS A	0.1	0.6	0.28	0.54	0.28	28.3
8	T1	1	0.0	1	0.0	0.003	7.8	LOS A	0.0	0.0	0.51	0.53	0.51	38.7
9	R2	1	0.0	1	0.0	0.003	6.1	LOS A	0.0	0.0	0.51	0.53	0.51	42.7
Approach		73	0.0	73	0.0	0.063	5.4	LOS A	0.1	0.6	0.29	0.54	0.29	29.4
West: Villawood Road														
10	L2	1	0.0	1	0.0	0.051	4.6	LOS A	0.0	0.0	0.00	0.01	0.00	49.1
11	T1	194	2.2	194	2.2	0.051	0.0	LOS A	4.8	34.4	0.00	0.00	0.00	49.9
12	R2	1	0.0	1	0.0	0.001	6.7	LOS A	0.0	0.0	0.42	0.50	0.42	43.7
Approach		196	2.2	196	2.2	0.051	0.1	NA	4.8	34.4	0.00	0.01	0.00	49.9
All Vehicles		711	1.3	701[N1]	1.4	0.278	2.9	NA	4.8	34.4	0.19	0.21	0.19	45.5

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

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.

Site: 101 [Woodville Road and Villawood Road and Llewellyn Avenue (Site Folder: 2031 Scenario - PM Peak | Without Kamira Ave Traffic)]

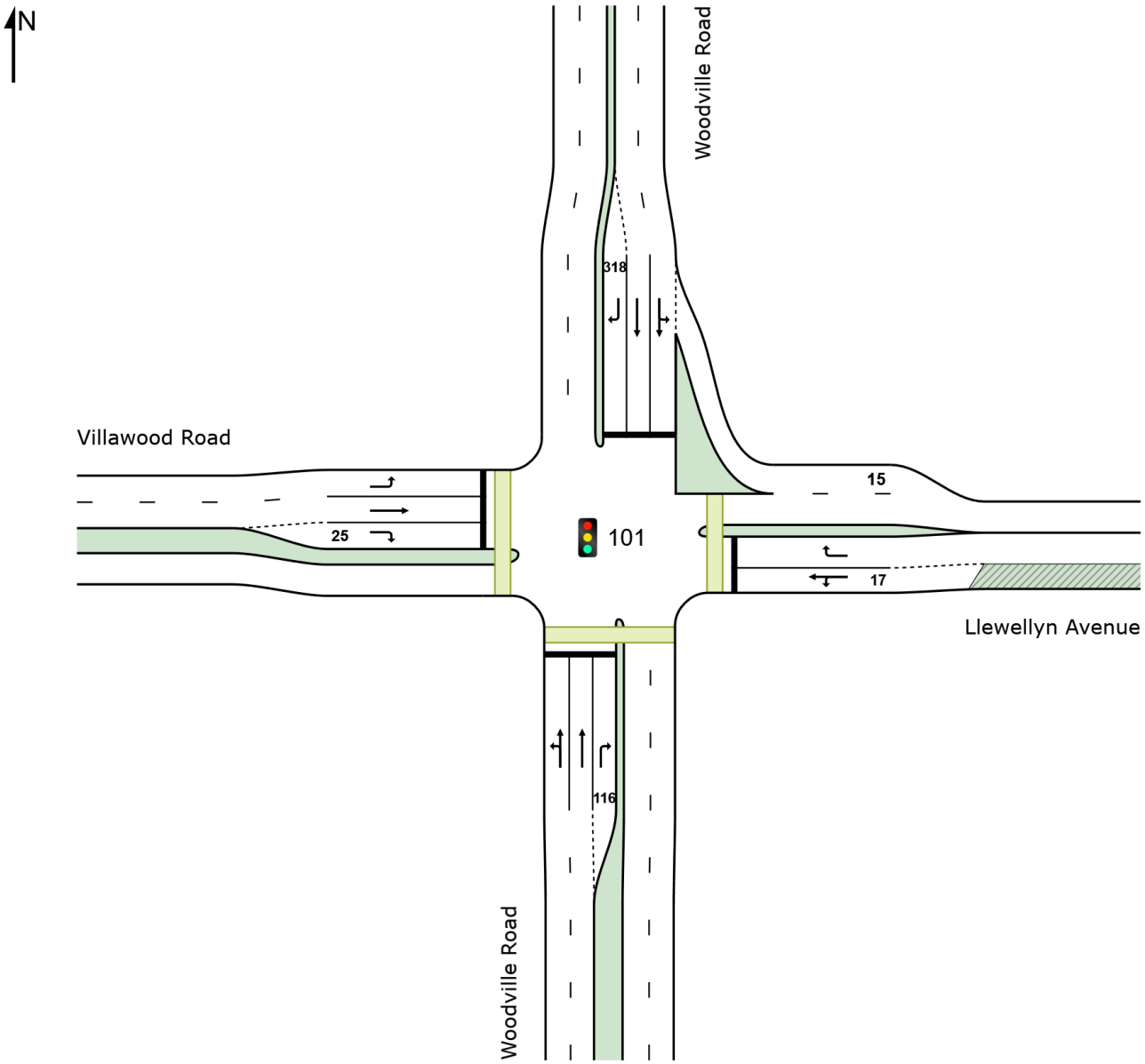
Network: 7 [2031 PM Peak Without Dev (Network Folder: PM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2031 PM Peak Without Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import - Import
Reference Phase: Phase A
Input Phase Sequence: A, B, D, E
Output Phase Sequence: A, B, D, E

