

## Appendix DT/19

TN/09/A – Link Capacity July 2020 (Area to the South)

## TECHNICAL NOTE

PROJECT: Peel Hall, Warrington

REPORT: 1901/TN/09/A – Link Capacity

DATE: July 2020

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1. This Technical Note (TN/09/A) has been prepared by Highgate Transportation Ltd to help quantify and explain the implications of increased traffic flows on the residential area to the immediate south of the Peel Hall development in terms of impact on link capacity. In particular this Technical Note considers whether or not the development traffic results in a harmful change to where any given road sits within the local road hierarchy, further to the 2018 Inspector's comments {IR13.45-13.54} regarding possible impact on the character of the local area.
  2. This Technical Note should be read in conjunction with Technical Note (TN/10/A), which considers parking and traffic calming measures in the area to the south of the Peel Hall site, which could be funded if required. This is in order to address the 2018 Inspector's comment {IR13.50} that development traffic within this area would result in conditions that would be busier, noisier and potentially make it more difficult for pedestrians to cross.
  3. This report is structured to show a comparison with the 2022 Do Minimum (no Peel Hall development) traffic flows from the Peel Hall WMMTM16 SATURN modelling and the forecast 2032 Do Minimum and 2032 Do Something (full Peel Hall development) traffic flows at different locations on the area to the south, as identified by the Inspector {IR13.49}. These links are Poplars Avenue, Capesthorne Road, Cleveland Road, Cotswold Road, Howson Road and Sandy Lane. We have also identified Statham Avenue, Greenwood Crescent and Sandy Lane West.

### Traffic Flows

4. **Table 1** shows two-way traffic flows on those road links within the study area listed in **paragraph 2** during both the AM Peak hour (0800-0900) and PM Peak hour (1700-1800) periods, as well as daily flows (AADT24) for a 2022 (year of opening) Do Minimum scenario. AADT24 data is based on a methodology and factors agreed with the Council, and Highways England (see correspondence contained in **Appendix 1**).

Table 1 – 2022 link flows within the study area (Do Minimum)

Link Name	AM Peak Hour	PM Peak Hour	AADT_24
	2022 DM	2022 DM	2022 DM
Capesthorne Road (Greenwood Crescent to Blackbrook Avenue)	848	782	7309
Capesthorne Road (Poplars Ave - parallel to Humber Road)	496	617	4991
Cleveland Road	316	375	3801
Cotswold Road	40	36	418
Howson Road	43	39	451
Greenwood Crescent (Darley Ave to Grasmere Ave)	297	9	1683
Greenwood Crescent ( Grasmere Ave to Meteor Cres)	482	84	3114
Poplars Avenue - East of (Central) Site entrance	383	440	4528
Poplars Avenue (Greenwood Cres - Capesthorne Road)	758	1042	9902
Poplars Avenue (south of Capesthorne Road)	740	685	7839
Sandy Lane West	578	774	7438
Sandy Lane	330	493	4528
Statham Avenue	353	431	4313

5. **Table 2** sets out the two-way traffic flows on the road links during the AM Peak hour (0800-0900) and PM Peak hour (1700-1800) for 2032 Do Minimum, along with the forecast daily flows (AADT24). The 'Flow 1' and 'Flow 2' columns are the forecast flows in each direction on the respective link.

Table 2 – 2032 link flows within the study area (Do Minimum)

Link Name	AM Peak Hour			PM Peak Hour			AADT_24
	2032 DM (Flow 1)	2032 DM (Flow 2)	2032 DM (Two-Way)	2032 DM (Flow 1)	2032 DM (Flow 2)	2032 DM (Two-Way)	2032 DM
Capesthorne Road (Greenwood Crescent to Blackbrook Avenue)	580	443	1023	577	407	984	9004
Capesthorne Road (Poplars Ave - parallel to Humber Road)	443	261	704	484	322	806	6771
Cleveland Road	244	286	530	190	366	556	5988
Cotswold Road	13	30	43	22	11	33	419
Howson Road	26	22	48	17	23	40	485
Greenwood Crescent (Darley Ave to Grasmere Ave)	129	181	310	5	3	8	1753
Greenwood Crescent ( Grasmere Ave to Meteor Cres)	242	269	511	44	49	93	3325
Poplars Avenue - East of (Central) Site entrance	398	208	606	374	256	630	6809
Poplars Avenue (Greenwood Cres - Capesthorne Road)	575	489	1064	505	786	1291	12984
Poplars Avenue (south of Capesthorne Road)	454	416	870	320	417	737	8871
Sandy Lane West	418	510	928	552	513	1065	10988
Sandy Lane	274	201	475	186	419	605	5955
Statham Avenue	299	118	417	362	95	457	4819

6. **Table 3** sets out the comparison between the 2022 Do Minimum and 2032 Do Minimum link flows to demonstrate the forecast background traffic growth on the roads through this area to the south.

**Table 3 – Comparison between 2022 and 2032 Do Minimum link flows**

Link Name	AM Peak Hour	PM Peak Hour	AADT_24
	2032 DM - 2022 DM (Two-Way)	2032 DM - 2022 DM (Two-Way)	2032 DM - 2022 DM
Capesthorne Road (Greenwood Crescent to Blackbrook Avenue)	175	202	1695
Capesthorne Road (Poplars Ave - parallel to Humber Road)	208	189	1780
Cleveland Road	214	181	2186
Cotswold Road	3	-3	1
Howson Road	5	1	34
Greenwood Crescent (Darley Ave to Grasmere Ave)	13	-1	70
Greenwood Crescent ( Grasmere Ave to Meteor Cres)	29	9	211
Poplars Avenue - East of (Central) Site entrance	223	190	2282
Poplars Avenue (Greenwood Cres - Capesthorne Road)	306	249	3082
Poplars Avenue (south of Capesthorne Road)	130	52	1032
Sandy Lane West	350	291	3551
Sandy Lane	145	112	1427
Statham Avenue	64	26	506

- It can be seen from this flow information that the busier links account for use by through-traffic. A comparison between the 2022 and 2032 Do Minimum SATURN results demonstrate that the flows through the area are expected to substantially increase over time on the majority of links even without Peel Hall development traffic i.e. up to around 200vph or around 2,000-3,000vpd.
- Table 4** sets out the two-way traffic flows on the road links during the AM Peak hour (0800-0900) and PM Peak hour (1700-1800) for 2032 Do Something, along with the forecast daily flows (AADT24).

**Table 4 – 2032 link flows within the study area (Do Something)**

Link Name	AM Peak Hour			PM Peak Hour			AADT_24
	2032 DS (full) (Flow 1)	2032 DS (full) (Flow 2)	2032 DS (full) Two-Way	2032 DS (full) (Flow 1)	2032 DS (full) (Flow 2)	2032 DS (full) Two-Way	2032 DS (full)
Capesthorne Road (Greenwood Crescent to Blackbrook Avenue)	800	686	1486	812	570	1382	12860
Capesthorne Road (Poplars Ave - parallel to Humber Road)	648	399	1047	711	477	1188	10022
Cleveland Road	299	341	640	241	431	672	7234
Cotswold Road	46	40	86	45	37	82	921
Howson Road	44	23	67	32	41	73	783
Greenwood Crescent (Darley Ave to Grasmere Ave)	135	264	399	8	6	14	2277
Greenwood Crescent ( Grasmere Ave to Meteor Cres)	212	350	562	44	49	93	3611
Poplars Avenue - East of (Central) Site entrance	564	300	864	495	432	927	9875
Poplars Avenue (Greenwood Cres - Capesthorne Road)	680	628	1308	1014	616	1630	16204
Poplars Avenue (south of Capesthorne Road)	508	556	1064	339	476	815	10365
Sandy Lane West	503	562	1065	638	595	1233	12670
Sandy Lane	276	213	489	189	443	632	6186
Statham Avenue	401	108	509	434	102	536	5756

Table 5 – Comparison between 2032 Do Minimum and 2032 Do Something link flows

Link Name	AM Peak Hour	PM Peak Hour	AADT_24
	2032 DS (full) - 2032 DM Two-Way	2032 DS (full) - 2032 DM Two-Way	2032 DS (Full) - 2032 DM
Capesthorne Road (Greenwood Crescent to Blackbrook Avenue)	463	398	3856
Capesthorne Road (Poplars Ave - parallel to Humber Road)	343	382	3251
Cleveland Road	110	116	1246
Cotswold Road	43	49	502
Howson Road	19	33	298
Greenwood Crescent (Darley Ave to Grasmere Ave)	89	6	524
Greenwood Crescent ( Grasmere Ave to Meteor Cres)	51	0	287
Poplars Avenue - East of (Central) Site entrance	258	297	3066
Poplars Avenue (Greenwood Cres - Capesthorne Road)	244	339	3220
Poplars Avenue (south of Capesthorne Road)	194	78	1494
Sandy Lane West	137	168	1682
Sandy Lane	14	27	232
Statham Avenue	92	79	937

9. It can be seen from **Table 5** that the increase in traffic as a result of the full Peel Hall development in 2032 varies across the links of between 1 to 461vph and 232 to 3,856vpd.
10. Furthermore, the Tables show development traffic impact to be very low on Sandy Lane and Howson Road (one vehicle every two to four minutes), with low increases of around 40 to 80vph on Cotswold Road, Greenwood Crescent and Statham Avenue i.e. around one vehicle per minute. Larger impacts are forecast on Cleveland Road and Sandy Lane West of around 110 to 170vph (two to three vehicles per minute) increasing to between 250 to 450vph Capesthorne Road and Poplars Avenue i.e. four to seven vehicles per minute.

### Traffic Capacity

11. The assessment procedure to determine the traffic capacity of urban roads is set out in Transport Advice Note TA 79/99 (May 1999) – see **Appendix 2**.
12. For the category UAP3 (Urban All Purpose Road Type 3 - variable standard roads carrying mixed traffic with HGV content less than 15%) it can be seen that this includes roads like those in the area to the immediate south of Peel Hall which have frontage access, side roads, bus stops and at-grade pedestrian crossings, and a 30mph speed restriction. Table 2 of this document gives the capacities of urban roads showing one-way hourly flows where the flows for a single carriageway are based upon a 60/40 directional split in the flow with the flows shown representing the busiest flow (60% figure).

Table 2 – TA 79/99

		Two-way Single Carriageway- Busiest direction flow (Assumes a 60/40 directional split)									Dual Carriageway			
		Total number of Lanes									Number of Lanes in each direction			
		2			2-3	3	3-4	4	4+	2		3	4	
Carriageway width		6.1m	6.75m	7.3m	9.0m	10.0m	12.3m	13.5m	14.6m	18.0m	6.75m	7.3m	11.0m	14.6m
Road type	UM	Not applicable										4000	5600	7200
	UAP1	1020	1320	1590	1860	2010	2550	2800	3050	3300	3350	3600	5200	*
	UAP2	1020	1260	1470	1550	1650	1700	1900	2100	2700	2950	3200	4800	*
	UAP3	900	1110	1300	1530	1620	*	*	*	*	2300	2600	3300	*
	UAP4	750	900	1140	1320	1410	*	*	*	*	*	*	*	*

**Table 2 Capacities of Urban Roads  
One-way hourly flows in each direction**

Notes

1. Capacities are in vehicles per hour.
2. HGV ≤ 15%
3. (\*) Capacities are excluded where the road width is not appropriate for the road type and where there are too few examples to give reliable figures.

13. The widths of the roads set out in **Tables 1 to 5** are set out in **Table 6**, together with the busiest direction peak hour flow limit identified in TA 79/99 Table 2 above.

**Table 6 – Road Widths**

Road	Width (metres)	TA 79/99 Table 2 – Busiest Direction Peak Hour Flow
Poplars Avenue	7.3	1300
Cotswold Road	7.3	1300
Cleveland Road	6.1	900
Howson Road	7.3	1300
Capesthorne Rd (Poplars Ave. - parallel to Humber Dr)	6.1	900
Capesthorne Rd (Greenwood Cres. - Blackbrook Ave.)	7.3	1300
Sandy Lane	7.3	1300
Sandy Lane West	6.1	900
Greenwood Crescent	7.3	1300
Statham Avenue	7.3	1300

14. Further guidance regarding traffic flow and safety for roads with frontage access is given in Manual for Streets (2007). Paragraph 7.9.5 contains the following:

7.9.5 It is recommended that the limit for providing direct access on roads with a 30 mph speed restriction is raised to at least 10,000 vehicles per day (see box).

#### **Traffic flow and road safety for streets with direct frontage access**

The relationship between traffic flow and road safety for streets with direct frontage access was researched for MfS. Data on recorded accidents and traffic flow for a total of 20 sites were obtained. All of the sites were similar in terms of land use (continuous houses with driveways), speed limit (30 mph) and geometry (single-carriageway roads with limited side-road junctions). Traffic flows at the sites varied from some 600 vehicles per day to some 23,000 vehicles per day, with an average traffic flow of some 4,000 vehicles per day.

It was found that very few accidents occurred involving vehicles turning into and out of driveways, even on heavily-trafficked roads.

Links with direct frontage access can be designed for significantly higher traffic flows than have been used in the past, and there is good evidence to raise this figure to 10,000 vehicles per day. It could be increased further, and it is suggested that local authorities review their standards with reference to their own traffic flows and personal injury accident records. The research indicated that a link carrying this volume of traffic, with characteristics similar to those studied, would experience around one driveway-related accident every five years per kilometre. Fewer accidents would be expected on links where the speed of traffic is limited to 20 mph or less, which should be the aim in residential areas.

15. From this it can be seen that:
- i. The Manual for Streets studies included roads with flows of 23,000vpd.
  - ii. The guidance figure of 10,000vpd can be increased further.
  - iii. Their studies showed that very few accidents occurred involving vehicles turning into and out of driveways.
  - iv. Fewer accidents would be expected on links where the speed of traffic is limited to 20mph.

It should also be noted that the main changes in the approach to link capacity that Manual for Streets recommends (paragraph 1.6.1) are:

- Moving away from hierarchies of standard road types based on traffic flows and/or the number of buildings served.
- Designing to keep vehicle speeds at or below 20 mph on residential streets unless there are overriding reasons for accepting higher speeds.
- Using the minimum of highway design features necessary to make the streets work properly.

16. This information above (Manual for Streets, Table 2 of TA 79/99 and **Table 6**) is compared to the data in **Tables 2 to 5** to summarise the development impact on link flow capacity. This is set out in **Table 7**.

**Table 7 – Summary for 2032 Development Impact on Link Capacity**

Road	Comments
Poplars Avenue	<p>This road is around 7.3m wide and in the busiest peak hour (PM) the busiest directional flow forecast in 2032 (with development traffic) is 1,014vph between Greenwood Crescent and Capesthorne Road. This is well below the DMRB figure of 1,300vph in the busiest direction.</p> <p>The forecast AADT24 figures range from 6,809vpd to 12,984vpd for a 2032 'without development' scenario.</p> <p>The 'with development' forecast AADT24 figures range from 9,875vpd to 16,204vpd.</p>
Cotswold Road	<p>This road is around 7.3m wide and in the busiest peak hour (PM) with the busiest directional flow forecast in 2032 (with development traffic) of 46vph. This is well below the DMRB figure of 1,300vph in the busiest direction.</p> <p>The forecast AADT24 is 419vpd for a 2032 'without development' scenario.</p> <p>The 'with development' forecast AADT24 is 921vpd.</p>
Cleveland Road	<p>This road is around 6.1m wide and in the busiest peak hour (PM) with the busiest directional flow forecast in 2032 (with development traffic) of 431vph. This is well below the DMRB figure of 900vph in the busiest direction.</p> <p>The forecast AADT24 is 5,988vpd for a 2032 'without development' scenario.</p> <p>The 'with development' forecast AADT24 is 7,234vpd.</p>



Table 7 – continued...

Road	Comments
Howson Road	<p>This road is around 7.3m wide and in the busiest peak hour (AM) with the busiest directional flow forecast in 2032 (with development traffic) of 44vph. This is well below the DMRB figure of 1,300vph in the busiest direction.</p> <p>The forecast AADT24 is 485vpd for a 2032 'without development' scenario.</p> <p>The 'with development' forecast AADT24 is 783vpd.</p>
Capesthorpe Rd (Poplars Ave. - parallel to Humber Dr)	<p>This road is around 6.1m wide and in the busiest peak hour (PM) with the busiest directional flow forecast in 2032 (with development traffic) of 711vph. This is below the DMRB figure of 900vph in the busiest direction.</p> <p>The forecast AADT24 is 6,771vpd for a 2032 'without development' scenario.</p> <p>The 'with development' forecast AADT24 is 10,022vpd.</p>
Capesthorpe Rd (Greenwood Cres. - Blackbrook Ave.)	<p>This road is around 7.3m wide and in the busiest peak hour (PM) with the busiest directional flow forecast in 2032 (with development traffic) of 812vph. This is well below the DMRB figure of 1,300vph in the busiest direction.</p> <p>The forecast AADT24 is 9,004vpd for a 2032 'without development' scenario.</p> <p>The 'with development' forecast AADT24 is 12,860vpd.</p>
Sandy Lane	<p>This road is around 7.3m wide and in the busiest peak hour (PM) with the busiest directional flow forecast in 2032 (with development traffic) of 443vph. This is well below the DMRB figure of 1,300vph in the busiest direction.</p> <p>The forecast AADT24 is 5,955vpd for a 2032 'without development' scenario.</p> <p>The 'with development' forecast AADT24 is 6,186vpd.</p>
Sandy Lane West	<p>This road is around 6.1m wide and in the busiest peak hour (PM) with the busiest directional flow forecast in 2032 (with development traffic) of 638vph. This is well below the DMRB figure of 900vph in the busiest direction.</p> <p>The forecast AADT24 is 10,988vpd for a 2032 'without development' scenario.</p> <p>The 'with development' forecast AADT24 is 12,670vpd.</p>

Table 7 – continued...

Road	Comments
Greenwood Crescent	<p>This road is around 7.3m wide and in the busiest peak hour (AM) with the busiest directional flow forecast in 2032 (with development traffic) of 350vph. This is well below the DMRB figure of 1,300vph in the busiest direction.</p> <p>The highest forecast AADT24 is 3,325vpd for a 2032 'without development' scenario.</p> <p>The 'with development' highest forecast AADT24 is 3,611vpd.</p>
Statham Avenue	<p>This road is around 7.3m wide and in the busiest peak hour (PM) with the busiest directional flow forecast in 2032 (with development traffic) of 434vph. This is well below the DMRB figure of 1,300vph in the busiest direction.</p> <p>The forecast AADT24 is 4,819vpd for a 2032 'without development' scenario.</p> <p>The 'with development' forecast AADT24 is 5,756vpd.</p>

*\*Note – measurements based on a combination of topographical survey (where available) and OS mapping supplemented by Google Earth*

17. **Table 7** demonstrates that using the methodology set out in TA 79/99 none of the links exceed the threshold figure given in the advice note.
18. The roads within the immediate area to the south of the Peel Hall site are road type UAP3, such as Sandy Lane West, Poplars Avenue and Capesthorpe Road. These will remain as UAP3 roads with the addition of the Peel Hall traffic and it can therefore be seen that there will be no change in road hierarchy.
19. Furthermore, the recommendation within Manual for Streets is that the threshold figure is at least 10,000vpd (for a 30mph road) and it can be seen that the AADT24 figures are generally below this guideline on all roads except for Sandy Lane West, Poplars Avenue and Capesthorpe Road, which form the main established through-traffic route.
20. Therefore, from the Manual for Streets guidelines it is considered that the figures shown in **Table 7** are acceptable. Additionally, this 10,000vpd threshold would increase with a reduction in speed limit.
21. TA 79/99 further states in paragraph 3.6 that, "*..effective parking restrictions can lead to higher flows*" and it is considered that mitigation such as the provision of developer funding to extend the 20mph speed restriction along the entire length of Poplars Avenue and also into Capesthorpe Road (between Poplars Avenue and Blackbrook Avenue, past St Bridget's Catholic Primary School), and to provide parking within the grass verges of these road links, which would be to formalise what occurs at present, will be beneficial (see HTP Technical Note TN/10/A dated July 2020).

## Summary

22. Whilst inevitably there will be an impact from development traffic on the amenity of the residents in the properties either side of the new accesses onto Poplars Avenue, both Poplars Avenue and the proposed access roads are designed to the appropriate standards i.e. Poplars Avenue is currently a 7.3 metre wide UAP3 road and will remain so apart from local widening to accommodate the access junction. The new access road will also be a road type UAP3.
23. The access junctions have been subject to Road Safety Audit and would be no different than the form of junction that you would see throughout an equivalent residential area.
24. Furthermore, in Transport for the Urban Environment it is set out on page 147 that, "*the existing pattern of land use has to be serviced by an affordable adaptation of the existing network, and much of which may have developed in haphazard ways over the history of the settlement. The initial definition of a hierarchy will necessarily have to be a practical compromise but identification of the current mixture of functions of each road and the scope for modifying it, over a period of time, is an important starting point for subsequent decisions about traffic management and development control, especially as it affects frontage access*".
25. Therefore, in highway terms the impact of the development traffic on the area to the south should be considered acceptable.
26. As set out in Technical Note TN/10/A, a range of parking and traffic calming measures to the area to the south of the Peel Hall site are available to address the 2018 Inspector's concerns regarding safety in general and pedestrian safety in the event that it is considered mitigation is essential.

# Appendix 1

## AADT Methodology and Factors

**Subject:** RE: Peel Hall - AADT and AAWT  
**Date:** Wednesday, 13 November 2019 at 08:21:04 Greenwich Mean Time  
**From:** Taylor, Mike  
**To:** Fiona Bennett  
**CC:** dave.tighe, Wright, Colin, Dickin, Alan  
**Attachments:** image001.png, image002.png

Fiona,

As per my previous email apologies for the delay.

The conversion factors have been identified as directional whereas it may be simpler to provide a flow-weighted average for each area; for example modification of Table 1 would give:

<b>A49</b>	AM	PM	24AADT	AADT Fac	18AAWT	AAWT Fac
NB	1096	1662	20435	14.819	20712	15.020
SB	1718	1362	20583	13.366	21035	13.659
TOTAL	2814	3024	41018	14.052	41747	14.302

I would appreciate your consideration and comment on this point.

Regards

Mike

**Mike Taylor**

Transport Development Control Team Leader

Environment and Transport Directorate  
Transport for Warrington  
Warrington Borough Council  
New Town House, Buttermarket Street, Warrington, WA1 2NH

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**From:** Fiona Bennett [mailto:fiona.bennett@highgatetransportation.co.uk]  
**Sent:** 25 October 2019 15:05  
**To:** Taylor, Mike <mike.taylor@warrington.gov.uk>  
**Cc:** dave.tighe <dave.tighe@highgatetransportation.co.uk>; Wright, Colin <Colin.Wright@wsp.com>; Dickin, Alan <adickin@warrington.gov.uk>  
**Subject:** Peel Hall - AADT and AAWT

Afternoon Mike,

Please find attached the updated TN/08 (Revision A). Hopefully this will clarify matters.

Happy to discuss.

**Subject:** Re: Peel Hall - AADT and AAWT  
**Date:** Wednesday, 13 November 2019 at 09:19:44 Greenwich Mean Time  
**From:** Fiona Bennett  
**To:** Taylor, Mike  
**CC:** dave.tighe, Wright, Colin, Dickin, Alan  
**Attachments:** image001.png, image002.png

Good morning Mike,

We are happy to provide a flow-weighted average for each area as you suggest in your email below. This will certainly make it simpler for all parties going forwards.

We will update the tables from TN/08/A following the methodology you set out in your modified Table 1 below, email across for your records and proceed on this basis for the provision of data to feed into the Noise and Air Quality assessments.

We should be in a position to send across the analysed WMMTM16 data in spreadsheet and flow diagram format shortly. Hopefully we can then arrange a meeting to discuss the next steps in terms of impact, analysis and mitigation.

Kind regards,  
Fiona

Fiona Bennett  
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**From:** "Taylor, Mike" <mike.taylor@warrington.gov.uk>  
**Date:** Wednesday, 13 November 2019 at 08:21  
**To:** Fiona Bennett <fiona.bennett@highgatetransportation.co.uk>  
**Cc:** "dave.tighe" <dave.tighe@highgatetransportation.co.uk>, "Wright, Colin" <Colin.Wright@wsp.com>, "Dickin, Alan" <adickin@warrington.gov.uk>  
**Subject:** RE: Peel Hall - AADT and AAWT

Fiona,

As per my previous email apologies for the delay.

The conversion factors have been identified as directional whereas it may be simpler to provide a flow-weighted average for each area; for example modification of Table 1 would give:

**Subject:** Peel Hall - Traffic Flow Data - AADT and AAWT Factors  
**Date:** Thursday, 21 November 2019 at 14:28:24 Greenwich Mean Time  
**From:** Fiona Bennett  
**To:** Taylor, Mike  
**CC:** dave.tighe, Wright, Colin, Dickin, Alan  
**Attachments:** image001.png, image002.png, image003.png

Dear Mike,

I am about to send via WeTransfer Peel Hall flow diagrams across all scenarios for Access Strategy A, the accompanying spreadsheets and original AECOM datasets. We will send across the same for Access Strategy B shortly, once finalised.

