TECHNICAL NOTE

PANATTONI PARK, SHOREHAM AIRFIELD
A27 ROUNDABOUT

ADC Infrastructure Limited, City Buildings, 34-36 Carrington Street, Nottingham, NG1 7FG
tel. 0115 941 4817, www.ADCinfrastructure.com

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1.0 INTRODUCTION

1.1 ADC Infrastructure Ltd are commissioned by Panattoni to provide transport and highways advice in support of their commercial development at Shoreham Airfield, west of Cecil Pashley Way in Shoreham-by-Sea, West Sussex. The general site location is shown in **Figure 1**.

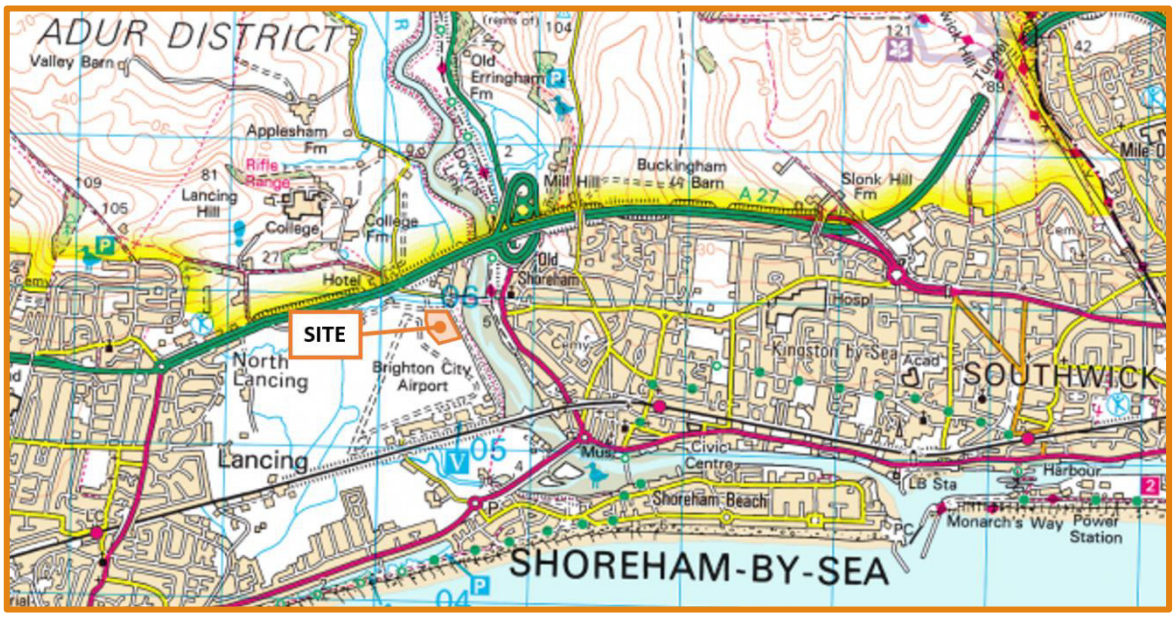


Figure 1: General site location plan

Planning summary

1.2 The Panattoni site is allocated for development within Adur District Council's Local Plan which was adopted in December 2017 and benefits from outline planning (AWDM/1093/17) which was approved in December 2019. The planning approval was for the erection of commercial buildings to provide up to 25,000 sqm of B1c, B2 and B8 employment use (**Figure 2**).



Figure 2: illustrative masterplan for New Monks Farm development (planning reference: AWDM/0961/17)

1.3 Subsequently, a Reserved Matters planning application (AWDM/1831/21) was approved in July 2022, detailing the appearance, landscaping, layout, and scale of the new commercial buildings. The approved scheme consists of five units, which in total provide 257,043sqft (23,880sqm) of B1c, B2 and B8 employment floor space.

1.4 To the west of the site, a hybrid planning application (AWDM/0961/17), known as 'New Monks Farm' was approved in February 2020 (**Figure 2**). This included full planning approval for the erection of 249 dwellings and a Country Park to be accessed from a new roundabout on the A27 (also **Figure 2**) as well as outline planning approval for the erection of 351 dwellings, a primary school and an IKEA. Once complete, the new roundabout junction on the A27 will also provide access to the Panattoni development.

Planning conditions 17 and 18

1.5 Construction of the Panattoni commercial development at Shoreham Airfield is underway. Condition 17 of the outline planning permission requires that the new roundabout on the A27 "*has been completed to the satisfaction of Highways England and West Sussex County Council*" prior to occupation of the development. Condition 18 is also a pre-occupation condition, that requires the shared footway improvements on the northern side of the A27 Old Shoreham Road and to the east of Coombes Road to be provided and open for use by the public before occupation of the development.

1.6 Construction of the A27 site access roundabout began in June 2022 and was programmed to be complete by August 2023. However, the contractor undertaking the works entered administration in the summer and hence construction was paused in September 2023. National Highways have recently appointed a new contractor to complete the works and it has been suggested that the revised programme for completion is summer 2024. However, Panattoni has no control over this date and require certainty that they will be able to occupy upon completion of their construction works.

1.7 Panattoni therefore wish to amend the planning conditions to allow occupation of their commercial development prior to the completion of the A27 highway works.

1.8 Hence, this Technical Note presents an assessment of the operation of the A27 roundabout in its current state and, accounting for the traffic management. It is demonstrated that allowing occupation of the development before the remaining works at the roundabout are complete would not materially impact on its operation or safety. Further, this Technical Note also demonstrates that allowing occupation of the proposed development before the opening of the footway improvements on the northern side of the A27 Old Shoreham Road, would not materially impact on the accessibility of the site.

2.0 A27 SITE ACCESS ROUNDABOUT

Consented access strategy

2.1 The A27 forms part of the strategic road network. It is a dual carriageway providing access to Brighton and Eastbourne to the east as well as Worthing to the west.

2.2 The access strategy for the Panattoni and New Monks Farm developments is centred around the construction of a major new junction on the A27. The new junction is a four-arm roundabout, that will have partial traffic signal control. Both the eastbound and westbound A27 approaches have been widened to accommodate three approach lanes and will be subject to traffic signal control. The southern arm (the Monk's Farm access) has two approach lanes and will also be subject to traffic signal control. The northern arm will provide a new link to Coombes Road and will operate under priority control. The access strategy is shown on Vectos drawing number VN201557-PL-03 Rev J, provided at **Appendix A** and an extract is shown below at **Figure 3**.

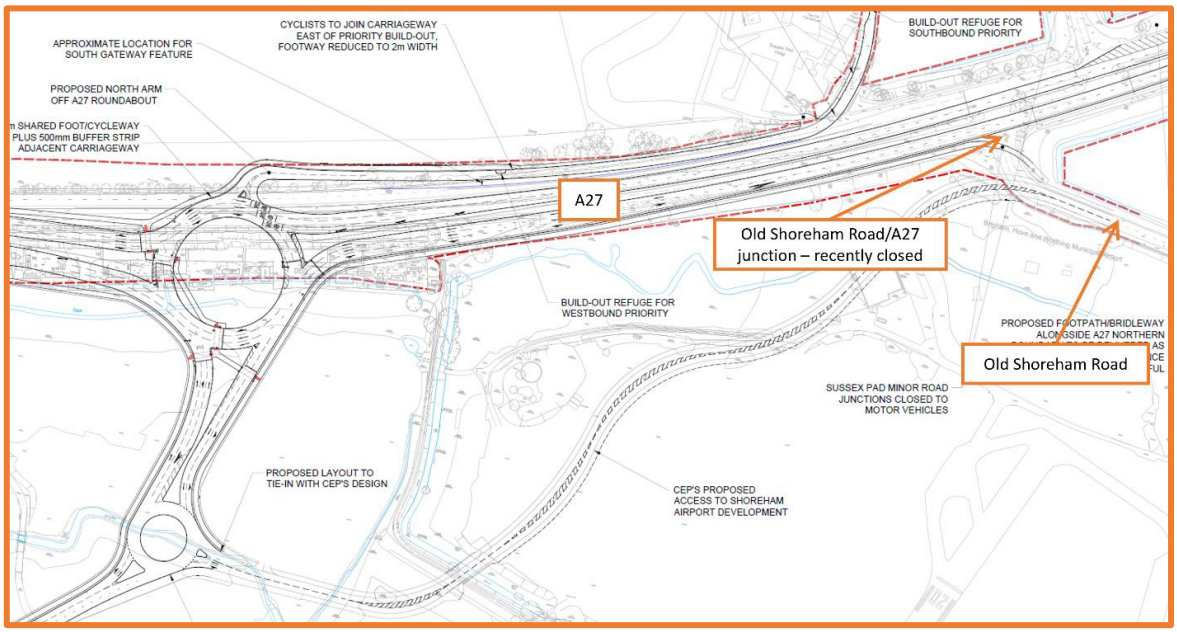


Figure 3: A27 improvement works (proposed as part of New Monks Farm development – drawing number VN201557-PL-03 Rev J)

2.3 Access to Shoreham Airfield and the Panattoni site is via Cecil Pashley Way and Old Shoreham Road, which formerly met with the A27 at a staggered traffic signal controlled junction crossroads, at which Coombes Road forms the northern arm. However, in accordance with the access strategy, and facilitated by the partial opening of the new roundabout, access to Old Shoreham Road at this junction has been closed, though access to Coombes Way is still open and the traffic signals remain active. As shown in **Figure 3**, Old Shoreham Road is now accessed via the southern arm (Monks Farm access) of the new A27 roundabout and Rose Street, which meet at another newly completed and operational roundabout.