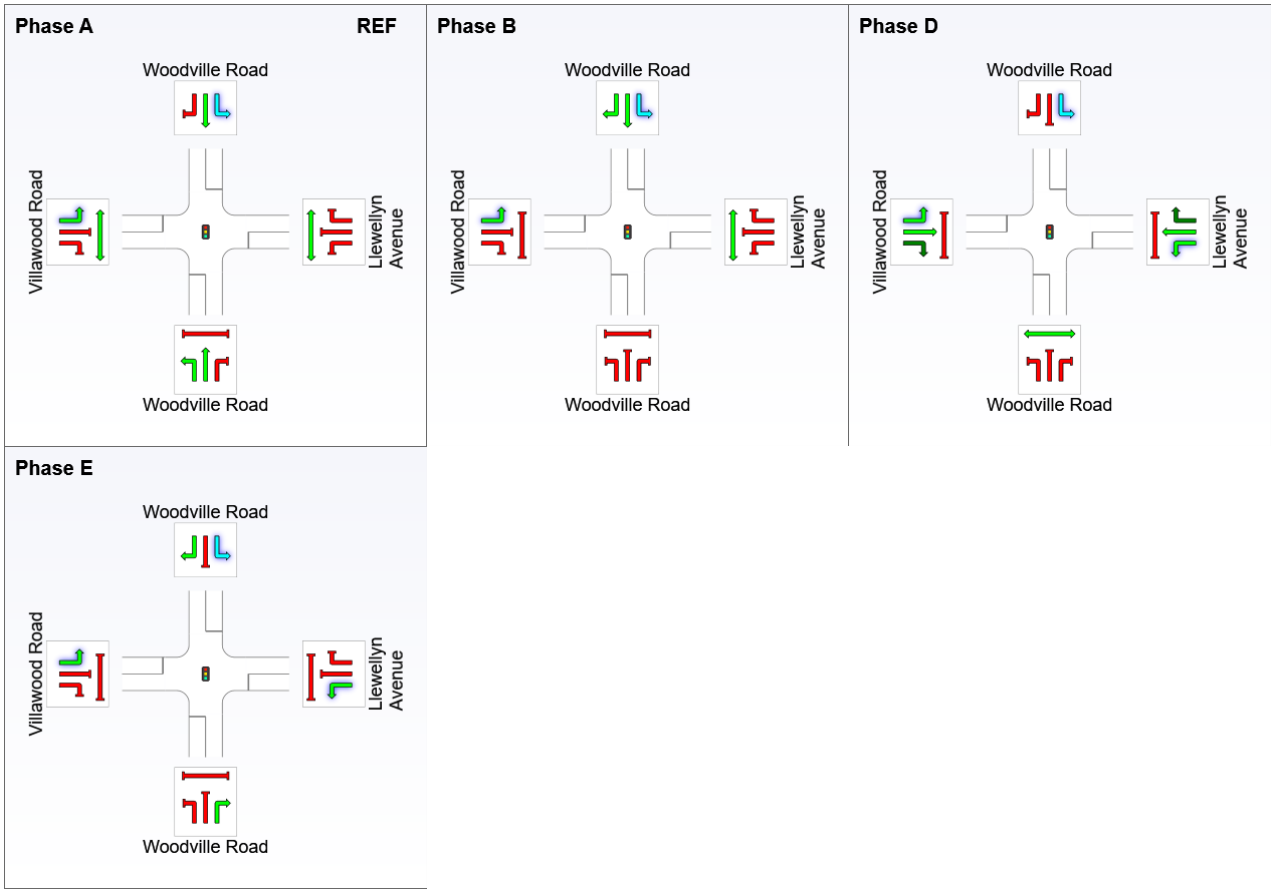
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	68	0.0	59	0.0	0.796	34.0	LOS C	24.0	181.0	0.86	0.80	0.86	17.5
31	T1	1701	10.0	1456	9.9	0.796	28.3	LOS B	24.0	181.0	0.87	0.80	0.87	36.5
32	R2	22	9.5	19	9.4	0.221	78.5	LOS F	0.8	6.1	0.99	0.70	0.99	18.6
Approach		1792	9.6	1533 N1	9.5	0.796	29.1	LOS C	24.0	181.0	0.87	0.80	0.87	35.7
East: Llewellyn Avenue														
21	L2	85	13.6	85	13.6	1.023	137.4	LOS F	10.5	77.9	1.00	1.30	1.83	9.6
5	T1	78	0.0	78	0.0	1.023	132.7	LOS F	10.5	77.9	1.00	1.30	1.83	9.6
23	R2	174	24.8	174	24.8	* 1.281	333.8	LOS F	18.3	155.1	1.00	1.72	2.77	8.6
Approach		337	16.3	337	16.3	1.281	237.6	LOS F	18.3	155.1	1.00	1.52	2.31	8.9
North: Woodville Road														
24	L2	109	14.4	109	14.4	0.901	33.3	LOS C	40.4	313.3	0.91	0.90	0.96	38.8
25	T1	2011	12.3	2011	12.3	* 0.901	28.0	LOS B	40.4	313.3	0.92	0.91	0.97	32.6
9	R2	241	2.2	241	2.2	* 0.987	86.9	LOS F	10.6	75.3	1.00	1.09	1.58	16.7
Approach		2361	11.4	2361	11.4	0.987	34.2	LOS C	40.4	313.3	0.92	0.92	1.03	30.1
West: Villawood Road														
10	L2	204	2.1	204	2.1	0.121	4.9	LOS A	0.4	3.0	0.10	0.56	0.10	49.7
11	T1	1	0.0	1	0.0	0.003	51.5	LOS D	0.0	0.3	0.85	0.51	0.85	21.3
12	R2	108	0.0	108	0.0	1.917	875.8	LOS F	10.7	75.0	1.00	1.96	4.25	0.4
Approach		314	1.3	314	1.3	1.917	306.1	LOS F	10.7	75.0	0.42	1.04	1.54	4.6
All Vehicles		4803	10.4	4545 N1	11.0	1.917	66.3	LOS E	40.4	313.3	0.88	0.93	1.11	21.3

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.5	218.8	0.94
East: Llewellyn Avenue											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94
West: Villawood Road											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.1	218.1	0.94
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94

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.

Site: 102 [Woodville Road and Howatt Street and Binna Burra Street (Site Folder: 2031 Scenario - PM Peak | Without Kamira Ave Traffic)]

