

The Hurlstone Partnership

PROPOSED RESIDENTIAL CARAVAN PARK FOR OVER 50S AT
DANESBURY PARK ROAD, CODICOTE, WELWYN AL6 9SN

Transport Statement

March 2026

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The Hurlstone Partnership

PROPOSED RESIDENTIAL CARAVAN PARK FOR OVER 50S AT DANESBURY PARK ROAD, CODICOTE, WELWYN AL6 9SN

Document Status – 2nd Draft

Produced by: - - - - - J P Hurlstone

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Transportation Planning, Highway Design and Environmental Assessment

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1 INTRODUCTION

- 1.1 Planning permission is sought for a residential caravan park / Park Homes development for occupation by over 50s on land to the southeast of Danesbury Park Road, Codicote, Welwyn.
- 1.2 The site boundaries are formed by Dansbury Park Road to the northwest, the A1(M) to the southeast, a residential Gypsy/Traveller site to the northeast and an area of open land between the site and the Woodlands Park Homes' development to the southwest.
- 1.3 The proposed development comprises 27 units with associated parking, which has been designed in accordance with the 'Model Standards' for such schemes, following consultation between the Laister Planning Ltd and the Council.
- 1.4 Access would be taken from Danesbury Park Road towards the northeast corner of the site, with a separate egress via an internal one-way loop through the site located approximately 60m to the southwest, as illustrated on the Park Designs' Masterplan provided within the Figures section of this report, which also shows the proposed pedestrian footway to provide connectivity to Pottersheath Road to the northeast.
- 1.5 During discussions with the Local Planning Authority, a Transport Statement was requested to assess the potential impact of the proposed development. The Hurlstone Partnership Limited was subsequently instructed to prepare the document to assist in the determination of a planning application.
- 1.6 The remainder of the report details the findings of the review and confirms the proposed development would be acceptable in terms of its impact on the local highway network.

2 EXISTING SITUATION

- 2.1 The site sits approximately 30m southwest along Danesbury Park Road from its priority T junction with Pottersheath Road, which in turn meets Heath Road at a further priority T junction around 107m to the southeast.
- 2.2 The site frontage to Danesbury Park Road extends approximately 110m and is defined by a close-boarded fence containing two gated access points around 20m and 80m along its length when measured from northeast to southwest.
- 2.3 Danesbury Park Road is a single carriageway route approximately 4.5m wide, which is subject to the national speed limit. It is unlit and has no pedestrian footways. The route is straight and level in the vicinity of the site and provides direct access to several neighbouring properties.

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- 2.4 The bellmouth of its junction extends approximately 26m between its tangent points with Pottersheath Road, which forms the priority route. Visibility to the right / southeast for drivers leaving Pottersheath Road is good, as the junction sits on the outside of a slight bend. This allows emerging drivers to see oncoming traffic approaching across the bridge crossing over the A1(M) from the Heath Road T junction approximately 110m distant, which naturally constrains vehicle speeds as they turn into Pottersheath Road, which is also subject to a 60 mph speed limit and has a width of around 6.5m.
- 2.5 Although Pottersheath Road is not fully lit, there is a lamp column opposite the Danesbury Park Road junction, which coincides with the commencement of a pedestrian footway on the north side of the priority route, which continues southeast across the A1(M) bridge and into Heath Road. The footway runs along the southeast side of Heath Road into Oaklands, where there are local shops and bus stops within approximately 0.9km of the site on the Great North Road.
- 2.6 Immediately to the north of the Danesbury Park Road junction, the speed limit on Pottersheath Road reduces to 30 mph and the road narrows. Warning signs alert northbound drivers of the potential to encounter bends for ½ mile and also pedestrians. However, the alignment of Pottersheath Road to the north is such that drivers heading south are afforded forward visibility towards Danesbury Park Road extending around 85m, which is significantly greater than the 43m stopping distance from the posted 30 mph speed limit.
- 2.7 There are direct accesses to numerous properties along the northern section of Pottersheath Road beyond the Danesbury Park Road junction. Vegetation overhanging the carriageway was observed to restrict visibility to the north / left from Danesbury Park Road, which could be cleared via the powers bestowed upon the Local Highway Authority.

3 EXISTING TRAFFIC FLOWS

- 3.1 In the absence of traffic flows at the Danesbury Park Road / Pottersheath Road junction, a new turning count survey was undertaken between 07:00 – 19:00 on Wednesday 11th June 2025. The survey recorded all turning movements at the junction during the 12 hour period, and the results are provided at Appendix A of this report.
- 3.2 The results revealed the AM peak hour occurred between 08:00 – 09:00 with a total of 124 vehicles recorded. The comparable PM peak hour occurred between 16:45 and 17:45 with a total of 136 vehicles recorded.
- 3.3 The peak hour turning counts are tabulated overleaf for information:

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Table 3.1 – AM Peak Hour Traffic Movements (08:00 – 09:00)

To From	A	B	C	Total
A	0 (0)	8 (0)	38 (6)	46 (6)
B	4 (0)	0 (0)	3 (0)	7 (0)
C	67 (2)	4 (0)	0 (0)	71 (2)
Total	71 (2)	12 (0)	41 (6)	124 (8)

Arm A = Pottersheath Road (SE)

Arm B = Danesbury Park Road

Arm C = Pottersheath Road (NW)

XX = Total Vehicles (YY) = HGVs within the Total

Table 3.2 – PM Peak Hour Traffic Movements (16:45 – 17:45)

To From	A	B	C	Total
A	0 (0)	12 (0)	62 (0)	74 (0)
B	15 (0)	0 (0)	5 (0)	20 (0)
C	38 (1)	4 (0)	0 (0)	42 (1)
Total	53 (1)	16 (0)	67 (0)	136 (1)

Arm A = Pottersheath Road (SE)

Arm B = Danesbury Park Road

Arm C = Pottersheath Road (NW)

XX = Total Vehicles (YY) = HGVs within the Total

- 3.4 The above turning movements reveal the distribution of traffic entering Danesbury Park Road during the AM peak hour is 33.33% from the northwest (right in) and 66.67% from the southeast (left in). Of the traffic joining Pottersheath Road from Danesbury Park Road, 42.9% turned left to head northwest and 57.1% turned right to head southeast.
- 3.5 During the PM peak hour, the comparable distribution of trips was 25% from the northwest (right in) and 75% from the southeast (left in). Of the traffic joining Pottersheath Road from Danesbury Park Road, 25% turned left to head northwest and 75% turned right to head southeast.
- 3.6 In terms of Danesbury Park Road, the hourly flows varied between 21 and 44 movements (both directions combined) over the 12 hour period.
- 3.7 The Hurlstone Partnership Limited reviewed the visibility requirements at the neighbouring site access in 2016. As part of that review an Automatic Traffic Counter was installed to record traffic flows and speeds between 23 – 29 November 2016 inclusive. The ATC results are provided at Appendix B for information.
- 3.8 For the comparable Wednesday in November 2016, the hourly flows between 07:00 – 19:00 varied between 21 and 50 movements. It is therefore apparent that traffic flows on Danesbury Park Road have not altered significantly over the intervening period.

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3.9 The 85th percentile speeds recorded during the ATC surveys were found to be 24.1 mph northeast-bound and 22.8 mph southwest-bound. Given the traffic volumes and road alignment have not changed since the surveys, the speeds are also unlikely to have changed significantly.

3.10 In its initial response to the application for the neighbouring site (16/02460/1), the Highway Authority requested visibility splays of 2.4m x 43m be provided to the southwest / left along Danesbury Park Road. Following receipt of the survey data 2.4m x 27.5m was agreed as being appropriate, taking into account the wet-weather correction. Due to the available site frontage, either a 27.5m or 43m visibility splay could be provided to the left / southwest of the proposed access centreline.

3.11 As the ATC count was taken at the approximate position of the proposed site access to the new development. Based on the corrected southwest-bound speed (20.3 mph) the corresponding visibility splay is calculated to be 25.3 (say 25.5m).

4 HIGHWAY SAFETY

4.1 In order to assess the safety performance of the local road network, the Crashmap database has been interrogated. It is normal for a 5 year assessment period to be undertaken, but due to the effects of the Covid 19 pandemic on travel patterns, an additional 2 years has been added, resulting in the most recent data covering the period 2017 to 2024 inclusive.

4.2 It was found that there had been no recorded injury accidents on Danesbury Park Road or Pottersheath Road in the vicinity of the site during the period considered, which demonstrates the existing road network is of a sufficient standard to safely accommodate the routine activity by its users.

5 PROPOSED DEVELOPMENT

5.1 The proposed development is a residential caravan / Park Home site for occupation by the over 50s, comprising 27 units and associated parking, designed in accordance with the Model Standard for such sites.

5.2 The site would be served by separate entry and egress points from and to Danesbury Park Road, which are separated by approximately 60m between their centrelines, as illustrated on the site Park Designs' Masterplan provided in the Figures section of this report. The main loop would operate on a one-way basis with vehicles entering at the northeast corner of the site, then following a clockwise route to the egress point.

5.3 As illustrated on the proposed plan, the access and egress points and internal loop road have been subject to a vehicle tracking assessment based on the Council's refuse vehicle dimensions, to demonstrate service access is achievable.

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- 5.4 The proposed plan also illustrates the visibility splays at the site egress, which extend beyond 65m to the left / southwest and 52m to the right / northeast from the 2.4m set-back distance, both of which significantly exceed the 27.5m to the left / southwest and 25.5m to the right / northeast established from the speed survey data presented in section 3 of this document.

Development Traffic

- 5.5 There is limited trip information available for residential caravan parks. However, the TRICS database does include some information for a site within the Miscellaneous category of its database.
- 5.6 The site (Reference DC-16-A-11) is located south of the A31 between Ringwood and Trickett's Cross. At the time of the survey, it comprised 196 units. Based on the 12 hour traffic survey between 07:00 – 19:00, the trip rates during each hour were established per unit, which were then multiplied by the proposed 27 units for the proposed development.
- 5.7 The TRICS data sheets and the resulting trip rate calculations are provided at Appendix C for information. The analysis reveals that during the AM and PM peak hours on the local road network, the proposed development of 27 units would generate 3 arrivals / 4 departures / 7 total movements between 08:00 – 09:00 and 6 arrivals / 4 departures / 10 total movements between 17:00 – 18:00.
- 5.8 The peak hour of traffic generation for the proposed development was found to occur between 10:00 – 11:00 with 5 arrivals / 7 departures / 12 total movements.