2.4 Further to the above, at the new A27 roundabout there will be Toucan crossings on the A27 eastbound approach (entry, not exit), the circulating carriageway at the A27 eastbound and site access entries, and on both the entry and exit sides of the site access arm. These Toucan facilities will link the committed shared footway/cycleway on the northern side of the A27 (as per condition 18) with the proposed development site and the existing shared footway/cycleway that runs along the southern side of the A27.

Site visit and current A27 roundabout layout

2.5 Construction of the new roundabout on the A27 began in June 2022 was expected to be completed in September 2023. Much of the early work was completed offline, with the site access arm open to traffic in June 2023. However, in August 2023 the principal contractor, Buckingham Group, appointed administrators and the works on the A27 roundabout ceased.

2.6 A site visit was undertaken on the 30 December 2023 to establish the extent of the works completed and the current level of traffic management in place at the roundabout. In terms of the physical highway works, the roundabout is in place and operating under traffic management, largely as shown on the construction phasing plan provided at **Appendix B** (C21008-CENTURION-A27-SCHEME_DRAWING-P5). **Figure 4** below shows a screenshot of the current layout of the roundabout taken from the traffic survey drone footage, which is detailed below.



Figure 4: screenshot taken from drone footage of the A27 improvement works in January 2024

2.7 The A27 is restricted to two lanes on each approach, with the third lane coned off. This extends around the circulatory carriageway on the roundabout. The Monks Farm site access arm is open to traffic, but the northern arm, that will provide a new link to Coombes Road is not yet constructed. Hence the roundabout is operating with only the three arms. Access to Coombes Road is currently retained via the signal junction to the east of the roundabout. That junction will be removed in the final scheme, but it means that at present the traffic signals at this junction periodically stop the A27 traffic. This results in platooning (or 'gating') of traffic on the A27 westbound into the junction, which in turn creates gaps in the A27 westbound flow at the roundabout. It also allows pedestrians (and cyclist) to cross the A27, under traffic signal control, and link with Coombes Road.

2.8 As detailed above, once fully complete the new roundabout scheme will provide traffic signal control on the two A27 arms and the site access arm. The traffic signals have not yet been installed and the roundabout is operating under priority control. There is a 40mph speed limit through all the traffic management zone. The street lighting is not yet operational. However, there is temporary lighting at the give-way lines at the roundabout.

2.9 The site visit confirmed that the footway improvements on the northern side of the A27 Old Shoreham Road and to the east of Coombes Road (referred to in Condition 18) are not yet complete.

2.10 Octavious Infrastructure Ltd. have been appointed by National Highways as the new principal contractor to undertake the remaining works at the roundabout and it is anticipated that all works will be competed and the roundabout fully operational by summer 2024.

Traffic survey

2.11 To understand how the roundabout is currently operating, a morning and evening peak period drone traffic survey was commissioned and completed on 24 January 2024. The results of the traffic survey are provided at **Appendix C**.

2.12 The 2024 morning and evening peak hour turning movements have been identified from the traffic survey results and are summarised in matrix format at **Appendix D** (in 15-minute intervals to allow a 'direct-entry' junction assessment to be undertaken).

2.13 The traffic survey results show that there are 4,933 vehicles using the A27 roundabout in the morning peak hour, with 241 arriving at the Monks Farm arm from the A27 and 47 vehicles exiting the Monks Farm arm onto the A27. In the evening peak hour, there are 4,175 vehicles using the A27 roundabout, with 14 vehicles arriving at the Monks Farm arm from the A27 and 192 vehicles exiting the Monks Farm arm onto the A27. The background traffic flows on the A27 are therefore considerable and there is a reasonable level of traffic using the Monks Farm arm.

3.0 CONDITION 17- A27 ROUNDABOUT PERFORMANCE

Development traffic flows

3.1 Using the trip rates agreed in the New Monks Farm Transport Assessment (ref. VN40408, page 85, prepared by Vectos) and the floor area consented under the reserved matters planning application, the Panattoni commercial development is forecast to generate 140 two-way vehicle movements in the morning peak hour and 103 two-way vehicle movements in the evening peak hour, as set out in the table below.

		arrive	depart	two-way
Trip rates (per 100 sqm)	AM peak hour	0.500	0.090	0.590
	PM peak hour	0.040	0.390	0.430
Vehicle trips (23,880 sqm)	AM peak hour	119	21	140
	PM peak hour	10	93	103

3.2 These development traffic flows would equate to an average of just over two additional movements per minute during the morning peak hour at the new A27 roundabout, and less than two additional vehicle movements per minute in the evening peak hour. As detailed in Section 2, the traffic survey results show that there are currently 4,933 vehicle movements through the roundabout in the morning peak hour. Therefore, during the worst-case peak hour the increase in traffic due to the Panattoni development would be less than 3% of the existing traffic movements at the new junction.

3.3 Hence, the additional traffic due to the Panattoni development would not be significant.

Assessment traffic flows

3.4 The traffic distribution for the Panattoni development has been extracted from Figure 15 of the New Monks Farm Transport Assessment (ref. VN40408, page 85, prepared by Vectos) and applied to the morning and evening peak hour traffic generation shown in the table above at paragraph 3.1 to give the Panattoni commercial development traffic flow assignment at the new A27 roundabout (in 15-minute intervals). The calculations are provided in **Appendix D**.

3.5 The Panattoni commercial development traffic flow assignments have been added to the 2024 base traffic flows for both the morning and evening peak hours (in 15-minute intervals to allow a 'direct-entry' junction assessment to be undertaken), to give the 2024 with development assessment traffic flows (**Appendix D**).

Junction modelling results

3.6 Based on the observations made during the recent site visit and the drone survey footage, the general arrangement drawing of the roundabout has been amended to accurately reflect the current traffic management arrangement on site. This layout drawing, provided at **Appendix E**, has been used to build an Arcady model of the junction suitable for testing the 2024 'base' and 2024 'with development' scenarios for the morning and evening peak hours. As stated above, the traffic flows have been added to the model using the 'direct-entry' function to more accurately reflect the traffic flow profile over the modelled periods.

3.7 The ARCADY outputs are in **Appendix E** and the junction operation is summarised in the table below.

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	2024 Base							
Arm 1	95.9	135.20	1.09	F	6.9	12.02	0.88	B
Arm 2	0.1	5.41	0.07	A	0.3	4.30	0.21	A
Arm 3	262.0	341.88	1.14	F	7.1	12.59	0.89	B
	2024 with dev							
Arm 1	150.6	216.39	1.13	F	7.1	12.39	0.89	B
Arm 2	0.1	4.79	0.09	A	0.4	5.00	0.30	A
Arm 3	324.0	425.87	1.18	F	8.0	14.07	0.90	B

Arm 1 = A27 westbound, Arm 2 = Southern Arm (Monks Farm), Arm 3 = A27 Eastbound

3.8 The modelling results show that the A27 westbound and eastbound approaches to the roundabout would be heavily congested in the morning peak hour, with increases in queueing and delay on the A27 approaches due to the Panattoni commercial development. In the evening peak hour, the modelling forecasts that the A27 approaches would be at capacity, but functioning acceptably with no material increase in queueing or delay due to the additional of the Panattoni commercial development.