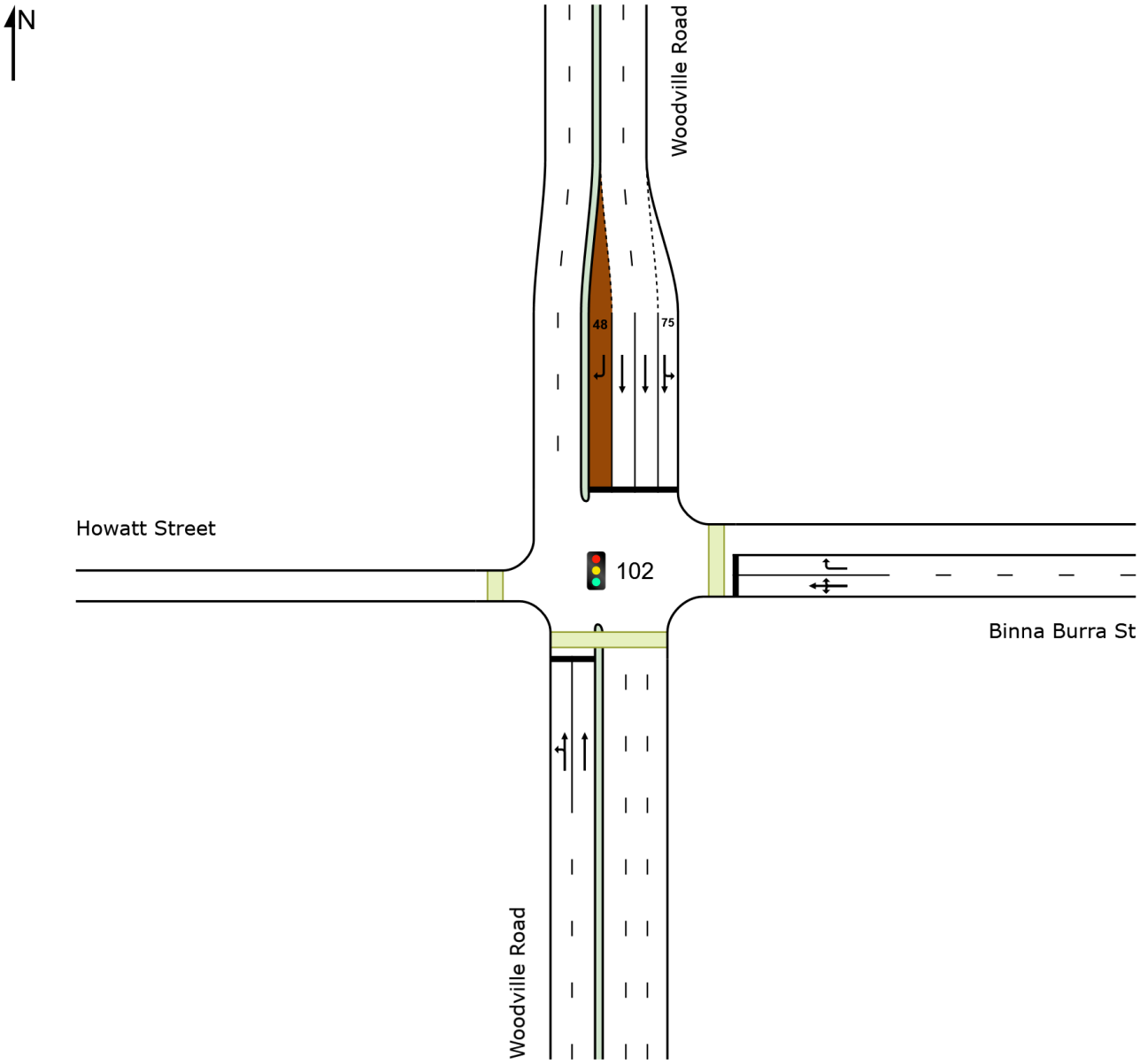
Network: 7 [2031 PM Peak Without Dev (Network Folder: PM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2031 PM Peak Without Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import - Import
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

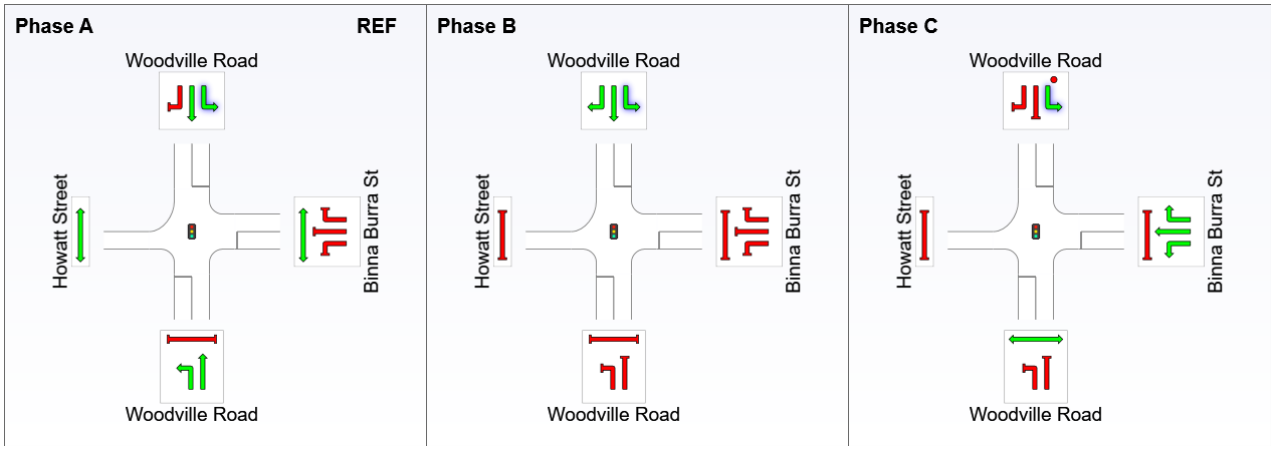
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	76	0.0	76	0.0	1.341	373.7	LOS F	35.7	270.0	1.00	2.35	2.82	3.1
31	T1	1695	10.2	1695	10.2	* 1.341	368.5	LOS F	35.7	270.0	1.00	2.38	2.82	2.6
Approach		1771	9.8	1771	9.8	1.341	368.8	LOS F	35.7	270.0	1.00	2.37	2.82	2.6
East: Binna Burra St														
21	L2	55	3.8	55	3.8	0.847	80.1	LOS F	6.4	45.9	1.00	0.98	1.29	3.0
5	T1	60	1.8	60	1.8	* 0.847	76.3	LOS F	6.4	45.9	1.00	0.98	1.29	5.6
23	R2	106	0.0	106	0.0	0.847	84.0	LOS F	6.4	45.9	1.00	0.99	1.38	2.8
Approach		221	1.4	221	1.4	0.847	80.9	LOS F	6.4	45.9	1.00	0.98	1.33	3.6
North: Woodville Road														
24	L2	178	1.2	173	1.2	0.497	7.1	LOS A	3.3	25.3	0.13	0.24	0.13	24.2
25	T1	2003	12.8	1955	13.1	0.497	1.5	LOS A	3.4	26.6	0.12	0.14	0.12	51.4
9	R2	29	100.0	29	100.0	* 0.644	87.0	LOS F	1.4	17.9	1.00	0.79	1.14	8.8
Approach		2211	13.0	2157 N1	13.4	0.644	3.2	LOS A	3.4	26.6	0.13	0.16	0.13	42.9
All Vehicles		4202	11.1	4149 N1	11.2	1.341	163.3	LOS F	35.7	270.0	0.55	1.15	1.34	4.6

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	231.3	217.2	0.94
East: Binna Burra St											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	226.9	211.4	0.93
West: Howatt Street											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	222.7	206.0	0.92
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	227.0	211.5	0.93

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.

