Attachment A2

Transport Impact Assessment – Parramatta Road Precinct

CITY OF SYDNEY

Transport Impact Assessment – Parramatta Road, Forest Lodge Planning Proposal



Transport Impact Assessment
November 2026

The City of Sydney acknowledges the Gadigal of the Eora Nation as the Traditional Custodians of our local area.

Contents

Introduction	6
Strategic Context	8
Existing Conditions	10
Future Conditions	21
Planning Proposal	23
Transport Impact Assessment	33
Conclusion	41
Appendix A – Car Parking Calculations	42
Appendix B – Western Sites Articulation Zone Detail	44
Appendix C – SIDRA Modelling Outputs	46

Table of figures

Figure 1. Land affected by this Planning Proposal 6
Figure 2. Site and surrounding context 10
Figure 3. Zoning map Sydney LEP 2012 11
Figure 4. Road Hierarchy 11
Figure 5. Parramatta Road, facing west 12
Figure 6. Ross Street, facing north 12
Figure 7. Arundel Street, facing east 13
Figure 8. Existing and planned cycling network 14
Table 1. Bus routes and frequency 15
Figure 9. Bus route map 16
Table 2. Existing journey to work mode share 17
Table 3. Intersection performance indicators 18
Table 4. Baseline intersection performance 19
Table 5. Patronage levels of buses along Parramatta Road 20
Table 6. Site summaries 24
Figure 10. Reference scheme – plan view 25
Figure 11: Indicative vehicle access plan 26
Figure 12. Lots impacted by flooding constraints 27
Table 7. Car parking requirements (maximum provision) 28
Table 8. Indicative car parking provision 29
Table 9. Bicycle parking requirements (minimum provision) 29
Table 10. Service vehicle parking requirements (minimum provision) 31
Figure 13. Trip distribution (inbound distribution) 35
Figure 14. Trip distribution (outbound distribution) 35
Figure 15. Permanent road counter id 19065 volumes 36
Figure 16. Permanent road counter id 02350 volumes 37
Table 11. Proposed Planning Proposal SIDRA modelling results 38
Table 12. SIDRA modelling results (Existing versus Existing + Planning Proposal) 39

Executive Summary

This Transport Impact Assessment (TIA) has been prepared to inform Planning Proposal: Parramatta Road Precinct (Planning Proposal) that affects land in Forest Lodge that fronts Parramatta Road, Arundel Street and Ross Street (Figure 1). The Planning Proposal will facilitate additional housing and employment growth through increased development capacity, land rezoning, and site-specific planning controls.

The Planning Proposal is to establish new planning controls for the site in the *Sydney Local Environmental Plan 2012* (Sydney LEP 2012) and the Sydney Development Control Plan 2012 (Sydney DCP 2012). being assessed at a strategic planning level, and development form and land use mix will continue to be refined through future development application processes.

A reference scheme has been developed and forms the basis for this transport assessment. The reference scheme is for a high-density mixed-use precinct comprising residential and non-residential land use, comprising:

- 462 residential apartments (44,327m^2 GFA)
  - 138 1-bed
  - 231 2-bed
  - 92 3+-bed
- 791 student accommodation rooms (22,943m^2 GFA)
- 4,603m² GFA retail floor space
- 8,690m² GFA new commercial floor space (i.e. excluding existing ambulance station)

The site is located within an established inner-city road network with good active and public transport accessibility, reflected in the low private vehicle mode share for the broader area (37%)[1]. SIDRA traffic modelling of the surrounding road network finds the intersections within the study network to operate acceptably under current conditions with minor-to-moderate queues.

The key constraint for the site is flooding, which limits the practicality for vehicular access and basement car parking across many of the western lots. The Planning Proposal responds to this via a low car parking provision, limited basements in flood prone areas, a raised pedestrian footpath along Parramatta Road for the western sites), and allocation of land uses which respond well to the access constraints.

Car, service vehicle, and bicycle parking provisions for the reference design have been calculated based on the Sydney Local Environment Plan (LEP) and Development Control Plan (DCP) Housekeeping Amendments, reflecting upcoming reductions in car parking provision and changes to bicycle parking provisions expected to come into effect late 2026. Final car parking numbers will be refined through future development application processes.

Traffic generation has been calculated on a car parking basis, reflecting the constrained parking strategy and resulting downwards pressure on private vehicle mode share. The reference scheme is expected to generate a net increase of some 120-180 vehicle trips during the weekday and weekend peak hours. SIDRA modelling indicates that this would have minimal impact upon the surrounding road network, with no material change in overall intersection performance.

[1] Source: Australian Bureau of Statistics 2026, *Census TableBuilder – Place of Usual Residence for the Glebe - Forest Lodge Statistical Area 2*

The Planning Proposal is expected to generate minor to moderate increases in active and public transport demand, representing a small increase compared to existing network activity, and which will be comfortably accommodated within the existing walking, cycling and public transport network.

Overall, the Planning Proposal is not expected to materially affect local transport conditions and will be supported by the site's high level of accessibility and support increased use of existing walking, cycling and public transport infrastructure without requiring significant transport network upgrades.

Introduction

Overview

This Transport Impact Assessment (TIA) has been prepared to inform a Planning Proposal for the coordinated redevelopment of around 18,000m^2 of land fronting Parramatta Road, Arundel Street and Ross Street in Forest Lodge as shown in Figure 1.

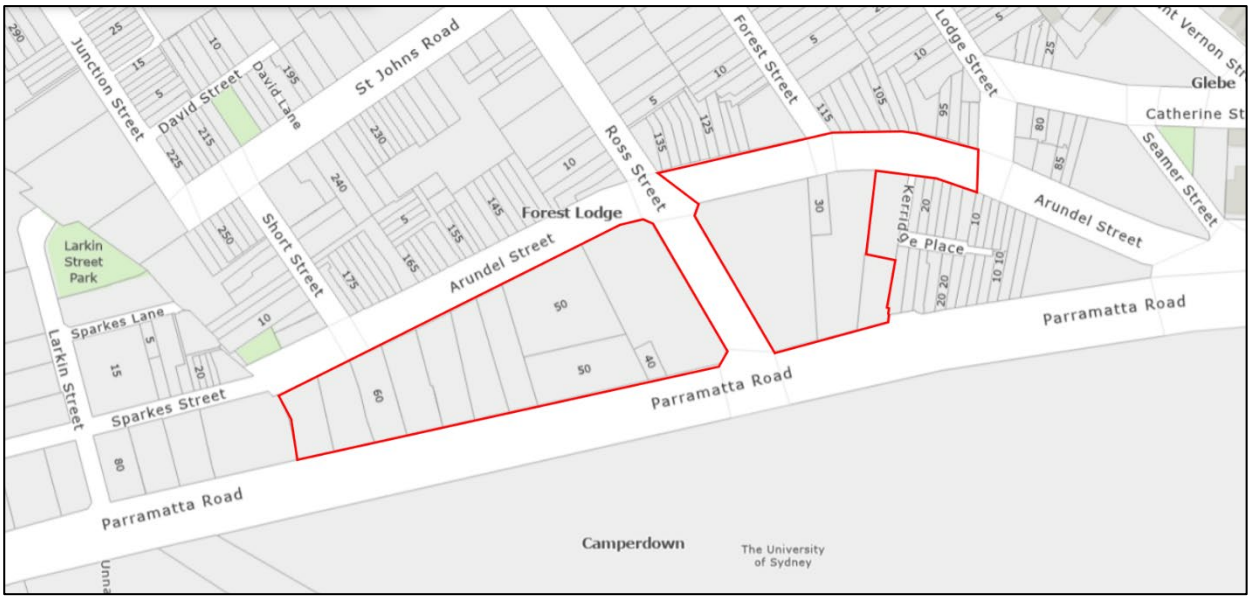


Figure 1. Land affected by this Planning Proposal

The Planning Proposal seeks to increase the development capacity of the site to support a high-density mixed-use precinct comprising residential, retail, commercial and other employment-generating uses. The Planning Proposal seeks to facilitate additional housing and employment capacity through amendments to the Sydney Local Environmental Plan 2012 (Sydney LEP 2012), including the rezoning of land from E3 Productivity Support to MU1 Mixed Use.

A key site constraint is flooding, which may limit the feasibility of basement parking in some areas. Future development is therefore expected to adopt a reduced parking provision strategy, with parking provided only where it can be safely and practically accommodated.

The Planning Proposal is to provide new planning controls for the site. Detailed matters such as vehicle access arrangements, servicing, loading facilities, parking layouts, swept path assessments and intersection modelling will continue to be refined during future development application processes once the final development form and land use mix are established. Current assumptions indicate redevelopment may comprise multiple buildings accommodating a range of residential housing typologies, including student accommodation, together with complementary non-residential uses.

Scope of the study

Assessment of traffic and transport implications at the Planning Proposal stage are generally expected to be strategic in nature, focusing on broader planning considerations rather than detailed traffic modelling.

Consistent with Transport for NSW's multimodal approach to transport assessment, this report considers:

– The existing transport environment surrounding the site

– Walking, cycling and public transport accessibility

– The surrounding road network and current operating conditions

– Likely future travel demand associated with the proposed land uses

– The influence of anticipated residential typologies on car ownership and travel behaviour

– Access and parking considerations, including constraints associated with flooding

– Potential impacts on active transport, public transport and road networks

– Management measures, as required, to support sustainable transport outcomes

The assessment is intended to inform the Planning Proposal and identify transport matters requiring further consideration at later stages of the planning and development process.

Strategic Context

Sydney Plan

The Sydney Plan is the NSW Government's strategic land use plan for Greater Sydney and establishes a framework for accommodating future housing, employment and infrastructure growth over 2026-2046. The Plan seeks to coordinate urban growth with transport infrastructure and encourages additional housing and employment within well-located urban areas that are supported by public transport, active transport and community infrastructure.

The Planning Proposal is consistent with the Sydney Plan's objectives of directing housing and employment growth to locations with strong access to public transport, active transport and existing infrastructure. The site is located opposite the University of Sydney, close to Royal Prince Alfred Hospital and approximately 2 km from the Sydney CBD, enabling a high proportion of trips to be undertaken by walking, cycling and public transport. The proposal supports additional housing and employment growth on a strategically located urban site with existing transport infrastructure and services.

City Plan 2036

City Plan 2036 is the City of Sydney's Local Strategic Planning Statement and provides the long-term strategic framework for land use and infrastructure planning within the local government area. Transport-related priorities relevant to the site include:

- H1: Housing for all
- I1: Movement for walkable neighbourhoods and a connected city
- I2: Align development and growth with supporting infrastructure
- P1: Growing a stronger, more competitive economy

The Planning Proposal supports the movement and infrastructure priorities of City Plan 2036 by directing housing and employment growth to a highly accessible location. The site is well connected to walking, cycling and public transport networks and can accomodate additional travel demand through existing transport infrastructure. The proposal also supports access to major employment, education and health destinations, reducing reliance on private vehicle travel.

Sustainable Sydney 2030-2050 Continuing the Vision

Sustainable Sydney 2030-2050 Continuing the Vision establishes the City of Sydney's long-term vision for a green, global and connected city. A key direction of the strategy is the creation of a city where walking, cycling and public transport are the preferred travel modes and where growth occurs in locations with strong accessibility to jobs, services and infrastructure.

The Planning Proposal supports these objectives by introducing additional housing and employment opportunities within an established inner-city location that benefits from excellent public transport accessibility and proximity to major employment, education and health destinations. The proposal is expected to generate a high proportion of trips by walking, cycling and public transport due to its location and surrounding transport network characteristics.

Housing for All Discussion Paper

The Housing for All Discussion Paper, exhibited by the City of Sydney in mid-2026, identifies key opportunities to increase housing supply across the local government area. The paper identifies the precinct as a strategic urban renewal opportunity, recognising its capacity to accommodate additional housing, including affordable housing, student accommodation and other diverse housing typologies.

The paper highlights the precinct's proximity to the University of Sydney, Royal Prince Alfred Hospital and major public transport corridors, and supports the renewal of underutilised former industrial lands to facilitate a mixed-use, transit-oriented precinct. This approach is intended to increase housing supply while contributing to the long-term transformation of the Parramatta Road corridor into a more vibrant, connected and liveable urban environment. The paper also acknowledges that future public transport improvements, including light rail, could further enhance the precinct's accessibility and development potential.

Local Environmental Plan and Development Control Plan Amendments

The City of Sydney is currently progressing amendments to the Sydney LEP 2012 and Sydney Development Control Plan 2012 (LEP Amendments and DCP Amendments) as a response to the priorities and actions identified in the City Plan 2036. This update gathers a series of smaller planning control changes related to housing, parking, greening, amenity, sustainability and design excellence to implement priorities of the planning statement as well as housekeeping changes to improve the operation of controls[2].

The update was exhibited over late 2024 to early 2025, approved by Council in mid-2025, and is currently with the Department for finalisation. While not formally in effect as of the time of this report, the LEP and DCP Amendments, having regard to their advanced stage in the statutory process, have formed the basis of assessment within this Transport Impact Assessment.

[2] Source: City of Sydney 2025, *Decision details Post Exhibition - Planning Proposal - Sydney Local Environmental Plan and Development Control Plan - Policy and Housekeeping Amendments (LEP/DCP Update)*, https://meetings.cityofsydney.nsw.gov.au/ieDecisionDetails.aspx?AIId=19796

Existing Conditions

Site Location and Local Context

The site is located on land fronting Parramatta Road, Arundel Street and Ross Street, Forest Lodge, within the City of Sydney Local Government Area (LGA).

The site comprises multiple adjoining land parcels with a combined area of approximately 18,000m². Existing development includes a range of commercial and service-based uses, including Officeworks, Sydney City Toyota, the NSW Ambulance Station and other commercial premises. For a detailed summary, refer to the *Planning Proposal – Parramatta Road Precinct*.

The site is located approximately 2 km west of the Sydney CBD, opposite the University of Sydney and in proximity to Royal Prince Alfred Hospital, Broadway, Camperdown and Glebe. Parramatta Road forms the southern boundary of the site and operates as a major arterial road and public transport corridor, while Arundel Street and Ross Street provide local access and connections to surrounding residential and mixed-use areas. The site location and context is shown in Figure 2.



Figure 2. Site and surrounding context

The site is currently zoned E3 Productivity Support under the Sydney LEP 2012. Surrounding land uses are predominantly zoned R1 General Residential to the north, and SP2 Educational to the south.

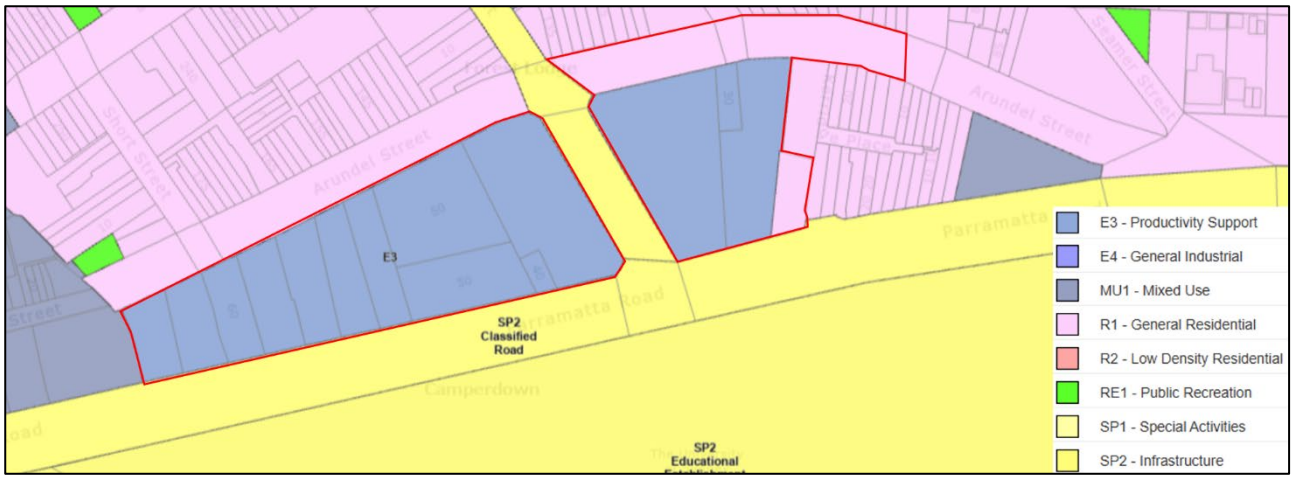


Figure 3. Zoning map Sydney LEP 2012

Road Network

The site is located within an established inner-city road network and has frontages to Parramatta Road, Arundel Street and Ross Street. Key State and Regional roads within the vicinity of the site are illustrated in Figure 4.

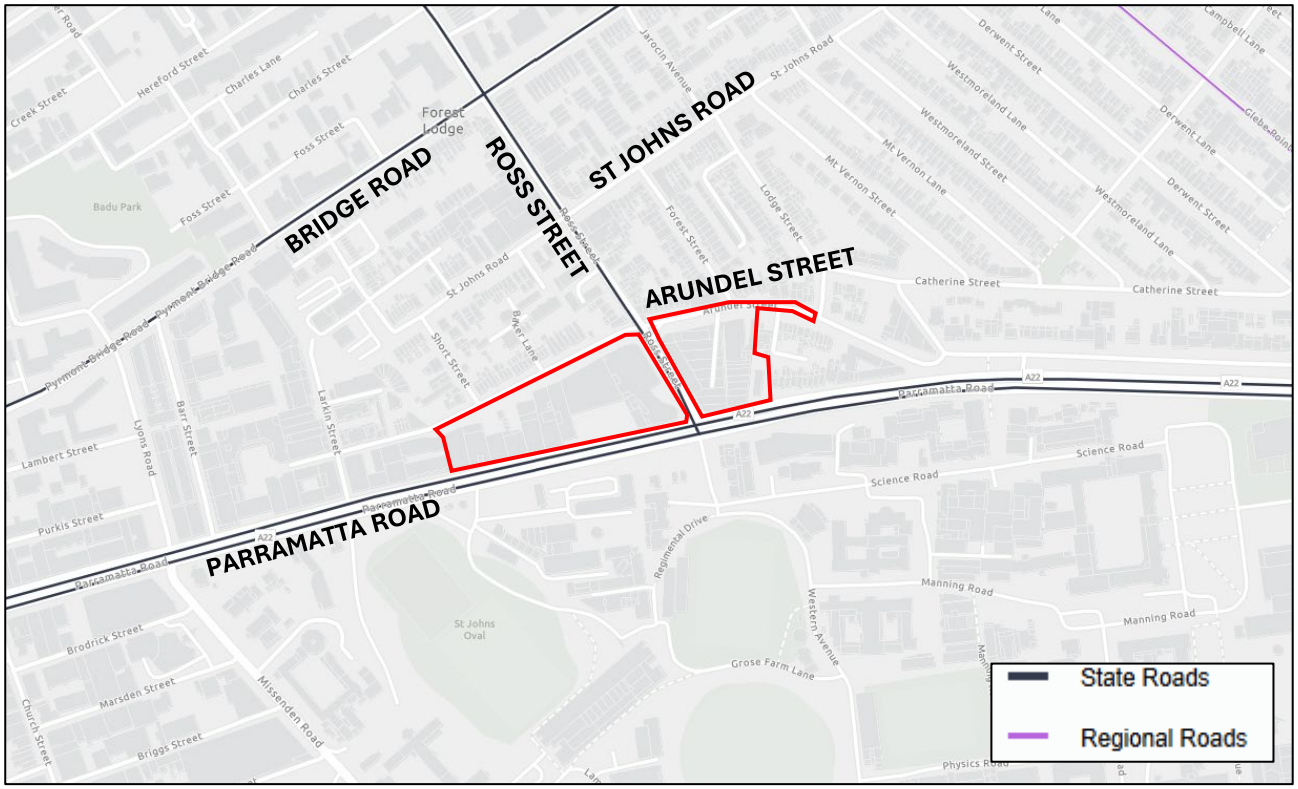


Figure 4. Road Hierarchy

Parramatta Road

Parramatta Road is a classified State Road and forms the southern frontage of the site. It serves as a major arterial road providing east-west connections between Central Sydney, Camperdown, the Inner West and the broader metropolitan road network. The corridor also accommodates a significant volume of bus services and features 3 lanes in each direction.

Along the site frontage, Parramatta Road has a posted speed limit of 60km/h and features AM and PM peak period bus lanes (from 6am to 10am and 3pm to 7pm on weekdays). The western end of

the Parramatta Road frontage features 1P parking restrictions (10am-3pm Monday-Friday, 8:30am-12:30pm Saturday).

While Parramatta Road remains a major arterial corridor, the opening of WestConnex has reduced its role in accommodating longer-distance east-west movements, creating opportunities for the corridor to evolve into a more people-focused urban environment.



Figure 5. Parramatta Road, facing west

Ross Street

Ross Street is a classified State Road and forms the central north-south spine between the 2 halves of the site. There is 1 lane in each direction, with kerbside parking on the eastern side of the road between Parramatta Road and St Johns Road and on both sides of the road between St Johns Road and Bridge Road. Ross Street has a posted speed limit of 40km/h.



Figure 6. Ross Street, facing north

Arundel Street

Arundel Street forms the northern frontage of the site and provides a local street interface with surrounding residential development. It provides 1 lane in each direction, with kerbside parking on both sides, typically 1P 8am-10pm, permit holders excepted. Arundel Street has a posted speed limit of 40km/h.



Figure 7. Arundel Street, facing east

The surrounding road network also includes Bridge Road to the north, Broadway to the east and Missenden Road to the west. These routes provide access to surrounding centres and destinations including Glebe, Camperdown, Newtown, Broadway, the University of Sydney and Royal Prince Alfred Hospital.

Active Transport

Walking Environment

The site is located within a highly walkable inner-city environment. Footpaths are provided on both sides along Parramatta Road, Arundel Street and Ross Street, with signalised pedestrian crossings on all legs of the nearby signalised intersections.

The site is within convenient walking distance of a range of major destinations, including the University of Sydney, Royal Prince Alfred Hospital, Broadway Shopping Centre, Glebe Point Road, Victoria Park and surrounding employment, education and retail precincts.

Cycling Environment

The site benefits from proximity to existing and planned cycling routes connecting the area with the Sydney CBD, the University of Sydney, Camperdown, Glebe, Newtown and other surrounding inner-city destinations.

While Parramatta Road primarily functions as a strategic traffic corridor and is generally not attractive for most cyclists, alternative cycling routes are available via lower-speed local streets and dedicated facilities within the surrounding area, including an off-road cycleway on Bridge Road as shown in Figure 8.

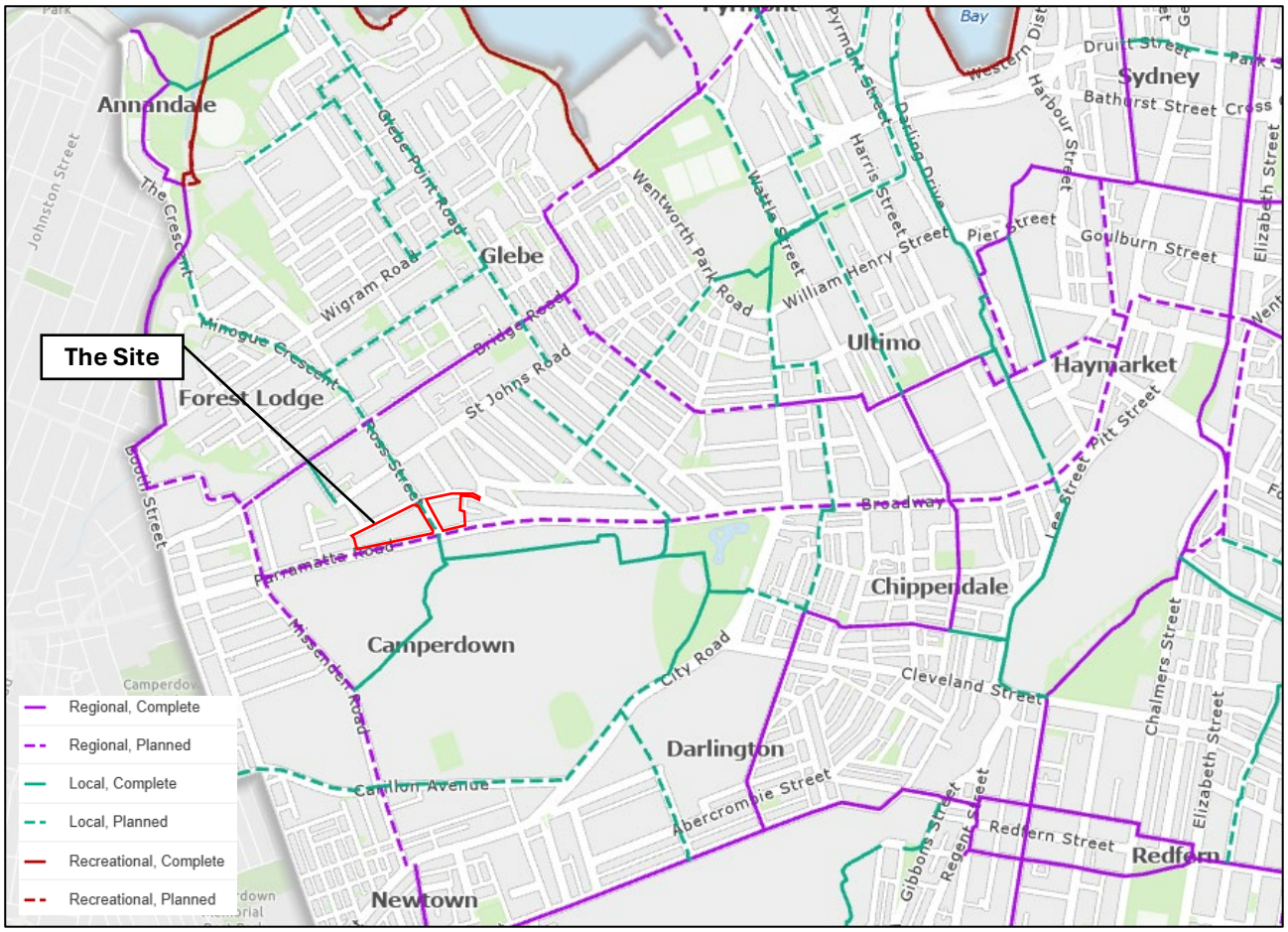


Figure 8. Existing and planned cycling network

Public Transport

The site is well served by bus services operating along Parramatta Road, with frequent connections to Central Sydney, the University of Sydney, Camperdown, the inner west and surrounding centres.

Bus stops located adjacent to the site provide access to numerous routes connecting the area with Central Station, Martin Place, Town Hall and other major transport interchanges. The frequency, span and coverage of bus services provide a high level of public transport accessibility throughout the day. These services also provide convenient connections to major public transport interchanges, facilitating access to the wider Sydney rail, metro and light rail networks.

Table 1 summarises the principal bus services operating adjacent to the site. Figure 9 illustrates the surrounding bus routes.

Table 1. Bus routes and frequency

Bus route	Description	Peak period frequency	Approximate service span
412	Campsie to City Martin Place via Earlwood & Dulwich Hill	Every 10-15 mins	5:00am – 1:30am
413	Campsie to Central Pitt St	Every 10-15 mins	6:30am – 1:00am
422	Kogarah to Central Pitt St	Every 10-15 mins	5:30am – 1:00am
438X	Abbotsford to City Martin Place (Express Service)	Every 5-10 mins	6:00am – midnight
438N	Abbotsford to City Martin Place (Night Service)	Every 30 mins	Midnight – 6:00am
440	Bondi Junction to Rozelle	Every 8-12 mins	4:00am – 12:30am
461X	Burwood to City Domain (Express Service)	Every 10-15 mins	6:00am – 10:00pm
461N	Burwood to City Hyde Pk (Night Service)	Every 25-30 mins	10:00pm – 6:00am
469	MarketPlace Leichhardt to Glebe (Loop Service)	Every 20-30 mins	6:00am – 10:30pm
470	Lilyfield to City Martin Place	Every 10-15 mins	6:00am – 1:00am
480	Strathfield to Central Pitt St via Homebush Rd	Every 15-20 mins	5:00am – 9:00pm
483	Strathfield to Central Pitt St via South Strathfield	Every 10-15 mins	6:00am – 12:30am

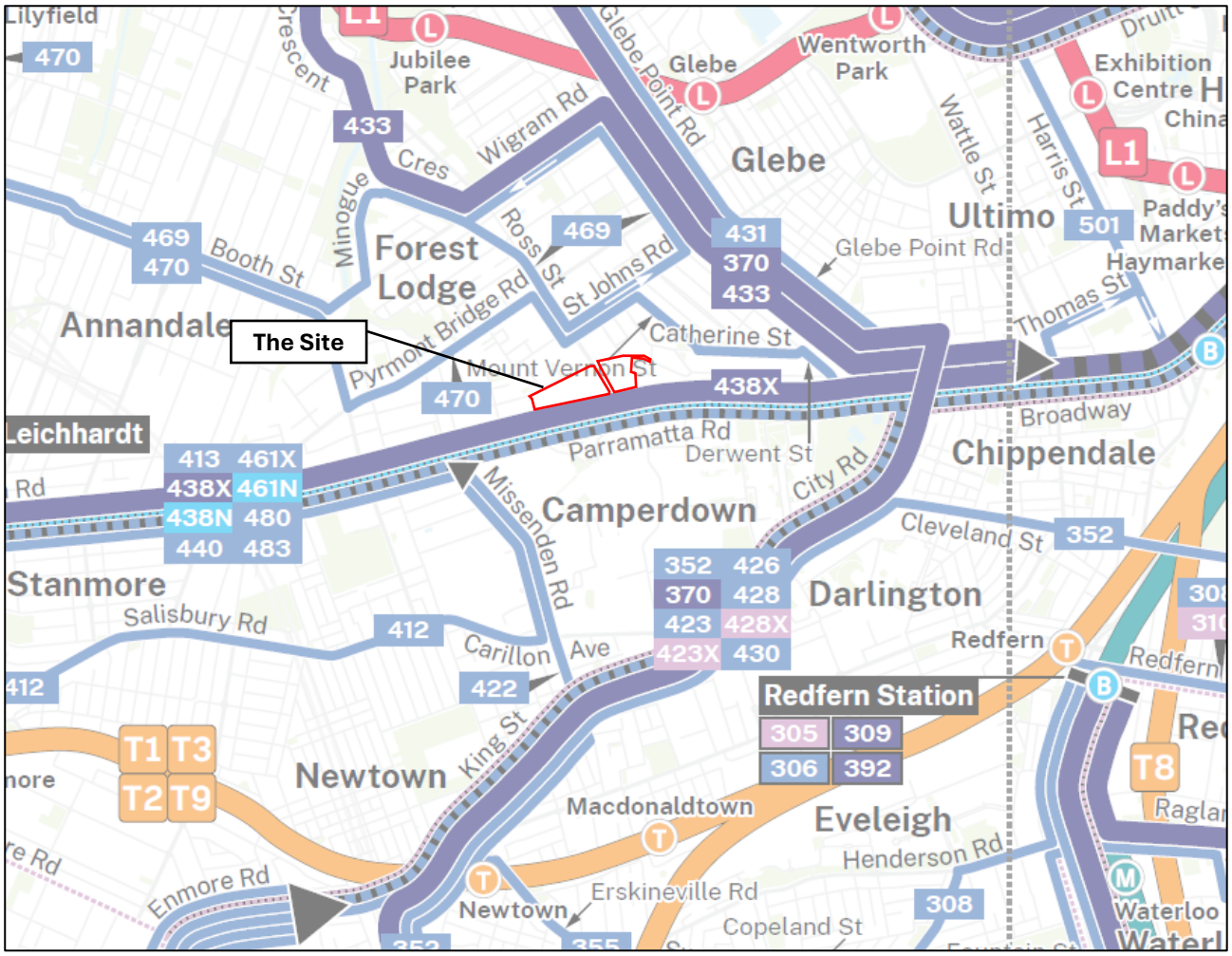


Figure 9. Bus route map

Travel Behaviour

Existing travel behaviour in the surrounding area reflects the site's inner-city location, proximity to major education, health and employment destinations, and access to public transport.

2016 Census Journey to Work (JTW) data for the broader Glebe/Forest Lodge Statistical Area 2 has been used to understand existing travel patterns in the vicinity of the site. The 2016 Census is considered more representative than the 2021 Census, as travel patterns in 2021 were influenced by COVID-19 restrictions and increased levels of remote working.

Table 2. Existing journey to work mode share

Mode	Mode Share
Private vehicle	37%
Rail	14%
Bus	25%
Walk	19%
Bicycle	5%
Other	1%

The benchmark data indicates that travel in the surrounding area is highly multimodal. While private vehicles account for the largest individual mode, almost two thirds of journey-to-work trips are undertaken by public transport, walking or cycling.

Future residents and workers associated with the proposed redevelopment are likely to exhibit travel characteristics that are at least as sustainable as those reflected in the benchmark area.

This expectation is supported by the site's proximity to the University of Sydney, Royal Prince Alfred Hospital, Broadway and the Sydney CBD fringe, together with direct access to high-frequency bus services and surrounding walking and cycling networks.

The anticipated residential mix is also expected to support lower rates of car ownership and a greater propensity to use public and active transport modes.

Traffic Volumes

Classified intersection count surveys were undertaken for the following nearby intersections on Thursday 30 July 2026 (between 7am-10am and 4pm-7pm) and on Saturday 1 August 2026 (between 10am-2pm).

1. Parramatta Road / Ross Street
2. Ross Street / Arundel Street
3. Ross Street / St Johns Road
4. Ross Street / Bridge Road

The network peak hours were identified to be:

– AM peak hour: 8:15am – 9:15am

– PM peak hour: 5:00pm – 6:00pm

– Saturday peak hour: 12:45pm – 1:45pm

Vehicle counts during these periods were extracted to inform the intersection modelling outlined in the following section.

Intersection Operation

The operation of the key intersections within the study area have been assessed using SIDRA Intersection 10, a computer-based modelling package which evaluates intersection performance.

The 4 intersections have been modelled as a network to capture the potential effects of vehicle queues and associated impacts on intersection throughput.

The intersection performance has been assessed using the following metrics:

– Degree of Saturation

– Average delay (seconds per vehicle)

– Level of Service

– 95th percentile queue length

A common measure of intersection performance is the Degree of Saturation (DOS), which provides an overall measure of the capability of the intersection to accommodate additional traffic. A DOS of 1.0 indicates that an intersection is operating at capacity. The desirable maximum DOS for an intersection is 0.9 (or 90%).

In urban areas, the traffic capacity of the major road network is generally a function of the performance of key intersections. This performance is quantified in terms of Level of Service (LOS), which is based on the average delay per vehicle. LOS ranges from A = very good to F = unsatisfactory. The desirable maximum level of service for an intersection is D. A summary is shown in Table 3.

Table 3. Intersection performance indicators

Level of Service	Average delay (seconds)	Operation
A	<15	Good operation
B	15-28	Good with acceptable delays and spare capacity
C	29-42	Satisfactory
D	43-56	Operating near capacity
E	57-70	At capacity
F	>70	Over capacity

The baseline performance of the road network is summarised in Table 4.

Table 4. Baseline intersection performance

Period	Intersection	DOS	Delay (s)	LOS	95th Percentile Queue (m)
AM peak	Parramatta Road / Ross Street	0.89	16	B	172
	Ross Street / Arundel Street	0.24	12	A	4
	Ross Street / St Johns Road	0.41	14	A	56
	Ross Street / Bridge Road	0.73	23	B	150
PM peak	Parramatta Road / Ross Street	0.93	17	B	114
	Ross Street / Arundel Street	0.23	12	A	3
	Ross Street / St Johns Road	0.56	21	B	86
	Ross Street / Bridge Road	0.66	22	B	126
SAT peak	Parramatta Road / Ross Street	0.91	19	B	139
	Ross Street / Arundel Street	0.22	11	A	3
	Ross Street / St Johns Road	0.42	15	B	42
	Ross Street / Bridge Road	0.65	21	B	95

As shown in Table 4, the surrounding intersections are currently operating acceptably, with a LOS B or better across all peak periods. The minor approaches of the Parramatta Road / Ross Street intersection experience higher delays and Degrees of Saturation due to low green time allocation (this being prioritised along Parramatta Road), but the overall intersection operates well with low levels of queueing along Parramatta Road.