In terms of AADT/AAWT factors, we have updated the tables from TN/08/A further to your email of 13<sup>th</sup> November as follows:

**Table 1 – A49 flows and conversion factors**

	<b>AM Flow</b>	<b>PM Flow</b>	<b>24-hour Flow</b>	<b>24-hour AADT scale factor</b>	<b>18-hour Flow</b>	<b>18-hour AAWT scale factor</b>
<b>7-Day</b>						
Northbound A49**			20,435	14.817		
Southbound A49**			20,583	13.366		
<b>5-Day</b>						
Northbound A49**	1,096	1,662			20,712	15.017
Southbound A49**	1,718	1,362			21,035	13.660
<b>Total</b>	<b>2,814*</b>	<b>3,024*</b>	<b>41,018*</b>	<b>14.052</b>	<b>41,747*</b>	<b>14.302</b>

\*\* Figures taken directly from Excel 8551 – A49 Winwick Road – ATC Survey Results\_FB

\* Sum of tabulated figures

**Table 2 – A50 flows and conversion factors**

	<b>AM Flow</b>	<b>PM Flow</b>	<b>24-hour Flow</b>	<b>24-hour AADT scale factor</b>	<b>18-hour Flow</b>	<b>18-hour AAWT scale factor</b>
<b>7-Day</b>						
Westbound A50*			7,707	10.939		
Eastbound A50*			7,308	11.805		
<b>5-Day</b>						
Westbound A50*	712	697			8,170	11.595
Eastbound A50*	594	644			7,822	12.634
<b>Total (as above)</b>	<b>1,306</b>	<b>1,341</b>	<b>15,015</b>	<b>11.345</b>	<b>15,992</b>	<b>12.083</b>

\* Figures taken directly from Excel Warrington A50 ATC\_FB

**Table 3 – Poplars Avenue flows and conversion factors**

	AM Flow	PM Flow	24-hour Flow	24-hour AADT scale factor	18-hour Flow	18-hour AAWT scale factor
<b>7-Day</b>						
Westbound Poplars*			2,808	11.847		
Eastbound Poplars*			2,970	10.347		
<b>5-Day</b>						
Westbound Poplars*	171	303			2,843	11.995
Eastbound Poplars*	330	244			3,102	10.808
<b>Total (as above)</b>	501	547	5,778	<b>11.027</b>	5,945	<b>11.345</b>

Figures taken directly from Excel Warrington Poplars Avenue ATC\_FB

**Table 4 – Blackbrook Avenue flows and conversion factors**

	AM Flow	PM Flow	24-hour Flow	24-hour AADT scale factor	18-hour Flow	18-hour AAWT scale factor
<b>7-Day</b>						
Northbound Blackbrook*			2,867	9.882		
Southbound Blackbrook*			3,294	8.298		
<b>5-Day</b>						
Northbound Blackbrook*	245	335			3,054	10.527
Southbound Blackbrook*	496	298			3,622	9.123
<b>Total (as above)</b>	741	633	6,161	<b>8.968</b>	6,676	<b>9.718</b>

Figures taken directly from Excel Warrington ATC 1115\_FB

**Table 5 – Delph Lane flows and conversion factors**

	AM Flow	PM Flow	24-hour Flow	24-hour AADT scale factor	18-hour Flow	18-hour AAWT scale factor
<b>7-Day</b>						
Northbound Delph*			3,373	8.125		
Southbound Delph*			3,636	8.480		
<b>5-Day</b>						
Northbound Delph*	351	480			3,663	8.822
Southbound Delph*	500	358			3,931	9.168
<b>Total (as above)</b>	851	838	7,009	<b>8.300</b>	7,594	<b>8.992</b>

Figures taken directly from Excel Warrington Delph Lane ATC\_FB

$$\text{AADT FACTOR} * ((\text{SATURN AM} + \text{PM peak hour two-way flows}) / 2) = \text{AADT}_{24}$$

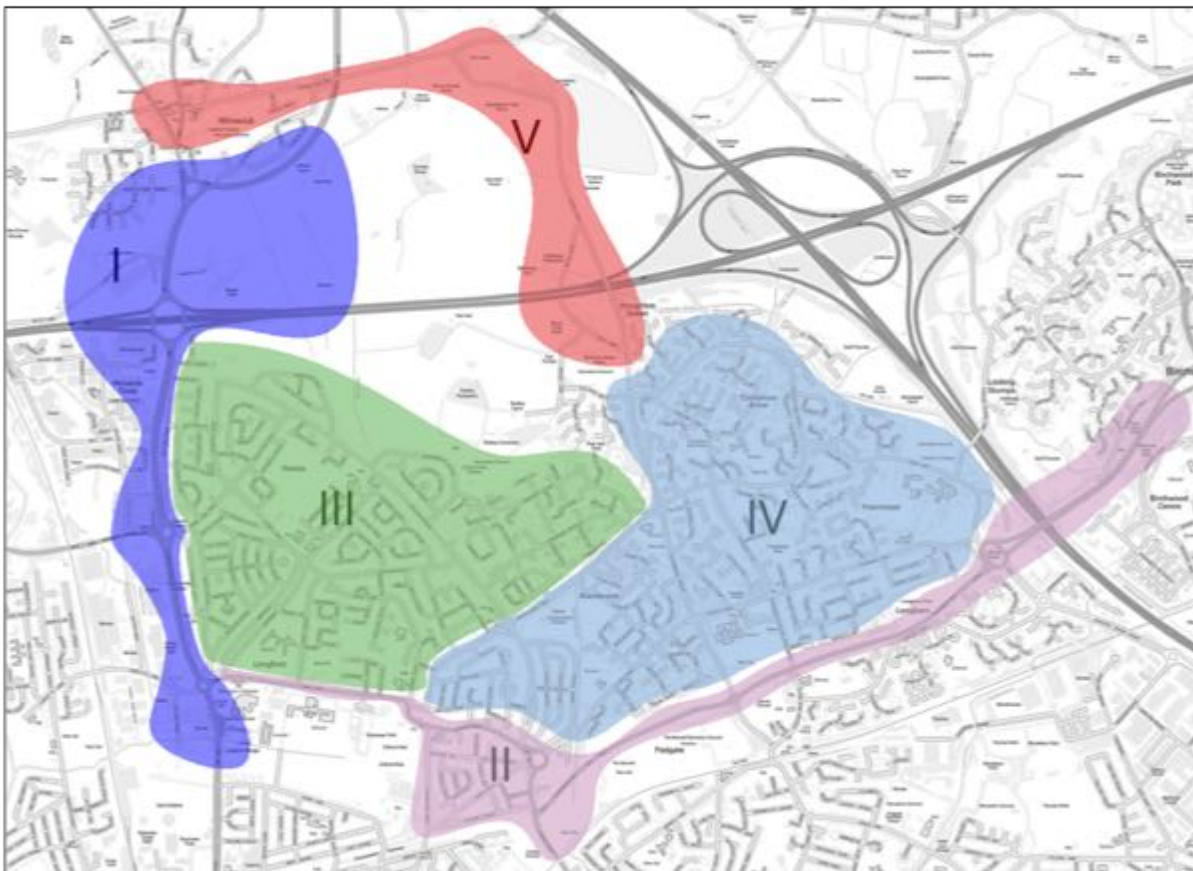
$$\text{AAWT FACTOR} * ((\text{SATURN AM} + \text{PM peak hour two-way flows}) / 2) = \text{AAWT}_{18}$$



**Table 6 – Summary of conversion factors**

24-hour AADT	18-hour AAWT
<b>A49</b>	
14.052	14.302
<b>A50</b>	
11.345	12.083
<b>Poplars Avenue</b>	
11.027	11.345
<b>Blackbrook Avenue</b>	
8.968	9.718
<b>Delph Lane</b>	
8.300	8.992

**Figure 2 TN/08/A - Areas for factors to be used**



It would be good to have a meeting date in the diary for early December – please could you let us know your availability?

Kind regards,

Fiona

Fiona Bennett

Highgate *Transportation*

Tel: 0117 934 9121

Mob: 07595 892 217

[fiona.bennett@highgatetransportation.co.uk](mailto:fiona.bennett@highgatetransportation.co.uk)

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*BRISTOL BS1 5NL*

*Company Registration Number: 07500534*

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**From:** Fiona Bennett <[fiona.bennett@highgatetransportation.co.uk](mailto:fiona.bennett@highgatetransportation.co.uk)>

**Date:** Wednesday, 13 November 2019 at 09:19

**To:** "Taylor, Mike" <[mike.taylor@warrington.gov.uk](mailto:mike.taylor@warrington.gov.uk)>

**Cc:** "dave.tighe" <[dave.tighe@highgatetransportation.co.uk](mailto:dave.tighe@highgatetransportation.co.uk)>, "Wright, Colin" <[Colin.Wright@wsp.com](mailto:Colin.Wright@wsp.com)>, "Dickin, Alan" <[adickin@warrington.gov.uk](mailto:adickin@warrington.gov.uk)>

**Subject:** Re: Peel Hall - AADT and AAWT

Good morning Mike,

We are happy to provide a flow-weighted average for each area as you suggest in your email below. This will certainly make it simpler for all parties going forwards.

We will update the tables from TN/08/A following the methodology you set out in your modified Table 1 below, email across for your records and proceed on this basis for the provision of data to feed into the Noise and Air Quality assessments.

We should be in a position to send across the analysed WMMTM16 data in spreadsheet and flow diagram format shortly. Hopefully we can then arrange a meeting to discuss the next steps in terms of impact, analysis and mitigation.

Kind regards,

Fiona

Fiona Bennett

Highgate *Transportation*

**Subject:** Peel Hall - M62 AAWT and AADT Factors  
**Date:** Monday, 25 November 2019 at 12:54:56 Greenwich Mean Time  
**From:** Fiona Bennett  
**To:** Laverick, Benjamin  
**CC:** Gavin.Coupe@atkinsglobal.com, Dave Tighe (dave.tighe@highgatetransportation.co.uk)  
**Attachments:** image001.png

Afternoon Ben,

Do you have appropriate AADT and 18-hour AAWT factors for the M62 mainline around Junction 9 that we can provide to the Air Quality and Noise teams for factoring up the AM+PM peak hour SATURN flows to corresponding Annual Average Daily Traffic and Annual Average Weekday Traffic?

We have the following factors for the A49:

24-hour AADT	18-hour AAWT
<b>A49</b>	
14.052	14.302

$$\text{AADT FACTOR} * ((\text{SATURN AM+PM peak hour two-way flows}) / 2) = \text{AADT24}$$

$$\text{AAWT FACTOR} * ((\text{SATURN AM+PM peak hour two-way flows}) / 2) = \text{AAWT18}$$

Happy to discuss.

Kind regards,  
Fiona

Fiona Bennett  
**Highgate *Transportation***  
Tel: 0117 934 9121  
Mob: 07595 892 217  
[fiona.bennett@highgatetransportation.co.uk](mailto:fiona.bennett@highgatetransportation.co.uk)

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*BRISTOL BS1 5NL*  
*Company Registration Number: 07500534*

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**Subject:** Peel Hall - M62 AAWT and AADT Factors  
**Date:** Tuesday, 26 November 2019 at 12:36:54 Greenwich Mean Time  
**From:** Fiona Bennett  
**To:** Laverick, Benjamin  
**CC:** dave.tighe, Gavin.Coupe@atkinsglobal.com  
**Attachments:** image001.png

Afternoon Ben,

Further to my email yesterday (below) where I asked if you were happy for us to use the factors provided for the A49 (using 2018 ATC data) to be applied to the M62 mainline future flows for obtaining AADT and AAWT from the AM and PM peak hour flows from the AECOM SATURN data, we have reviewed the AADT24 and AAWT18 2018 Do Minimum flow summaries from the mainline data provided by AECOM (WMMTM16 for Peel Hall) and this is summarised as:

Total two-way average daily traffic of 121,100 (PCU) *(as provided by AECOM)*

Total two-way AM flows of 9,634 (PCU) *(as provided in the dataset)*

Total two-way PM flows of 10,399 (PCU) *(as provided in the dataset)*

**Approximate AADT24 M62 mainline Factor of 12.090**

Total two-way average weekday traffic of 126,790 (PCU) *(as provided by AECOM)*

Total two-way AM flows of 9,634 (PCU) *(as provided in the dataset)*

Total two-way PM flows of 10,399 (PCU) *(as provided in the dataset)*

**Approximate AAWT18 M62 mainline Factor of 12.658**

We will move forward on the basis of the M62 mainline factors as set out above unless we hear otherwise today.

Happy to discuss.

Kind regards,  
Fiona

Fiona Bennett

Highgate *Transportation*

Tel: 0117 934 9121

Mob: 07595 892 217

[fiona.bennett@highgatetransportation.co.uk](mailto:fiona.bennett@highgatetransportation.co.uk)

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**From:** Fiona Bennett <[fiona.bennett@highgatetransportation.co.uk](mailto:fiona.bennett@highgatetransportation.co.uk)>

**Date:** Monday, 25 November 2019 at 12:54

**To:** "Laverick, Benjamin" <[Benjamin.Laverick@highwaysengland.co.uk](mailto:Benjamin.Laverick@highwaysengland.co.uk)>

**Cc:** "[Gavin.Coupe@atkinsglobal.com](mailto:Gavin.Coupe@atkinsglobal.com)" <[Gavin.Coupe@atkinsglobal.com](mailto:Gavin.Coupe@atkinsglobal.com)>, "Dave Tighe"

**Subject:** RE: Peel Hall - M62 AAWT and AADT Factors  
**Date:** Tuesday, 26 November 2019 at 14:03:10 Greenwich Mean Time  
**From:** Laverick, Benjamin  
**To:** Fiona Bennett  
**CC:** dave.tighe  
**Attachments:** image002.png

Hi Fiona,

I am content with the proposed factors as laid out below.

Kind regards

Ben

**Benjamin Laverick, Assistant Asset Manager**

Highways England | Piccadilly Gate | Store Street | Manchester | M1 2WD  
Web: [www.highwaysengland.co.uk](http://www.highwaysengland.co.uk)

---

**From:** Fiona Bennett [mailto:fiona.bennett@highgatetransportation.co.uk]  
**Sent:** 26 November 2019 12:37  
**To:** Laverick, Benjamin <Benjamin.Laverick@highwaysengland.co.uk>  
**Cc:** dave.tighe <dave.tighe@highgatetransportation.co.uk>; Gavin.Coupe@atkinglobal.com  
**Subject:** Peel Hall - M62 AAWT and AADT Factors

Afternoon Ben,

Further to my email yesterday (below) where I asked if you were happy for us to use the factors provided for the A49 (using 2018 ATC data) to be applied to the M62 mainline future flows for obtaining AADT and AAWT from the AM and PM peak hour flows from the AECOM SATURN data, we have reviewed the AADT24 and AAWT18 2018 Do Minimum flow summaries from the mainline data provided by AECOM (WMMTM16 for Peel Hall) and this is summarised as:

Total two-way average daily traffic of 121,100 (PCU) *(as provided by AECOM)*  
Total two-way AM flows of 9,634 (PCU) *(as provided in the dataset)*  
Total two-way PM flows of 10,399 (PCU) *(as provided in the dataset)*  
**Approximate AADT24 M62 mainline Factor of 12.090**

Total two-way average weekday traffic of 126,790 (PCU) *(as provided by AECOM)*  
Total two-way AM flows of 9,634 (PCU) *(as provided in the dataset)*  
Total two-way PM flows of 10,399 (PCU) *(as provided in the dataset)*  
**Approximate AAWT18 M62 mainline Factor of 12.658**

We will move forward on the basis of the M62 mainline factors as set out above unless we hear otherwise today.

Happy to discuss.

Kind regards,  
Fiona

Fiona Bennett  
Highgate *Transportation*

Tel: 0117 934 9121  
Mob: 07595 892 217

TECHNICAL NOTE

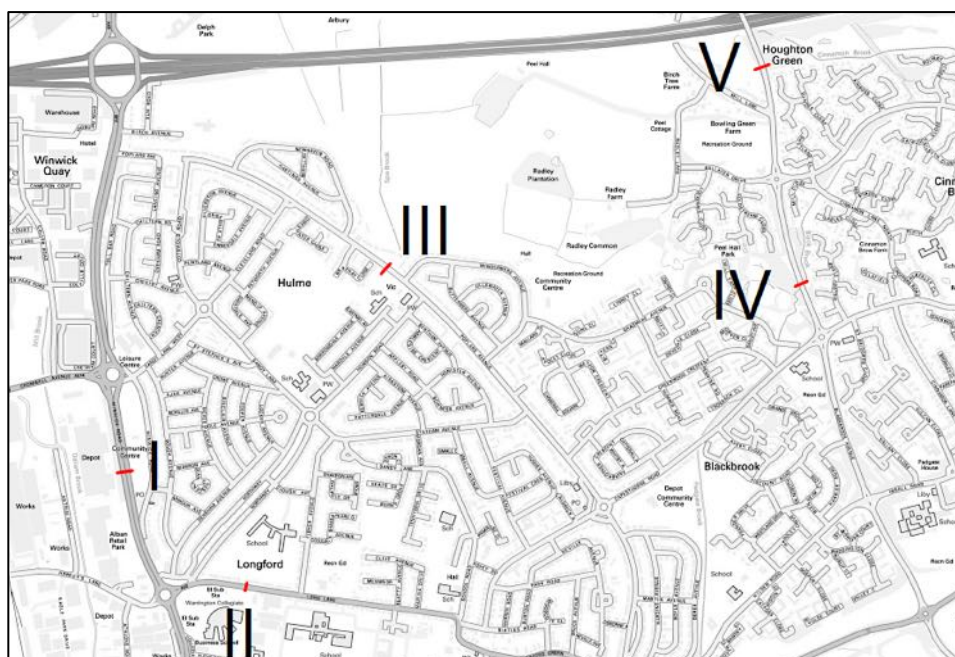
PROJECT: Peel Hall, Warrington

REPORT: 1901/TN/08/A – Conversion factors for 24-Hour AADT & 18-Hour AAWT

DATE: August 2019 (updated September 2019)

1. This Technical Note has been provided to set out the calculation factors for taking the Peel Hall WMMTM16 SATURN model AM and PM peak hour outputs and converting to 24-hour AADT<sup>1</sup> and 18-hour AAWT<sup>2</sup> (0600-2400 hours). This is for the purposes of the Air Quality and Noise Assessments required to support the development of land at Peel Hall, Warrington.
2. The factors are being determined from existing week-long ATC traffic count data from the following roads and the locations of these surveys are indicated on **Figure 1**.
  - i. A49 (2018)
  - ii. A50 (2019)
  - iii. Poplars Avenue (2019)
  - iv. Blackbrook Avenue (2015)
  - v. Delph Lane (2019)

Figure 1 – ATC Location Plan



<sup>1</sup> Average Annual Daily Traffic (7-day)

<sup>2</sup> Average Annual Weekday traffic (5-day)



3. The AM (0800-0900) and PM (1700-1800) two-way weekday flows from the ATC data is provided with the 24-hour weekly data and 18-hour weekday for each site in turn below.
4. The resultant 24-hour AADT and 18-hour AAWT are then presented for agreement with Warrington Borough Council (WBC), using the 5-day average peak hour flows as these are what will be available from the SATURN outputs.

**A49 – Traffic Data**

5. Traffic surveys were undertaken along the A49 between the Sandy Lane West signalised roundabout and the Junction 9 Retail Park three-arm signal junction to the south. The survey was undertaken between Tuesday 20<sup>th</sup> March 2018 and Monday 2<sup>nd</sup> April 2018. Easter was Sunday 1<sup>st</sup> April in 2018, and the Warrington school holidays ran from Saturday 6<sup>th</sup> to Monday 22<sup>nd</sup> April that year. Therefore, the first week of this data has been used (20<sup>th</sup> to 26<sup>th</sup> March 2018).
6. The resultant summary data and conversion factors are provided in **Table 1**.

**Table 1 – A49 flows and conversion factors**

	AM Flow	PM Flow	24-hour Flow	18-hour Flow	24-hour AADT scale factor	18-hour AAWT scale factor
<b>7-Day</b>						
Northbound A49			20,435		14.817	
Southbound A49			20,583		13.366	
<b>5-Day</b>						
Northbound A49	1,096	1,662		20,712		15.017
Southbound A49	1,718	1,362		21,035		13.660

7. The ATC data is provided in **Appendix 1** for reference alongside the data analysis.
8. As set out at **Table 1**, the conversion factors to forecast 24-hour AADT using the peak hour flows from the SATURN model for the A49 corridor is 14.817 and 13.336 for northbound and southbound flows respectively.
9. The corresponding factors for forecasting 18-hour AAWT using the peak hour flows from the SATURN model for the A49 corridor is 15.017 and 13.660 for northbound and southbound flows respectively.
10. Therefore, these factors would be used as follows:

$$\text{AADT DIRECTIONAL FACTOR} * ((\text{AM} + \text{PM peak hour directional flows}) / 2) = \text{AADT24}$$

$$\text{AAWT DIRECTIONAL FACTOR} * ((\text{AM} + \text{PM peak hour directional flows}) / 2) = \text{AAWT18}$$

**A50 – Traffic Data**

11. Traffic surveys were undertaken along the A50. The survey was undertaken between Saturday 30<sup>th</sup> March 2019 and Friday 5<sup>th</sup> April 2019. Easter was Sunday 21<sup>st</sup> April in 2019, and the Warrington school holidays ran from either Saturday 6<sup>th</sup> or Saturday 13<sup>th</sup> to Tuesday 23<sup>rd</sup> or Monday 29<sup>th</sup> April that year.
12. The resultant summary data and conversion factors are provided in **Table 2**.

**Table 2 – A50 flows and conversion factors**

	AM Flow	PM Flow	24-hour Flow	18-hour Flow	24-hour AADT scale factor	18-hour AAWT scale factor
<b>7-Day</b>						
Westbound A50			7,707		10.939	
Eastbound A50			7,308		11.805	
<b>5-Day</b>						
Westbound A50	712	697		8,170		11.595
Eastbound A50	594	644		7,822		12.634

13. The ATC data is provided in **Appendix 2** for reference alongside the data analysis.
14. As set out at **Table 2**, the conversion factors to forecast 24-hour AADT using the peak hour flows from the SATURN model for the A50 corridor is 10.939 and 11.805 for westbound and eastbound flows respectively.
15. The corresponding factors for forecasting 18-hour AAWT using the peak hour flows from the SATURN model for the A50 corridor is 11.595 and 12.634 for westbound and eastbound flows respectively.
16. These factors would be applied as set out in **paragraph 10**.

**Poplars Avenue – Traffic Data**

17. Traffic surveys were undertaken at three locations along Poplars Avenue in March/April 2019. For the purposes of this assessment the busiest of the three locations has been used. This survey location was between the Poplars Avenue junctions with Newhaven Road and Windermere Avenue. The survey was undertaken between Saturday 30<sup>th</sup> March 2019 and Friday 5<sup>th</sup> April 2019.
18. The resultant summary data and conversion factors are provided in **Table 3**.



Table 3 – Poplars Avenue flows and conversion factors

	AM Flow	PM Flow	24-hour Flow	18-hour Flow	24-hour AADT scale factor	18-hour AAWT scale factor
<b>7-Day</b>						
Westbound Poplars			2,808		11.847	
Eastbound Poplars			2,970		10.347	
<b>5-Day</b>						
Westbound Poplars	171	303		2,843		11.995
Eastbound Poplars	330	244		3,102		10.808

19. The ATC data is provided in **Appendix 3** for reference alongside the data analysis.
20. As set out at **Table 3**, the conversion factors to forecast 24-hour AADT using the peak hour flows from the SATURN model for the Poplars Avenue area is 11.847 and 10.347 for westbound and eastbound flows respectively.
21. The corresponding factors for forecasting 18-hour AAWT using the peak hour flows from the SATURN model for the Poplars Avenue area is 11.995 and 10.808 for westbound and eastbound flows respectively.
22. These factors would be applied as set out in **paragraph 10**.

#### Blackbrook Avenue – Traffic Data

23. Traffic surveys were undertaken along Blackbrook Avenue adjacent to Peel Hall Park. The survey was undertaken between Friday 20<sup>th</sup> and Thursday 26<sup>th</sup> November 2015.
24. The resultant summary data and conversion factors are provided in **Table 4**.