Development Traffic Impact

- 5.9 By considering the movements identified above in the context of the traffic flows recorded on the local road network, it is apparent that they fall well within the range of normal day to day variation experienced when the surveys were undertaken.
- 5.10 For example, during the 12 hour survey in June 2025, the hourly traffic flows on Danesbury Park Road varied by 23 vehicles, whereas during the week-long ATC survey, between 10:00 – 11:00 when the development trip rate is highest, the weekday (Monday to Friday) traffic flows varied between 25 and 44 movements, giving a daily variation of 19 vehicles.
- 5.11 By adding the development trips to the baseline survey day obtained from the 2025 turning count, the cumulative hourly flows were found to vary between 31 and 52 movements over the 12 hour period from 07:00 – 19:00.
- 5.12 These flows may be compared with research by the Transport and Roads Research Laboratory (TRRL) now TRL, which considered the capacity of single track roads carrying traffic flows of between 50 and 300 movements per hour, which is provided at Appendix D.

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- 5.13 The findings of the study advise: *“Results from the TRRL studies indicate that simply in terms of their capacity for carrying moving traffic single lane carriageways, correctly designed, are unlikely to incur significant increases in delay compared with traffic in free flow conditions, at flow levels of up to 300 vph (total two-way)”*.
- 5.14 Given there are opportunities to pass along Danesbury Park Road, within the limited intervening length of around 50m between the site access and Pottersheath Road, and the 110m between the site egress and Pottersheath Road junction, it is apparent that the Danesbury Park Road would continue to operate satisfactorily with the proposed development in place.
- 5.15 An alternative comparison may be made with the design flows contained in Appendix D of TAG UNIT M3.1 Highway Assignment Modelling. For small towns and villages, Table D.6 indicates Urban Roads have a capacity of up to 1200 vehicles per traffic lane. Paragraph D.5.3 advises *“The breakpoint flow QB is taken as 700 veh/h/3.65 metre lane. The maximum realistic flow (QC) should be taken as 1200 veh/h/3.65 metre lane.”*
- 5.16 In terms of junction capacity, the recorded AM and PM peak hour traffic flows from Tables 3.1 and 3.2 were input to PICADY together with the relevant geometric parameters for the junction.
- 5.17 To demonstrate the ability to accommodate the development traffic, the total movements predicted over a 12 hour period were added to each peak hour period based on the directional distribution of the baseline turning movements, which resulted in the following development trips:

Table 5.1 – Development Traffic 12 Hour – AM Peak Distribution

To From	A	B	C	Total
A	0 (0)	34 (0)	0 (0)	34 (0)
B	31 (0)	0 (0)	23 (0)	54 (0)
C	0 (0)	17 (0)	0 (0)	17 (0)
Total	31 (0)	51 (0)	23 (0)	105 (0)

Arm A = Pottersheath Road (SE)

Arm B = Danesbury Park Road

Arm C = Pottersheath Road (NW)

XX = Total Vehicles (YY) = HGVs within the Total

Table 5.2 – Development Traffic 12 Hour PM Peak Distribution

To From	A	B	C	Total
A	0 (0)	38 (0)	(0)	38 (0)
B	40 (0)	0 (0)	14 (0)	54 (0)
C	0 (0)	13 (0)	0 (0)	13 (0)
Total	40(0)	51 (0)	14 (0)	105 (0)

Arm A = Pottersheath Road (SE)

Arm B = Danesbury Park Road

Arm C = Pottersheath Road (NW)

XX = Total Vehicles (YY) = HGVs within the Total

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- 5.18 Adding the development trips from Tables 5.1 and 5.2 to the base flows in Tables 3.1 and 3.2 gives the following cumulative flows for 12 hours of development traffic occurring with each of the AM and PM peak hours:

Table 5.3 – AM Peak Hour 12 Hour Dev. Traffic Movements (08:00 – 09:00)

To From	A	B	C	Total
A	0 (0)	42 (0)	38 (6)	80 (6)
B	35 (0)	0 (0)	26 (0)	61 (0)
C	67 (2)	21 (0)	0 (0)	88 (2)
Total	102 (2)	63 (0)	64 (6)	229 (8)

Arm A = Pottersheath Road (SE)

Arm B = Danesbury Park Road

Arm C = Pottersheath Road (NW)

XX = Total Vehicles (YY) = HGVs within the Total

Table 5.4 – PM Peak Hour 12 Hour Dev. Traffic Movements (16:45 – 17:45)

To From	A	B	C	Total
A	0 (0)	50 (0)	62 (0)	112 (0)
B	55 (0)	0 (0)	19 (0)	74 (0)
C	38 (1)	17 (0)	0 (0)	55 (1)
Total	93 (1)	67 (0)	81 (0)	241 (1)

Arm A = Pottersheath Road (SE)

Arm B = Danesbury Park Road

Arm C = Pottersheath Road (NW)

XX = Total Vehicles (YY) = HGVs within the Total

- 5.19 The results of the PICADY analysis are provided at Appendix E and are tabulated below:

Table 5.5 – PICADY Results - 12 Hour Development Trips in Peak Hour Periods

Turning Movement From:	Maximum RFC		Maximum Queue (Vehicles)		Inclusive Delay (Mins/Vehicle)	
	AM	PM	AM	PM	AM	PM
B – AC	0.142	0.181	0.2	0.2	0.14	0.16
C – AB	0.039	0.032	0.0	0.0	0.11	0.11

Arm A = Pottersheath Road (SE)

Arm B = Danesbury Park Road

Arm C = Pottersheath Road (NW)

- 5.20 As the results reveal, even under the artificially onerous conditions whereby the 12 hour (07:00 – 19:00) development traffic flow is added to both the AM and PM peak hours, the junction continues to operate well within the normally acceptable criteria.

- 5.21 The maximum Ratio of Flow to Capacity (RFC) of 0.181 on the Danesbury Park Road approach may be compared with the desirable maximum of 0.85 and the theoretical junction capacity of 1.0. It is also apparent that queues and delays are not significant on any of the approaches to the junction under the artificially onerous conditions assessed.

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5.22 Given the foregoing, it is apparent that the capacity of the junction is not a constraint to the proposed development.

6 POLICY CONSIDERATIONS

6.1 The National Planning Policy Framework (The Framework) imposes the following tests in terms of transport matters. The latest version of The Framework was published in December 2024 and updated in February 2025. Under the heading '*Considering development proposals*', paragraph 115 of The Framework states:

"In assessing sites that may be allocated for development in plans, or specific applications for development, it should be ensured that:

- a) sustainable transport modes are prioritised taking account of the vision for the site, the type of development and its location;*
- b) safe and suitable access to the site can be achieved for all users;*
- c) the design of streets, parking areas, other transport elements and the content of associated standards reflects current national guidance, including the National Design Guide and the National Model Design Code⁴⁸; and*
- d) any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree through a vision-led approach."*

6.2 Paragraph 116 continues: *"Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network, following mitigation, would be severe, taking into account all reasonable future scenarios."*

6.3 A severe impact is a high threshold to breach. In circumstances where the proposed development would be served by an access to current, relevant design guidance onto a road network that retains sufficient capacity to accommodate the increased activity, given the proximity of the site to local services and facilities together with the proposed new footway connection, it can only reasonably be concluded that that the proposal would not result in an unacceptable impact on highway safety or a severe residual cumulative impact on the road network.

6.4 It is therefore concluded that in accordance with The Framework, the traffic impact of the proposed development is acceptable, and planning permission should not be prevented or refused on highways grounds.

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7 SUMMARY

- 7.1 Planning permission is sought for a residential caravan park / Park Homes development for occupation by over 50s on land to the southeast of Danesbury Park Road, Codicote, Welwyn.
- 7.2 The proposed development comprises 27 units with associated parking, which has been designed in accordance with the 'Model Standards' for such schemes, following consultation between the Laister Planning Ltd and the Council.
- 7.3 Access would be taken from Danesbury Park Road towards the northeast corner of the site, with a one way system in operation to a separate egress point around 60m to the southwest along Danesbury Park Road. A new footway connection to Pottersheath Road is also proposed as part of the proposed development.
- 7.4 The Hurlstone Partnership Limited was subsequently instructed to assess the acceptability of the proposed development, to assist in the determination of a planning application, following a request for a Transport Statement from the Council.
- 7.5 The review found that the proposed access arrangement would provide appropriate visibility and geometry to accommodate the scheme and that the adjoining road network has a good safety record and sufficient capacity to accommodate the increased activity, even if artificially adding the total number of predicted development trips occurring over the 12 hour period 07:00 – 19:00 to each of the existing AM and PM peak hour base flows.
- 7.6 In practical terms, it was found that the development traffic falls within the range of normal daily and hourly variations experienced on the road network, which provides access to local services and facilities.
- 7.7 It is therefore apparent that the proposed development would be served by a safe means of access and that the cumulative impact of the proposed development on the local highway network would not be severe. As a result, in accordance with the National Planning Policy Framework, permission should not be prevented or refused on highways grounds.