USER REPORT FOR NETWORK SITE

All Movement Classes

Project: Modelling of Intersections - Copy

Template: Default Site User Report

Site: 103 [Woodville Road and Kirrang Avenue (Site Folder: 2031 Scenario - PM Peak | With Kamira Ave Traffic)]

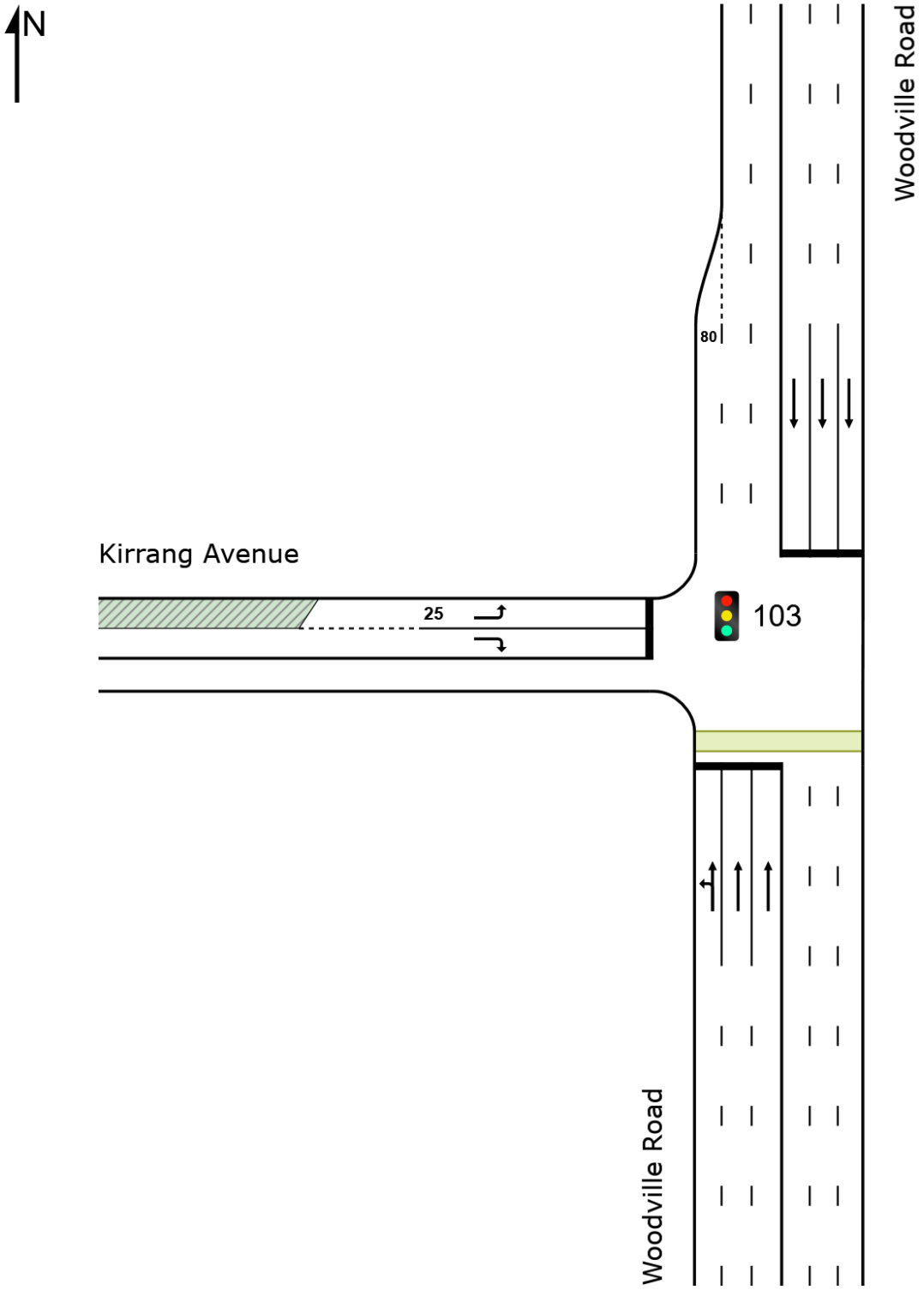
Network: 8 [2031 PM Peak With Dev (Network Folder: PM Peak)]

Woodville Road and Kirrang Avenue
Site Category: 2031 PM Peak With Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import - Import - Import
Reference Phase: Phase A
Input Phase Sequence: A, B
Output Phase Sequence: A, B

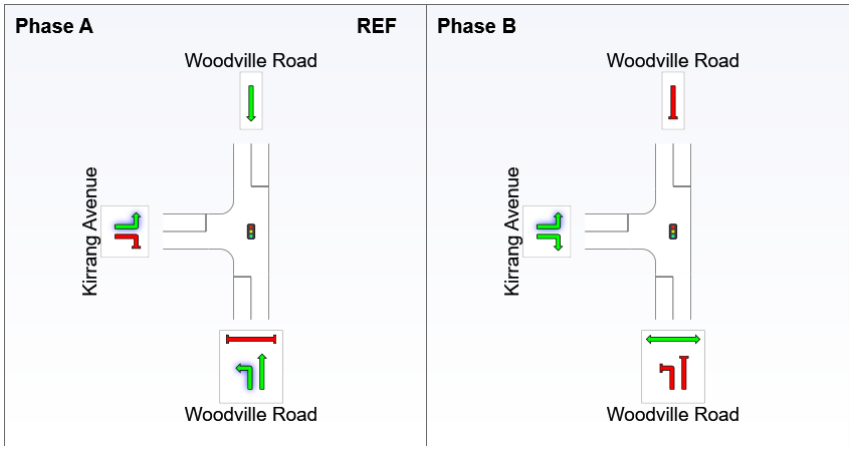
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.


N
Woodville Road
80
Kirrang Avenue
25
103
Woodville Road

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
30	L2	165	0.0	165	0.0	0.423	10.0	LOS A	14.0	104.3	0.33	0.41	0.33	48.6
31	T1	1823	9.8	1823	9.8	* 0.959	48.5	LOS D	33.7	255.7	0.79	0.97	1.03	20.4
Approach		1988	8.9	1988	8.9	0.959	45.3	LOS D	33.7	255.7	0.75	0.92	0.97	22.6
North: Woodville Road														
25	T1	2105	12.4	2105	12.4	0.501	2.6	LOS A	6.8	52.4	0.19	0.17	0.19	56.4
Approach		2105	12.4	2105	12.4	0.501	2.6	LOS A	6.8	52.4	0.19	0.17	0.19	56.4
West: Kirrang Avenue														
27	L2	23	0.0	23	0.0	0.014	7.7	LOS A	0.7	5.2	0.09	0.55	0.09	44.1
29	R2	187	0.0	187	0.0	* 0.953	96.7	LOS F	9.6	67.4	1.00	1.05	1.51	20.6
Approach		211	0.0	211	0.0	0.953	86.9	LOS F	9.6	67.4	0.90	1.00	1.36	21.4
All Vehicles		4304	10.2	4304	10.2	0.959	26.5	LOS B	33.7	255.7	0.48	0.56	0.61	34.1

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94
All Pedestrians		53	64.3	LOS F	0.2	0.2	0.96	0.96	232.6	218.8	0.94

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.