Occasionally southbound queues along Ross Street may extend from Parramatta Road to Arundel Street during the AM and Saturday peak hours, however, these are infrequent and quickly dissipate.

Public Transport

Bus Opal Assignment Model (BOAM) data was sourced from the Transport for NSW Open Data Hub to review current patronage levels at the 2 closest bus stops, summarised in Table 5.

– Parramatta Rd opp University of Sydney Ross St Gate (id 203768)

– University of Sydney Ross St Gate, Parramatta Rd (id 205021)

Each column represents the total number of buses that stopped at 1 of these bus stops during the AM, PM or Saturday peak hour.

Table 5. Patronage levels of buses along Parramatta Road

Occupancy	Weekday AM peak		Weekday PM peak		Saturday peak	
	Towards CBD	Away from CBD	Towards CBD	Away from CBD	Towards CBD	Away from CBD
0-20%	9	19	19	9	10	8
21-40%	16	13	8	18	15	17
41-60%	12	2	0	9	1	1
61-80%	1	0	0	3	0	0
81-100%	1	0	0	0	0	0

Patronage levels on bus routes at this location is low to moderate. During the peak weekday periods in the major flow direction (towards CBD in the AM peak and away from CBD in the PM peak), most buses are 0-60% occupied, and only very infrequently exceed 60% occupancy. Outside of these periods, patronage is generally around the 0-40% level.

Therefore, bus services generally have ample spare capacity within the vicinity of the site.

Future Conditions

Western Harbour Tunnel

The future operation of the surrounding road network will be influenced by the delivery of the Western Harbour Tunnel, estimated for completion in 2028[3]. While the project is not directly connected to Parramatta Road, it will provide an additional strategic north-south motorway connection within Sydney's broader motorway network.

While the Environmental Impact Statement for the Western Harbour Tunnel does not forecast specific traffic reductions on Parramatta Road, the Parramatta Road corridor is expected to benefit indirectly from broader network redistribution, establishing increasing opportunities for Parramatta Road to perform a place and movement function that balances local access, public transport and active transport outcomes alongside its arterial road role.

Potential Future Light Rail

A future light rail connection along Parramatta Road has also been proposed by the ALTRAC consortium through an unsolicited proposal to the NSW Government[4]. The proposal would extend light rail from the existing Taverners Hill stop east along Parramatta Road and Broadway to Central Station, before continuing through Redfern and Waterloo to Green Square. The proposed route is approximately 11 kilometres in length and would include around 21 stops.

While the proposal is not a committed government project it demonstrates ongoing strategic interest in delivering higher-capacity public transport within the Parramatta Road corridor. If progressed in the future, a light rail service would further enhance public transport accessibility for sites along Parramatta Road and support the corridor's broader urban renewal and housing growth objectives.

Parramatta Road Revitalisation

The site's future transport context will also be influenced by the ongoing revitalisation of the Parramatta Road corridor. Transport for NSW's Parramatta Road Vision[5] identifies a long-term objective to transform the corridor into a multimodal transport spine supported by enhanced bus services, improved integration between buses, freight, cycling and private vehicles, and upgrades to pedestrian, cycling and public domain infrastructure.

These transport initiatives align with the broader objectives of the Parramatta Road Corridor Urban Transformation Strategy (PRCUTS), which seeks to support urban renewal, housing growth and improved liveability along the corridor.

[3] Source: NSW Government 2025, *Ministerial media release Light at the end of the Western Harbour Tunnel*, https://www.nsw.gov.au/ministerial-releases/light-at-end-of-western-harbour-tunnel
[4] Source: Altrac 2026, *Parramatta Road to Green Square – The next stage of Sydney's Light Rail*, https://altraclightrail.com.au/proposal/
[5] Source: Transport for NSW 2026, *Parramatta Road Vision*, https://www.transport.nsw.gov.au/projects/current-projects/parramatta-road-vision

More recently, the NSW Government and Inner West Council have commenced a state-led rezoning process for land along the Parramatta Road corridor within the Inner West LGA[6,7]. The proposal is intended to facilitate up to 8,000 new homes in locations with strong access to public transport, employment and services, while also considering active transport, public domain and infrastructure improvements.

As these initiatives are progressively implemented, the transport network serving the site is expected to become increasingly supportive of public transport, walking and cycling, reinforcing the appropriateness of a reduced car-dependency outcome for future development.

Consistent with this strategic direction, the Planning Proposal incorporates a setback behind the existing bus stop at the Parramatta Road and Ross Street intersection. This provides flexibility for future public transport, public domain and streetscape improvements should future corridor upgrades be progressed.

[6] Source: Inner West Council 2026, *Parramatta Road Corridor State led rezoning*, https://www.innerwest.nsw.gov.au/strategic-planning/parramatta-road-corridor-state-led-rezoning
[7] Source: NSW Government 2026, *Ministerial media release Plans for 300+ homes at Haberfield dive site revealed*, https://www.nsw.gov.au/ministerial-releases/plans-new-homes-haberfield

Planning Proposal

Reference Scheme

For the purposes of the Planning Proposal and the supporting transport assessment, a reference scheme has been adopted to enable consideration of the potential transport implications of redevelopment. The reference scheme is intended as a basis for strategic assessment and does not represent a final development outcome. The final development yield, built form, land use mix and staging will be confirmed through ongoing development applications.[8]

The following planning assumptions have been considered in this assessment. A breakdown by each site is presented in Table 6. For further details, refer to the *Planning Proposal – Parramatta Road, Forest Lodge*.

- 462 residential apartments (44,327m^2 GFA)
  - 138 1-bed
  - 231 2-bed
  - 92 3+-bed
- 791 student accommodation rooms (22,943m^2 GFA)
- 4,603m² GFA retail floor space
- 8,690m² GFA new commercial floor space (i.e. excluding existing ambulance station)

[8] Note: The reference scheme does not include the additional floor space incentives available for developments that comprise at least 25% non-residential floor space. While this incentive has the potential to influence future employment floor space outcomes, any resulting transport impacts would be subject to detailed assessment at the development application stage.

Table 6. Site summaries

Site	Land use	Site area (m^2)	Residential GFA (m^2)	Retail GFA (m^2)	Commercial GFA (m^2)	Apartments / Rooms
50 Parramatta Road	Mixed-use residential	1,368	5,212	657	492	54
50 Arundel Street	Existing Central Ambulance Station (unchanged)	2,090	-	-	-	-
40 Parramatta Road	Retail and commercial	169	-	140	782	-
36 Parramatta Road	Mixed-use residential	2,973	12,695	2,196	5,445	132
1–3 Ross Street	Mixed-use residential	3,375	14,884	1,259	1,745	155
26 Arundel Street	Mixed-use residential	1,899	10,008	351	226	104
30 Arundel Street	Mixed-use residential	290	1,528	-	-	16
AB	Student housing	1,459	4,114	-	-	142
CD	Student housing	1,777	7,195	-	-	248
EFG	Student housing	2,718	11,634	-	-	401



Figure 10. Reference scheme – plan view

Site Access

Future development will prioritise walking, cycling and public transport use, consistent with the site's accessibility and strategic location on the Parramatta Road corridor.

Pedestrian and cyclist access

Pedestrian accesses will be located to respond to each building's frontage, land use, flood constraints and expected desire lines. Consideration will be required for areas affected by flooding, to ensure safe and accessible pedestrian access.

Cycling access is expected to be provided via the surrounding local street network and will consider existing cycling connections within the area. Bicycle parking provision and end-of-trip facilities will be provided in accordance with the DCP to encourage cycling to and from the site.

Where possible, pedestrian and bicycle accesses will be designed to avoid conflict with vehicle access, servicing and loading areas.

Specifically for the western sites, the development would generally be elevated above the level of Parramatta Road resulting in a raised ground floor frontage that increases in height towards the west edge of the site. This results in:

- A retaining wall being provided along the Parramatta Road frontage, creating a clear distinction between the public footpath and the elevated development platform
- A pedestrian corridor being incorporated between the elevated buildings and Parramatta Road, providing a generous pedestrian interface that includes stairs, ramps and access points between the elevated development and the public domain, and

- While non-residential uses are not specifically required on these properties, communal areas, building lobbies and other active frontages address the pedestrian corridor, creating an active and well-surveilled frontage and visual interest along Parramatta Road.

This is outlined in the articulation detail in Appendix B.

The western development sites are also intended to facilitate a flood-safe pedestrian evacuation route (through future planning controls and easements) connecting future redevelopment parcels to the flood-safe access point at 52 Parramatta Road. The route is intended to be publicly accessible and delivered progressively as individual sites redevelop (from east to west), ensuring that all future development within the flood-affected western precinct can achieve safe pedestrian evacuation during flood events.

Vehicular access

As both Parramatta Road and Ross Street are classified State Roads, future access arrangements will seek to minimise direct interaction with the arterial road network where practicable.

Correspondingly, Arundel Street is identified as the preferred location for primary vehicular access to the site. This approach reflects the local road function of Arundel Street and has the potential to minimise operational impacts on the surrounding arterial network.

The suitability of Arundel Street to accommodate access, servicing and loading activities will be subject to further review during future development applications. This assessment will consider operational performance, road safety, servicing requirements, vehicle swept paths, pedestrian and cyclist movements, residential amenity outcomes and emergency vehicle access requirements.

The consolidation of lots also creates opportunities to reduce the number of driveways across the surrounding frontages, particularly along Arundel Street. This reduces the number of potential pedestrian/vehicle conflict interfaces and enables opportunity to recover on-street car parking spaces.

The Planning Proposal does not seek approval for any specific access arrangement, with detailed access design to be developed as part of future stages of the planning process. An indicative vehicle access plan is provided in Figure 11.

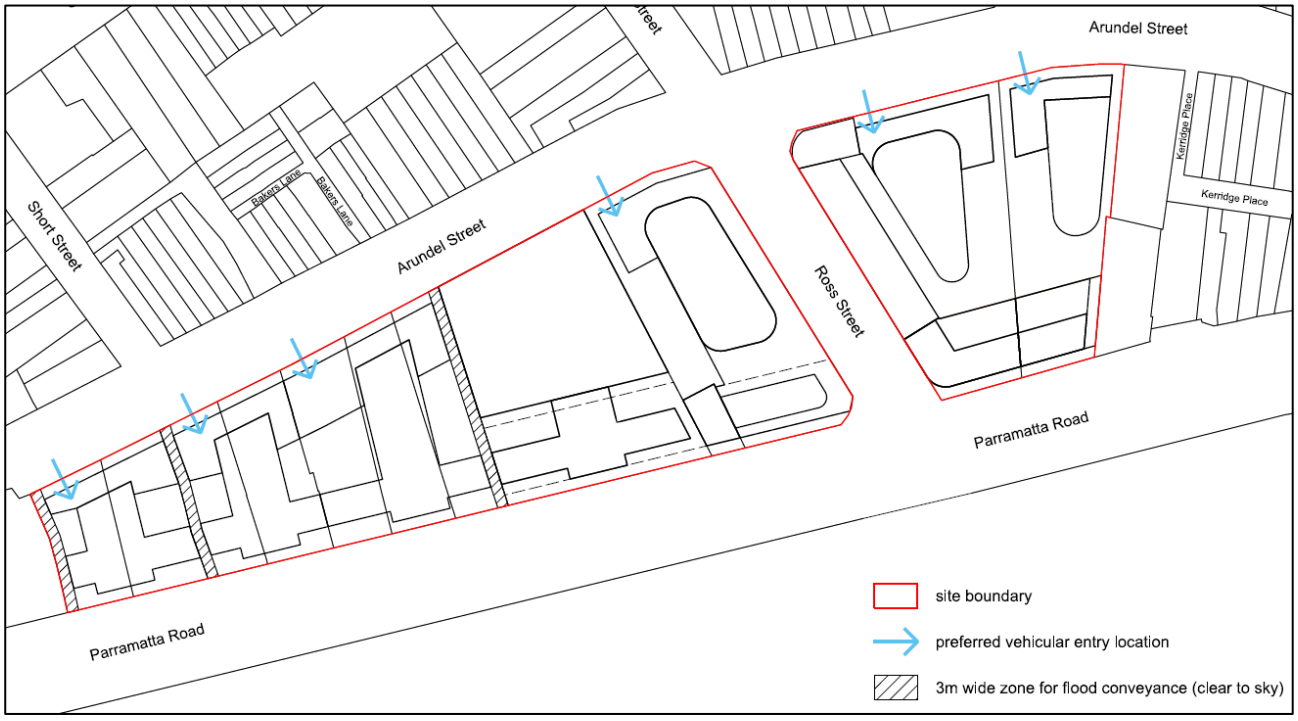


Figure 11: Indicative vehicle access plan

Servicing and Freight

Detailed servicing arrangements will be developed through future development application processes following confirmation of the final site layout, land use mix and staging strategy.

At this stage, servicing activities are expected to be accommodated on-site and accessed via the preferred vehicle access arrangements. Opportunities to separate servicing and light vehicle movements internally while maintaining a combined vehicle crossover will be explored.

Parking

The Planning Proposal adopts a constrained parking strategy that reflects the site's high level of accessibility to public transport, employment, education and services.

Given the site's inner-city location and access to sustainable transport options, future redevelopment is expected to support lower levels of private vehicle ownership and use than would typically occur in more car-dependent locations.

The western portion of the site is subject to flooding constraints (shown in Figure 12), which limits opportunities for basement parking and reinforces the appropriateness of a reduced parking provision strategy. As such, the reference scheme proposes no on-site car parking within these lots.

While no provisions are proposed to specifically prohibit parking on the flood affected lots, this assumption is appropriate given that the flooding constraints substantially limit the feasibility and practicality of providing basement or at-grade parking in these areas. Changes to the amount of parking provided may affect future traffic generation and would be assessed at that time.



Figure 12. Lots impacted by flooding constraints

Any future parking provision will be assessed against the Sydney LEP 2012 provisions in effect at the time of development.

Detailed parking calculations will be prepared following confirmation of the final development yield, land use mix and parking-capable development parcels. Initial calculations based on the reference scheme are provided in the following sections.

Car Parking

Maximum parking rates set out in the LEP Amendments have been utilised in this assessment. For residential parking, the site is classified as Category B on the Land Use and Transport Integration Map. For non-residential parking, the overall site spans multiple Public Transport Accessibility Level categories, with the western part of the site classified as Category D and the balance of the site classified as Category E. However, non-residential parking is proposed only on the Category E portions.

The relevant rates are summarised in Table 7, and the maximum parking provision, and proposed reference scheme parking provision is summarised in Table 8. This assumes:

– No car parking on the western sites (assumed to be provided as student housing in the reference scheme),

– Parking on the existing Central Ambulance Station is excluded, as this is proposed to remain unchanged, and

– No car parking on the 40 Parramatta Road site given the minor size of the lot (119m^2 site area) and no assumed amalgamation with adjacent sites (50 Arundel Street to remain unchanged as the Central Ambulance Station, and the 50 Parramatta Road and 36 Parramatta Road sites assumed to be independent mixed-use towers).

Detailed calculations are provided in Appendix A – Car Parking Calculations.

Table 7. Car parking requirements (maximum provision)

Land Use	Detail	Maximum parking rate (LEP Amendments)
Residential	1 bed dwelling	0.4 spaces per unit
	2 bed dwelling	0.7 spaces per unit
	3+ bed dwelling	1.0 spaces per unit
	Student accommodation	0.15 spaces per room
	Visitor	For units up to 30: 0.167 per unit + Units between 31-70: 0.1 per unit + Units over 70: 0.05 per unit
Non-residential	Retail	1 space per 60m^2 GFA
	Commercial	If FSR does not exceed 2.5:1, 1 space per 125m^2 GFA If FSR exceeds 2.5:1, calculate maximum parking based on: $\frac{GFA_{commercial} \times Site\ Area}{50 \times\ GFA_{total}}$

Table 8. Indicative car parking provision

Land use	Yield	LEP Parking maximums	Reference scheme car parking provision
Residential	462 units | 791 student rooms	427	309
Residential visitor		46	46
Retail	4,603m^2 GFA	77	75
Commercial	8,690m^2 GFA	39	36
Total		**589**	**466**

Note: the above commercial GFA figure excludes the GFA of the existing ambulance site

Bicycle Parking

Reference is made to the DCP Amendments for minimum bicycle parking requirements. The calculation based on the reference scheme yield is presented in Table 9.

Table 9. Bicycle parking requirements (minimum provision)

Land Use	Yield	Bicycle Parking Rate		Minimum Bicycle Provision	
		Residents / employees	Visitors / customers	Residents / employees	Visitors / customers
Residential	462 units	1 per dwelling	1 per 10 dwellings	462	47
Student housing	791 rooms	1 per 5 rooms	1 per 50 rooms	159	16
Retail	4,603 m^2 GFA	1 per 500 sqm area	1 per 90 sqm area	10	52
Commercial	8,690 m^2 GFA	1 per 150 sqm GFA	1 per 400 sqm GFA	58	22
Total				**689**	**137**

Note: the above commercial GFA figure excludes the GFA of the existing ambulance site

The DCP Amendments also specifies end of trip facility (EOTF) provision at the following rates for non-residential land uses, which should be considered:

– 1.25 personal lockers for each staff bike parking space

– 1 shower and change cubicle per 10 staff bike parking spaces

Car Share

Car share will also support the constrained parking strategy. The DCP requires car share spaces to be provided in addition to the maximum number of car parking spaces permitted, with rates depending on the relevant LUTI or PTAL category and number of car spaces provided.

For the residential component, this is 1 car share space per 60 car spaces provided.

For the non-residential components, this is 1 car share space per 40 car spaces provided.

Based on the reference scheme yield, this is 9 car share spaces.

Service Vehicle Parking

Section 7.8.1 of the DCP Amendments specifies service vehicle parking rates based on the GFA of each land use. However, this does not consider efficiencies in service vehicle parking provision through shared use (e.g. multiple sites or complementary uses using the same dock).

As specific details of loading dock arrangements are not known at this stage, a calculation solely on the land use yields for each lot would overestimate the necessary service vehicle parking. Evaluation of the sufficiency of each site's service parking arrangements will be best assessed at the development application stage.

For reference, the DCP Amendments service vehicle parking rates are summarised in Table 10.

Table 10. Service vehicle parking requirements (minimum provision)

Land use	GFA (min)	GFA (max)	MRV requirement	SRV requirement	Van requirement
Residential	1	7,499	1	0	0
	7,500	14,999	1	0	1
	15,000	22,499	1	0	2
	22,500	29,999	1	0	3
	30,000	37,499	1	1	3
	37,500+		1	1	3
			Plus any additional service bays as recommended by a Delivery Service Plan		
Retail	1	599	1	0	0
	600	1,199	1	0	1
	1,200	1,799	1	0	2
	1,800	2,399	1	0	3
	2,400	2,999	1	1	3
	3,000	3,599	1	1	4
	3,600	3,999	1	1	5
	4,000+		1	1	5
			Plus any additional service bays as recommended by a Delivery Service Plan		
Commercial	1	199	0	0	0
	200	4,999	0	1	0
	5,000	9,999	1	0	1
	10,000	14,999	1	0	2
	15,000	19,999	1	0	3
	20,000	24,999	1	1	3
	25,000	29,999	1	1	4
	30,000	34,999	1	1	5
	35,000	39,999	1	1	6
	40,000	44,999	1	2	6
	45,000	49,999	1	2	7
	50,000+		1	2	7
			Plus any additional service bays as recommended by a Delivery Service Plan		

Transport Planning Response

The Planning Proposal incorporates a range of measures intended to support sustainable travel behaviour and minimise reliance on private vehicle use. These measures respond to the site's highly accessible inner-city location, proximity to major employment and education destinations, and flooding constraints affecting parts of the site.

Reduced car parking provision

Future development is expected to adopt a constrained parking strategy consistent with the site's high level of public transport accessibility and the LEP and DCP Amendments' parking controls. Future development of the site is expected to provide overall parking less than the maximums permitted under the LEP/DCP Amendments due to the flooding constraints on the western portion of sites. Reduced parking provision is expected to suppress private vehicle ownership and associated traffic generation.

Car share provision

Car share spaces will be provided in accordance with the DCP Amendments. Car share vehicles provide residents and workers with access to a vehicle when required while reducing the need for private vehicle ownership.

Comprehensive bicycle parking and end-of-trip facilities

Bicycle parking will be provided in accordance with the DCP Amendments. End-of-trip facilities for non-residential uses will support cycling by providing convenient access to showers, change facilities and lockers.

Walking and pedestrian permeability

Future redevelopment will seek to maximise pedestrian accessibility through active frontages, clearly defined building entries and direct connections to surrounding streets, public transport services and nearby destinations. Consideration will be given to maintaining safe and accessible pedestrian movement in areas affected by flooding constraints.

Access from the local road network

Vehicular access will preferentially be provided from Arundel Street, reducing interaction with the surrounding State Road network and limiting potential impacts on the operation of Parramatta Road and Ross Street.

Mixed-use development and internal trip capture

The proposed mix of residential, retail and commercial uses is expected to facilitate internal trip capture, whereby some resident and worker trips can be satisfied within the development itself. This reduces the need for external vehicle trips and supports broader walkability objectives.

Transport Impact Assessment

Reference Scheme

This assessment is based on the reference scheme prepared to support the Planning Proposal. The reference scheme represents one potential redevelopment outcome under the proposed planning framework, which has been adopted for the traffic modelling purposes.

The Planning Proposal permits a range of redevelopment outcomes through site-specific planning controls, including floor space incentives, employment-generating floor space provisions and alternative redevelopment sequencing. Actual development outcomes may therefore differ from the reference scheme assessed in this report and will be subject to further assessment at the Development Application stage.

Trip Generation

Residential trip generation

A trip generation assessment based on parking provision has been adopted for the residential component of this proposal. This is considered a more representative estimate compared to the standard per dwelling rates due to the low parking provision constraining private vehicle mode share.

While the Transport for NSW Guide to Transport Impact Assessment (GTIA) provides trip generation rates (per car parking space) for high density residential development, the underlying survey data is limited to locations with low public transport accessibility.

Therefore, reference has instead been made to the TRIPS (Trip Rate Integrated Planning System) database, a centralised repository of land use trip generation survey data. Managed by the University of Sydney's Institute of Transport and Logistics Studies, this database contains trip generation data for over 800 sites across Australia.

Filtering the database to high density residential developments (37 sites), the following trip generation rates are determined:

– AM peak hour: 0.169 vehicle trips per parking space (26% in, 74% out)
– PM peak hour: 0.165 vehicle trips per parking space (64% in, 36% out)
– Saturday peak hour: 0.141 vehicle trips per parking space (51% in, 49% out)

Applying this to the car parking provision of 351 spaces, the residential vehicle trips are estimated at:

– AM peak hour: 60 vehicle trips
– PM peak hour: 59 vehicle trips
– Saturday peak hour: 50 vehicle trips

Commercial trip generation

It is envisaged that low car parking provision (25 spaces) for the commercial component would place downwards pressure on vehicle trips to the site. It is conservatively assumed that each commercial car space would equate to 1 vehicle trip (i.e. an employee arriving or departing work and coinciding with the road network peak hour) during the AM and PM peak hours. Assuming the

commercial spaces are not open on weekends, no vehicle trips are assumed for the Saturday peak hour.

– AM peak hour: 36 vehicle trips
– PM peak hour: 36 vehicle trips
– Saturday peak hour: 0 vehicle trips

Retail trip generation

As the exact retail uses are not yet known, first principles-based approach to the trip generation has been adopted. This approach is considered appropriate at Planning Proposal stage given the unknown retail tenancy mix, with parking supply expected to be the primary constraint on vehicular demand. Assuming an average visitation duration of 1 hour, for the proposed 74 spaces this would equate to a vehicle trip rate of 2 trips per car space per hour.

– AM peak hour: 150 vehicle trips
– PM peak hour: 150 vehicle trips
– Saturday peak hour: 150 vehicle trips

Existing trip generation

Survey footage of the existing sites' traffic generation was also reviewed to establish the existing peak hour traffic generation. These values are subtracted from the trip generation of the proposal to calculate a net trip generation:

– AM peak hour: 69 vehicle trips
– PM peak hour: 94 vehicle trips
– Saturday peak hour: 82 vehicle trips

Net trip generation

Therefore, the net trip generation estimated for the proposal is

– AM peak hour: 177 vehicle trips
– PM peak hour: 151 vehicle trips
– Saturday peak hour: 118 vehicle trips

This is approximately 2-3 trips every minute and represents a minor increase in the context of the broader road network. The development would be expected to increase volumes along Ross Street by around 9-14% and along Parramatta Road by around 0.4% during the weekday and weekend peak hours.

Trip Distribution

The directional distribution and assignment of traffic generated by the proposal will be influenced by several factors, including the:

– Configuration of the road network in the vicinity of the site
– Existing operation of intersections providing access between the local and arterial road network
– Distribution of various attractors and destinations in relation to the site
– Configuration of access points to the site

Journey to Work data from the Census 2016 has been used to inform the likely trip distribution. Reference has been made to the 2016 Census rather than 2021, as travel patterns in 2021 were influenced by COVID-19 restrictions and increased levels of remote working. Specifically, the

Glebe - Forest Lodge Statistical Area 2 was used alongside expected travel routes to and from the site. This is summarised in Figure 13 and Figure 14.

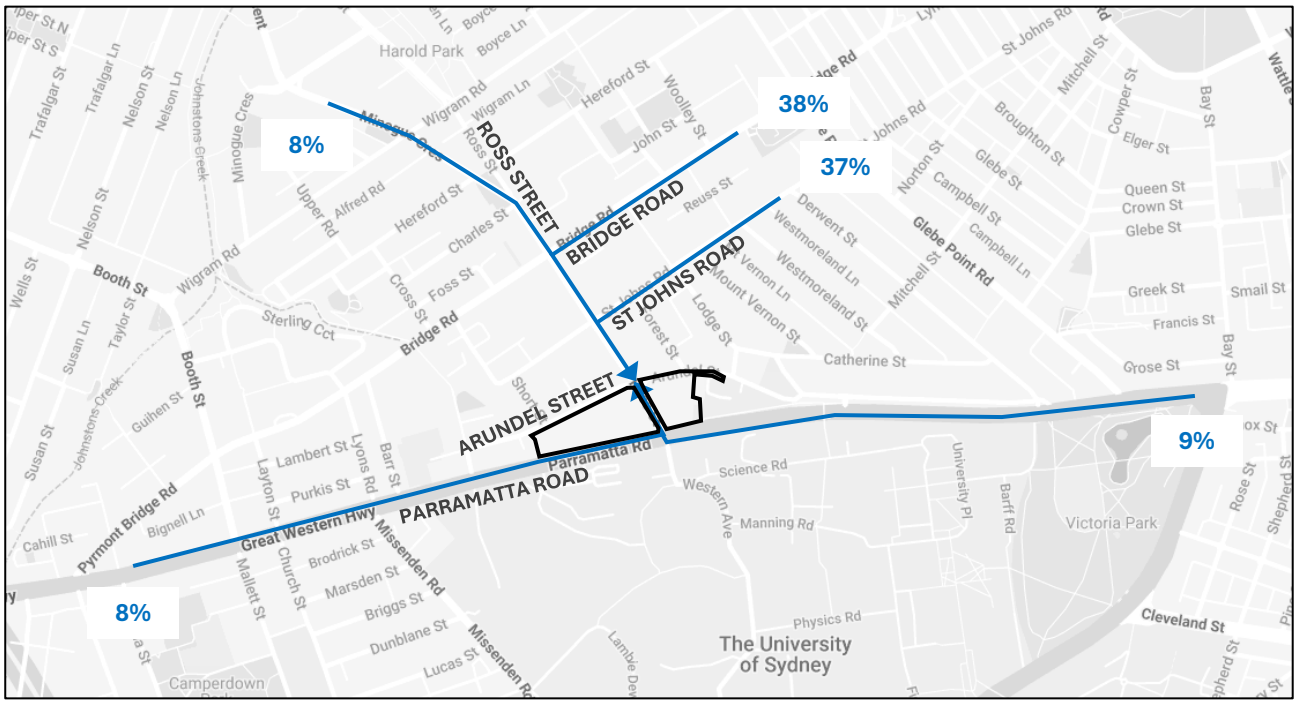


Figure 13. Trip distribution (inbound distribution)

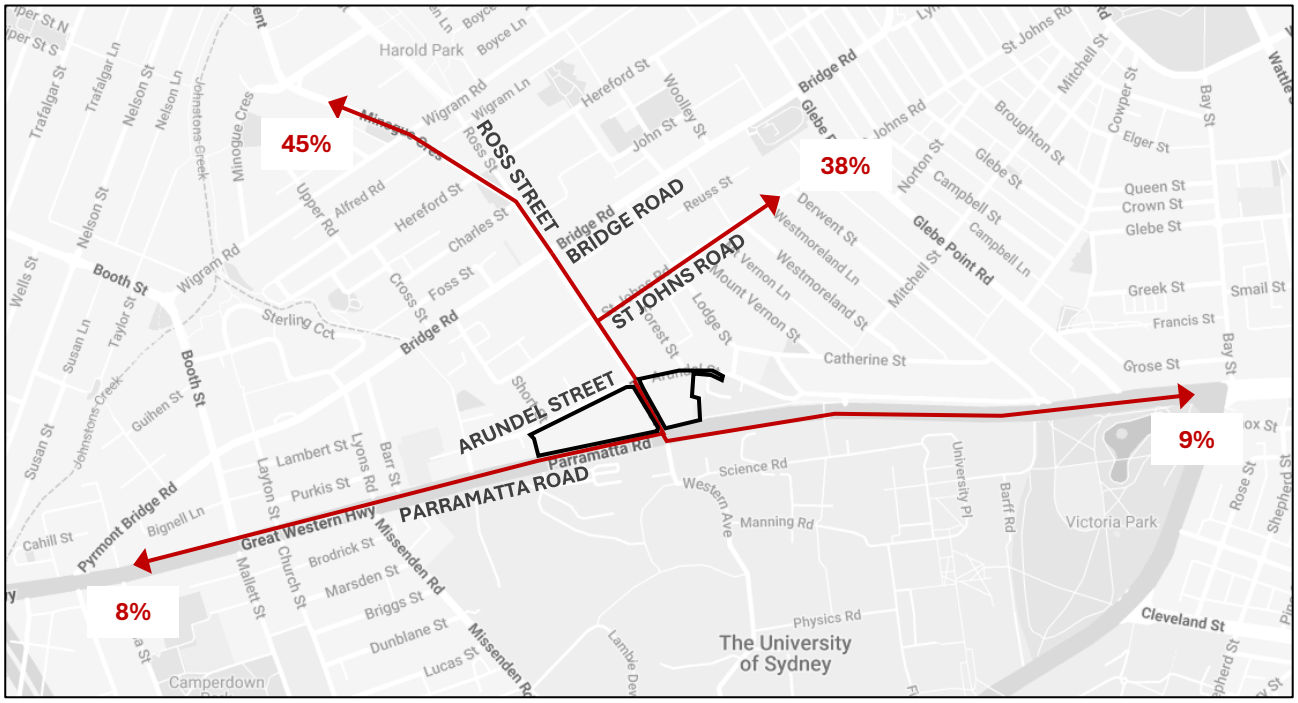


Figure 14. Trip distribution (outbound distribution)

The proportion of inbound to outbound distribution has also been informed by the TRIPS database, this being:

- AM peak hour: 26% in | 74% out
- PM peak hour: 64% in | 36% out
- Saturday peak hour: 51% in | 49% out

Background Growth

Nearby Transport for NSW permanent vehicle counters were reviewed to determine a suitable level of background traffic growth. This included:

– Parramatta Road, 10m South of Mathieson Street, Annandale 2038 (station id 19065)

– Parramatta Road, 10m west of Derwent Lane, Glebe (station id 02350)

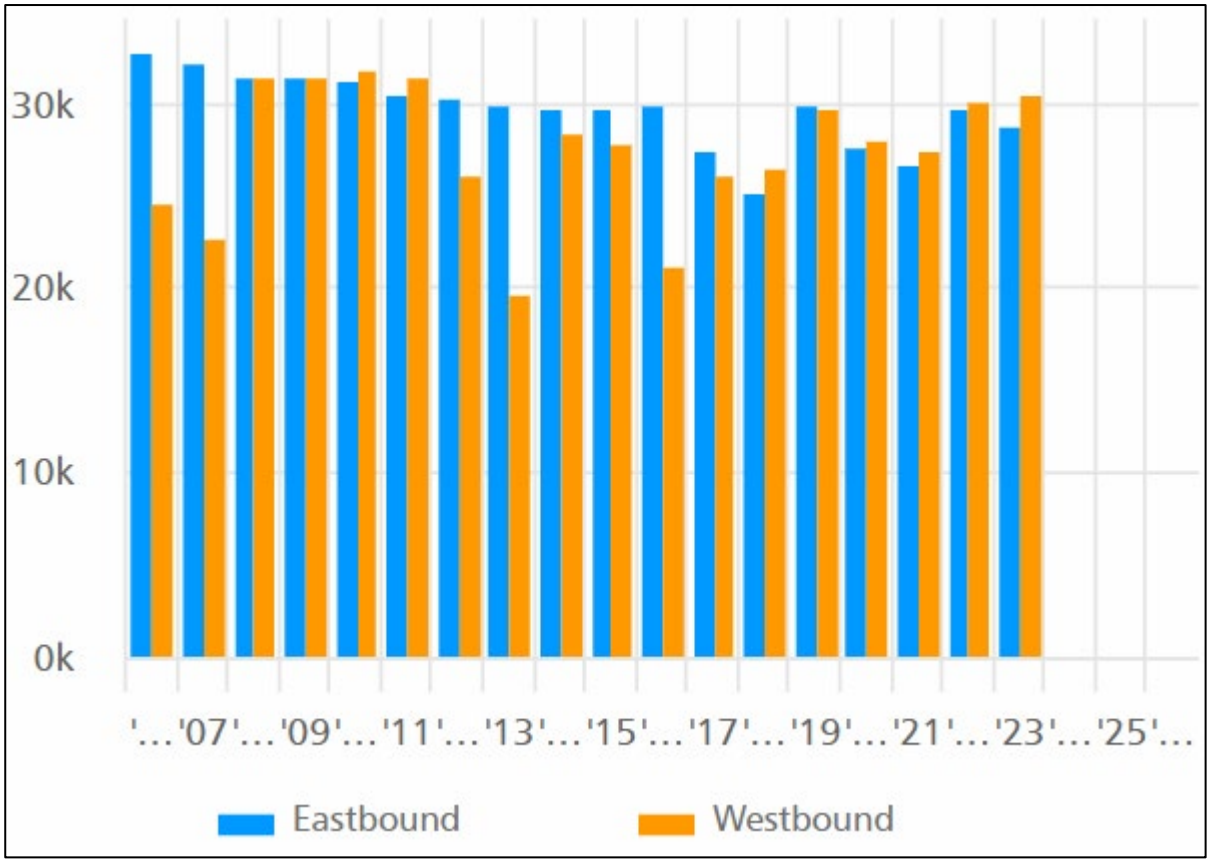


Figure 15. Permanent road counter id 19065 volumes

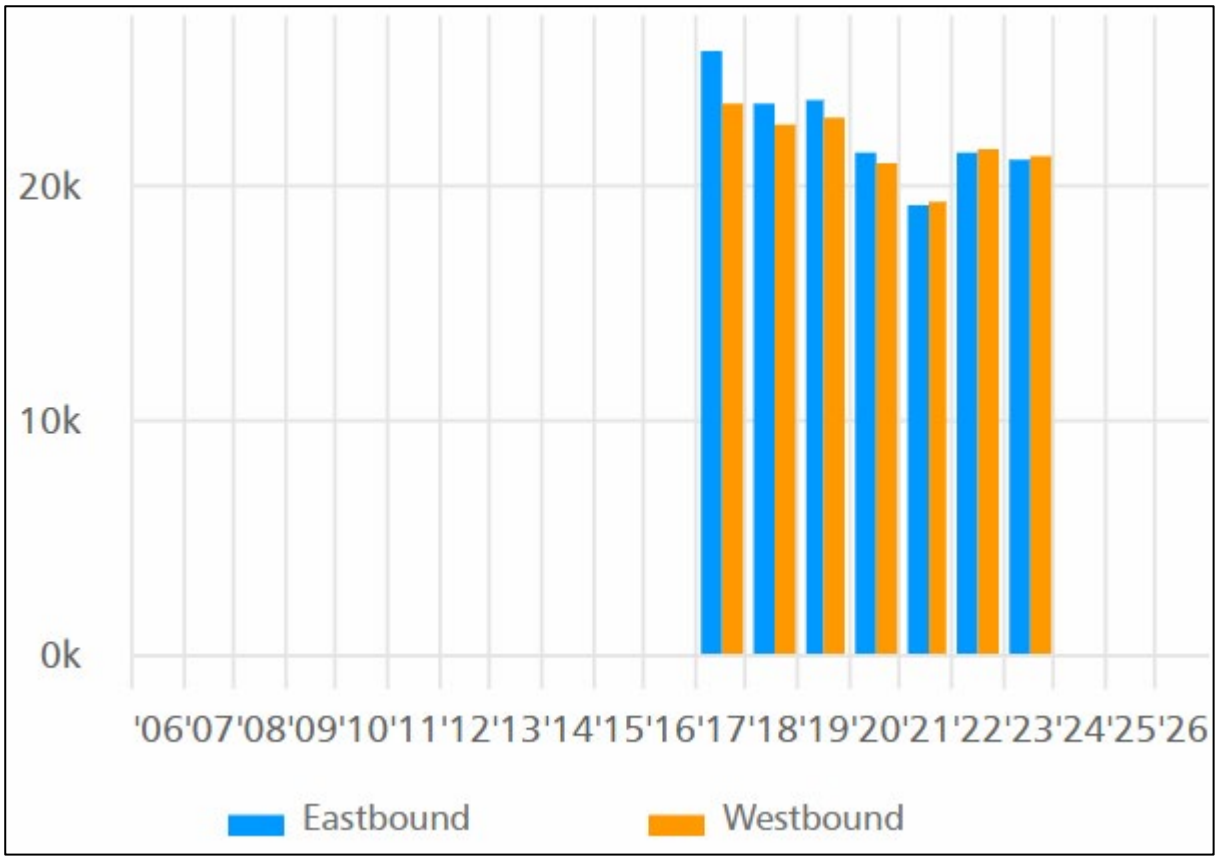


Figure 16. Permanent road counter id 02350 volumes

These counters showed minimal to negative growth along Parramatta Road, indicating that background traffic patterns have not materially increased along this corridor. This pattern suggests that background traffic growth along the Parramatta Road corridor is likely to remain limited, reflecting broader network capacity and the mature urban context.