Table 4 – Blackbrook Avenue flows and conversion factors

	AM Flow	PM Flow	24-hour Flow	18-hour Flow	24-hour AADT scale factor	18-hour AAWT scale factor
<b>7-Day</b>						
Northbound Blackbrook			2,867		9.882	
Southbound Blackbrook			3,294		8.298	
<b>5-Day</b>						
Northbound Blackbrook	245	335		3,054		10.527
Southbound Blackbrook	496	298		3,622		9.123

25. The ATC data is provided in **Appendix 4** for reference alongside the data analysis.

- 26. As set out at **Table 4**, the conversion factors to forecast 24-hour AADT using the peak hour flows from the SATURN model for the Blackbrook Avenue area is 9.882 and 8.298 for northbound and southbound flows respectively.
- 27. The corresponding factors for forecasting 18-hour AAWT using the peak hour flows from the SATURN model for the Blackbrook Avenue area is 10.527 and 9.123 for northbound and southbound flows respectively.
- 28. These factors would be applied as set out in **paragraph 10**.

**Delph Lane – Traffic Data**

- 29. Additional traffic surveys were undertaken along Delph Lane, effectively a continuation to the north of Blackbrook Avenue and the data reviewed against the older 2015 data. The survey was undertaken between Saturday 30<sup>th</sup> March 2019 and Friday 5<sup>th</sup> April 2019.
- 30. The resultant summary data and conversion factors are provided in **Table 5**.

**Table 5 – Delph Lane flows and conversion factors**

	AM Flow	PM Flow	24-hour Flow	18-hour Flow	24-hour AADT scale factor	18-hour AAWT scale factor
<b>7-Day</b>						
Northbound Delph			3,373		8.125	
Southbound Delph			3,636		8.480	
<b>5-Day</b>						
Northbound Delph	351	480		3,663		8.822
Southbound Delph	500	358		3,931		9.168

- 31. The ATC data is provided in **Appendix 5** for reference alongside the data analysis.
- 32. As set out at **Table 5**, the conversion factor to forecast 24-hour AADT using the peak hour flows from the SATURN model for the Delph Lane area is 8.125 and 8.480 for northbound and southbound flows respectively.
- 33. The corresponding factors for forecasting 18-hour AAWT using the peak hour flows from the SATURN model for the Delph Lane area is 8.822 and 9.126 for northbound and southbound flows respectively.
- 34. Given the 2019 data is more recent, it is considered that the factors from the Delph Lane data will be used to the areas north of the M62.
- 35. These factors would be applied as set out in **paragraph 10**.

**Summary**

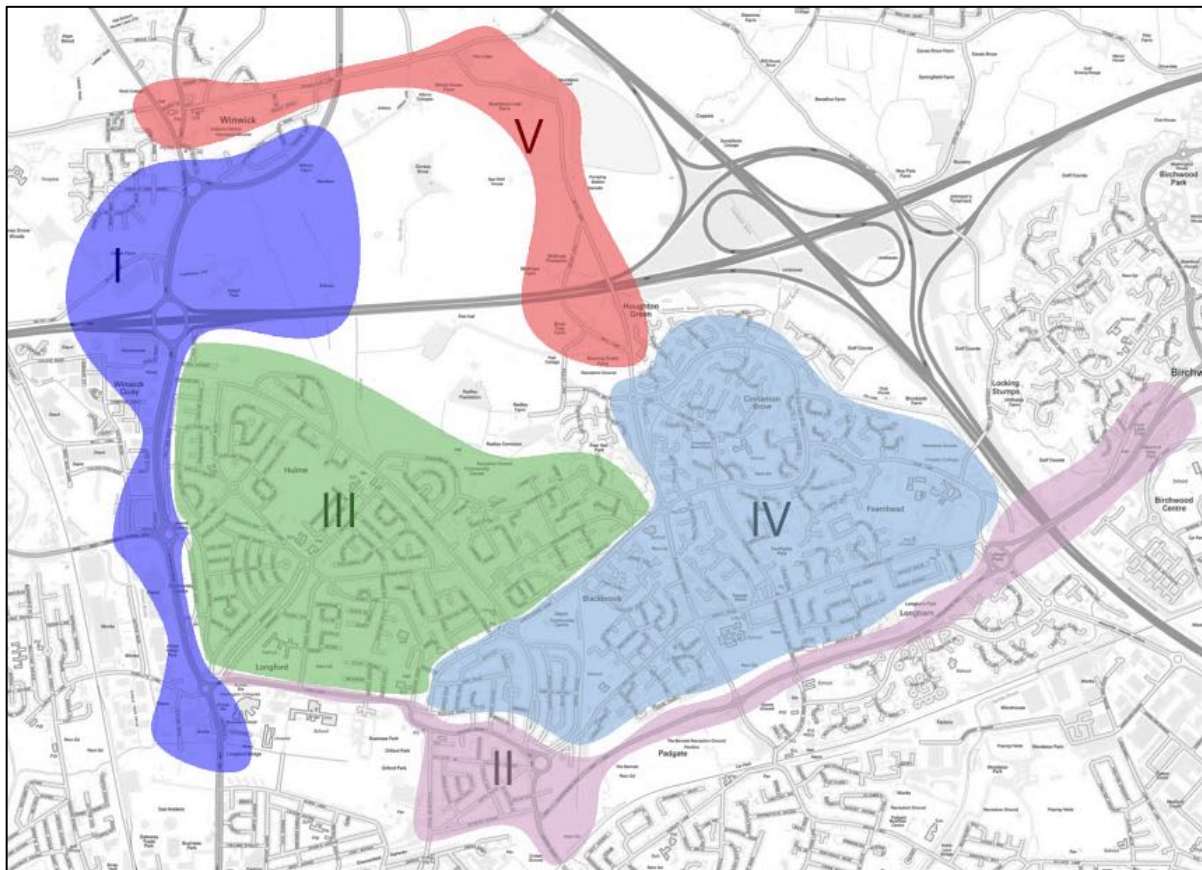
- 36. This Technical Note has been provided to set out the calculation factors for taking the Peel Hall WMMTM16 SATURN model AM and PM peak hour outputs and converting to 24-hour AADT and 18-hour AAWT for the purposes of the Air Quality and Noise Assessments required to support the development of land at Peel Hall, Warrington.

37. The factors for 24-hour AADT and 18-hour AAWT flows are summarised at **Table 6**, with the corresponding links that these factors will be used for illustrated on **Figure 2**.

**Table 6 – Summary of conversion factors**

	24-hour AADT	18-hour AAWT
<b>A49</b>		
Northbound	14.817	15.017
Southbound	13.366	13.660
<b>A50</b>		
Westbound	10.939	11.595
Eastbound	11.805	12.634
<b>Poplars Avenue</b>		
Westbound	11.847	11.995
Eastbound	10.347	10.808
<b>Blackbrook Avenue</b>		
Northbound	9.882	10.527
Southbound	8.298	9.123
<b>Delph Lane</b>		
Northbound	8.125	8.822
Southbound	8.480	9.168

**Figure 2 - Areas for factors to be used**



# Appendix 1

ATC Data – A49

Tuesday 20 March 2018

Time	Total	Classification												JPSL	JPSL%	JSL1	JSL1%	JSL2	JSL2%	Mean	Vpp
		1	2	3	4	5	6	7	8	9	10	11	12								
	MCL	SV	SVT	TB2	TB3	T4	ART3	ART4	ART5	ART6	BD	DRT	40	ACPO	ACPO	DFT					
0000	0	69	0	9	1	1	0	8	12	4	0	0	23	5	4.8	0	36.9	41.2			
0100	0	43	0	14	2	0	0	2	13	1	0	0	19	3	4	0	36.8	42.3			
0200	0	29	0	14	0	0	0	1	6	7	0	1	11	4	6.9	0	35.7	40.9			
0300	0	50	0	16	0	0	0	2	3	2	0	0	26	8	11	0	38.5	43.6			
0400	2	60	0	24	0	0	0	0	7	5	0	0	32	5	5.1	1	37.3	43.6			
0500	1	291	2	50	1	2	0	7	4	9	1	0	98	18	4.9	2	37.5	42.3			
0600	8	454	9	75	9	5	1	16	7	11	0	1	157	30	5	2	37.2	42.3			
0700	8	881	16	112	18	6	5	32	8	12	0	5	118	14	1.3	1	32.2	38.7			
0800	5	861	22	110	13	10	2	26	9	10	3	3	43	8	0.7	0	30.3	35.3			
0900	6	868	17	111	15	10	4	26	16	11	3	7	44	3	0.3	1	30.2	35.1			
1000	4	931	15	137	7	16	3	23	10	7	1	3	35	3	0.3	0	29.1	34.9			
1100	6	1077	20	116	18	4	2	21	11	15	1	3	30	5	0.4	0	28.4	34			
1200	8	1135	18	114	17	11	6	23	10	12	3	5	28	3	0.2	0	27.1	32.7			
1300	10	1265	22	88	8	14	3	28	10	7	3	7	32	2	0.1	0	28.9	34			
1400	12	1358	27	121	14	14	2	28	9	10	1	5	26	1	0.1	0	26.1	32.9			
1500	11	1420	38	98	7	7	4	40	12	12	5	3	13	1	0.1	0	26.1	33.1			
1600	19	1612	45	71	25	17	3	36	5	16	5	6	4	0	0	0	20.6	28.4			
1700	8	1572	54	44	16	10	1	62	2	13	4	9	15	1	0.1	1	22.9	30.9			
1800	4	1295	32	45	7	3	2	37	5	14	1	3	39	5	0.3	0	29.7	34.9			
1900	4	975	20	39	4	3	2	25	10	6	1	3	36	5	0.5	0	30.1	34.7			
2000	2	790	12	31	3	3	0	21	13	7	0	4	54	14	1.6	3	32.2	37.4			
2100	1	543	8	27	3	2	0	7	12	4	0	0	51	14	2.3	1	33.1	37.4			
2200	4	298	4	15	0	0	1	3	12	6	0	0	66	12	3.5	1	35	41.2			
2300	3	154	0	15	1	0	0	4	20	1	0	0	49	14	7.1	1	37.3	41.6			
07-19	101	14275	326	1167	165	122	37	382	107	139	30	59	427	46	0.3	3	27.1	34			
06-22	116	17037	375	1339	184	135	40	451	149	167	31	67	725	109	0.5	9	28	34.9			
06-00	123	17489	379	1369	185	135	41	458	181	174	31	67	840	135	0.7	11	28.2	35.1			
00-00	126	18031	381	1496	189	138	41	478	226	202	32	68	1049	178	0.8	14	28.5	35.6			

Time	Total	Classification												JPSL 40	JPSL% 40	JSL1 46 ACPO	JSL1% 46 ACPO	JSL2 55 DFT	JSL2% 55 DFT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	123	0	90	1	9	0	0	1	9	11	2	0	0	28	22.8	4	3.3	1	0.8	36.6	40.9
0100	70	0	39	1	14	1	0	0	1	10	4	0	0	17	24.3	5	7.1	0	0	36.9	41.2
0200	69	1	43	0	10	1	0	0	2	7	5	0	0	17	24.6	5	7.2	0	0	37.6	41.6
0300	63	0	41	0	13	1	0	0	0	6	2	0	0	18	28.6	5	7.9	1	1.6	38.4	43.8
0400	96	1	56	0	24	0	0	0	4	5	6	0	0	27	28.1	13	13.5	0	0	38.2	45.2
0500	356	3	296	4	33	2	3	0	6	4	5	0	0	119	33.4	27	7.6	3	0.8	38.4	43.2
0600	575	5	441	7	75	6	11	1	10	6	11	0	2	157	27.3	40	7	5	0.9	37.8	42.5
0700	1149	6	913	17	125	13	11	2	32	10	11	2	7	108	9.4	17	1.5	4	0.3	32.3	38.5
0800	1085	6	846	22	130	12	14	3	28	11	10	0	3	56	5.2	6	0.6	0	0	30.6	36.2
0900	1107	3	881	26	119	7	8	4	28	10	16	2	3	39	3.5	2	0.2	0	0	29.1	35.1
1000	1153	3	936	24	120	13	8	4	23	7	12	3	0	47	4.1	9	0.8	2	0.2	30.2	35.1
1100	1287	6	1100	14	93	5	5	2	41	6	8	1	6	28	2.2	6	0.5	1	0.1	29.2	34.4
1200	1324	6	1112	12	121	8	10	2	27	11	10	1	4	40	3	6	0.5	1	0.1	27.5	34.2
1300	1466	6	1225	36	105	13	16	1	37	7	16	3	1	36	2.5	2	0.1	0	0	29	34
1400	1701	7	1462	19	131	21	11	10	22	5	6	5	2	11	0.6	2	0.1	1	0.1	22.1	30.9
1500	1662	5	1427	41	100	21	5	3	36	4	11	3	6	16	1	2	0.1	0	0	25.5	32.2
1600	1760	12	1507	50	72	23	14	4	46	6	18	3	5	9	0.5	4	0.2	0	0	23.1	30.4
1700	1460	9	1259	55	28	21	14	6	44	3	10	5	6	3	0.2	0	0	0	0	12.4	16.6
1800	1496	4	1325	39	28	16	9	4	49	4	12	3	3	6	0.4	0	0	0	0	18.1	28
1900	1091	5	980	18	40	4	2	1	23	10	5	1	2	23	2.1	6	0.5	1	0.1	29.4	33.6
2000	892	4	801	17	20	2	0	0	25	9	10	1	3	49	5.5	10	1.1	1	0.1	31.2	36.5
2100	646	5	576	8	24	2	3	0	12	14	1	0	1	71	11	17	2.6	1	0.2	33.7	38.7
2200	409	3	382	2	13	1	0	0	2	4	2	0	0	75	18.3	20	4.9	5	1.2	35.7	40.3
2300	217	1	167	0	19	3	0	0	3	20	3	0	1	49	22.6	13	6	5	2.3	37.1	40.9
07-19	16650	73	13993	355	1172	173	125	45	413	84	140	31	46	399	2.4	56	0.3	9	0.1	25.2	33.6
06-22	19854	92	16791	405	1331	187	141	47	483	123	167	33	54	699	3.5	129	0.6	17	0.1	26.3	34.7
06-00	20480	96	17340	407	1363	191	141	47	488	147	172	33	55	823	4	162	0.8	27	0.1	26.6	34.9
00-00	21257	101	17905	413	1466	196	144	48	510	190	196	33	55	1049	4.9	221	1	32	0.2	27.1	35.6

Thursday 22 March 2018

Time	Total	Classification												JPSL	JPSL%	JSL1 ACPO	JSL1%	JSL2 DFT	JSL2%	Mean	Vpp
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	105	1	75	0	8	0	0	0	6	11	4	0	0	28	26.7	7	6.7	1	1	37.1	42.7
0100	69	0	40	0	13	0	0	0	2	10	4	0	0	14	20.3	5	7.2	2	2.9	36.5	40.9
0200	70	1	46	0	14	0	0	0	2	6	1	0	0	26	37.1	7	10	2	2.9	39	44.7
0300	67	0	40	1	12	0	0	0	2	8	4	0	0	21	31.3	6	9	1	1.5	38.3	43.8
0400	102	2	67	1	26	0	0	0	0	5	1	0	0	29	28.4	11	10.8	1	1	37.3	43.2
0500	383	3	313	2	44	3	2	0	4	6	6	0	0	112	29.2	26	6.8	2	0.5	37.7	42.3
0600	629	8	472	11	85	7	7	1	15	11	11	1	0	179	28.5	36	5.7	5	0.8	37.6	42.7
0700	1084	6	868	12	116	9	12	5	30	10	11	1	4	116	10.7	13	1.2	1	0.1	33.2	38.9
0800	1127	4	894	20	116	9	10	4	32	15	17	5	1	54	4.8	9	0.8	0	0	31	36.7
0900	1122	4	880	15	144	10	8	3	26	15	9	4	4	57	5.1	9	0.8	1	0.1	30.2	35.6
1000	1178	5	949	17	120	15	16	1	31	11	9	2	2	33	2.8	5	0.4	0	0	30.2	34.7
1100	1338	2	1098	23	119	15	11	4	34	13	16	0	3	30	2.2	2	0.1	0	0	29.8	34.7
1200	1413	2	1185	19	103	13	15	3	32	11	18	5	7	37	2.6	6	0.4	1	0.1	29.6	34
1300	1497	5	1248	33	122	11	11	7	32	8	14	0	6	33	2.2	3	0.2	0	0	28.6	34
1400	1498	10	1284	31	83	25	10	8	25	7	10	1	4	5	0.3	1	0.1	0	0	19.1	28.9
1500	1656	12	1411	38	99	17	15	1	33	13	13	2	2	43	2.6	6	0.4	2	0.1	25.9	32.7
1600	1794	8	1555	45	62	22	11	7	51	10	9	4	10	15	0.8	1	0.1	0	0	22.1	30.2
1700	1843	9	1625	47	52	12	11	4	60	5	10	3	5	13	0.7	5	0.3	1	0.1	22.5	30.2
1800	1479	8	1318	40	49	9	3	2	35	3	10	0	2	61	4.1	11	0.7	1	0.1	29.8	35.6
1900	1105	3	987	22	30	12	2	2	24	12	9	1	1	35	3.2	4	0.4	0	0	29.9	34.4
2000	973	2	875	24	27	4	3	1	14	14	6	1	2	78	8	23	2.4	2	0.2	32.7	37.6
2100	603	3	541	9	21	3	1	0	7	12	3	2	1	96	15.9	17	2.8	2	0.3	34.3	40
2200	385	6	349	2	11	0	1	1	5	6	4	0	0	80	20.8	17	4.4	2	0.5	35.9	40.9
2300	201	0	160	0	12	0	0	0	4	20	5	0	0	61	30.3	21	10.4	3	1.5	38.1	43.8
07-19	17029	75	14315	340	1185	167	133	49	421	121	146	27	50	497	2.9	71	0.4	7	0	27.1	34.2
06-22	20339	91	17190	406	1348	193	146	53	481	170	175	32	54	885	4.4	151	0.7	16	0.1	28.1	35.1
06-00	20925	97	17699	408	1371	193	147	54	490	196	184	32	54	1026	4.9	189	0.9	21	0.1	28.3	35.6
00-00	21721	104	18280	412	1488	196	149	54	506	242	204	32	54	1256	5.8	251	1.2	30	0.1	28.6	36





Time	Total	Classification												JPSL 40	JPSL% 40	JSL1 46 ACPO	JSL1% 46 ACPO	JSL2 55 DFT	JSL2% 55 DFT	Mean	Vpp 85	
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT									
0000	122	1	82	0	16	2	1	0	5	11	4	0	0	0	29	23.8	5	4.1	2	1.6	37.3	41.8
0100	86	0	51	0	16	0	0	0	4	10	5	0	0	0	23	26.7	4	4.7	0	0	36.5	41.6
0200	74	0	53	0	10	0	1	0	2	4	4	0	0	0	28	37.8	8	10.8	0	0	39.1	44.7
0300	61	0	44	0	8	0	0	0	2	5	2	0	0	0	20	32.8	7	11.5	1	1.6	38.7	44.3
0400	107	2	70	0	21	0	0	0	2	10	2	0	0	0	38	35.5	8	7.5	0	0	38.2	42.9
0500	358	1	289	3	41	4	1	1	3	7	7	0	0	1	113	31.6	22	6.1	2	0.6	37.9	42.5
0600	625	7	487	5	86	8	10	0	11	4	7	0	0	0	190	30.4	48	7.7	7	1.1	37.6	42.9
0700	1115	8	851	24	130	12	20	4	30	8	19	3	6	6	113	10.1	11	1	4	0.4	32.2	38.3
0800	1099	4	859	25	128	15	9	2	30	11	11	1	4	4	67	6.1	13	1.2	0	0	31.1	37.1
0900	1147	3	915	24	123	7	14	0	31	13	13	3	1	1	28	2.4	4	0.3	0	0	29.1	34.4
1000	1255	5	1020	26	122	14	11	3	22	10	14	1	7	7	38	3	4	0.3	0	0	29.9	35.1
1100	1409	10	1217	21	103	10	9	6	22	4	4	1	2	2	8	0.6	2	0.1	0	0	23.5	31.8
1200	1538	9	1299	23	114	16	14	2	35	3	20	2	1	1	24	1.6	2	0.1	0	0	26.8	33.6
1300	1569	4	1349	21	111	13	12	2	22	10	14	2	9	9	17	1.1	1	0.1	0	0	26.1	32.9
1400	1572	9	1348	29	67	25	19	7	39	1	16	1	11	11	4	0.3	0	0	0	0	17.8	26.4
1500	1686	6	1445	33	90	18	17	4	43	12	14	3	1	1	14	0.8	1	0.1	0	0	24	31.3
1600	1868	10	1647	44	74	9	13	1	46	3	15	3	3	3	7	0.4	0	0	0	0	22.1	29.3
1700	1784	13	1591	44	42	13	12	3	36	5	17	2	6	6	28	1.6	2	0.1	1	0.1	25.2	32.7
1800	1388	9	1240	30	40	5	5	0	41	9	6	2	1	1	59	4.3	8	0.6	4	0.3	31.3	36
1900	1002	2	890	25	39	4	3	0	22	8	5	2	2	2	33	3.3	10	1	2	0.2	30.7	35.1
2000	727	3	644	16	21	2	3	0	18	12	6	0	2	2	61	8.4	10	1.4	2	0.3	32.7	37.6
2100	823	6	740	16	15	7	2	1	15	16	0	1	4	4	63	7.7	13	1.6	2	0.2	29	37.1
2200	604	5	534	4	26	7	10	1	8	4	5	0	0	0	59	9.8	10	1.7	0	0	27.8	37.8
2300	271	1	233	1	11	0	0	0	6	16	3	0	0	0	48	17.7	12	4.4	0	0	35.7	41.4
07-19	17430	90	14781	344	1144	157	155	34	397	89	163	24	52	52	407	2.3	48	0.3	9	0.1	26.1	33.8
06-22	20607	108	17542	406	1305	178	173	35	463	129	181	27	60	60	754	3.7	129	0.6	22	0.1	27	34.7
06-00	21482	114	18309	411	1342	185	183	36	477	149	189	27	60	60	861	4	151	0.7	22	0.1	27.1	34.9
00-00	22290	118	18898	414	1454	191	186	37	495	196	213	27	61	61	1112	5	205	0.9	27	0.1	27.5	35.6



Time	Total	Classification												JPSL	JPSL%	JSL1	JSL1%	JSL2	JSL2%	Mean	Vpp
		1	2	3	4	5	6	7	8	9	10	11	12								
	MCL	SV	SVT	TB2	TB3	T4	ART3	ART4	ART5	ART6	BD	DRT	40	ACPO	ACPO	DFT	DFT				
0000	0	166	0	13	0	0	1	4	11	4	0	0	42	16	8	1	0.5	37.4	41.6		
0100	1	94	0	12	2	0	0	2	8	3	0	0	25	12	9.8	2	1.6	37.7	40.5		
0200	0	63	0	11	0	0	0	5	8	5	0	0	24	8	8.7	1	1.1	38	43.8		
0300	0	73	0	12	0	0	0	0	3	2	0	0	29	9	10	3	3.3	39.5	44.3		
0400	1	70	1	16	0	0	0	2	6	7	0	0	38	5	4.9	2	1.9	37.7	42.1		
0500	4	189	3	21	0	0	0	0	5	7	0	0	69	17	7.4	3	1.3	38	42.9		
0600	2	236	3	38	2	1	0	3	2	3	0	0	104	24	8.3	0	0	38.3	43.4		
0700	1	415	4	60	3	7	1	6	2	5	0	1	112	19	3.8	3	0.6	36.2	41.4		
0800	1	599	13	59	7	10	1	13	2	5	0	0	82	17	2.4	3	0.4	33.9	39.1		
0900	3	843	17	76	5	11	2	26	3	2	1	1	67	7	0.7	4	0.4	31.4	36.7		
1000	7	1122	19	50	6	6	2	28	3	4	0	2	42	8	0.6	2	0.2	30.5	35.6		
1100	3	1360	31	40	6	11	2	33	3	1	1	3	25	5	0.3	1	0.1	28.9	33.8		
1200	5	1456	47	35	20	10	5	35	1	10	1	2	4	1	0.1	0	0	21.9	28.6		
1300	11	1554	42	34	9	6	0	39	1	7	1	1	8	1	0.1	0	0	22.5	29.8		
1400	11	1512	35	42	13	8	3	31	0	6	2	1	8	0	0	0	0	23.5	30		
1500	9	1532	29	37	11	10	5	24	2	7	1	6	9	2	0.1	1	0.1	24.7	30.6		
1600	4	1496	39	44	12	7	2	34	1	2	2	5	25	5	0.3	2	0.1	27.7	33.1		
1700	3	1427	37	37	5	6	1	33	0	8	1	2	34	5	0.3	0	0	29.1	33.8		
1800	5	1093	28	22	6	5	1	28	1	2	0	0	36	6	0.5	0	0	31	35.8		
1900	3	743	10	12	8	1	1	16	3	1	1	2	72	12	1.5	3	0.4	32.3	37.6		
2000	2	531	10	9	0	0	1	7	1	4	0	0	61	15	2.7	1	0.2	33	38.3		
2100	7	412	5	14	1	0	1	3	0	3	0	0	64	25	5.6	2	0.4	34.6	39.6		
2200	1	303	2	6	1	1	0	0	0	0	0	0	77	20	6.4	3	1	37.2	41.6		
2300	0	250	1	6	1	0	0	1	1	0	0	0	64	11	4.2	4	1.5	37.3	41.4		
07-19	63	14409	341	536	103	97	25	330	19	59	10	24	452	76	0.5	16	0.1	27.3	34		
06-22	77	16331	369	609	114	99	28	359	25	70	11	26	753	152	0.8	22	0.1	28.1	34.9		
06-00	78	16884	372	621	116	100	28	360	26	70	11	26	894	183	1	29	0.2	28.3	35.3		
00-00	84	17539	376	706	118	100	29	373	67	98	11	26	1121	250	1.3	41	0.2	28.7	36		

