

JRB/18111
11 October 2019

Philip Forster
Development Control
Wrexham County Borough Council
Guildhall
Wrexham
LL11 1AY

Dear Mr Forster,

Application P/2018/0675. Erection of Class A1 retail store and class A1/A3 drive-thru coffee shop, former police headquarters, Wrexham
Response to Further Highways Comments submitted 27th September 2019

I refer to further correspondence from your colleague David Hesketh in your highways department dated 27th September in relation to this application. I am grateful that in the main, highways are satisfied with my letter of the 19th September 2019 in which I rebutted the comments of TPS on behalf of Asda. However, I note that highways are still concerned with the way in which our Arcady models validate against observed queuing.

I have already made extremely strong representations on numerous occasions against any further modelling of the Tesco roundabout or the Powell Road/Chester Road roundabout in relation to this application. Even when I have added 100% of Lidl traffic as extra-over to the existing baseline flows at these junctions, they increase overall traffic conditions by less than 5%. We know that flows can vary on a daily basis by as much as +/- 10% and so this is not significant. We also know that Lidl do not generate a significant proportion of new traffic in the peak hours, and that given the presence of Asda and Tesco in the vicinity, the true percentage of new trips to the Lidl will be extremely low.

In fact, I can provide you with some additional comfort on that having recently undertaken post-opening surveys at a six-month old Lidl store in Clayton-le-Woods, near Chorley. This store is very close to an established Asda and TPS objected to our application there on behalf of that retailer in a very similar fashion to the way in which they have made representations against this application.

We were able to satisfy Lancashire County Council with regard to the impact of the store on the main roundabout junction to the north of the site in Clayton-le-Woods but the capacity assessments that were undertaken were extremely robust. It has transpired in the light of the post-opening surveys undertaken

at the site that peak hour flows have not increased at all in spite of the opening of the new Lidl. This is evidenced in the following table.

Table 1 – Comparison of Northbound & Southbound flow along A6 at Lidl Access

Direction	Weekday (PM)		Weekend (Midday)	
	2017 Survey	2019 Post-opening Survey	2017 Survey	2019 Post-opening Survey
Northbound	556	605	596	480
Southbound	984	650	672	600
Total	1540	1255	1268	1081

In fact, the passing flow has reduced and this is in spite of Lidl generating at fairly typical levels for a new store. The surveys were undertaken in March 2017 and September 2019, so both neutral and both entirely representative.

The following table shows how close our forecast flows for the store were to the observed. Again, the Lidl is generating marginally less traffic than was forecast for the purpose of the TA and the planning application.

Table 2 – Comparison of Lidl Traffic Flows at Site Access Pre-and Post Opening

Movement	Weekday (PM)		Saturday (Midday)	
	Predicted Flows from TA	2019 Surveyed Flows	Predicted Flows from TA	2019 Surveyed Flows
Left In	67	68	78	77
Right In	38	29	69	25
Left Out	55	54	69	46
Right Out	55	33	69	66
Total	215	184	285	214

The Clayton-le-Woods site is circa 60 miles from the application site in Wrexham and in my view very similar. It is very close to an established large food retailer and adjacent to a principal route. I have provided a map at **Appendix 1** to show the two sites in context and some photos to show the improvements made by Lidl to the local highway network. You could in fact argue that the Clayton-le-Woods site should be more reliant on the private car given the fact that the current application site is adjacent to Wrexham town centre.

As a result, I do not believe that your highways colleagues should be at all concerned about Lidl's proposals and any potential increase in traffic on the local highway network.

That said, I am aware that without further Arcady model runs, your highways colleagues are likely to feel exposed under questioning at committee. I therefore provide on a without-prejudice basis, the following Arcady modelling results and the output at **Appendix 2**.

We have made site-specific adjustments to the slope and intercept in order to achieve a better validation against observed queuing levels. Please note that the queue levels reported by TPS in their August objection letter were maxima, not averages, across the time period. The results of the base-year modelling against observed queues is provided below at Table 3.

