

24 January 2024

Zarko Danilov Canberra Airport Group Level 4, 21 Terminal Avenue, Plaza Offices – West Canberra Airport, ACT, 2609

Dear Zarko

19 & 21 Scherger Development Application - Traffic Impact Statement

Introduction and background

SCT Consulting has prepared this Traffic Impact Statement to support the proposed development of 19 & 21 Scherger Street located in the Fairbairn Precinct northeast of Canberra Airport. The development site is located at the intersection of Scherger Drive and Richmond Avenue as shown in **Figure 1**. The site is accessed via Scherger Drive, which intersects with Pialligo Avenue a major arterial road that links to Queanbeyan in the southeast and provides connectivity with Majura Parkway (Federal Highway) and Morshead Drive west of the Canberra Airport Precinct. There are no public buses that service the Fairbairn Precinct or active transport infrastructure along Pialligo Avenue and Scherger Drive to facilitate walking trips to the site.

Figure 1 Proposed development site



Source: Canberra Airport Group, 2023



The proposal

The Fairbairn Precinct has a considerable off-street parking supply, with a total of 2,466 existing parking spaces. Parking data provided indicates that maximum parking occupancy during a typical week is 1,240 vehicles corresponding to an occupancy rate of approximately 50%.

Canberra Airport is seeking to construct an office space shown in **Figure 2**, with a Gross Floor Area of 13,970m² and a Net Leasable Area of 11,546m². 217 additional long-stay parking spaces (including seven accessible spaces) and 24 short-stay parking spaces (with four accessible spaces), totalling 241 new parking spaces.

Figure 2 Location of proposed development and car parking



Source: Indesco, 2023

Traffic modelling and assumptions

Traffic modelling was undertaken using SIDRA 9.1 to test the operational performance of the intersection of Pialligo Avenue / Scherger Drive. SIDRA models the delays to road users (cars, trucks, buses, pedestrians, cyclists) based on the demands and geometry of intersections. It is a typical software used for a development application of this scale. Traffic volumes for the intersection were collected over a 24 hour period on Wednesday the 29th of November 2023 using the Sydney Coordinated Adaptive Traffic System (SCATS). A one-hour AM and PM traffic peak was determined between 8-9am and 56pm respectively, with volumes extracted during these periods. As SCATS data relies on sensors within the road surface, and not via manual counts through methods such as visual observation, SCATS data may have identifiable errors. Left turning volumes from Scherger Drive were not recorded by SCATS. Traffic volumes for this movement were estimated using the proportion of vehicles entering the site from the west and east ends of Pialligo Drive.

Three scenarios were modelled as part of this impact assessment:

- base case (existing traffic volumes)
- development case (development and existing traffic volumes)
- development and background growth case (development traffic, existing traffic and background growth to traffic volumes on Pialligo Avenue from CSTM).



Traffic generated by the proposal was determined using a rate of 1.6 and 1.2 vehicles per 100m² during the AM and PM peaks respectively, for an 'office block' development type as per the *Guide to Traffic Generating Developments Updated traffic surveys* (2013). This corresponds to 224 AM vehicle trips and 168 PM trips generated by the proposed development. A 90% 'In' and 10% 'out' ratio was assumed for AM peak trips, which was reversed for the PM peak. The trips were distributed based on the proportion of existing traffic accessing the site from the east and west (those turning right from Pialligo Avenue and those turning left) respectively. 70 additional AM and 120 additional PM through movements at the intersection of Scherger Drive / Pialligo Avenue were distributed to account for additional growth in network demand along Pialligo Avenue. These additional movements represent the difference in traffic volume from the 2031 and 2021 CSTM models between Scherger Drive and Sutton Road.

Intersection performance

Intersection Level of Service (LOS) is a tool to measure the level of congestion at an intersection as well as to identify locations requiring further investigations. The LOS as defined in the Traffic Modelling Guidelines is summarised in **Table 1**.