Hence, a nominal background growth rate of 0% has been adopted for the purposes of this strategic Planning Proposal assessment.

Nearby Developments

A review of nearby approved developments has been undertaken to consider the potential cumulative traffic impact. These include:

- SSD-57838709: Ross Street Teaching and Learning Hub (corner of Parramatta Road and Western Avenue)
  - Negligible vehicular generation as there would only be pedestrian access to this building
- D/2024/969: Demolition, retention and reuse of two terraces and construction of co-living housing containing 118 rooms (2 Arundel Street, Forest Lodge)
  - Negligible vehicular generation as there is no vehicle access to the site (waste collection serviced via kerbside arrangement)
- D/2021/1229: Residential alterations and additions (9 Ross Street, Forest Lodge)
  - No change in traffic generation
- D/2023/393: Alterations to existing boarding house, demolition of existing structures and construction of a coliving housing (20 Forest Street, Forest Lodge)
  - Negligible vehicular generation as there is no vehicle access to the site (waste collection serviced via kerbside arrangement)

- D/2025/192: Construction of a secondary dwelling (240 St Johns Road, Forest Lodge)
  - Negligible vehicular generation
- Planning Proposal: Life Sciences Development (88–94 Parramatta Road, Camperdown)
  - The Life Sciences Planning Proposal has not been approved as of the time of this report and therefore is not considered in the cumulative assessment

Therefore, there are no approved developments in the vicinity of the proposal that are expected to generate material traffic impacts requiring consideration as part of a cumulative traffic assessment.

SIDRA Modelling

An additional scenario with the Planning Proposal has been assessed for the AM, PM, and Saturday peak hours.

The results of this are summarised in Table 11 and Table 12.

Table 11. Proposed Planning Proposal SIDRA modelling results

Period	Intersection	DOS	Delay (s)	LOS	95th Percentile Queue (m)
AM peak	Parramatta Road / Ross Street	0.92	16	B	172
	Ross Street / Arundel Street	0.24	13	A	6
	Ross Street / St Johns Road	0.48	15	B	84
	Ross Street / Bridge Road	0.73	26	B	150
PM peak	Parramatta Road / Ross Street	0.97	17	B	114
	Ross Street / Arundel Street	0.24	13	A	6
	Ross Street / St Johns Road	0.59	21	B	105
	Ross Street / Bridge Road	0.70	23	B	126
SAT peak	Parramatta Road / Ross Street	0.94	20	B	139
	Ross Street / Arundel Street	0.57	12	A	6
	Ross Street / St Johns Road	0.42	15	B	52
	Ross Street / Bridge Road	0.68	23	B	95

Table 12. SIDRA modelling results (Existing versus Existing + Planning Proposal)

Period	Intersection	Existing		Existing + Planning Proposal	
		Delay (s)	LOS	Delay (s)	LOS
AM peak	Parramatta Road / Ross Street	16	B	16	B
	Parramatta Road / Ross Street	16	B	16	B
	Ross Street / Arundel Street	12	A	13	A
	Ross Street / St Johns Road	14	A	15	B
	Ross Street / Bridge Road	23	B	26	B
PM peak	Parramatta Road / Ross Street	17	B	17	B
	Ross Street / Arundel Street	12	A	13	A
	Ross Street / St Johns Road	21	B	21	B
	Ross Street / Bridge Road	22	B	23	B
SAT peak	Parramatta Road / Ross Street	19	B	20	B
	Ross Street / Arundel Street	11	A	12	A
	Ross Street / St Johns Road	15	B	15	B
	Ross Street / Bridge Road	21	B	23	B

The surrounding road network generally operates well during the weekday AM and PM and weekend peak periods, with the modelled intersections operating at a Level of Service B or better. Southbound queues occasionally build up on Ross Street, extending from Parramatta Road to Arundel Street, however, dissipate quickly and do not persist across the peak hours.

With the additional traffic generation forecasted for the Planning Proposal, the assessed intersections do not materially change in performance. All intersections only exhibit increases in delay of 0-2 seconds, and only 1 intersection (Ross Street / St Johns Road in the AM peak) exhibits a change in Level of Service, from LOS A to LOS B. This is due to the delay crossing the defined threshold between LOS A and B, rather than representing a material increase.

Therefore, the Planning Proposal is expected to have minimal impact on the operation of the surrounding road network.

Impacts on Walking, Cycling, and Public Transport

The Planning Proposal is expected to generate a minor to moderate increase in walking, cycling and public transport demand through the introduction of additional residential and employment-generating land uses.

As outlined in Table 2, active and public transport modes account for around 63% of journey-to-work trips within the broader area. Given the site's proximity to the University of Sydney, Royal Prince Alfred Hospital, Broadway, Central Sydney and high-frequency bus services operating along Parramatta Road, future residents and workers are expected to exhibit similarly high rates of sustainable travel. Table 5 demonstrates that nearby bus services currently operate with sufficient spare capacity to accommodate the additional demand generated by the proposal. This demand is expected to represent a small proportion of existing network activity and is unlikely to result in material operational or capacity constraints.

The site benefits from strong pedestrian accessibility via Parramatta Road, Ross Street and Arundel Street, providing direct connections to surrounding destinations and public transport services. Cycling access is supported by the surrounding local street network and existing cycling routes linking the site to Glebe, Camperdown, the University of Sydney and Central Sydney. Future development will provide bicycle parking and end-of-trip facilities in accordance with relevant planning controls.

The site's accessibility to employment, education, health and retail destinations is expected to encourage mode shift away from private vehicle travel and support lower levels of car dependency. Existing walking, cycling and public transport infrastructure is considered capable of accommodating the additional demand generated by the proposal. Accordingly, the Planning Proposal will be supported by the site's high level of accessibility and support increased use of existing walking, cycling and public transport infrastructure without requiring significant transport network upgrades.

Conclusion

This Transport Impact Assessment has evaluated the transport implications of the proposed Planning Proposal for land fronting Parramatta Road, Arundel Street and Ross Street, Forest Lodge.

The assessment considered the strategic transport context, existing transport conditions, applicable parking controls, and forecast traffic impacts associated with the proposal.

Based on the reference scheme yield and SIDRA intersection modelling, the proposal is expected to generate additional travel demand that is proportionate to the strategic uplift being sought and capable of being accommodated within the broader transport network.

Overall, the Planning Proposal is not expected to materially affect local transport conditions and does not necessitate upgrades to the surrounding transport network to support the proposed uplift.

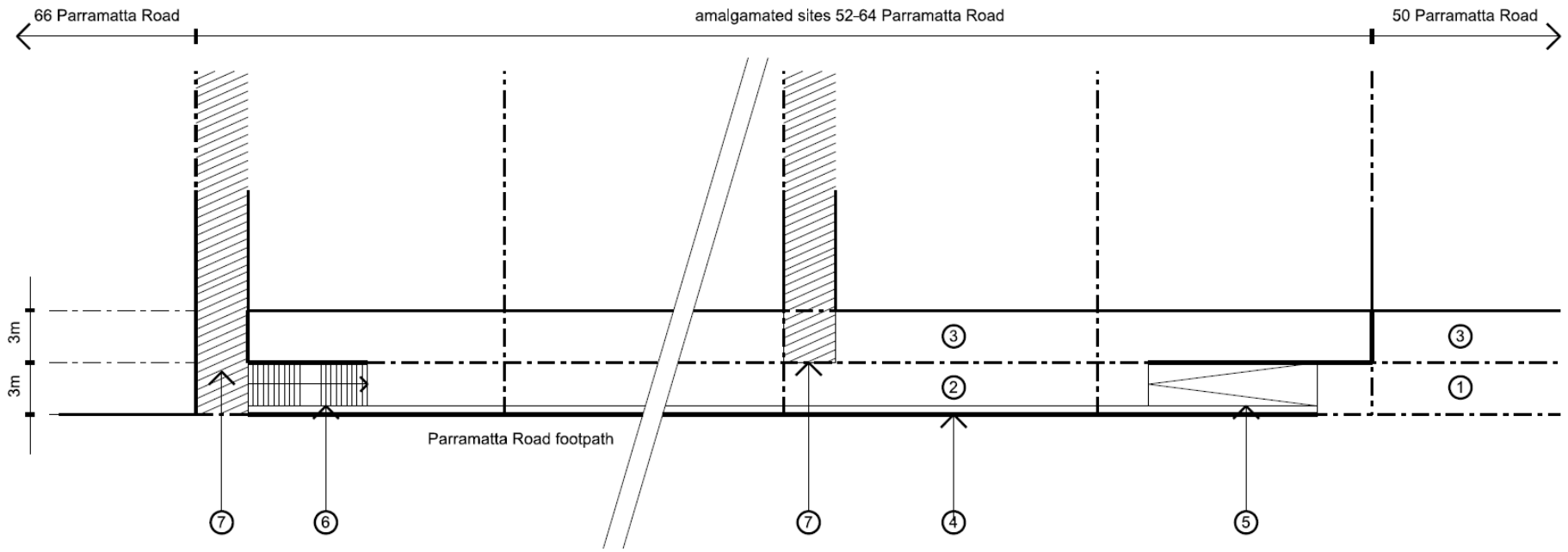
Detailed traffic, access, parking, servicing, waste collection and vehicle swept path requirements will be confirmed through future development application processes once the final site layout, land use mix, development yield and servicing arrangements are established. Future development should incorporate measures that support walking, cycling and public transport use and appropriately manage servicing and access requirements.

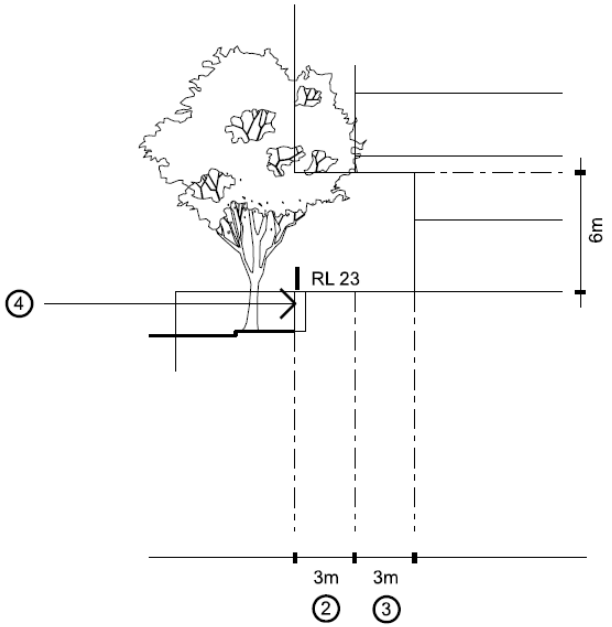
Subject to future detailed design, the proposal is considered acceptable from a transport perspective.

Appendix A – Car Parking Calculations

Site	Land use	Site area	Resi GFA	Retail GFA	Commercial GFA	Apartments / Rooms	Parking	CAR PARKING RATES	CAR PARKING MAXIMUMS				CAR PARKING PROVISION			
									Residents	Visitor	Retail	Commercial	Residents	Visitor	Retail	Commercial
50 Parramatta Road	Mixed-use residential	1,368	5,212	657	492	54 16 1-bed 27 2-bed 11 3+-bed	Yes	Student accommodation 0.15 per student room Residential (residents) 0.4 per 1-bed unit 0.7 per 2-bed unit 1.0 per 3+-bed unit Residential (visitor) 0.167 per unit from 0 to 30 units, plus 0.1 per unit from 31-70 units, plus 0.05 per unit over 70 units Retail 1 per 60m^2 GFA Commercial $\frac{GFA_{commercial} \times Site\ Area}{50 \times\ GFA_{total}}$	36	7	11	4	36	7	11	4
50 Arundel Street	Central Ambulance Station (unchanged)	2,090	0	0	0	-	-		-	-	-	-	-	-	-	-
40 Parramatta Road	Retail and commercial	169	0	140	782	-	No		0	0	2	3	0	0	0	0
36 Parramatta Road	Mixed-use residential	2,973	12,695	2,196	5,445	132 40 1-bed 66 2-bed 26 3+-bed	Yes		88	12	37	16	88	12	37	16
1–3 Ross Street	Mixed-use residential	3,375	14,884	1,259	1,745	155 46 1-bed 78 2-bed 31 3+-bed	Yes		104	13	21	14	104	13	21	14
26 Arundel Street	Mixed-use residential	1,899	10,008	351	226	104 31 1-bed 52 2-bed 21 3+-bed	Yes		70	11	6	2	70	11	6	2
30 Arundel Street	Mixed-use residential	290	1,528	0	0	16 5 1-bed 8 2-bed 3 3+-bed	No		11	3	0	0	11	3	0	0
AB	Student housing	1,459	4,114	0	0	142 student rooms	No		21	0	0	0	0	0	0	0
CD	Student housing	1,777	7,195	0	0	248 student rooms	No		37	0	0	0	0	0	0	0
EFG	Student housing	2,718	11,634	0	0	401 student rooms	No		60	0	0	0	0	0	0	0
		18,118	**67,270**	**4,603**	**8,690**	**1,253**			**427**	**46**	**77**	**39**	**309**	**46**	**75**	**36**

Appendix B – Western Sites Articulation Zone Detail





1. 3m setback for footpath widening to accommodate future light rail stop
2. right of way at level RL 23 - material and construction to CoS street design code (minimum 3m clear width)
3. 3m building articulation zone - building over permitted 6m above right of way level, for no more than 35% of the length of the building frontage
4. retaining wall - sandstone cladding to match Chapman Steps, balustrade above (see specification)
5. flood egress ramp to ground level - material and construction to CoS street design code
6. additional access stairs - material and construction to CoS street design code
7. min. 3m wide floodway between Parramatta Road and Arundel Street - open to the sky except under right of way

Appendix C – SIDRA Modelling Outputs

USER REPORT FOR NETWORK SITE

Default Site User Report

Site: [Ex_AM_1a] 1 Ross Street / Parramatta Road - AM (Existing)

Network: [Ex_AM_UGPT] AM (Existing)

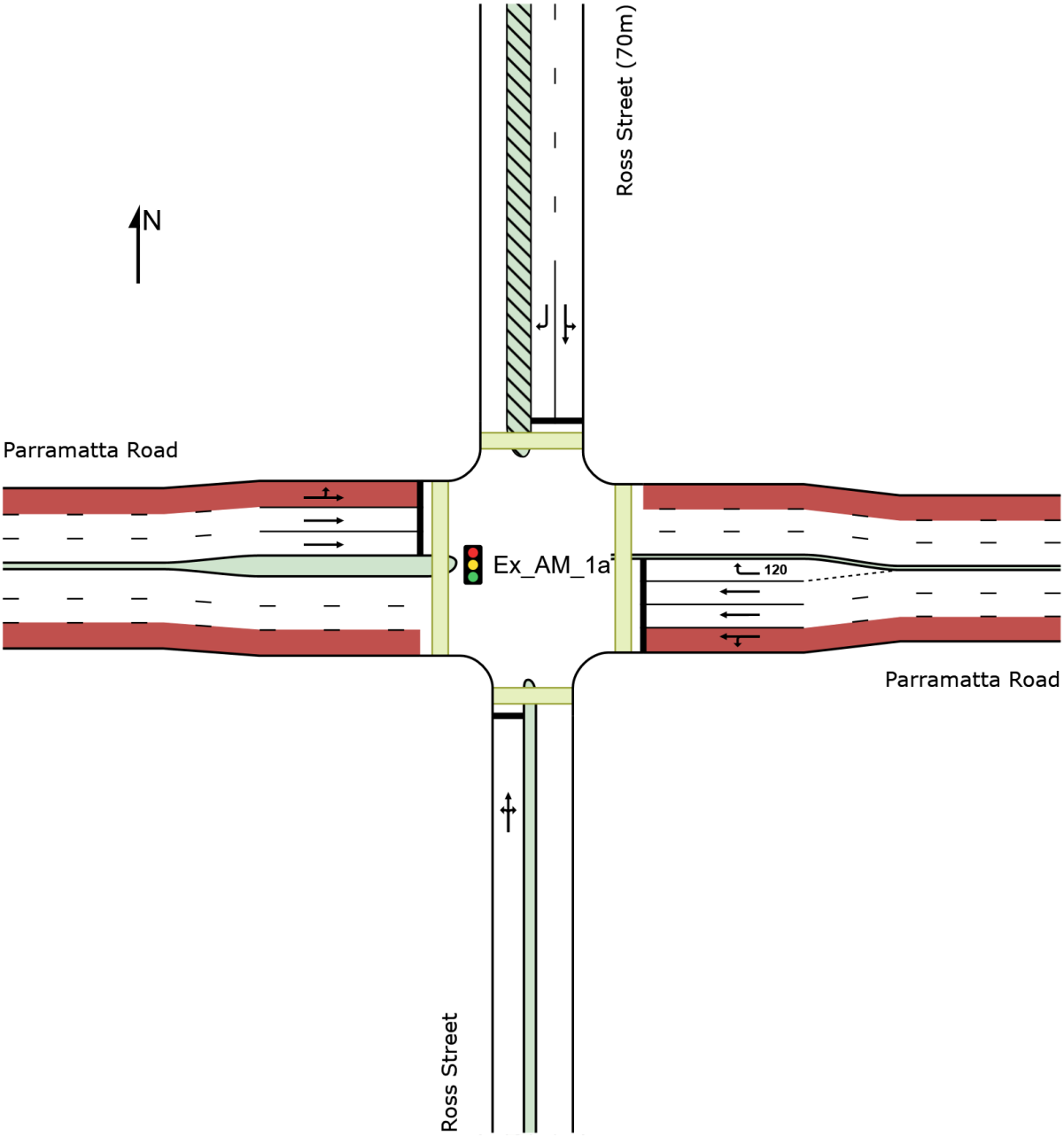
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: TCS0434 - Copy
Input Phase Sequence: A, C, D
Output Phase Sequence: A, C, D
Reference Phase: Phase A
Offset: 0 seconds (User)

Site Layout

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


N
Ross Street (70m)
Parramatta Road
Ex_AM_1a
120
Parramatta Road
Ross Street

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street															
1	L2	All MCs	33	6.5	33	6.5	0.297	52.8	LOS D	4.7	32.0	0.93	0.74	0.93	27.0
2	T1	All MCs	42	2.5	42	2.5	0.297	47.1	LOS D	4.7	32.0	0.93	0.74	0.93	18.5
3	R2	All MCs	14	15.4	14	15.4	0.297	60.3	LOS E	4.7	32.0	0.93	0.74	0.93	28.9
Approach			88	6.0	88	6.0	0.297	51.2	LOS D	4.7	32.0	0.93	0.74	0.93	23.9
East: Parramatta Road															
4	L2	All MCs	13	8.3	13	8.3	0.057	11.7	LOS A	0.9	10.3	0.32	0.35	0.32	43.7
5	T1	All MCs	774	9.9	774	9.9	0.277	6.3	LOS A	7.4	54.3	0.38	0.34	0.38	54.8
6	R2	All MCs	119	2.7	119	2.7	* 0.893	77.6	LOS F	8.0	57.3	1.00	1.00	1.42	19.8
Approach			905	9.0	905	9.0	0.893	15.7	LOS B	8.0	57.3	0.46	0.42	0.51	47.8
North: Ross Street (70m)															
7	L2	All MCs	81	10.4	81	10.4	0.493	44.3	LOS D	10.2	66.4	0.95	0.79	0.95	25.7
8	T1	All MCs	111	1.9	111	1.9	* 0.493	52.9	LOS D	10.2	66.4	0.95	0.79	0.95	19.0
9	R2	All MCs	117	5.4	117	5.4	0.482	54.7	LOS D	6.4	47.1	0.96	0.79	0.96	21.8
Approach			308	5.5	308	5.5	0.493	51.3	LOS D	10.2	66.4	0.95	0.79	0.95	21.7
West: Parramatta Road															
10	L2	All MCs	266	3.2	266	3.2	0.336	19.2	LOS B	9.2	74.5	0.53	0.69	0.53	36.7
11	T1	All MCs	1972	4.9	1972	4.9	* 0.659	7.9	LOS A	24.1	172.1	0.48	0.45	0.48	53.5
Approach			2238	4.7	2238	4.7	0.659	9.2	LOS A	24.1	172.1	0.49	0.48	0.49	52.1
All Vehicles			3540	5.9	3540	5.9	0.893	15.6	LOS B	24.1	172.1	0.53	0.50	0.54	46.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

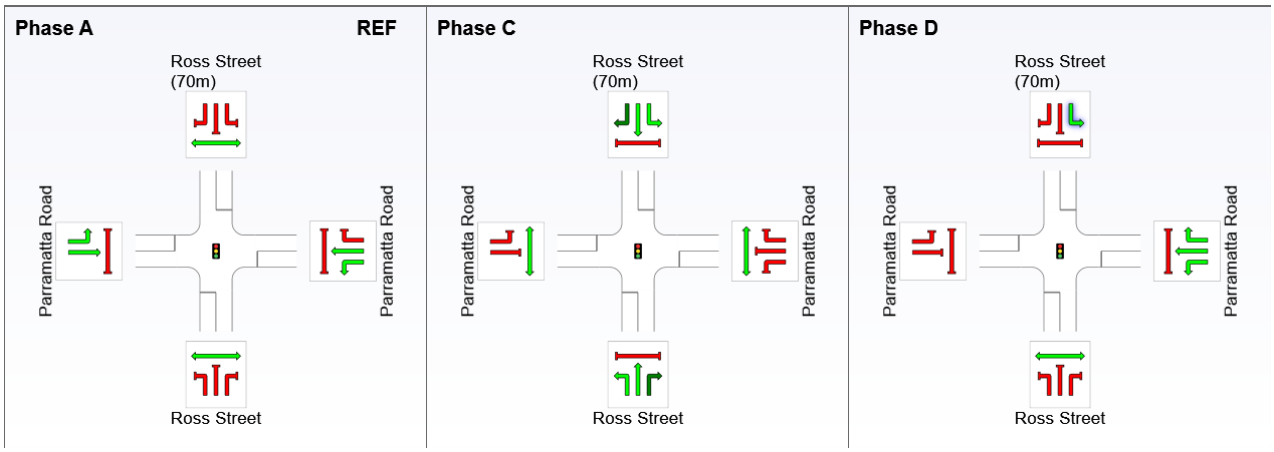
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase



Phase Timing Summary

Phase	A	C	D
Phase Change Time (sec)	0.0	77.0	105.2
Green Time (sec)	71.0	22.2	9.0
Phase Time (sec)	77.0	28.0	15.0
Phase Split	64%	23%	13%
Phase Frequency (%)	100.0	97.1[2]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

2 Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Default Site User Report

Site: [Ex_AM_2a] 2 Ross Street / Arundel Street - AM (Existing)

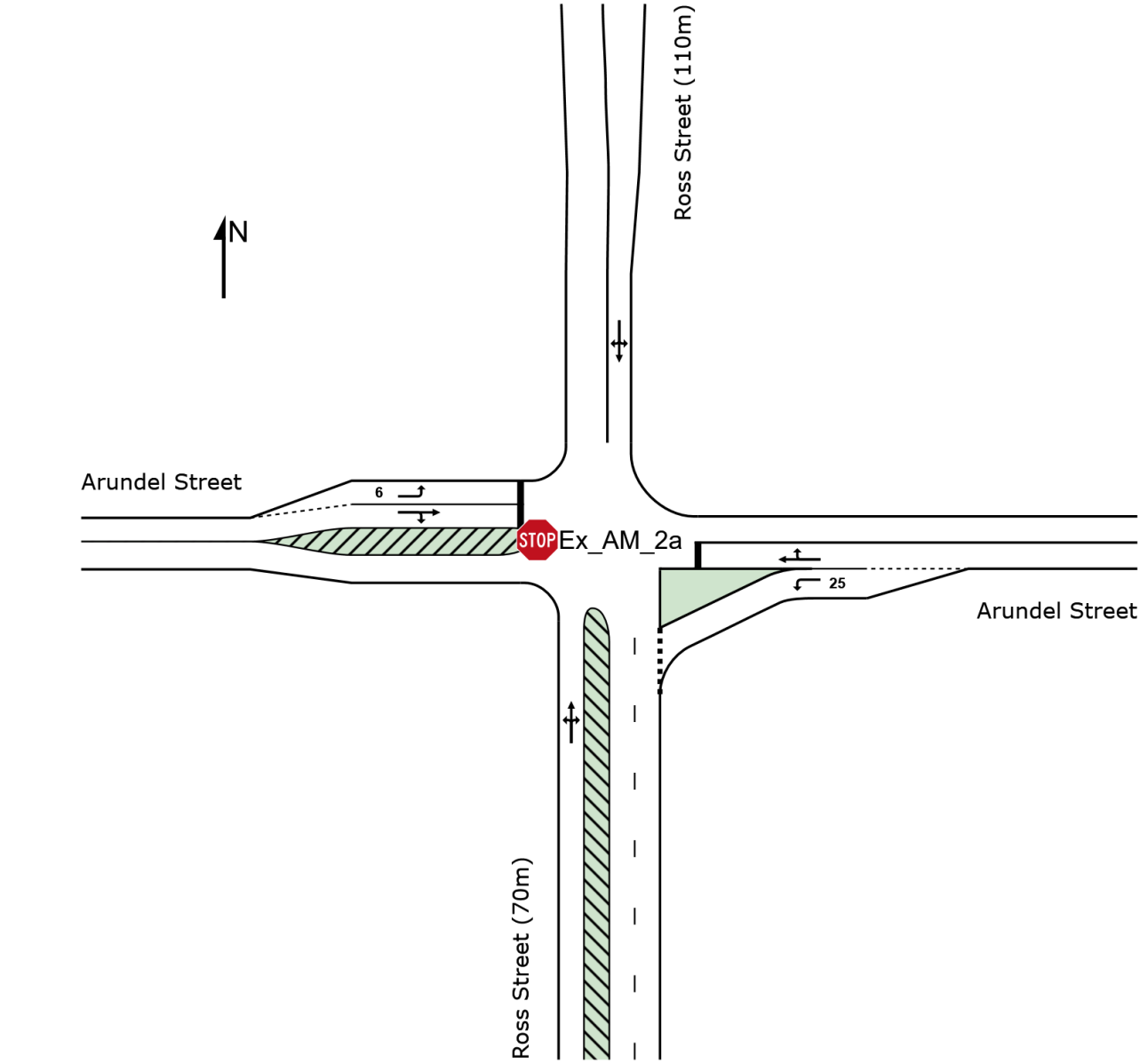
Network: [Ex_AM_UGPT] AM (Existing)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Site Layout

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



Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (70m)															
1	L2	All MCs	75	0.0	75	0.0	0.235	4.0	LOS A	0.6	4.3	0.14	0.23	0.14	37.5
2	T1	All MCs	279	4.2	279	4.2	0.235	0.3	LOS A	0.6	4.3	0.14	0.23	0.14	32.2
3	R2	All MCs	66	1.6	66	1.6	0.235	4.5	LOS A	0.6	4.3	0.14	0.23	0.14	37.7
Approach			420	3.0	420	3.0	0.235	1.6	NA	0.6	4.3	0.14	0.23	0.14	36.2
East: Arundel Street															
4	L2	All MCs	49	4.3	49	4.3	0.034	3.5	LOS A	0.1	1.0	0.21	0.40	0.21	36.1
5	T1	All MCs	7	14.3	7	14.3	0.049	12.1	LOS A	0.2	1.1	0.56	0.97	0.56	32.3
6	R2	All MCs	15	7.1	15	7.1	0.049	12.1	LOS A	0.2	1.1	0.56	0.97	0.56	31.1
Approach			72	5.9	72	5.9	0.049	6.1	LOS A	0.2	1.1	0.32	0.58	0.32	34.4
North: Ross Street (110m)															
7	L2	All MCs	43	4.9	43	4.9	0.181	4.4	LOS A	0.6	3.9	0.19	0.23	0.19	37.7
8	T1	All MCs	239	5.7	239	5.7	0.181	0.4	LOS A	0.6	3.9	0.19	0.23	0.19	33.2
9	R2	All MCs	45	4.7	45	4.7	0.181	4.9	LOS A	0.6	3.9	0.19	0.23	0.19	37.7
Approach			327	5.5	327	5.5	0.181	1.6	NA	0.6	3.9	0.19	0.23	0.19	36.0
West: Arundel Street															
10	L2	All MCs	24	0.0	24	0.0	0.022	7.8	LOS A	0.1	0.7	0.36	0.83	0.36	34.7
11	T1	All MCs	15	7.1	15	7.1	0.056	11.3	LOS A	0.2	1.2	0.55	0.96	0.55	32.8
12	R2	All MCs	14	0.0	14	0.0	0.056	11.3	LOS A	0.2	1.2	0.55	0.96	0.55	30.8
Approach			53	2.0	53	2.0	0.056	9.7	LOS A	0.2	1.2	0.46	0.90	0.46	33.0
All Vehicles			872	4.1	872	4.1	0.235	2.5	NA	0.6	4.3	0.20	0.30	0.20	35.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

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

Default Site User Report

Site: [Ex_AM_3a] 3 Ross Street / St Johns Road - AM (Existing)

Network: [Ex_AM_UGPT] AM (Existing)

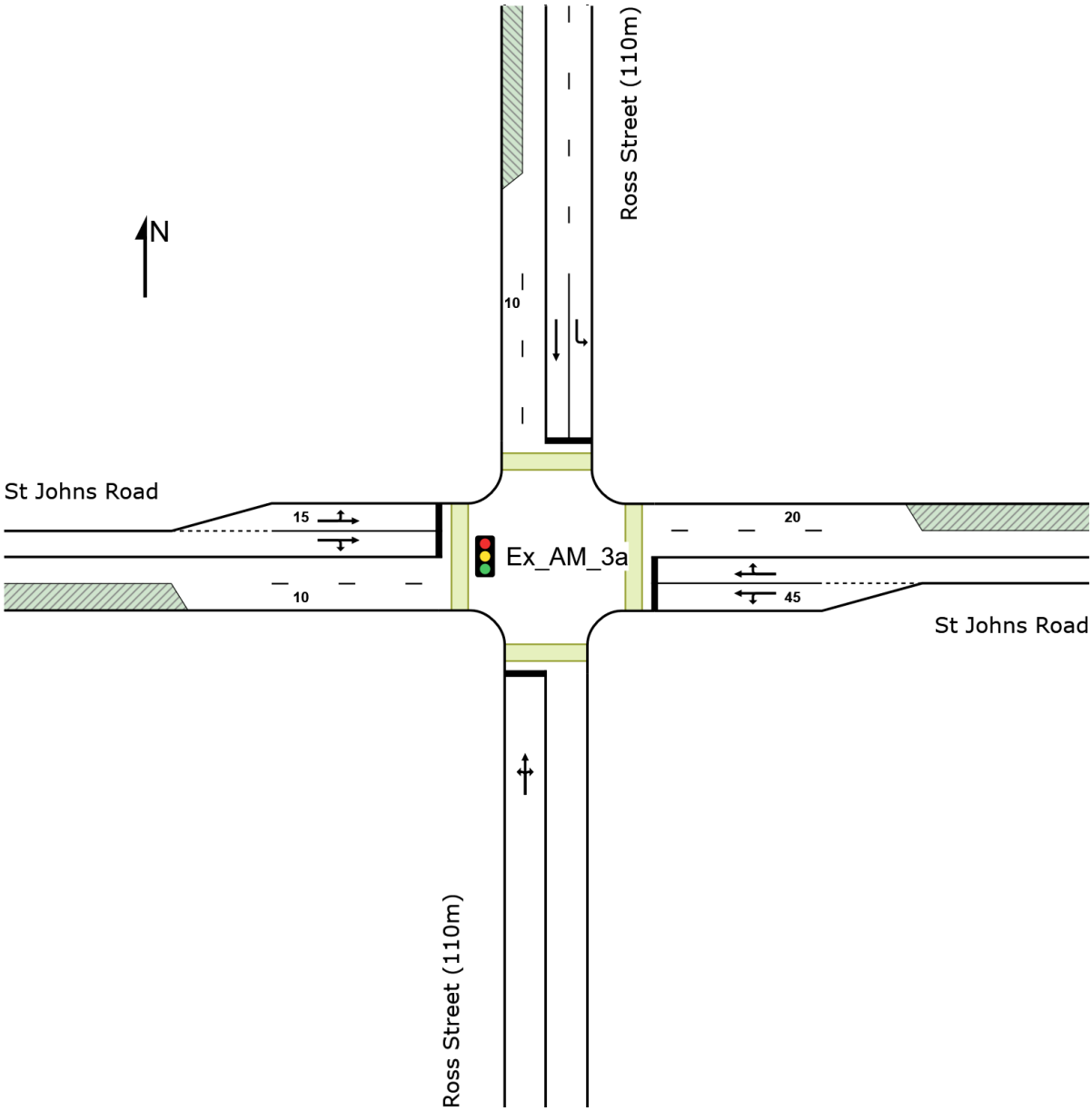
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110.0 seconds (Network Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: TCS1879
Input Phase Sequence: C, B, A
Output Phase Sequence: C, B, A
Reference Phase: Phase A
Offset: 0 seconds (User)