**Table 3: Observed and Predicted Queue Length Comparison – 2018 Baseline Traffic Flows
Police Station Roundabout**

Approach	Average Observed Queue				Mean Modelled Queue			
	Weekday		Saturday		Weekday		Saturday	
	PM Peak		midday Pk		PM Peak		midday Pk	
	No.	Length	No.	Length	No.	Length	No.	Length
	PCUs	(m)	PCUs	(m)	PCUs	(m)	PCUs	(m)
Powell	3	17.25	4	23	2.4	13.8	4.6	26.45
Road	1	5.75	2	11.5				
Alexandra	1	5.75	0	0	0.0	0	0.0	0
CP Schl								
Asda	4	23	3	17.25	2.4	13.8	5.0	28.75
	2	11.5	2	11.5				
A5152	4	23	3	17.25	3.1	17.83	3.4	19.55
	2	11.5	2	11.5				
Lidl	1	5.75	0	0	0.1	0	0.0	0
Access								

Note: Double observed entries represent multiple lanes. Arcady summarises across entire entry width.

The full Arcady output provided at **Appendix 2** shows how the weekday peak hour level of service is relatively unchanged between now and 2023 with Lidl development traffic in place. For the Saturday, the starting level of service for the Asda arm for example is already at level E. This deteriorates to a Level F in 2023 without Lidl and remains at F when Lidl traffic is in place.

Powell Road is at a Level C in 2018, this deteriorates to a Level D in 2023 with no Lidl traffic and to a Level E when Lidl traffic is added. At no point though, in this without-prejudice model, does the Ratio of Flow to Capacity (RFC) exceed 1.00 on any arm.

I do hope that the information provided within this letter is sufficient to enable your highways colleagues now to report confidently to committee and to respond with a positive recommendation to you in highways terms.

If there is anything else I can help you with in the meantime, though, please do not hesitate to contact me.

Yours sincerely

A handwritten signature in black ink, appearing to read 'J.R. Budd', with a stylized, flowing script.

Jim Budd
Director
On behalf of SCP

jim.budd@scptransport.co.uk

S|C|P

APPENDIX 1



CLAYTON-LE-WOODS, CHORLEY

1 h 10 min - 1 h 15 min
69.3 miles



1 h 5 min - 1 h 30 min
63.5 miles





**Above: Lidl at Clayton-le-Woods, Chorley, April 2019.
Store and Section 278 works close to completion prior to opening**



**Above: Site prior to construction in April 2018.
Note lack of crossing facilities for nearby school**

S|C|P

APPENDIX 2

Junctions 9			
ARCADY 9 - Roundabout Module			
Version: 9.5.0.6896 © Copyright TRL Limited, 2018			
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk			
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution			

Filename: A5152_Powell Rd_Bodhyfryd_Access Rdbt_Advanced.j9

Path: \\SCP-SERVER\Projects\Job Library\2018\18111 - Lidl, Wrexham Police Station, Wrexham\Traffic

Data\ARCADY\Review_Sept 2019

Report generation date: 10/10/2019 11:07:32

- »Base 2018, PM
- »Base 2018, SAT
- »Base 2023, PM
- »Base 2023, SAT
- »Base 2023 with Lidl, PM
- »Base 2023 with Lidl, SAT

Summary of junction performance

	PM				SAT			
	Queue (PCU)	Delay (s)	RFC	LOS	Queue (PCU)	Delay (s)	RFC	LOS
Base 2018								
1 - Asda	2.4	24.92	0.69	C	5.0	42.85	0.84	E
2 - A5152	3.1	14.77	0.74	B	3.4	16.14	0.76	C
3 - Lidl Site	0.1	8.57	0.06	A	0.0	8.33	0.01	A
4 - Powell Road	3.1	13.63	0.74	B	4.6	19.07	0.82	C
5 - Alexandra C.P. School	0.0	9.79	0.04	A	0.0	0.00	0.00	A
Base 2023								
1 - Asda	3.2	32.09	0.76	D	8.5	68.38	0.92	F
2 - A5152	4.1	18.57	0.80	C	4.6	20.92	0.82	C
3 - Lidl Site	0.1	8.90	0.06	A	0.0	8.65	0.01	A
4 - Powell Road	4.1	17.18	0.80	C	7.0	27.43	0.88	D
5 - Alexandra C.P. School	0.1	10.48	0.05	B	0.0	0.00	0.00	A
Base 2023 with Lidl								
1 - Asda	3.5	35.38	0.78	E	12.9	100.39	0.97	F
2 - A5152	4.6	20.84	0.81	C	5.7	25.85	0.85	D
3 - Lidl Site	0.2	9.73	0.17	A	0.6	12.53	0.35	B
4 - Powell Road	4.5	18.84	0.81	C	10.0	39.13	0.92	E
5 - Alexandra C.P. School	0.1	10.94	0.05	B	0.0	0.00	0.00	A