Time	Total	Classification												JPSL 40	JPSL% 40	JSL1 46 ACPO	JSL1% 46 ACPO	JSL2 55 DFT	JSL2% 55 DFT	Mean	Vpp 85	
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT									
0000	220	2	196	0	17	1	2	0	1	1	0	0	0	0	66	30	9	4.1	2	0.9	37.2	42.7
0100	125	0	107	1	13	0	0	1	0	2	1	0	0	0	46	36.8	10	8	0	0	38.8	43.6
0200	117	2	105	0	6	0	0	0	1	3	0	0	0	0	41	35	17	14.5	2	1.7	39.1	45.2
0300	115	0	108	0	3	0	0	0	2	0	2	0	0	0	33	28.7	7	6.1	0	0	37.9	41.8
0400	158	0	148	2	7	0	0	0	1	0	0	0	0	0	42	26.6	16	10.1	3	1.9	38	42.9
0500	172	2	151	1	13	0	0	0	1	2	2	0	0	0	58	33.7	16	9.3	2	1.2	38.8	43.4
0600	351	1	321	3	22	2	0	0	1	1	0	0	0	0	114	32.5	26	7.4	3	0.9	38.3	43.4
0700	450	2	399	0	41	1	1	0	2	3	0	1	0	0	129	28.7	23	5.1	5	1.1	37.8	42.9
0800	623	6	571	6	24	3	2	3	7	0	1	0	0	0	119	19.1	24	3.9	5	0.8	36.3	40.9
0900	888	11	786	18	41	7	3	0	15	4	1	1	1	1	105	11.8	19	2.1	3	0.3	33.3	38.7
1000	1215	13	1092	28	38	7	7	1	22	0	5	1	1	1	30	2.5	6	0.5	1	0.1	30.3	34.7
1100	1452	10	1321	35	40	4	3	0	28	0	8	1	2	2	12	0.8	0	0	0	0	28.1	32.7
1200	1525	4	1388	40	33	5	4	2	37	0	10	0	2	2	11	0.7	1	0.1	0	0	27.2	32
1300	1527	16	1382	43	25	7	7	2	33	2	8	1	1	1	14	0.9	2	0.1	0	0	28.3	32.9
1400	1485	6	1365	34	29	7	5	2	31	0	2	1	3	3	41	2.8	4	0.3	0	0	30.1	34.4
1500	1312	8	1222	16	23	4	6	2	22	1	6	0	2	2	61	4.6	8	0.6	4	0.3	30.9	36
1600	1035	6	956	17	32	3	3	0	14	0	4	0	0	0	115	11.1	33	3.2	5	0.5	33.3	38.7
1700	708	9	645	8	13	1	4	0	20	3	3	0	2	2	136	19.2	33	4.7	8	1.1	35.9	40.5
1800	687	4	636	10	15	3	2	0	11	0	4	0	2	2	72	10.5	15	2.2	2	0.3	33.5	38.7
1900	587	1	545	15	12	3	1	0	8	1	1	0	0	0	68	11.6	16	2.7	2	0.3	34	39.1
2000	396	5	359	11	9	0	1	0	9	0	2	0	0	0	61	15.4	14	3.5	5	1.3	34.7	40
2100	242	2	223	1	10	0	1	0	1	2	2	0	0	0	71	29.3	22	9.1	2	0.8	37.4	43.6
2200	157	3	142	0	5	1	0	0	3	1	2	0	0	0	34	21.7	8	5.1	1	0.6	36.9	41.2
2300	106	1	92	0	8	0	0	0	3	1	1	0	0	0	41	38.7	11	10.4	5	4.7	38.9	44.5
07-19	12907	95	11763	255	354	52	47	12	242	13	52	6	16	16	845	6.5	168	1.3	33	0.3	31	36.7
06-22	14483	104	13211	285	407	57	50	12	261	17	57	6	16	16	1159	8	246	1.7	45	0.3	31.5	37.4
06-00	14746	108	13445	285	420	58	50	12	267	19	60	6	16	16	1234	8.4	265	1.8	51	0.3	31.6	37.6
00-00	15653	114	14260	289	479	59	52	13	273	27	65	6	16	16	1520	9.7	340	2.2	60	0.4	32	38.3

Monday 26 March 2018

Time	Total	Classification												JPSL	JPSL%	JSL1	JSL1%	JSL2	JSL2%	Mean	Vpp
		1	2	3	4	5	6	7	8	9	10	11	12								
	MCL	SV	SVT	TB2	TB3	T4	ART3	ART4	ART5	ART6	BD	DRT	40	ACPO	ACPO	DFT	DFT				
0000	0	35	0	3	1	0	0	0	0	1	0	0	12	2	5	0	0	37.1	42.3		
0100	0	25	0	12	0	0	0	2	2	1	0	0	20	5	11.9	2	4.8	40	44.5		
0200	0	35	0	14	0	0	0	0	3	2	0	0	15	3	5.6	1	1.9	37.7	42.9		
0300	0	68	0	11	0	0	0	2	1	3	0	0	19	3	3.5	0	0	36.2	40.7		
0400	3	282	4	37	1	1	1	3	2	5	0	0	88	17	5	1	0.3	37.9	42.5		
0500	2	465	9	79	3	11	0	15	2	4	0	1	150	27	4.6	4	0.7	36.7	42.1		
0600	8	853	19	99	11	8	2	25	10	9	1	2	116	27	2.6	1	0.1	32.3	38.7		
0700	5	902	26	101	8	9	5	24	6	8	2	5	80	15	1.4	2	0.2	31.7	37.1		
0800	4	851	27	128	12	13	3	24	13	17	0	4	49	10	0.9	0	0	31.3	36		
0900	2	936	23	137	10	10	4	22	17	13	1	4	47	10	0.8	0	0	31	36		
1000	7	1079	19	123	12	10	1	34	11	15	2	5	38	10	0.8	0	0	28.9	34.4		
1100	4	1292	20	132	9	10	2	36	9	13	2	3	23	4	0.3	1	0.1	28	33.8		
1200	10	1246	35	108	9	14	3	37	9	17	0	3	29	5	0.3	0	0	29	34		
1300	9	1406	27	103	14	12	6	45	10	6	0	2	21	1	0.1	0	0	27	32.4		
1400	8	1326	28	96	17	11	8	25	7	11	2	8	13	3	0.2	0	0	23	32		
1500	10	1581	44	67	24	12	5	39	3	13	0	4	9	3	0.2	0	0	19.3	27.3		
1600	8	1617	44	38	25	16	6	43	0	5	3	5	1	1	0.1	0	0	16.8	22.8		
1700	7	1264	41	40	6	9	2	37	4	15	1	3	68	7	0.5	1	0.1	29.9	35.8		
1800	7	957	15	31	4	2	0	24	4	7	2	2	26	7	0.7	1	0.1	29.8	34		
1900	3	658	22	19	6	2	0	13	9	12	0	1	65	13	1.7	3	0.4	31.9	37.1		
2000	2	494	5	18	3	0	0	14	9	4	0	1	100	24	4.4	7	1.3	35.4	40.7		
2100	1	342	1	15	0	1	0	5	7	3	0	0	91	28	7.5	3	0.8	36.9	41.6		
2200	2	154	1	15	1	0	0	3	13	7	0	0	54	19	9.7	3	1.5	37.7	43.2		
2300	2	95	0	13	0	0	0	4	12	2	0	0	42	13	10.2	1	0.8	38.3	43.8		
07-19	81	14457	349	1104	150	128	45	390	93	140	15	48	404	76	0.4	5	0	26.4	33.8		
06-22	95	16804	396	1255	170	139	47	447	128	168	16	52	776	168	0.9	19	0.1	27.4	34.9		
06-00	99	17053	397	1283	171	139	47	454	153	177	16	52	872	200	1	23	0.1	27.6	35.1		
00-00	104	17963	410	1439	176	151	48	476	163	193	16	53	1176	257	1.2	31	0.1	28.1	36		

Site  
Location  
Direction

1  
A49 Winwick Road -N53.412624, W2.597562  
Southbound

8551 / A49 Warrington  
Mar-18  
Automatic Traffic Count

Tuesday 20 March 2018

Time	Total	Classification												JPSL	JPSL%	JSL1 ACPO	JSL1%	JSL2 DfT	JSL2%	Mean	Vpp
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	101	3	70	0	12	0	0	0	3	5	8	0	0	29	28.7	13	12.9	2	2	37.8	43.6
0100	67	0	39	0	11	0	0	0	3	9	5	0	0	26	38.8	4	6	1	1.5	38.8	43.6
0200	56	0	36	0	8	2	0	0	2	3	5	0	0	24	42.9	5	8.9	1	1.8	39.6	44.1
0300	82	0	59	0	10	1	0	0	0	9	2	0	0	44	53.7	14	17.1	3	3.7	41.2	46.8
0400	99	2	72	1	14	0	0	0	3	5	2	0	0	36	36.4	11	11.1	2	2	39.4	44.5
0500	424	5	348	4	45	4	3	0	9	3	3	0	0	213	50.2	49	11.6	5	1.2	40.1	45
0600	1060	4	896	10	78	9	10	1	33	9	9	1	0	506	47.7	136	12.8	9	0.8	40	45.2
<b>0700</b>	<b>1818</b>	<b>9</b>	<b>1512</b>	<b>43</b>	<b>114</b>	<b>20</b>	<b>21</b>	<b>3</b>	<b>61</b>	<b>8</b>	<b>18</b>	<b>1</b>	<b>8</b>	<b>257</b>	<b>14.1</b>	<b>44</b>	<b>2.4</b>	<b>4</b>	<b>0.2</b>	<b>32.8</b>	<b>39.8</b>
0800	1683	15	1402	46	61	28	27	9	67	4	18	4	2	6	0.4	2	0.1	0	0	19.4	24.8
0900	1581	8	1300	36	103	30	18	6	43	9	17	7	4	91	5.8	9	0.6	1	0.1	24.9	36.5
1000	1271	7	1042	20	125	15	7	4	29	9	11	1	1	172	13.5	24	1.9	2	0.2	32.7	39.4
1100	1327	6	1104	16	128	11	9	1	22	14	11	0	5	123	9.3	13	1	1	0.1	31	38.5
1200	1301	8	1055	18	138	14	13	4	22	15	9	0	5	152	11.7	27	2.1	2	0.2	31.6	38.9
1300	1260	2	1050	19	113	8	12	3	21	15	14	1	2	177	14	17	1.3	0	0	31.3	39.6
1400	1274	7	1004	27	134	13	15	3	25	22	15	1	8	177	13.9	25	2	2	0.2	31.5	39.6
1500	1306	5	1061	20	136	18	16	3	17	15	9	2	4	202	15.5	35	2.7	4	0.3	32.5	40
1600	1318	8	1121	21	98	14	10	0	31	7	5	1	2	248	18.8	35	2.7	4	0.3	33.3	40.7
<b>1700</b>	<b>1389</b>	<b>8</b>	<b>1230</b>	<b>16</b>	<b>74</b>	<b>7</b>	<b>8</b>	<b>2</b>	<b>25</b>	<b>7</b>	<b>5</b>	<b>0</b>	<b>7</b>	<b>238</b>	<b>17.1</b>	<b>55</b>	<b>4</b>	<b>6</b>	<b>0.4</b>	<b>33</b>	<b>40.5</b>
1800	1292	13	1147	11	70	10	3	0	21	7	6	0	4	186	14.4	37	2.9	3	0.2	32.3	39.6
1900	1007	2	912	14	44	4	4	1	10	8	7	0	1	172	17.1	29	2.9	3	0.3	33.3	40.3
2000	632	4	571	9	22	3	0	0	4	13	4	0	2	138	21.8	30	4.7	5	0.8	34.4	41.2
2100	434	1	381	3	27	1	3	0	7	5	5	1	0	94	21.7	26	6	3	0.7	35.1	41.4
2200	364	2	307	3	21	0	0	1	5	17	7	1	0	109	29.9	33	9.1	4	1.1	37.4	42.9
2300	192	2	146	2	16	1	0	0	9	9	6	0	1	63	32.8	17	8.9	2	1	38.2	43.2
<b>07-19</b>	<b>16820</b>	<b>96</b>	<b>14028</b>	<b>293</b>	<b>1294</b>	<b>188</b>	<b>159</b>	<b>38</b>	<b>384</b>	<b>132</b>	<b>138</b>	<b>18</b>	<b>52</b>	<b>2029</b>	<b>12.1</b>	<b>323</b>	<b>1.9</b>	<b>29</b>	<b>0.2</b>	<b>30.3</b>	<b>39.1</b>
<b>06-22</b>	<b>19953</b>	<b>107</b>	<b>16788</b>	<b>329</b>	<b>1465</b>	<b>205</b>	<b>176</b>	<b>40</b>	<b>438</b>	<b>167</b>	<b>163</b>	<b>20</b>	<b>55</b>	<b>2939</b>	<b>14.7</b>	<b>544</b>	<b>2.7</b>	<b>49</b>	<b>0.2</b>	<b>31.2</b>	<b>39.8</b>
<b>06-00</b>	<b>20509</b>	<b>111</b>	<b>17241</b>	<b>334</b>	<b>1502</b>	<b>206</b>	<b>176</b>	<b>41</b>	<b>452</b>	<b>193</b>	<b>176</b>	<b>21</b>	<b>56</b>	<b>3111</b>	<b>15.2</b>	<b>594</b>	<b>2.9</b>	<b>55</b>	<b>0.3</b>	<b>31.4</b>	<b>39.8</b>
<b>00-00</b>	<b>21338</b>	<b>121</b>	<b>17865</b>	<b>339</b>	<b>1602</b>	<b>213</b>	<b>180</b>	<b>41</b>	<b>472</b>	<b>227</b>	<b>201</b>	<b>21</b>	<b>56</b>	<b>3483</b>	<b>16.3</b>	<b>690</b>	<b>3.2</b>	<b>69</b>	<b>0.3</b>	<b>31.7</b>	<b>40.3</b>



Site  
Location  
Direction

1  
A49 Winwick Road -N53.412624, W2.597562  
Southbound

8551 / A49 Warrington  
Mar-18  
Automatic Traffic Count

Wednesday 21 March 2018

Time	Total	Classification												JPSL 40	JPSL% 40	JSL1 46 ACPO	JSL1% 46 ACPO	JSL2 55 DfT	JSL2% 55 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	86	1	63	0	8	0	0	0	1	10	3	0	0	32	37.2	11	12.8	0	0	38.8	45.2
0100	65	0	39	0	10	0	0	0	2	6	8	0	0	22	33.8	5	7.7	0	0	38.7	41.8
0200	54	0	34	0	9	0	0	0	0	6	5	0	0	18	33.3	6	11.1	1	1.9	39.5	43.8
0300	78	0	56	1	13	2	0	0	1	4	1	0	0	28	35.9	8	10.3	1	1.3	39.2	44.1
0400	92	0	59	1	18	1	0	0	2	6	4	0	0	37	40.2	13	14.1	1	1.1	39.7	45.2
0500	399	7	328	6	32	5	6	0	6	4	5	0	0	204	51.1	57	14.3	5	1.3	40.6	45.6
0600	1061	8	888	12	88	7	12	3	27	2	11	1	2	532	50.1	149	14	7	0.7	40.4	45.6
<b>0700</b>	<b>1806</b>	<b>6</b>	<b>1491</b>	<b>56</b>	<b>122</b>	<b>18</b>	<b>18</b>	<b>3</b>	<b>58</b>	<b>14</b>	<b>9</b>	<b>6</b>	<b>5</b>	<b>263</b>	<b>14.6</b>	<b>47</b>	<b>2.6</b>	<b>1</b>	<b>0.1</b>	<b>33.3</b>	<b>39.8</b>
0800	1735	14	1438	51	78	21	20	7	73	5	16	2	10	14	0.8	1	0.1	0	0	21.8	29.1
0900	1605	8	1318	30	116	20	20	6	51	7	14	7	8	113	7	12	0.7	0	0	28	36.7
1000	1585	7	1271	22	141	15	15	3	46	14	25	10	16	79	5	11	0.7	1	0.1	29.2	36.7
1100	1488	9	1172	22	160	18	18	2	28	25	21	3	10	64	4.3	10	0.7	0	0	28.5	36.5
<b>1200</b>	<b>1487</b>	<b>4</b>	<b>1218</b>	<b>25</b>	<b>144</b>	<b>12</b>	<b>11</b>	<b>10</b>	<b>31</b>	<b>9</b>	<b>11</b>	<b>4</b>	<b>8</b>	<b>100</b>	<b>6.7</b>	<b>23</b>	<b>1.5</b>	<b>1</b>	<b>0.1</b>	<b>29.2</b>	<b>37.1</b>
1300	1404	6	1170	19	117	14	12	7	32	9	15	0	3	147	10.5	18	1.3	0	0	31	38.7
1400	1405	8	1156	14	137	14	13	3	26	17	11	2	4	152	10.8	19	1.4	1	0.1	30.7	38.7
1500	1321	3	1105	14	121	13	12	4	22	11	10	2	4	157	11.9	23	1.7	2	0.2	31.5	39.1
1600	1345	6	1155	22	89	6	6	5	29	9	14	1	3	223	16.6	32	2.4	0	0	32.4	40.3
1700	1267	7	1146	15	48	5	5	2	23	5	6	1	4	229	18.1	39	3.1	1	0.1	33.3	40.5
1800	1303	10	1156	14	68	10	3	1	27	7	4	1	2	110	8.4	17	1.3	4	0.3	31.1	37.8
1900	1005	5	905	9	45	7	5	1	13	9	3	1	2	101	10	21	2.1	2	0.2	31.4	38.5
2000	661	2	606	4	28	1	0	0	5	6	7	0	2	89	13.5	16	2.4	3	0.5	33.9	39.6
2100	426	0	378	6	19	2	2	0	3	10	5	0	1	76	17.8	19	4.5	2	0.5	34.7	40.7
2200	358	2	305	4	17	1	0	0	7	15	5	0	2	118	33	31	8.7	4	1.1	37.6	43.4
2300	220	0	179	1	19	1	1	0	5	10	4	0	0	85	38.6	25	11.4	10	4.5	39.1	44.3
<b>07-19</b>	<b>17751</b>	<b>88</b>	<b>14796</b>	<b>304</b>	<b>1341</b>	<b>166</b>	<b>153</b>	<b>53</b>	<b>446</b>	<b>132</b>	<b>156</b>	<b>39</b>	<b>77</b>	<b>1651</b>	<b>9.3</b>	<b>252</b>	<b>1.4</b>	<b>11</b>	<b>0.1</b>	<b>29.8</b>	<b>38</b>
<b>06-22</b>	<b>20904</b>	<b>103</b>	<b>17573</b>	<b>335</b>	<b>1521</b>	<b>183</b>	<b>172</b>	<b>57</b>	<b>494</b>	<b>159</b>	<b>182</b>	<b>41</b>	<b>84</b>	<b>2449</b>	<b>11.7</b>	<b>457</b>	<b>2.2</b>	<b>25</b>	<b>0.1</b>	<b>30.7</b>	<b>38.9</b>
<b>06-00</b>	<b>21482</b>	<b>105</b>	<b>18057</b>	<b>340</b>	<b>1557</b>	<b>185</b>	<b>173</b>	<b>57</b>	<b>506</b>	<b>184</b>	<b>191</b>	<b>41</b>	<b>86</b>	<b>2652</b>	<b>12.3</b>	<b>513</b>	<b>2.4</b>	<b>39</b>	<b>0.2</b>	<b>30.9</b>	<b>39.1</b>
<b>00-00</b>	<b>22256</b>	<b>113</b>	<b>18636</b>	<b>348</b>	<b>1647</b>	<b>193</b>	<b>180</b>	<b>57</b>	<b>518</b>	<b>220</b>	<b>217</b>	<b>41</b>	<b>86</b>	<b>2993</b>	<b>13.4</b>	<b>613</b>	<b>2.8</b>	<b>47</b>	<b>0.2</b>	<b>31.2</b>	<b>39.4</b>

Site  
Location  
Direction

1  
A49 Winwick Road -N53.412624, W2.597562  
Southbound

8551 / A49 Warrington  
Mar-18  
Automatic Traffic Count

Thursday 22 March 2018

Time	Total	Classification												JPSL 40	JPSL% 40	JSL1 46 ACPO	JSL1% 46 ACPO	JSL2 55 DfT	JSL2% 55 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	104	2	82	0	8	0	0	0	0	6	5	0	1	54	51.9	16	15.4	2	1.9	40.4	45.6
0100	66	1	45	0	7	1	0	0	0	7	3	0	0	27	40.9	12	18.2	2	3	40	46.3
0200	47	1	27	0	8	0	0	0	0	1	5	0	0	19	40.4	5	10.6	0	0	39.2	43.6
0300	73	2	45	0	16	0	1	0	0	5	2	0	0	33	45.2	10	13.7	2	2.7	39.9	45
0400	111	0	79	0	20	1	0	0	0	5	2	0	0	43	38.7	12	10.8	0	0	39.5	44.3
0500	424	8	350	4	34	5	2	0	0	7	4	1	1	232	54.7	60	14.2	10	2.4	40.7	45.6
0600	1106	7	925	15	90	6	7	1	33	6	11	1	4	527	47.6	119	10.8	11	1	40	44.7
<b>0700</b>	<b>1830</b>	<b>9</b>	<b>1505</b>	<b>53</b>	<b>105</b>	<b>16</b>	<b>23</b>	<b>7</b>	<b>59</b>	<b>14</b>	<b>24</b>	<b>1</b>	<b>14</b>	<b>237</b>	<b>13</b>	<b>25</b>	<b>1.4</b>	<b>2</b>	<b>0.1</b>	<b>32.8</b>	<b>39.4</b>
0800	1806	12	1494	51	89	13	21	8	73	7	23	4	11	18	1	4	0.2	0	0	23.3	31.3
0900	1601	9	1347	23	115	24	18	6	28	11	13	1	6	88	5.5	8	0.5	1	0.1	26.3	36.2
1000	1363	6	1122	15	134	10	16	3	31	4	19	1	2	150	11	19	1.4	2	0.1	31.5	38.7
1100	1348	4	1104	18	136	18	14	3	24	8	12	2	5	167	12.4	17	1.3	0	0	32.2	39.1
1200	1352	13	1116	13	125	18	17	2	23	9	6	5	5	121	8.9	21	1.6	2	0.1	28.7	38
1300	1408	6	1176	17	118	16	18	3	30	5	13	3	3	159	11.3	18	1.3	1	0.1	31.5	38.7
<b>1400</b>	<b>1421</b>	<b>7</b>	<b>1161</b>	<b>28</b>	<b>127</b>	<b>14</b>	<b>12</b>	<b>2</b>	<b>28</b>	<b>27</b>	<b>9</b>	<b>3</b>	<b>3</b>	<b>185</b>	<b>13</b>	<b>26</b>	<b>1.8</b>	<b>5</b>	<b>0.4</b>	<b>32</b>	<b>39.4</b>
1500	1303	6	1085	16	122	10	15	2	21	7	12	3	4	175	13.4	20	1.5	0	0	32.1	39.4
1600	1381	11	1194	17	93	6	9	0	21	4	17	2	7	180	13	32	2.3	7	0.5	32.2	39.1
1700	1401	6	1245	23	73	8	7	1	21	7	5	2	3	241	17.2	38	2.7	3	0.2	32.7	40.3
1800	1263	11	1128	11	56	7	6	0	23	8	7	2	4	182	14.4	41	3.2	4	0.3	32.4	39.8
1900	1003	6	893	11	52	4	4	1	12	9	8	1	2	105	10.5	14	1.4	1	0.1	31.7	38.5
2000	708	1	631	3	34	6	3	0	6	12	12	0	0	140	19.8	29	4.1	5	0.7	34	41.2
2100	437	1	390	4	20	4	2	0	4	5	5	0	2	82	18.8	12	2.7	2	0.5	34.7	40.7
2200	360	5	305	3	16	3	0	0	5	13	8	1	1	78	21.7	18	5	2	0.6	36.6	41.2
2300	204	0	175	1	8	1	0	0	8	7	4	0	0	60	29.4	17	8.3	4	2	38.3	42.5
<b>07-19</b>	<b>17477</b>	<b>100</b>	<b>14677</b>	<b>285</b>	<b>1293</b>	<b>160</b>	<b>176</b>	<b>37</b>	<b>382</b>	<b>111</b>	<b>160</b>	<b>29</b>	<b>67</b>	<b>1903</b>	<b>10.9</b>	<b>269</b>	<b>1.5</b>	<b>27</b>	<b>0.2</b>	<b>30.4</b>	<b>38.7</b>
<b>06-22</b>	<b>20731</b>	<b>115</b>	<b>17516</b>	<b>318</b>	<b>1489</b>	<b>180</b>	<b>192</b>	<b>39</b>	<b>437</b>	<b>143</b>	<b>196</b>	<b>31</b>	<b>75</b>	<b>2757</b>	<b>13.3</b>	<b>443</b>	<b>2.1</b>	<b>46</b>	<b>0.2</b>	<b>31.2</b>	<b>39.4</b>
<b>06-00</b>	<b>21295</b>	<b>120</b>	<b>17996</b>	<b>322</b>	<b>1513</b>	<b>184</b>	<b>192</b>	<b>39</b>	<b>450</b>	<b>163</b>	<b>208</b>	<b>32</b>	<b>76</b>	<b>2895</b>	<b>13.6</b>	<b>478</b>	<b>2.2</b>	<b>52</b>	<b>0.2</b>	<b>31.4</b>	<b>39.4</b>
<b>00-00</b>	<b>22120</b>	<b>134</b>	<b>18624</b>	<b>326</b>	<b>1606</b>	<b>191</b>	<b>195</b>	<b>39</b>	<b>467</b>	<b>198</b>	<b>229</b>	<b>33</b>	<b>78</b>	<b>3303</b>	<b>14.9</b>	<b>593</b>	<b>2.7</b>	<b>68</b>	<b>0.3</b>	<b>31.7</b>	<b>39.8</b>