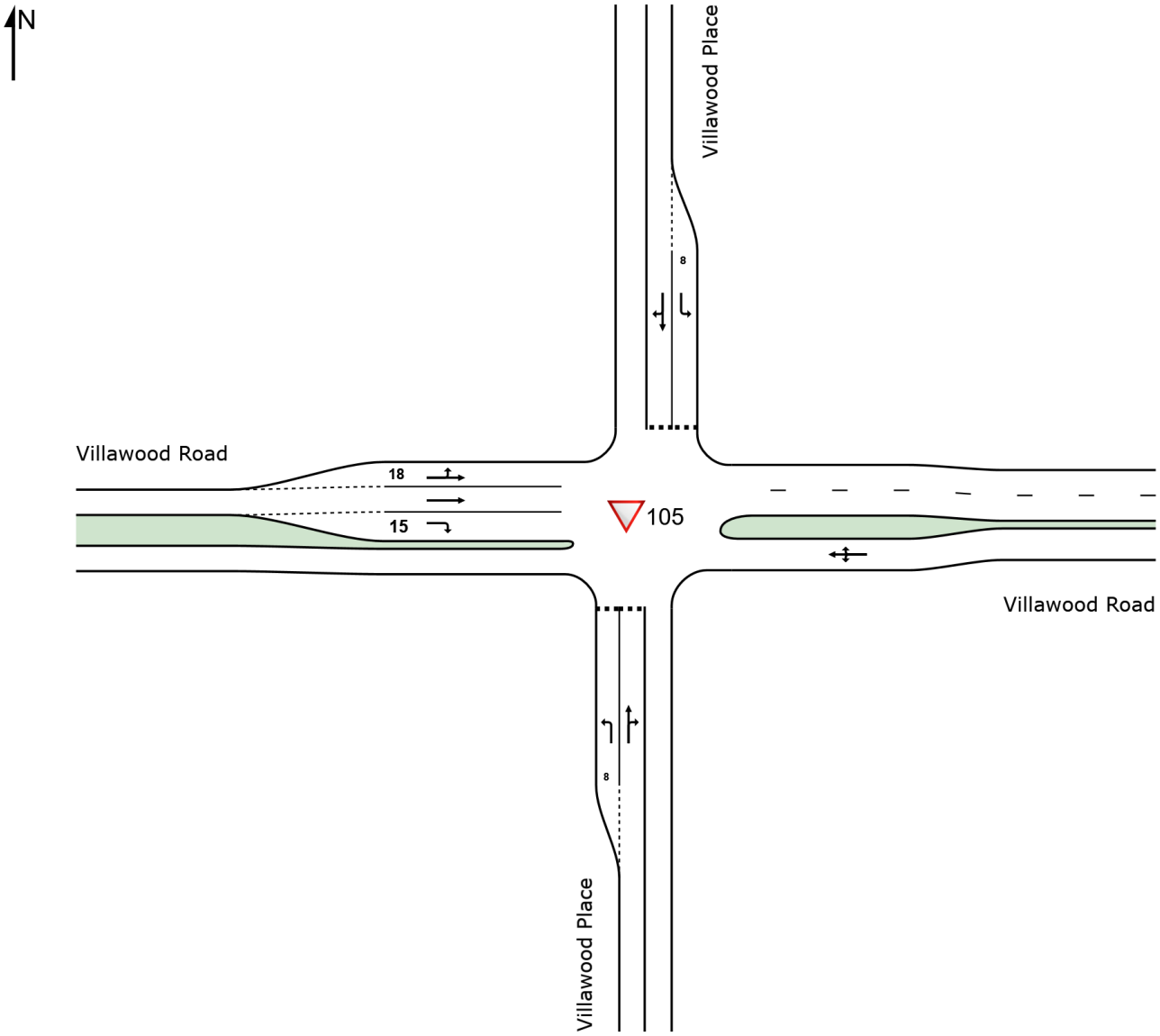
Site: 105 [Villawood Road and Villawood Place (Site Folder: 2031 Scenario - PM Peak | With Kamira Ave Traffic)]

Network: 8 [2031 PM Peak With Dev (Network Folder: PM Peak)]

Villawood Road and Villawood Place
Site Category: 2031 PM Peak With Dev
Give-Way (Two-Way)

Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Villawood Place														
1	L2	1	0.0	1	0.0	0.001	5.9	LOS A	0.0	0.0	0.38	0.49	0.38	44.4
2	T1	1	0.0	1	0.0	0.126	10.4	LOS A	4.0	28.0	0.56	0.76	0.56	37.6
3	R2	51	0.0	51	0.0	0.126	7.7	LOS A	4.0	28.0	0.56	0.76	0.56	34.6
Approach		53	0.0	53	0.0	0.126	7.7	LOS A	4.0	28.0	0.56	0.75	0.56	35.1
East: Villawood Road														
4	L2	39	0.0	37	0.0	0.346	9.3	LOS A	1.0	6.8	0.32	0.16	0.36	41.3
5	T1	362	1.5	345	1.5	0.346	2.5	LOS A	1.0	6.8	0.32	0.16	0.36	47.5
6	R2	91	0.0	86	0.0	0.346	9.7	LOS A	1.0	6.8	0.32	0.16	0.36	36.3
Approach		492	1.1	468 N1	1.1	0.346	4.4	NA	1.0	6.8	0.32	0.16	0.36	46.2
North: Villawood Place														
7	L2	71	0.0	71	0.0	0.071	5.9	LOS A	0.1	0.7	0.37	0.59	0.37	27.6
8	T1	1	0.0	1	0.0	0.004	10.3	LOS A	0.0	0.0	0.59	0.59	0.59	36.7
9	R2	1	0.0	1	0.0	0.004	7.0	LOS A	0.0	0.0	0.59	0.59	0.59	41.3
Approach		73	0.0	73	0.0	0.071	6.0	LOS A	0.1	0.7	0.38	0.59	0.38	28.6
West: Villawood Road														
10	L2	1	0.0	1	0.0	0.081	4.9	LOS A	0.0	0.0	0.00	0.01	0.00	51.9
11	T1	311	1.4	311	1.4	0.081	0.0	LOS A	12.4	87.5	0.00	0.00	0.00	53.3
12	R2	1	0.0	1	0.0	0.002	7.6	LOS A	0.0	0.0	0.49	0.52	0.49	43.0
Approach		313	1.3	313	1.3	0.081	0.1	NA	12.4	87.5	0.00	0.01	0.00	53.2
All Vehicles		929	1.0	906 N1	1.0	0.346	3.2	NA	12.4	87.5	0.23	0.17	0.25	47.6

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.