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FIGURES



Key:

	Park Home
	Parking
	Visitor Parking
	Storage Shed
	Refuse Storage
	Refuse Collection Point
	Gabion Retainment Wall
	Acoustic Fencing
	Pedestrian Footpath
	Electric Vehicle Charging Point
	Assembly Point
	Fire Point
	Low Level Bollard Lighting

Job: Carden Gardens
Danesbury Park Road, Welwy
AL6 9SN

Title: Masterplan

Plan Number: P379C16 - 13 - REV

Checked by: JH

Scale: 1:500@A2

Date: 16.03.2026

Ordnance Survey © Crown Copyright 2025.
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APPENDIX A

Junction Turning Count Results

SITE: 1	AUTO SURVEYS LTD TRAFFIC DATA COLLECTION	DATE: 11/06/2025
LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)		DAY: WEDNESDAY



JOB TITLE: WELWYN	JOB NUMBER: 14524
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MANUAL CLASSIFIED COUNTS

JOB REF: 14524

JOB NAME: WELWYN

SITE: 1

LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)



DATE: 11/06/2025

DAY: WEDNESDAY

TIME	A TO B FROM POTTERSHEATH RD (SE) TO DANESBURY PARK RD							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	3	0	0	0	0	0	0	3
07:15	4	1	0	0	0	0	0	5
07:30	1	1	0	0	0	0	0	2
07:45	1	0	0	0	0	0	2	3
H/TOT	9	2	0	0	0	0	2	13
08:00	0	0	0	0	0	0	0	0
08:15	1	0	0	0	0	0	0	1
08:30	3	1	0	0	0	0	0	4
08:45	2	1	0	0	0	0	1	4
H/TOT	6	2	0	0	0	0	1	9
09:00	3	2	0	0	0	0	0	5
09:15	4	1	0	0	0	0	0	5
09:30	2	0	0	0	0	0	0	2
09:45	2	0	0	0	0	0	0	2
H/TOT	11	3	0	0	0	0	0	14
10:00	2	0	0	0	0	0	0	2
10:15	3	0	0	0	0	0	0	3
10:30	2	0	0	0	0	0	0	2
10:45	4	0	0	0	0	0	0	4
H/TOT	11	0	0	0	0	0	0	11
11:00	1	1	0	0	0	0	0	2
11:15	0	0	0	0	0	0	0	0
11:30	2	0	0	0	0	0	0	2
11:45	1	0	0	0	0	0	0	1
H/TOT	4	1	0	0	0	0	0	5
12:00	3	1	0	0	0	0	0	4
12:15	4	0	0	0	0	0	1	5
12:30	0	0	0	0	0	0	0	0
12:45	4	0	0	0	0	0	0	4
H/TOT	11	1	0	0	0	0	1	13

	A TO C FROM POTTERSHEATH RD (SE) TO POTTERSHEATH RD (NW)							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
2	0	0	0	0	0	0	0	2
1	0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	3
5	1	0	0	0	0	0	0	6
11	1	0	0	0	0	0	0	12
2	1	1	0	0	0	1	1	6
5	1	0	0	0	0	0	0	6
11	2	4	0	0	0	0	0	17
7	2	1	0	0	0	0	1	11
25	6	6	0	0	0	1	2	40
3	0	0	0	0	0	0	1	4
6	3	0	0	0	0	0	0	9
6	2	1	0	0	0	0	0	9
7	0	0	0	0	0	0	2	9
22	5	1	0	0	0	0	3	31
5	1	1	0	0	0	0	0	7
6	1	0	0	0	0	0	0	7
4	1	1	0	0	0	0	0	6
4	1	0	0	0	0	0	0	5
19	4	2	0	0	0	0	0	25
5	1	0	0	0	0	0	0	6
7	2	0	0	0	0	0	1	10
5	1	0	0	0	0	0	0	6
4	1	0	0	0	0	0	0	5
21	5	0	0	0	0	0	1	27
7	1	0	0	0	0	0	1	9
3	0	0	0	0	0	0	0	3
1	0	1	0	0	0	0	0	2
4	0	0	0	0	0	0	0	4
15	1	1	0	0	0	0	1	18

MANUAL CLASSIFIED COUNTS

JOB REF: 14524

JOB NAME: WELWYN

SITE: 1

LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)



DATE: 11/06/2025

DAY: WEDNESDAY

TIME	A TO B FROM POTTERSHEATH RD (SE) TO DANESBURY PARK RD							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
13:00	2	2	0	0	0	0	0	4
13:15	3	0	0	0	0	0	0	3
13:30	4	1	0	0	0	0	0	5
13:45	3	0	0	0	0	0	0	3
H/TOT	12	3	0	0	0	0	0	15
14:00	1	2	0	0	0	0	0	3
14:15	3	0	0	0	0	0	0	3
14:30	1	0	0	0	0	0	0	1
14:45	3	1	0	0	0	0	0	4
H/TOT	8	3	0	0	0	0	0	11
15:00	3	0	0	0	0	0	0	3
15:15	1	0	0	0	0	0	2	3
15:30	4	1	0	0	0	0	0	5
15:45	4	0	0	0	0	0	0	4
H/TOT	12	1	0	0	0	0	2	15
16:00	2	0	0	0	0	0	0	2
16:15	2	1	0	0	0	0	0	3
16:30	0	0	0	0	0	0	0	0
16:45	2	1	0	0	0	0	0	3
H/TOT	6	2	0	0	0	0	0	8
17:00	2	1	0	0	0	0	1	4
17:15	4	0	0	0	0	0	0	4
17:30	2	0	0	0	0	0	0	2
17:45	1	0	0	0	0	0	0	1
H/TOT	9	1	0	0	0	0	1	11
18:00	1	2	0	0	0	0	2	5
18:15	1	0	0	0	0	0	0	1
18:30	4	0	0	0	0	0	0	4
18:45	12	0	0	0	0	0	0	12
H/TOT	18	2	0	0	0	0	2	22
P/TOT	117	21	0	0	0	0	9	147

A TO C FROM POTTERSHEATH RD (SE) TO POTTERSHEATH RD (NW)							
CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
7	2	0	0	0	0	0	9
4	1	0	0	0	0	0	5
2	2	0	0	0	0	0	4
4	2	0	0	0	0	0	6
17	7	0	0	0	0	0	24
4	1	0	0	0	0	0	5
7	1	1	0	0	0	0	9
5	1	0	0	0	0	0	6
1	0	0	0	0	0	1	2
17	3	1	0	0	0	1	22
5	2	0	0	0	0	0	7
10	0	0	0	0	0	0	10
9	2	0	0	0	0	0	11
8	0	0	0	0	0	0	8
32	4	0	0	0	0	0	36
10	3	0	0	0	0	0	13
13	1	0	0	0	0	1	15
5	4	2	0	0	0	0	11
14	2	0	0	0	1	1	18
42	10	2	0	0	1	2	57
9	2	0	0	0	0	0	11
15	0	0	0	0	0	0	15
16	3	0	0	0	0	0	19
12	1	0	0	0	0	0	13
52	6	0	0	0	0	0	58
9	0	0	0	0	0	0	9
12	2	0	0	0	0	0	14
4	0	0	0	0	0	1	5
2	2	0	0	0	0	0	4
27	4	0	0	0	0	1	32
300	56	13	0	0	2	11	382

MANUAL CLASSIFIED COUNTS

JOB REF: 14524

JOB NAME: WELWYN

SITE: 1

DATE: 11/06/2025

LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)

DAY: WEDNESDAY



TIME	B TO A							
	FROM DANESBURY PARK RD TO POTTERSHEATH RD (SE)							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	11	1	1	0	0	0	0	13
07:15	1	0	0	0	0	0	0	1
07:30	6	0	0	0	0	0	0	6
07:45	6	2	0	0	0	0	0	8
H/TOT	24	3	1	0	0	0	0	28
08:00	1	0	0	0	0	0	0	1
08:15	0	0	0	0	0	0	2	2
08:30	1	0	0	0	0	0	0	1
08:45	0	2	0	0	0	0	0	2
H/TOT	2	2	0	0	0	0	2	6
09:00	2	1	0	0	0	0	0	3
09:15	3	1	0	0	0	0	1	5
09:30	4	0	0	0	0	0	0	4
09:45	0	0	0	0	0	0	0	0
H/TOT	9	2	0	0	0	0	1	12
10:00	4	0	0	0	0	0	0	4
10:15	2	0	0	0	0	0	0	2
10:30	2	1	0	0	0	0	0	3
10:45	3	0	0	0	0	0	0	3
H/TOT	11	1	0	0	0	0	0	12
11:00	4	0	0	0	0	0	0	4
11:15	2	0	0	0	0	0	0	2
11:30	5	0	0	0	0	0	0	5
11:45	3	0	0	0	0	0	0	3
H/TOT	14	0	0	0	0	0	0	14
12:00	3	0	0	0	0	0	0	3
12:15	0	1	0	0	0	0	0	1
12:30	3	0	1	0	0	0	0	4
12:45	0	0	0	0	0	0	0	0
H/TOT	6	1	1	0	0	0	0	8

B TO C							
FROM DANESBURY PARK RD TO POTTERSHEATH RD (NW)							
CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	3
0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	3
0	0	0	0	0	0	0	0
0	1	0	0	0	0	0	1
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
0	0	0	0	0	0	4	4
1	1	0	0	0	0	4	6
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
0	0	0	0	0	0	1	1
0	1	0	0	0	0	0	1
0	1	0	0	0	0	0	1
0	1	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	3	0	0	0	0	0	3
1	0	0	0	0	0	0	1
0	1	0	0	0	0	0	1
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	1	0	0	0	0	0	2

MANUAL CLASSIFIED COUNTS

JOB REF: 14524

JOB NAME: WELWYN

SITE: 1

LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)



DATE: 11/06/2025

DAY: WEDNESDAY

TIME	B TO A FROM DANESBURY PARK RD TO POTTERSHEATH RD (SE)							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
13:00	3	0	0	0	0	0	0	3
13:15	1	1	0	0	0	0	0	2
13:30	2	0	0	0	0	0	0	2
13:45	2	0	0	0	0	0	0	2
H/TOT	8	1	0	0	0	0	0	9
14:00	2	1	0	0	0	0	0	3
14:15	1	0	0	0	0	0	0	1
14:30	3	0	0	0	0	0	0	3
14:45	1	2	0	0	0	0	0	3
H/TOT	7	3	0	0	0	0	0	10
15:00	1	1	0	0	0	0	2	4
15:15	5	0	0	0	0	0	0	5
15:30	0	1	0	0	0	0	2	3
15:45	2	0	0	0	0	0	0	2
H/TOT	8	2	0	0	0	0	4	14
16:00	6	1	0	0	0	0	0	7
16:15	2	0	0	0	0	0	0	2
16:30	2	0	0	0	0	0	0	2
16:45	4	0	0	0	0	0	0	4
H/TOT	14	1	0	0	0	0	0	15
17:00	4	1	0	0	0	0	0	5
17:15	3	1	0	0	0	0	0	4
17:30	2	0	0	0	0	0	0	2
17:45	2	0	0	0	0	0	0	2
H/TOT	11	2	0	0	0	0	0	13
18:00	3	0	0	0	0	0	0	3
18:15	0	0	0	0	0	0	0	0
18:30	4	0	0	0	0	0	4	8
18:45	5	0	0	0	0	0	0	5
H/TOT	12	0	0	0	0	0	4	16
P/TOT	126	18	2	0	0	0	11	157