Site  
Location  
Direction

1  
A49 Winwick Road -N53.412624, W2.597562  
Southbound

8551 / A49 Warrington  
Mar-18  
Automatic Traffic Count

Friday 23 March 2018

Time	Total	Classification												JPSL 40	JPSL% 40	JSL1 46 ACPO	JSL1% 46 ACPO	JSL2 55 DfT	JSL2% 55 DfT	Mean	Vpp 85
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT								
0000	98	2	64	0	17	0	0	0	1	8	6	0	0	30	30.6	6	6.1	1	1	37.7	41.8
0100	67	1	45	0	8	0	0	0	5	5	3	0	0	23	34.3	4	6	0	0	38.3	43.4
0200	66	1	37	1	11	1	1	1	1	8	4	0	0	24	36.4	3	4.5	0	0	38.4	42.9
0300	60	0	47	0	7	0	0	0	1	4	1	0	0	28	46.7	6	10	0	0	39.6	44.5
0400	95	1	73	0	13	0	0	0	2	2	4	0	0	35	36.8	11	11.6	1	1.1	39.3	44.1
0500	398	9	324	5	33	5	6	0	8	3	4	0	1	180	45.2	52	13.1	8	2	40.1	45.2
0600	1057	6	859	16	102	7	18	1	18	8	20	0	2	493	46.6	113	10.7	9	0.9	39.7	44.7
0700	1827	8	1484	51	124	25	19	9	68	9	26	1	3	225	12.3	33	1.8	1	0.1	31.5	39.1
0800	1847	8	1529	33	134	16	22	6	52	7	24	6	10	75	4.1	9	0.5	0	0	29.2	36
0900	1510	7	1233	21	135	18	16	7	42	7	15	2	7	177	11.7	18	1.2	0	0	31.2	38.9
1000	1338	6	1079	16	153	13	13	3	18	15	16	2	4	156	11.7	24	1.8	1	0.1	31.9	38.9
1100	1395	12	1155	18	134	11	18	3	21	9	12	1	1	160	11.5	30	2.2	1	0.1	31.4	38.7
1200	1420	9	1188	21	130	8	16	4	22	11	9	0	2	108	7.6	19	1.3	2	0.1	30.3	37.6
1300	1471	8	1232	19	129	15	12	8	24	7	11	2	4	166	11.3	20	1.4	4	0.3	30.5	38.9
1400	1396	6	1157	12	113	18	21	4	32	8	18	2	5	109	7.8	13	0.9	3	0.2	28.8	37.8
1500	1400	9	1173	23	110	17	14	2	26	13	8	3	2	186	13.3	27	1.9	3	0.2	31.9	39.4
1600	1304	11	1125	19	71	8	6	5	33	9	8	1	8	230	17.6	42	3.2	4	0.3	32.5	40.7
1700	1395	10	1256	10	62	6	7	1	22	10	8	0	3	237	17	43	3.1	3	0.2	33	40.3
1800	1430	4	1285	25	52	9	9	5	28	3	8	1	1	134	9.4	26	1.8	1	0.1	30.9	38.3
1900	1082	5	961	15	54	4	4	0	19	12	8	0	0	126	11.6	37	3.4	3	0.3	31.8	38.9
2000	698	4	628	4	30	3	2	0	7	10	9	0	1	126	18.1	30	4.3	2	0.3	34.4	40.5
2100	507	1	457	3	25	2	0	0	7	7	4	0	1	126	24.9	22	4.3	2	0.4	35.9	42.3
2200	436	6	385	1	16	1	1	0	4	12	8	1	1	141	32.3	22	5	4	0.9	37.3	42.3
2300	287	1	247	0	20	2	0	0	6	9	2	0	0	75	26.1	14	4.9	2	0.7	36.8	41.8
07-19	17733	98	14896	268	1347	164	173	57	388	108	163	21	50	1963	11.1	304	1.7	23	0.1	31	38.7
06-22	21077	114	17801	306	1558	180	197	58	439	145	204	21	54	2834	13.4	506	2.4	39	0.2	31.7	39.4
06-00	21800	121	18433	307	1594	183	198	58	449	166	214	22	55	3050	14	542	2.5	45	0.2	31.9	39.6
00-00	22584	135	19023	313	1683	189	205	59	467	196	236	22	56	3370	14.9	624	2.8	55	0.2	32.2	39.8





Site  
Location  
Direction

1  
A49 Winwick Road -N53.412624, W2.597562  
Southbound

8551 / A49 Warrington  
Mar-18  
Automatic Traffic Count

Sunday 25 March 2018

Time	Total	Classification												JPSL 40	JPSL% 40	JSL1 46 ACPO	JSL1% 46 ACPO	JSL2 55 DfT	JSL2% 55 DfT	Mean	Vpp 85	
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT									
0000	205	0	188	2	11	2	0	0	0	0	0	0	0	0	87	42.4	15	7.3	1	0.5	39.2	43.4
0100	121	2	96	0	19	0	0	0	0	1	2	1	2	1	55	45.5	15	12.4	1	0.8	40.1	45
0200	111	0	104	0	6	0	0	0	0	0	1	0	0	0	51	45.9	12	10.8	2	1.8	39.7	44.1
0300	94	0	86	0	4	1	0	0	0	0	2	1	0	0	42	44.7	11	11.7	0	0	39.7	44.5
0400	123	2	115	0	4	0	0	0	0	0	2	0	0	0	60	48.8	20	16.3	3	2.4	40.4	46.1
0500	210	0	186	1	14	3	0	0	0	3	3	0	0	0	107	51	29	13.8	3	1.4	40.5	45.2
0600	318	1	285	2	22	0	0	0	0	3	1	4	0	0	167	52.5	59	18.6	6	1.9	41.2	46.8
0700	365	1	329	3	24	2	1	1	0	0	3	1	0	0	173	47.4	41	11.2	2	0.5	39.6	44.7
0800	654	2	597	7	29	3	1	0	0	11	3	1	0	0	257	39.3	75	11.5	9	1.4	39.2	44.5
0900	1095	6	1004	10	47	2	1	1	1	15	1	5	1	2	301	27.5	69	6.3	11	1	35.7	42.5
1000	1435	12	1317	25	37	8	5	0	0	19	0	9	0	3	138	9.6	22	1.5	2	0.1	30.7	38.7
1100	1421	15	1300	24	41	7	6	2	2	19	2	2	0	3	124	8.7	18	1.3	1	0.1	29.9	37.8
1200	1532	17	1420	14	34	7	8	1	1	25	2	3	0	1	112	7.3	27	1.8	1	0.1	28.7	37.4
1300	1331	10	1243	15	29	4	5	1	1	14	1	4	1	4	129	9.7	26	2	3	0.2	29.4	38.7
1400	1352	16	1265	14	32	6	2	0	0	13	1	2	0	1	179	13.2	32	2.4	4	0.3	31.1	39.4
1500	1010	13	914	20	31	4	2	0	0	18	3	4	0	1	239	23.7	57	5.6	10	1	34.8	41.6
1600	901	13	816	14	35	1	5	1	1	11	1	4	0	0	240	26.6	65	7.2	9	1	35.4	42.3
1700	802	11	744	6	23	1	1	0	0	11	2	3	0	0	301	37.5	90	11.2	13	1.6	38.3	44.5
1800	735	4	669	8	34	3	1	0	0	11	1	1	1	2	205	27.9	49	6.7	5	0.7	36.1	42.7
1900	531	5	502	4	13	2	1	0	0	2	1	1	0	0	140	26.4	37	7	5	0.9	36.1	42.3
2000	352	0	325	1	12	1	2	0	0	6	1	4	0	0	105	29.8	18	5.1	1	0.3	36.4	42.1
2100	228	2	214	0	7	0	0	0	0	3	1	1	0	0	93	40.8	32	14	9	3.9	39.6	45.4
2200	144	0	136	0	5	0	0	0	0	1	0	2	0	0	43	29.9	10	6.9	4	2.8	38.5	42.9
2300	87	2	78	0	5	0	0	0	0	0	0	2	0	0	28	32.2	4	4.6	0	0	37.9	43.4
07-19	12633	120	11618	160	396	48	38	7	167	20	39	3	17	2398	19	571	4.5	70	0.6	32.9	40.9	
06-22	14062	128	12944	167	450	51	41	7	181	24	49	3	17	2903	20.6	717	5.1	91	0.6	33.4	41.4	
06-00	14293	130	13158	167	460	51	41	7	182	24	53	3	17	2974	20.8	731	5.1	95	0.7	33.5	41.4	
00-00	15157	134	13933	170	518	57	41	7	188	34	55	3	17	3376	22.3	833	5.5	105	0.7	33.8	41.6	

Site  
Location  
Direction

1  
A49 Winwick Road -N53.412624, W2.597562  
Southbound

8551 / A49 Warrington  
Mar-18  
Automatic Traffic Count

Monday 26 March 2018

Time	Total	Classification												JPSL	JPSL%	JSL1 ACPO	JSL1%	JSL2 DfT	JSL2%	Mean	Vpp	
		1 MCL	2 SV	3 SVT	4 TB2	5 TB3	6 T4	7 ART3	8 ART4	9 ART5	10 ART6	11 BD	12 DRT									
0000	48	0	43	0	4	0	0	0	1	0	0	0	0	0	27	56.3	9	18.8	1	2.1	41.5	46.3
0100	44	0	34	0	4	0	0	0	0	4	2	0	0	0	18	40.9	4	9.1	0	0	39	43.4
0200	55	1	44	0	8	0	0	0	1	0	1	0	0	0	23	41.8	7	12.7	0	0	40.6	45.2
0300	95	1	74	0	15	0	1	0	2	1	1	0	0	0	43	45.3	14	14.7	1	1.1	40.4	45.9
0400	403	6	343	2	26	7	1	0	10	4	3	0	1	213	52.9	48	11.9	4	1	40.2	45	
0500	985	6	814	11	92	15	10	2	21	7	7	0	0	417	42.3	95	9.6	7	0.7	39.3	44.5	
0600	1769	8	1502	34	100	14	18	5	52	5	18	5	8	204	11.5	21	1.2	0	0	31.5	39.1	
<b>0700</b>	<b>1777</b>	<b>10</b>	<b>1479</b>	<b>48</b>	<b>90</b>	<b>16</b>	<b>23</b>	<b>5</b>	<b>71</b>	<b>8</b>	<b>16</b>	<b>5</b>	<b>6</b>	<b>12</b>	<b>0.7</b>	<b>2</b>	<b>0.1</b>	<b>0</b>	<b>0</b>	<b>21.4</b>	<b>29.3</b>	
0800	1521	6	1243	30	134	13	22	4	45	6	15	1	2	116	7.6	15	1	0	0	27.9	37.4	
0900	1395	6	1113	23	153	17	14	2	30	9	19	2	7	196	14.1	21	1.5	2	0.1	31.6	39.6	
1000	1335	8	1088	16	155	7	13	1	22	12	11	0	2	134	10	22	1.6	0	0	30.9	38.5	
1100	1417	3	1206	16	108	17	15	2	25	8	13	3	1	123	8.7	16	1.1	1	0.1	30.1	38.3	
<b>1200</b>	<b>1398</b>	<b>10</b>	<b>1157</b>	<b>25</b>	<b>126</b>	<b>9</b>	<b>8</b>	<b>4</b>	<b>36</b>	<b>7</b>	<b>12</b>	<b>2</b>	<b>2</b>	<b>128</b>	<b>9.2</b>	<b>12</b>	<b>0.9</b>	<b>3</b>	<b>0.2</b>	<b>29.6</b>	<b>38</b>	
1300	1370	5	1155	21	110	14	12	0	27	6	12	1	7	132	9.6	19	1.4	2	0.1	30.7	38.5	
1400	1335	11	1127	13	107	22	5	3	26	5	12	1	3	224	16.8	32	2.4	2	0.1	32.3	40.3	
1500	1328	7	1161	13	97	6	4	1	26	2	7	1	3	200	15.1	38	2.9	2	0.2	33.1	39.8	
1600	1306	6	1141	23	76	8	6	2	30	6	4	1	3	290	22.2	56	4.3	5	0.4	34	41.4	
1700	1356	15	1199	18	71	6	5	2	25	6	8	0	1	205	15.1	29	2.1	3	0.2	32.7	40	
1800	1008	3	893	9	54	7	6	1	19	4	10	1	1	153	15.2	34	3.4	4	0.4	32.6	40	
1900	694	0	623	9	30	2	2	0	10	8	9	0	1	134	19.3	22	3.2	3	0.4	34.1	40.7	
2000	422	2	375	1	18	3	0	0	8	12	3	0	0	100	23.7	25	5.9	2	0.5	36.2	41.6	
2100	343	4	295	1	14	1	2	0	8	9	9	0	0	110	32.1	22	6.4	2	0.6	37.5	43.2	
2200	221	1	178	0	19	0	0	0	8	9	6	0	0	82	37.1	26	11.8	3	1.4	38.8	44.3	
2300	95	0	74	1	6	0	0	0	0	12	2	0	0	34	35.8	6	6.3	0	0	38.9	42.5	
<b>07-19</b>	<b>16546</b>	<b>90</b>	<b>13962</b>	<b>255</b>	<b>1281</b>	<b>142</b>	<b>133</b>	<b>27</b>	<b>382</b>	<b>79</b>	<b>139</b>	<b>18</b>	<b>38</b>	<b>1913</b>	<b>11.6</b>	<b>296</b>	<b>1.8</b>	<b>24</b>	<b>0.1</b>	<b>30.3</b>	<b>38.9</b>	
<b>06-22</b>	<b>19774</b>	<b>104</b>	<b>16757</b>	<b>300</b>	<b>1443</b>	<b>162</b>	<b>155</b>	<b>32</b>	<b>460</b>	<b>113</b>	<b>178</b>	<b>23</b>	<b>47</b>	<b>2461</b>	<b>12.4</b>	<b>386</b>	<b>2</b>	<b>31</b>	<b>0.2</b>	<b>30.8</b>	<b>39.1</b>	
<b>06-00</b>	<b>20090</b>	<b>105</b>	<b>17009</b>	<b>301</b>	<b>1468</b>	<b>162</b>	<b>155</b>	<b>32</b>	<b>468</b>	<b>134</b>	<b>186</b>	<b>23</b>	<b>47</b>	<b>2577</b>	<b>12.8</b>	<b>418</b>	<b>2.1</b>	<b>34</b>	<b>0.2</b>	<b>30.9</b>	<b>39.4</b>	
<b>00-00</b>	<b>21720</b>	<b>119</b>	<b>18361</b>	<b>314</b>	<b>1617</b>	<b>184</b>	<b>167</b>	<b>34</b>	<b>503</b>	<b>150</b>	<b>200</b>	<b>23</b>	<b>48</b>	<b>3318</b>	<b>15.3</b>	<b>595</b>	<b>2.7</b>	<b>47</b>	<b>0.2</b>	<b>31.6</b>	<b>40</b>	

1

A49 Winwick Road -N53.412624, W2.597562  
Northbound

7 Day Average Northbound

Time	Total
0000	130
0100	84
0200	76
0300	79
0400	143
0500	351
0600	588
0700	930
0800	973
0900	1075
1000	1218
<b>1100</b>	<b>1401</b>
1200	1469
1300	1553
1400	1581
1500	1635
<b>1600</b>	<b>1682</b>
1700	1511
1800	1249
1900	918
2000	713
2100	535
2200	344
2300	197
<b>07-19</b>	<b>16277</b>
<b>06-00</b>	<b>19571</b>
<b>00-00</b>	<b>20435</b>

AADT Factor 14.8169

5 Day Average Northbound

Time	Total
0000	99
0100	68
0200	65
0300	70
0400	148
0500	411
0600	694
0700	1110
0800	1096
0900	1130
1000	1212
<b>1100</b>	<b>1372</b>
1200	1426
1300	1527
1400	1584
1500	1693
<b>1600</b>	<b>1818</b>
1700	1662
1800	1373
1900	1007
2000	806
2100	611
2200	387
2300	203
<b>07-19</b>	<b>17004</b>
<b>06-00</b>	<b>20712</b>
<b>00-00</b>	<b>21574</b>

AAWT Factor 15.0174

1

A49 Winwick Road -N53.412624, W2.597562  
Southbound

7 Day Average Southbound

Time	Total
0000	117
0100	79
0200	67
0300	82
0400	147
0500	436
0600	965
<b>0700</b>	<b>1432</b>
0800	1477
0900	1432
1000	1398
1100	1419
1200	1428
1300	1392
1400	1367
1500	1295
1600	1259
<b>1700</b>	<b>1257</b>
1800	1162
1900	878
2000	575
2100	404
2200	318
2300	196
<b>07-19</b>	<b>16318</b>
<b>06-00</b>	<b>19654</b>
<b>00-00</b>	<b>20583</b>

AADT Factor 13.3655

5 Day Average Northbound

Time	Total
0000	87
0100	62
0200	56
0300	78
0400	160
0500	526
0600	1211
<b>0700</b>	<b>1812</b>
0800	1718
0900	1538
1000	1378
1100	1395
1200	1392
1300	1383
1400	1366
1500	1332
1600	1331
<b>1700</b>	<b>1362</b>
1800	1259
1900	958
2000	624
2100	429
2200	348
2300	200
<b>07-19</b>	<b>17265</b>
<b>06-00</b>	<b>21035</b>
<b>00-00</b>	<b>22004</b>

AAWT Factor 13.6592

## Appendix 2

ATC Data – A50

# Warrington ATC K, A50

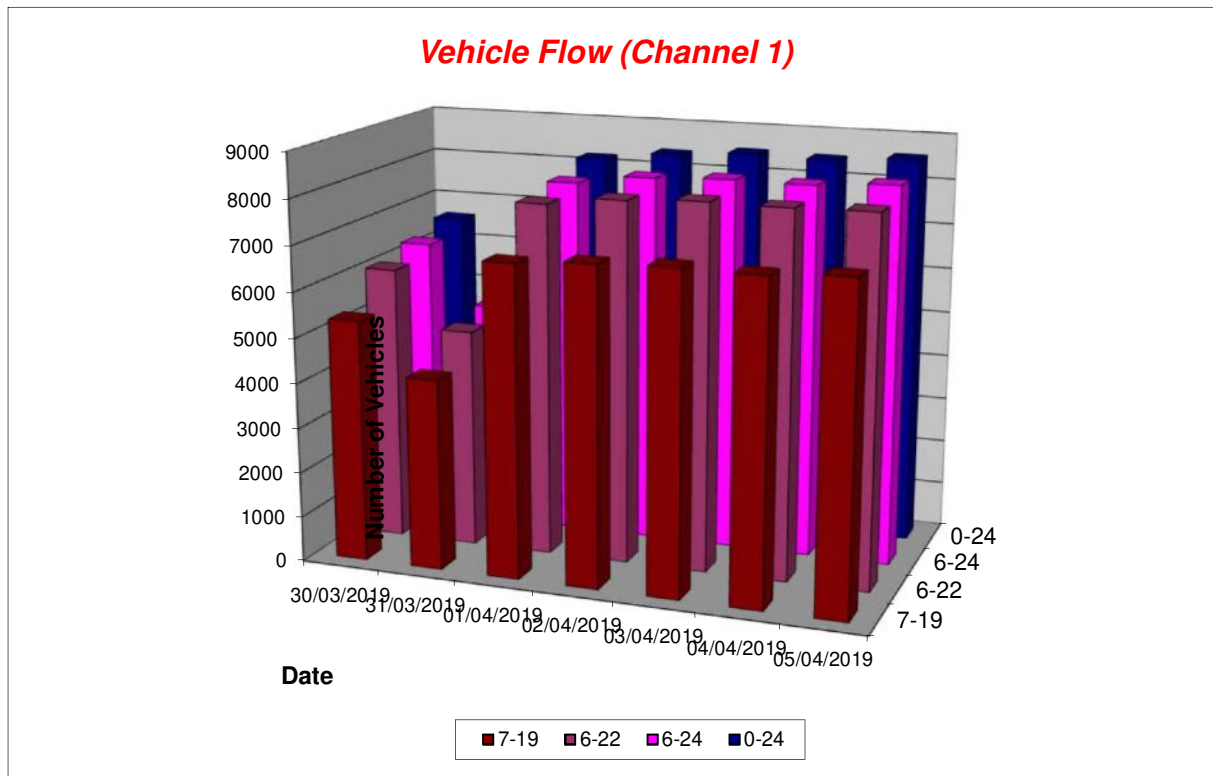
Produced by Road Data Services Ltd.

Channel 1 - Westbound

Vehicle Flow

Week 1

Hr Ending	30/03/2019 Saturday	31/03/2019 Sunday	01/04/2019 Monday	02/04/2019 Tuesday	03/04/2019 Wednesday	04/04/2019 Thursday	05/04/2019 Friday	5 Day Ave	7 Day Ave
1	84	82	40	28	26	20	35	30	45
2	37	40	14	16	22	19	19	18	24
3	24	0	12	6	11	9	11	10	10
4	23	32	10	7	25	10	19	14	18
5	21	23	37	25	30	26	22	28	26
6	70	61	141	152	165	168	153	156	130
7	105	74	195	214	259	242	231	228	189
8	209	91	571	596	609	632	562	594	467
9	285	133	708	678	765	742	667	712	568
10	474	269	584	591	643	614	623	611	543
11	495	405	455	493	425	448	476	459	457
12	566	482	402	492	448	482	523	469	485
13	532	553	514	481	536	481	553	513	521
14	551	494	482	463	487	491	504	485	496
15	483	462	486	468	476	488	520	488	483
16	500	399	584	626	543	590	647	598	556
17	447	283	743	731	747	740	719	736	630
18	432	324	707	723	703	669	684	697	606
19	378	327	635	643	661	642	645	645	562
20	269	251	328	357	325	350	322	336	315
21	206	165	223	225	241	236	214	228	216
22	163	138	170	193	190	195	185	187	176
23	117	97	109	121	113	125	152	124	119
24	111	58	46	60	53	45	89	59	66
7-19	5352	4222	6871	6985	7043	7019	7123	7008	6374
6-22	6095	4850	7787	7974	8058	8042	8075	7987	7269
6-24	6323	5005	7942	8155	8224	8212	8316	8170	7454
0-24	6582	5243	8196	8389	8503	8464	8575	8425	7707



# Warrington ATC K, A50

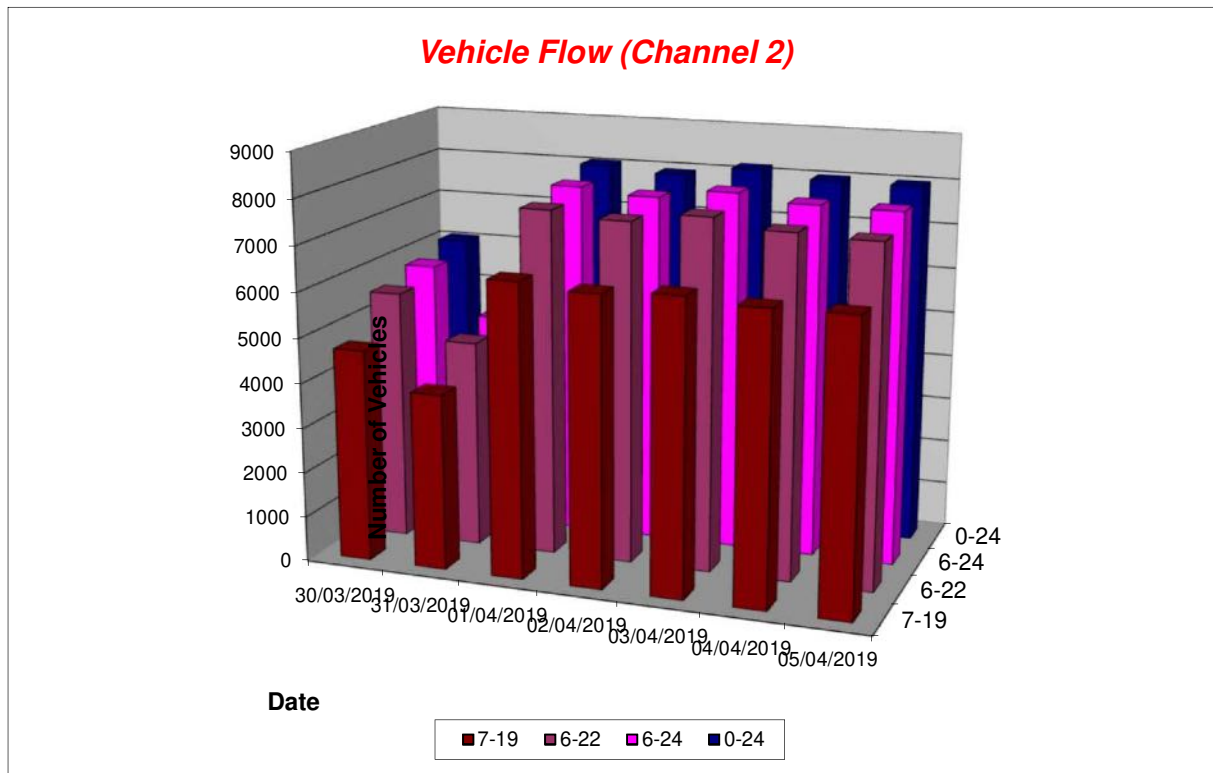
Produced by Road Data Services Ltd.