Level of Service (LOS)	Average Delay per Vehicle (sec/h)	Performance explanation
Α	Less than 14.5	Good operation
В	14.5 to 28.4	Good with acceptable delays and spare capacity
С	28.5 to 42.4	Satisfactory
D	42.5 to 56.4	Operating near capacity
E	56.5 to 70.4	At capacity, at signals incidents will cause excessive delays. Roundabouts require other control methods.
F	70.5 or greater	At capacity, at signals incidents will cause excessive delays. Roundabouts require other control methods.

Table 1 Level Of Service definitions

Source: Roads and Maritime Services, 2002

Intersection Degree of Saturation (DOS) is another metric to measure the performance of isolated intersections and approaches. DOS is a ratio of traffic demand to capacity. For intersections controlled by traffic signals, both queue length and delays typically increase rapidly as DOS approaches 1.0. The Traffic Modelling Guidelines identified an upper limit of 0.9 for signalised intersections.

Modelling results from **Table 2** indicate the development will have minimal impact on vehicle delay during the AM peak, with LOS remaining constant at 'A' across all three scenarios. DOS increases by 0.02, which will not impact intersection capacity. Delay during the PM increases by 1.7and 2.7 seconds respectively. LOS remains at 'A' and DOS increases by 0.06. These increases in delay and DOS are predominantly a result of vehicles from Scherger Drive turning onto Pialligo Avenue and vehicles turning right from Pialligo Avenue.

It is therefore anticipated that the development will have an insignificant impact on the road network with minor increases in delay and DOS, which are within the *TCCS Guidelines for Transport Impact Assessment* of LOS D for each movement and DOS \leq 0.90.



Table 2 SIDRA Intersection performance results

Interportion	Week	day AM p	eak	Weekday PM peak			
Intersection	Delay	LoS	DoS	Delay	LoS	DoS	
	Base case)					
Pialligo Avenue / Scherger Drive	5.4s	Α	0.74	11.1s	Α	0.77	
Base a	nd developr	nent case)				
Pialligo Avenue / Scherger Drive	6.2s	Α	0.74	12.8s	Α	0.82	
Future bas	e and devel	opment c	ase				
Pialligo Avenue / Scherger Drive	6.2s	Α	0.76	13.8s	Α	0.83	

Parking and pedestrian connectivity

A total of 241 additional parking spaces neighbouring the site are proposed as part of the development. This is in addition to the current 2,466 spaces within the wider business park. From **Figure 3**, there is sufficient pedestrian connectivity through the provision of footpaths from the proposed car parks to the site.

241 new spaces will sufficiently accommodate parking demand from the anticipated 224 vehicles accessing the site during the AM peak, as there will likely be a mix of long and short-term users, the latter of which should have a high turnover that all peak-period vehicles could use the proposed parking. Vehicles can be catered for by the additional 1,226 vacant parking spaces neighbouring the site (**Figure 1**) within the precinct on a typical weekday. These can be accessed via pedestrian-only routes such as those bisecting Scherger Drive (**Figure 1**). As a reference for this development, the ACT Parliamentary Counsel's *Planning (Commercial Zones) Technical Specifications* (2023) outlines a parking rate of two spaces per 100m² of GFA, which would result in a demand of 279 spaces. The 241 new proposed parking spaces and 1226 existing vacant parking spaces would sufficiently satisfy this.



Figure 3 Footpaths and pedestrian infrastructure surrounding the development site

Source: Indesco and SCT Consulting, 2023



Conclusion

Canberra Airport Group is seeking to develop a 13,970m² site within the Fairbairn Precinct adjoining Canberra Airport. 241 parking spaces neighbouring the development will be constructed in addition to the existing 2466 spaces. 280 vehicle trips are estimated to be generated by the development. The development will have a minor impact on the intersection of Pialligo Avenue / Scherger Drive within the bounds set by the *TCCS Guidelines for Transport Impact Assessment*. The current vacant parking supply of 1,240 as well as the proposed 241 parking spaces as part of the proposal will sufficiently cover parking demands from vehicle trips generated as a result of the development.