	B TO C FROM DANESBURY PARK RD TO POTTERSHEATH RD (NW)							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	1	1
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	1	1
	0	0	0	0	0	0	0	0
	1	0	0	0	0	0	0	1
	0	1	0	0	0	0	0	1
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0
	0	1	0	0	0	0	0	1
	1	0	0	0	0	0	0	1
	0	0	0	0	0	0	0	0
	1	0	0	0	0	0	0	1
	0	0	0	0	0	0	1	1
	2	0	0	0	0	0	1	3
	0	2	0	0	0	0	1	3
	2	0	0	0	0	0	0	2
	1	0	0	0	0	0	0	1
	1	0	0	0	0	0	0	1
	4	2	0	0	0	0	1	7
	2	0	0	0	0	0	0	2
	1	0	0	0	0	0	0	1
	1	0	0	0	0	0	0	1
	1	0	0	0	0	0	1	2
	5	0	0	0	0	0	1	6
	16	9	0	0	0	0	9	34

MANUAL CLASSIFIED COUNTS

JOB REF: 14524

JOB NAME: WELWYN

SITE: 1

LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)



DATE: 11/06/2025

DAY: WEDNESDAY

TIME	C TO A FROM POTTERSHEATH RD (NW) TO POTTERSHEATH RD (SE)								C TO B FROM POTTERSHEATH RD (NW) TO DANESBURY PARK RD							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
07:15	7	1	0	0	0	0	3	11	0	0	0	0	0	0	0	0
07:30	12	1	0	0	0	0	0	13	0	0	0	0	0	0	0	0
07:45	13	2	0	0	0	0	0	15	1	0	0	0	0	0	1	2
H/TOT	35	4	0	0	0	0	3	42	1	0	0	0	0	0	1	2
08:00	22	1	0	0	0	0	0	23	0	0	0	0	0	0	0	0
08:15	12	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0
08:30	14	1	0	0	0	0	0	15	1	1	0	0	0	0	0	2
08:45	12	3	2	0	0	0	0	17	1	1	0	0	0	0	0	2
H/TOT	60	5	2	0	0	0	0	67	2	2	0	0	0	0	0	4
09:00	6	1	0	0	0	0	0	7	0	1	0	0	0	0	0	1
09:15	5	1	1	0	0	0	0	7	0	0	0	0	0	0	0	0
09:30	7	1	0	0	0	0	0	8	0	0	0	0	0	0	0	0
09:45	6	1	2	0	0	0	0	9	0	0	0	0	0	0	0	0
H/TOT	24	4	3	0	0	0	0	31	0	1	0	0	0	0	0	1
10:00	3	3	0	0	0	0	1	7	0	1	0	0	0	0	0	1
10:15	5	1	1	0	0	0	0	7	0	0	0	0	0	0	0	0
10:30	0	3	0	0	0	0	1	4	0	0	0	0	0	0	0	0
10:45	6	0	1	0	0	0	3	10	1	0	0	0	0	0	0	1
H/TOT	14	7	2	0	0	0	5	28	1	1	0	0	0	0	0	2
11:00	2	0	1	0	0	0	0	3	2	0	0	0	0	0	0	2
11:15	3	1	0	0	0	0	0	4	0	0	0	0	0	0	0	0
11:30	6	2	1	0	0	0	2	11	0	1	0	0	0	0	0	1
11:45	10	1	0	0	0	0	0	11	0	0	0	0	0	0	0	0
H/TOT	21	4	2	0	0	0	2	29	2	1	0	0	0	0	0	3
12:00	4	4	0	0	0	1	0	9	0	0	0	0	0	0	0	0
12:15	7	3	0	0	0	0	3	13	0	0	1	0	0	0	0	1
12:30	4	2	0	0	0	0	1	7	0	1	0	0	0	0	0	1
12:45	4	1	0	0	0	0	0	5	0	0	0	0	0	0	0	0
H/TOT	19	10	0	0	0	1	4	34	0	1	1	0	0	0	0	2

MANUAL CLASSIFIED COUNTS

JOB REF: 14524

JOB NAME: WELWYN

SITE: 1

DATE: 11/06/2025

LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)

DAY: WEDNESDAY



TIME	C TO A							
	FROM POTTERSHEATH RD (NW) TO POTTERSHEATH RD (SE)							TOT
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	
13:00	1	0	0	0	0	0	0	1
13:15	5	1	0	0	0	0	0	6
13:30	5	0	0	0	0	0	0	5
13:45	3	2	0	0	0	0	0	5
H/TOT	14	3	0	0	0	0	0	17
14:00	6	1	0	0	0	0	0	7
14:15	3	1	0	0	0	0	0	4
14:30	6	1	0	0	0	0	1	8
14:45	8	2	1	0	0	0	0	11
H/TOT	23	5	1	0	0	0	1	30
15:00	3	1	0	0	0	0	0	4
15:15	4	3	0	0	0	0	0	7
15:30	9	3	0	0	0	0	0	12
15:45	5	2	0	0	0	0	0	7
H/TOT	21	9	0	0	0	0	0	30
16:00	4	1	0	0	0	0	0	5
16:15	4	0	0	0	0	0	3	7
16:30	3	2	0	0	0	0	0	5
16:45	12	1	1	0	0	0	1	15
H/TOT	23	4	1	0	0	0	4	32
17:00	5	1	0	0	0	0	0	6
17:15	12	0	0	0	0	0	0	12
17:30	6	0	0	0	0	0	0	6
17:45	8	1	0	0	0	0	0	9
H/TOT	31	2	0	0	0	0	0	33
18:00	6	0	0	0	0	0	1	7
18:15	2	1	0	0	0	0	3	6
18:30	10	0	0	0	0	0	0	10
18:45	5	0	0	0	0	0	1	6
H/TOT	23	1	0	0	0	0	5	29
P/TOT	308	58	11	0	0	1	24	402

[illegible]

MANUAL CLASSIFIED COUNTS

JOB REF: 14524

JOB NAME: WELWYN

SITE: 1

LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)



DATE: 11/06/2025

DAY: WEDNESDAY

TIME	TO ARM A POTTERSHEATH RD (SE)							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	14	1	1	0	0	0	0	16
07:15	8	1	0	0	0	0	3	12
07:30	18	1	0	0	0	0	0	19
07:45	19	4	0	0	0	0	0	23
H/TOT	59	7	1	0	0	0	3	70
08:00	23	1	0	0	0	0	0	24
08:15	12	0	0	0	0	0	2	14
08:30	15	1	0	0	0	0	0	16
08:45	12	5	2	0	0	0	0	19
H/TOT	62	7	2	0	0	0	2	73
09:00	8	2	0	0	0	0	0	10
09:15	8	2	1	0	0	0	1	12
09:30	11	1	0	0	0	0	0	12
09:45	6	1	2	0	0	0	0	9
H/TOT	33	6	3	0	0	0	1	43
10:00	7	3	0	0	0	0	1	11
10:15	7	1	1	0	0	0	0	9
10:30	2	4	0	0	0	0	1	7
10:45	9	0	1	0	0	0	3	13
H/TOT	25	8	2	0	0	0	5	40
11:00	6	0	1	0	0	0	0	7
11:15	5	1	0	0	0	0	0	6
11:30	11	2	1	0	0	0	2	16
11:45	13	1	0	0	0	0	0	14
H/TOT	35	4	2	0	0	0	2	43
12:00	7	4	0	0	0	1	0	12
12:15	7	4	0	0	0	0	3	14
12:30	7	2	1	0	0	0	1	11
12:45	4	1	0	0	0	0	0	5
H/TOT	25	11	1	0	0	1	4	42

	FROM ARM A POTTERSHEATH RD (SE)							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
	5	0	0	0	0	0	0	5
	5	1	0	0	0	0	0	6
	4	1	0	0	0	0	0	5
	6	1	0	0	0	0	2	9
	20	3	0	0	0	0	2	25
	2	1	1	0	0	1	1	6
	6	1	0	0	0	0	0	7
	14	3	4	0	0	0	0	21
	9	3	1	0	0	0	2	15
	31	8	6	0	0	1	3	49
	6	2	0	0	0	0	1	9
	10	4	0	0	0	0	0	14
	8	2	1	0	0	0	0	11
	9	0	0	0	0	0	2	11
	33	8	1	0	0	0	3	45
	7	1	1	0	0	0	0	9
	9	1	0	0	0	0	0	10
	6	1	1	0	0	0	0	8
	8	1	0	0	0	0	0	9
	30	4	2	0	0	0	0	36
	6	2	0	0	0	0	0	8
	7	2	0	0	0	0	1	10
	7	1	0	0	0	0	0	8
	5	1	0	0	0	0	0	6
	25	6	0	0	0	0	1	32
	10	2	0	0	0	0	1	13
	7	0	0	0	0	0	1	8
	1	0	1	0	0	0	0	2
	8	0	0	0	0	0	0	8
	26	2	1	0	0	0	2	31

MANUAL CLASSIFIED COUNTS

JOB REF: 14524

JOB NAME: WELWYN

SITE: 1

LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)



DATE: 11/06/2025

DAY: WEDNESDAY

TIME	TO ARM A POTTERSHEATH RD (SE)							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
13:00	4	0	0	0	0	0	0	4
13:15	6	2	0	0	0	0	0	8
13:30	7	0	0	0	0	0	0	7
13:45	5	2	0	0	0	0	0	7
H/TOT	22	4	0	0	0	0	0	26
14:00	8	2	0	0	0	0	0	10
14:15	4	1	0	0	0	0	0	5
14:30	9	1	0	0	0	0	1	11
14:45	9	4	1	0	0	0	0	14
H/TOT	30	8	1	0	0	0	1	40
15:00	4	2	0	0	0	0	2	8
15:15	9	3	0	0	0	0	0	12
15:30	9	4	0	0	0	0	2	15
15:45	7	2	0	0	0	0	0	9
H/TOT	29	11	0	0	0	0	4	44
16:00	10	2	0	0	0	0	0	12
16:15	6	0	0	0	0	0	3	9
16:30	5	2	0	0	0	0	0	7
16:45	16	1	1	0	0	0	1	19
H/TOT	37	5	1	0	0	0	4	47
17:00	9	2	0	0	0	0	0	11
17:15	15	1	0	0	0	0	0	16
17:30	8	0	0	0	0	0	0	8
17:45	10	1	0	0	0	0	0	11
H/TOT	42	4	0	0	0	0	0	46
18:00	9	0	0	0	0	0	1	10
18:15	2	1	0	0	0	0	3	6
18:30	14	0	0	0	0	0	4	18
18:45	10	0	0	0	0	0	1	11
H/TOT	35	1	0	0	0	0	9	45
P/TOT	434	76	13	0	0	1	35	559