3.9 In both the morning and evening peak hours, the modelling shows that there would be no significant queueing or delay on the Monks Farm arm for both the 'base' and 'with development' scenarios. Hence, the modelling forecasts that the traffic exiting the Monks Farm arm would not suffer from congestion, which corresponds to the drone footage observations for vehicles currently exiting the Monks Farm arm.

Discussion and summary

3.10 The drone survey footage shows that in both the morning and evening peak hours the eastbound and westbound A27 approaches to the junction are effectively functioning as 'moving queues', with the traffic management fulfilling its function of slowing traffic. The footage shows few instances of stationary queues forming. When stationary queues do form, the footage shows that they last for just a short period of time. This is helped by the existing Combes Road traffic signal controlled junction, which, as described in Section 2, provides the occasional added benefit of 'gating' the westbound flow. In the morning peak hour the traffic exiting the Monks Farm arm does so without significant queueing or delays.

3.11 The drone footage shows that in the evening peak hour there is an element of exit blocking in the westbound direction leading to vehicles exiting the roundabout more slowly than would be expected. Whilst this exit blocking does occasionally lead to slightly longer delays to traffic exiting the Monks Farm arm, it is not significant and occurs for only a short period across the peak hour. It does not, therefore, materially impact on the performance of the roundabout.

3.12 Therefore, the 2024 'base' morning peak hour modelling results do not adequately reflect the observed traffic behaviour shown on the drone survey footage. This is because the modelling software is not well suited to modelling the observed traffic conditions where there are 'slow moving' queues and hence it is concluded that the footage is more instructive in considering how the additional development traffic might affect the function of the junction in its current form.

3.13 The Panattoni commercial development would add just two additional vehicles per minute to the roundabout in the morning peak hour, with 85% of the additional traffic being arrivals to the site, split broadly equally between the east and the west so that there would be just one additional vehicle per minute on both the eastbound and westbound approaches to the

roundabout. These traffic flow increases would not materially affect the operation of the roundabout.

3.14 In the evening peak hour, the modelling results more accurately reflect the observations from the drone survey that the eastbound and westbound A27 approaches to the junction are effectively functioning as slow-moving queues and traffic exiting the Monks Farm arm is not unduly delayed. The modelling results suggest that there would not be a material impact on the performance of the junction in the evening peak hour, and the observations of the drone footage support this conclusion.

3.15 Therefore, the findings are summarised as follows:

- Observations from the drone survey show that the roundabout is operating reasonably well under the current traffic management arrangement, with slow moving queues on both A27 approaches and no issues for vehicles exiting the Monks Farm arm of the roundabout.
- The Panattoni commercial development would not significantly increase traffic flows at the junction, and it is noted that the commercial development traffic is only a small part of the overall traffic that the roundabout is designed to accommodate.
- The survey footage does not suggest a road safety concern at the roundabout in its current state, and this would not change due to the modest additional development traffic volumes.
- The modelling shows significant congestion in the morning peak hour which would be exacerbated by the commercial development traffic. However, it is concluded that the model is not sufficiently representing the actual conditions and is therefore overestimating the impact of the Panattoni development traffic. Based on the observations of the actual junction performance, the traffic flow increases in the morning peak hour would not materially affect the operation of the roundabout.
- The modelling shows that there would be no material impact in the evening peak hour due to the additional traffic associated with the Panattoni development and this is supported by the drone footage observations.
- The modelling shows that there would be no increase in congestion on the Monks Farm arm due to the additional development traffic.

Conclusion

3.16 A new contractor has been appointed by National Highways and the A27 roundabout works are programmed to be complete in summer 2024. The roundabout is currently operating under traffic management, with no restrictions on traffic using the Monks Farm arm. Panattoni wish to amend planning condition 17 so that they could, if needed, occupy their development prior to the A27 highway works being completed.

3.17 The Panattoni development would only add two additional vehicles per minute to the roundabout. The Monks Farm arm operates satisfactorily and there are no safety concerns. Therefore, should Panattoni need to occupy prior to completion of the highway works, there would be no material impact or safety concern at the roundabout.

4.0 CONDITION 18 – UPGRADED PEDESTRIAN LINK

Planning condition

4.1 Condition 18 is a pre-occupation condition that requires the shared footway/cycleway improvements on the northern side of the A27 Old Shoreham Road and to the east of Coombes Road to be provided and open for use by the public before occupation of the development.

4.2 The committed new shared footway/cycleway will run along the northern carriageway of the A27 from the junction with Hoe Ct to the new A27 roundabout where it will follow the new link road connection towards Coombes Road. Approximately 150m east of the A27 roundabout, cyclists would rejoin the carriageway and the new facility continues eastwards as a footway only. The committed footway/cycleway is shown on Vectos drawing number VN201557-PL-03 Rev J, provided at **Appendix A**

Pedestrian catchment and facilities

4.3 A pedestrian catchment of 2km from the Panattoni development is shown in **Figure 5**. The catchment includes the airport terminal and associated building to the south of the site and the western part of Shoreham-by-Sea which can be accessed via Shoreham Tollbridge. It is therefore evident that almost all residential dwellings within acceptable walking distance of the site are located to the east of the Panattoni development, south the A27, and would not use the committed footway/cycleway infrastructure referred to in condition 18.



Figure 5: 2km Pedestrian catchment area

4.4 There are a small number of dwellings located within the 2km catchment area to the west along the A27. Employees who live within the pedestrian catchment area to the west can use the existing shared footway/cycleway alongside the southern side of the A27 to access the site.

4.5 Therefore, the absence of committed footway/cycleway infrastructure referred to in condition 18 will not materially impact the number of employees at the Panattoni development that would choose to access the site on foot.

Cycle catchment and infrastructure

4.6 Cyclists are typically prepared to cycle up to 5km for non-leisure journeys, such as those to work. As shown in **Figure 6**, a 5km cycle catchment includes all of Shoreham-by-Sea, Lancing and Southwick.



Figure 6: 5km cycling catchment

4.7 **Figure 6** shows that almost all residential areas within the 5km cycle catchment are located south of the A27 to the east and west of the Panattoni development site. Employees wishing to cycle to work from the residential areas within the catchment can do so on existing on-carriageway and off-carriageway routes, including the Shoreham Tollbridge connection to Shoreham-by-Sea and Southwick, and the existing shared footway/cycleway which runs along the southern side of the A27 between the site and Lancing.

4.8 Therefore, the absence of the committed footway/cycleway infrastructure referred to in condition 18 will not materially impact the number of employees at the Panattoni development who choose to access the site by cycle.

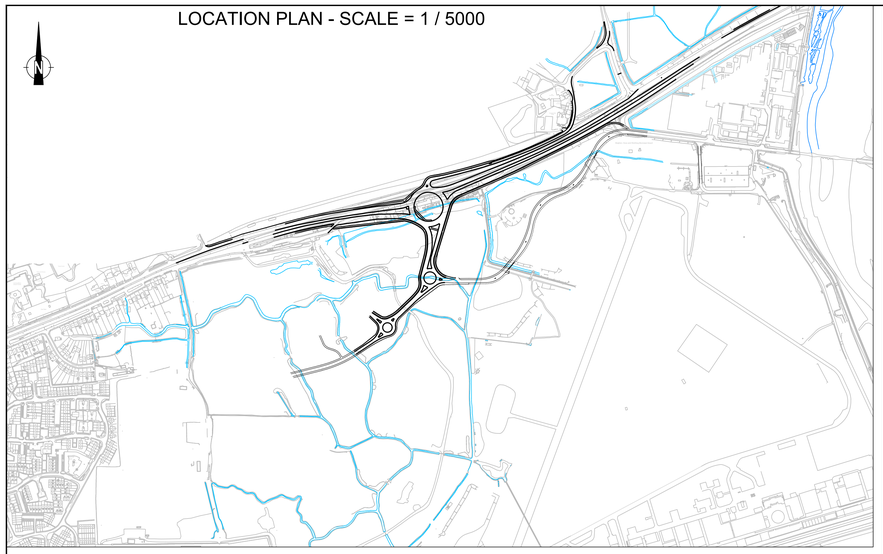
Conclusion

4.9 Whilst the committed footway/cycleway infrastructure referred to in condition 18 has a strategic purpose in terms of maintaining the linkage between Coombes Road, the airport site and bridleway 2065 (**Figure 5**), the new facility would not materially impact the opportunities for employees at the Panattoni development to walk or cycle to and from the site. Therefore, the delay in constructing the new footway/cycleway north of the A27 should not prevent the occupation of the Panattoni development.