Yours sincerely

Jonathan Busc

Associate Director Jonathan.Busch@sctconsulting.com.au 0481 818 776 | (02) 9060 7222 Suite 4.03, Level 4, 157 Walker Street, North Sydney NSW 2060

SITE LAYOUT Site: 1AM [PIA_SCH_24_AM_BY (Site Folder: General)]

New Site Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Isolated

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



SIDRA INTERSECTION 9.1 | Copyright © 2000-2023 Akcelik and Associates Pty Ltd | sidrasolutions.com Organisation: SCT CONSULTING PTY LTD | Licence: NETWORK / 1PC | Created: Wednesday, 24 January 2024 11:37:41 AM Project: S:\Projects\SCT_00536C 19-21 Scherger Drive DA\4. Tech Work\1. Modelling\SCT_00536_Scherger Drive DA.sip9

Site: 1AM [PIA_SCH_24_AM_BY (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site

Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 54 seconds (Site User-Given Phase Times)

Vehic	le M	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Derr F [Total veh/h	nand Iows HV] %	Ar Fl [Total veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% [Qı [Veh. veh	Back Of ieue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Piallig	o Ave													
5	T1	All MCs	1387	5.0	1387	5.0	0.735	0.5	LOS A	0.0	0.0	0.00	0.00	0.00	68.7
6	R2	All MCs	84	0.0	84	0.0	*0.306	30.0	LOS C	2.1	14.7	0.93	0.76	0.93	41.3
Appro	ach		1472	4.7	1472	4.7	0.735	2.2	LOS A	2.1	14.7	0.05	0.04	0.05	66.2
North:	Sche	erger Drive	е												
7	L2	All MCs	16	0.0	16	0.0	0.016	8.4	LOS A	0.1	0.7	0.35	0.61	0.35	54.4
9	R2	All MCs	79	0.0	79	0.0	*0.253	30.8	LOS C	1.4	9.5	0.94	0.72	0.94	40.3
Appro	ach		95	0.0	95	0.0	0.253	27.1	LOS B	1.4	9.5	0.84	0.70	0.84	42.1
West:	Piallię	go Ave													
10	L2	All MCs	420	0.0	420	0.0	0.280	6.8	LOS A	1.5	10.8	0.20	0.60	0.20	55.6
11	T1	All MCs	499	5.0	499	5.0	*0.495	9.5	LOS A	8.3	60.7	0.68	0.62	0.68	59.1
Appro	ach		919	2.7	919	2.7	0.495	8.3	LOS A	8.3	60.7	0.46	0.61	0.46	57.5
All Ve	hicles		2485	3.8	2485	3.8	0.735	5.4	LOS A	8.3	60.7	0.23	0.28	0.23	61.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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)

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Site: 1PM [PIA_SCH_24_PM_BY (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 49 seconds (Site User-Given Phase Times)

Vehic	le M	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Derr F [Total veh/h	nand Iows HV] %	Ar Fl [Total veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Qui [Veh. veh	ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Piallig	o Ave													
5	T1	All MCs	662	5.0	662	5.0	0.351	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
6	R2	All MCs	6	0.0	6	0.0	*0.167	37.6	LOS C	0.2	1.3	1.00	0.63	1.00	38.1
Appro	ach		668	5.0	668	5.0	0.351	0.5	LOS A	0.2	1.3	0.01	0.01	0.01	69.2
North	Sche	erger Drive	е												
7	L2	All MCs	72	0.0	72	0.0	0.079	12.3	LOS A	0.6	4.3	0.48	0.66	0.48	53.2
9	R2	All MCs	383	0.0	383	0.0	*0.607	24.8	LOS B	5.8	40.6	0.92	0.81	0.95	43.3
Appro	ach		455	0.0	455	0.0	0.607	22.8	LOS B	5.8	40.6	0.85	0.78	0.87	44.6
West:	Pialli	go Ave													
10	L2	All MCs	34	0.0	34	0.0	0.436	7.1	LOS A	6.3	45.5	0.67	0.60	0.67	54.1
11	T1	All MCs	1118	5.0	1118	5.0	*0.771	12.8	LOS A	16.1	117.9	0.80	0.76	0.87	57.3
Appro	ach		1152	4.9	1152	4.9	0.771	12.6	LOS A	16.1	117.9	0.80	0.75	0.86	57.2
All Ve	hicles		2275	3.9	2275	3.9	0.771	11.1	LOS A	16.1	117.9	0.58	0.54	0.61	56.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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)