FROM ARM A POTTERSHEATH RD (SE)							
CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
9	4	0	0	0	0	0	13
7	1	0	0	0	0	0	8
6	3	0	0	0	0	0	9
7	2	0	0	0	0	0	9
29	10	0	0	0	0	0	39
5	3	0	0	0	0	0	8
10	1	1	0	0	0	0	12
6	1	0	0	0	0	0	7
4	1	0	0	0	0	1	6
25	6	1	0	0	0	1	33
8	2	0	0	0	0	0	10
11	0	0	0	0	0	2	13
13	3	0	0	0	0	0	16
12	0	0	0	0	0	0	12
44	5	0	0	0	0	2	51
12	3	0	0	0	0	0	15
15	2	0	0	0	0	1	18
5	4	2	0	0	0	0	11
16	3	0	0	0	1	1	21
48	12	2	0	0	1	2	65
11	3	0	0	0	0	1	15
19	0	0	0	0	0	0	19
18	3	0	0	0	0	0	21
13	1	0	0	0	0	0	14
61	7	0	0	0	0	1	69
10	2	0	0	0	0	2	14
13	2	0	0	0	0	0	15
8	0	0	0	0	0	1	9
14	2	0	0	0	0	0	16
45	6	0	0	0	0	3	54
417	77	13	0	0	2	20	529

MANUAL CLASSIFIED COUNTS

JOB REF: 14524

JOB NAME: WELWYN

SITE: 1

LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)



DATE: 11/06/2025

DAY: WEDNESDAY

TIME	TO ARM B DANESBURY PARK RD							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	3	0	0	0	0	0	0	3
07:15	4	1	0	0	0	0	0	5
07:30	1	1	0	0	0	0	0	2
07:45	2	0	0	0	0	0	3	5
H/TOT	10	2	0	0	0	0	3	15
08:00	0	0	0	0	0	0	0	0
08:15	1	0	0	0	0	0	0	1
08:30	4	2	0	0	0	0	0	6
08:45	3	2	0	0	0	0	1	6
H/TOT	8	4	0	0	0	0	1	13
09:00	3	3	0	0	0	0	0	6
09:15	4	1	0	0	0	0	0	5
09:30	2	0	0	0	0	0	0	2
09:45	2	0	0	0	0	0	0	2
H/TOT	11	4	0	0	0	0	0	15
10:00	2	1	0	0	0	0	0	3
10:15	3	0	0	0	0	0	0	3
10:30	2	0	0	0	0	0	0	2
10:45	5	0	0	0	0	0	0	5
H/TOT	12	1	0	0	0	0	0	13
11:00	3	1	0	0	0	0	0	4
11:15	0	0	0	0	0	0	0	0
11:30	2	1	0	0	0	0	0	3
11:45	1	0	0	0	0	0	0	1
H/TOT	6	2	0	0	0	0	0	8
12:00	3	1	0	0	0	0	0	4
12:15	4	0	1	0	0	0	1	6
12:30	0	1	0	0	0	0	0	1
12:45	4	0	0	0	0	0	0	4
H/TOT	11	2	1	0	0	0	1	15

FROM ARM B DANESBURY PARK RD							
CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
11	1	1	0	0	0	0	13
1	0	0	0	0	0	0	1
6	0	0	0	0	0	0	6
6	2	0	0	0	0	0	8
24	3	1	0	0	0	0	28
1	0	0	0	0	0	0	1
0	0	0	0	0	0	2	2
3	1	0	0	0	0	0	4
0	2	0	0	0	0	0	2
4	3	0	0	0	0	2	9
2	2	0	0	0	0	0	4
3	1	0	0	0	0	1	5
5	0	0	0	0	0	0	5
0	0	0	0	0	0	4	4
10	3	0	0	0	0	5	18
4	0	0	0	0	0	0	4
2	0	0	0	0	0	1	3
2	1	0	0	0	0	0	3
3	0	0	0	0	0	0	3
11	1	0	0	0	0	1	13
4	1	0	0	0	0	0	5
2	1	0	0	0	0	0	3
5	1	0	0	0	0	0	6
3	0	0	0	0	0	0	3
14	3	0	0	0	0	0	17
4	0	0	0	0	0	0	4
0	2	0	0	0	0	0	2
3	0	1	0	0	0	0	4
0	0	0	0	0	0	0	0
7	2	1	0	0	0	0	10

MANUAL CLASSIFIED COUNTS

JOB REF: 14524

JOB NAME: WELWYN

SITE: 1

LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)



DATE: 11/06/2025

DAY: WEDNESDAY

TIME	TO ARM B DANESBURY PARK RD							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
13:00	2	2	0	0	0	0	1	5
13:15	3	1	0	0	0	0	0	4
13:30	4	1	0	0	0	0	0	5
13:45	4	0	0	0	0	0	0	4
H/TOT	13	4	0	0	0	0	1	18
14:00	1	2	0	0	0	0	0	3
14:15	3	0	0	0	0	0	0	3
14:30	1	0	0	0	0	0	0	1
14:45	3	1	0	0	0	0	0	4
H/TOT	8	3	0	0	0	0	0	11
15:00	3	0	0	0	0	0	0	3
15:15	1	0	0	0	0	0	2	3
15:30	4	1	0	0	0	0	0	5
15:45	4	0	0	0	0	0	0	4
H/TOT	12	1	0	0	0	0	2	15
16:00	2	0	0	0	0	0	0	2
16:15	2	1	0	0	0	0	0	3
16:30	0	0	0	0	0	0	0	0
16:45	2	1	0	0	0	0	0	3
H/TOT	6	2	0	0	0	0	0	8
17:00	3	1	0	0	0	0	1	5
17:15	6	0	0	0	0	0	0	6
17:30	3	0	0	0	0	0	1	4
17:45	2	0	0	0	0	0	0	2
H/TOT	14	1	0	0	0	0	2	17
18:00	1	2	0	0	0	0	2	5
18:15	1	0	0	0	0	0	0	1
18:30	4	0	0	0	0	0	0	4
18:45	12	0	0	0	0	0	0	12
H/TOT	18	2	0	0	0	0	2	22
P/TOT	129	28	1	0	0	0	12	170

	FROM ARM B DANESBURY PARK RD							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
3	0	0	0	0	0	0	0	3
1	1	0	0	0	0	0	1	3
2	0	0	0	0	0	0	0	2
2	0	0	0	0	0	0	0	2
8	1	0	0	0	0	0	1	10
2	1	0	0	0	0	0	0	3
2	0	0	0	0	0	0	0	2
3	0	0	0	0	0	0	0	3
1	2	0	0	0	0	0	0	3
8	3	0	0	0	0	0	0	11
1	2	0	0	0	0	0	2	5
5	0	0	0	0	0	0	0	5
0	1	0	0	0	0	0	2	3
2	0	0	0	0	0	0	0	2
8	3	0	0	0	0	0	4	15
7	1	0	0	0	0	0	0	8
2	0	0	0	0	0	0	0	2
3	0	0	0	0	0	0	0	3
4	0	0	0	0	0	0	1	5
16	1	0	0	0	0	0	1	18
4	3	0	0	0	0	0	1	8
5	1	0	0	0	0	0	0	6
3	0	0	0	0	0	0	0	3
3	0	0	0	0	0	0	0	3
15	4	0	0	0	0	0	1	20
5	0	0	0	0	0	0	0	5
1	0	0	0	0	0	0	0	1
5	0	0	0	0	0	0	4	9
6	0	0	0	0	0	0	1	7
17	0	0	0	0	0	0	5	22
142	27	2	0	0	0	0	20	191

MANUAL CLASSIFIED COUNTS

JOB REF: 14524

JOB NAME: WELWYN

SITE: 1

LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)



DATE: 11/06/2025

DAY: WEDNESDAY

TIME	TO ARM C POTTERSHEATH RD (NW)							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
07:00	2	0	0	0	0	0	0	2
07:15	1	0	0	0	0	0	0	1
07:30	3	0	0	0	0	0	0	3
07:45	5	1	0	0	0	0	0	6
H/TOT	11	1	0	0	0	0	0	12
08:00	2	1	1	0	0	1	1	6
08:15	5	1	0	0	0	0	0	6
08:30	13	3	4	0	0	0	0	20
08:45	7	2	1	0	0	0	1	11
H/TOT	27	7	6	0	0	1	2	43
09:00	3	1	0	0	0	0	1	5
09:15	6	3	0	0	0	0	0	9
09:30	7	2	1	0	0	0	0	10
09:45	7	0	0	0	0	0	6	13
H/TOT	23	6	1	0	0	0	7	37
10:00	5	1	1	0	0	0	0	7
10:15	6	1	0	0	0	0	1	8
10:30	4	1	1	0	0	0	0	6
10:45	4	1	0	0	0	0	0	5
H/TOT	19	4	2	0	0	0	1	26
11:00	5	2	0	0	0	0	0	7
11:15	7	3	0	0	0	0	1	11
11:30	5	2	0	0	0	0	0	7
11:45	4	1	0	0	0	0	0	5
H/TOT	21	8	0	0	0	0	1	30
12:00	8	1	0	0	0	0	1	10
12:15	3	1	0	0	0	0	0	4
12:30	1	0	1	0	0	0	0	2
12:45	4	0	0	0	0	0	0	4
H/TOT	16	2	1	0	0	0	1	20

	FROM ARM C POTTERSHEATH RD (NW)							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
3	0	0	0	0	0	0	0	3
7	1	0	0	0	0	0	3	11
12	1	0	0	0	0	0	0	13
14	2	0	0	0	0	0	1	17
36	4	0	0	0	0	0	4	44
22	1	0	0	0	0	0	0	23
12	0	0	0	0	0	0	0	12
15	2	0	0	0	0	0	0	17
13	4	2	0	0	0	0	0	19
62	7	2	0	0	0	0	0	71
6	2	0	0	0	0	0	0	8
5	1	1	0	0	0	0	0	7
7	1	0	0	0	0	0	0	8
6	1	2	0	0	0	0	0	9
24	5	3	0	0	0	0	0	32
3	4	0	0	0	0	0	1	8
5	1	1	0	0	0	0	0	7
0	3	0	0	0	0	0	1	4
7	0	1	0	0	0	0	3	11
15	8	2	0	0	0	0	5	30
4	0	1	0	0	0	0	0	5
3	1	0	0	0	0	0	0	4
6	3	1	0	0	0	0	2	12
10	1	0	0	0	0	0	0	11
23	5	2	0	0	0	0	2	32
4	4	0	0	0	0	1	0	9
7	3	1	0	0	0	0	3	14
4	3	0	0	0	0	0	1	8
4	1	0	0	0	0	0	0	5
19	11	1	0	0	0	1	4	36