Channel 2 - Eastbound

Vehicle Flow

Week 1

Hr Ending	30/03/2019 Saturday	31/03/2019 Sunday	01/04/2019 Monday	02/04/2019 Tuesday	03/04/2019 Wednesday	04/04/2019 Thursday	05/04/2019 Friday	5 Day Ave	7 Day Ave
1	84	68	35	40	37	31	42	37	48
2	43	34	16	14	16	14	17	15	22
3	22	0	11	13	9	10	11	11	11
4	23	28	11	8	10	18	15	12	16
5	26	22	29	33	30	32	26	30	28
6	56	38	93	92	112	107	106	102	86
7	88	58	252	259	285	259	231	257	205
8	117	65	892	817	845	880	809	849	632
9	205	100	611	620	602	563	575	594	468
10	354	164	494	487	523	543	540	517	444
11	402	315	334	346	350	344	360	347	350
12	453	446	404	385	429	407	411	407	419
13	495	446	422	433	439	424	483	440	449
14	491	439	417	450	441	438	418	433	442
15	459	438	450	465	520	522	523	496	482
16	420	470	477	470	450	470	441	462	457
17	435	367	694	618	634	658	558	632	566
18	435	330	703	663	654	567	633	644	569
19	438	320	594	616	587	547	628	594	533
20	361	272	404	403	391	376	356	386	366
21	236	232	316	304	355	323	298	319	295
22	174	136	197	198	237	220	216	214	197
23	141	89	125	139	131	165	191	150	140
24	105	71	73	67	71	86	102	80	82
7-19	4704	3900	6492	6370	6474	6363	6379	6416	5812
6-22	5563	4598	7661	7534	7742	7541	7480	7592	6874
6-24	5809	4758	7859	7740	7944	7792	7773	7822	7096
0-24	6063	4948	8054	7940	8158	8004	7990	8029	7308



A50

Westbound

**7 Day Average Westbound**

Time	Total
0000	45
0100	24
0200	10
0300	18
0400	26
0500	130
0600	189
0700	467
<b>0800</b>	<b>568</b>
0900	543
1000	457
1100	485
1200	521
1300	496
1400	483
1500	556
1600	630
1700	606
1800	562
1900	315
2000	216
2100	176
2200	119
2300	66
<b>07-19</b>	<b>6374</b>
<b>06-00</b>	<b>7454</b>
<b>00-00</b>	<b>7707</b>

**AADT Factor 10.9387**

**5 Day Average Westbound**

Time	Total
0000	30
0100	18
0200	10
0300	14
0400	28
0500	156
0600	228
0700	594
<b>0800</b>	<b>712</b>
0900	611
1000	459
1100	469
1200	513
1300	485
1400	488
1500	598
1600	736
1700	697
1800	645
1900	336
2000	228
2100	187
2200	124
2300	59
<b>07-19</b>	<b>7008</b>
<b>06-00</b>	<b>8170</b>
<b>00-00</b>	<b>8425</b>

**AAWT Factor 11.5949**

A50

Eastbound

**7 Day Average Eastbound**

Time	Total
0000	48
0100	22
0200	11
0300	16
0400	28
0500	86
0600	205
0700	632
0800	468
0900	444
1000	350
1100	419
1200	449
1300	442
1400	482
1500	457
1600	566
1700	569
1800	533
1900	366
2000	295
2100	197
2200	140
2300	82
<b>07-19</b>	<b>5812</b>
<b>06-00</b>	<b>7096</b>
<b>00-00</b>	<b>7308</b>

**AADT Factor 11.8045**

**5 Day Average Eastbound**

Time	Total
0000	37
0100	15
0200	11
0300	12
0400	30
0500	102
0600	257
0700	849
0800	594
0900	517
1000	347
1100	407
1200	440
1300	433
1400	496
1500	462
1600	632
1700	644
1800	594
1900	386
2000	319
2100	214
2200	150
2300	80
<b>07-19</b>	<b>6416</b>
<b>06-00</b>	<b>7822</b>
<b>00-00</b>	<b>8029</b>

**AAWT Factor 12.6338**

## **Appendix 3**

ATC Data – Poplars Avenue



# Warrington ATC F, Poplars Avenue

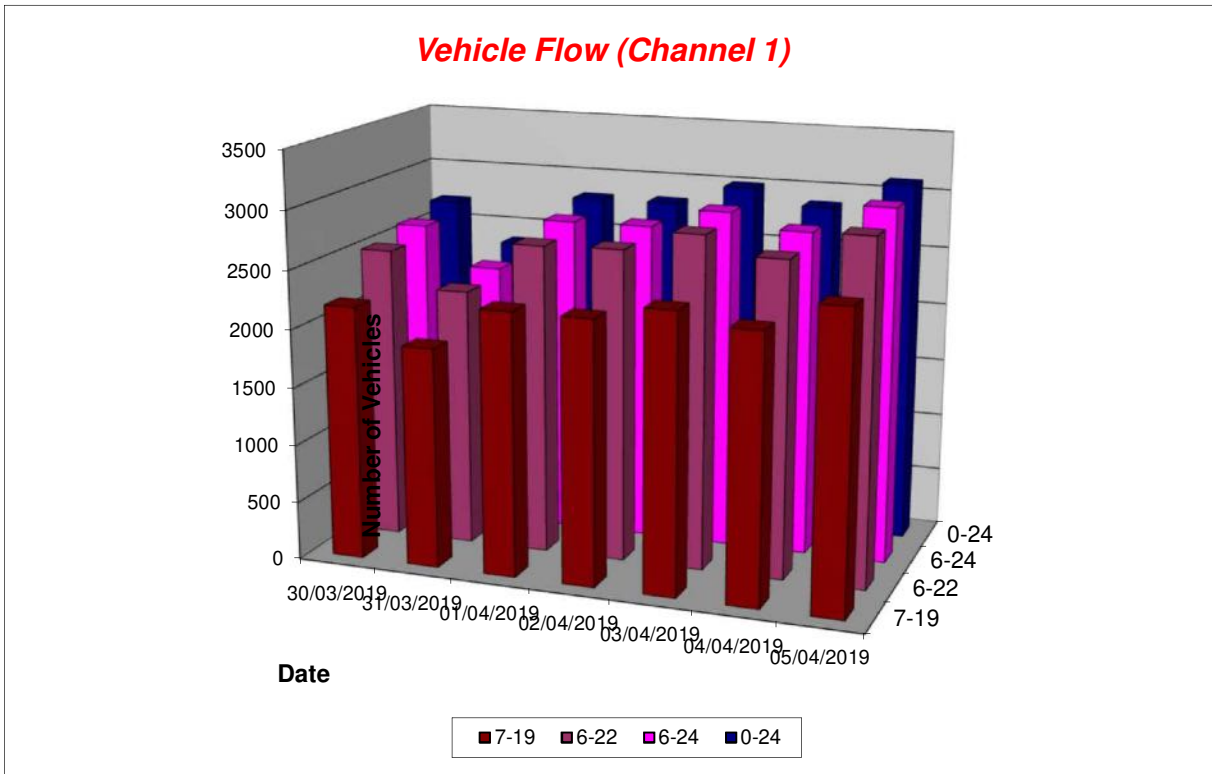
Produced by Road Data Services Ltd.

Channel 1 - Westbound

Vehicle Flow

Week 1

Hr Ending	30/03/2019 Saturday	31/03/2019 Sunday	01/04/2019 Monday	02/04/2019 Tuesday	03/04/2019 Wednesday	04/04/2019 Thursday	05/04/2019 Friday	5 Day Ave	7 Day Ave
1	20	24	12	14	14	12	12	13	15
2	14	15	5	2	4	4	5	4	7
3	8	0	1	4	2	3	2	2	3
4	9	8	7	6	5	3	3	5	6
5	11	18	7	14	16	13	11	12	13
6	30	17	42	35	43	44	37	40	35
7	32	24	58	62	76	73	78	69	58
8	67	45	143	140	129	126	130	134	111
9	115	57	183	187	174	146	163	171	146
10	162	110	136	142	178	146	172	155	149
11	180	147	134	142	135	174	170	151	155
12	207	207	143	144	156	175	172	158	172
13	214	248	170	143	156	147	172	158	179
14	232	228	179	168	185	162	239	187	199
15	233	220	186	155	195	169	189	179	192
16	194	189	222	242	246	213	282	241	227
17	208	151	300	275	276	277	291	284	254
18	195	164	276	301	331	325	284	303	268
19	178	127	190	221	224	226	266	225	205
20	129	128	160	160	172	149	146	157	149
21	100	102	101	115	124	116	98	111	108
22	73	70	80	82	95	77	85	84	80
23	48	37	52	49	36	55	61	51	48
24	41	22	24	15	22	32	38	26	28
7-19	2185	1893	2262	2260	2385	2286	2530	2345	2257
6-22	2519	2217	2661	2679	2852	2701	2937	2766	2652
6-24	2608	2276	2737	2743	2910	2788	3036	2843	2728
0-24	2700	2358	2811	2818	2994	2867	3106	2919	2808



# Warrington ATC F, Poplars Avenue

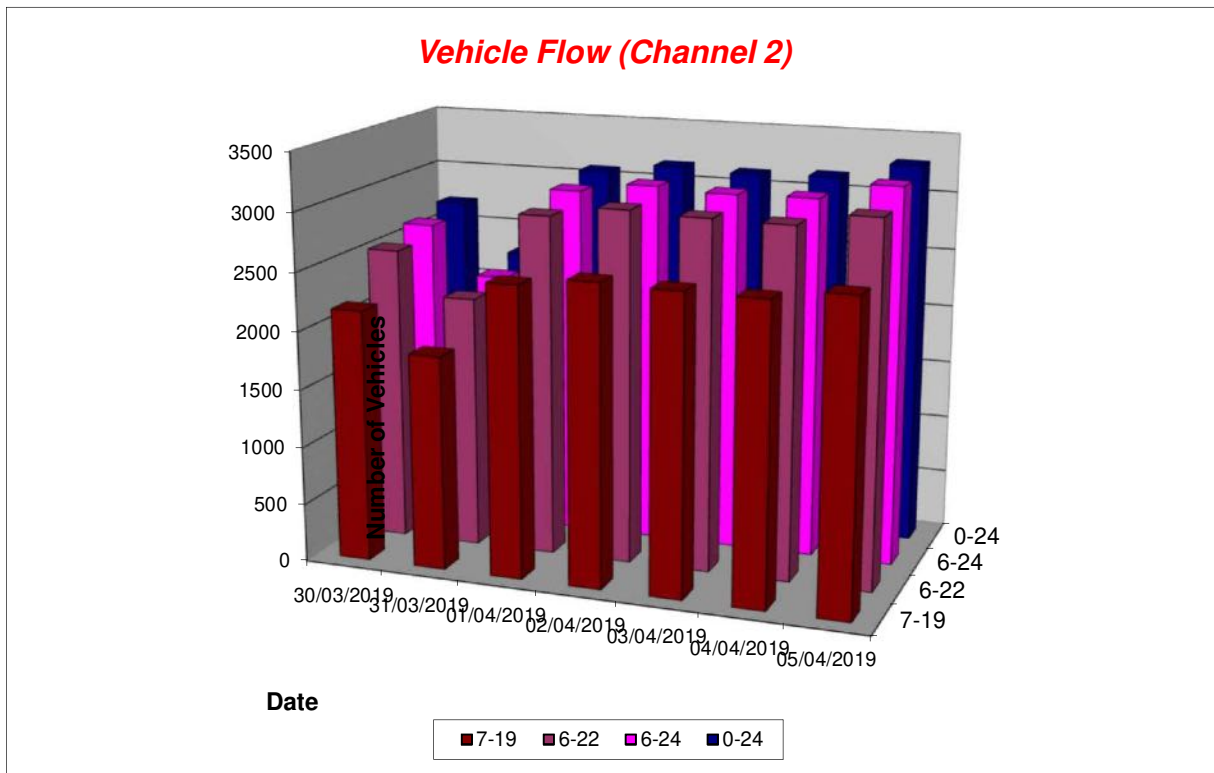
Produced by Road Data Services Ltd.

Channel 2 - Eastbound

Vehicle Flow

Week 1

Hr Ending	30/03/2019 Saturday	31/03/2019 Sunday	01/04/2019 Monday	02/04/2019 Tuesday	03/04/2019 Wednesday	04/04/2019 Thursday	05/04/2019 Friday	5 Day Ave	7 Day Ave
1	17	20	8	7	11	17	16	12	14
2	13	16	7	4	4	4	4	5	7
3	9	0	4	8	3	4	3	4	4
4	10	12	7	6	7	5	6	6	8
5	7	11	4	3	3	4	11	5	6
6	19	10	27	27	27	30	18	26	23
7	33	21	90	105	95	97	75	92	74
8	54	28	274	257	253	284	237	261	198
9	82	49	326	334	348	329	315	330	255
10	153	101	172	176	172	176	152	170	157
11	179	135	130	159	137	117	144	137	143
12	197	183	162	159	158	172	168	164	171
13	197	209	161	177	169	173	225	181	187
14	236	252	159	168	180	164	190	172	193
15	226	201	205	216	213	215	218	213	213
16	218	206	247	231	217	223	236	231	225
17	215	162	216	227	265	238	251	239	225
18	222	171	222	268	233	235	260	244	230
19	189	146	222	199	210	220	235	217	203
20	139	134	137	161	148	145	176	153	149
21	122	102	132	107	114	127	123	121	118
22	75	70	73	79	88	76	94	82	79
23	60	30	63	60	48	72	90	67	60
24	34	15	29	20	27	22	37	27	26
7-19	2168	1843	2496	2571	2555	2546	2631	2560	2401
6-22	2537	2170	2928	3023	3000	2991	3099	3008	2821
6-24	2631	2215	3020	3103	3075	3085	3226	3102	2908
0-24	2706	2284	3077	3158	3130	3149	3284	3160	2970



Poplars Avenue  
Westbound

7 Day Average Westbound

Time	Total
0000	15
0100	7
0200	3
0300	6
0400	13
0500	35
0600	58
0700	111
<b>0800</b>	<b>146</b>
0900	149
1000	155
1100	172
<b>1200</b>	<b>179</b>
<b>1300</b>	<b>199</b>
1400	192
1500	227
1600	254
1700	268
1800	205
1900	149
2000	108
2100	80
2200	48
2300	28
<b>07-19</b>	<b>2257</b>
<b>06-00</b>	<b>2728</b>
<b>00-00</b>	<b>2808</b>

AAWT Factor 11.8469

5 Day Average Westbound

Time	Total
0000	13
0100	4
0200	2
0300	5
0400	12
0500	40
0600	69
0700	134
<b>0800</b>	<b>171</b>
0900	155
1000	151
1100	158
<b>1200</b>	<b>158</b>
<b>1300</b>	<b>187</b>
1400	179
1500	241
1600	284
1700	303
1800	225
1900	157
2000	111
2100	84
2200	51
2300	26
<b>07-19</b>	<b>2345</b>
<b>06-00</b>	<b>2843</b>
<b>00-00</b>	<b>2919</b>

AAWT Factor 11.9949

Poplars Avenue  
Eastbound

7 Day Average Eastbound

Time	Total
0000	14
0100	7
0200	4
0300	8
0400	6
0500	23
0600	74
0700	198
0800	255
0900	157
1000	143
1100	171
1200	187
1300	193
1400	213
1500	225
1600	225
1700	230
1800	203
1900	149
2000	118
2100	79
2200	60
2300	26
<b>07-19</b>	<b>2401</b>
<b>06-00</b>	<b>2908</b>
<b>00-00</b>	<b>2970</b>

AAWT Factor 10.3474

5 Day Average Eastbound

Time	Total
0000	12
0100	5
0200	4
0300	6
0400	5
0500	26
0600	92
0700	261
0800	330
0900	170
1000	137
1100	164
1200	181
1300	172
1400	213
1500	231
1600	239
1700	244
1800	217
1900	153
2000	121
2100	82
2200	67
2300	27
<b>07-19</b>	<b>2560</b>
<b>06-00</b>	<b>3102</b>
<b>00-00</b>	<b>3160</b>

AAWT Factor 10.8077

## **Appendix 4**

ATC Data – Blackbrook Avenue

# Warrington ATC, Blackbrook Avenue

Produced by Road Data Services Ltd.

## Channel 1 - Northbound

20/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	11	1	0	0	0	0	0	0	0	0	0	0	0	12
2	4	0	0	0	0	0	0	0	0	0	0	0	0	4
3	2	2	0	0	0	0	0	0	0	0	0	0	0	4
4	0	1	0	0	0	0	0	0	0	0	0	0	0	1
5	9	0	0	0	0	0	0	0	0	0	0	0	0	9
6	23	5	0	0	0	0	0	0	0	0	0	0	0	28
7	46	9	0	0	0	0	0	0	0	0	0	0	0	55
8	126	25	0	0	0	0	0	0	0	0	0	1	0	152
9	207	32	0	0	1	0	0	0	0	0	0	1	0	241
10	144	26	1	1	0	0	0	0	0	0	0	1	0	173
11	120	14	0	0	0	0	0	0	0	0	0	1	0	135
12	151	19	0	0	1	0	0	0	0	0	0	0	0	171
13	176	16	2	0	0	0	0	0	0	0	0	1	0	195
14	167	29	1	0	1	0	0	0	0	0	0	2	0	200
15	191	29	1	0	0	0	0	0	0	0	0	0	0	221
16	232	41	1	0	1	0	0	0	0	0	0	2	0	277
17	291	39	1	0	0	0	0	0	0	0	0	0	0	331
18	328	44	1	0	1	0	0	0	0	0	0	2	0	376
19	299	26	2	0	0	0	0	0	0	0	0	0	0	327
20	194	12	1	0	2	0	0	0	0	0	0	1	0	210
21	94	7	0	0	0	0	0	0	0	0	0	0	0	101
22	75	5	1	0	0	0	0	0	0	0	0	0	0	81
23	55	6	0	0	0	0	0	0	0	0	0	0	0	61
24	50	3	0	0	0	0	0	0	0	0	0	0	0	53
7-19	2432	340	10	1	5	0	0	0	0	0	0	11	0	2799
6-22	2841	373	12	1	7	0	0	0	0	0	0	12	0	3246
6-24	2946	382	12	1	7	0	0	0	0	0	0	12	0	3360
0-24	2995	391	12	1	7	0	0	0	0	0	0	12	0	3418

## Channel 2 - Southbound

20/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	11	2	0	0	0	0	0	0	0	0	0	0	0	13
2	4	0	0	0	0	0	0	0	0	0	0	0	0	4
3	4	0	0	0	0	0	0	0	0	0	0	0	0	4
4	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5	11	0	0	0	0	0	0	0	0	0	0	0	0	11
6	22	4	0	0	0	0	0	0	0	0	0	0	0	26
7	82	13	0	0	0	0	0	0	0	0	0	0	0	95
8	363	39	1	0	0	0	0	0	0	0	0	0	0	403
9	380	44	1	0	0	0	0	0	0	0	0	0	0	425
10	224	18	0	0	0	0	0	0	0	0	0	1	0	243
11	175	19	0	0	0	0	0	0	0	0	0	0	0	194
12	131	21	1	0	0	0	0	0	0	0	0	3	0	156
13	158	14	0	0	1	0	0	0	0	0	0	2	0	175
14	178	21	0	0	0	0	0	0	0	0	0	0	0	199
15	191	20	0	0	1	0	0	0	0	0	0	2	0	214
16	247	28	3	0	0	0	0	0	0	0	0	0	0	278
17	251	34	0	0	0	0	0	0	0	0	0	0	0	285
18	267	27	1	0	0	0	0	0	0	0	0	1	0	296
19	202	10	0	0	0	0	0	0	0	0	0	0	0	212
20	156	9	1	0	0	0	0	0	0	0	0	0	0	166
21	101	3	0	0	0	0	0	0	0	0	0	0	0	104
22	80	6	0	0	0	0	0	0	0	0	0	0	0	86
23	44	3	0	0	0	0	0	0	0	0	0	0	0	47
24	42	2	0	0	0	0	0	0	0	0	0	0	0	44
7-19	2767	295	7	0	2	0	0	0	0	0	0	9	0	3080
6-22	3186	326	8	0	2	0	0	0	0	0	0	9	0	3531
6-24	3272	331	8	0	2	0	0	0	0	0	0	9	0	3622
0-24	3326	337	8	0	2	0	0	0	0	0	0	9	0	3682

# Warrington ATC, Blackbrook Avenue

Produced by Road Data Services Ltd.

## Channel 1 - Northbound

21/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	26	1	0	0	0	0	0	0	0	0	0	0	0	27
2	8	0	0	0	0	0	0	0	0	0	0	0	0	8
3	7	0	0	0	0	0	0	0	0	0	0	0	0	7
4	6	1	0	0	0	0	0	0	0	0	0	0	0	7
5	5	0	0	0	0	0	0	0	0	0	0	0	0	5
6	8	1	0	0	0	0	0	0	0	0	0	0	0	9
7	17	1	0	0	0	0	0	0	0	0	0	0	0	18
8	35	4	0	0	0	0	0	0	0	0	0	0	0	39
9	54	9	1	0	0	0	0	0	0	0	0	0	0	64
10	103	13	1	0	0	0	0	0	0	0	0	1	0	118
11	162	26	0	0	0	0	0	0	0	0	0	0	0	188
12	218	17	0	0	0	0	0	0	0	0	0	0	0	235
13	198	30	0	0	0	0	0	1	0	0	0	0	0	229
14	186	14	0	0	0	0	0	1	0	0	0	1	0	202
15	181	23	0	0	0	0	0	0	0	0	0	0	0	204
16	192	18	1	0	0	0	0	0	0	0	0	1	0	212
17	187	11	0	0	0	0	0	0	0	0	0	0	0	198
18	185	9	0	0	0	0	0	0	0	0	0	0	0	194
19	147	10	0	0	0	0	0	0	0	0	0	0	0	157
20	102	7	0	0	0	0	0	0	0	0	0	0	0	109
21	84	8	0	0	0	0	0	0	0	0	0	0	0	92
22	60	1	0	0	0	0	0	0	0	0	0	0	0	61
23	55	1	0	0	0	0	0	0	0	0	0	0	0	56
24	52	5	1	0	0	0	0	0	0	0	0	0	0	58
7-19	1848	184	3	0	0	0	0	2	0	0	0	3	0	2040
6-22	2111	201	3	0	0	0	0	2	0	0	0	3	0	2320
6-24	2218	207	4	0	0	0	0	2	0	0	0	3	0	2434
0-24	2278	210	4	0	0	0	0	2	0	0	0	3	0	2497

## Channel 2 - Southbound

21/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	21	1	0	0	0	0	0	0	0	0	0	0	0	22
2	13	1	0	0	0	0	0	0	0	0	0	0	0	14
3	4	1	0	0	0	0	0	0	0	0	0	0	0	5
4	3	0	0	0	0	0	0	0	0	0	0	0	0	3
5	4	0	0	0	0	0	0	0	0	0	0	0	0	4
6	10	2	0	0	0	0	0	0	0	0	0	0	0	12
7	29	4	0	0	0	0	0	0	0	0	0	0	0	33
8	51	3	0	0	0	0	0	0	0	0	0	0	0	54
9	120	14	0	0	0	0	0	0	0	0	0	0	0	134
10	166	17	0	0	1	0	0	0	0	0	0	0	0	184
11	199	14	0	0	0	0	0	0	0	0	0	0	0	213
12	206	12	0	0	0	0	0	0	0	0	0	0	0	218
13	187	8	0	0	0	0	0	0	0	0	0	0	0	195
14	191	10	0	1	0	0	0	1	0	0	0	0	0	203
15	206	14	0	0	0	0	0	0	0	0	0	0	0	220
16	178	12	0	0	0	0	0	0	0	0	0	0	0	190
17	189	12	0	0	0	0	0	0	1	0	0	0	0	202
18	161	8	0	0	0	0	0	0	0	0	0	0	0	169
19	112	1	0	0	0	0	0	0	0	0	0	0	0	113
20	123	4	0	0	0	0	0	0	0	0	0	0	0	127
21	81	4	0	0	0	0	0	0	0	0	0	0	0	85
22	64	1	0	0	0	0	0	0	0	0	0	0	0	65
23	54	0	0	0	0	0	0	0	0	0	0	0	0	54
24	49	3	0	0	0	0	0	0	0	0	0	0	0	52
7-19	1966	125	0	1	1	0	0	1	1	0	0	0	0	2095
6-22	2263	138	0	1	1	0	0	1	1	0	0	0	0	2405
6-24	2366	141	0	1	1	0	0	1	1	0	0	0	0	2511
0-24	2421	146	0	1	1	0	0	1	1	0	0	0	0	2571

# Warrington ATC, Blackbrook Avenue

Produced by Road Data Services Ltd.