Site Layout

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



Vehicle Movement Performance

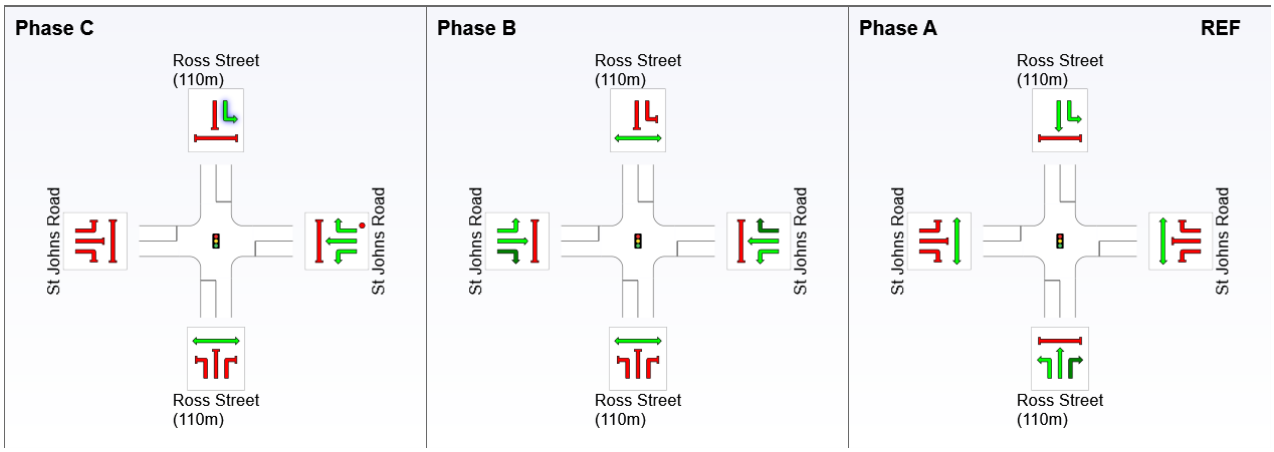
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (110m)															
1	L2	All MCs	36	5.9	36	5.9	0.349	14.6	LOS B	7.8	55.8	0.51	0.56	0.51	32.0
2	T1	All MCs	159	4.0	159	4.0	0.349	9.6	LOS A	7.8	55.8	0.51	0.56	0.51	19.2
3	R2	All MCs	114	3.7	114	3.7	* 0.349	14.8	LOS B	7.8	55.8	0.51	0.56	0.51	32.0
Approach			308	4.1	308	4.1	0.349	12.1	LOS A	7.8	55.8	0.51	0.56	0.51	28.6
East: St Johns Road															
4	L2	All MCs	42	5.0	42	5.0	0.096	38.7	LOS C	1.8	12.5	0.82	0.70	0.82	21.3
5	T1	All MCs	12	0.0	12	0.0	0.408	36.2	LOS C	5.7	42.5	0.93	1.03	0.93	22.5
6	R2	All MCs	119	8.0	119	8.0	* 0.408	40.0	LOS C	5.7	42.5	0.93	1.03	0.93	15.7
Approach			173	6.7	173	6.7	0.408	39.4	LOS C	5.7	42.5	0.90	0.95	0.90	17.4
North: Ross Street (110m)															
7	L2	All MCs	166	10.1	166	10.1	0.121	3.6	LOS A	0.3	2.2	0.04	0.45	0.04	35.3
8	T1	All MCs	287	4.8	287	4.8	0.225	1.5	LOS A	1.3	9.2	0.10	0.08	0.10	33.7
Approach			454	6.7	454	6.7	0.225	2.3	LOS A	1.3	9.2	0.07	0.22	0.07	34.9
West: St Johns Road															
10	L2	All MCs	14	7.7	14	7.7	0.079	54.0	LOS D	0.7	4.7	0.95	0.68	0.95	17.8
11	T1	All MCs	25	8.3	25	8.3	* 0.176	50.4	LOS D	1.6	11.3	0.95	0.70	0.95	24.4
12	R2	All MCs	6	16.7	6	16.7	0.176	55.3	LOS D	1.6	11.3	0.95	0.70	0.95	18.3
Approach			45	9.3	45	9.3	0.176	52.2	LOS D	1.6	11.3	0.95	0.69	0.95	22.1
All Vehicles			980	6.0	980	6.0	0.408	14.2	LOS A	7.8	55.8	0.40	0.48	0.40	25.6

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase



Phase Timing Summary

Phase	C	B	A
Phase Change Time (sec)	77.0	94.0	1.1
Green Time (sec)	11.0	11.1	71.0
Phase Time (sec)	17.0	16.0	77.0
Phase Split	15%	15%	70%
Phase Frequency (%)	100.0	81.4[2]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

2 Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Default Site User Report

Site: [Ex_AM_4a] 4 Ross Street / Bridge Road - AM (Existing)

Network: [Ex_AM_UGPT] AM (Existing)

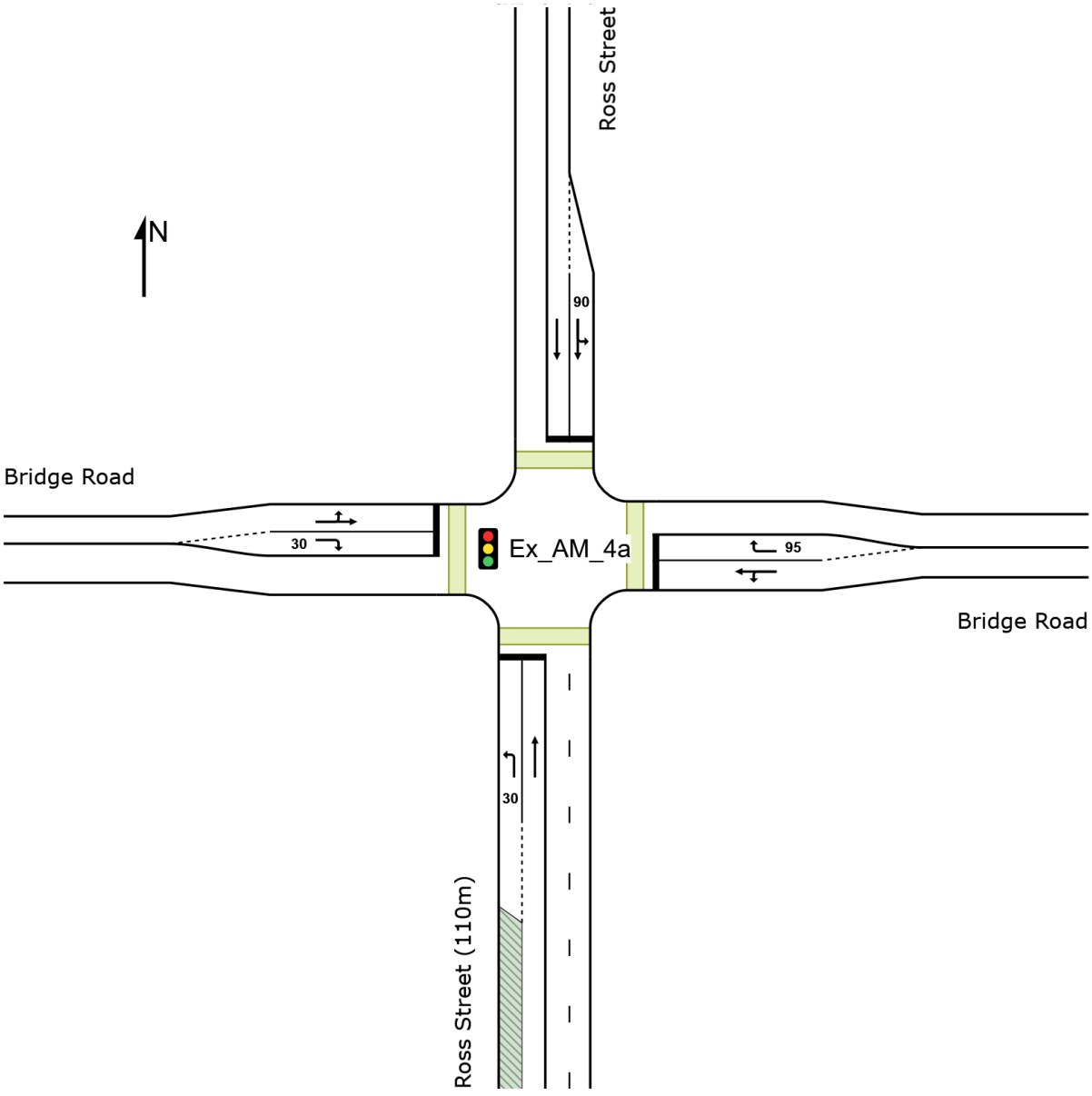
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110.0 seconds (Network Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: TCS0002
Input Phase Sequence: C, B, A
Output Phase Sequence: C, B, A
Reference Phase: Phase C
Offset: 0 seconds (User)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (110m)															
1	L2	All MCs	136	7.0	136	7.0	0.371	43.4	LOS D	6.3	45.9	0.89	0.77	0.89	20.3
2	T1	All MCs	154	4.1	154	4.1	0.327	33.6	LOS C	6.4	44.9	0.81	0.66	0.81	24.7
Approach			289	5.5	289	5.5	0.371	38.2	LOS C	6.4	45.9	0.85	0.71	0.85	22.6
East: Bridge Road															
4	L2	All MCs	46	4.5	46	4.5	0.384	14.9	LOS B	12.0	86.1	0.51	0.48	0.51	32.4
5	T1	All MCs	433	4.1	433	4.1	0.384	9.7	LOS A	12.0	86.1	0.51	0.48	0.51	35.2
6	R2	All MCs	38	2.8	38	2.8	* 0.124	15.0	LOS B	0.8	5.4	0.65	1.16	0.65	25.0
Approach			517	4.1	517	4.1	0.384	10.6	LOS A	12.0	86.1	0.52	0.53	0.52	33.9
North: Ross Street															
7	L2	All MCs	96	6.6	96	6.6	0.515	40.0	LOS C	10.7	76.8	0.92	0.78	0.92	27.0
8	T1	All MCs	374	4.8	374	4.8	* 0.515	39.9	LOS C	11.3	79.3	0.92	0.77	0.92	21.2
Approach			469	5.2	469	5.2	0.515	39.9	LOS C	11.3	79.3	0.92	0.78	0.92	22.9
West: Bridge Road															
10	L2	All MCs	45	0.0	45	0.0	* 0.731	21.0	LOS B	22.2	149.5	0.55	0.51	0.55	35.1
11	T1	All MCs	788	2.4	788	2.4	0.731	16.4	LOS B	22.2	149.5	0.55	0.51	0.55	34.6
12	R2	All MCs	26	40.0	26	40.0	0.067	23.8	LOS B	0.7	4.8	0.52	0.54	0.52	21.5
Approach			860	3.4	860	3.4	0.731	16.8	LOS B	22.2	149.5	0.54	0.51	0.54	31.6
All Vehicles			2136	4.2	2136	4.2	0.731	23.3	LOS B	22.2	149.5	0.66	0.60	0.66	29.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

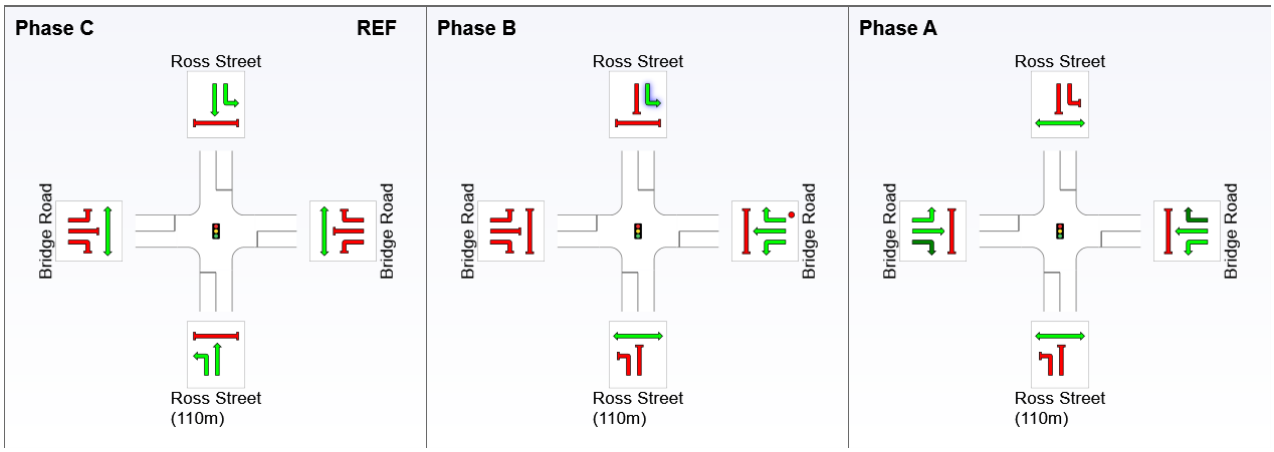
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Phase Timing Summary

Phase	C	B	A
Phase Change Time (sec)	0.0	33.0	42.0
Green Time (sec)	27.0	3.0	65.0
Phase Time (sec)	33.0	6.0	71.0
Phase Split	30%	5%	65%
Phase Frequency (%)	100.0	50.0 [1]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

1 Phase Frequency has been given with User-Specified Phase Times.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com

USER REPORT FOR NETWORK SITE

Default Site User Report

Site: [Ex_PM_1a] 1 Ross Street / Parramatta Road - PM (Existing)

Network: [Ex_PM_UGPT] PM (Existing)

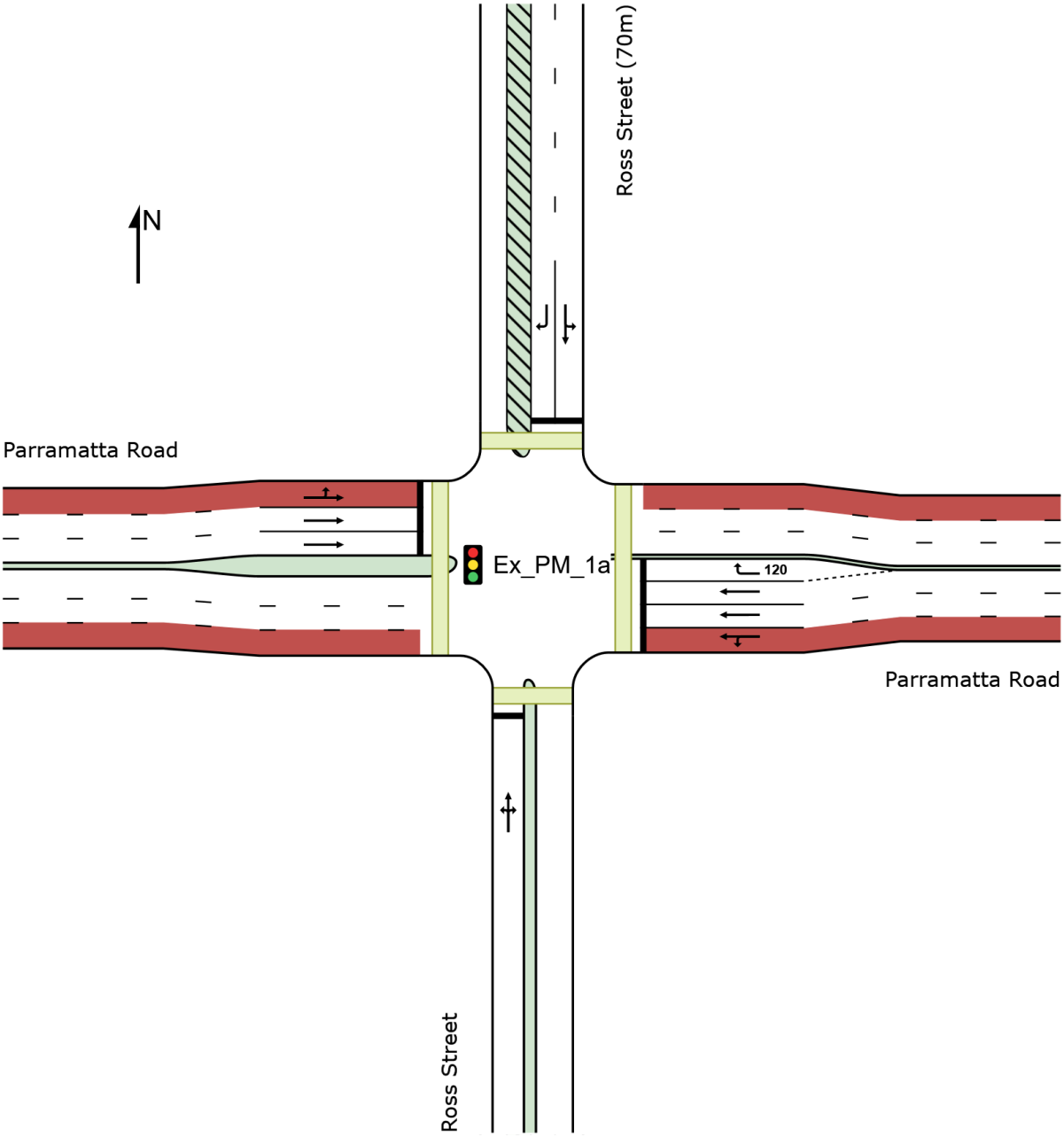
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: TCS0434 - Copy
Input Phase Sequence: A, C, D
Output Phase Sequence: A, C, D
Reference Phase: Phase A
Offset: 0 seconds (User)

Site Layout

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


N
Ross Street (70m)
Parramatta Road
Ex_PM_1a
120
Parramatta Road
Ross Street

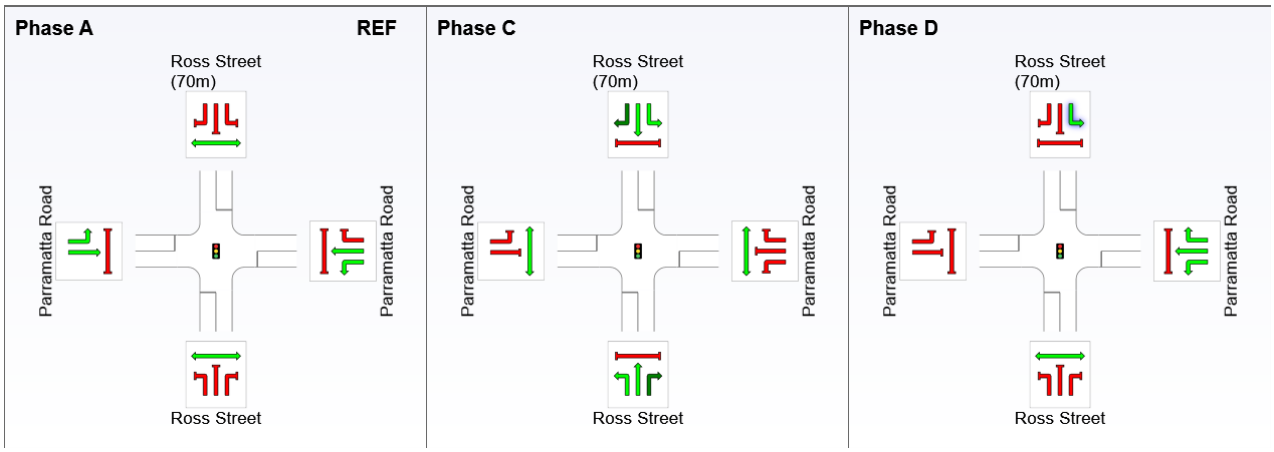
Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street															
1	L2	All MCs	42	7.5	42	7.5	0.298	46.5	LOS D	7.2	43.5	0.88	0.73	0.88	27.7
2	T1	All MCs	93	0.0	93	0.0	0.298	41.0	LOS C	7.2	43.5	0.88	0.73	0.88	19.1
3	R2	All MCs	13	8.3	13	8.3	0.298	51.9	LOS D	7.2	43.5	0.88	0.73	0.88	29.6
Approach			147	2.9	147	2.9	0.298	43.5	LOS D	7.2	43.5	0.88	0.73	0.88	23.1
East: Parramatta Road															
4	L2	All MCs	17	6.2	17	6.2	0.078	10.1	LOS A	0.7	8.2	0.20	0.30	0.20	43.5
5	T1	All MCs	1828	4.1	1828	4.1	* 0.705	3.4	LOS A	15.3	108.2	0.32	0.30	0.32	56.9
6	R2	All MCs	195	0.5	195	0.5	0.926	79.8	LOS F	13.6	95.7	1.00	1.04	1.43	19.4
Approach			2040	3.8	2040	3.8	0.926	10.7	LOS A	15.3	108.2	0.38	0.37	0.43	51.2
North: Ross Street (70m)															
7	L2	All MCs	88	0.0	88	0.0	0.345	37.0	LOS C	8.0	53.2	0.88	0.75	0.88	27.9
8	T1	All MCs	75	0.0	75	0.0	0.345	50.3	LOS D	8.0	53.2	0.88	0.75	0.88	21.1
9	R2	All MCs	148	0.0	148	0.0	* 0.536	51.9	LOS D	8.1	56.1	0.95	0.80	0.95	22.5
Approach			312	0.0	312	0.0	0.536	47.3	LOS D	8.1	56.1	0.91	0.77	0.91	23.6
West: Parramatta Road															
10	L2	All MCs	153	0.0	153	0.0	0.232	24.6	LOS B	6.1	48.4	0.60	0.71	0.60	33.0
11	T1	All MCs	1093	3.9	1093	3.9	0.554	13.9	LOS A	16.1	114.0	0.57	0.52	0.57	49.3
Approach			1245	3.5	1245	3.5	0.554	15.2	LOS B	16.1	114.0	0.57	0.54	0.57	47.9
All Vehicles			3744	3.3	3744	3.3	0.926	16.5	LOS B	16.1	114.0	0.51	0.47	0.53	45.8

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase



Phase Timing Summary

Phase	A	C	D
Phase Change Time (sec)	0.0	66.0	100.0
Green Time (sec)	60.0	28.0	14.0
Phase Time (sec)	66.0	34.0	20.0
Phase Split	55%	28%	17%
Phase Frequency (%)	100.0	100.0	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Default Site User Report

Site: [Ex_PM_2a] 2 Ross Street / Arundel Street - PM (Existing)

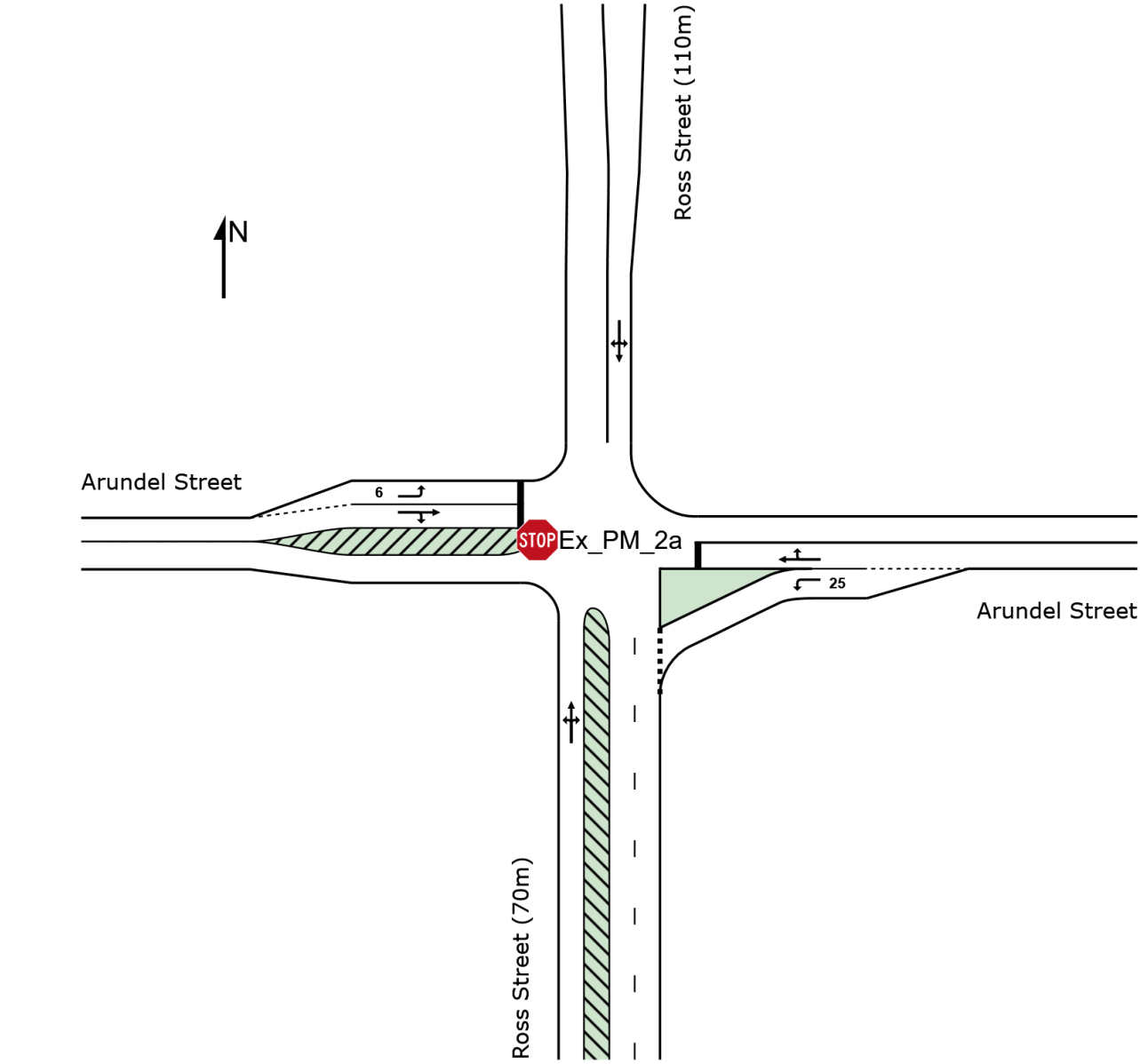
Network: [Ex_PM_UGPT] PM (Existing)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Site Layout

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



Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (70m)															
1	L2	All MCs	38	0.0	38	0.0	0.233	3.8	LOS A	0.5	3.4	0.11	0.15	0.11	35.7
2	T1	All MCs	356	0.3	356	0.3	0.233	0.2	LOS A	0.5	3.4	0.11	0.15	0.11	33.6
3	R2	All MCs	55	0.0	55	0.0	0.233	4.4	LOS A	0.5	3.4	0.11	0.15	0.11	37.9
Approach			448	0.2	448	0.2	0.233	1.0	NA	0.5	3.4	0.11	0.15	0.11	35.7
East: Arundel Street															
4	L2	All MCs	53	0.0	53	0.0	0.036	3.5	LOS A	0.1	1.0	0.22	0.41	0.22	36.1
5	T1	All MCs	12	0.0	12	0.0	0.115	10.1	LOS A	0.4	2.7	0.56	1.00	0.56	30.8
6	R2	All MCs	44	2.4	44	2.4	0.115	12.0	LOS A	0.4	2.7	0.56	1.00	0.56	31.0
Approach			108	1.0	108	1.0	0.115	7.7	LOS A	0.4	2.7	0.40	0.71	0.40	33.1
North: Ross Street (110m)															
7	L2	All MCs	35	0.0	35	0.0	0.160	4.1	LOS A	0.3	2.3	0.13	0.16	0.13	37.4
8	T1	All MCs	240	0.0	240	0.0	0.160	0.3	LOS A	0.3	2.3	0.13	0.16	0.13	35.2
9	R2	All MCs	26	0.0	26	0.0	0.160	4.7	LOS A	0.3	2.3	0.13	0.16	0.13	37.2
Approach			301	0.0	301	0.0	0.160	1.1	NA	0.3	2.3	0.13	0.16	0.13	36.3
West: Arundel Street															
10	L2	All MCs	36	0.0	36	0.0	0.034	8.1	LOS A	0.2	1.1	0.40	0.84	0.40	34.6
11	T1	All MCs	8	0.0	8	0.0	0.076	10.2	LOS A	0.3	1.7	0.54	0.96	0.54	31.9
12	R2	All MCs	31	0.0	31	0.0	0.076	11.5	LOS A	0.3	1.7	0.54	0.96	0.54	31.6
Approach			75	0.0	75	0.0	0.076	9.7	LOS A	0.3	1.7	0.48	0.90	0.48	32.9
All Vehicles			933	0.2	933	0.2	0.233	2.5	NA	0.5	3.4	0.18	0.28	0.18	34.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

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

Default Site User Report

Site: [Ex_PM_3a] 3 Ross Street / St Johns Road - PM (Existing)

Network: [Ex_PM_UGPT] PM (Existing)

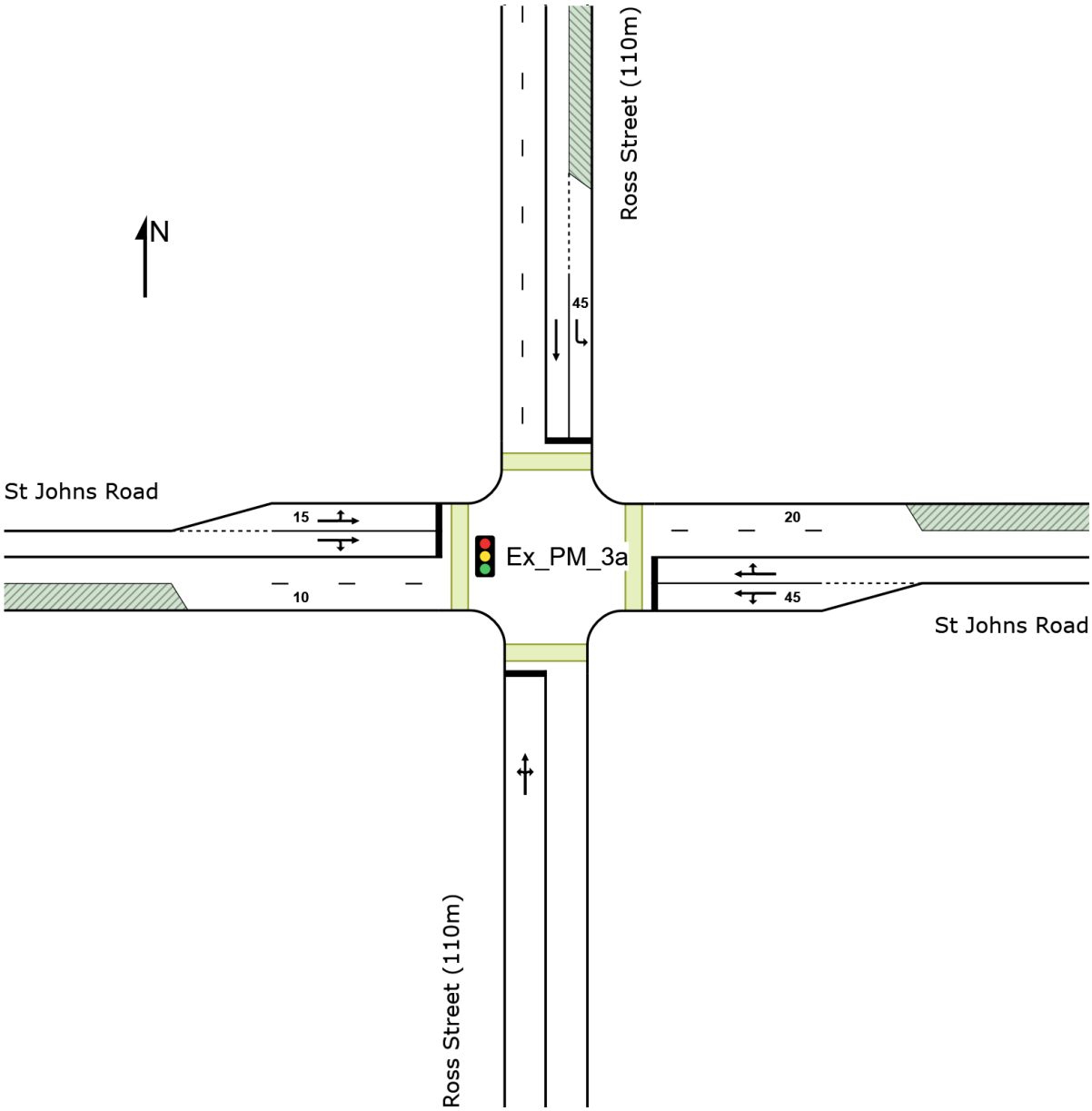
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110.0 seconds (Network Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: TCS1879
Input Phase Sequence: C, B, A
Output Phase Sequence: C, B, A
Reference Phase: Phase A
Offset: 0 seconds (User)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (110m)															
1	L2	All MCs	16	0.0	16	0.0	0.404	19.6	LOS B	12.9	86.4	0.61	0.57	0.61	30.2
2	T1	All MCs	348	0.6	348	0.6	0.404	14.4	LOS A	12.9	86.4	0.61	0.57	0.61	16.7
3	R2	All MCs	62	0.0	62	0.0	* 0.404	19.8	LOS B	12.9	86.4	0.61	0.57	0.61	29.6
Approach			426	0.5	426	0.5	0.404	15.4	LOS B	12.9	86.4	0.61	0.57	0.61	21.6
East: St Johns Road															
4	L2	All MCs	75	0.0	75	0.0	0.122	32.3	LOS C	2.9	18.9	0.75	0.70	0.75	22.8
5	T1	All MCs	26	0.0	26	0.0	0.558	31.2	LOS C	10.8	74.2	0.92	1.03	0.92	20.7
6	R2	All MCs	231	3.7	231	3.7	* 0.558	35.0	LOS C	10.8	74.2	0.92	1.03	0.92	15.7
Approach			332	2.5	332	2.5	0.558	34.1	LOS C	10.8	74.2	0.88	0.96	0.88	17.5
North: Ross Street (110m)															
7	L2	All MCs	73	10.1	73	10.1	0.057	4.3	LOS A	0.2	1.8	0.07	0.47	0.07	35.8
8	T1	All MCs	206	0.0	206	0.0	0.188	2.4	LOS A	1.2	8.2	0.12	0.10	0.12	32.5
Approach			279	2.6	279	2.6	0.188	2.9	LOS A	1.2	8.2	0.11	0.20	0.11	34.5
West: St Johns Road															
10	L2	All MCs	37	0.0	37	0.0	0.181	52.6	LOS D	1.8	12.9	0.94	0.72	0.94	18.8
11	T1	All MCs	41	0.0	41	0.0	* 0.274	49.0	LOS D	2.9	19.5	0.95	0.73	0.95	25.1
12	R2	All MCs	16	0.0	16	0.0	0.274	54.8	LOS D	2.9	19.5	0.95	0.73	0.95	18.9
Approach			94	0.0	94	0.0	0.274	51.4	LOS D	2.9	19.5	0.95	0.73	0.95	22.1
All Vehicles			1131	1.6	1131	1.6	0.558	20.8	LOS B	12.9	86.4	0.59	0.61	0.59	20.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