APPENDIX A

ACCESS STRATEGY DRAWING

LOCATION PLAN - SCALE = 1 / 5000



APPROXIMATE LOCATION FOR NORTH GATEWAY FEATURE

PROPOSED SUSSEX PAD LINK ROAD ALIGNED ADJACENT LANCING COLLEGE (FORMERLY SUSSEX PAD HOTEL)

COOMBES ROAD JUNCTION MODIFIED

BOUNDARY HEDGE TO BE REMOVED FOR NEW LANCING COLLEGE LINK ROAD

ACCESS TO CAR PARK RECONFIGURED TO NEW LINK ROAD TO PROVIDE JUNCTION VISIBILITY

BUILD-OUT REFUGE FOR SOUTHBOUND PRIORITY

CYCLISTS TO JOIN CARRIAGEWAY EAST OF PRIORITY BUILD-OUT, FOOTWAY REDUCED TO 2m WIDTH

APPROXIMATE LOCATION FOR SOUTH GATEWAY FEATURE

PROPOSED NORTH ARM OFF A27 ROUNDABOUT

3m SHARED FOOT/CYCLEWAY PLUS 500mm BUFFER STRIP ADJACENT CARRIAGEWAY

A27 SHOREHAM BYPASS

BUILD-OUT REFUGE FOR WESTBOUND PRIORITY

PROPOSED FOOTPATH/BRIDLEWAY ALONGSIDE A27 NORTHERN BOUNDARY TO BE DELIVERED AS PER PLANNING REFERENCE SDNP/18/00434/FUL

SUSSEX PAD MINOR ROAD JUNCTIONS CLOSED TO MOTOR VEHICLES

PROPOSED LAYOUT TO TIE-IN WITH CEP'S DESIGN

CEP'S PROPOSED ACCESS TO SHOREHAM AIRPORT DEVELOPMENT

ACCESS TO NEW MONKS FARM DEVELOPMENT

CUSTOMER AND SERVICE ACCESS TO IKEA STORE

PROPOSED LAYOUT TO TIE-IN WITH CEP'S DESIGN

NOTE: THE PROPERTY OF THIS DRAWING AND DESIGN IS VESTED IN VECTOS (NORTH) LTD. IT MUST NOT BE COPIED OR REPRODUCED IN ANY WAY WITHOUT THEIR PRIOR WRITTEN CONSENT.

REV	DETAILS	DRAWN	CHECKED	DATE
A	Changes to 4th arm alignment thru Lancing College Nursery	DLB	PW	17.06.20
B	The Drive/Coombes Rd junction re-prioritised; NMU link added to A27	DLB	PW	30.06.20
C	Proposed footpath between The Drive and Coombes Rd removed	DLB	PW	7.07.20
D	Traffic calming features, eg. gateways, colour marks added to 4th arm	DLB	PW	5.08.20
E	Alignment adjusted to topo survey; speed cushion added outside LCN	DLB	PW	8.09.20
F	Build-outs amended for staggered priority to 4th arm	DLB	PW	12.10.20
G	Anti-dazzle screen added between 4th arm and A27 Eb reserve	DLB	PW	18.12.20
H	Amendments to 4th arm proposed traffic calming measures	DLB	PW	6.04.21
J	'keep clear' markings added to circ adjacent 4th arm entry	DLB	PW	26.05.21

Notes:
1.
2.

KEY

- HIGHWAY BOUNDARY
- VEHICLE RESTRAINT SYSTEM
- ANTI-DAZZLE SCREEN

DRAFT

PROJECT: New Monks Farm, Lancing

CLIENT: New Monks Farm Development

DRAWING TITLE: Proposed A27 Old Shoreham Road Improvements Development Access & Sussex Pad via Lancing College

vectos highway infrastructure specialists
Oxford Place, 61 Oxford St, Manchester, M1 6EQ
t: 0161 228 1008 e: manchester@vectos.co.uk

DRAWN:	CHECKED:	DATE:	SCALES:	DRAWING NUMBER:	REVISION:
DB	PW	Mar 2020	1:1000 at A0	VN201557/PL-03	J

APPENDIX B

TRAFFIC MANAGEMEMT DRAWING

NOTES:

1. All Traffic Management will be set out in acordance with the requirements of the Traffic signs Manual, Chapter 8, 2009.
2. Any sign reference Numbers used in this drawing refer to, either the diagram numbers contained within the Traffic Signs Regulations and General Directions 2016 (TSRGD 2016); or when used as a sign authorised under Schedule 13 part 9 of these regulations, a diagram from Schedule 12 of the 2011 Regulations (TSRGD 2011).
3. All sign frames will be secured with sand bags.
4. Exact locations of signs are to be determined on site and will be positioned as to not obstruct any other sign, footpath or visibility.
8. The Inner Boundary of the safety zone is omitted for Clarity but is to be marked with barrier in accordance with TSM Chapter 8 at the appropriate distance for the speed of carriageway.

KEY

- Traffic sign
- 610 — TSRGD Sign Reference Number
- (A) — Cone or Road Marking Detail
- Traffic cone line
- Temporary vehicle restraint barrier - N2 W3

By	Checked	Approved	Date	Description
DP	CD	JL	23.11.23	C2 - WESTBOUND LANE 3 LANE GAIN ADDED

CENTURION TRAFFIC MANAGEMENT

Auxilium TM Ltd

Scheme: A27 Monk Farm Roundabout

Title: Overall Scheme TM Layout Phase 5

SHEET 1 OF 3

Designed	DP	08.09.23	Eng.Chk.	x	x
Drawn	DP	08.09.23	Coordination	x	x
Dwg.Chk.	JL	11.09.23	Approved	x	x

Scale at A3: NTS | Project: x | Status: x

Drawing No: C21008-CENTURION-A27-SCHEME_DRAWING-P5 | Rev: C2

A3

APPENDIX C

TRAFFIC SURVEY RESULTS

Click to return to Home Page tab

Lancing

Arm A - A27 Westbound

Approach - A27 WB

	Left Turn						Ahead					
Time	Lights	HGV	Bus/Coach	Cycles	Motorcycles	TOTAL	Lights	HGV	Bus/Coach	Cycles	Motorcycles	TOTAL
0730 - 0745	32	0	0	0	0	**32**	493	18	0	0	3	**514**
0745 - 0800	39	4	0	0	2	**45**	520	20	0	0	2	**542**
0800 - 0815	33	4	0	0	0	**37**	496	17	1	0	2	**516**
0815 - 0830	52	2	0	0	0	**54**	433	18	0	0	1	**452**
0830 - 0845	45	1	0	0	0	**46**	452	19	3	0	3	**477**
0845 - 0900	43	2	0	0	0	**45**	373	29	1	0	3	**406**
0900 - 0915	35	3	0	0	0	**38**	430	20	1	0	0	**451**
0915 - 0930	24	3	0	0	0	**27**	382	20	0	0	0	**402**
3 Hour Total	**303**	**19**	**0**	**0**	**2**	**324**	**3579**	**161**	**6**	**0**	**14**	**3760**
1630 - 1645	4	0	0	0	0	**4**	467	5	1	0	4	**477**
1645 - 1700	3	0	0	0	0	**3**	469	8	2	0	5	**484**
1700 - 1715	0	1	0	0	0	**1**	502	8	2	0	4	**516**
1715 - 1730	1	0	0	0	0	**1**	502	2	0	0	6	**510**
1730 - 1745	1	0	0	0	0	**1**	473	2	2	0	5	**482**
1745 - 1800	1	0	0	0	0	**1**	514	4	2	0	2	**522**
1800 - 1815	0	1	0	0	0	**1**	477	3	1	0	3	**484**
1815 - 1830	2	0	0	0	0	**2**	522	4	1	0	3	**530**
3 Hour Total	**12**	**2**	**0**	**0**	**0**	**14**	**3926**	**36**	**11**	**0**	**32**	**4005**