## Channel 1 - Northbound

22/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	39	1	0	0	0	0	0	0	0	0	0	0	0	40
2	15	2	0	0	0	0	0	0	0	0	0	0	0	17
3	4	0	0	0	0	0	0	0	0	0	0	0	0	4
4	6	2	0	0	0	0	0	0	0	0	0	0	0	8
5	15	0	0	0	0	0	0	0	0	0	0	0	0	15
6	5	0	0	0	0	0	0	0	0	0	0	0	0	5
7	13	3	0	0	0	0	0	0	0	0	0	0	0	16
8	23	3	0	0	0	0	0	0	0	0	0	0	0	26
9	33	2	0	0	0	0	0	0	0	0	0	0	0	35
10	76	6	0	0	0	0	0	0	0	0	0	0	0	82
11	96	11	1	0	0	0	0	0	0	0	0	1	0	109
12	141	8	0	0	1	0	0	0	0	0	0	0	0	150
13	166	17	1	0	0	0	0	1	0	0	0	0	0	185
14	219	13	0	0	0	0	0	0	0	0	0	2	0	234
15	146	16	1	0	0	0	0	0	0	0	0	0	0	163
16	193	10	0	0	1	0	0	0	0	0	0	1	0	205
17	189	13	0	0	0	0	1	0	0	0	0	0	0	203
18	152	9	0	0	0	0	0	0	0	0	0	1	0	162
19	108	4	2	0	1	0	0	0	1	0	0	0	0	116
20	102	5	0	0	0	0	0	0	0	0	0	0	0	107
21	68	2	0	0	0	0	0	0	0	0	0	0	0	70
22	48	2	0	0	0	0	0	0	0	0	0	0	0	50
23	36	4	0	0	0	0	0	0	0	0	0	0	0	40
24	14	3	0	0	0	0	0	0	0	0	0	0	0	17
7-19	1542	112	5	0	3	0	1	1	1	0	0	5	0	1670
6-22	1773	124	5	0	3	0	1	1	1	0	0	5	0	1913
6-24	1823	131	5	0	3	0	1	1	1	0	0	5	0	1970
0-24	1907	136	5	0	3	0	1	1	1	0	0	5	0	2059

## Channel 2 - Southbound

22/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	40	1	0	0	0	0	0	0	0	0	0	0	0	41
2	16	5	0	0	0	0	0	0	0	0	0	0	0	21
3	5	1	0	0	0	0	0	0	0	0	0	0	0	6
4	6	4	0	0	0	0	0	0	0	0	0	0	0	10
5	13	0	0	0	0	0	0	0	0	0	0	0	0	13
6	10	0	0	0	0	0	0	0	0	0	0	0	0	10
7	14	2	0	0	0	0	0	0	0	0	0	0	0	16
8	27	2	0	0	0	0	0	0	0	0	0	0	0	29
9	55	2	0	0	0	0	0	0	0	0	0	0	0	57
10	85	2	1	0	0	0	0	0	0	0	0	0	0	88
11	125	10	0	0	0	0	0	0	0	0	0	2	0	137
12	162	14	0	0	0	0	0	0	0	0	0	0	0	176
13	200	12	1	0	0	0	0	0	0	0	0	1	0	214
14	204	15	0	1	2	0	0	0	0	0	0	0	0	222
15	186	16	0	0	0	0	0	0	0	0	0	1	0	203
16	160	6	0	0	0	0	0	0	0	0	0	0	0	166
17	194	8	0	0	0	0	0	0	0	0	0	1	0	203
18	120	10	0	0	0	0	0	0	0	0	0	0	0	130
19	118	3	0	0	0	0	0	0	0	0	0	0	0	121
20	85	1	0	0	0	0	0	0	0	0	0	1	0	87
21	74	4	0	0	0	0	0	0	0	0	0	0	0	78
22	52	2	0	0	0	0	0	0	0	0	0	0	0	54
23	27	3	0	0	0	0	0	0	0	0	0	0	0	30
24	20	1	0	0	0	0	0	0	0	0	0	0	0	21
7-19	1636	100	2	1	2	0	0	0	0	0	0	5	0	1746
6-22	1861	109	2	1	2	0	0	0	0	0	0	6	0	1981
6-24	1908	113	2	1	2	0	0	0	0	0	0	6	0	2032
0-24	1998	124	2	1	2	0	0	0	0	0	0	6	0	2133

# Warrington ATC, Blackbrook Avenue

Produced by Road Data Services Ltd.

## Channel 1 - Northbound

23/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	3	4	0	0	0	0	0	0	0	0	0	0	0	7
2	2	2	0	0	0	0	0	0	0	0	0	0	0	4
3	2	0	0	0	0	0	0	0	0	0	0	0	0	2
4	2	1	0	0	0	0	0	0	0	0	0	0	0	3
5	6	0	0	0	0	0	0	0	0	0	0	0	0	6
6	27	2	0	0	0	0	0	0	0	0	0	1	0	30
7	36	3	0	0	0	0	0	0	0	0	0	1	0	40
8	135	28	0	0	0	0	0	0	0	0	0	1	0	164
9	214	29	1	0	1	0	0	0	0	0	0	1	0	246
10	109	24	1	0	0	0	0	0	1	0	0	0	0	135
11	101	16	0	0	0	0	0	0	0	0	0	1	0	118
12	127	16	0	0	0	0	0	0	0	0	0	1	0	144
13	149	17	0	0	0	0	0	0	0	0	0	0	0	166
14	122	23	0	0	1	0	0	0	0	0	0	1	0	147
15	143	25	0	0	0	0	0	0	0	0	0	0	0	168
16	264	33	0	0	1	0	0	0	0	0	0	0	0	298
17	268	48	0	0	0	0	0	0	1	0	0	0	0	317
18	259	31	2	0	0	0	0	0	1	0	0	2	0	295
19	198	18	0	0	0	0	0	0	0	0	0	0	0	216
20	122	8	0	0	0	0	0	0	0	0	0	0	0	130
21	94	8	0	0	0	0	0	0	0	0	0	0	0	102
22	64	2	0	0	0	0	0	0	0	0	0	0	0	66
23	46	5	0	0	0	0	0	0	0	0	0	0	0	51
24	13	0	0	0	0	0	0	0	0	0	0	0	0	13
7-19	2089	308	4	0	3	0	0	0	3	0	0	7	0	2414
6-22	2405	329	4	0	3	0	0	0	3	0	0	8	0	2752
6-24	2464	334	4	0	3	0	0	0	3	0	0	8	0	2816
0-24	2506	343	4	0	3	0	0	0	3	0	0	9	0	2868

## Channel 2 - Southbound

23/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	5	1	0	0	0	0	0	0	0	0	0	0	0	6
2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
3	2	0	0	0	0	0	0	0	0	0	0	0	0	2
4	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5	4	1	0	0	0	0	0	0	0	0	0	0	0	5
6	22	3	0	0	0	0	0	0	0	0	0	1	0	26
7	80	13	0	0	0	0	0	0	0	0	0	0	0	93
8	353	46	2	0	2	0	0	0	0	0	0	0	0	403
9	438	34	2	1	1	0	0	0	0	0	0	1	0	477
10	247	32	1	0	0	0	0	1	2	0	0	0	0	283
11	157	16	0	0	0	0	0	0	0	0	0	0	0	173
12	150	22	0	1	0	0	0	0	0	0	0	3	0	176
13	155	14	0	0	0	0	0	0	0	0	0	2	0	171
14	196	26	1	0	0	0	0	0	1	0	0	0	0	224
15	196	29	1	0	0	0	0	1	1	0	0	1	0	229
16	180	17	1	0	0	0	0	0	0	0	0	0	0	198
17	231	36	0	0	0	0	0	0	0	0	0	1	0	268
18	272	23	2	0	0	0	0	0	0	0	0	1	0	298
19	188	12	0	0	0	0	0	0	0	0	0	0	0	200
20	134	2	0	0	0	0	0	0	0	0	0	0	0	136
21	80	7	0	0	0	0	0	0	0	0	0	0	0	87
22	59	2	0	0	0	0	0	0	0	0	0	0	0	61
23	35	6	0	0	0	0	0	0	0	0	0	0	0	41
24	15	1	0	0	0	0	0	0	0	0	0	0	0	16
7-19	2763	307	10	2	3	0	0	2	4	0	0	9	0	3100
6-22	3116	331	10	2	3	0	0	2	4	0	0	9	0	3477
6-24	3166	338	10	2	3	0	0	2	4	0	0	9	0	3534
0-24	3202	343	10	2	3	0	0	2	4	0	0	10	0	3576



# Warrington ATC, Blackbrook Avenue

Produced by Road Data Services Ltd.

## Channel 1 - Northbound

24/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	8	2	0	0	0	0	0	0	0	0	0	0	0	10
2	1	0	0	0	0	0	0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	3	1	0	0	0	0	0	0	0	0	0	0	0	4
5	6	1	0	0	0	0	0	0	0	0	0	0	0	7
6	24	3	0	0	0	0	0	0	0	0	0	0	0	27
7	45	11	2	0	0	0	0	1	0	0	0	1	0	60
8	133	26	1	0	0	0	0	0	0	0	0	1	0	161
9	213	21	1	0	1	0	0	0	0	0	0	1	0	237
10	120	22	2	0	0	0	0	1	0	0	2	1	0	148
11	107	18	2	0	1	0	0	0	0	0	0	1	0	129
12	118	14	0	0	0	0	0	0	0	0	0	2	0	134
13	156	19	0	0	1	0	0	0	0	0	0	0	0	176
14	122	18	1	0	0	0	1	0	0	0	0	1	0	143
15	148	24	0	0	2	0	0	0	1	0	0	0	0	175
16	201	31	0	0	2	0	1	1	0	0	0	0	0	236
17	269	48	1	0	0	0	0	0	0	0	0	1	0	319
18	296	32	1	0	0	0	0	0	0	0	0	0	0	329
19	225	20	1	0	0	0	0	0	0	0	0	0	0	246
20	147	15	0	0	1	0	0	0	0	0	0	1	0	164
21	96	18	0	0	0	0	0	0	1	0	0	1	0	116
22	101	5	0	0	0	0	0	0	0	0	0	0	0	106
23	47	6	0	0	0	0	0	0	0	0	0	0	0	53
24	30	2	0	0	0	0	0	0	0	0	0	0	0	32
7-19	2108	293	10	0	7	0	2	2	1	0	2	8	0	2433
6-22	2497	342	12	0	8	0	2	3	2	0	2	11	0	2879
6-24	2574	350	12	0	8	0	2	3	2	0	2	11	0	2964
0-24	2616	357	12	0	8	0	2	3	2	0	2	11	0	3013

## Channel 2 - Southbound

24/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	9	1	0	0	0	0	0	0	0	0	0	0	0	10
2	6	0	0	0	0	0	0	0	0	0	0	0	0	6
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	7	0	0	0	0	0	0	0	0	0	0	0	0	7
5	6	0	0	0	0	0	0	0	0	0	0	0	0	6
6	17	6	0	0	0	0	0	0	0	0	0	1	0	24
7	88	10	0	0	0	0	0	0	0	0	0	0	0	98
8	355	33	1	1	1	0	0	0	0	0	0	0	0	391
9	492	52	1	0	0	0	0	0	0	0	0	2	0	547
10	265	31	1	0	0	0	0	0	0	0	0	1	0	298
11	157	10	1	0	0	0	0	1	0	0	1	0	0	170
12	146	12	1	0	0	0	0	0	0	0	0	0	0	159
13	146	15	1	0	0	0	0	0	0	0	0	1	0	163
14	148	16	0	1	1	0	0	0	0	0	0	1	0	167
15	168	22	1	0	1	0	0	0	0	0	0	1	0	193
16	197	20	4	0	1	0	0	0	0	0	0	0	0	222
17	221	28	3	0	0	0	0	0	0	0	0	0	0	252
18	274	26	1	0	0	0	0	0	0	0	0	1	0	302
19	213	14	0	0	0	0	0	0	0	0	0	0	0	227
20	136	10	0	0	0	0	0	0	0	0	0	0	0	146
21	89	18	1	0	0	0	0	0	0	0	0	0	0	108
22	72	2	0	0	0	0	0	0	0	0	0	0	0	74
23	42	4	0	0	0	0	0	0	0	0	0	0	0	46
24	33	1	0	0	0	0	0	0	0	0	0	0	0	34
7-19	2782	279	15	2	4	0	0	1	0	0	1	7	0	3091
6-22	3167	319	16	2	4	0	0	1	0	0	1	7	0	3517
6-24	3242	324	16	2	4	0	0	1	0	0	1	7	0	3597
0-24	3287	331	16	2	4	0	0	1	0	0	1	8	0	3650

# Warrington ATC, Blackbrook Avenue

Produced by Road Data Services Ltd.

## Channel 1 - Northbound

25/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	6	3	0	0	0	0	0	0	0	0	0	0	0	9
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	2	0	0	0	0	0	0	0	0	0	0	0	0	2
4	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5	6	0	0	0	0	0	0	0	0	0	0	0	0	6
6	22	4	0	0	0	0	0	0	0	0	0	0	0	26
7	48	11	0	0	0	0	0	0	0	0	0	0	0	59
8	144	20	0	0	0	0	0	0	0	0	0	2	0	166
9	217	33	2	0	0	0	0	0	0	1	0	1	0	254
10	116	22	1	0	1	0	0	0	0	0	0	0	0	140
11	122	17	0	0	1	0	0	0	0	0	0	1	0	141
12	145	12	0	0	0	0	0	0	0	0	0	1	0	158
13	153	17	0	0	0	0	0	0	0	0	0	1	0	171
14	116	22	1	0	1	0	0	0	0	0	0	2	0	142
15	151	33	0	0	0	0	0	0	0	0	0	2	0	186
16	229	30	1	0	0	0	0	0	0	0	0	0	0	260
17	268	54	1	0	2	0	0	0	0	0	0	1	0	326
18	309	34	0	0	0	0	0	0	0	0	0	2	0	345
19	200	23	0	0	0	0	0	0	0	0	0	0	0	223
20	153	15	1	0	0	0	0	0	0	0	0	0	0	169
21	91	9	0	0	0	0	0	0	0	0	0	0	0	100
22	85	12	0	0	0	0	0	0	0	0	0	0	0	97
23	69	3	0	0	0	0	0	0	0	0	0	0	0	72
24	20	0	0	0	0	0	0	0	0	0	0	0	0	20
7-19	2170	317	6	0	5	0	0	0	0	1	0	13	0	2512
6-22	2547	364	7	0	5	0	0	0	0	1	0	13	0	2937
6-24	2636	367	7	0	5	0	0	0	0	1	0	13	0	3029
0-24	2673	374	7	0	5	0	0	0	0	1	0	13	0	3073

## Channel 2 - Southbound

25/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	8	3	0	0	0	0	0	0	0	0	0	0	0	11
2	1	1	0	0	0	0	0	0	0	0	0	0	0	2
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5	5	0	0	0	0	0	0	0	0	0	0	0	0	5
6	24	4	0	0	0	0	0	0	0	0	0	0	0	28
7	97	13	0	0	0	0	1	0	0	0	0	0	0	111
8	375	45	1	0	0	0	0	0	0	0	0	1	0	422
9	458	51	4	0	1	0	0	0	0	0	0	1	0	515
10	224	23	0	0	0	0	0	0	0	0	0	4	0	251
11	149	22	0	0	1	0	0	0	0	0	0	0	0	172
12	131	10	2	0	0	0	0	0	0	0	0	1	0	144
13	154	16	0	0	1	0	0	0	0	0	0	1	0	172
14	182	18	1	0	0	0	0	0	0	0	0	0	0	201
15	176	23	0	0	0	0	0	0	0	0	0	0	0	199
16	204	26	1	0	0	0	0	0	0	0	0	0	0	231
17	218	41	3	1	0	0	0	0	0	0	0	2	0	265
18	248	28	0	0	0	0	0	0	0	0	0	0	0	276
19	219	22	0	0	0	0	0	0	0	0	0	0	0	241
20	164	15	0	1	0	0	0	0	0	0	0	0	0	180
21	90	6	0	0	0	0	0	0	0	0	0	0	0	96
22	64	4	0	0	0	0	0	0	0	0	0	0	0	68
23	52	1	0	0	0	0	0	0	0	0	0	0	0	53
24	20	2	0	0	0	0	0	0	0	0	0	0	0	22
7-19	2738	325	12	1	3	0	0	0	0	0	0	10	0	3089
6-22	3153	363	12	2	3	0	1	0	0	0	0	10	0	3544
6-24	3225	366	12	2	3	0	1	0	0	0	0	10	0	3619
0-24	3265	374	12	2	3	0	1	0	0	0	0	10	0	3667

# Warrington ATC, Blackbrook Avenue

Produced by Road Data Services Ltd.

## Channel 1 - Northbound

26/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	5	2	0	0	0	0	0	0	0	0	0	0	0	7
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	2	1	0	0	0	0	0	0	0	0	0	0	0	3
4	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5	6	0	0	0	0	0	0	0	0	0	0	0	0	6
6	20	3	0	0	0	0	0	0	0	0	0	0	0	23
7	48	7	0	0	0	0	0	0	0	0	0	0	0	55
8	128	26	1	0	0	0	0	0	0	0	0	0	0	155
9	228	18	1	0	1	0	0	0	0	0	0	1	0	249
10	112	18	2	0	0	0	0	1	0	0	3	1	0	137
11	118	13	0	0	1	0	0	0	0	0	0	0	0	132
12	137	18	0	0	1	0	0	1	0	0	0	1	0	158
13	155	12	1	0	0	0	0	0	0	0	0	0	0	168
14	139	20	1	1	0	0	0	0	0	0	0	0	0	161
15	165	27	1	0	0	0	0	0	0	0	0	0	0	193
16	211	30	1	0	1	0	0	0	0	0	0	0	0	243
17	315	44	0	0	1	0	0	0	0	0	0	0	0	360
18	298	29	0	0	0	0	1	0	0	0	0	1	0	329
19	234	23	0	0	2	0	0	0	0	0	0	0	0	259
20	160	8	1	0	0	0	0	0	0	0	0	0	0	169
21	128	7	0	0	0	0	0	0	0	0	0	1	0	136
22	95	6	1	0	0	0	0	0	0	0	0	0	0	102
23	60	3	0	0	0	0	0	0	0	0	0	0	0	63
24	29	2	0	0	0	0	0	0	0	0	0	0	0	31
7-19	2240	278	8	1	7	0	1	2	0	0	3	4	0	2544
6-22	2671	306	10	1	7	0	1	2	0	0	3	5	0	3006
6-24	2760	311	10	1	7	0	1	2	0	0	3	5	0	3100
0-24	2794	317	10	1	7	0	1	2	0	0	3	5	0	3140

## Channel 2 - Southbound

26/11/2015	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	5	2	0	0	0	0	0	0	0	0	0	0	0	7
2	1	0	0	0	0	0	0	0	0	0	0	0	0	1
3	2	0	0	0	0	0	0	0	0	0	0	0	0	2
4	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5	5	0	0	0	0	0	0	0	0	0	0	0	0	5
6	23	4	0	0	0	0	0	0	0	0	0	0	0	27
7	94	6	0	0	0	0	0	0	0	0	0	0	0	100
8	353	47	2	0	1	0	0	0	0	0	0	0	0	403
9	465	46	1	0	1	0	0	0	1	0	0	2	0	516
10	257	37	1	0	0	0	0	0	0	0	0	1	0	296
11	138	19	0	0	0	0	0	0	0	0	0	1	0	158
12	161	15	1	0	0	0	0	0	0	0	0	0	0	177
13	152	9	0	0	0	0	0	0	0	0	0	2	0	163
14	168	13	1	0	1	0	0	0	0	0	0	0	0	183
15	203	18	0	0	0	0	0	0	0	0	0	0	0	221
16	208	20	0	0	1	0	0	0	0	0	0	0	0	229
17	243	30	2	0	1	0	0	0	0	0	0	0	0	276
18	296	22	0	0	0	0	0	0	0	0	0	0	0	318
19	209	18	0	0	0	0	0	0	0	0	0	1	0	228
20	169	7	1	0	0	0	0	0	0	0	0	0	0	177
21	111	7	1	0	0	0	0	0	0	0	0	0	0	119
22	78	3	0	0	0	0	0	0	0	0	0	0	0	81
23	40	0	0	0	0	0	0	0	0	0	0	0	0	40
24	50	2	0	0	0	0	0	0	0	0	0	0	0	52
7-19	2853	294	8	0	5	0	0	0	1	0	0	7	0	3168
6-22	3305	317	10	0	5	0	0	0	1	0	0	7	0	3645
6-24	3395	319	10	0	5	0	0	0	1	0	0	7	0	3737
0-24	3432	325	10	0	5	0	0	0	1	0	0	7	0	3780

Blackbrook Avenue  
Northbound

7 Day Average Northbound

Time	Total
0000	16
0100	5
0200	3
0300	4
0400	8
0500	21
0600	43
0700	123
<b>0800</b>	<b>189</b>
0900	133
1000	136
1100	164
1200	184
1300	176
1400	187
1500	247
1600	293
<b>1700</b>	<b>290</b>
1800	221
1900	151
2000	102
2100	80
2200	57
2300	32
<b>07-19</b>	<b>2345</b>
<b>06-00</b>	<b>2810</b>
<b>00-00</b>	<b>2867</b>

AAWT Factor 9.8823

5 Day Average Northbound

Time	Total
0000	9
0100	2
0200	2
0300	2
0400	7
0500	27
0600	54
0700	160
<b>0800</b>	<b>245</b>
0900	147
1000	131
1100	153
1200	175
1300	159
1400	189
1500	263
1600	331
<b>1700</b>	<b>335</b>
1800	254
1900	168
2000	111
2100	90
2200	60
2300	30
<b>07-19</b>	<b>2540</b>
<b>06-00</b>	<b>3054</b>
<b>00-00</b>	<b>3102</b>

AAWT Factor 10.5267

Blackbrook Avenue  
Southbound

7 Day Average Southbound

Time	Total
0000	16
0100	7
0200	3
0300	4
0400	7
0500	22
0600	78
0700	301
<b>0800</b>	<b>382</b>
0900	235
1000	174
1100	172
1200	179
1300	200
1400	211
1500	216
1600	250
<b>1700</b>	<b>256</b>
1800	192
1900	146
2000	97
2100	70
2200	44
2300	34
<b>07-19</b>	<b>2767</b>
<b>06-00</b>	<b>3236</b>
<b>00-00</b>	<b>3294</b>

AAWT Factor 8.2976

5 Day Average Southbound

Time	Total
0000	9
0100	3
0200	2
0300	3
0400	6
0500	26
0600	99
0700	404
<b>0800</b>	<b>496</b>
0900	274
1000	173
1100	162
1200	169
1300	195
1400	211
1500	232
1600	269
<b>1700</b>	<b>298</b>
1800	222
1900	161
2000	103
2100	74
2200	45
2300	34
<b>07-19</b>	<b>3106</b>
<b>06-00</b>	<b>3622</b>
<b>00-00</b>	<b>3671</b>

AAWT Factor 9.1229

# Appendix 5

ATC Data – Delph Lane

# Warrington ATC A, Delph Road

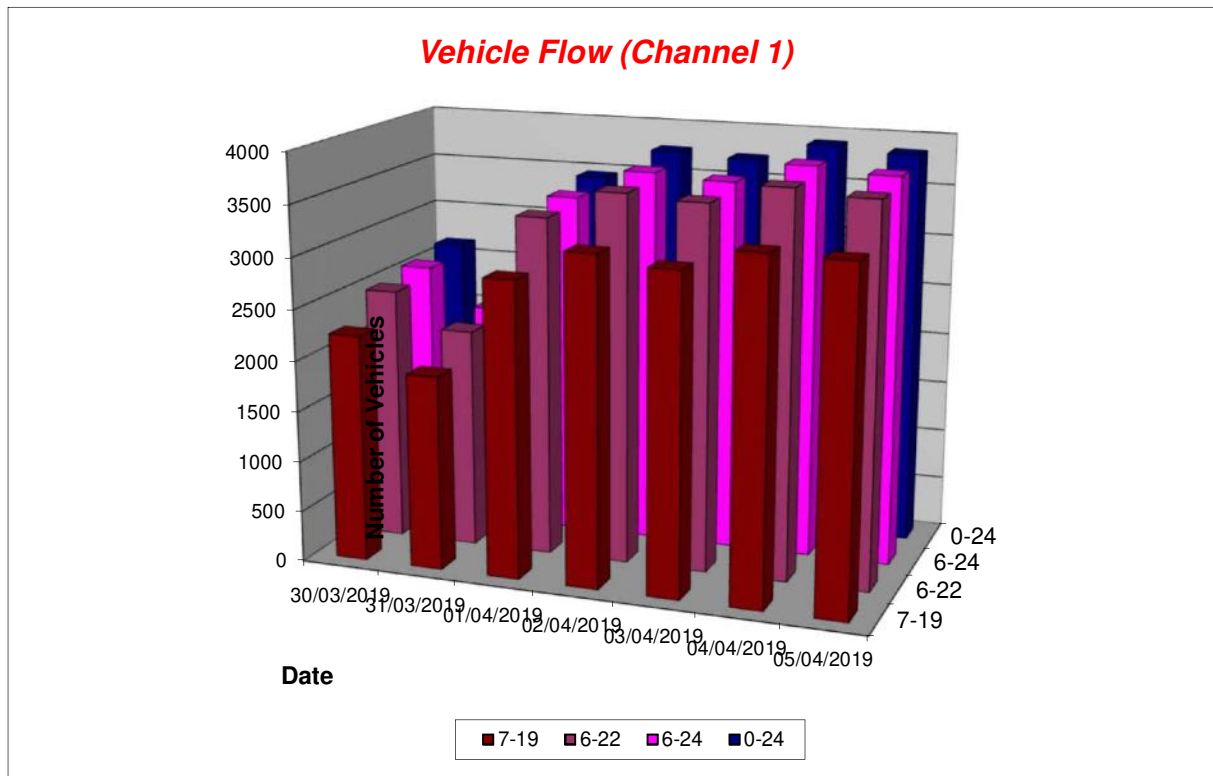
Produced by Road Data Services Ltd.