MANUAL CLASSIFIED COUNTS

JOB REF: 14524

JOB NAME: WELWYN

SITE: 1

LOCATION: POTTERSHEATH RD (SE) / DANESBURY PARK RD / POTTERSHEATH RD (NW)



DATE: 11/06/2025

DAY: WEDNESDAY

TIME	TO ARM C POTTERSHEATH RD (NW)							
	CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
13:00	7	2	0	0	0	0	0	9
13:15	4	1	0	0	0	0	1	6
13:30	2	2	0	0	0	0	0	4
13:45	4	2	0	0	0	0	0	6
H/TOT	17	7	0	0	0	0	1	25
14:00	4	1	0	0	0	0	0	5
14:15	8	1	1	0	0	0	0	10
14:30	5	1	0	0	0	0	0	6
14:45	1	0	0	0	0	0	1	2
H/TOT	18	3	1	0	0	0	1	23
15:00	5	3	0	0	0	0	0	8
15:15	10	0	0	0	0	0	0	10
15:30	9	2	0	0	0	0	0	11
15:45	8	0	0	0	0	0	0	8
H/TOT	32	5	0	0	0	0	0	37
16:00	11	3	0	0	0	0	0	14
16:15	13	1	0	0	0	0	1	15
16:30	6	4	2	0	0	0	0	12
16:45	14	2	0	0	0	1	2	19
H/TOT	44	10	2	0	0	1	3	60
17:00	9	4	0	0	0	0	1	14
17:15	17	0	0	0	0	0	0	17
17:30	17	3	0	0	0	0	0	20
17:45	13	1	0	0	0	0	0	14
H/TOT	56	8	0	0	0	0	1	65
18:00	11	0	0	0	0	0	0	11
18:15	13	2	0	0	0	0	0	15
18:30	5	0	0	0	0	0	1	6
18:45	3	2	0	0	0	0	1	6
H/TOT	32	4	0	0	0	0	2	38
P/TOT	316	65	13	0	0	2	20	416

FROM ARM C POTTERSHEATH RD (NW)							
CAR	LGV	OGV1	OGV2	PSV	MCL	PCL	TOT
1	0	0	0	0	0	1	2
5	2	0	0	0	0	0	7
5	0	0	0	0	0	0	5
4	2	0	0	0	0	0	6
15	4	0	0	0	0	1	20
6	1	0	0	0	0	0	7
3	1	0	0	0	0	0	4
6	1	0	0	0	0	1	8
8	2	1	0	0	0	0	11
23	5	1	0	0	0	1	30
3	1	0	0	0	0	0	4
4	3	0	0	0	0	0	7
9	3	0	0	0	0	0	12
5	2	0	0	0	0	0	7
21	9	0	0	0	0	0	30
4	1	0	0	0	0	0	5
4	0	0	0	0	0	3	7
3	2	0	0	0	0	0	5
12	1	1	0	0	0	1	15
23	4	1	0	0	0	4	32
6	1	0	0	0	0	0	7
14	0	0	0	0	0	0	14
7	0	0	0	0	0	1	8
9	1	0	0	0	0	0	10
36	2	0	0	0	0	1	39
6	0	0	0	0	0	1	7
2	1	0	0	0	0	3	6
10	0	0	0	0	0	0	10
5	0	0	0	0	0	1	6
23	1	0	0	0	0	5	29
320	65	12	0	0	1	27	425

The Hurlstone Partnership

APPENDIX B

Automatic Traffic Counter Results

12636		WELWYN								
		NOVEMBER 2016			Posted Speed Limit (PSL)	Total Vehicles	5 Day Ave.	7 Day Ave.	Average 85%ile Speed	Average Mean Speed
Site	Location	Direction	Start Date	End Date						
Site No: 12636001	Danesbury Park Rd, Welwyn - att to Cornerwood Sign OSGR - TL 24096 18072	Channel: Northeastbound	Wed 23-Nov-16	Tue 29-Nov-16	30	1588	246	227	24.1	18.5
		Channel: Southwestbound	Wed 23-Nov-16	Tue 29-Nov-16		1731	267	247	22.8	17.7

12636 WELWYN Site No: 12636001 Location Danesbury Park Rd, Welwyn - att to Cornerwood Sign
Channel: Northeastbound

TIME PERIOD	Wed 23/11/16	Thu 24/11/16	Fri 25/11/16	Sat 26/11/16	Sun 27/11/16	Mon 28/11/16	Tue 29/11/16	5-Day Av	7-Day Av
Week Begin: 23-Nov-16									
00:00	1	0	1	6	0	0	1	1	1
01:00	0	1	0	1	0	0	0	0	0
02:00	1	1	1	1	0	0	1	1	1
03:00	0	0	0	1	0	2	3	1	1
04:00	0	0	0	1	0	0	0	0	0
05:00	5	3	3	1	0	2	2	3	2
06:00	3	5	8	5	2	5	6	5	5
07:00	22	25	19	8	7	24	15	21	17
08:00	16	17	14	13	5	12	24	17	14
09:00	23	13	18	12	10	10	15	16	14
10:00	13	12	14	11	11	19	16	15	14
11:00	13	14	14	20	20	22	11	15	16
12:00	12	17	9	17	12	20	24	16	16
13:00	7	18	18	18	14	14	15	14	15
14:00	23	16	25	15	13	18	16	20	18
15:00	23	25	22	9	12	25	21	23	20
16:00	15	17	12	13	13	19	16	16	15
17:00	18	12	17	9	9	15	15	15	14
18:00	15	19	19	10	8	10	17	16	14
19:00	16	15	15	12	9	16	14	15	14
20:00	13	8	10	10	9	8	6	9	9
21:00	2	2	1	3	5	2	3	2	3
22:00	1	4	2	3	0	3	1	2	2
23:00	5	2	3	1	1	1	1	2	2
12H,7-19	200	205	201	155	134	208	205	204	187
16H,6-22	234	235	235	185	159	239	234	235	217
18H,6-24	240	241	240	189	160	243	236	240	221
24H,0-24	247	246	245	200	160	247	243	246	227

12636	WELWYN				Site No: 12636001	Location	Danesbury Park Rd, Welwyn - att to Cornerwood Sign		
	Channel: Southwestbound								
		Wed	Thu	Fri	Sat	Sun	Mon	Tue	5-Day
TIME PERIOD	23/11/16	24/11/16	25/11/16	26/11/16	27/11/16	28/11/16	29/11/16	Av	Av
Week Begin: 23-Nov-16									
00:00	1	1	1	2	0	2	0	1	1
01:00	0	1	2	2	1	0	0	1	1
02:00	1	0	1	1	0	1	2	1	1
03:00	0	0	1	0	0	0	0	0	0
04:00	0	0	0	2	1	0	0	0	0
05:00	3	3	4	0	0	3	2	3	2
06:00	6	5	5	3	6	4	4	5	5
07:00	13	15	15	13	7	16	20	16	14
08:00	20	24	12	6	8	35	26	23	19
09:00	24	24	20	10	10	20	22	22	19
10:00	21	19	11	24	10	25	12	18	17
11:00	13	20	15	18	30	21	22	18	20
12:00	12	14	15	13	16	20	25	17	16
13:00	14	14	23	20	9	16	9	15	15
14:00	15	15	19	12	11	18	15	16	15
15:00	27	23	24	17	15	28	25	25	23
16:00	21	23	22	21	13	26	13	21	20
17:00	15	18	12	11	7	13	13	14	13
18:00	19	20	16	13	12	11	18	17	16
19:00	16	16	11	13	11	10	16	14	13
20:00	6	7	8	8	9	10	10	8	8
21:00	11	4	3	1	4	6	5	6	5
22:00	5	3	6	5	0	2	4	4	4
23:00	1	1	4	0	1	0	1	1	1
12H,7-19	214	229	204	178	148	249	220	223	206
16H,6-22	253	261	231	203	178	279	255	256	237
18H,6-24	259	265	241	208	179	281	260	261	242
24H,0-24	264	270	250	215	181	287	264	267	247

12636	WELWYN		Site No: 12636001		Location		Danesbury Park Rd, Welwyn - att to Cornerwood Sign		
	Channel: Combined								
	Wed	Thu	Fri	Sat	Sun	Mon	Tue	5-Day	7-Day
TIME PERIOD	23/11/16	24/11/16	25/11/16	26/11/16	27/11/16	28/11/16	29/11/16	Av	Av
Week Begin: 23-Nov-16									
00:00	2	1	2	8	0	2	1	2	2
01:00	0	2	2	3	1	0	0	1	1
02:00	2	1	2	2	0	1	3	2	2
03:00	0	0	1	1	0	2	3	1	1
04:00	0	0	0	3	1	0	0	0	0
05:00	8	6	7	1	0	5	4	6	4
06:00	9	10	13	8	8	9	10	10	10
07:00	35	40	34	21	14	40	35	37	31
08:00	36	41	26	19	13	47	50	40	33
09:00	47	37	38	22	20	30	37	38	33
10:00	34	31	25	35	21	44	28	33	31
11:00	26	34	29	38	50	43	33	33	36
12:00	24	31	24	30	28	40	49	33	32
13:00	21	32	41	38	23	30	24	29	30
14:00	38	31	44	27	24	36	31	36	33
15:00	50	48	46	26	27	53	46	48	43
16:00	36	40	34	34	26	45	29	37	35
17:00	33	30	29	20	16	28	28	29	27
18:00	34	39	35	23	20	21	35	33	30
19:00	32	31	26	25	20	26	30	29	27
20:00	19	15	18	18	18	18	16	17	17
21:00	13	6	4	4	9	8	8	8	8
22:00	6	7	8	8	0	5	5	6	6
23:00	6	3	7	1	2	1	2	3	3
12H,7-19	414	434	405	333	282	457	425	427	393
16H,6-22	487	496	466	388	337	518	489	491	454
18H,6-24	499	506	481	397	339	524	496	501	463
24H,0-24	511	516	495	415	341	534	507	513	474

12636	WELWYN	Site No: 12636001	Location	Danesbury Park Rd, Welwyn - att to Cornerwood Sign
Wed 23-Nov-16 to Tue 29-Nov-16		Channel: Northeastbound		