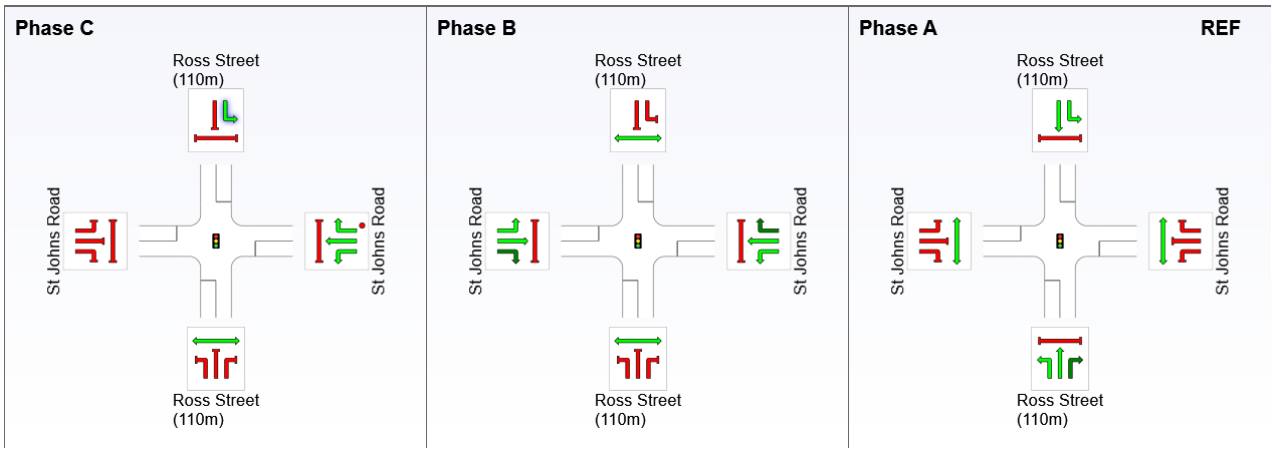
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Phase Timing Summary

Phase	C	B	A
Phase Change Time (sec)	67.8	90.8	0.0
Green Time (sec)	17.0	13.2	62.0
Phase Time (sec)	23.0	19.0	68.0
Phase Split	21%	17%	62%
Phase Frequency (%)	100.0	96.6[2]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

2 Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Default Site User Report

Site: [Ex_PM_4a] 4 Ross Street / Bridge Road - PM (Existing)

Network: [Ex_PM_UGPT] PM (Existing)

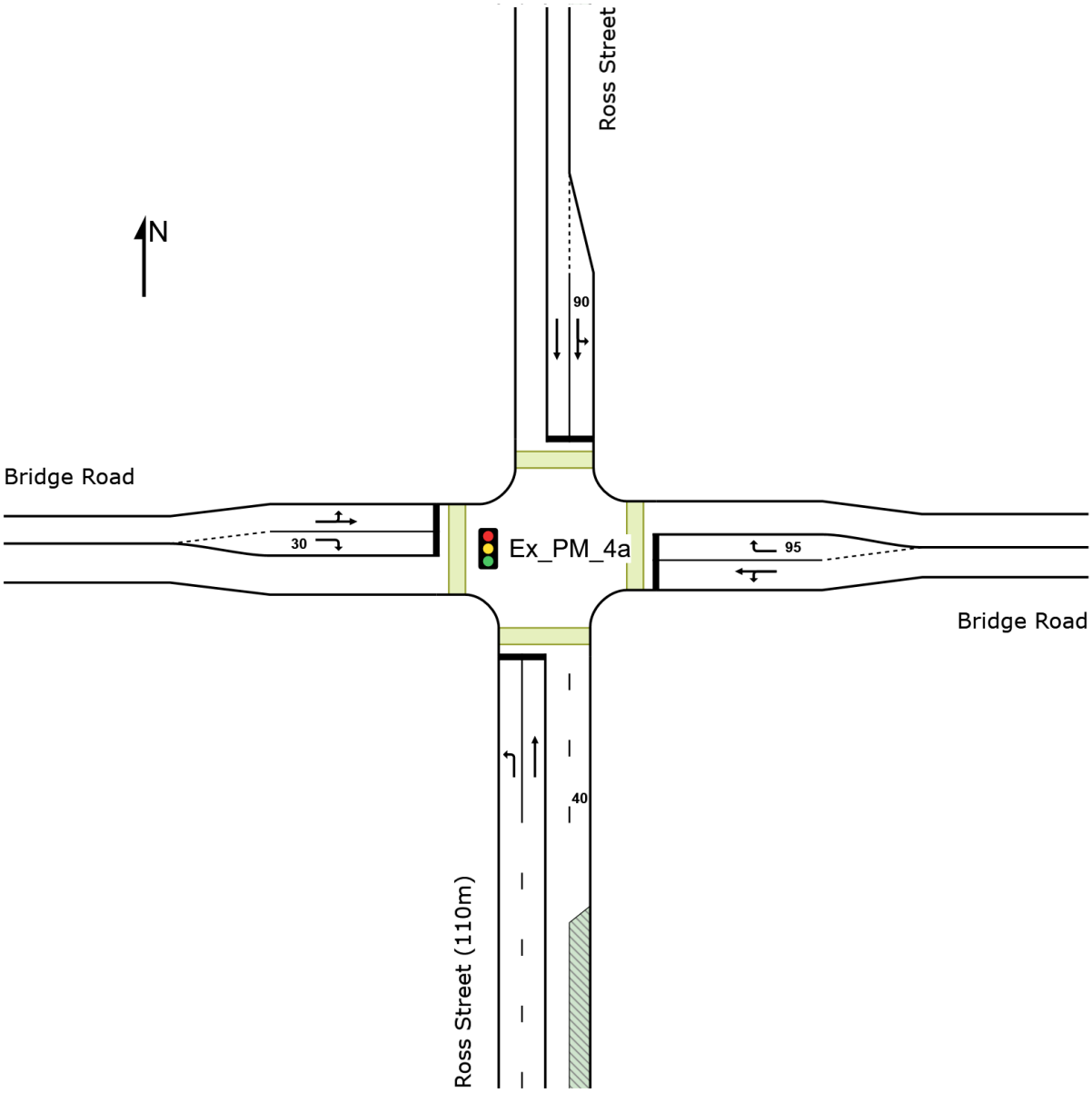
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110.0 seconds (Network Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: TCS0002
Input Phase Sequence: C, B, A
Output Phase Sequence: C, B, A
Reference Phase: Phase C
Offset: 0 seconds (User)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (110m)															
1	L2	All MCs	236	3.6	236	3.6	0.534	44.3	LOS D	11.4	80.8	0.94	0.82	0.94	20.1
2	T1	All MCs	365	0.6	365	0.6	* 0.656	29.4	LOS C	15.7	106.1	0.85	0.73	0.85	25.7
Approach			601	1.8	601	1.8	0.656	35.3	LOS C	15.7	106.1	0.88	0.76	0.88	23.4
East: Bridge Road															
4	L2	All MCs	37	0.0	37	0.0	0.543	9.9	LOS A	12.9	85.8	0.38	0.36	0.38	33.8
5	T1	All MCs	655	0.6	655	0.6	0.543	6.0	LOS A	12.9	85.8	0.38	0.36	0.38	35.6
6	R2	All MCs	119	0.9	119	0.9	* 0.301	16.4	LOS B	2.7	18.0	0.71	1.13	0.71	24.0
Approach			811	0.6	811	0.6	0.543	7.7	LOS A	12.9	85.8	0.43	0.47	0.43	32.9
North: Ross Street															
7	L2	All MCs	77	0.0	77	0.0	0.121	29.9	LOS C	2.8	19.2	0.72	0.69	0.72	29.2
8	T1	All MCs	236	0.9	236	0.9	0.436	34.9	LOS C	10.4	71.9	0.87	0.73	0.87	22.6
Approach			313	0.7	313	0.7	0.436	33.7	LOS C	10.4	71.9	0.83	0.72	0.83	24.8
West: Bridge Road															
10	L2	All MCs	107	1.0	107	1.0	* 0.616	27.2	LOS B	18.2	125.6	0.61	0.58	0.61	33.4
11	T1	All MCs	504	0.4	504	0.4	0.616	22.1	LOS B	18.2	125.6	0.61	0.58	0.61	33.7
12	R2	All MCs	9	55.6	9	55.6	0.036	27.6	LOS B	0.3	2.3	0.54	0.55	0.54	22.4
Approach			621	1.4	621	1.4	0.616	23.1	LOS B	18.2	125.6	0.60	0.58	0.60	30.5
All Vehicles			2345	1.1	2345	1.1	0.656	22.3	LOS B	18.2	125.6	0.65	0.61	0.65	29.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

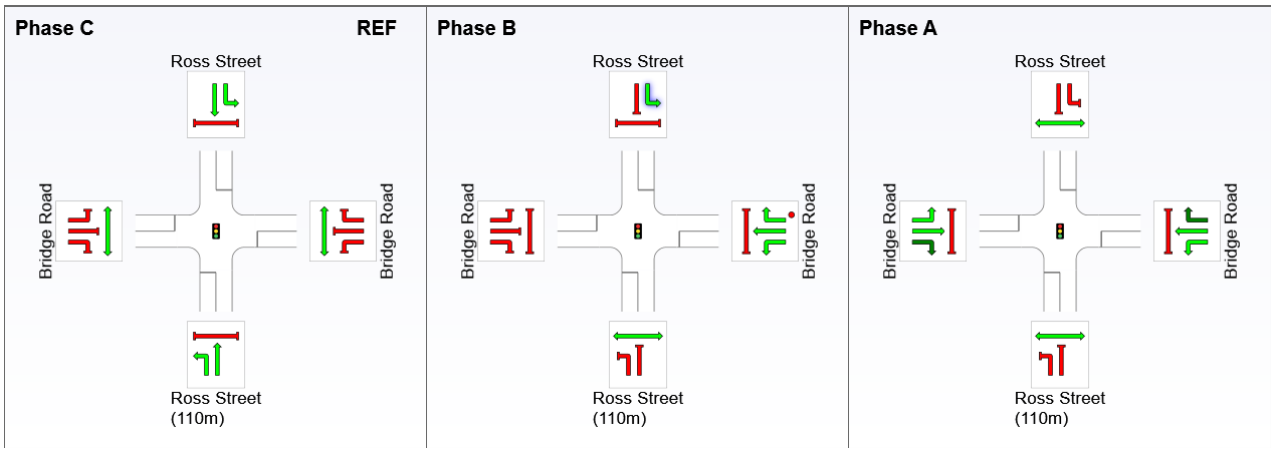
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Phase Timing Summary

Phase	C	B	A
Phase Change Time (sec)	109.0	36.0	46.5
Green Time (sec)	31.0	4.5	58.0
Phase Time (sec)	37.0	9.0	64.0
Phase Split	34%	8%	58%
Phase Frequency (%)	100.0	75.0 [1]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

1 Phase Frequency has been given with User-Specified Phase Times.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com

USER REPORT FOR NETWORK SITE

Default Site User Report

Site: [Ex_SAT_1a] 1 Ross Street / Parramatta Road - SAT (Existing)

Network: [Ex_SA_UGPT] SAT (Existing)

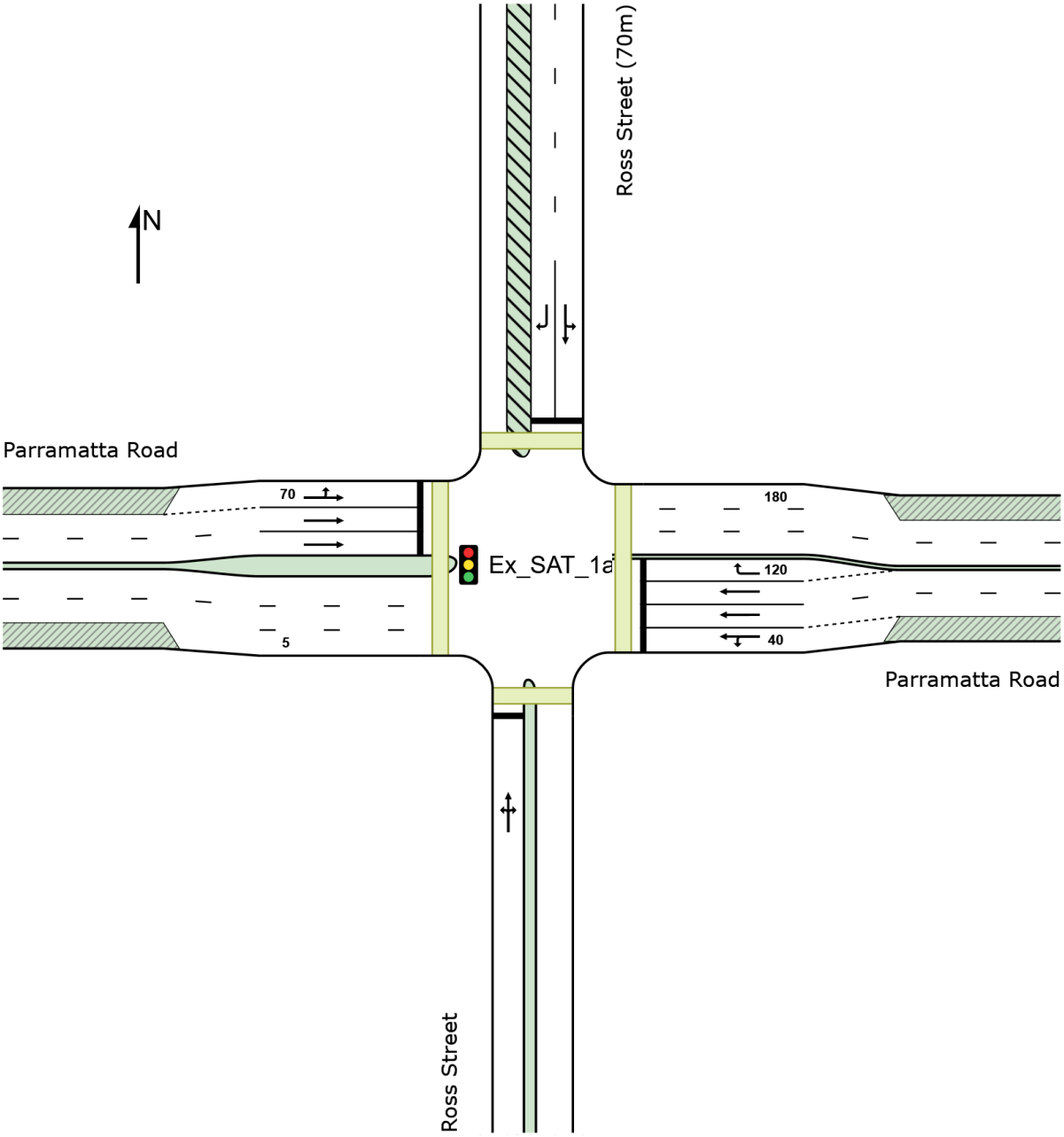
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140.0 seconds (Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: TCS0434 - Copy
Input Phase Sequence: A, C, D
Output Phase Sequence: A, C, D
Reference Phase: Phase A
Offset: 0 seconds (User)

Site Layout

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


N
Ross Street (70m)
Parramatta Road
70
5
Ex_SAT_1a
180
120
40
Parramatta Road
Ross Street

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street															
1	L2	All MCs	11	0.0	11	0.0	0.350	62.3	LOS E	5.1	34.3	0.96	0.76	0.96	24.9
2	T1	All MCs	41	0.0	41	0.0	0.350	57.0	LOS E	5.1	34.3	0.96	0.76	0.96	16.8
3	R2	All MCs	28	0.0	28	0.0	0.350	72.3	LOS F	5.1	34.3	0.96	0.76	0.96	27.1
Approach			80	0.0	80	0.0	0.350	63.2	LOS E	5.1	34.3	0.96	0.76	0.96	22.2
East: Parramatta Road															
4	L2	All MCs	16	0.0	16	0.0	0.043	15.9	LOS B	0.8	8.7	0.30	0.40	0.30	42.7
5	T1	All MCs	1378	3.5	1378	3.5	0.501	10.5	LOS A	19.6	139.4	0.46	0.42	0.46	53.1
6	R2	All MCs	127	1.7	127	1.7	* 0.907	89.3	LOS F	10.0	70.7	1.00	1.00	1.39	17.9
Approach			1521	3.3	1521	3.3	0.907	17.1	LOS B	19.6	139.4	0.50	0.47	0.54	47.2
North: Ross Street (70m)															
7	L2	All MCs	122	1.7	122	1.7	0.462	51.5	LOS D	11.1	74.9	0.93	0.79	0.93	24.5
8	T1	All MCs	61	0.0	61	0.0	0.462	63.4	LOS E	11.1	74.9	0.93	0.79	0.93	18.6
9	R2	All MCs	178	0.6	178	0.6	* 0.654	63.6	LOS E	11.6	81.9	0.99	0.83	1.00	19.9
Approach			361	0.9	361	0.9	0.654	59.5	LOS E	11.6	81.9	0.96	0.81	0.96	21.2
West: Parramatta Road															
10	L2	All MCs	147	1.4	147	1.4	0.178	18.5	LOS B	5.0	40.0	0.45	0.66	0.45	37.1
11	T1	All MCs	1251	3.2	1251	3.2	* 0.526	7.2	LOS A	13.5	95.5	0.36	0.33	0.36	53.9
Approach			1398	3.0	1398	3.0	0.526	8.4	LOS A	13.5	95.5	0.37	0.37	0.37	52.7
All Vehicles			3360	2.9	3360	2.9	0.907	19.1	LOS B	19.6	139.4	0.51	0.47	0.52	44.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

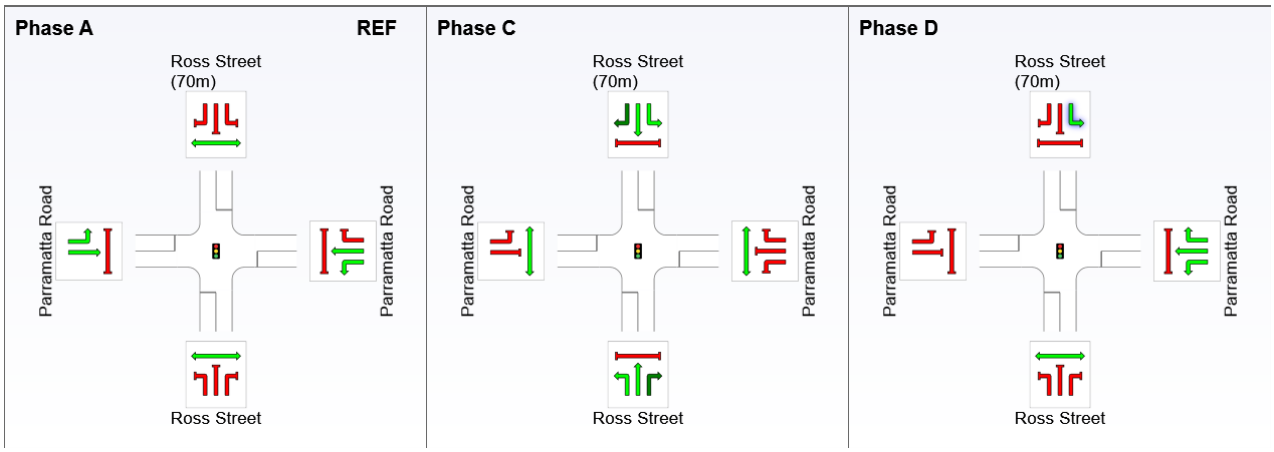
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase



Phase Timing Summary

Phase	A	C	D
Phase Change Time (sec)	0.0	91.0	123.0
Green Time (sec)	85.0	26.0	11.0
Phase Time (sec)	91.0	32.0	17.0
Phase Split	65%	23%	12%
Phase Frequency (%)	100.0	100.0	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Default Site User Report

Site: [Ex_SAT_2a] 2 Ross Street / Arundel Street - SAT (Existing)

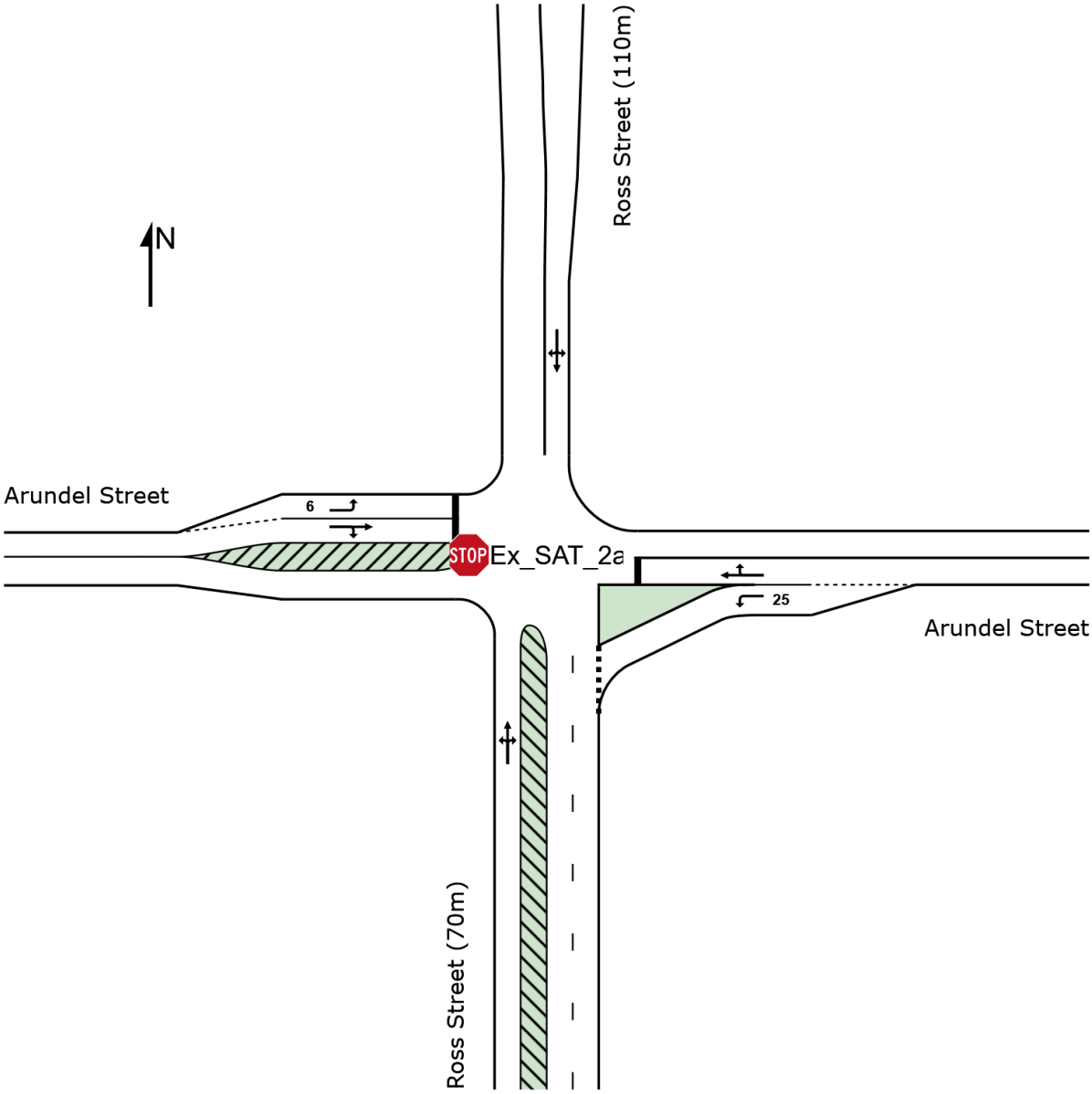
Network: [Ex_SA_UGPT] SAT (Existing)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Site Layout

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



Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (70m)															
1	L2	All MCs	20	0.0	20	0.0	0.177	4.5	LOS A	0.4	3.0	0.14	0.19	0.14	38.2
2	T1	All MCs	242	1.7	242	1.7	0.177	0.4	LOS A	0.4	3.0	0.14	0.19	0.14	33.6
3	R2	All MCs	53	0.0	53	0.0	0.177	4.6	LOS A	0.4	3.0	0.14	0.19	0.14	37.9
Approach			315	1.3	315	1.3	0.177	1.3	NA	0.4	3.0	0.14	0.19	0.14	36.4
East: Arundel Street															
4	L2	All MCs	58	0.0	58	0.0	0.047	3.5	LOS A	0.2	1.1	0.24	0.42	0.24	36.1
5	T1	All MCs	5	0.0	5	0.0	0.061	10.1	LOS A	0.2	1.3	0.53	0.95	0.53	33.2
6	R2	All MCs	26	0.0	26	0.0	0.061	10.8	LOS A	0.2	1.3	0.53	0.95	0.53	31.2
Approach			89	0.0	89	0.0	0.061	6.1	LOS A	0.2	1.3	0.34	0.61	0.34	34.3
North: Ross Street (110m)															
7	L2	All MCs	38	0.0	38	0.0	0.221	3.8	LOS A	0.4	2.5	0.10	0.13	0.10	37.6
8	T1	All MCs	295	1.1	295	1.1	0.221	0.2	LOS A	0.4	2.5	0.10	0.13	0.10	35.9
9	R2	All MCs	29	0.0	29	0.0	0.221	4.3	LOS A	0.4	2.5	0.10	0.13	0.10	37.9
Approach			362	0.9	362	0.9	0.221	0.9	NA	0.4	2.5	0.10	0.13	0.10	36.8
West: Arundel Street															
10	L2	All MCs	18	0.0	18	0.0	0.015	7.4	LOS A	0.1	0.4	0.33	0.83	0.33	33.1
11	T1	All MCs	11	0.0	11	0.0	0.036	9.7	LOS A	0.1	0.7	0.52	0.92	0.52	30.8
12	R2	All MCs	8	0.0	8	0.0	0.036	10.9	LOS A	0.1	0.7	0.52	0.92	0.52	29.9
Approach			37	0.0	37	0.0	0.036	8.8	LOS A	0.1	0.7	0.43	0.88	0.43	31.5
All Vehicles			803	0.9	803	0.9	0.221	2.0	NA	0.4	3.0	0.16	0.24	0.16	35.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

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

Default Site User Report

Site: [Ex_SAT_3a] 3 Ross Street / St Johns Road - SAT (Existing)

Network: [Ex_SA_UGPT] SAT (Existing)

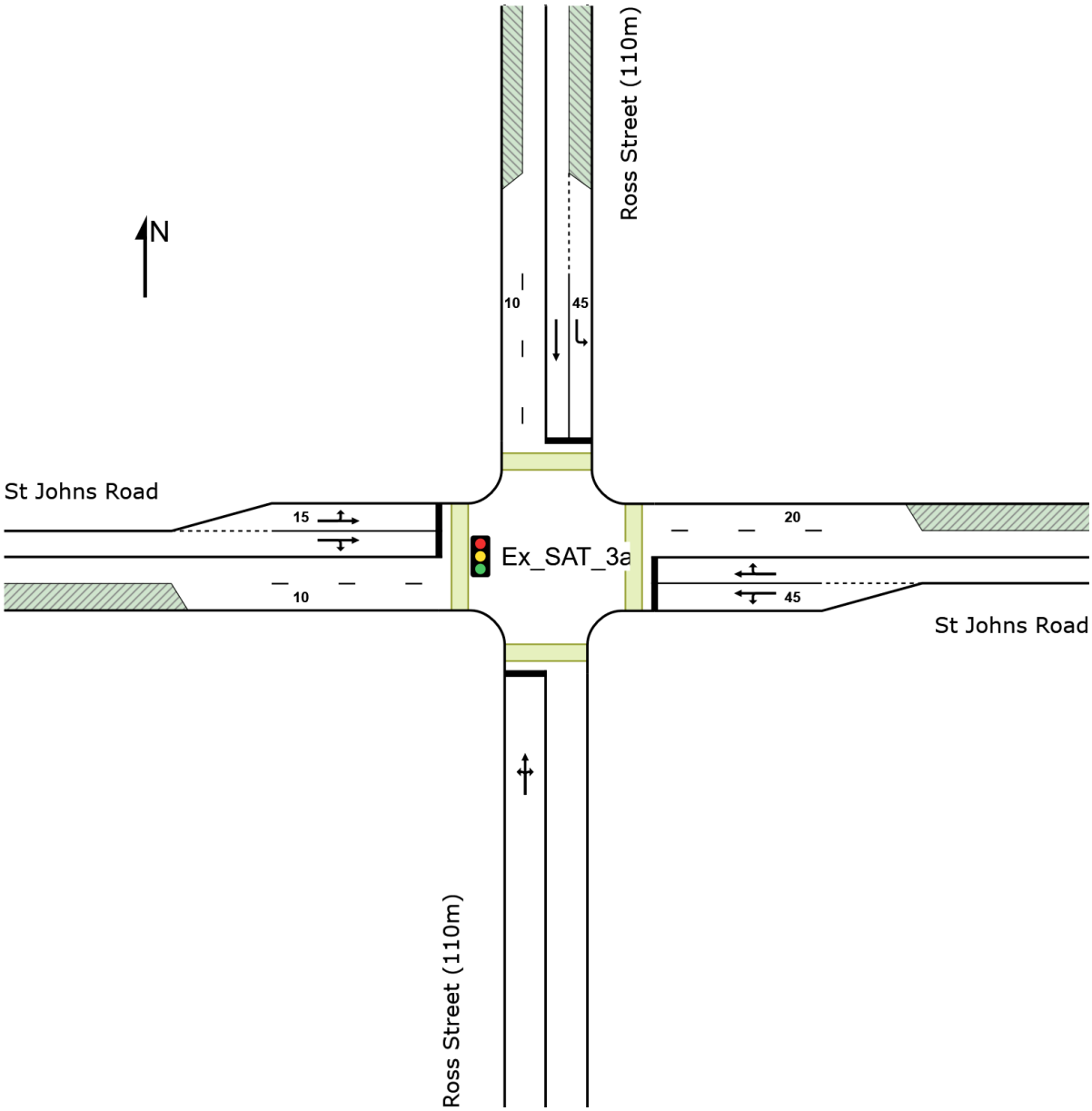
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90.0 seconds (Network Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: TCS1879
Input Phase Sequence: C, B, A
Output Phase Sequence: C, B, A
Reference Phase: Phase A
Offset: 0 seconds (User)

Site Layout

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



Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (110m)															
1	L2	All MCs	19	5.6	19	5.6	0.266	14.3	LOS A	6.1	42.1	0.54	0.51	0.54	31.6
2	T1	All MCs	211	1.0	211	1.0	0.266	10.1	LOS A	6.1	42.1	0.54	0.51	0.54	20.0
3	R2	All MCs	46	2.3	46	2.3	* 0.266	15.0	LOS B	6.1	42.1	0.54	0.51	0.54	32.2
Approach			276	1.5	276	1.5	0.266	11.2	LOS A	6.1	42.1	0.54	0.51	0.54	25.8
East: St Johns Road															
4	L2	All MCs	84	1.2	84	1.2	0.158	29.5	LOS C	2.8	19.3	0.79	0.71	0.79	24.0
5	T1	All MCs	22	0.0	22	0.0	0.424	26.6	LOS B	6.0	41.1	0.91	1.04	0.91	22.2
6	R2	All MCs	152	3.5	152	3.5	* 0.424	30.3	LOS C	6.0	41.1	0.91	1.04	0.91	16.3
Approach			258	2.4	258	2.4	0.424	29.7	LOS C	6.0	41.1	0.87	0.93	0.87	18.9
North: Ross Street (110m)															
7	L2	All MCs	69	7.6	69	7.6	0.053	3.7	LOS A	0.1	0.7	0.03	0.46	0.03	36.3
8	T1	All MCs	259	0.8	259	0.8	0.230	0.9	LOS A	0.6	4.3	0.06	0.05	0.06	36.2
Approach			328	2.2	328	2.2	0.230	1.5	LOS A	0.6	4.3	0.05	0.14	0.05	36.3
West: St Johns Road															
10	L2	All MCs	16	0.0	16	0.0	0.097	46.0	LOS D	0.7	4.5	0.95	0.68	0.95	19.8
11	T1	All MCs	16	0.0	16	0.0	* 0.203	41.8	LOS C	1.4	9.7	0.96	0.71	0.96	25.9
12	R2	All MCs	18	0.0	18	0.0	0.203	47.1	LOS D	1.4	9.7	0.96	0.71	0.96	20.0
Approach			49	0.0	49	0.0	0.203	45.0	LOS D	1.4	9.7	0.96	0.70	0.96	22.4
All Vehicles			912	2.0	912	2.0	0.424	14.8	LOS B	6.1	42.1	0.48	0.51	0.48	23.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

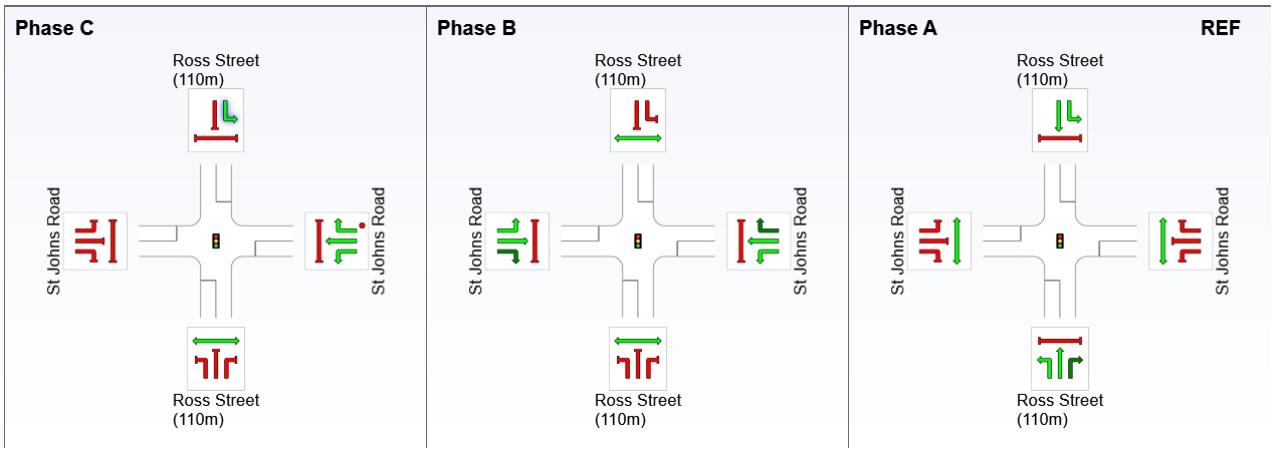
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Phase Timing Summary

Phase	C	B	A
Phase Change Time (sec)	56.8	74.8	0.0
Green Time (sec)	12.0	9.2	52.0
Phase Time (sec)	18.0	14.0	58.0
Phase Split	20%	16%	64%
Phase Frequency (%)	100.0	80.0[1]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

1 Phase Frequency has been given with User-Specified Phase Times.

Default Site User Report

Site: [Ex_SAT_4a] 4 Ross Street / Bridge Road - SAT (Existing)

Network: [Ex_SA_UGPT] SAT (Existing)