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	(untitled)
Location	
Site number	
Date	09/04/2018
Version	
Status	(new file)
Identifier	
Client	
Jobnumber	
Enumerator	SCP\Jeanne Watrin
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	PCU	PCU	perHour	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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 segment length (min)	Run automatically
D1	Base 2018	PM	ONE HOUR	17:00	18:30	15	✓
D2	Base 2018	SAT	ONE HOUR	11:00	12:30	15	✓
D3	Base 2023	PM	ONE HOUR	17:00	18:30	15	✓
D4	Base 2023	SAT	ONE HOUR	11:00	12:30	15	✓
D5	Base 2023 with Lidl	PM	ONE HOUR	17:00	18:30	15	✓
D6	Base 2023 with Lidl	SAT	ONE HOUR	11:00	12:30	15	✓

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	94.000	101.000

Base 2018, 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	A5152_Powell Rd_Bodhyfyd_Access	Standard Roundabout		1, 2, 3, 4, 5	15.96	C

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description
1	Asda	
2	A5152	
3	Lidl Site	
4	Powell Road	
5	Alexandra C.P. School	

Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1 - Asda	4.00	5.00	15.0	10.0	40.0	40.0	
2 - A5152	6.00	7.00	2.0	15.0	40.0	60.0	
3 - Lidl Site	3.50	6.50	12.0	7.3	40.0	40.0	
4 - Powell Road	5.80	7.50	11.0	27.5	40.0	44.0	
5 - Alexandra C.P. School	3.00	6.50	5.0	12.7	40.0	30.0	

Slope / Intercept / Capacity

Arm Intercept Adjustments

Arm	Type	Reason	Direct intercept adjustment (PCU/hr)	Percentage intercept adjustment (%)
1 - Asda	Percentage	queue calibration		95.00
2 - A5152	Percentage	queue calibration		100.00
3 - Lidl Site	Direct		100	
4 - Powell Road	Percentage			98.00
5 - Alexandra C.P. School	Percentage			95.00

Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1 - Asda	0.545	1273
2 - A5152	0.606	1702
3 - Lidl Site	0.541	1478
4 - Powell Road	0.697	1987
5 - Alexandra C.P. School	0.534	1141

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

Arm Capacity Adjustments

Arm	Type	Reason	Percentage capacity adjustment (%)
1 - Asda	Percentage	queue calibration	55.00
2 - A5152	Percentage	queue calibration	64.00
3 - Lidl Site	Percentage	queue calibration	50.00
4 - Powell Road	Percentage	queue calibration	60.00
5 - Alexandra C.P. School	Percentage	queue calibration	70.00

Traffic Demand

Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Run automatically
D1	Base 2018	PM	ONE HOUR	17:00	18:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Asda		ONE HOUR	✓	342	100.000
2 - A5152		ONE HOUR	✓	740	100.000
3 - Lidl Site		ONE HOUR	✓	29	100.000
4 - Powell Road		ONE HOUR	✓	804	100.000
5 - Alexandra C.P. School		ONE HOUR	✓	17	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Asda	2 - A5152	3 - Lidl Site	4 - Powell Road	5 - Alexandra C.P. School
From	1 - Asda	0	185	1	156	0
	2 - A5152	177	0	2	557	4
	3 - Lidl Site	1	8	0	20	0
	4 - Powell Road	200	597	3	0	4
	5 - Alexandra C.P. School	1	10	0	6	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
		1 - Asda	2 - A5152	3 - Lidl Site	4 - Powell Road	5 - Alexandra C.P. School
From	1 - Asda	10	10	10	10	10
	2 - A5152	10	10	10	10	10
	3 - Lidl Site	10	10	10	10	10
	4 - Powell Road	10	10	10	10	10
	5 - Alexandra C.P. School	10	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Asda	0.69	24.92	2.4	C	295	442
2 - A5152	0.74	14.77	3.1	B	638	957
3 - Lidl Site	0.06	8.57	0.1	A	25	38
4 - Powell Road	0.74	13.63	3.1	B	693	1040
5 - Alexandra C.P. School	0.04	9.79	0.0	A	15	22