TIME PERIOD	TOTAL VEHICLES	MOTOR-CYCLES	MOTOR-CYCLES %	CARS	CARS %	LGV	LGV %	HGV	HGV %	BUS	BUS %
Daily Totals											
Wed 23-Nov-16	247	4	1.6	224	90.7	15	6.1	3	1.2	1	0.4
Thu 24-Nov-16	246	4	1.6	220	89.4	21	8.5	1	0.4	0	0.0
Fri 25-Nov-16	245	3	1.2	224	91.4	13	5.3	4	1.6	1	0.4
Sat 26-Nov-16	200	2	1.0	183	91.5	12	6.0	3	1.5	0	0.0
Sun 27-Nov-16	160	5	3.1	151	94.4	3	1.9	1	0.6	0	0.0
Mon 28-Nov-16	247	11	4.5	221	89.5	10	4.1	5	2.0	0	0.0
Tue 29-Nov-16	243	4	1.7	222	91.4	15	6.2	2	0.8	0	0.0
Total Vehicles											
[--]	1588	33	2.1	1445	91.2	89	5.4	19	1.2	2	0.1

12636	WELWYN	Site No: 12636001	Location	Danesbury Park Rd, Welwyn - att to Cornerwood Sign
Wed 23-Nov-16 to Tue 29-Nov-16		Channel: Southwestbound		

TIME PERIOD	TOTAL VEHICLES	MOTOR-CYCLES	MOTOR-CYCLES %	CARS	CARS %	LGV	LGV %	HGV	HGV %	BUS	BUS %
Daily Totals											
Wed 23-Nov-16	264	7	2.7	237	89.8	18	6.8	1	0.4	1	0.4
Thu 24-Nov-16	270	3	1.1	243	90.0	20	7.4	4	1.5	0	0.0
Fri 25-Nov-16	250	5	2.0	225	90.0	15	6.0	5	2.0	0	0.0
Sat 26-Nov-16	215	4	1.9	198	92.1	11	5.1	2	0.9	0	0.0
Sun 27-Nov-16	181	8	4.4	167	92.3	5	2.8	1	0.6	0	0.0
Mon 28-Nov-16	287	8	2.8	256	89.2	14	4.9	9	3.1	0	0.0
Tue 29-Nov-16	264	3	1.1	242	91.7	16	6.1	3	1.1	0	0.0
Total Vehicles											
[--]	1731	38	2.3	1568	90.7	99	5.6	25	1.4	1	0.1

Development Trip Rates and Flows

Danesbury Park Road, Welwyn

ST. LEONARDS							Welwyn		
Time Period	196 Units			Trip Rate Per Unit			27 Units		
	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
07:00 - 08:00	12	29	41	0.061	0.148	0.209	2	4	6
08:00 - 09:00	21	26	47	0.107	0.133	0.240	3	4	7
09:00 - 10:00	25	49	74	0.128	0.250	0.378	3	7	10
10:00 - 11:00	33	54	87	0.168	0.276	0.444	5	7	12
11:00 - 12:00	25	32	57	0.128	0.163	0.291	3	4	7
12:00 - 13:00	36	42	78	0.184	0.214	0.398	5	6	11
13:00 - 14:00	32	25	57	0.163	0.128	0.291	4	3	7
14:00 - 15:00	33	26	59	0.168	0.133	0.301	5	4	9
15:00 - 16:00	28	28	56	0.143	0.143	0.286	4	4	8
16:00 - 17:00	52	30	82	0.265	0.153	0.418	7	4	11
17:00 - 18:00	43	26	69	0.219	0.133	0.352	6	4	10
18:00 - 19:00	31	28	59	0.158	0.143	0.301	4	4	8
Total									
	371	395	766	1.893	2.015	3.908	51	54	105

TRRL Single Lane Capacity Study

Residential roads and footpaths

layout considerations

HMSO £4.00 net



APPENDIX 4: STUDIES OF DELAYS TO TRAFFIC ON SINGLE-LANE CARRIAGEWAYS WITH PASSING PLACES

Introduction

1. This Appendix contains a summary of studies undertaken at the Transport and Road Research Laboratory on behalf of the Housing Development Directorate of DOE into the use of single-lane carriageways with passing places.²⁹

2. While these results may be used as guidance in producing innovative schemes, it must be emphasised that they do not represent studies of systems in everyday use and that additional factors must be taken into consideration when determining carriageway widths, as outlined in paragraphs 8.04-8.21 of this bulletin.

3. It is hoped, however, that the results provide sufficient guidance to enable schemes with single-lane carriageways to be produced where appropriate, and to enable follow-up studies to be conducted of their use.

4. Results from the TRRL studies indicate that simply in terms of their capacity for carrying moving traffic single-lane carriageways, correctly designed, are unlikely to incur significant increases in delay compared with traffic in free-flow conditions, at flow levels of up to 300 vph (total two-way).

5. The studies were undertaken in two stages:

- (a) first, a computer program was written representing the operation of a fixed length of single-lane carriageway, with passing places. From this a series of graphs of average delay against numbers of passing places was obtained for a range of flow levels (paragraphs 6-14);
- (b) second, a small-scale controlled experiment was carried out on the laboratory's test track to check the results of the simulation (paragraphs 15-29).

The simulation

6. A program, written in Fortran, was used to simulate the operation of a length of single-lane road. This length of road was split into 60 sections, some of which could be designated as passing places. No assumptions were made about the geometric configuration of the passing places since this has no effect on the operation of the program. From 0 to 5 passing places could be provided, uniformly spaced along the length considered; an additional section at each end was assumed to act as a passing place at all times, representing widening at each end of the single-lane road. The program operated under a fixed time cycle: during each cycle, vehicles could be generated at each end of the road and move along it at a constant speed of one section per time unit, unless impeded by other vehicles. For the purposes of this simulation the sections were assumed to be 3m long (giving a total of 180m) and the time unit was taken as half a second. This gives a speed of 3m/½ sec, i.e. about 22 km/h.

7. Traffic flows up to a two-way total of 300 vph (with various directional splits) were used in the simulation, and the entry times of vehicles into the single-lane road were determined by the computer's random number generator.

8. Simple rules were used to govern the movement of vehicles along the length of single-lane road. No two vehicles (regardless of their direction of movement) were allowed to be present at the same time in any 3m section unless it had been designated as a passing place (or was an end section). Vehicles had to wait in a passing place until the length of single-lane road up to the next passing place was clear of oncoming traffic. All vehicles moved with a fixed speed or were stationary: there was no acceleration/deceleration time or intermediate speed. Any number of vehicles were allowed to occupy a passing place (or end section).

9. For each simulation run (with a nominal traffic flow and number of passing places) the average journey time was calculated from the vehicle entry and exit times for each direction separately. Since the vehicles had a constant speed, their unimpeded journey time was constant at 30 seconds, thus the average delay to vehicles in each direction was found, and the mean delay for all vehicles. Additionally, a record was produced of the use of each passing place and end section. In each case, the number of half-second periods during which nil, one, two, three or more vehicles were present was recorded. This was done for each direction separately and for the two directions combined. Finally, the maximum number of vehicles present at any passing place or end section was output.

Results

10. Eight different combinations of nominal flow were used with from nil to five passing places provided within the 180m length. For each case three separate one-hour-long operations were simulated using different random patterns of traffic arrivals. The three simulations were averaged for each case and it is these averages which are presented here.

11. Figure 1 shows the way in which average delay per vehicle (both directions of flow combined) varied with the number of passing places for eight different flow combinations. The flow values given are the nominal flow rates; the actual flows obtained by the random generation procedure are in most cases slightly different.

12. These results show that the delay per vehicle falls considerably with the provision of one or two passing places, but a law of diminishing returns rapidly sets in. It can also be seen that balanced flows produce higher overall average delays per vehicle than equivalent unbalanced ones. Figure 2 shows the average delay per vehicle plotted against total flows for the cases where the nominal flows are equal.

13. These results are discussed in paragraphs 22-29 after the controlled experiment has been described.

14. Figure 3 gives information on the use made of the passing places and end sections for the various flow combinations. In each case the end sections are considered separately and an average passing place is also considered. For each of these the number of seconds during which one vehicle is waiting (T_1) and two or more vehicles are waiting (T_{2+}) is given. For the passing places this can include vehicles travelling in either direction, but only entering vehicles could be required to wait at the end sections. The figures are again the averages of three one-hour simulations. Also shown is the maximum number of vehicles ever required to wait in any passing place or end section. This figure is the highest occurring in any of the three simulations.

The single-lane experiment

15. In order to observe the operation of a single-lane road and to provide a check on the simulation output a small controlled experiment was carried out on the Laboratory's test track (the small roads system).

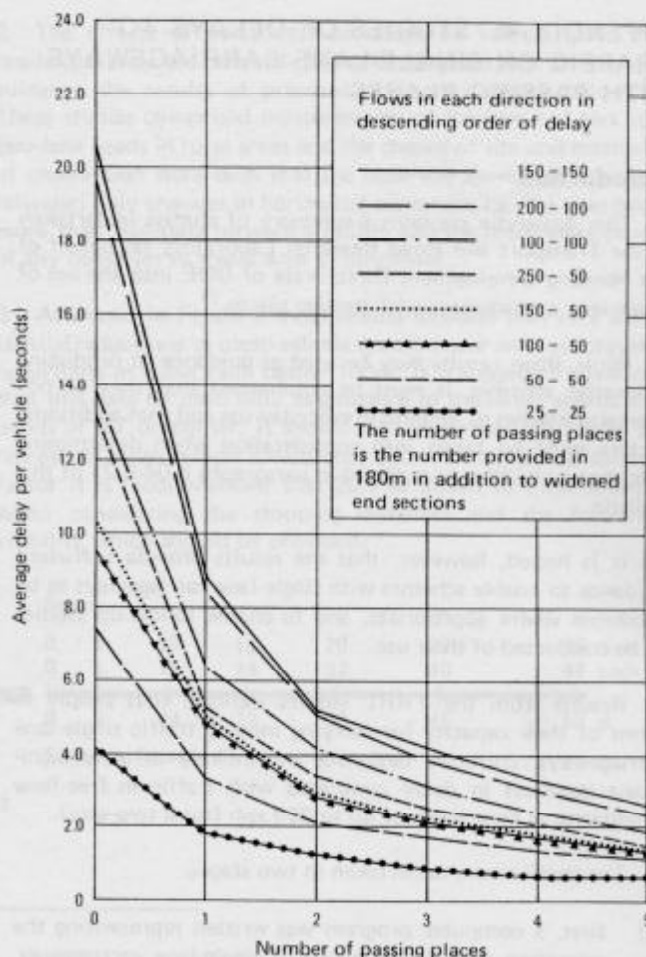
16. A straight stretch of 9m-wide road was narrowed using wooden blisters to 2.75m for 180m of its length. Three passing places marked out by cones were provided within the 180m, but two of these were blocked off in some tests. In addition to the 180m stretch of single-lane road, each end was entered through a widened section of road. Other parts of the small roads system were used to re-circulate traffic taking part in the experiment (see Figure 4). The layout of the single-lane road and the detailed design of the passing places, is shown in Figure 5 and illustrated in Figure 6.