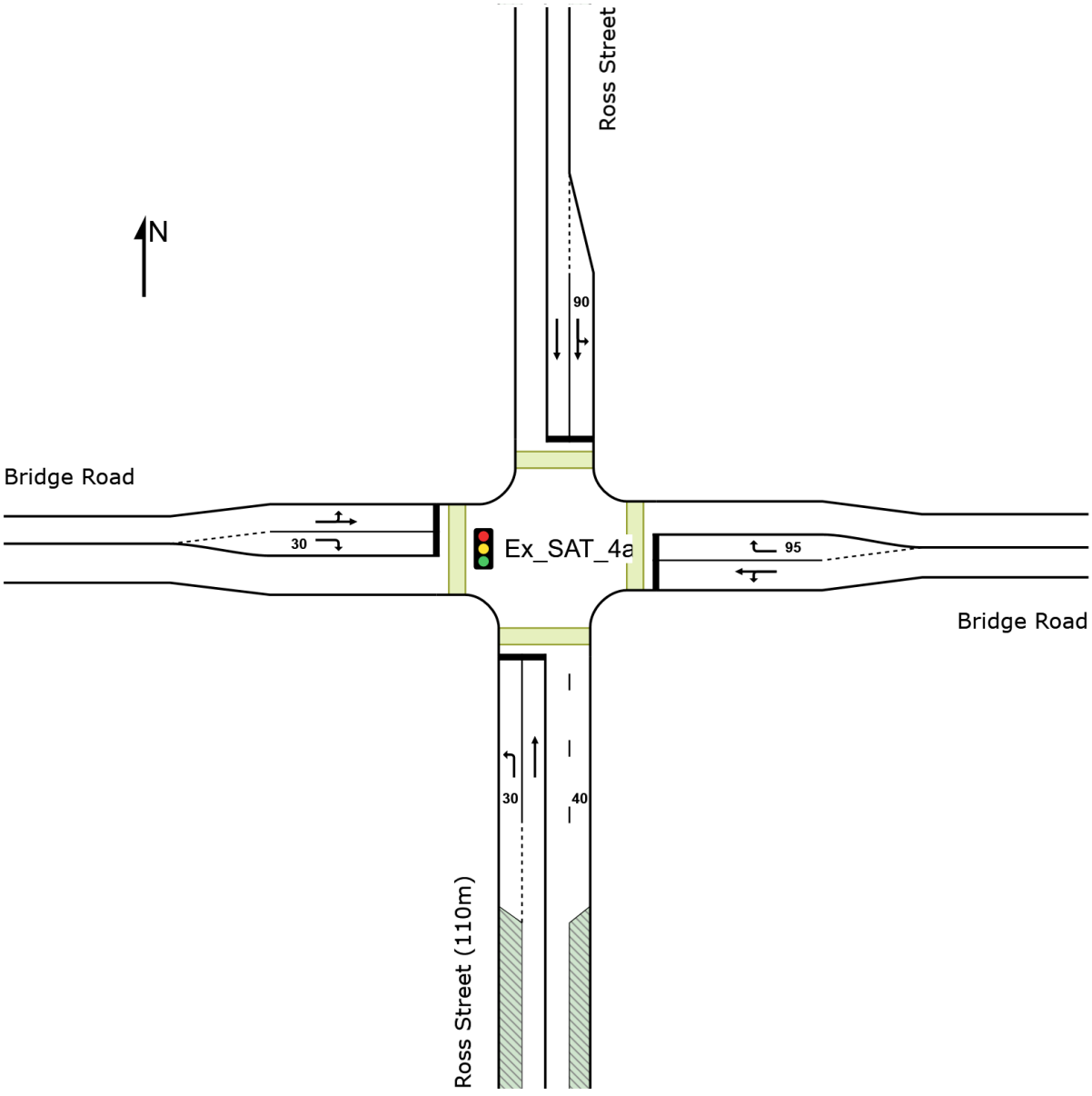
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90.0 seconds (Network Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: TCS0002
Input Phase Sequence: C, B, A
Output Phase Sequence: C, B, A
Reference Phase: Phase C
Offset: 0 seconds (User)

Site Layout

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



Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (110m)															
1	L2	All MCs	139	3.8	139	3.8	0.371	35.2	LOS C	4.9	35.0	0.82	0.74	0.82	23.1
2	T1	All MCs	238	1.3	238	1.3	0.568	30.7	LOS C	8.6	60.2	0.85	0.71	0.85	26.5
Approach			377	2.2	377	2.2	0.568	32.3	LOS C	8.6	60.2	0.84	0.72	0.84	24.5
East: Bridge Road															
4	L2	All MCs	32	0.0	32	0.0	0.353	12.9	LOS A	9.1	63.5	0.51	0.47	0.51	33.3
5	T1	All MCs	412	0.8	412	0.8	0.353	8.3	LOS A	9.1	63.5	0.51	0.47	0.51	35.9
6	R2	All MCs	67	1.6	67	1.6	* 0.152	11.7	LOS A	1.1	7.5	0.60	1.18	0.60	24.8
Approach			511	0.8	511	0.8	0.353	9.0	LOS A	9.1	63.5	0.52	0.56	0.52	33.5
North: Ross Street															
7	L2	All MCs	82	2.6	82	2.6	0.180	30.0	LOS C	3.0	21.3	0.80	0.72	0.80	29.5
8	T1	All MCs	299	1.8	299	1.8	* 0.649	34.2	LOS C	11.8	81.7	0.95	0.81	0.95	22.7
Approach			381	1.9	381	1.9	0.649	33.3	LOS C	11.8	81.7	0.92	0.79	0.92	24.7
West: Bridge Road															
10	L2	All MCs	74	1.4	74	1.4	* 0.480	20.2	LOS B	13.5	94.6	0.61	0.57	0.61	34.5
11	T1	All MCs	477	0.0	477	0.0	0.480	15.4	LOS B	13.5	94.6	0.61	0.57	0.61	35.0
12	R2	All MCs	3	100.0	3	100.0	0.011	19.7	LOS B	0.1	0.9	0.49	0.57	0.49	28.3
Approach			554	0.8	554	0.8	0.480	16.0	LOS B	13.5	94.6	0.61	0.57	0.61	33.2
All Vehicles			1822	1.3	1822	1.3	0.649	21.0	LOS B	13.5	94.6	0.70	0.64	0.70	29.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

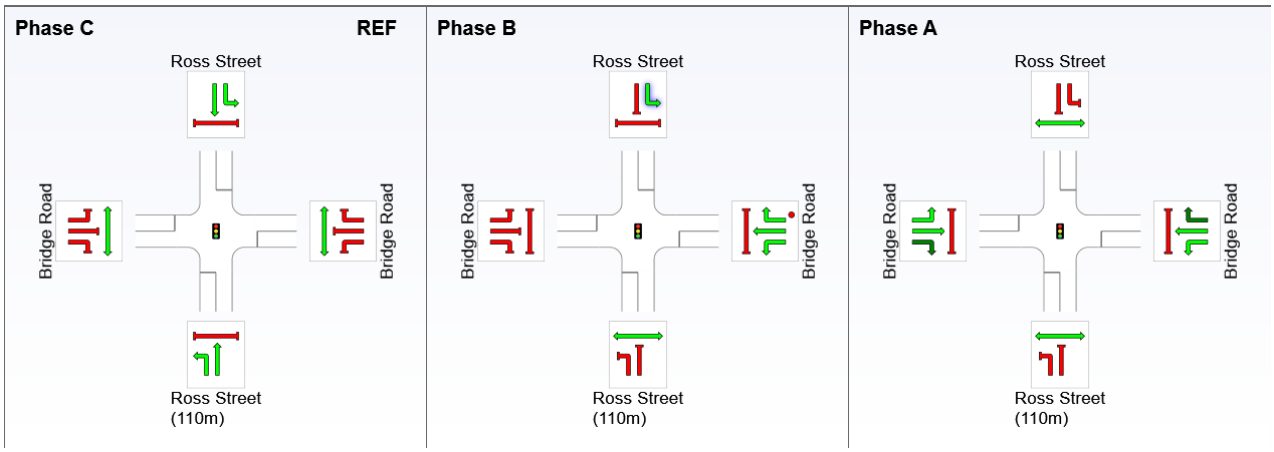
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Phase Timing Summary

Phase	C	B	A
Phase Change Time (sec)	88.0	25.0	32.5
Green Time (sec)	21.0	1.5	54.0
Phase Time (sec)	27.0	3.0	60.0
Phase Split	30%	3%	67%
Phase Frequency (%)	100.0	25.0 [1]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

1 Phase Frequency has been given with User-Specified Phase Times.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com

USER REPORT FOR NETWORK SITE

Default Site User Report

Site: [Ex_AM_] 1 Ross Street / Parramatta Road - AM (Existing + Development)

Network: [Ex_AM_UGP] AM + Development (Existing + Development)

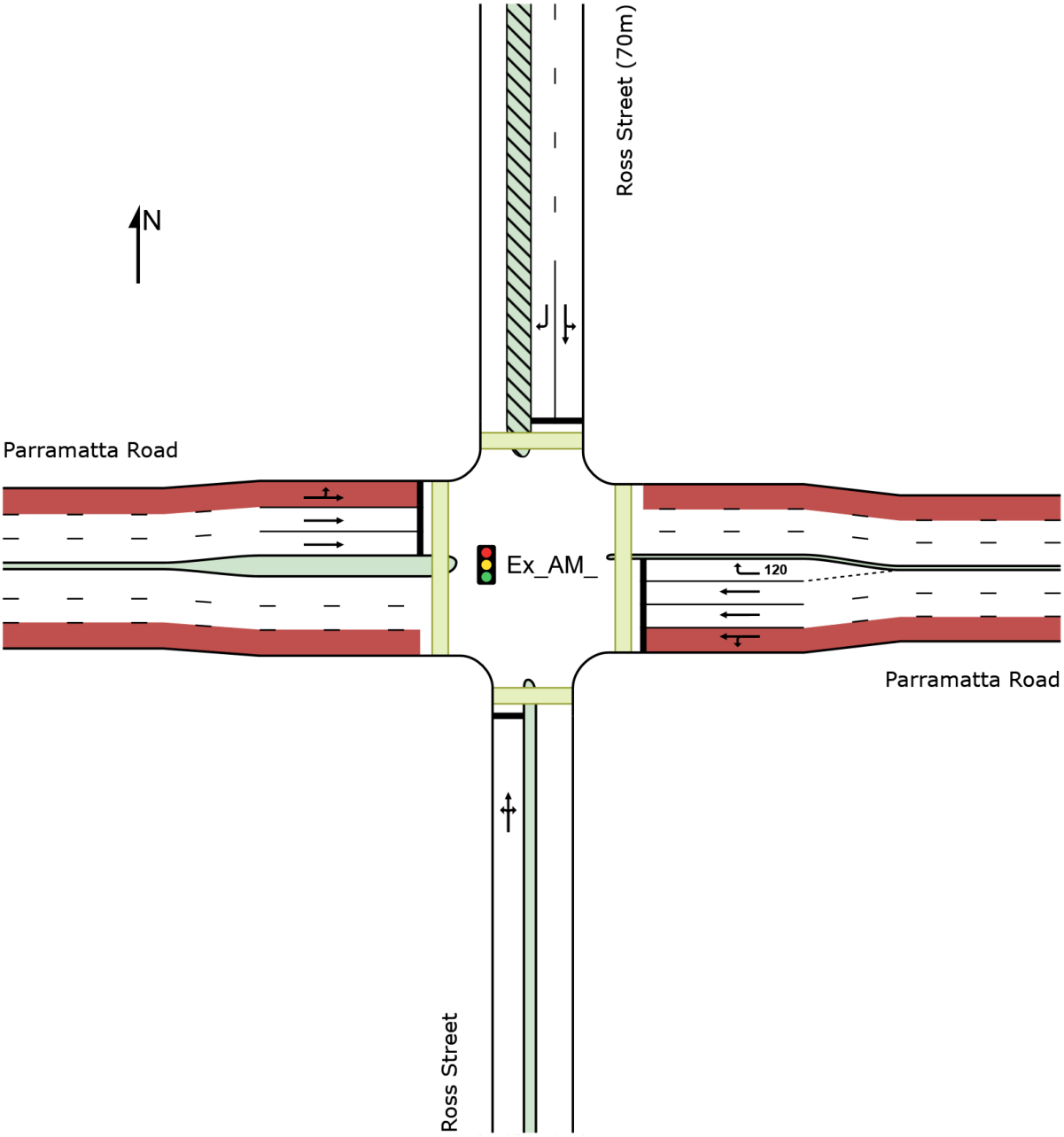
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: TCS0434 - Copy
Input Phase Sequence: A, C, D
Output Phase Sequence: A, C, D
Reference Phase: Phase A
Offset: 0 seconds (User)

Site Layout

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


N
Ross Street (70m)
Parramatta Road
Ex_AM_
120
Parramatta Road
Ross Street

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street															
1	L2	All MCs	33	6.5	33	6.5	0.305	53.2	LOS D	4.7	32.2	0.93	0.75	0.93	26.9
2	T1	All MCs	42	2.5	42	2.5	0.305	47.5	LOS D	4.7	32.2	0.93	0.75	0.93	18.4
3	R2	All MCs	14	15.4	14	15.4	0.305	61.5	LOS E	4.7	32.2	0.93	0.75	0.93	28.8
Approach			88	6.0	88	6.0	0.305	51.7	LOS D	4.7	32.2	0.93	0.75	0.93	23.8
East: Parramatta Road															
4	L2	All MCs	13	8.3	13	8.3	0.057	11.7	LOS A	0.9	10.3	0.32	0.35	0.32	43.7
5	T1	All MCs	774	9.9	774	9.9	0.277	6.3	LOS A	7.4	54.3	0.38	0.34	0.38	54.8
6	R2	All MCs	123	2.6	123	2.6	* 0.924	81.8	LOS F	8.6	61.3	1.00	1.04	1.50	19.1
Approach			909	8.9	909	8.9	0.924	16.6	LOS B	8.6	61.3	0.46	0.43	0.53	47.3
North: Ross Street (70m)															
7	L2	All MCs	93	9.1	93	9.1	0.525	44.9	LOS D	10.9	71.2	0.95	0.80	0.95	25.7
8	T1	All MCs	111	1.9	111	1.9	* 0.525	53.7	LOS D	10.9	71.2	0.95	0.80	0.95	19.0
9	R2	All MCs	126	5.0	126	5.0	0.516	55.0	LOS D	7.0	51.1	0.97	0.79	0.97	21.7
Approach			329	5.1	329	5.1	0.525	51.7	LOS D	10.9	71.2	0.96	0.79	0.96	21.8
West: Parramatta Road															
10	L2	All MCs	269	3.1	269	3.1	0.339	19.2	LOS B	9.3	75.4	0.53	0.69	0.53	36.7
11	T1	All MCs	1972	4.9	1972	4.9	* 0.659	7.9	LOS A	24.1	172.1	0.48	0.45	0.48	53.5
Approach			2241	4.7	2241	4.7	0.659	9.2	LOS A	24.1	172.1	0.49	0.48	0.49	52.1
All Vehicles			3568	5.8	3568	5.8	0.924	16.1	LOS B	24.1	172.1	0.53	0.50	0.55	46.1

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

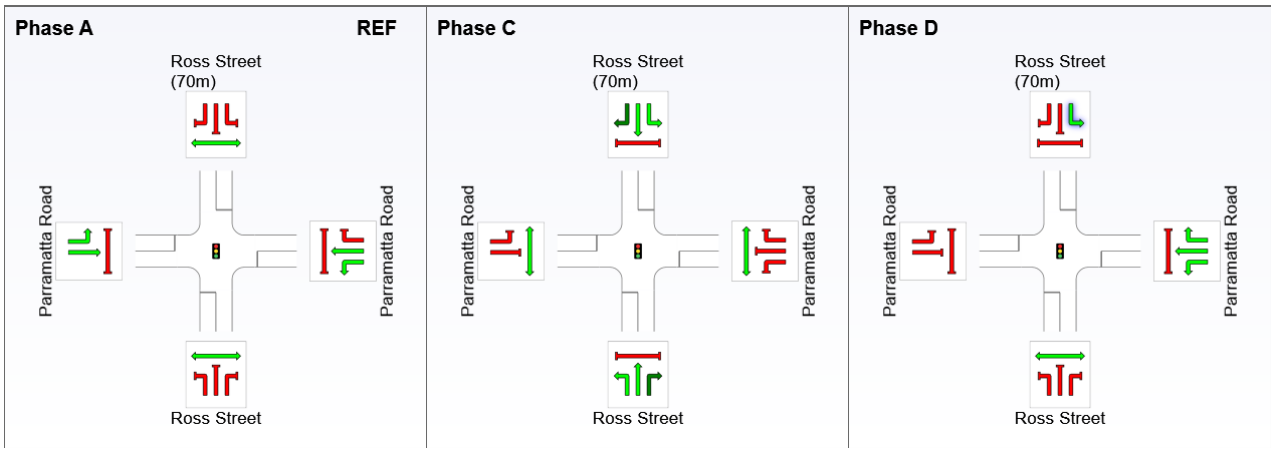
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase



Phase Timing Summary

Phase	A	C	D
Phase Change Time (sec)	0.0	77.0	105.2
Green Time (sec)	71.0	22.2	9.0
Phase Time (sec)	77.0	28.0	15.0
Phase Split	64%	23%	13%
Phase Frequency (%)	100.0	97.1[2]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

2 Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Default Site User Report

Site: [Ex_AM_ (2)] 2 Ross Street / Arundel Street - AM (Existing + Development)

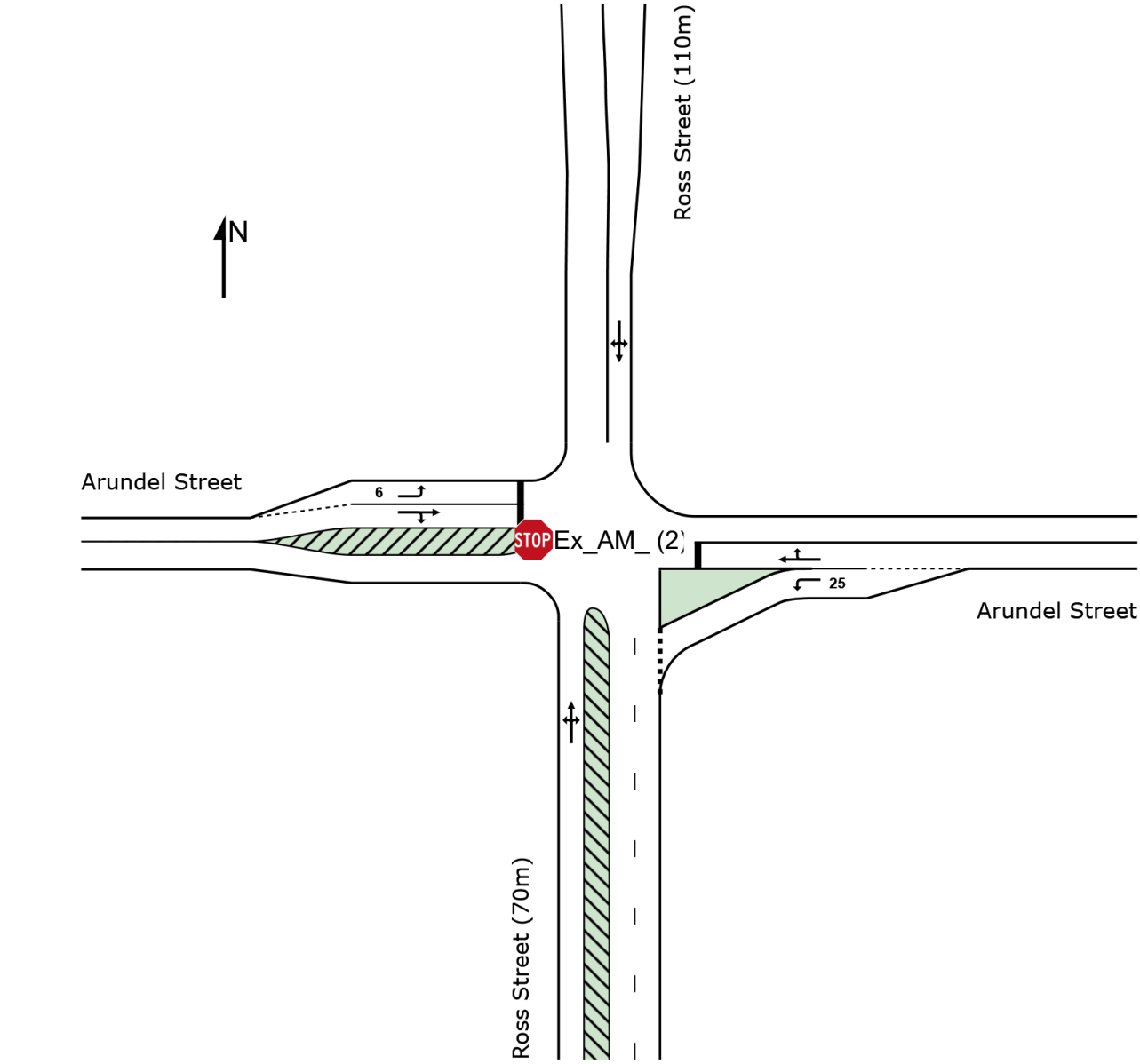
Network: [Ex_AM_UGP] AM + Development (Existing + Development)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Site Layout

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



Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (70m)															
1	L2	All MCs	80	0.0	80	0.0	0.240	4.0	LOS A	0.6	4.5	0.15	0.24	0.15	37.5
2	T1	All MCs	279	4.2	279	4.2	0.240	0.4	LOS A	0.6	4.5	0.15	0.24	0.15	32.0
3	R2	All MCs	68	1.5	68	1.5	0.240	4.5	LOS A	0.6	4.5	0.15	0.24	0.15	37.7
Approach			427	3.0	427	3.0	0.240	1.7	NA	0.6	4.5	0.15	0.24	0.15	36.2
East: Arundel Street															
4	L2	All MCs	56	3.8	56	3.8	0.040	3.5	LOS A	0.2	1.1	0.22	0.41	0.22	36.2
5	T1	All MCs	7	14.3	7	14.3	0.134	12.9	LOS A	0.4	3.2	0.63	1.00	0.63	32.4
6	R2	All MCs	48	2.2	48	2.2	0.134	13.2	LOS A	0.4	3.2	0.63	1.00	0.63	31.3
Approach			112	3.8	112	3.8	0.134	8.3	LOS A	0.4	3.2	0.42	0.71	0.42	33.6
North: Ross Street (110m)															
7	L2	All MCs	55	3.8	55	3.8	0.212	4.6	LOS A	0.8	5.7	0.25	0.29	0.25	37.4
8	T1	All MCs	239	5.7	239	5.7	0.212	0.6	LOS A	0.8	5.7	0.25	0.29	0.25	32.1
9	R2	All MCs	71	3.0	71	3.0	0.212	4.9	LOS A	0.8	5.7	0.25	0.29	0.25	37.5
Approach			364	4.9	364	4.9	0.212	2.1	NA	0.8	5.7	0.25	0.29	0.25	35.8
West: Arundel Street															
10	L2	All MCs	99	0.0	99	0.0	0.088	7.9	LOS A	0.4	2.8	0.37	0.86	0.37	34.7
11	T1	All MCs	15	7.1	15	7.1	0.091	11.9	LOS A	0.3	2.0	0.57	0.99	0.57	33.0
12	R2	All MCs	28	0.0	28	0.0	0.091	11.8	LOS A	0.3	2.0	0.57	0.99	0.57	31.2
Approach			142	0.7	142	0.7	0.091	9.1	LOS A	0.4	2.8	0.43	0.90	0.43	33.7
All Vehicles			1045	3.4	1045	3.4	0.240	3.5	NA	0.8	5.7	0.25	0.39	0.25	35.0

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

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

Default Site User Report

Site: [Ex_AM_ (3)] 3 Ross Street / St Johns Road - AM (Existing + Development)

Network: [Ex_AM_UGP] AM + Development (Existing + Development)

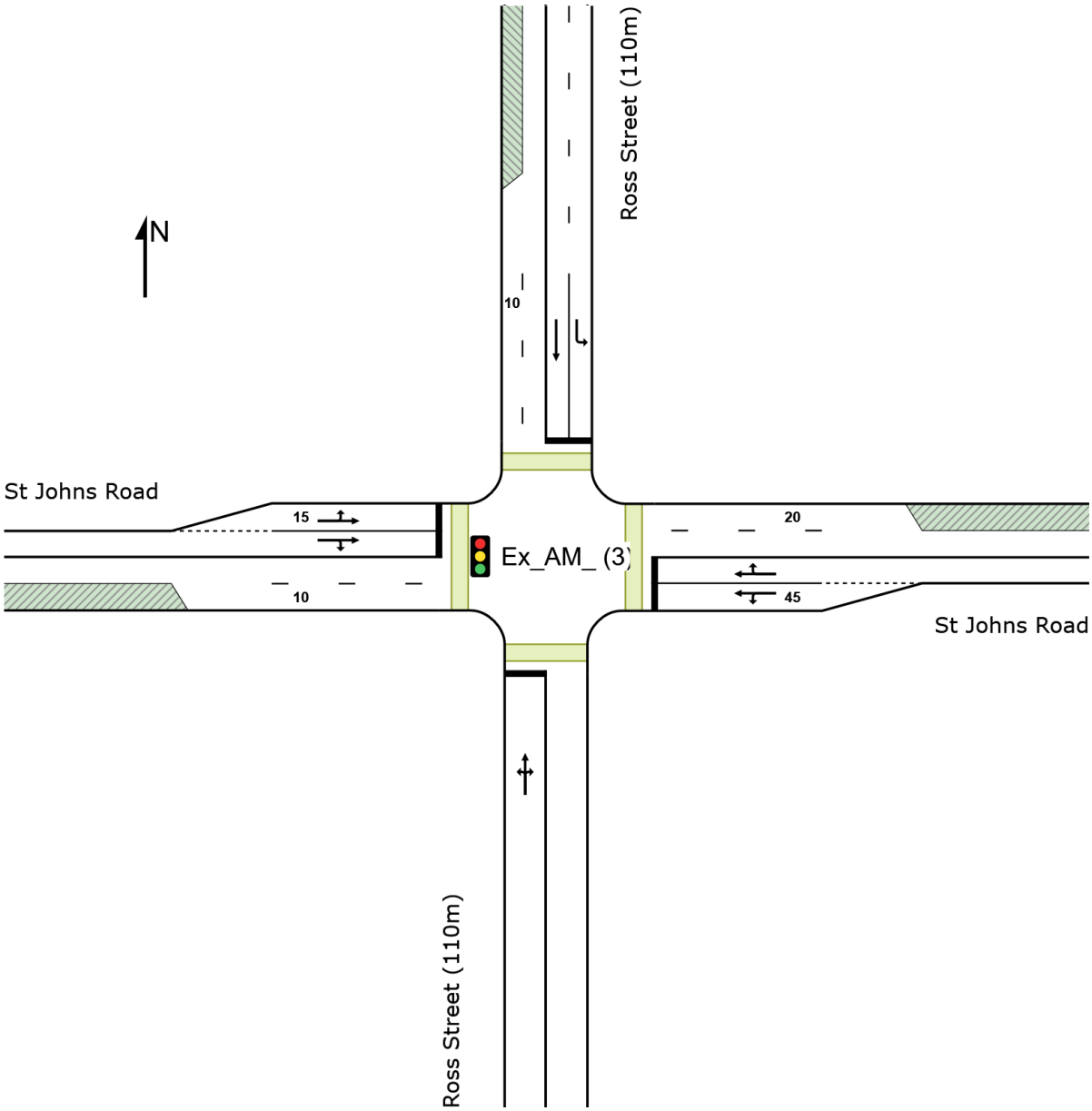
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110.0 seconds (Network Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: TCS1879
Input Phase Sequence: C, B, A
Output Phase Sequence: C, B, A
Reference Phase: Phase A
Offset: 0 seconds (User)

Site Layout

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



Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (110m)															
1	L2	All MCs	36	5.9	36	5.9	0.482	16.0	LOS B	11.8	84.0	0.58	0.61	0.58	31.5
2	T1	All MCs	218	2.9	218	2.9	0.482	10.7	LOS A	11.8	84.0	0.58	0.61	0.58	18.3
3	R2	All MCs	162	2.6	162	2.6	* 0.482	16.2	LOS B	11.8	84.0	0.58	0.61	0.58	31.5
Approach			416	3.0	416	3.0	0.482	13.3	LOS A	11.8	84.0	0.58	0.61	0.58	27.8
East: St Johns Road															
4	L2	All MCs	59	3.6	59	3.6	0.135	39.1	LOS C	2.5	17.7	0.83	0.71	0.83	21.3
5	T1	All MCs	12	0.0	12	0.0	0.408	36.2	LOS C	5.7	42.5	0.93	1.03	0.93	22.5
6	R2	All MCs	119	8.0	119	8.0	* 0.408	40.0	LOS C	5.7	42.5	0.93	1.03	0.93	15.7
Approach			189	6.1	189	6.1	0.408	39.5	LOS C	5.7	42.5	0.90	0.93	0.90	17.7
North: Ross Street (110m)															
7	L2	All MCs	166	10.1	166	10.1	0.121	3.6	LOS A	0.3	2.2	0.04	0.45	0.04	35.3
8	T1	All MCs	307	4.5	307	4.5	0.242	2.0	LOS A	1.9	13.3	0.13	0.11	0.13	32.5
Approach			474	6.4	474	6.4	0.242	2.6	LOS A	1.9	13.3	0.10	0.23	0.10	34.5
West: St Johns Road															
10	L2	All MCs	14	7.7	14	7.7	0.079	54.0	LOS D	0.7	4.7	0.95	0.68	0.95	17.8
11	T1	All MCs	25	8.3	25	8.3	* 0.177	50.4	LOS D	1.6	11.3	0.95	0.70	0.95	24.4
12	R2	All MCs	6	16.7	6	16.7	0.177	55.3	LOS D	1.6	11.3	0.95	0.70	0.95	18.3
Approach			45	9.3	45	9.3	0.177	52.2	LOS D	1.6	11.3	0.95	0.69	0.95	22.1
All Vehicles			1124	5.2	1124	5.2	0.482	14.8	LOS B	11.8	84.0	0.44	0.51	0.44	25.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

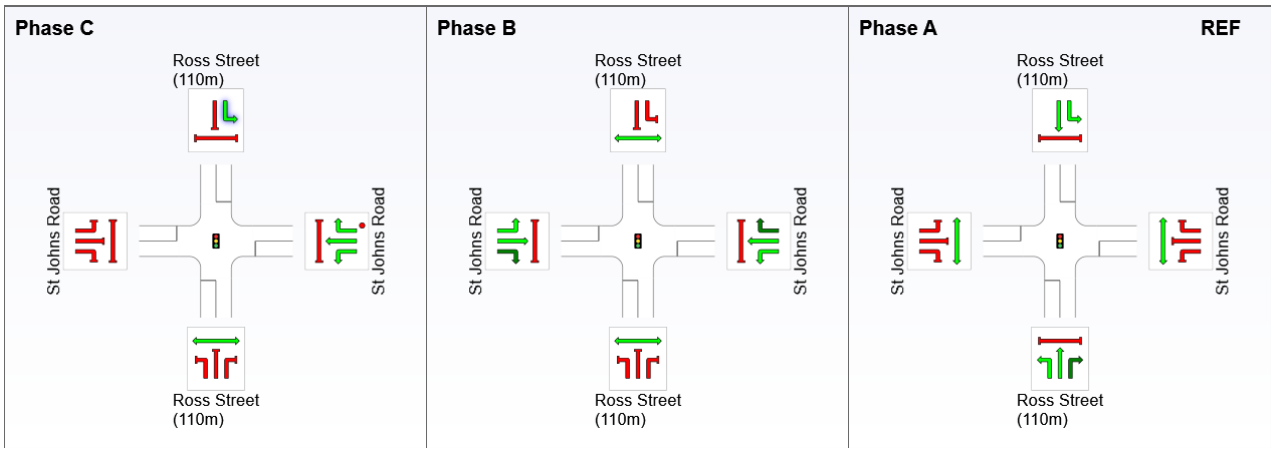
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase



Phase Timing Summary

Phase	C	B	A
Phase Change Time (sec)	77.0	94.0	1.1
Green Time (sec)	11.0	11.1	71.0
Phase Time (sec)	17.0	16.0	77.0
Phase Split	15%	15%	70%
Phase Frequency (%)	100.0	81.4[2]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

2 Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Default Site User Report

Site: [Ex_AM_ (4)] 4 Ross Street / Bridge Road - AM (Existing + Development)

Network: [Ex_AM_UGP] AM + Development (Existing + Development)

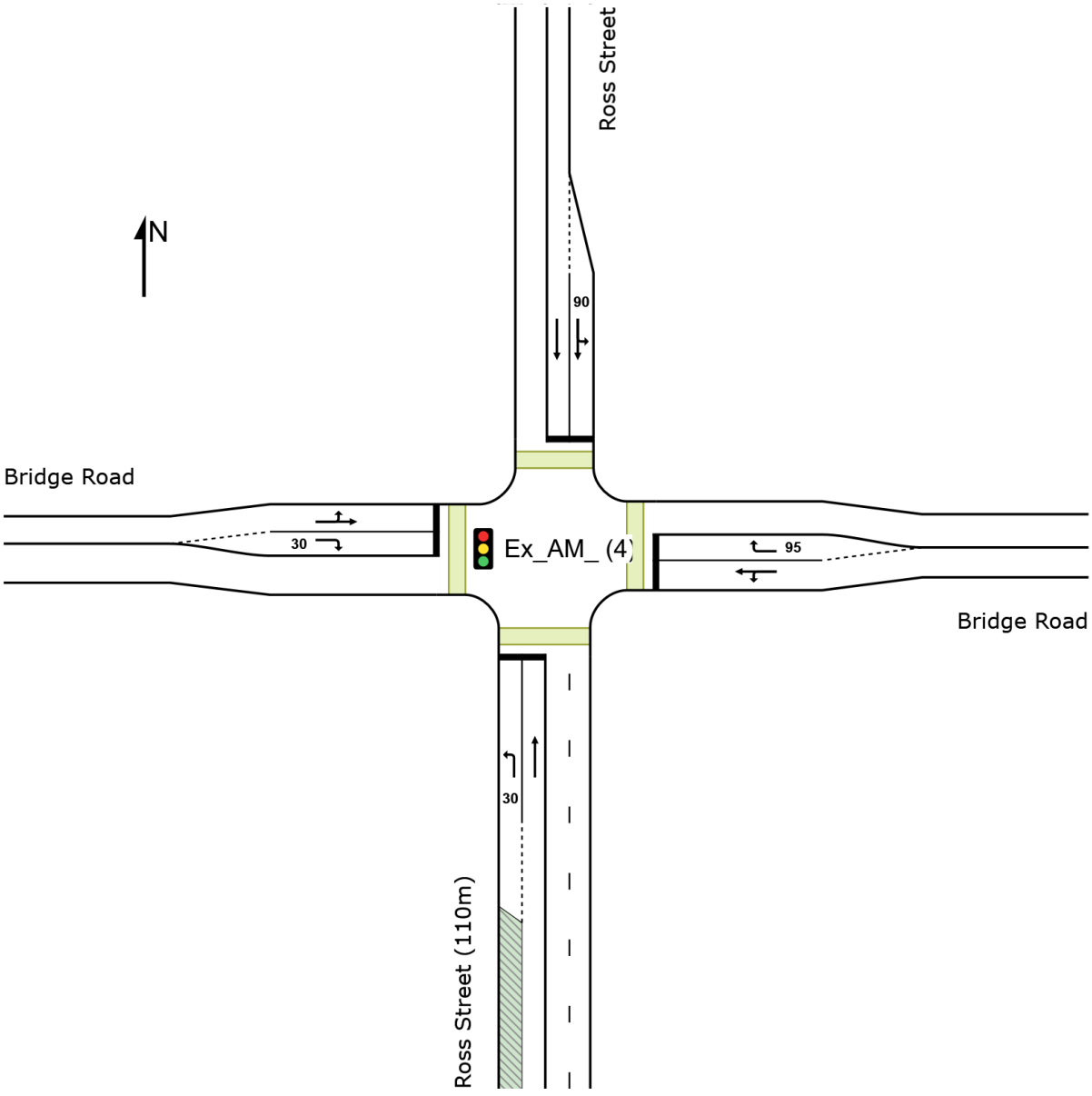
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110.0 seconds (Network Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: TCS0002
Input Phase Sequence: C, B, A
Output Phase Sequence: C, B, A
Reference Phase: Phase C
Offset: 0 seconds (User)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (110m)															
1	L2	All MCs	136	7.0	136	7.0	0.371	53.4	LOS D	6.5	47.5	0.92	0.78	0.92	19.9
2	T1	All MCs	213	3.0	213	3.0	* 0.526	46.7	LOS D	10.0	70.1	0.91	0.76	0.91	23.4
Approach			348	4.5	348	4.5	0.526	49.3	LOS D	10.0	70.1	0.92	0.77	0.92	20.4
East: Bridge Road															
4	L2	All MCs	63	3.3	63	3.3	0.399	15.0	LOS B	12.6	90.5	0.52	0.49	0.52	32.2
5	T1	All MCs	433	4.1	433	4.1	0.399	9.9	LOS A	12.6	90.5	0.52	0.49	0.52	35.1
6	R2	All MCs	38	2.8	38	2.8	* 0.124	15.0	LOS B	0.8	5.4	0.65	1.16	0.65	25.0
Approach			534	3.9	534	3.9	0.399	10.9	LOS A	12.6	90.5	0.53	0.54	0.53	33.8
North: Ross Street															
7	L2	All MCs	96	6.6	96	6.6	0.519	40.1	LOS C	10.9	77.6	0.92	0.79	0.92	27.0
8	T1	All MCs	378	4.7	378	4.7	0.519	39.9	LOS C	11.4	80.1	0.92	0.78	0.92	21.2
Approach			474	5.1	474	5.1	0.519	40.0	LOS C	11.4	80.1	0.92	0.78	0.92	22.8
West: Bridge Road															
10	L2	All MCs	45	0.0	45	0.0	* 0.732	21.1	LOS B	22.2	149.6	0.55	0.51	0.55	35.1
11	T1	All MCs	788	2.4	788	2.4	0.732	16.4	LOS B	22.2	149.6	0.55	0.51	0.55	34.5
12	R2	All MCs	26	40.0	26	40.0	0.069	24.3	LOS B	0.7	4.9	0.52	0.54	0.52	21.3
Approach			860	3.4	860	3.4	0.732	16.9	LOS B	22.2	149.6	0.54	0.51	0.54	31.5
All Vehicles			2216	4.1	2216	4.1	0.732	25.5	LOS B	22.2	149.6	0.68	0.62	0.68	28.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