Base 2018, SAT

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	A5152_Powell Rd_Bodhyfyd_Access	Standard Roundabout		1, 2, 3, 4, 5	22.98	C

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 segment length (min)	Run automatically
D2	Base 2018	SAT	ONE HOUR	11:00	12:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Asda		ONE HOUR	✓	436	100.000
2 - A5152		ONE HOUR	✓	751	100.000
3 - Lidl Site		ONE HOUR	✓	5	100.000
4 - Powell Road		ONE HOUR	✓	882	100.000
5 - Alexandra C.P. School		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
From		1 - Asda	2 - A5152	3 - Lidl Site	4 - Powell Road	5 - Alexandra C.P. School
	1 - Asda	0	241	0	195	0
	2 - A5152	198	0	6	547	0
	3 - Lidl Site	0	1	0	4	0
	4 - Powell Road	342	539	1	0	0
	5 - Alexandra C.P. School	0	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1 - Asda	2 - A5152	3 - Lidl Site	4 - Powell Road	5 - Alexandra C.P. School
	1 - Asda	10	10	10	10	10
	2 - A5152	10	10	10	10	10
	3 - Lidl Site	10	10	10	10	10
	4 - Powell Road	10	10	10	10	10
	5 - Alexandra C.P. School	10	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Asda	0.84	42.85	5.0	E	376	564
2 - A5152	0.76	16.14	3.4	C	648	972
3 - Lidl Site	0.01	8.33	0.0	A	4	6
4 - Powell Road	0.82	19.07	4.6	C	761	1141
5 - Alexandra C.P. School	0.00	0.00	0.0	A	0	0

Base 2023, 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	A5152_Powell Rd_Bodhyfyd_Access	Standard Roundabout		1, 2, 3, 4, 5	20.18	C

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 segment length (min)	Run automatically
D3	Base 2023	PM	ONE HOUR	17:00	18:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Asda		ONE HOUR	✓	365	100.000
2 - A5152		ONE HOUR	✓	790	100.000
3 - Lidl Site		ONE HOUR	✓	29	100.000
4 - Powell Road		ONE HOUR	✓	858	100.000
5 - Alexandra C.P. School		ONE HOUR	✓	18	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
From		1 - Asda	2 - A5152	3 - Lidl Site	4 - Powell Road	5 - Alexandra C.P. School
	1 - Asda	0	197	1	167	0
	2 - A5152	189	0	2	595	4
	3 - Lidl Site	1	8	0	20	0
	4 - Powell Road	213	638	3	0	4
	5 - Alexandra C.P. School	1	11	0	6	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1 - Asda	2 - A5152	3 - Lidl Site	4 - Powell Road	5 - Alexandra C.P. School
	1 - Asda	10	10	10	10	10
	2 - A5152	10	10	10	10	10
	3 - Lidl Site	10	10	10	10	10
	4 - Powell Road	10	10	10	10	10
	5 - Alexandra C.P. School	10	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Asda	0.76	32.09	3.2	D	315	472
2 - A5152	0.80	18.57	4.1	C	681	1022
3 - Lidl Site	0.06	8.90	0.1	A	25	38
4 - Powell Road	0.80	17.18	4.1	C	740	1110
5 - Alexandra C.P. School	0.05	10.48	0.1	B	16	23

Base 2023, SAT

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	A5152_Powell Rd_Bodhyfyd_Access	Standard Roundabout		1, 2, 3, 4, 5	33.66	D

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 segment length (min)	Run automatically
D4	Base 2023	SAT	ONE HOUR	11:00	12:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Asda		ONE HOUR	✓	467	100.000
2 - A5152		ONE HOUR	✓	802	100.000
3 - Lidl Site		ONE HOUR	✓	5	100.000
4 - Powell Road		ONE HOUR	✓	942	100.000
5 - Alexandra C.P. School		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
From		1 - Asda	2 - A5152	3 - Lidl Site	4 - Powell Road	5 - Alexandra C.P. School
	1 - Asda	0	258	0	209	0
	2 - A5152	211	0	6	585	0
	3 - Lidl Site	0	1	0	4	0
	4 - Powell Road	365	576	1	0	0
	5 - Alexandra C.P. School	0	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1 - Asda	2 - A5152	3 - Lidl Site	4 - Powell Road	5 - Alexandra C.P. School
	1 - Asda	10	10	10	10	10
	2 - A5152	10	10	10	10	10
	3 - Lidl Site	10	10	10	10	10
	4 - Powell Road	10	10	10	10	10
	5 - Alexandra C.P. School	10	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Asda	0.92	68.38	8.5	F	403	604
2 - A5152	0.82	20.92	4.6	C	692	1038
3 - Lidl Site	0.01	8.65	0.0	A	4	6
4 - Powell Road	0.88	27.43	7.0	D	813	1219
5 - Alexandra C.P. School	0.00	0.00	0.0	A	0	0