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.

Delay Model: SIDRA Standard (Geometric Delay is included).

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.

Site: 101 [Woodville Road and Villawood Road and Llewellyn Avenue (Site Folder: 2031 Scenario - PM Peak | With Kamira Ave Traffic)]

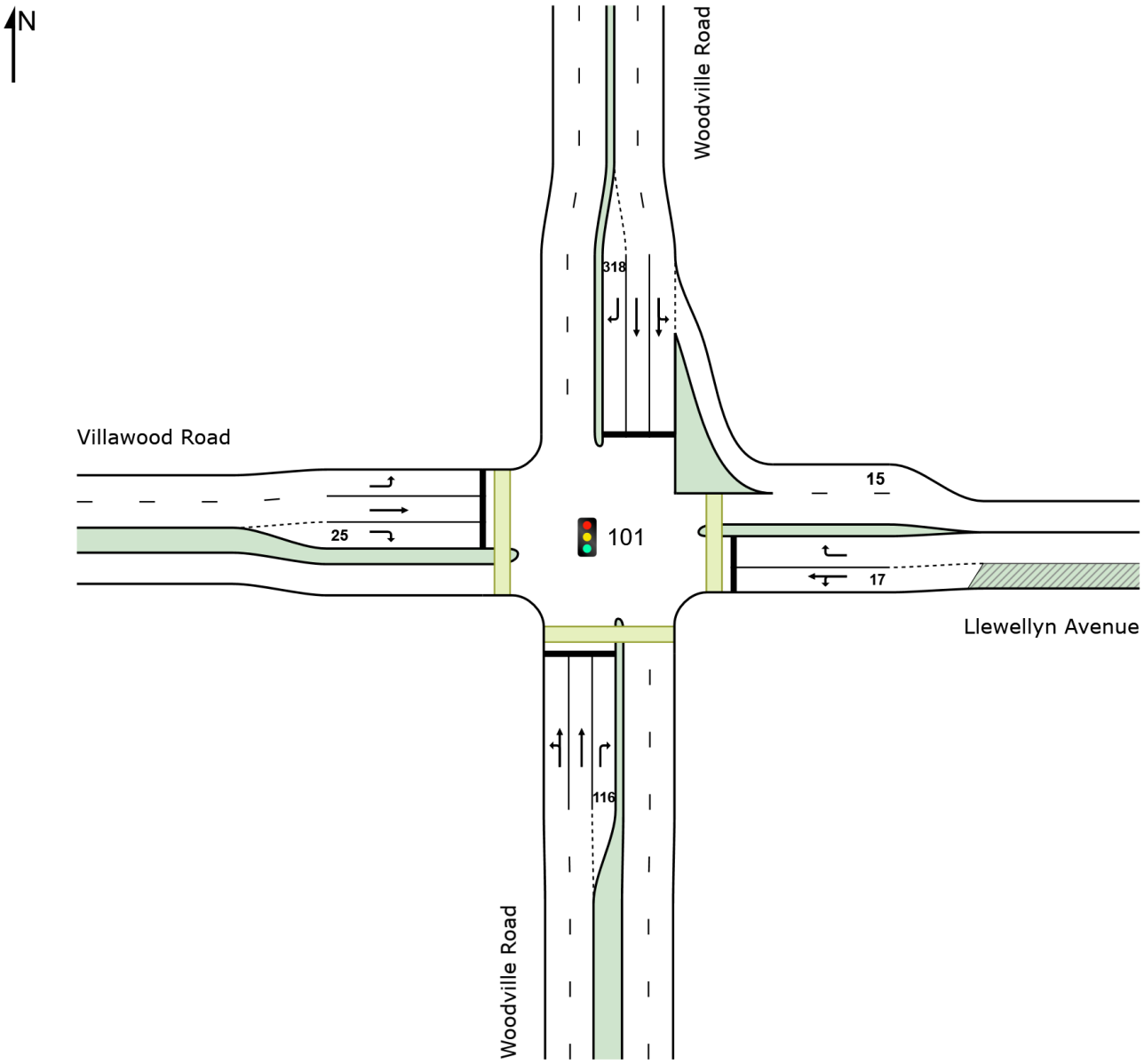
Network: 8 [2031 PM Peak With Dev (Network Folder: PM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2031 PM Peak With Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import (2)
Reference Phase: Phase A
Input Phase Sequence: A, B, D, E
Output Phase Sequence: A, B, D, E