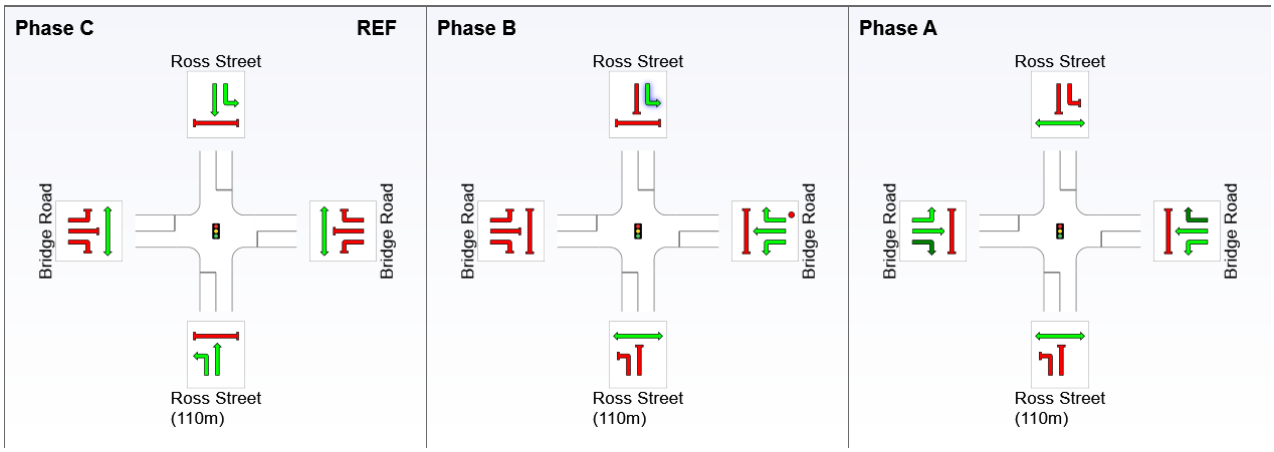
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Phase Timing Summary

Phase	C	B	A
Phase Change Time (sec)	0.0	33.0	42.0
Green Time (sec)	27.0	3.0	65.0
Phase Time (sec)	33.0	6.0	71.0
Phase Split	30%	5%	65%
Phase Frequency (%)	100.0	50.0 [1]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

1 Phase Frequency has been given with User-Specified Phase Times.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com

USER REPORT FOR NETWORK SITE

Default Site User Report

Site: [Ex_PM_] 1 Ross Street / Parramatta Road - PM (Existing + Development)

Network: [Ex_PM_UGP] PM + Development (Existing + Development)

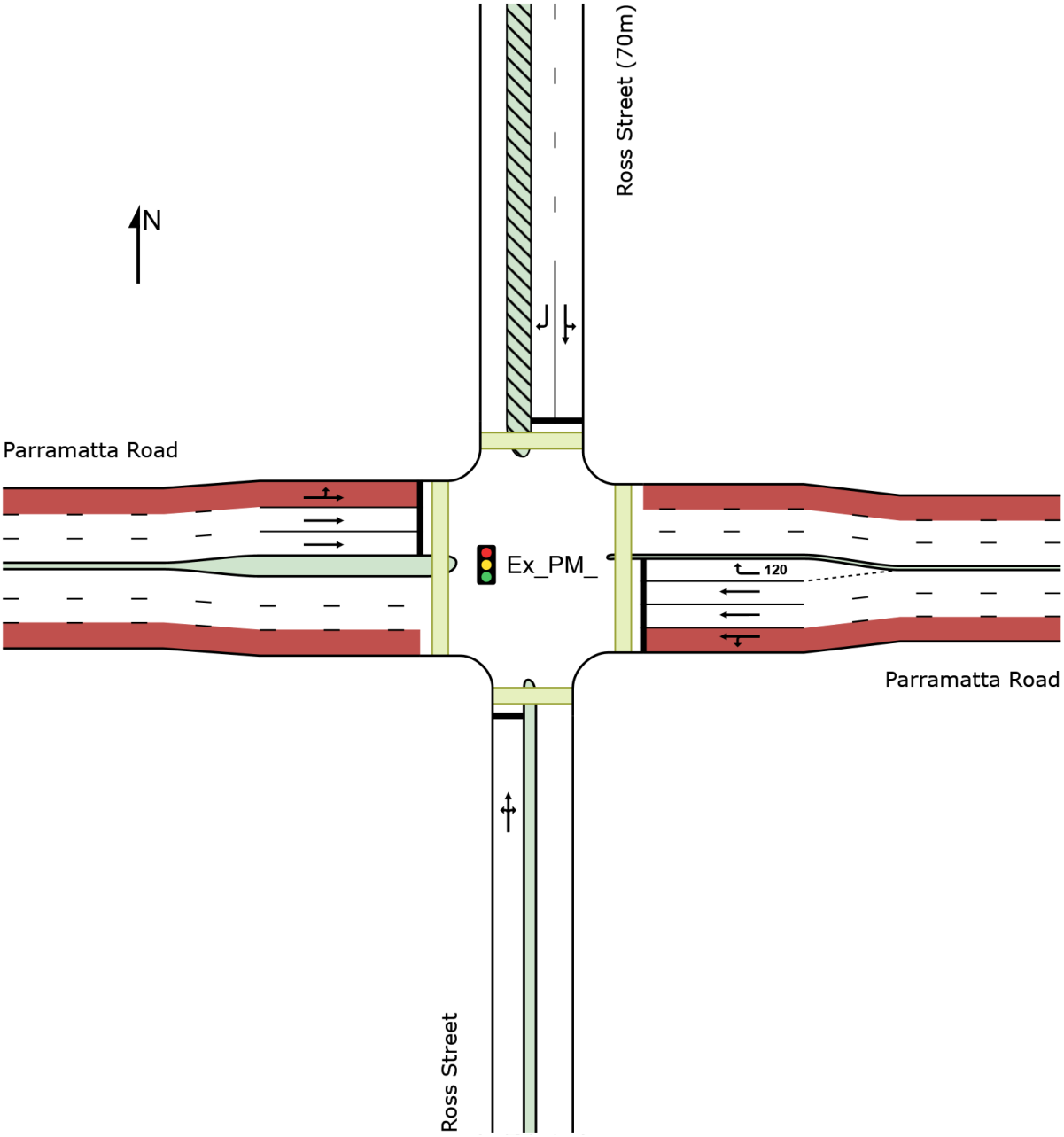
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120.0 seconds (Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: TCS0434 - Copy
Input Phase Sequence: A, C, D
Output Phase Sequence: A, C, D
Reference Phase: Phase A
Offset: 0 seconds (User)

Site Layout

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


N
Ross Street (70m)
Parramatta Road
Ex_PM_
120
Parramatta Road
Ross Street

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street															
1	L2	All MCs	42	7.5	42	7.5	0.299	46.6	LOS D	7.2	43.6	0.88	0.73	0.88	27.7
2	T1	All MCs	93	0.0	93	0.0	0.299	41.1	LOS C	7.2	43.6	0.88	0.73	0.88	19.0
3	R2	All MCs	13	8.3	13	8.3	0.299	52.2	LOS D	7.2	43.6	0.88	0.73	0.88	29.6
Approach			147	2.9	147	2.9	0.299	43.6	LOS D	7.2	43.6	0.88	0.73	0.88	23.1
East: Parramatta Road															
4	L2	All MCs	17	6.2	17	6.2	0.078	10.1	LOS A	0.7	8.2	0.20	0.30	0.20	43.5
5	T1	All MCs	1828	4.1	1828	4.1	* 0.705	3.4	LOS A	15.3	108.2	0.32	0.30	0.32	56.9
6	R2	All MCs	203	0.5	203	0.5	0.966	90.3	LOS F	15.3	107.4	1.00	1.10	1.54	17.8
Approach			2048	3.8	2048	3.8	0.966	12.0	LOS A	15.3	108.2	0.39	0.38	0.44	50.3
North: Ross Street (70m)															
7	L2	All MCs	93	0.0	93	0.0	0.353	37.2	LOS C	8.2	54.7	0.88	0.75	0.88	27.8
8	T1	All MCs	75	0.0	75	0.0	0.353	50.6	LOS D	8.2	54.7	0.88	0.75	0.88	21.1
9	R2	All MCs	153	0.0	153	0.0	* 0.551	52.1	LOS D	8.3	57.9	0.96	0.80	0.96	22.4
Approach			320	0.0	320	0.0	0.551	47.4	LOS D	8.3	57.9	0.92	0.78	0.92	23.6
West: Parramatta Road															
10	L2	All MCs	160	0.0	160	0.0	0.241	24.7	LOS B	6.4	50.4	0.60	0.71	0.60	33.0
11	T1	All MCs	1093	3.9	1093	3.9	0.554	13.9	LOS A	16.1	114.0	0.57	0.52	0.57	49.3
Approach			1253	3.4	1253	3.4	0.554	15.3	LOS B	16.1	114.0	0.57	0.54	0.57	47.9
All Vehicles			3768	3.3	3768	3.3	0.966	17.4	LOS B	16.1	114.0	0.51	0.48	0.54	45.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

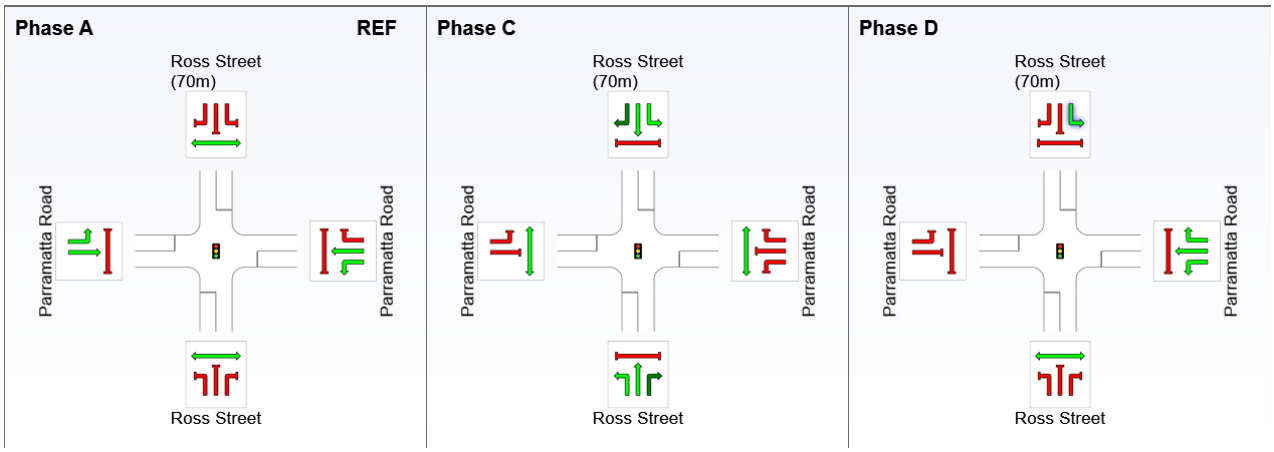
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase



Phase Timing Summary

Phase	A	C	D
Phase Change Time (sec)	0.0	66.0	100.0
Green Time (sec)	60.0	28.0	14.0
Phase Time (sec)	66.0	34.0	20.0
Phase Split	55%	28%	17%
Phase Frequency (%)	100.0	100.0	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Default Site User Report

Site: [Ex_PM_ (2)] 2 Ross Street / Arundel Street - PM (Existing + Development)

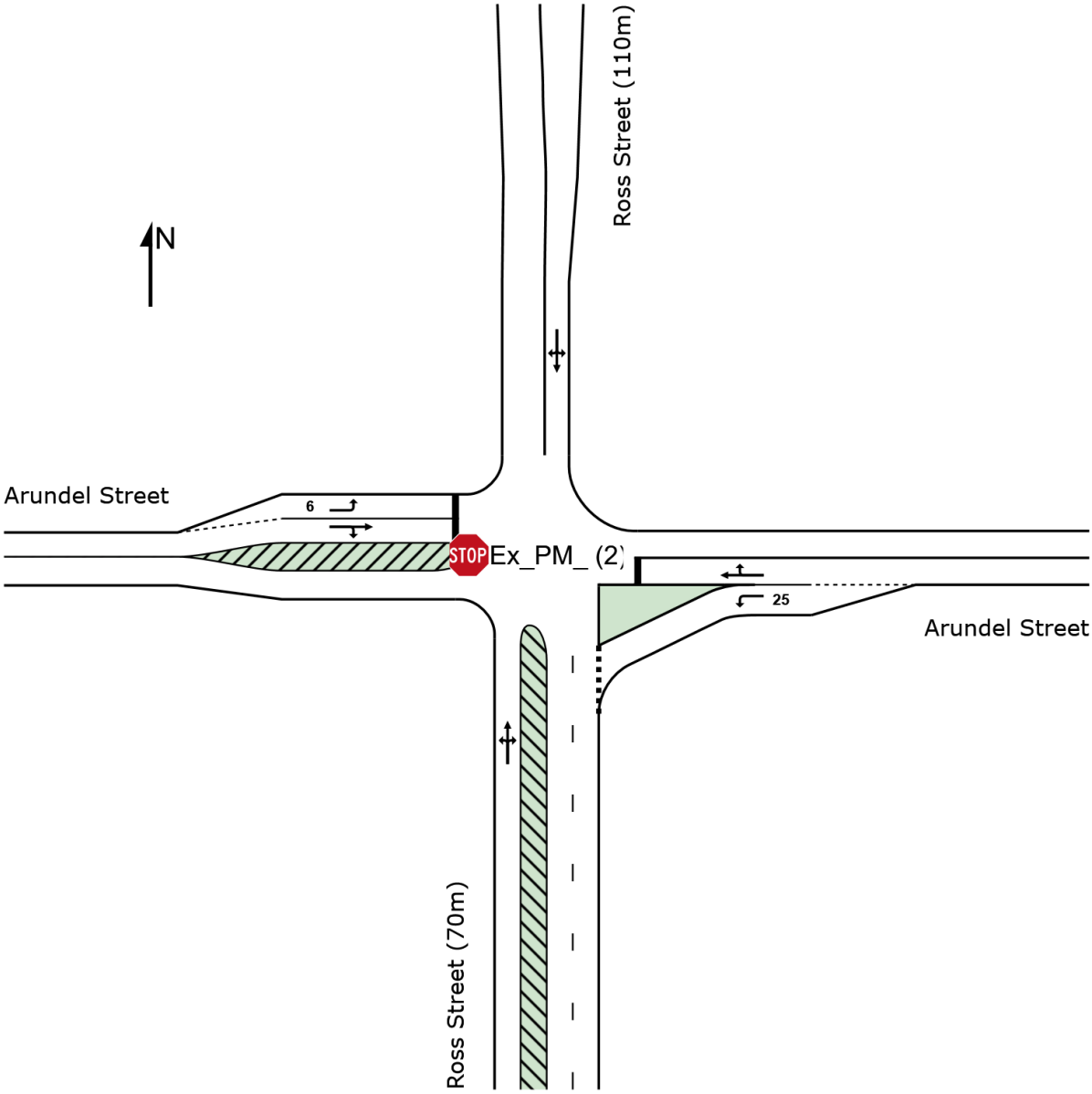
Network: [Ex_PM_UGP] PM + Development (Existing + Development)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Site Layout

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



Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (70m)															
1	L2	All MCs	49	0.0	49	0.0	0.243	3.9	LOS A	0.6	3.8	0.12	0.17	0.12	36.2
2	T1	All MCs	356	0.3	356	0.3	0.243	0.3	LOS A	0.6	3.8	0.12	0.17	0.12	33.1
3	R2	All MCs	59	0.0	59	0.0	0.243	4.5	LOS A	0.6	3.8	0.12	0.17	0.12	37.8
Approach			464	0.2	464	0.2	0.243	1.2	NA	0.6	3.8	0.12	0.17	0.12	35.7
East: Arundel Street															
4	L2	All MCs	55	0.0	55	0.0	0.037	3.5	LOS A	0.2	1.1	0.23	0.41	0.23	36.1
5	T1	All MCs	12	0.0	12	0.0	0.154	11.0	LOS A	0.5	3.6	0.63	1.00	0.63	30.7
6	R2	All MCs	55	1.9	55	1.9	0.154	13.3	LOS A	0.5	3.6	0.63	1.00	0.63	30.6
Approach			121	0.9	121	0.9	0.154	8.6	LOS A	0.5	3.6	0.44	0.73	0.44	32.7
North: Ross Street (110m)															
7	L2	All MCs	54	0.0	54	0.0	0.218	4.6	LOS A	0.9	6.4	0.27	0.31	0.27	37.0
8	T1	All MCs	240	0.0	240	0.0	0.218	0.8	LOS A	0.9	6.4	0.27	0.31	0.27	32.4
9	R2	All MCs	85	0.0	85	0.0	0.218	5.0	LOS A	0.9	6.4	0.27	0.31	0.27	37.2
Approach			379	0.0	379	0.0	0.218	2.2	NA	0.9	6.4	0.27	0.31	0.27	35.8
West: Arundel Street															
10	L2	All MCs	68	0.0	68	0.0	0.064	8.2	LOS A	0.3	2.1	0.41	0.85	0.41	34.6
11	T1	All MCs	8	0.0	8	0.0	0.095	11.0	LOS A	0.3	2.2	0.58	0.99	0.58	31.7
12	R2	All MCs	37	0.0	37	0.0	0.095	12.2	LOS A	0.3	2.2	0.58	0.99	0.58	31.3
Approach			114	0.0	114	0.0	0.095	9.7	LOS A	0.3	2.2	0.48	0.91	0.48	33.1
All Vehicles			1078	0.2	1078	0.2	0.243	3.3	NA	0.9	6.4	0.25	0.36	0.25	34.6

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

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

Default Site User Report

Site: [Ex_PM_ (3)] 3 Ross Street / St Johns Road - PM (Existing + Development)

Network: [Ex_PM_UGP] PM + Development (Existing + Development)

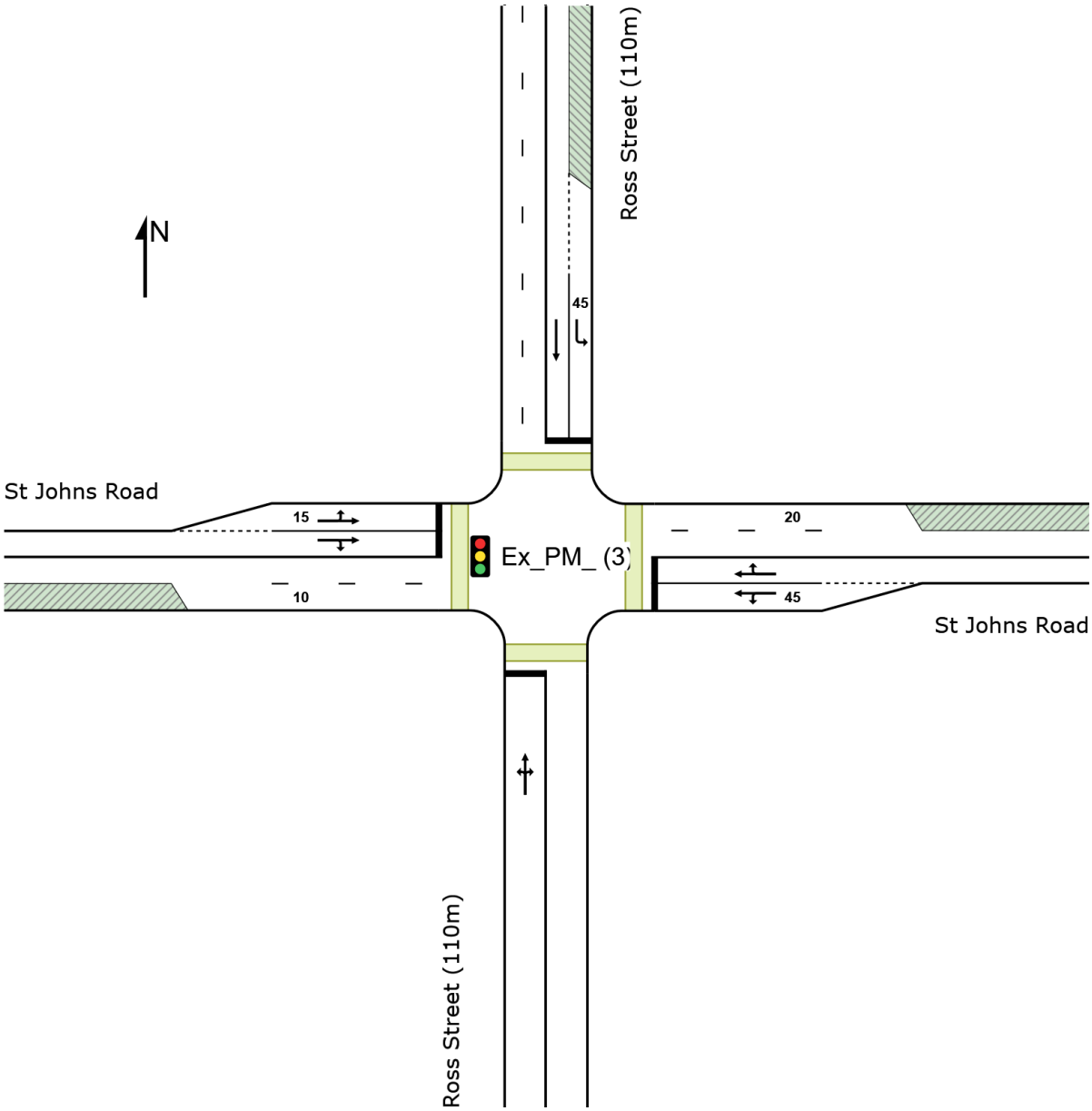
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110.0 seconds (Network Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: TCS1879
Input Phase Sequence: C, B, A
Output Phase Sequence: C, B, A
Reference Phase: Phase A
Offset: 0 seconds (User)

Site Layout

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



Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (110m)															
1	L2	All MCs	16	0.0	16	0.0	0.511	21.0	LOS B	15.5	104.6	0.67	0.63	0.67	29.6
2	T1	All MCs	373	0.6	373	0.6	0.511	15.7	LOS B	15.5	104.6	0.67	0.63	0.67	15.9
3	R2	All MCs	82	0.0	82	0.0	* 0.511	21.5	LOS B	15.5	104.6	0.67	0.63	0.67	29.3
Approach			471	0.4	471	0.4	0.511	16.9	LOS B	15.5	104.6	0.67	0.63	0.67	21.4
East: St Johns Road															
4	L2	All MCs	109	0.0	109	0.0	0.183	33.0	LOS C	4.3	28.9	0.77	0.72	0.77	22.8
5	T1	All MCs	26	0.0	26	0.0	0.592	31.6	LOS C	10.9	75.1	0.93	1.03	0.93	20.7
6	R2	All MCs	231	3.7	231	3.7	* 0.592	35.4	LOS C	10.9	75.1	0.93	1.03	0.93	15.7
Approach			366	2.3	366	2.3	0.592	34.4	LOS C	10.9	75.1	0.88	0.94	0.88	17.8
North: Ross Street (110m)															
7	L2	All MCs	73	10.1	73	10.1	0.057	4.7	LOS A	0.4	2.7	0.10	0.48	0.10	35.6
8	T1	All MCs	249	0.0	249	0.0	0.228	4.1	LOS A	2.5	17.2	0.20	0.17	0.20	29.0
Approach			322	2.3	322	2.3	0.228	4.3	LOS A	2.5	17.2	0.18	0.24	0.18	32.5
West: St Johns Road															
10	L2	All MCs	37	0.0	37	0.0	0.192	52.8	LOS D	1.9	13.0	0.94	0.72	0.94	18.7
11	T1	All MCs	41	0.0	41	0.0	* 0.277	49.0	LOS D	2.9	19.5	0.95	0.73	0.95	25.1
12	R2	All MCs	16	0.0	16	0.0	0.277	55.0	LOS D	2.9	19.5	0.95	0.73	0.95	18.8
Approach			94	0.0	94	0.0	0.277	51.5	LOS D	2.9	19.5	0.95	0.73	0.95	22.1
All Vehicles			1253	1.4	1253	1.4	0.592	21.3	LOS B	15.5	104.6	0.63	0.63	0.63	20.9

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

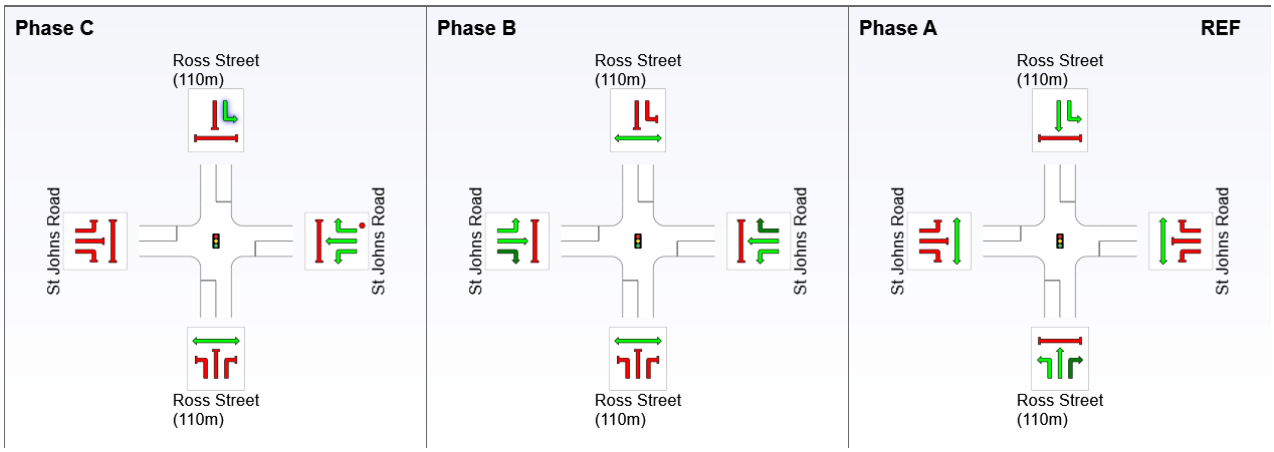
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Phase Timing Summary

Phase	C	B	A
Phase Change Time (sec)	67.8	90.8	0.0
Green Time (sec)	17.0	13.2	62.0
Phase Time (sec)	23.0	19.0	68.0
Phase Split	21%	17%	62%
Phase Frequency (%)	100.0	96.6[2]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

2 Phase Frequency is implied by a Phase Time specified by the user that is less than the Required Movement Time.

Default Site User Report

Site: [Ex_PM_ (4)] 4 Ross Street / Bridge Road - PM (Existing + Development)

Network: [Ex_PM_UGP] PM + Development (Existing + Development)

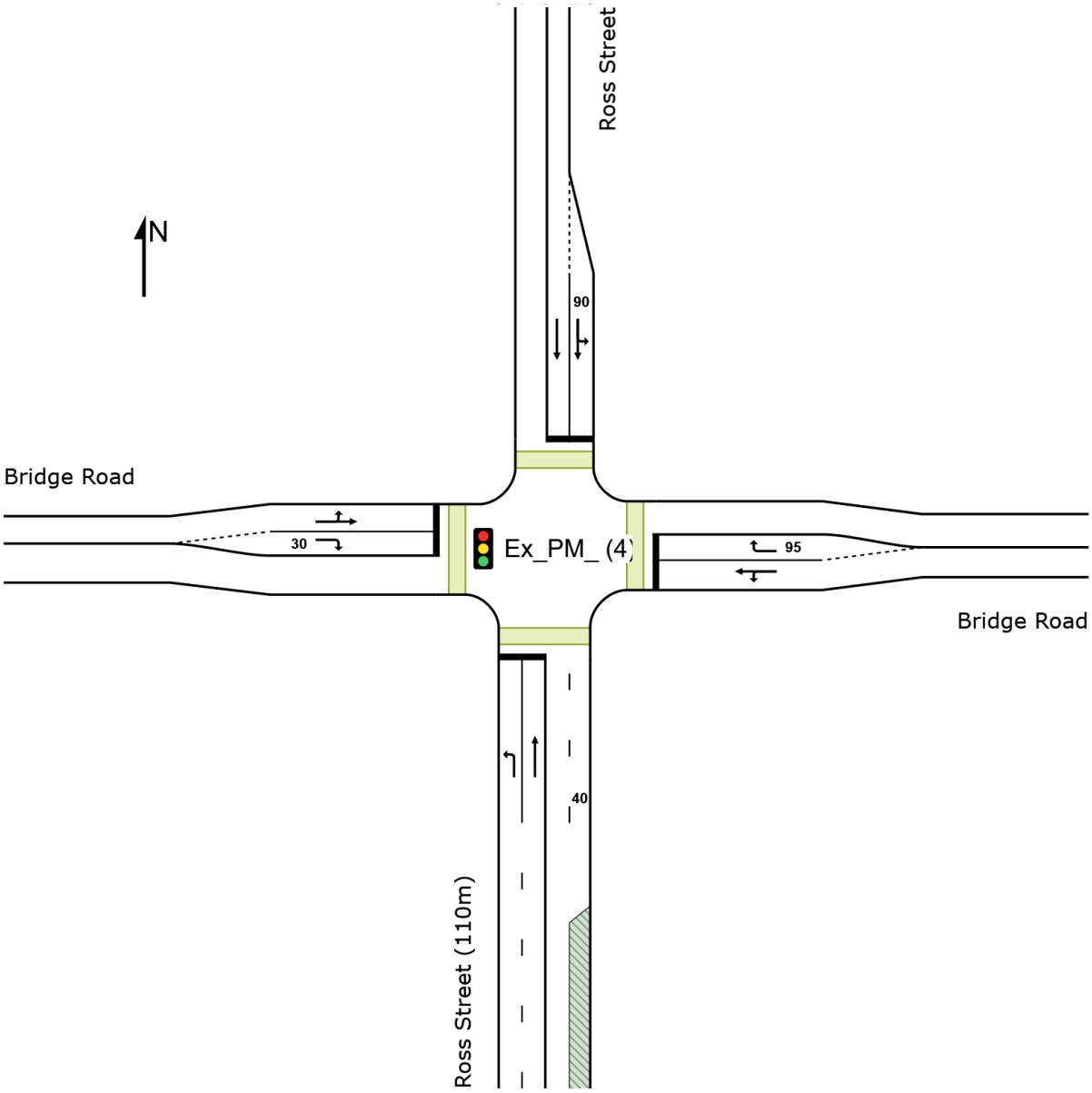
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 110.0 seconds (Network Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: TCS0002
Input Phase Sequence: C, B, A
Output Phase Sequence: C, B, A
Reference Phase: Phase C
Offset: 0 seconds (User)

Site Layout

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



Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (110m)															
1	L2	All MCs	236	3.6	236	3.6	0.534	45.3	LOS D	11.5	81.8	0.95	0.82	0.95	19.9
2	T1	All MCs	389	0.5	389	0.5	* 0.701	32.3	LOS C	17.7	120.1	0.90	0.78	0.90	24.9
Approach			625	1.7	625	1.7	0.701	37.2	LOS C	17.7	120.1	0.92	0.79	0.92	23.0
East: Bridge Road															
4	L2	All MCs	72	0.0	72	0.0	0.575	10.8	LOS A	14.7	98.3	0.42	0.40	0.42	33.4
5	T1	All MCs	655	0.6	655	0.6	0.575	6.6	LOS A	14.7	98.3	0.42	0.40	0.42	35.4
6	R2	All MCs	119	0.9	119	0.9	* 0.301	16.4	LOS B	2.7	18.0	0.71	1.13	0.71	24.0
Approach			845	0.6	845	0.6	0.575	8.3	LOS A	14.7	98.3	0.46	0.51	0.46	32.8
North: Ross Street															
7	L2	All MCs	77	0.0	77	0.0	0.124	30.2	LOS C	2.9	19.6	0.73	0.69	0.73	29.1
8	T1	All MCs	243	0.9	243	0.9	0.448	35.0	LOS C	10.7	74.1	0.87	0.73	0.87	22.6
Approach			320	0.7	320	0.7	0.448	33.9	LOS C	10.7	74.1	0.84	0.72	0.84	24.7
West: Bridge Road															
10	L2	All MCs	107	1.0	107	1.0	* 0.617	27.2	LOS B	18.3	125.7	0.61	0.58	0.61	33.4
11	T1	All MCs	504	0.4	504	0.4	0.617	22.2	LOS B	18.3	125.7	0.61	0.58	0.61	33.7
12	R2	All MCs	9	55.6	9	55.6	0.039	28.9	LOS C	0.3	2.4	0.56	0.56	0.56	22.0
Approach			621	1.4	621	1.4	0.617	23.1	LOS B	18.3	125.7	0.61	0.58	0.61	30.5
All Vehicles			2412	1.1	2412	1.1	0.701	23.0	LOS B	18.3	125.7	0.67	0.63	0.67	28.7