Click to return to Home Page tab

Lancing

Arm B - Unnamed Rd NB

Approach - Unnamed Rd NB

	Left Turn						Right Turn					
Time	Lights	HGV	Bus/Coach	Cycles	Motorcycles	TOTAL	Lights	HGV	Bus/Coach	Cycles	Motorcycles	TOTAL
0730 - 0745	4	1	0	1	0	6	4	0	0	0	0	4
0745 - 0800	2	1	0	0	0	3	10	0	0	0	0	10
0800 - 0815	4	0	0	0	0	4	6	1	0	0	0	7
0815 - 0830	5	3	0	0	0	8	2	3	0	0	0	5
0830 - 0845	8	0	0	0	0	8	9	2	0	0	0	11
0845 - 0900	9	0	0	0	0	9	11	3	0	0	0	14
0900 - 0915	6	1	0	0	0	7	6	1	0	0	0	7
0915 - 0930	9	1	0	0	0	10	7	1	0	0	0	8
3 Hour Total	**47**	**7**	**0**	**1**	**0**	**55**	**55**	**11**	**0**	**0**	**0**	**66**
1630 - 1645	19	0	0	0	0	19	29	2	0	0	1	32
1645 - 1700	16	0	0	0	2	18	24	2	0	0	1	27
1700 - 1715	21	0	0	0	1	22	32	0	0	0	0	32
1715 - 1730	13	0	0	0	1	14	35	0	0	0	0	35
1730 - 1745	17	0	0	0	1	18	25	1	0	0	0	26
1745 - 1800	6	0	0	0	0	6	9	1	0	0	0	10
1800 - 1815	7	0	0	0	0	7	17	0	0	0	0	17
1815 - 1830	5	0	0	0	0	5	10	0	0	0	0	10
3 Hour Total	**104**	**0**	**0**	**0**	**5**	**109**	**181**	**6**	**0**	**0**	**2**	**189**

Click to return to Home Page tab

Lancing

Arm C - A27 EB

Approach - A27 EB

	Right Turn						Ahead					
Time	Lights	HGV	Bus/Coach	Cycles	Motorcycles	TOTAL	Lights	HGV	Bus/Coach	Cycles	Motorcycles	TOTAL
0730 - 0745	19	0	0	0	2	21	619	8	3	0	6	636
0745 - 0800	18	0	0	0	0	18	595	16	0	0	6	617
0800 - 0815	10	1	0	0	0	11	576	14	2	0	4	596
0815 - 0830	22	1	0	0	0	23	609	19	2	0	10	640
0830 - 0845	14	1	0	0	1	16	608	13	0	0	6	627
0845 - 0900	19	1	0	0	2	22	512	20	1	0	3	536
0900 - 0915	25	0	0	0	0	25	535	31	1	0	0	567
0915 - 0930	13	0	0	0	0	13	423	27	0	0	6	456
3 Hour Total	**140**	**4**	**0**	**0**	**5**	**149**	**4477**	**148**	**9**	**0**	**41**	**4675**
1630 - 1645	2	1	0	0	0	3	469	9	3	0	2	483
1645 - 1700	3	0	0	0	0	3	467	9	2	0	4	482
1700 - 1715	3	0	0	0	0	3	451	5	1	0	1	458
1715 - 1730	0	0	0	0	1	1	452	6	2	0	5	465
1730 - 1745	1	0	0	0	0	1	511	6	1	0	1	519
1745 - 1800	0	0	0	0	0	0	433	5	1	0	4	443
1800 - 1815	1	0	0	0	0	1	400	4	0	0	5	409
1815 - 1830	1	0	0	0	0	1	375	6	1	0	1	383
3 Hour Total	**11**	**1**	**0**	**0**	**1**	**13**	**3558**	**50**	**11**	**0**	**23**	**3642**

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Lancing

U - Trun

Approach - U - Trun

	A27 WB						Unnamed Rd						A27 EB					
Time	Lights	HGV	Bus/Coach	Cycles	Motorcycles	TOTAL	Lights	HGV	Bus/Coach	Cycles	Motorcycles	TOTAL	Lights	HGV	Bus/Coach	Cycles	Motorcycles	TOTAL
0730 - 0745	17	0	0	0	0	17	0	0	0	0	0	0	1	0	0	0	0	1
0745 - 0800	39	0	2	0	0	41	0	0	0	0	0	0	3	0	0	0	0	3
0800 - 0815	51	0	0	0	0	51	0	0	0	0	0	0	2	1	0	0	0	3
0815 - 0830	14	1	0	0	0	15	0	0	0	0	0	0	1	0	0	0	0	1
0830 - 0845	16	0	0	0	1	17	0	0	0	0	0	0	1	0	0	0	0	1
0845 - 0900	11	0	0	0	0	11	0	0	0	0	0	0	3	1	0	0	0	4
0900 - 0915	8	0	0	0	0	8	0	0	0	0	0	0	4	0	0	0	0	4
0915 - 0930	6	0	0	0	0	6	0	0	0	0	0	0	1	0	0	0	0	1
3 Hour Total	**162**	**1**	**2**	**0**	**1**	**166**	**0**	**0**	**0**	**0**	**0**	**0**	**16**	**2**	**0**	**0**	**0**	**18**
1630 - 1645	13	0	0	0	1	14	0	0	0	0	0	0	0	1	0	0	0	1
1645 - 1700	12	0	0	0	0	12	0	0	0	0	0	0	0	0	0	0	0	0
1700 - 1715	10	0	0	0	0	10	0	0	0	0	0	0	1	0	0	0	0	1
1715 - 1730	16	0	1	0	0	17	0	0	0	0	0	0	0	0	0	0	0	0
1730 - 1745	11	0	1	0	0	12	0	0	0	0	0	0	1	0	0	0	0	1
1745 - 1800	33	0	0	0	0	33	0	0	0	0	0	0	1	1	0	0	0	2
1800 - 1815	19	0	0	0	0	19	0	0	0	0	0	0	3	0	0	0	0	3
1815 - 1830	17	0	0	0	0	17	0	0	0	0	0	0	2	0	0	0	0	2
3 Hour Total	**131**	**0**	**2**	**0**	**1**	**134**	**0**	**0**	**0**	**0**	**0**	**0**	**8**	**2**	**0**	**0**	**0**	**10**

APPENDIX D

ASSESSMENT TRAFFIC FLOWS

2024 morning peak (0730 to 0745) survey

Total				
	A	B	C	Total
A	17	32	514	563
B	4	0	6	10
C	636	21	1	658
Total	657	53	521	1231

HGV				
	A	B	C	Total
A	0	0	18	18
B	1	0	0	1
C	11	0	0	11
Total	12	0	18	30

% HGVs			
	A	B	C
A	0.0%	0.0%	3.5%
B	25.0%	0.0%	0.0%
C	1.7%	0.0%	0.0%

2024 morning peak (07450 to 0800) survey

Total				
	A	B	C	Total
A	41	45	542	628
B	10	0	3	13
C	617	18	3	638
Total	668	63	548	1279

HGV				
	A	B	C	Total
A	2	4	20	26
B	1	0	0	1
C	16	0	0	16
Total	19	4	20	43

% HGVs			
	A	B	C
A	4.9%	8.9%	3.7%
B	10.0%	0.0%	0.0%
C	2.6%	0.0%	0.0%

2024 morning peak (0800 to 0815) survey

Total				
	A	B	C	Total
A	51	37	516	604
B	7	0	4	11
C	596	11	3	610
Total	654	48	523	1225

HGV				
	A	B	C	Total
A	0	4	18	22
B	0	0	1	1
C	16	1	1	18
Total	16	5	20	41

% HGVs			
	A	B	C
A	0.0%	10.8%	3.5%
B	0.0%	0.0%	25.0%
C	2.7%	9.1%	33.3%

2024 morning peak (0815 to 0830) survey

Total				
	A	B	C	Total
A	15	54	452	521
B	5	0	8	13
C	640	23	1	664
Total	660	77	461	1198

HGV				
	A	B	C	Total
A	1	2	18	21
B	3	0	3	6
C	21	1	0	22
Total	25	3	21	49

% HGVs			
	A	B	C
A	6.7%	3.7%	4.0%
B	60.0%	0.0%	37.5%
C	3.3%	4.3%	0.0%

2024 morning peak hour (0730 to 0830) survey

Total				
	A	B	C	Total
A	124	168	2024	2316
B	26	0	21	47
C	2489	73	8	2570
Total	2639	241	2053	4933