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Site: 1AMDEV [PIA_SCH_24_AM_DEV (Site Folder: DEV)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site

Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 54 seconds (Site User-Given Phase Times)

Vehic	le M	ovement	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Derr F [Total veh/h	nand Iows HV] %	Ar Fl [Total veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% E Qu [Veh. veh	Back Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Piallig	o Ave													
5	T1	All MCs	1387	5.0	1387	5.0	0.735	0.5	LOS A	0.0	0.0	0.00	0.00	0.00	68.7
6	R2	All MCs	120	0.0	120	0.0	*0.436	30.6	LOS C	3.1	21.5	0.95	0.78	0.95	41.0
Appro	ach		1507	4.6	1507	4.6	0.735	2.9	LOS A	3.1	21.5	0.08	0.06	0.08	65.2
North:	Sche	erger Drive	Э												
7	L2	All MCs	21	0.0	21	0.0	0.022	8.7	LOS A	0.1	1.0	0.37	0.62	0.37	54.1
9	R2	All MCs	99	0.0	99	0.0	*0.317	31.1	LOS C	1.7	12.0	0.95	0.73	0.95	40.2
Appro	ach		120	0.0	120	0.0	0.317	27.2	LOS B	1.7	12.0	0.85	0.71	0.85	42.1
West:	Pialli	go Ave													
10	L2	All MCs	597	0.0	597	0.0	0.385	7.3	LOS A	2.6	18.5	0.28	0.65	0.28	55.0
11	T1	All MCs	499	5.0	499	5.0	*0.528	10.0	LOS A	9.1	66.2	0.73	0.64	0.73	58.8
Appro	ach		1096	2.3	1096	2.3	0.528	8.6	LOS A	9.1	66.2	0.48	0.64	0.48	56.6
All Ve	hicles		2723	3.5	2723	3.5	0.735	6.2	LOS A	9.1	66.2	0.27	0.33	0.27	60.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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)

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Site: 1PMDEV [PIA_SCH_24_PM_DEV (Site Folder: DEV)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site

Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 49 seconds (Site User-Given Phase Times)

Vehic	le M	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Derr Fl [Total veh/h	nand lows HV] %	Ar Fl [Total] veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% E Qu [Veh. veh	Back Of ieue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Piallig	o Ave													
5	T1	All MCs	662	5.0	662	5.0	0.351	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
6	R2	All MCs	9	0.0	9	0.0	*0.250	37.9	LOS C	0.3	1.9	1.00	0.65	1.00	37.9
Appro	ach		672	4.9	672	4.9	0.351	0.6	LOS A	0.3	1.9	0.01	0.01	0.01	68.9
North:	Sche	erger Driv	е												
7	L2	All MCs	97	0.0	97	0.0	0.107	12.5	LOS A	0.9	6.0	0.49	0.67	0.49	53.1
9	R2	All MCs	517	0.0	517	0.0	* 0.819	28.5	LOS B	9.3	64.8	0.97	0.92	1.18	41.5
Appro	ach		614	0.0	614	0.0	0.819	26.0	LOS B	9.3	64.8	0.89	0.88	1.07	43.0
West:	Piallię	go Ave													
10	L2	All MCs	48	0.0	48	0.0	0.440	7.1	LOS A	6.4	46.4	0.67	0.61	0.67	53.9
11	T1	All MCs	1118	5.0	1118	5.0	*0.779	13.2	LOS A	16.6	121.1	0.81	0.77	0.88	57.0
Appro	ach		1166	4.8	1166	4.8	0.779	13.0	LOS A	16.6	121.1	0.80	0.76	0.87	56.8
All Ve	hicles		2452	3.6	2452	3.6	0.819	12.8	LOS A	16.6	121.1	0.61	0.58	0.69	55.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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)