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

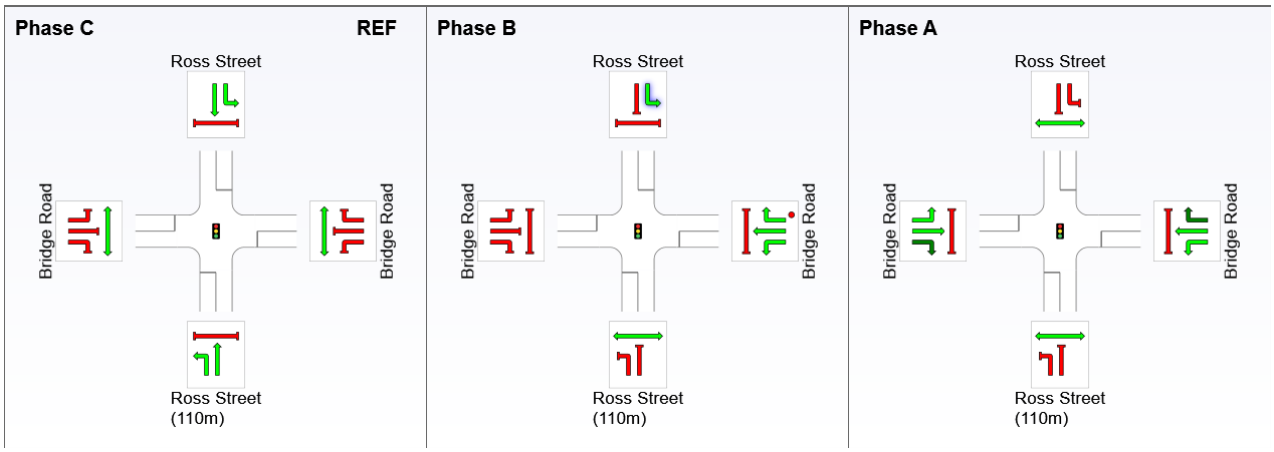
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Phase Timing Summary

Phase	C	B	A
Phase Change Time (sec)	109.0	36.0	46.5
Green Time (sec)	31.0	4.5	58.0
Phase Time (sec)	37.0	9.0	64.0
Phase Split	34%	8%	58%
Phase Frequency (%)	100.0	75.0 [1]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

1 Phase Frequency has been given with User-Specified Phase Times.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com

USER REPORT FOR NETWORK SITE

Default Site User Report

Site: [Ex_SAT_] 1 Ross Street / Parramatta Road - SAT (Existing + Development)

Network: [Ex_SA_UGP] SAT + Development (Existing + Development)

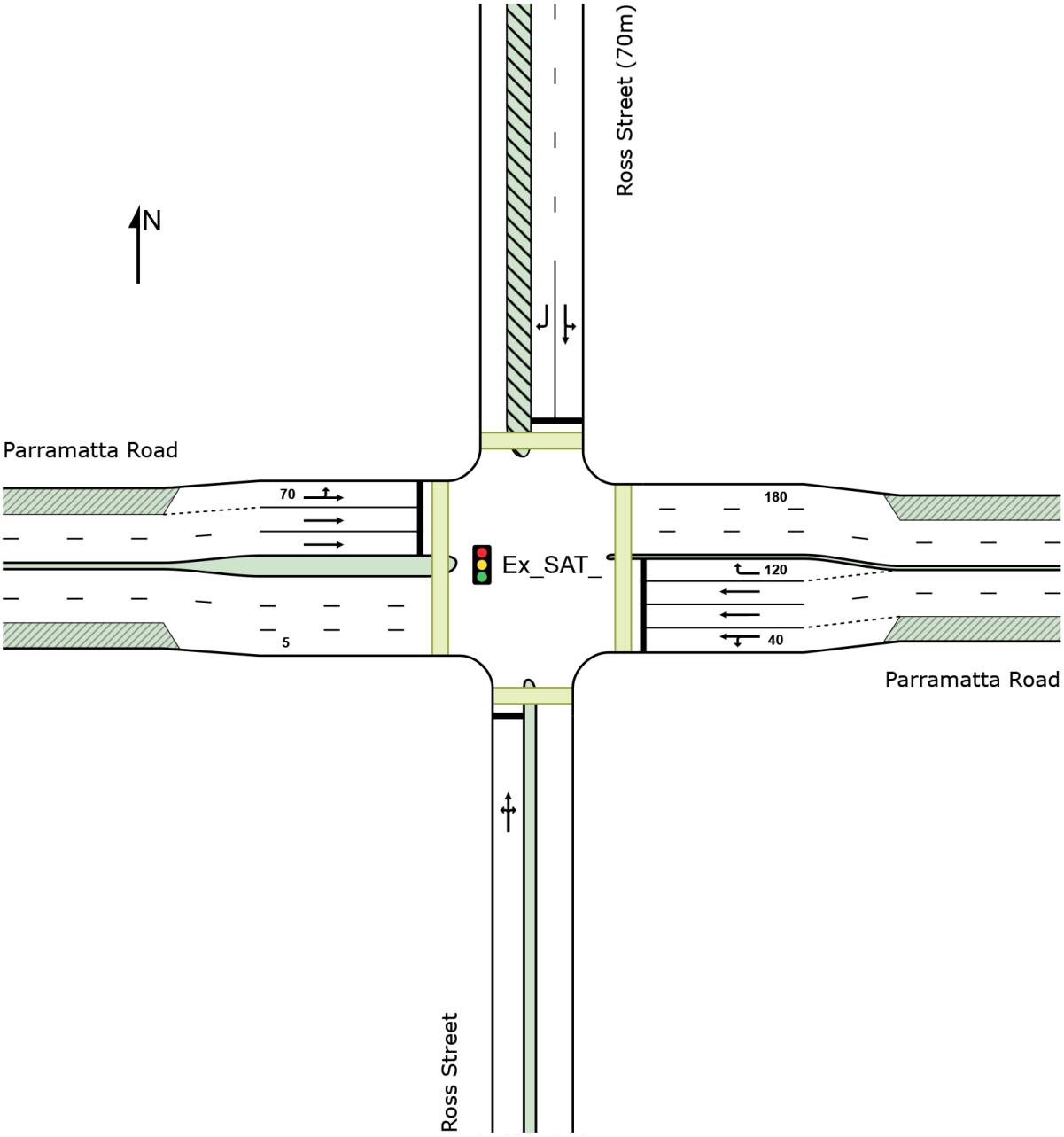
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140.0 seconds (Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: TCS0434 - Copy
Input Phase Sequence: A, C, D
Output Phase Sequence: A, C, D
Reference Phase: Phase A
Offset: 0 seconds (User)

Site Layout

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


N
Ross Street (70m)
Parramatta Road
70
5
Ex_SAT_
180
120
40
Parramatta Road
Ross Street

Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street															
1	L2	All MCs	11	0.0	11	0.0	0.357	62.6	LOS E	5.1	34.4	0.96	0.76	0.96	24.8
2	T1	All MCs	41	0.0	41	0.0	0.357	57.3	LOS E	5.1	34.4	0.96	0.76	0.96	16.8
3	R2	All MCs	28	0.0	28	0.0	0.357	73.0	LOS F	5.1	34.4	0.96	0.76	0.96	27.0
Approach			80	0.0	80	0.0	0.357	63.6	LOS E	5.1	34.4	0.96	0.76	0.96	22.2
East: Parramatta Road															
4	L2	All MCs	16	0.0	16	0.0	0.043	15.9	LOS B	0.8	8.7	0.30	0.40	0.30	42.7
5	T1	All MCs	1378	3.5	1378	3.5	0.501	10.5	LOS A	19.6	139.4	0.46	0.42	0.46	53.1
6	R2	All MCs	133	1.6	133	1.6	* 0.944	96.1	LOS F	10.9	77.0	1.00	1.04	1.47	17.0
Approach			1526	3.3	1526	3.3	0.944	18.0	LOS B	19.6	139.4	0.51	0.48	0.55	46.7
North: Ross Street (70m)															
7	L2	All MCs	127	1.7	127	1.7	0.474	51.7	LOS D	11.4	77.3	0.93	0.79	0.93	24.5
8	T1	All MCs	61	0.0	61	0.0	0.474	63.7	LOS E	11.4	77.3	0.93	0.79	0.93	18.6
9	R2	All MCs	182	0.6	182	0.6	* 0.667	63.9	LOS E	12.0	84.2	0.99	0.83	1.01	19.9
Approach			371	0.9	371	0.9	0.667	59.7	LOS E	12.0	84.2	0.96	0.81	0.97	21.2
West: Parramatta Road															
10	L2	All MCs	153	1.4	153	1.4	0.182	18.6	LOS B	5.2	41.3	0.45	0.66	0.45	37.0
11	T1	All MCs	1251	3.2	1251	3.2	* 0.526	7.2	LOS A	13.5	95.5	0.36	0.33	0.36	53.9
Approach			1403	3.0	1403	3.0	0.526	8.4	LOS A	13.5	95.5	0.37	0.37	0.37	52.7
All Vehicles			3380	2.8	3380	2.8	0.944	19.7	LOS B	19.6	139.4	0.51	0.48	0.53	44.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

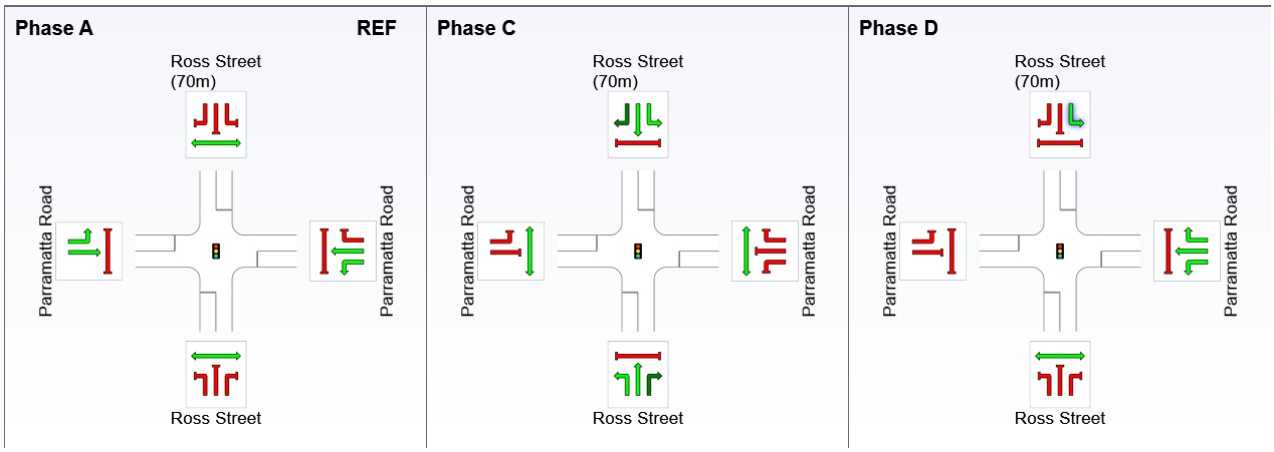
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase



Phase Timing Summary

Phase	A	C	D
Phase Change Time (sec)	0.0	91.0	123.0
Green Time (sec)	85.0	26.0	11.0
Phase Time (sec)	91.0	32.0	17.0
Phase Split	65%	23%	12%
Phase Frequency (%)	100.0	100.0	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

Default Site User Report

Site: [Ex_SAT] 2 Ross Street / Arundel Street - SAT (Existing + Development)

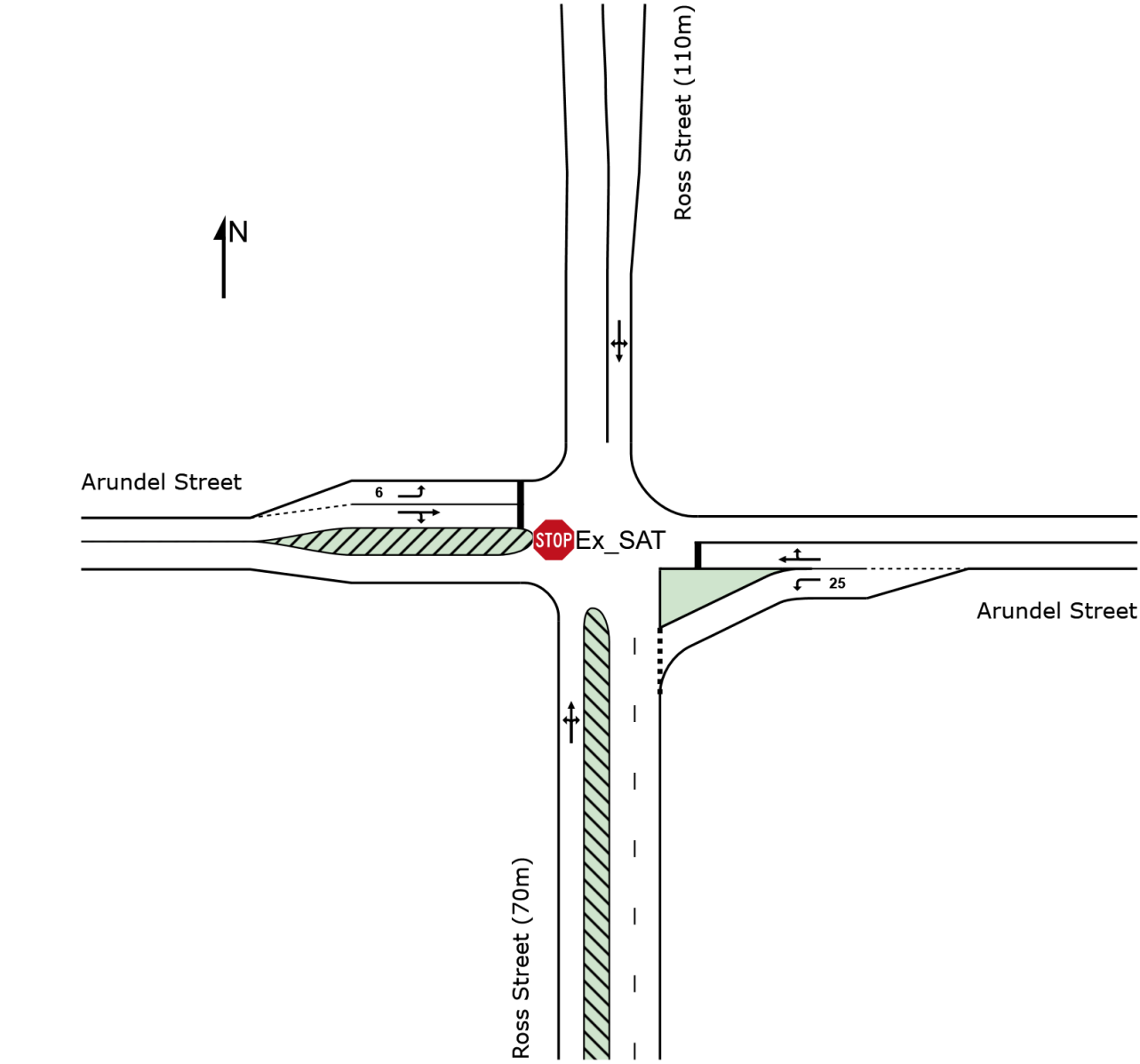
Network: [Ex_SA_UGP] SAT + Development (Existing + Development)

Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Stop (Two-Way)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Site Layout

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



Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (70m)															
1	L2	All MCs	29	0.0	29	0.0	0.183	4.4	LOS A	0.5	3.3	0.15	0.20	0.15	38.1
2	T1	All MCs	242	1.7	242	1.7	0.183	0.4	LOS A	0.5	3.3	0.15	0.20	0.15	33.2
3	R2	All MCs	54	0.0	54	0.0	0.183	4.6	LOS A	0.5	3.3	0.15	0.20	0.15	37.8
Approach			325	1.3	325	1.3	0.183	1.4	NA	0.5	3.3	0.15	0.20	0.15	36.4
East: Arundel Street															
4	L2	All MCs	59	0.0	59	0.0	0.050	3.5	LOS A	0.2	1.2	0.25	0.42	0.25	36.1
5	T1	All MCs	5	0.0	5	0.0	0.077	10.7	LOS A	0.3	1.7	0.58	0.99	0.58	33.0
6	R2	All MCs	31	0.0	31	0.0	0.077	11.9	LOS A	0.3	1.7	0.58	0.99	0.58	30.9
Approach			95	0.0	95	0.0	0.077	6.7	LOS A	0.3	1.7	0.37	0.63	0.37	34.0
North: Ross Street (110m)															
7	L2	All MCs	42	0.0	42	0.0	0.266	4.2	LOS A	0.8	5.8	0.20	0.23	0.20	37.2
8	T1	All MCs	295	1.1	295	1.1	0.266	0.4	LOS A	0.8	5.8	0.20	0.23	0.20	33.8
9	R2	All MCs	78	0.0	78	0.0	0.266	4.5	LOS A	0.8	5.8	0.20	0.23	0.20	37.8
Approach			415	0.8	415	0.8	0.266	1.6	NA	0.8	5.8	0.20	0.23	0.20	36.2
West: Arundel Street															
10	L2	All MCs	53	0.0	53	0.0	0.045	7.6	LOS A	0.2	1.4	0.33	0.85	0.33	34.2
11	T1	All MCs	11	0.0	11	0.0	0.063	10.4	LOS A	0.2	1.2	0.55	0.96	0.55	31.1
12	R2	All MCs	18	0.0	18	0.0	0.063	11.6	LOS A	0.2	1.2	0.55	0.96	0.55	30.6
Approach			81	0.0	81	0.0	0.063	8.8	LOS A	0.2	1.4	0.41	0.89	0.41	32.7
All Vehicles			916	0.8	916	0.8	0.266	2.7	NA	0.8	5.8	0.22	0.32	0.22	35.2

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data 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 (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

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

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

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

Default Site User Report

Site: [Ex_SAT (2)] 3 Ross Street / St Johns Road - SAT (Existing + Development)

Network: [Ex_SA_UGP] SAT + Development (Existing + Development)

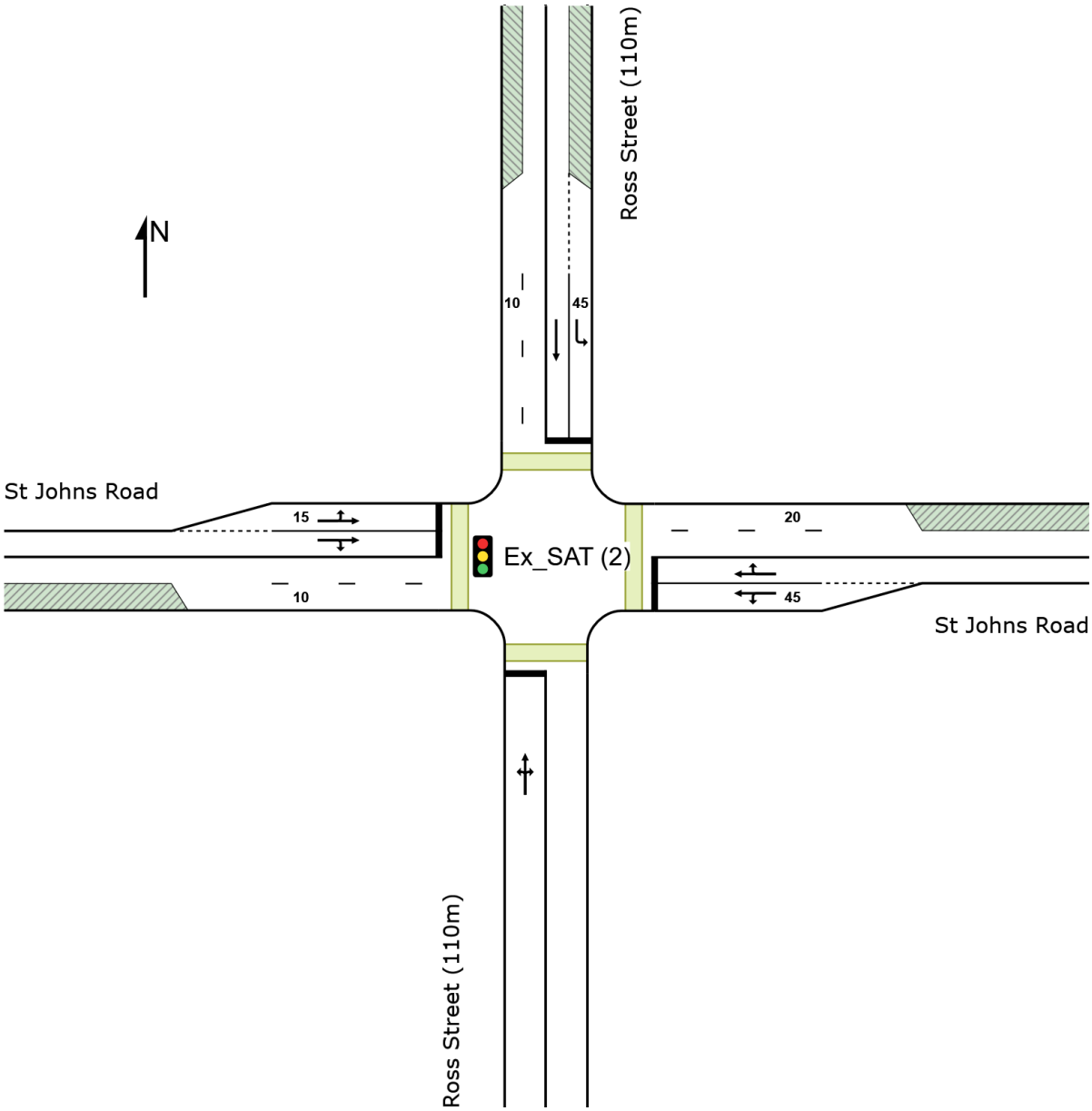
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90.0 seconds (Network Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: TCS1879
Input Phase Sequence: C, B, A
Output Phase Sequence: C, B, A
Reference Phase: Phase A
Offset: 0 seconds (User)

Site Layout

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



Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (110m)															
1	L2	All MCs	19	5.6	19	5.6	0.330	14.8	LOS B	7.5	52.3	0.57	0.55	0.57	31.3
2	T1	All MCs	238	0.9	238	0.9	0.330	10.6	LOS A	7.5	52.3	0.57	0.55	0.57	19.4
3	R2	All MCs	68	1.5	68	1.5	* 0.330	15.7	LOS B	7.5	52.3	0.57	0.55	0.57	32.0
Approach			325	1.3	325	1.3	0.330	11.9	LOS A	7.5	52.3	0.57	0.55	0.57	25.9
East: St Johns Road															
4	L2	All MCs	107	1.0	107	1.0	0.202	29.9	LOS C	3.6	25.0	0.80	0.73	0.80	23.9
5	T1	All MCs	22	0.0	22	0.0	0.424	26.6	LOS B	6.0	41.1	0.91	1.04	0.91	22.2
6	R2	All MCs	152	3.5	152	3.5	* 0.424	30.3	LOS C	6.0	41.1	0.91	1.04	0.91	16.3
Approach			281	2.2	281	2.2	0.424	29.8	LOS C	6.0	41.1	0.87	0.92	0.87	19.2
North: Ross Street (110m)															
7	L2	All MCs	69	7.6	69	7.6	0.053	3.9	LOS A	0.1	1.0	0.05	0.46	0.05	36.2
8	T1	All MCs	287	0.7	287	0.7	0.256	1.4	LOS A	1.1	7.6	0.10	0.08	0.10	34.9
Approach			357	2.1	357	2.1	0.256	1.9	LOS A	1.1	7.6	0.09	0.16	0.09	35.6
West: St Johns Road															
10	L2	All MCs	16	0.0	16	0.0	0.097	46.0	LOS D	0.7	4.5	0.95	0.68	0.95	19.8
11	T1	All MCs	16	0.0	16	0.0	* 0.204	41.9	LOS C	1.4	9.7	0.96	0.71	0.96	25.9
12	R2	All MCs	18	0.0	18	0.0	0.204	47.1	LOS D	1.4	9.7	0.96	0.71	0.96	20.0
Approach			49	0.0	49	0.0	0.204	45.1	LOS D	1.4	9.7	0.96	0.70	0.96	22.4
All Vehicles			1013	1.8	1013	1.8	0.424	15.0	LOS B	7.5	52.3	0.50	0.52	0.50	23.4

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

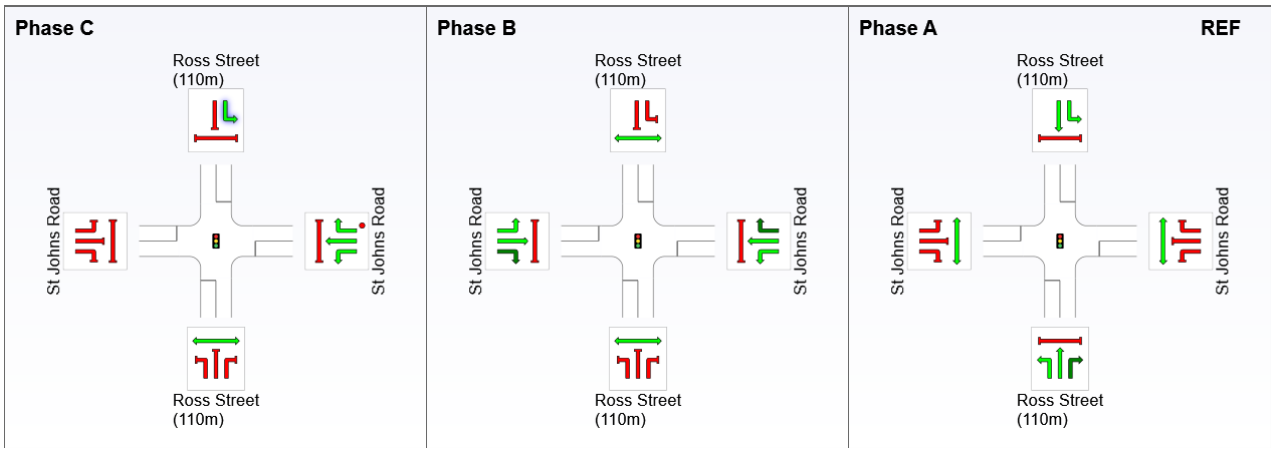
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Phase Timing Summary

Phase	C	B	A
Phase Change Time (sec)	56.8	74.8	0.0
Green Time (sec)	12.0	9.2	52.0
Phase Time (sec)	18.0	14.0	58.0
Phase Split	20%	16%	64%
Phase Frequency (%)	100.0	80.0[1]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

1 Phase Frequency has been given with User-Specified Phase Times.

Default Site User Report

Site: [Ex_SAT (3)] 4 Ross Street / Bridge Road - SAT (Existing + Development)

Network: [Ex_SA_UGP] SAT + Development (Existing + Development)

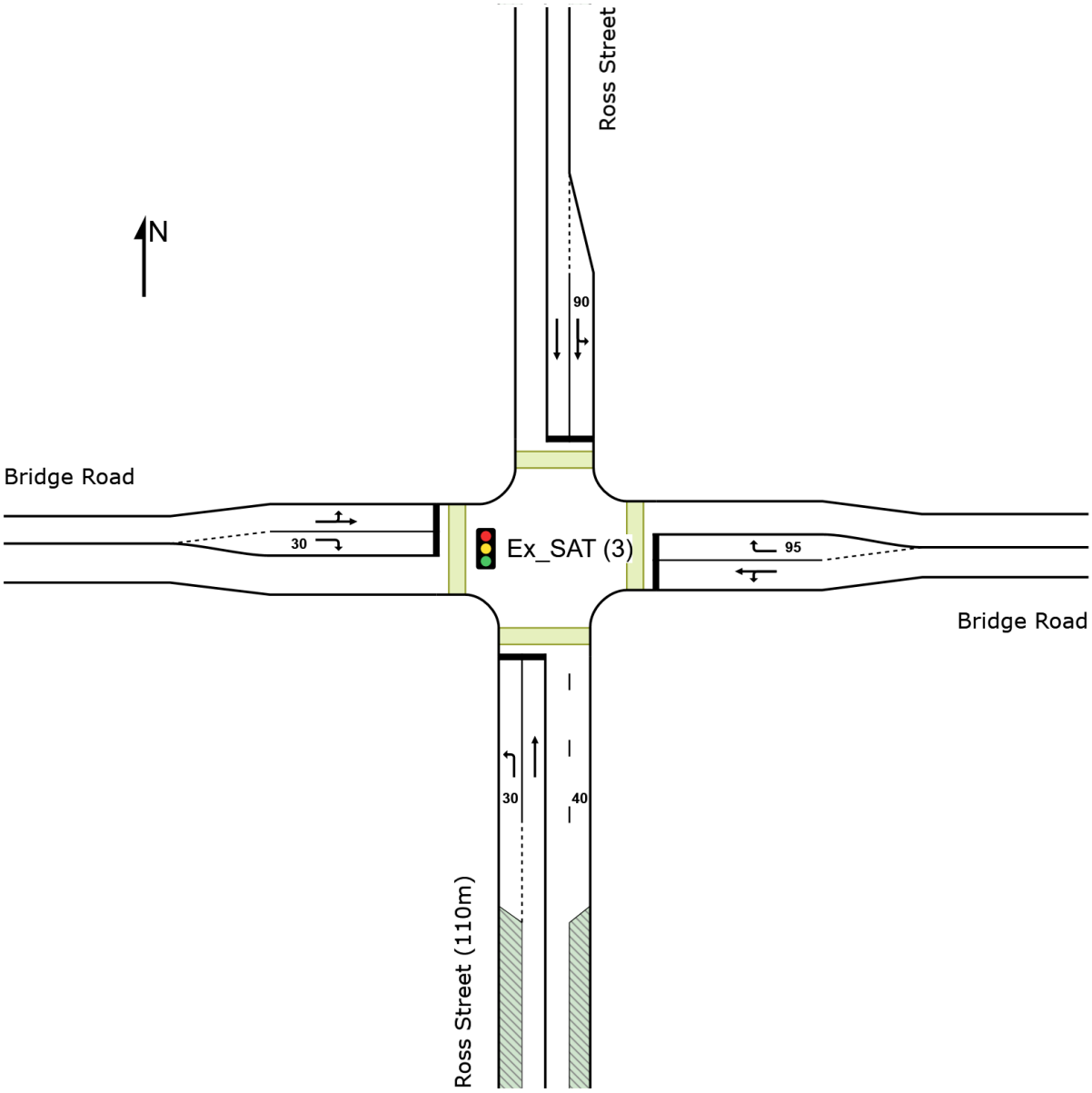
Output produced by SIDRA INTERSECTION Version: 10.0.5.217

New Site
Site Category: (None)
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 90.0 seconds (Network Site User-Given Phase Times)
Network Scenario: 1 | Local Volumes **Site Scenario: 1 | Local Volumes**

Timings based on settings in the Network Timing dialog
Phase Times specified by the user
Phase Sequence: TCS0002
Input Phase Sequence: C, B, A
Output Phase Sequence: C, B, A
Reference Phase: Phase C
Offset: 0 seconds (User)

Site Layout

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



Vehicle Movement Performance															
Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Ross Street (110m)															
1	L2	All MCs	139	3.8	139	3.8	0.371	41.5	LOS C	5.1	36.4	0.86	0.76	0.86	22.6
2	T1	All MCs	265	1.2	265	1.2	* 0.679	38.8	LOS C	10.5	73.3	0.92	0.79	0.95	25.4
Approach			404	2.1	404	2.1	0.679	39.7	LOS C	10.5	73.3	0.90	0.78	0.91	22.6
East: Bridge Road															
4	L2	All MCs	55	0.0	55	0.0	0.373	13.2	LOS A	9.8	68.2	0.52	0.49	0.52	33.1
5	T1	All MCs	412	0.8	412	0.8	0.373	8.4	LOS A	9.8	68.2	0.52	0.49	0.52	35.7
6	R2	All MCs	67	1.6	67	1.6	* 0.152	11.7	LOS A	1.1	7.5	0.60	1.18	0.60	24.8
Approach			534	0.8	534	0.8	0.373	9.3	LOS A	9.8	68.2	0.53	0.57	0.53	33.4
North: Ross Street															
7	L2	All MCs	82	2.6	82	2.6	0.182	30.1	LOS C	3.1	21.6	0.80	0.72	0.80	29.4
8	T1	All MCs	304	1.7	304	1.7	0.658	34.4	LOS C	12.0	83.4	0.96	0.81	0.96	22.7
Approach			386	1.9	386	1.9	0.658	33.5	LOS C	12.0	83.4	0.92	0.79	0.93	24.6
West: Bridge Road															
10	L2	All MCs	74	1.4	74	1.4	* 0.480	20.2	LOS B	13.5	94.6	0.61	0.57	0.61	34.5
11	T1	All MCs	477	0.0	477	0.0	0.480	15.4	LOS B	13.5	94.6	0.61	0.57	0.61	35.0
12	R2	All MCs	3	100.0	3	100.0	0.011	20.2	LOS B	0.1	0.9	0.50	0.57	0.50	28.0
Approach			554	0.8	554	0.8	0.480	16.0	LOS B	13.5	94.6	0.61	0.57	0.61	33.2
All Vehicles			1878	1.3	1878	1.3	0.679	22.8	LOS B	13.5	94.6	0.71	0.66	0.72	29.3

Site Level of Service (LOS) Method: Delay (NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Intersection and Approach LOS values are based on average delay for all vehicle movements.

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

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Green.

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

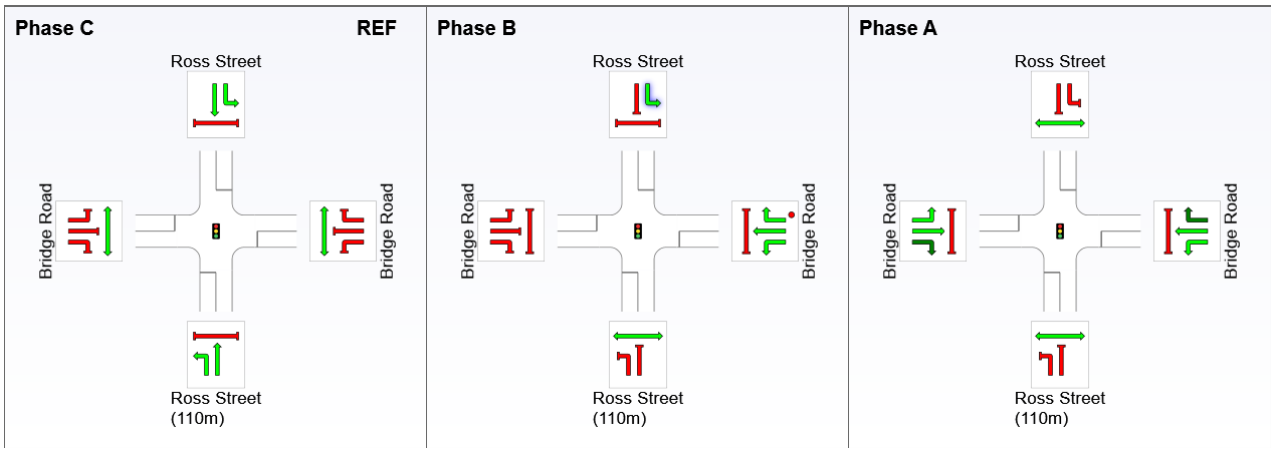
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

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

* Critical Movement (Signal Timing)

Input Phase Sequence

Movement Class: All Movement Classes



REF: Reference Phase
VAR: Variable Phase

Normal Movement	Permitted/Opposed
Slip/Bypass-Lane Movement	Opposed Slip/Bypass-Lane
Stopped Movement	Turn On Red
Other Movement Class (MC) Running	Undetected Movement
Mixed Running & Stopped MCs	Continuous Movement
Other Movement Class (MC) Stopped	Phase Transition Applied

Phase Timing Summary

Phase	C	B	A
Phase Change Time (sec)	88.0	25.0	32.5
Green Time (sec)	21.0	1.5	54.0
Phase Time (sec)	27.0	3.0	60.0
Phase Split	30%	3%	67%
Phase Frequency (%)	100.0	25.0 [1]	100.0

See the Timing Analysis report for more detailed information including input values of Yellow Time and All-Red Time, and information on any adjustments to Intergreen Time, Phase Time and Green Time values in cases of Pedestrian Actuation, Minor Phase Actuation and Phase Frequency values (user-specified or implied) less than 100%.

1 Phase Frequency has been given with User-Specified Phase Times.

SIDRA INTERSECTION 10.0 | Copyright © 2000-2025 Akcelik and Associates Pty Ltd | sidrasolutions.com