HGV				
	A	B	C	Total
A	3	10	74	87
B	5	0	4	9
C	64	2	1	67
Total	72	12	79	163

% HGVs			
	A	B	C
A	2.4%	6.0%	3.7%
B	19.2%	0.0%	19.0%
C	2.6%	2.7%	12.5%

Distribution

Trip distribution			
	A	B	C
A		52%	
B	52%		48%
C		48%	

Trip generation

	Arrial	Depart	2-way
Morning peak hour	119	21	140
Evening peak hour	10	93	103

15 minute Assignment

Total				
	A	B	C	Total
A		15		15
B	3		3	6
C		14		14
Total	3	29	3	35

HGV				
	A	B	C	Total
A		2		2
B	0		0	0
C		1		1
Total	0	3	0	3

2024 morning peak (0730 to 0745) WD

Total				
	A	B	C	Total
A	17	47	514	578
B	7	0	9	16
C	636	35	1	672
Total	660	82	524	1266

HGV				
	A	B	C	Total
A	0	2	18	20
B	1	0	0	1
C	11	1	0	12
Total	12	3	18	33

% HGVs			
	A	B	C
A	0.0%	4.3%	3.5%
B	14.3%	0.0%	0.0%
C	1.7%	2.9%	0.0%

2024 morning peak (0745 to 0800) WD

Total				
	A	B	C	Total
A	41	60	542	643
B	13	0	6	19
C	617	32	3	652
Total	671	92	551	1314

HGV				
	A	B	C	Total
A	2	6	20	28
B	1	0	0	1
C	16	1	0	17
Total	19	7	20	46

% HGVs			
	A	B	C
A	4.9%	10.0%	3.7%
B	7.7%	0.0%	0.0%
C	2.6%	3.1%	0.0%

2024 morning peak (0800 to 0815) WD

Total				
	A	B	C	Total
A	51	52	516	619
B	10	0	7	17
C	596	25	3	624
Total	657	77	526	1260

HGV				
	A	B	C	Total
A	0	6	18	24
B	0	0	1	1
C	16	2	1	19
Total	16	8	20	44

% HGVs			
	A	B	C
A	0.0%	11.5%	3.5%
B	0.0%	0.0%	14.3%
C	2.7%	8.0%	33.3%

2024 morning peak (0815 to 0830) WD

Total				
	A	B	C	Total
A	15	69	452	536
B	8	0	11	19
C	640	37	1	678
Total	663	106	464	1233

HGV				
	A	B	C	Total
A	1	4	18	23
B	3	0	3	6
C	21	2	0	23
Total	25	6	21	52

% HGVs			
	A	B	C
A	6.7%	5.8%	4.0%
B	37.5%	0.0%	27.3%
C	3.3%	5.4%	0.0%

2024 morning peak hour (0730 to 0830) WD

Total				
	A	B	C	Total
A	124	228	2024	2376
B	38	0	33	71
C	2489	129	8	2626
Total	2651	357	2065	5073

HGV				
	A	B	C	Total
A	3	18	74	95
B	5	0	4	9
C	64	6	1	71
Total	72	24	79	175

% HGVs			
	A	B	C
A	2.4%	7.9%	3.7%
B	13.2%	0.0%	12.1%
C	2.6%	4.7%	12.5%

2024 evening peak (1645 to 1700) survey

Total				
	A	B	C	Total
A	12	3	484	499
B	27	0	18	45
C	482	3	0	485
Total	521	6	502	1029

HGV				
	A	B	C	Total
A	0	0	10	10
B	2	0	0	2
C	11	0	0	11
Total	13	0	10	23

% HGVs			
	A	B	C
A	0.0%	0.0%	2.1%
B	7.4%	0.0%	0.0%
C	2.3%	0.0%	0.0%

2024 evening peak (1700 to 1715) survey

Total				
	A	B	C	Total
A	10	1	516	527
B	32	0	22	54
C	458	3	1	462
Total	500	4	539	1043

HGV				
	A	B	C	Total
A	0	1	10	11
B	0	0	0	0
C	6	0	0	6
Total	6	1	10	17

% HGVs			
	A	B	C
A	0.0%	100.0%	1.9%
B	0.0%	0.0%	0.0%
C	1.3%	0.0%	0.0%

2024 evening peak (1715 to 1730) survey

Total				
	A	B	C	Total
A	17	1	510	528
B	35	0	14	49
C	465	1	0	466
Total	517	2	524	1043

HGV				
	A	B	C	Total
A	1	0	2	3
B	0	0	0	0
C	8	0	0	8
Total	9	0	2	11

% HGVs			
	A	B	C
A	5.9%	0.0%	0.4%
B	0.0%	0.0%	0.0%
C	1.7%	0.0%	0.0%

2024 evening peak (1730 to 1745) survey

Total				
	A	B	C	Total
A	12	1	482	495
B	26	0	18	44
C	519	1	1	521
Total	557	2	501	1060

HGV				
	A	B	C	Total
A	1	0	4	5
B	1	0	0	1
C	7	0	0	7
Total	9	0	4	13

% HGVs			
	A	B	C
A	8.3%	0.0%	0.8%
B	3.8%	0.0%	0.0%
C	1.3%	0.0%	0.0%

2024 evening peak hour (1645 to 1745) survey

Total				
	A	B	C	Total
A	51	6	1992	2049
B	120	0	72	192
C	1924	8	2	1934
Total	2095	14	2066	4175

HGV				
	A	B	C	Total
A	2	1	26	29
B	3	0	0	3
C	32	0	0	32
Total	37	1	26	64

% HGVs			
	A	B	C
A	3.9%	16.7%	1.3%
B	2.5%	0.0%	0.0%
C	1.7%	0.0%	0.0%

Distribution

Trip distribution			
	A	B	C
A		52%	
B	52%		48%
C		48%	

Trip generation

	Arrial	Depart	2-way
Morning peak hour	119	21	140
Evening peak hour	10	93	103

15 minute Assignment

Total				
	A	B	C	Total
A		1		1
B	12		11	23
C		1		1
Total	12	2	11	25

HGV				
	A	B	C	Total
A		0		0
B	1		1	2
C		0		0
Total	1	0	1	2

2024 evening peak (1645 to 1700) WD

Total				
	A	B	C	Total
A	12	4	484	500
B	39	0	29	68
C	482	4	0	486
Total	533	8	513	1054

HGV				
	A	B	C	Total
A	0	0	10	10
B	3	0	1	4
C	11	0	0	11
Total	14	0	11	25

% HGVs			
	A	B	C
A	0.0%	0.0%	2.1%
B	7.7%	0.0%	3.4%
C	2.3%	0.0%	0.0%

2024 evening peak (1700 to 1715) WD

Total				
	A	B	C	Total
A	10	2	516	528
B	44	0	33	77
C	458	4	1	463
Total	512	6	550	1068

HGV				
	A	B	C	Total
A	0	1	10	11
B	1	0	1	2
C	6	0	0	6
Total	7	1	11	19

% HGVs			
	A	B	C
A	0.0%	50.0%	1.9%
B	2.3%	0.0%	3.0%
C	1.3%	0.0%	0.0%

2024 evening peak (1715 to 1730) WD

Total				
	A	B	C	Total
A	17	2	510	529
B	47	0	25	72
C	465	2	0	467
Total	529	4	535	1068

HGV				
	A	B	C	Total
A	1	0	2	3
B	1	0	1	2
C	8	0	0	8
Total	10	0	3	13

% HGVs			
	A	B	C
A	5.9%	0.0%	0.4%
B	2.1%	0.0%	4.0%
C	1.7%	0.0%	0.0%

2024 evening peak (1730 to 1745) WD

Total				
	A	B	C	Total
A	12	2	482	496
B	38	0	29	67
C	519	2	1	522
Total	569	4	512	1085