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Site: 1AMDEV [PIA_SCH_31_AM_DEV (Site Folder: DEV + Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 54 seconds (Site User-Given Phase Times)

Vehic	le M	ovement	Perfo	rma	nce										
Mov ID	Turn	Mov Class	Derr Fl [Total veh/h	nand Iows HV] %	Ar Fl [Total] veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% E Qu [Veh. veh	Back Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Piallig	o Ave													
5	T1	All MCs	1442	5.0	1442	5.0	0.764	0.6	LOS A	0.0	0.0	0.00	0.00	0.00	68.5
6	R2	All MCs	120	0.0	120	0.0	*0.436	30.6	LOS C	3.1	21.5	0.95	0.78	0.95	41.0
Appro	ach		1562	4.6	1562	4.6	0.764	2.9	LOS A	3.1	21.5	0.07	0.06	0.07	65.1
North:	Sche	rger Drive	e												
7	L2	All MCs	21	0.0	21	0.0	0.022	9.1	LOS A	0.2	1.1	0.39	0.62	0.39	53.9
9	R2	All MCs	99	0.0	99	0.0	*0.317	31.1	LOS C	1.7	12.0	0.95	0.73	0.95	40.2
Appro	ach		120	0.0	120	0.0	0.317	27.2	LOS B	1.7	12.0	0.85	0.71	0.85	42.1
West:	Piallię	go Ave													
10	L2	All MCs	597	0.0	597	0.0	0.385	7.3	LOS A	2.6	18.5	0.28	0.65	0.28	55.0
11	T1	All MCs	519	5.0	519	5.0	* 0.550	10.2	LOS A	9.6	69.9	0.74	0.65	0.74	58.6
Appro	ach		1116	2.3	1116	2.3	0.550	8.7	LOS A	9.6	69.9	0.49	0.65	0.49	56.6
All Ve	nicles		2798	3.5	2798	3.5	0.764	6.2	LOS A	9.6	69.9	0.27	0.32	0.27	60.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options tab).

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* Critical Movement (Signal Timing)

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Site: 1PMDEV [PIA_SCH_31_PM_DEV (Site Folder: DEV + Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site

Site Category: (None)

Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 49 seconds (Site User-Given Phase Times)

Vehic	le M	ovemen	t Perfo	rma	nce										
Mov ID	Turn	Mov Class	Derr F [Total veh/h	nand Iows HV] %	Ar Fl [Total veh/h	rival lows HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% B Que [Veh. veh	ack Of eue Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
East:	Piallig	o Ave													
5	T1	All MCs	709	5.0	709	5.0	0.376	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	69.7
6	R2	All MCs	9	0.0	9	0.0	*0.250	37.9	LOS C	0.3	1.9	1.00	0.65	1.00	37.9
Appro	ach		719	4.9	719	4.9	0.376	0.6	LOS A	0.3	1.9	0.01	0.01	0.01	69.0
North:	Sche	erger Drive	е												
7	L2	All MCs	97	0.0	97	0.0	0.109	14.1	LOS A	1.0	6.7	0.53	0.68	0.53	52.5
9	R2	All MCs	517	0.0	517	0.0	*0.819	28.5	LOS B	9.3	64.8	0.97	0.92	1.18	41.5
Appro	ach		614	0.0	614	0.0	0.819	26.2	LOS B	9.3	64.8	0.90	0.88	1.07	42.9
West:	Pialli	go Ave													
10	L2	All MCs	48	0.0	48	0.0	0.471	7.2	LOS A	7.0	50.6	0.69	0.62	0.69	53.8
11	T1	All MCs	1198	5.0	1198	5.0	*0.832	15.7	LOS B	20.1	146.7	0.84	0.83	0.97	55.1
Appro	ach		1246	4.8	1246	4.8	0.832	15.4	LOS B	20.1	146.7	0.84	0.83	0.96	55.0
All Ve	hicles		2579	3.7	2579	3.7	0.832	13.8	LOS A	20.1	146.7	0.62	0.61	0.72	54.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Options 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)