Base 2023 with Lidl, 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	A5152_Powell Rd_Bodhyfyd_Access	Standard Roundabout		1, 2, 3, 4, 5	22.03	C

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 segment length (min)	Run automatically
D5	Base 2023 with Lidl	PM	ONE HOUR	17:00	18:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Asda		ONE HOUR	✓	364	100.000
2 - A5152		ONE HOUR	✓	794	100.000
3 - Lidl Site		ONE HOUR	✓	78	100.000
4 - Powell Road		ONE HOUR	✓	863	100.000
5 - Alexandra C.P. School		ONE HOUR	✓	18	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
		1 - Asda	2 - A5152	3 - Lidl Site	4 - Powell Road	5 - Alexandra C.P. School
From	1 - Asda	0	197	0	167	0
	2 - A5152	189	0	51	550	4
	3 - Lidl Site	0	45	0	33	0
	4 - Powell Road	213	593	53	0	4
	5 - Alexandra C.P. School	1	11	0	6	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1 - Asda	2 - A5152	3 - Lidl Site	4 - Powell Road	5 - Alexandra C.P. School
	1 - Asda	10	10	10	10	10
	2 - A5152	10	10	10	10	10
	3 - Lidl Site	10	10	10	10	10
	4 - Powell Road	10	10	10	10	10
	5 - Alexandra C.P. School	10	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Asda	0.78	35.38	3.5	E	314	471
2 - A5152	0.81	20.84	4.6	C	685	1027
3 - Lidl Site	0.17	9.73	0.2	A	67	101
4 - Powell Road	0.81	18.84	4.5	C	744	1117
5 - Alexandra C.P. School	0.05	10.94	0.1	B	16	23

Base 2023 with Lidl, SAT

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	A5152_Powell Rd_Bodhyfyd_Access	Standard Roundabout		1, 2, 3, 4, 5	44.79	E

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 segment length (min)	Run automatically
D6	Base 2023 with Lidl	SAT	ONE HOUR	11:00	12:30	15	✓

Default vehicle mix	Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Average Demand (PCU/hr)	Scaling Factor (%)
1 - Asda		ONE HOUR	✓	467	100.000
2 - A5152		ONE HOUR	✓	804	100.000
3 - Lidl Site		ONE HOUR	✓	165	100.000
4 - Powell Road		ONE HOUR	✓	956	100.000
5 - Alexandra C.P. School		ONE HOUR	✓	0	100.000

Origin-Destination Data

Demand (PCU/hr)

	To					
From		1 - Asda	2 - A5152	3 - Lidl Site	4 - Powell Road	5 - Alexandra C.P. School
	1 - Asda	0	258	0	209	0
	2 - A5152	211	0	88	505	0
	3 - Lidl Site	0	84	0	81	0
	4 - Powell Road	365	497	94	0	0
	5 - Alexandra C.P. School	0	0	0	0	0

Vehicle Mix

Heavy Vehicle Percentages

	To					
From		1 - Asda	2 - A5152	3 - Lidl Site	4 - Powell Road	5 - Alexandra C.P. School
	1 - Asda	10	10	10	10	10
	2 - A5152	10	10	10	10	10
	3 - Lidl Site	10	10	10	10	10
	4 - Powell Road	10	10	10	10	10
	5 - Alexandra C.P. School	10	10	10	10	10

Results

Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (PCU)	Max LOS	Average Demand (PCU/hr)	Total Junction Arrivals (PCU)
1 - Asda	0.97	100.39	12.9	F	403	604
2 - A5152	0.85	25.85	5.7	D	693	1040
3 - Lidl Site	0.35	12.53	0.6	B	142	213
4 - Powell Road	0.92	39.13	10.0	E	825	1237
5 - Alexandra C.P. School	0.00	0.00	0.0	A	0	0