HGV				
	A	B	C	Total
A	1	0	4	5
B	2	0	1	3
C	7	0	0	7
Total	10	0	5	15

% HGVs			
	A	B	C
A	8.3%	0.0%	0.8%
B	5.3%	0.0%	3.4%
C	1.3%	0.0%	0.0%

2024 evening peak hour (1645 to 1745) WD

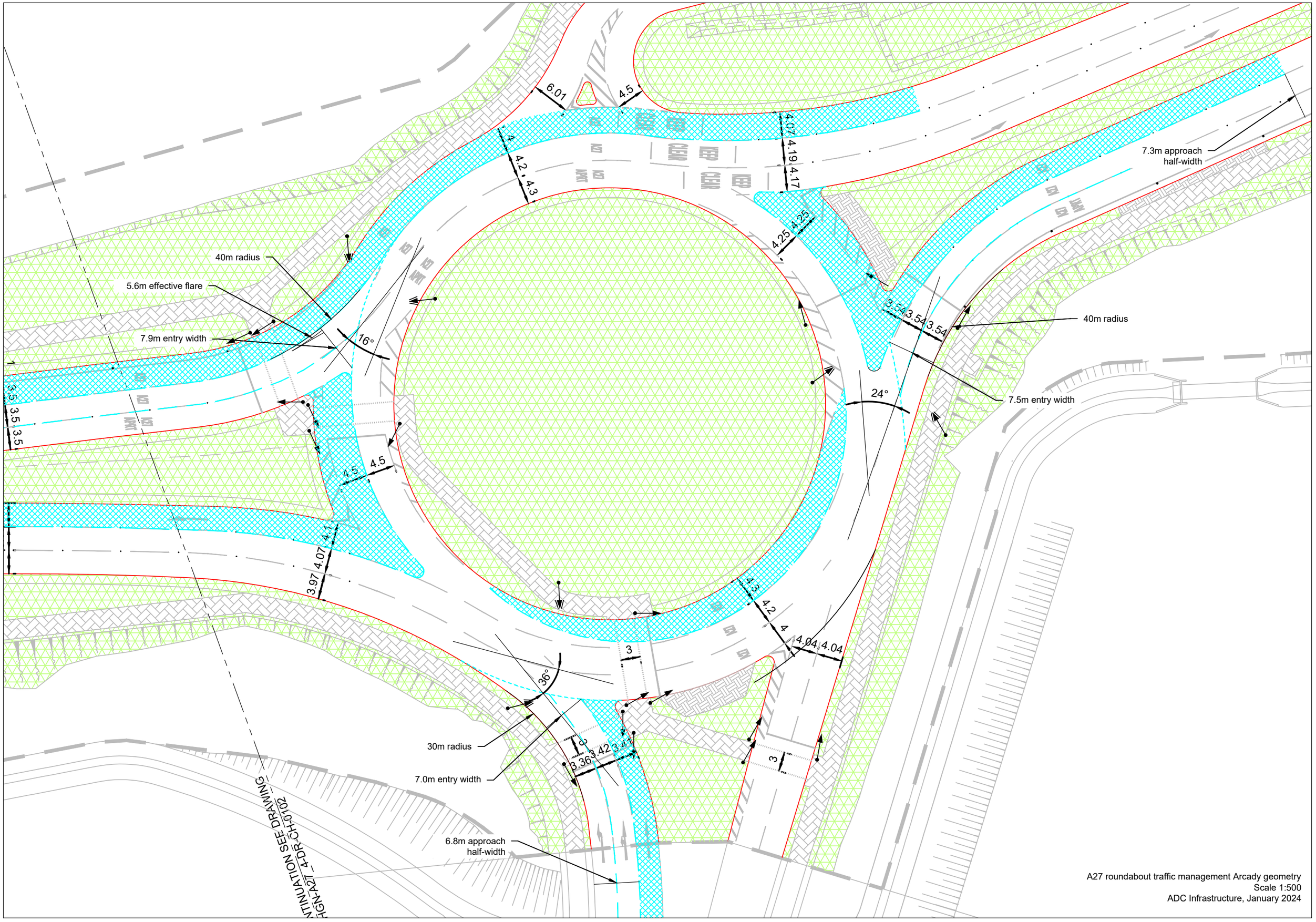
Total				
	A	B	C	Total
A	51	10	1992	2053
B	168	0	116	284
C	1924	12	2	1938
Total	2143	22	2110	4275

HGV				
	A	B	C	Total
A	2	1	26	29
B	7	0	4	11
C	32	0	0	32
Total	41	1	30	72

% HGVs			
	A	B	C
A	3.9%	10.0%	1.3%
B	4.2%	0.0%	3.4%
C	1.7%	0.0%	0.0%

APPENDIX E

ARCADY MODELLING RESULTS



A27 roundabout traffic management Arcady geometry
Scale 1:500
ADC Infrastructure, January 2024

Junctions 9

ARCADY 9 - Roundabout Module

Version: 9.5.0.6896
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Filename: 240129 A27 model - direct entry.j9
Path: C:\Users\ADC\ADC Infrastructure Dropbox\ADC Projects\ADC3436 A27 Roundabout, Shoreham Airport\Calculations
Report generation date: 31/01/2024 12:28:24

»2024 Base, AM
»2024 Base, PM
»2024 with dev, AM
»2024 with dev, PM

Summary of junction performance

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	2024 Base							
Arm 1	95.9	135.20	1.09	F	6.9	12.02	0.88	B
Arm 2	0.1	5.41	0.07	A	0.3	4.30	0.21	A
Arm 3	262.0	341.88	1.14	F	7.1	12.59	0.89	B
	2024 with dev							
Arm 1	150.6	216.39	1.13	F	7.1	12.39	0.89	B
Arm 2	0.1	4.79	0.09	A	0.4	5.00	0.30	A
Arm 3	324.0	425.87	1.18	F	8.0	14.07	0.90	B

Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.

File summary

File Description

Title	240129 A27/site access TM model
Location	A27 Shoreham
Site number	
Date	29/01/2024
Version	
Status	(new file)
Identifier	
Client	Pegasus
Jobnumber	ADC3436
Enumerator	ADC-TOSHIBA-AIO\ADC
Description	

Units

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perTimeSegment	s	-Min	perMin

Analysis Options

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 Base	AM	DIRECT	07:30	08:30	60	15
D2	2024 Base	PM	DIRECT	16:45	17:45	60	15
D3	2024 with dev	AM	DIRECT	07:30	08:30	60	15
D4	2024 with dev	PM	DIRECT	16:45	17:45	60	15

Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

2024 Base, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A27/Site access, Shoreham	Standard Roundabout		1, 2, 3	240.75	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	A27 East	
2	Site access	
3	A27 West	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	l' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	7.30	7.50	1.0	40.0	88.0	12.0	
2	6.80	7.00	1.0	30.0	88.0	18.0	
3	7.00	7.90	5.6	40.0	88.0	16.0	

Slope / Intercept / Capacity

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/TS)
1	0.583	611.075
2	0.545	554.718
3	0.584	617.283

The slope and intercept shown above include any corrections and adjustments.

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D1	2024 Base	AM	DIRECT	07:30	08:30	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000

Origin-Destination Data

07:30 - 07:45

Demand (Veh/TS)

		To		
		1	2	3
From	1	17.00	32.00	514.00
	2	4.00	0.00	6.00
	3	636.00	21.00	1.00

07:45 - 08:00

Demand (Veh/TS)

		To		
		1	2	3
From	1	41.00	45.00	542.00
	2	10.00	0.00	3.00
	3	617.00	18.00	3.00

08:00 - 08:15

Demand (Veh/TS)

		To		
		1	2	3
From	1	51.00	37.00	516.00
	2	7.00	0.00	4.00
	3	596.00	11.00	3.00

08:15 - 08:30

Demand (Veh/TS)

		To		
		1	2	3
From	1	15.00	54.00	452.00
	2	5.00	0.00	8.00
	3	640.00	23.00	1.00

Vehicle Mix

07:30 - 07:45

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	0	4
	2	25	0	0
	3	2	0	0

07:45 - 08:00

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	5	9	4
	2	10	0	0
	3	3	0	0

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	11	4
	2	0	0	25
	3	3	9	33

Heavy Vehicle Percentages

08:15 - 08:30

		To		
		1	2	3
From	1	7	4	4
	2	60	0	38
	3	3	4	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1	1.09	135.20	95.9	F
2	0.07	5.41	0.1	A
3	1.14	341.88	262.0	F

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	563.00	19.62	581.07	0.969	546.96	16.0	20.903	C
2	10.00	516.77	239.64	0.042	9.96	0.0	3.919	A
3	658.00	20.50	594.96	1.106	586.73	71.3	60.666	F

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	628.00	18.93	576.31	1.090	573.17	70.9	76.147	F
2	13.00	534.80	234.28	0.055	12.98	0.1	4.066	A
3	638.00	46.85	574.49	1.112	573.99	135.3	167.419	F

08:00 - 08:15

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	604.00	14.31	580.23	1.040	578.83	96.0	135.199	F
2	11.00	545.41	226.90	0.048	11.01	0.1	4.170	A
3	610.00	54.48	568.96	1.073	568.58	176.6	250.023	F