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Site: 1AM [PIA_SCH_24_AM_BY (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 54 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog Phase Times specified by the user Phase Sequence: Four-Phase Leading Right Turns Input Phase Sequence: A, C, D Output Phase Sequence: A, C, D Reference Phase: Phase A

Phase Timing Summary

Phase	Α	С	D
Phase Change Time (sec)	0	31	43
Green Time (sec)	27	6	8
Phase Time (sec)	33	9	12
Phase Split	61%	17%	22%
Phase Frequency (%)	100.0 ¹	54.0 ¹	74.0 ¹

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.





Site: 1PM [PIA_SCH_24_PM_BY (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 49 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog Phase Times specified by the user Phase Sequence: Four-Phase Leading Right Turns Input Phase Sequence: A, C, D Output Phase Sequence: A, C, D Reference Phase: Phase A

Phase Timing	Summary
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Phase	Α	С	D
Phase Change Time (sec)	0	25	42
Green Time (sec)	25	11	1
Phase Time (sec)	31	17	1
Phase Split	63%	35%	2%
Phase Frequency (%)	100.0 ¹	100.0 ¹	5.0 ¹

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.





Site: 1AMDEV [PIA_SCH_24_AM_DEV (Site Folder: DEV)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 54 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog Phase Times specified by the user Phase Sequence: Four-Phase Leading Right Turns Input Phase Sequence: A, C, D Output Phase Sequence: A, C, D Reference Phase: Phase A

Phase Timing Summary

Phase	Α	С	D
Phase Change Time (sec)	0	31	43
Green Time (sec)	27	6	8
Phase Time (sec)	33	9	12
Phase Split	61%	17%	22%
Phase Frequency (%)	100.0 ¹	54.0 ¹	74.0 ¹

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.





Site: 1PMDEV [PIA_SCH_24_PM_DEV (Site Folder: DEV)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 49 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog Phase Times specified by the user Phase Sequence: Four-Phase Leading Right Turns Input Phase Sequence: A, C, D Output Phase Sequence: A, C, D Reference Phase: Phase A

Phase Timing Summary

Phase	Α	С	D
Phase Change Time (sec)	0	25	42
Green Time (sec)	25	11	1
Phase Time (sec)	31	17	1
Phase Split	63%	35%	2%
Phase Frequency (%)	100.0 ¹	100.0 ¹	5.0 ¹

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.





Site: 1AMDEV [PIA_SCH_31_AM_DEV (Site Folder: DEV + Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 54 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog Phase Times specified by the user Phase Sequence: Four-Phase Leading Right Turns Input Phase Sequence: A, C, D Output Phase Sequence: A, C, D Reference Phase: Phase A

Phase Timing Summary

Phase	Α	С	D
Phase Change Time (sec)	0	31	43
Green Time (sec)	27	6	8
Phase Time (sec)	33	9	12
Phase Split	61%	17%	22%
Phase Frequency (%)	100.0 ¹	54.0 ¹	74.0 ¹

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.

Output Phase Sequence





Site: 1PMDEV [PIA_SCH_31_PM_DEV (Site Folder: DEV + Growth)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

New Site Site Category: (None) Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 49 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog Phase Times specified by the user Phase Sequence: Four-Phase Leading Right Turns Input Phase Sequence: A, C, D Output Phase Sequence: A, C, D Reference Phase: Phase A

Phase Timing Summary

Phase	Α	С	D
Phase Change Time (sec)	0	25	42
Green Time (sec)	25	11	1
Phase Time (sec)	31	17	1
Phase Split	63%	35%	2%
Phase Frequency (%)	100.0 ¹	100.0 ¹	5.0 ¹

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.

Output Phase Sequence