Channel 1 - Northbound

Vehicle Flow

Week 1

Hr Ending	30/03/2019 Saturday	31/03/2019 Sunday	01/04/2019 Monday	02/04/2019 Tuesday	03/04/2019 Wednesday	04/04/2019 Thursday	05/04/2019 Friday	5 Day Ave	7 Day Ave
1	25	17	6	5	4	4	6	5	10
2	8	6	6	4	2	4	2	4	5
3	7	0	0	0	3	1	3	1	2
4	6	7	2	4	10	3	4	5	5
5	8	5	14	10	9	8	13	11	10
6	25	18	44	59	61	50	49	53	44
7	30	23	112	123	120	116	112	117	91
8	72	35	255	274	301	308	260	280	215
9	106	62	332	406	368	351	297	351	275
10	176	131	152	177	171	179	178	171	166
11	244	155	140	136	144	155	147	144	160
12	243	193	156	145	167	157	193	164	179
13	223	216	193	183	146	142	185	170	184
14	236	248	170	187	176	198	207	188	203
15	227	238	233	257	204	203	305	240	238
16	191	185	215	272	294	277	362	284	257
17	180	194	394	467	435	472	478	449	374
18	192	128	449	465	455	582	447	480	388
19	145	125	209	230	250	293	247	246	214
20	100	99	147	128	150	142	145	142	130
21	67	78	96	101	116	116	76	101	93
22	61	48	77	62	74	68	67	70	65
23	44	36	48	58	49	56	52	53	49
24	34	13	8	8	15	18	23	14	17
7-19	2235	1910	2898	3199	3111	3317	3306	3166	2854
6-22	2493	2158	3330	3613	3571	3759	3706	3596	3233
6-24	2571	2207	3386	3679	3635	3833	3781	3663	3299
0-24	2650	2260	3458	3761	3724	3903	3858	3741	3373



# Warrington ATC A, Delph Road

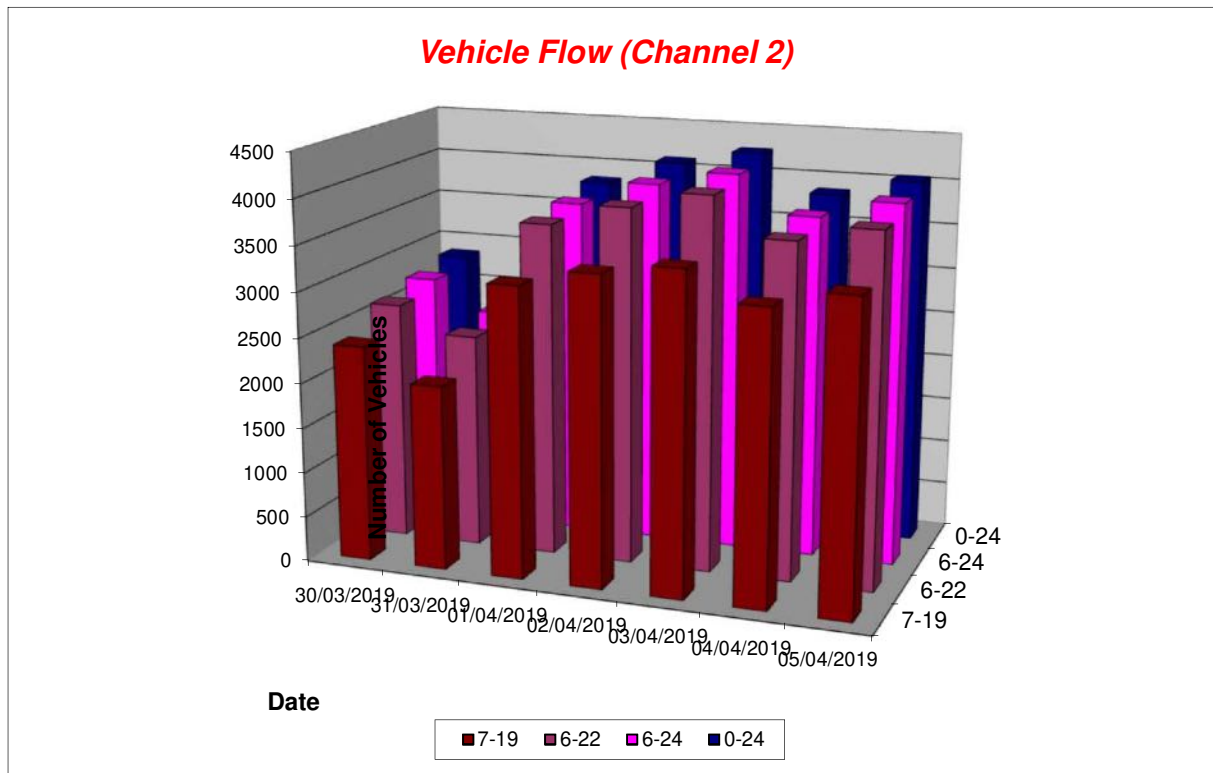
Produced by Road Data Services Ltd.

Channel 2 - Southbound

Vehicle Flow

Week 1

Hr Ending	30/03/2019 Saturday	31/03/2019 Sunday	01/04/2019 Monday	02/04/2019 Tuesday	03/04/2019 Wednesday	04/04/2019 Thursday	05/04/2019 Friday	5 Day Ave	7 Day Ave
1	30	26	6	8	7	6	9	7	13
2	13	12	5	4	3	5	8	5	7
3	6	0	3	6	4	8	1	4	4
4	10	10	4	3	2	0	2	2	4
5	11	12	8	10	20	10	13	12	12
6	21	17	63	65	51	58	47	57	46
7	33	13	172	200	196	184	183	187	140
8	66	28	432	404	455	438	398	425	317
9	98	52	477	574	554	490	404	500	378
10	167	92	262	346	375	240	243	293	246
11	216	153	149	174	193	156	171	169	173
12	259	204	154	164	166	159	297	188	200
13	263	252	174	183	169	165	216	181	203
14	254	263	142	190	189	182	241	189	209
15	237	246	207	187	196	198	250	208	217
16	214	233	258	243	273	231	305	262	251
17	235	210	378	338	309	348	322	339	306
18	232	169	346	368	401	362	312	358	313
19	155	140	221	221	234	228	222	225	203
20	110	141	129	149	183	152	130	149	142
21	64	111	100	99	126	84	87	99	96
22	48	61	73	71	81	66	77	74	68
23	51	48	45	76	54	43	70	58	55
24	54	18	20	22	18	41	42	29	31
7-19	2396	2042	3200	3392	3514	3197	3381	3337	3017
6-22	2651	2368	3674	3911	4100	3683	3858	3845	3464
6-24	2756	2434	3739	4009	4172	3767	3970	3931	3550
0-24	2847	2511	3828	4105	4259	3854	4050	4019	3636



Delph Lane  
Northbound

7 Day Average Northbound

Time	Total
0000	10
0100	5
0200	2
0300	5
0400	10
0500	44
0600	91
0700	215
<b>0800</b>	<b>275</b>
0900	166
1000	160
1100	179
1200	184
1300	203
1400	238
1500	257
1600	374
1700	388
1800	214
1900	130
2000	93
2100	65
2200	49
2300	17
<b>07-19</b>	<b>2854</b>
<b>06-00</b>	<b>3299</b>
<b>00-00</b>	<b>3373</b>

AAWT Factor 8.1248

5 Day Average Northbound

Time	Total
0000	5
0100	4
0200	1
0300	5
0400	11
0500	53
0600	117
0700	280
<b>0800</b>	<b>351</b>
0900	171
1000	144
1100	164
1200	170
1300	188
1400	240
1500	284
1600	449
1700	480
1800	246
1900	142
2000	101
2100	70
2200	53
2300	14
<b>07-19</b>	<b>3166</b>
<b>06-00</b>	<b>3663</b>
<b>00-00</b>	<b>3741</b>

AAWT Factor 8.8218

Delph Lane  
Southbound

7 Day Average Southbound

Time	Total
0000	13
0100	7
0200	4
0300	4
0400	12
0500	46
0600	140
0700	317
0800	378
0900	246
1000	173
1100	200
1200	203
1300	209
1400	217
1500	251
1600	306
1700	313
1800	203
1900	142
2000	96
2100	68
2200	55
2300	31
<b>07-19</b>	<b>3017</b>
<b>06-00</b>	<b>3550</b>
<b>00-00</b>	<b>3636</b>

AAWT Factor 8.4801

5 Day Average Southbound

Time	Total
0000	7
0100	5
0200	4
0300	2
0400	12
0500	57
0600	187
0700	425
0800	500
0900	293
1000	169
1100	188
1200	181
1300	189
1400	208
1500	262
1600	339
1700	358
1800	225
1900	149
2000	99
2100	74
2200	58
2300	29
<b>07-19</b>	<b>3337</b>
<b>06-00</b>	<b>3931</b>
<b>00-00</b>	<b>4019</b>

AAWT Factor 9.1684



## Appendix 2

Transport Advice Note TA 79/99 (May 1999)

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**VOLUME 5 ASSESSMENT AND  
PREPARATION OF ROAD  
SCHEMES**

**SECTION 1 PREPARATION AND  
IMPLEMENTATION**

---

**PART 3**

**TA 79/99 AMENDMENT NO 1**

**TRAFFIC CAPACITY OF URBAN ROADS**

**SUMMARY**

Advice Note TA 79/99, published February 1999, was wrongly placed in Section 2 of DMRB Volume 5. All users should arrange for the document TA 79/99 to be inserted in Volume 5, Section 1, Part 3 of DMRB. References within the document to Section 2, Part 2 should also be corrected accordingly.

**INSTRUCTIONS FOR USE**

1. Remove Advice Note TA 79/99 from Volume 3 of the DMRB.
2. Amend the volume references on all pages of TA 79/99 to read Volume 5, Section 1, Part 3 of DMRB.
3. Remove existing title page and insert amended title page and Note to Users in front of Contents sheet of TA 79/99.
4. Enter the details of the amendment on the Registration of Amendment sheet, sign and date to confirm that the amendment has been incorporated.

Note: A quarterly index with a full set of Volume Contents Pages is available separately from The Stationery Office Ltd.



**THE HIGHWAYS AGENCY**



**THE SCOTTISH OFFICE DEVELOPMENT DEPARTMENT**



**THE WELSH OFFICE  
Y SWYDDFA GYMREIG**



**THE DEPARTMENT OF THE ENVIRONMENT FOR  
NORTHERN IRELAND**

# **Traffic Capacity of Urban Roads**

Summary: Advice Note TA 79/99, published February 1999, was wrongly placed in Section 2 of DMRB Volume 5.

## **Note to Users**

1. Advice Note TA 79/99 published by the Highways Agency in February 1999 was placed erroneously in DMRB 5.2.2.
2. All users should arrange for the document TA 79/99 to be inserted in Volume 5, Section 1, Part 3 of DMRB. References within the document to Section 2, Part 2 should also be corrected accordingly.

**REGISTRATION OF AMENDMENTS**

Amend No	Page No	Signature & Date of incorporation of amendments	Amend No	Page No	Signature & Date of incorporation of amendments

**REGISTRATION OF AMENDMENTS**

Amend No	Page No	Signature & Date of incorporation of amendments	Amend No	Page No	Signature & Date of incorporation of amendments

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**VOLUME 5 ASSESSMENT AND  
PREPARATION OF ROAD  
SCHEMES**

**SECTION 2 PREPARATION AND  
IMPLEMENTATION**

---

**PART 2**

**TA 79/99**

**TRAFFIC CAPACITY OF URBAN ROADS**

**Contents**

Chapter

1. Introduction
2. General Principles
3. Determination of Urban Road Capacity
4. Assessment Procedure
5. Enquiries

# 1. INTRODUCTION

## General

1.1 Traffic flows on urban trunk roads in Greater and Outer London has been analysed to assess the capacities that can be achieved for different road types and widths. From this information the main features that affect capacity have been defined and the results presented in tabular form.

1.2 This document supersedes section 5 and Appendix 2 of TD 20/85 "Traffic Flows and Carriageway Width Assessment". TD 20/85 is now entirely superseded by both this document and TA 46/97. TD 20/85 is hereby withdrawn.

1.3 For **rural** roads reference should be made to TA 46/97 "Traffic Flow Ranges for Use in the Assessment of New Rural Roads".

## Scope

1.4 This Advice Note gives the maximum hourly vehicle capacity for various types of Urban Trunk Road. All capacities quoted are for traffic compositions including up to 15% heavy vehicles; corrections are provided for higher proportions.

1.5 The capacities may be used as starting points in the design and assessment of new urban trunk road links. They may also be used as a guide to the capacity of existing urban roads, and for assessing the likely effect on capacity of proposed changes to specific road features including carriageway width.

1.6 It should be borne in mind that the assessment of carriageway width is not based solely on peak hour travel demand. Cost and environmental impact should also be taken into account. A judgement may therefore have to be made between adopting reduced width of carriageway, weighed against any adverse effects incurred by providing for a higher level of demand.

## Implementation

1.7 This Advice Note should be used forthwith for all schemes for the construction of urban trunk roads including improvements, with the approval of the Overseeing Organisation. The exceptions are schemes currently being prepared where this would result in significant additional expense or delay progress.

## Definitions

1.8 Urban Motorway  
A motorway with a speed limit of 60 mph or less within a built up area.

1.9 Urban All-Purpose Road (UAP)  
An all-purpose road within a built up area, either a single carriageway with a speed limit of 40 mph or less or a dual carriageway with a speed limit of 60 mph or less.

1.10 Capacity  
For the purposes of this Advice Note, capacity is defined as the maximum sustainable flow of traffic passing in 1 hour, under favourable road and traffic conditions.



## 2. GENERAL PRINCIPLES

### Application of Capacity values

2.1 The guidance in this document should be used flexibly. In some circumstances, the use of a reduced width of carriageway will result in significant savings or environmental benefits, which outweigh the disbenefits of congestion during peak periods.

2.2 The capacity of urban roads can be affected by a wide range of factors that may not always be accurately predicted by the road features identified. For this reason capacity flows may be up to 10% more or less than the values given in this document.

### Features Affecting Capacity

2.3 The potential capacity of a link will not be reached if either the capacity of junctions along the link or the capacity of the adjoining network is lower than the link in question. The flow on an urban road may also be affected by turning movements restricting the mainline capacity. Such constraints should be identified at an early stage.

2.4 Urban roads normally have higher flows in the morning and evening peaks than at other times of day. Improving features that affect the capacity would help prevent congestion during these periods.

2.5 The flows given in the tables are the maximum that typical urban roads can carry consistently in an hour. The principal factors that may affect flow levels on urban roads are given in Table 1.  
For motorways the prime determinant is the carriageway width, but for all-purpose roads flow is also affected by the speed limit, the frequency of side roads, the degree of parking and loading, the frequency of at grade pedestrian crossings, bus stops, and accesses.

2.6 The capacity of the lower width roads will be significantly reduced by parking and temporary width restrictions caused by such activities as maintenance and Statutory Undertakers' Works. The lowest widths are unlikely to be suitable for bus routes or for significant volumes of heavy goods vehicles.

2.7 Roads in Category UAP3 and UAP4 may carry high proportions of local traffic, resulting in an increase in turning movements at junctions and accesses.

2.8 Capacity will also be affected by prevailing weather and night conditions. The capacities shown are for "favourable" daylight conditions.

Feature	ROAD TYPE				
	Urban Motorway	Urban All-purpose			
	UM	UAP1	UAP2	UAP3	UAP4
<b>General Description</b>	Through route with grade separated junctions, hardshoulders or hardstrips, and motorway restrictions.	High standard single/dual carriageway road carrying predominantly through traffic with limited access.	Good standard single/dual carriageway road with frontage access and more than two side roads per km.	Variable standard road carrying mixed traffic with frontage access, side roads, bus stops and at-grade pedestrian crossings.	Busy high street carrying predominantly local traffic with frontage activity including loading and unloading.
<b>Speed Limit</b>	60mph or less	40 to 60 mph for dual, & generally 40mph for single carriageway	Generally 40 mph	30 mph to 40 mph	30mph
<b>Side Roads</b>	None	0 to 2 per km	more than 2 per km	more than 2 per km	more than 2 per km
<b>Access to roadside development</b>	None. Grade separated for major only.	limited access	access to residential properties	frontage access	unlimited access to houses, shops & businesses
<b>Parking and loading</b>	none	restricted	restricted	unrestricted	unrestricted
<b>Pedestrian crossings</b>	grade separated	mostly grade separated	some at-grade	some at-grade	frequent at-grade
<b>Bus stops</b>	none	in lay-bys	at kerbside	at kerbside	at kerbside

**Table 1 Types of Urban roads and the features that distinguish them**

### 3. DETERMINATION OF URBAN ROAD CAPACITY

3.1 Table 1 sets out the types of Urban Roads and the features that distinguish between them and affect their traffic capacity. Tables 2 & 3 give the flow capacity for each road type described in Table 1.

3.2 Table 4 gives the adjustments when the proportion of heavy vehicles in a one way flow exceeds 15%. A heavy vehicle is defined in this context as OGV1, OGV2 or Buses and Coaches as given in the COBA Manual (DMRB 13.1 Part 4, Chapter 8).

3.3 The flows for road type UM in Table 2 apply to urban motorways where junctions are closely spaced giving weaving lengths of less than 1 kilometre. Urban motorways with layout and junction spacing similar to rural motorways can carry higher flows and TA46/97 "Traffic Flow Ranges for Use in the Assessment of New Rural Roads" will be more applicable.

3.4 Flows for single carriageways are based upon a 60/40 directional split in the flow. The one-way flows shown in Table 2 represent the busiest flow 60% figure.

3.5 The capacities shown apply to gradients of up to 5-6%. Special consideration should be made for steeper gradients, which would reduce capacity.

3.6 On-road parking reduces the effective road width and disrupts flow, e.g. where parking restrictions are not applied on road type UAP2 the flows are likely to be similar to UAP3 where unrestricted parking applies, see Table 1, Similarly effective parking restrictions can lead to higher flows.

		Two-way Single Carriageway- Busiest direction flow (Assumes a 60/40 directional split)								Dual Carriageway				
		Total number of Lanes								Number of Lanes in each direction				
		2			2-3	3	3-4	4	4+	2		3	4	
Carriageway width		6.1m	6.75m	7.3m	9.0m	10.0m	12.3m	13.5m	14.6m	18.0m	6.75m	7.3m	11.0m	14.6m
Road type	UM	Not applicable									4000	5600	7200	
	UAP1	1020	1320	1590	1860	2010	2550	2800	3050	3300	3350	3600	5200	*
	UAP2	1020	1260	1470	1550	1650	1700	1900	2100	2700	2950	3200	4800	*
	UAP3	900	1110	1300	1530	1620	*	*	*	*	2300	2600	3300	*
	UAP4	750	900	1140	1320	1410	*	*	*	*	*	*	*	*

**Table 2 Capacities of Urban Roads**  
**One-way hourly flows in each direction**

Notes

1. Capacities are in vehicles per hour.
2. HGV ≤ 15%
3. (\*) Capacities are excluded where the road width is not appropriate for the road type and where there are too few examples to give reliable figures.

Carriageway width		6.1m	6.75m	7.3m	9.0m	10.0m	11.0m
		2 lanes			2-3 lanes		3 lanes
Road type	UAP1		2950	3250	3950	4450	4800
	UAP2	1800	2000	2200	2850	3250	3550

**Table 3 Capacities of Urban One-Way roads, hourly flows**

Notes

1. Capacities are in vehicles per hour.
2. Capacities for one way road types UAP1 at 6.1m width, UAP3 and UAP4 are not shown as there are too few examples to give reliable capacities.
3. Capacities for one-way roads (e.g. UAP2 at 7.3m and 11.0m carriageway widths) are generally less than capacities of dual carriageways in one direction shown in Table 2. The reason is that one-way roads are often of short lengths and form part of a gyratory system between junctions, necessitating high proportion of vehicle weaving and stopping, thereby decreasing the capacities.

Heavy Vehicle Content	Total reduction in flow level (vehs/hr)		
	UM and UAP dual carriageway road	Single carriageway UAP road having width of 10m or wider	Single carriageway UAP road having width less than 10m
	per lane	per carriageway	per carriageway
15 - 20%	100	100	150
20 - 25%	150	150	225

**Table 4 Reduction in flow due to Heavy Vehicle Content**

## 4. ASSESSMENT PROCEDURE

4.1 The capacities given in Tables 2 - 4 provide a guide for the assessment of an appropriate carriageway width and standard. They may be applied to both the design of new urban roads and to the improvement of existing roads. The capacities are intended to help designers make a judgement as to which carriageway standard is likely to provide an acceptable level of service within an urban context when operating close to capacity. The capacities apply to links and take no account of the effects of junctions.

4.2 For improvement options to existing roads the designer should make an appraisal of each of the road features and thereby determine the most appropriate road type given in Table 1. An assessment may then be made of the expected capacity using Tables 2 – 4. It should be calibrated with observed traffic flows to validate the appraisal, taking account of any network constraints that may limit a desirable flow. The effect of link capacity on changes to specific features should then be examined.

4.3 Observations of existing traffic flows should be undertaken by manual classified counts and account taken of hourly, daily and seasonal variations. Reference to continuous automatic traffic count data if available would assist in identifying periods of maximum flow levels and whether traffic levels are operating close to capacity.

4.4 For the design of new urban roads, the carriageway standard options presented herein provide a guide to the desirable standard of carriageway provision given the features of the road and expected traffic levels. They should not be used alone as a design tool, because factors other than peak hour flows should also be considered. They should be regarded as a starting point for more detailed analysis of traffic, economic and environmental aspects.

4.5 For the estimation of future traffic demand levels for urban roads where changes to travel patterns over a wide area are likely to occur, reference should be made to “Traffic Appraisal in Urban Areas” (DMRB Volume 12 Section 2 Part 1).

## 5. ENQUIRIES

All technical enquiries or comments on this document should be sent in writing as appropriate to:

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