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	521.00	18.69	577.25	0.902	570.79	45.7	113.576	F
2	13.00	517.47	179.44	0.072	12.97	0.1	5.406	A
3	664.00	26.50	580.69	1.145	580.62	260.0	341.875	F

2024 Base, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A27/Site access, Shoreham	Standard Roundabout		1, 2, 3	11.93	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D2	2024 Base	PM	DIRECT	16:45	17:45	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000

Origin-Destination Data

16:45 - 17:00

Demand (Veh/TS)

		To		
		1	2	3
From	1	12.00	3.00	484.00
	2	27.00	0.00	18.00
	3	482.00	3.00	0.00

17:00 - 17:15

Demand (Veh/TS)

		To		
		1	2	3
From	1	10.00	1.00	516.00
	2	32.00	0.00	22.00
	3	458.00	3.00	1.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		1	2	3
From	1	17.00	1.00	510.00
	2	35.00	0.00	14.00
	3	465.00	1.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		1	2	3
From	1	12.00	1.00	482.00
	2	26.00	0.00	18.00
	3	519.00	1.00	1.00

Vehicle Mix

Heavy Vehicle Percentages

16:45 - 17:00

		To		
		1	2	3
From	1	0	0	2
	2	7	0	0
	3	2	0	0

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		1	2	3
From	1	0	10	2
	2	0	0	0
	3	1	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		1	2	3
From	1	6	0	0
	2	0	0	0
	3	2	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		1	2	3
From	1	8	0	1
	2	4	0	0
	3	1	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1	0.88	12.02	6.9	B
2	0.21	4.30	0.3	A
3	0.89	12.59	7.1	B

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	499.00	2.97	597.18	0.836	494.20	4.8	8.387	A
2	45.00	491.23	269.58	0.167	44.80	0.2	4.000	A
3	485.00	38.77	580.22	0.836	480.20	4.8	8.625	A

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	527.00	4.00	597.50	0.882	524.98	6.8	12.021	B
2	54.00	524.96	263.29	0.205	53.94	0.3	4.298	A
3	462.00	41.95	585.18	0.789	462.92	3.9	7.425	A

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	528.00	1.02	606.88	0.870	528.03	6.8	11.440	B
2	49.00	527.03	265.82	0.184	49.03	0.2	4.151	A
3	466.00	51.91	576.64	0.808	465.79	4.1	8.089	A

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	495.00	1.98	604.03	0.820	497.05	4.7	8.575	A
2	44.00	497.03	275.08	0.160	44.03	0.2	3.895	A
3	521.00	38.15	586.24	0.889	517.93	7.2	12.592	B

2024 with dev, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A27/Site access, Shoreham	Standard Roundabout		1, 2, 3	320.86	F

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D3	2024 with dev	AM	DIRECT	07:30	08:30	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000

Origin-Destination Data

07:30 - 07:45

Demand (Veh/TS)

		To		
		1	2	3
From	1	17.00	47.00	514.00
	2	7.00	0.00	9.00
	3	636.00	35.00	1.00

07:45 - 08:00

Demand (Veh/TS)

		To		
		1	2	3
From	1	41.00	60.00	542.00
	2	13.00	0.00	6.00
	3	617.00	32.00	3.00

08:00 - 08:15

Demand (Veh/TS)

		To		
		1	2	3
From	1	51.00	52.00	516.00
	2	10.00	0.00	7.00
	3	596.00	25.00	3.00

08:15 - 08:30

Demand (Veh/TS)

		To		
		1	2	3
From	1	15.00	69.00	452.00
	2	8.00	0.00	11.00
	3	640.00	37.00	1.00

Vehicle Mix

07:30 - 07:45

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	4	4
	2	14	0	0
	3	2	3	0

07:45 - 08:00

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	5	10	4
	2	8	0	0
	3	3	3	0

08:00 - 08:15

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	0	12	4
	2	0	0	14
	3	3	8	33

08:15 - 08:30

Heavy Vehicle Percentages

		To		
		1	2	3
From	1	7	6	4
	2	38	0	27
	3	3	5	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1	1.13	216.39	150.6	F
2	0.09	4.79	0.1	A
3	1.18	425.87	324.0	F

Main Results for each time segment

07:30 - 07:45

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	578.00	31.39	572.43	1.010	551.57	26.4	29.747	D
2	16.00	507.59	252.94	0.063	15.93	0.1	3.797	A
3	672.00	23.19	592.73	1.134	585.92	86.1	71.573	F

07:45 - 08:00

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	643.00	30.75	568.13	1.132	566.90	102.6	109.210	F
2	19.00	516.68	249.47	0.076	18.98	0.1	3.904	A
3	652.00	48.25	573.31	1.139	573.02	165.1	202.263	F

08:00 - 08:15

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	619.00	26.90	571.31	1.082	570.83	150.7	204.302	F
2	17.00	524.63	244.71	0.069	17.01	0.1	3.952	A
3	624.00	55.06	568.21	1.099	568.01	221.0	308.482	F

08:15 - 08:30

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	536.00	29.98	569.60	0.940	565.19	120.8	216.386	F
2	19.00	501.08	206.69	0.092	18.97	0.1	4.794	A
3	678.00	31.64	577.54	1.176	577.54	321.5	425.869	F

2024 with dev, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	A27/Site access, Shoreham	Standard Roundabout		1, 2, 3	12.65	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time period length (min)	Time segment length (min)
D4	2024 with dev	PM	DIRECT	16:45	17:45	60	15

Vehicle mix varies over time	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Scaling Factor (%)
1		✓	100.000
2		✓	100.000
3		✓	100.000

Origin-Destination Data

16:45 - 17:00

Demand (Veh/TS)

		To		
		1	2	3
From	1	12.00	4.00	484.00
	2	39.00	0.00	29.00
	3	482.00	4.00	0.00

17:00 - 17:15

Demand (Veh/TS)

		To		
		1	2	3
From	1	10.00	2.00	516.00
	2	44.00	0.00	33.00
	3	458.00	4.00	1.00

17:15 - 17:30

Demand (Veh/TS)

		To		
		1	2	3
From	1	17.00	2.00	510.00
	2	47.00	0.00	25.00
	3	465.00	2.00	0.00

Demand (Veh/TS)

17:30 - 17:45

		To		
		1	2	3
From	1	12.00	2.00	482.00
	2	38.00	0.00	29.00
	3	519.00	2.00	1.00

Vehicle Mix

Heavy Vehicle Percentages

16:45 - 17:00

		To		
		1	2	3
From	1	0	0	2
	2	8	0	3
	3	2	0	0

Heavy Vehicle Percentages

17:00 - 17:15

		To		
		1	2	3
From	1	0	50	2
	2	2	0	3
	3	1	0	0

Heavy Vehicle Percentages

17:15 - 17:30

		To		
		1	2	3
From	1	6	0	0
	2	2	0	4
	3	2	0	0

Heavy Vehicle Percentages

17:30 - 17:45

		To		
		1	2	3
From	1	8	0	1
	2	5	0	3
	3	1	0	0

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1	0.89	12.39	7.1	B
2	0.30	5.00	0.4	A
3	0.90	14.07	8.0	B

Main Results for each time segment

16:45 - 17:00

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	500.00	3.96	596.64	0.838	495.12	4.9	8.497	A
2	68.00	491.16	265.99	0.256	67.66	0.3	4.531	A
3	486.00	50.69	572.88	0.848	480.78	5.2	9.304	A

17:00 - 17:15

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	528.00	5.00	595.96	0.886	525.83	7.0	12.394	B
2	77.00	524.81	256.70	0.300	76.92	0.4	5.003	A
3	463.00	53.94	577.70	0.801	464.03	4.2	7.999	A

17:15 - 17:30

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	529.00	2.03	606.29	0.872	529.05	7.0	11.695	B
2	72.00	527.06	258.41	0.279	72.04	0.4	4.829	A
3	467.00	63.90	569.21	0.820	466.77	4.4	8.746	A

17:30 - 17:45

Arm	Total Demand (Veh/TS)	Circulating flow (Veh/TS)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	496.00	2.97	603.47	0.822	498.17	4.8	8.722	A
2	67.00	497.14	269.14	0.249	67.05	0.3	4.454	A
3	522.00	50.17	578.73	0.902	518.39	8.0	14.066	B