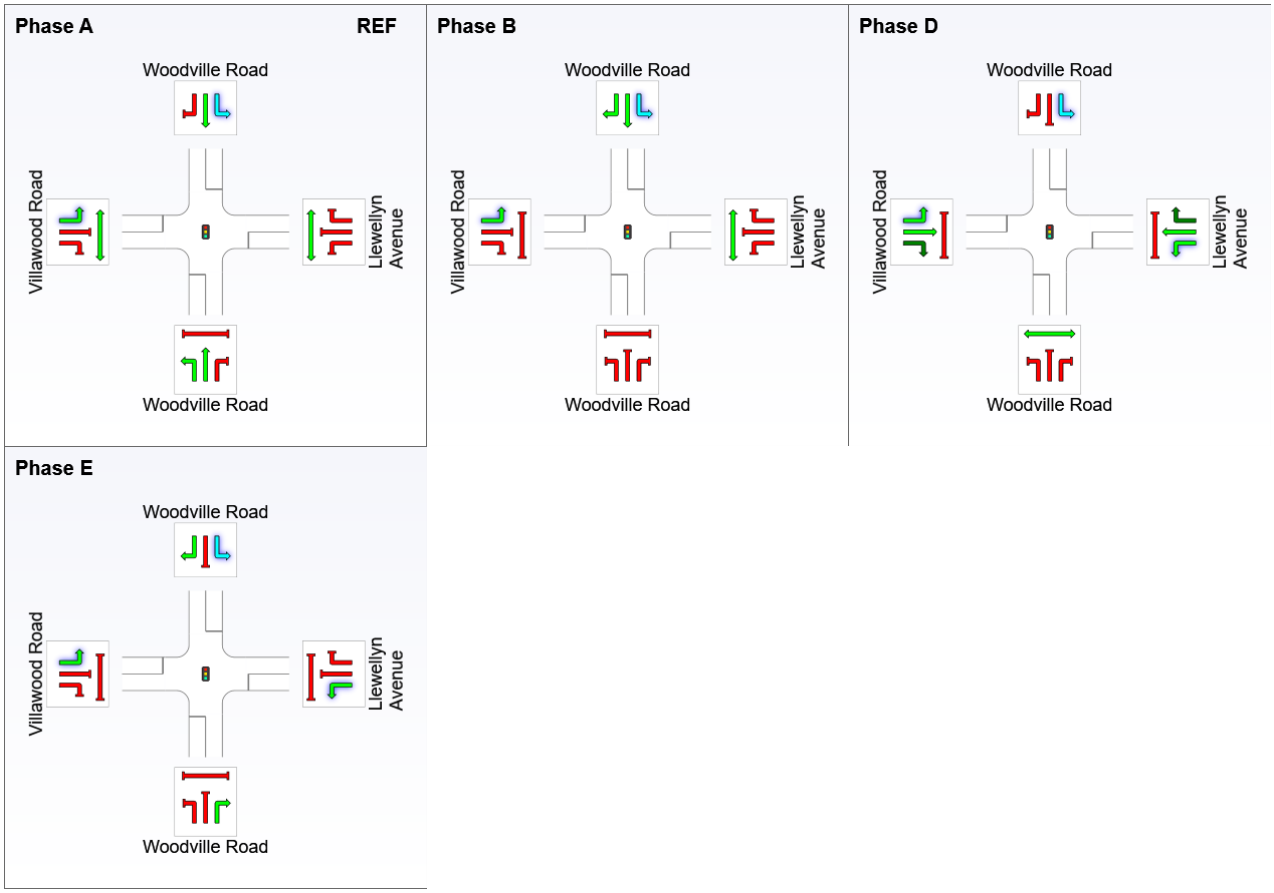
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	80	0.0	68	0.0	0.858	42.2	LOS C	24.0	181.0	0.95	0.90	0.99	14.6
31	T1	1701	10.0	1433	9.9	0.858	37.3	LOS C	24.0	181.0	0.95	0.90	0.99	32.5
32	R2	22	9.5	19	9.4	0.254	80.3	LOS F	0.8	6.1	1.00	0.70	1.00	18.3
Approach		1803	9.6	1519 N1	9.5	0.858	38.1	LOS C	24.0	181.0	0.95	0.90	0.99	31.7
East: Llewellyn Avenue														
21	L2	85	13.6	85	13.6	1.028	140.5	LOS F	10.9	81.0	1.00	1.31	1.84	9.5
5	T1	82	0.0	82	0.0	1.028	135.8	LOS F	10.9	81.0	1.00	1.31	1.84	9.5
23	R2	174	24.8	174	24.8	* 1.327	372.9	LOS F	19.4	164.7	1.00	1.80	2.92	7.8
Approach		341	16.0	341	16.0	1.327	257.7	LOS F	19.4	164.7	1.00	1.56	2.39	8.3
North: Woodville Road														
24	L2	109	14.4	109	14.4	0.901	33.3	LOS C	40.4	313.3	0.91	0.90	0.96	38.8
25	T1	2011	12.3	2011	12.3	* 0.901	28.0	LOS B	40.4	313.3	0.92	0.91	0.97	32.6
9	R2	321	1.6	321	1.6	* 1.036	111.7	LOS F	16.5	116.9	1.00	1.14	1.72	11.6
Approach		2441	11.0	2441	11.0	1.036	39.2	LOS C	40.4	313.3	0.93	0.94	1.07	26.8
West: Villawood Road														
10	L2	282	1.5	282	1.5	0.167	4.9	LOS A	0.6	4.3	0.11	0.56	0.11	49.7
11	T1	5	0.0	5	0.0	0.016	51.2	LOS D	0.2	1.3	0.85	0.57	0.85	21.4
12	R2	139	0.0	139	0.0	2.456	1352.6	LOS F	10.7	75.0	1.00	2.23	4.94	0.2
Approach		426	1.0	426	1.0	2.456	444.7	LOS F	10.7	75.0	0.41	1.11	1.69	3.3
All Vehicles		5012	10.0	4728 N1	10.6	2.456	91.2	LOS F	40.4	313.3	0.89	0.99	1.19	16.8

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.5	218.8	0.94
East: Llewellyn Avenue											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94
West: Villawood Road											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	232.1	218.1	0.94
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	232.3	218.4	0.94

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.

Site: 102 [Woodville Road and Howatt Street and Binna Burra Street (Site Folder: 2031 Scenario - PM Peak | With Kamira Ave Traffic)]

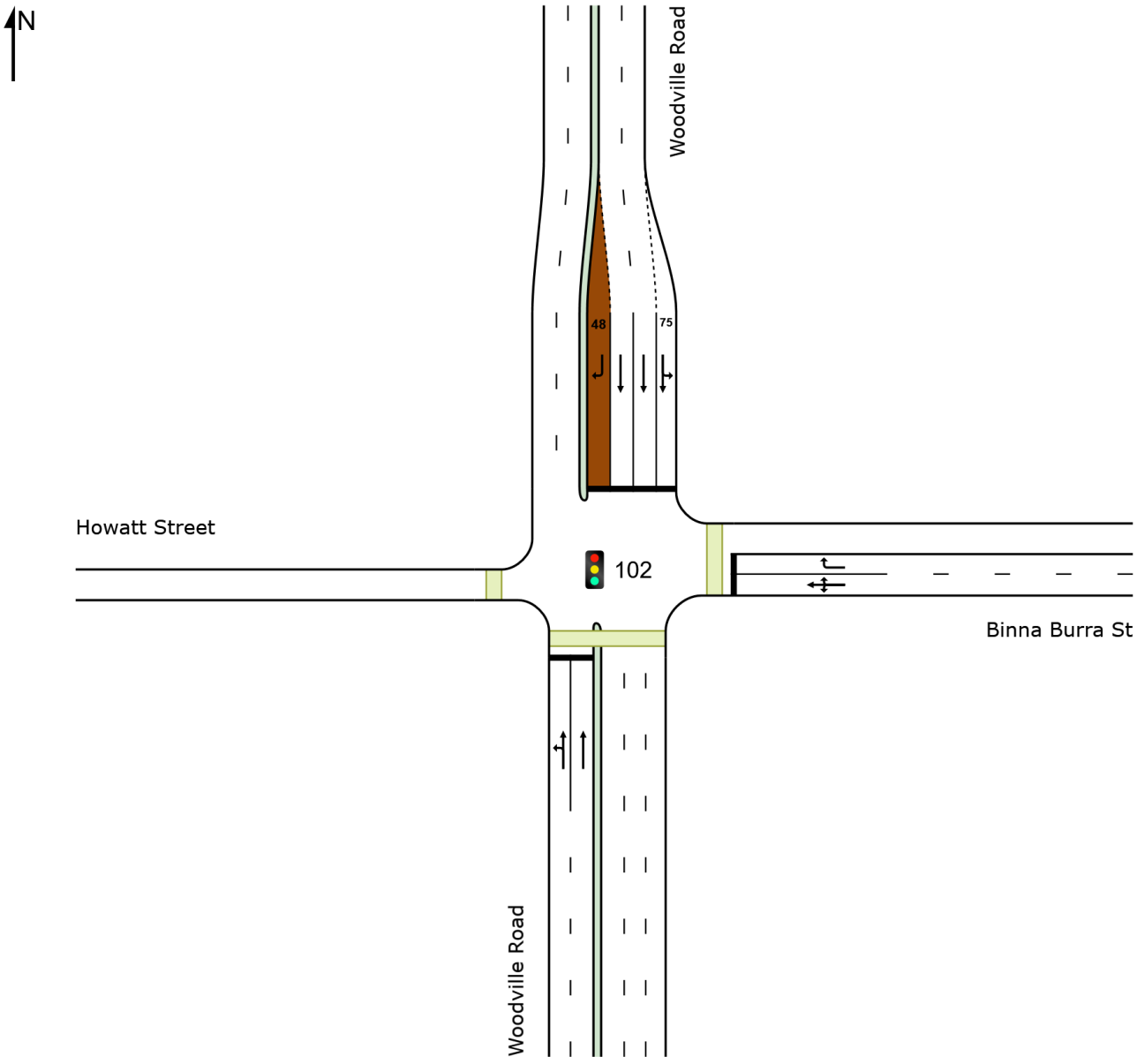
Network: 8 [2031 PM Peak With Dev (Network Folder: PM Peak)]

Woodville Road and Villawood Road and Llewellyn Avenue
Site Category: 2031 PM Peak With Dev
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Network User-Given Cycle Time)

Timings based on settings in the Network Timing dialog
Phase Times determined by the program
Downstream lane blockage effects included in determining phase times
Green Split Priority has been specified
Phase Sequence: Map Extract Default - Import - Import - Import
Reference Phase: Phase A
Input Phase Sequence: A, B, C
Output Phase Sequence: A, B, C

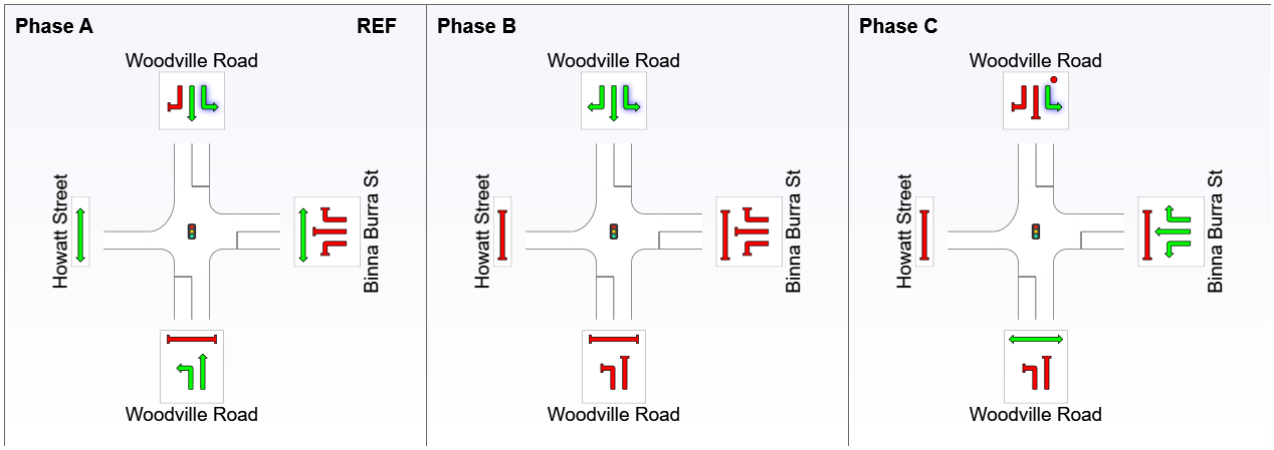
Site Layout

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Vehicle Movement Performance

Mov ID	Turn	DEMAND FLOWS [Total veh/h	HV] %	ARRIVAL FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Woodville Road														
1	L2	115	0.0	115	0.0	1.361	392.6	LOS F	35.8	270.0	1.00	2.37	2.88	3.0
31	T1	1702	10.2	1702	10.2	* 1.361	387.7	LOS F	35.8	270.0	1.00	2.41	2.88	2.5
Approach		1817	9.6	1817	9.6	1.361	388.0	LOS F	35.8	270.0	1.00	2.41	2.88	2.5
East: Binna Burra St														
21	L2	55	3.8	55	3.8	0.877	83.3	LOS F	6.8	48.3	1.00	1.02	1.35	2.9
5	T1	61	1.7	61	1.7	* 0.877	79.4	LOS F	6.8	48.3	1.00	1.02	1.35	5.4
23	R2	112	0.0	112	0.0	0.877	87.5	LOS F	6.8	48.3	1.00	1.02	1.45	2.7
Approach		227	1.4	227	1.4	0.877	84.3	LOS F	6.8	48.3	1.00	1.02	1.40	3.5
North: Woodville Road														
24	L2	182	1.2	174	1.2	0.495	6.9	LOS A	3.2	24.1	0.12	0.24	0.12	24.3
25	T1	2033	12.6	1957	13.1	0.495	1.4	LOS A	3.4	26.2	0.11	0.14	0.11	51.8
9	R2	29	100.0	29	100.0	* 0.644	87.0	LOS F	1.4	17.9	1.00	0.79	1.14	8.8
Approach		2244	12.9	2160 N1	13.3	0.644	3.0	LOS A	3.4	26.2	0.12	0.15	0.13	43.2
All Vehicles		4288	10.8	4205 N1	11.1	1.361	173.8	LOS F	35.8	270.0	0.55	1.18	1.39	4.4

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)
N1 Arrival Flow value is reduced due to capacity constraint at oversaturated upstream lanes.

Pedestrian Movement Performance											
Mov ID	Crossing	Dem. Flow ped/h	Aver. Delay sec	Level of Service	AVERAGE BACK OF QUEUE [Ped ped	Dist] m	Prop. Que	Effective Stop Rate	Travel Time sec	Travel Dist. m	Aver. Speed m/sec
South: Woodville Road											
P8	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	231.3	217.2	0.94
East: Binna Burra St											
P5	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	226.9	211.4	0.93
West: Howatt Street											
P4	Full	53	64.3	LOS F	0.2	0.2	0.96	0.96	222.7	206.0	0.92
All Pedestrians		158	64.3	LOS F	0.2	0.2	0.96	0.96	227.0	211.5	0.93

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.

A Traffic Engineering and Road Safety Consultancy

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