17. The traffic used for the experiment consisted of cars driven by members of the Traffic Engineering Department. Vehicles were released onto the test road at each end according to a prepared schedule which gave specified flow rates and random intervals between vehicles. The release times were based on the vehicle generation times used by the simulation, adjusted to give a more realistic time-gap between entering vehicles. Observers positioned at the entry points noted any deviations from the scheduled entry times. The observers also recorded the use made of the passing places and widened entries by noting the number of vehicles waiting and the duration of their wait. Finally, an observer at each end recorded the times at which vehicles left the system, from which journey times could be calculated.

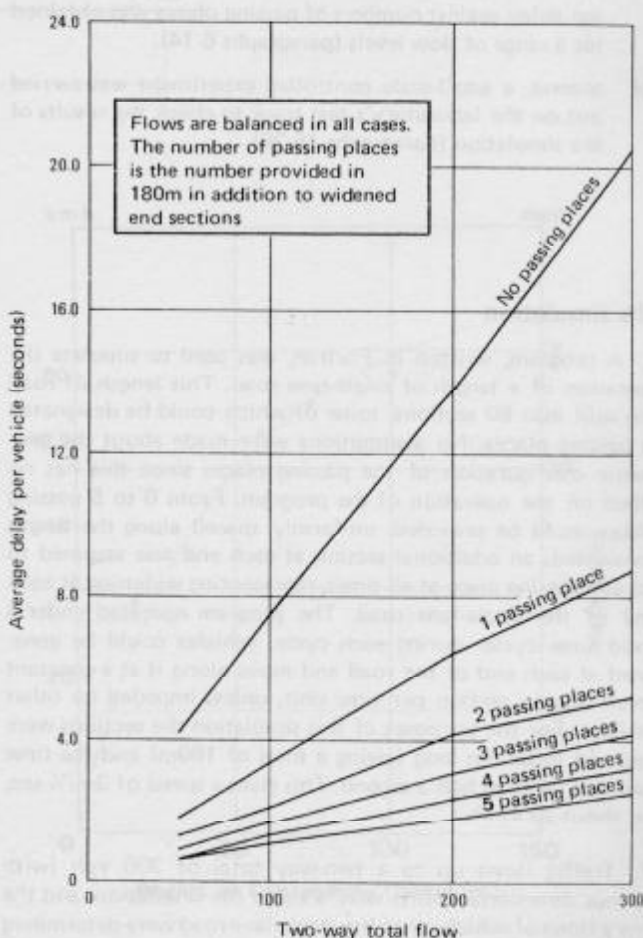
18. Seven tests were carried out, each lasting 20 minutes. Six of the tests were directly comparable with output from the simulation; the seventh used higher flows (250 vph each way) than had been used in the simulation. Since average speeds were higher during the experiment than that assumed in the simulation, average delays rather than average journey times were used as a basis of comparison. The calculation of delay was not as straightforward for the experiment as for the simulation since the unimpeded journey time was not constant for all vehicles. In order to obtain a value for the unimpeded journey time, a space-time plot was constructed for every vehicle in each of the first six tests. All vehicles which had a completely free run, in the sense that they met no oncoming traffic, were noted and their journey times recorded. The average journey time of all such vehicles was 23 seconds (giving a free-run speed of 28 km/h); this was subtracted from the overall average journey time in every test to produce a value for average delay.

19. The results of the seven tests are summarised in Figure 7. A comparison of these results with those from the simulation is made in paragraphs 22-29.

20. The space-time plots were also used to produce histograms of the journey time distribution for each test. As an example, Figure 8 shows the histogram for flows of 100/100 with three passing places, for both directions of flow combined. Also shown are the vehicles which had a completely free run (about 30% in this case; nearly 40% overall for the first six tests). In addition to these a number of vehicles were unimpeded because vehicles from the other direction let them pass. Since all these 'free-running' vehicles are included in the calculation of average delay, it follows that the delays actually incurred by some vehicles were considerably higher than the overall averages quoted: four of the 70 vehicles represented in Figure 8 suffered delays of more than 30 seconds, when the overall average delay was less than five seconds.



1 Variation of average delay with number of passing places and flow



2 Variation of average delay with flow and number of passing places.

3 Use of passing places and end sections

Flow (vph) in each direction	Number of passing places per 180m	Use of average passing place (seconds/hour)		Use of high-flow end section (seconds/hour)		Use of low-flow end section (seconds/hour)		Maximum number waiting
		T_{2+}^*	T_1^*	T_{2+}	T_1	T_{2+}	T_1	
25/25	0			29	95	0	82	3
	1	7	51	0	47	0	32	3
	2	1	43	0	25	0	25	2
	3	1	34	0	18	0	18	2
	4	0	32	0	15	0	13	2
	5	0	30	0	15	0	15	2
50/50	0			71	209	96	191	4
	1	15	153	9	173	20	85	3
	2	9	102	3	48	9	56	3
	3	4	84	1	44	3	44	2
	4	2	73	1	37	1	43	2
	5	1	66	1	36	0	38	2
100/50	0			118	333	209	423	5
	1	61	303	31	160	26	144	4
	2	18	181	4	97	10	98	4
	3	11	136	1	80	5	61	3
	4	5	118	1	69	1	53	3
	5	3	104	0	63	0	43	3
100/100	0			325	529	322	541	7
	1	125	432	49	256	45	285	6
	2	34	291	12	149	23	157	4
	3	22	211	11	116	2	117	3
	4	10	176	2	92	2	98	3
	5	6	151	0	79	0	84	3
150/50	0			170	312	347	504	5
	1	346	529	27	215	47	207	4
	2	115	391	6	128	11	128	4
	3	56	323	4	112	6	89	4
	4	31	264	1	94	2	66	3
	5	17	230	1	89	1	44	3
150/150	0			682	483	708	549	14
	1	119	330	117	379	114	425	6
	2	32	222	26	233	29	270	6
	3	14	172	30	182	11	180	5
	4	8	148	10	165	10	137	3
	5	4	135	7	136	4	127	4
200/100	0			568	366	840	617	14
	1	360	546	105	345	120	472	7
	2	98	409	42	249	28	267	5
	3	47	324	23	202	7	157	4
	4	26	264	8	175	7	141	5
	5	15	229	6	155	2	105	3
250/50	0			253	287	745	637	8
	1	223	467	46	278	73	308	4
	2	54	349	35	200	17	206	5
	3	36	252	9	191	10	129	4
	4	24	221	5	167	3	97	3
	5	12	196	4	150	0	59	3

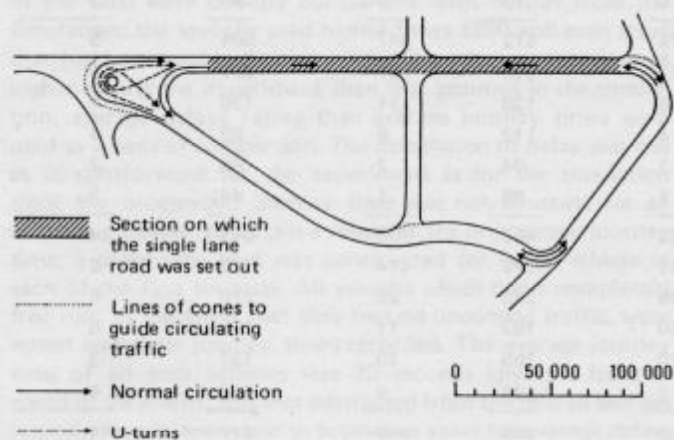
* T_1 and T_{2+} are the average number of seconds per hour during which an average passing place or end section is occupied by one vehicle or by two or more vehicles respectively.

21. The records of the numbers of vehicles using the passing places were hard to analyse due to the difficulty of defining when a vehicle was actually using a passing place. In particular, a number of vehicles used passing places to perform 'moving passes' during which neither of them actually stopped. Vehicles were also adjusting their speed well in advance of a passing place to take advantage of particular traffic circumstances. However, both the records kept and the opinions of observers suggested that the passing places employed were adequate for all but the final test when exceptionally high flows (in the single-lane road context) were used. It seems unlikely that much smaller passing places could be used due to the need to accommodate large service vehicles.

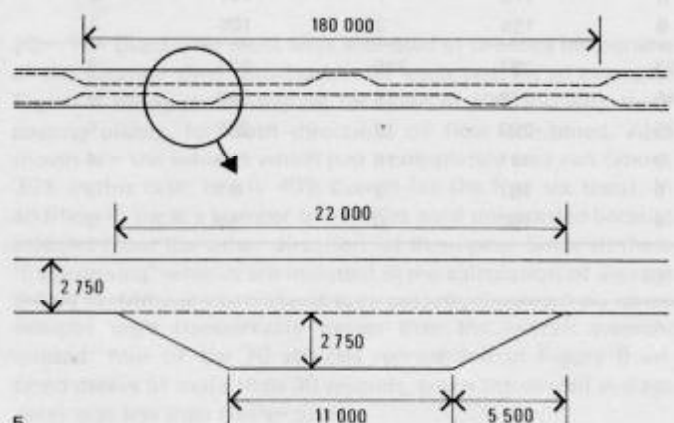
Comparison of results between simulation and controlled experiment

22. The results of the first six tests during the controlled experiment are compared with the appropriate simulation results in Figure 9. The seventh test did not correspond to any simulated case; this test had only been included as an attempt to introduce more diverse driving conditions than seemed likely to occur during tests within the simulated range.

23. Figure 9 shows a systematic difference between the simulation and the experiment in the overall average delay per vehicle for the various flow combinations; the test-to-test differences were in close agreement. The experimental values were about 1½ seconds higher in every case except that in which very unbalanced flows (250/50) were provided with only one passing place. This difference may be the result of the omission of certain factors (e.g. acceleration/deceleration delays) from the simulation.



4



5

66

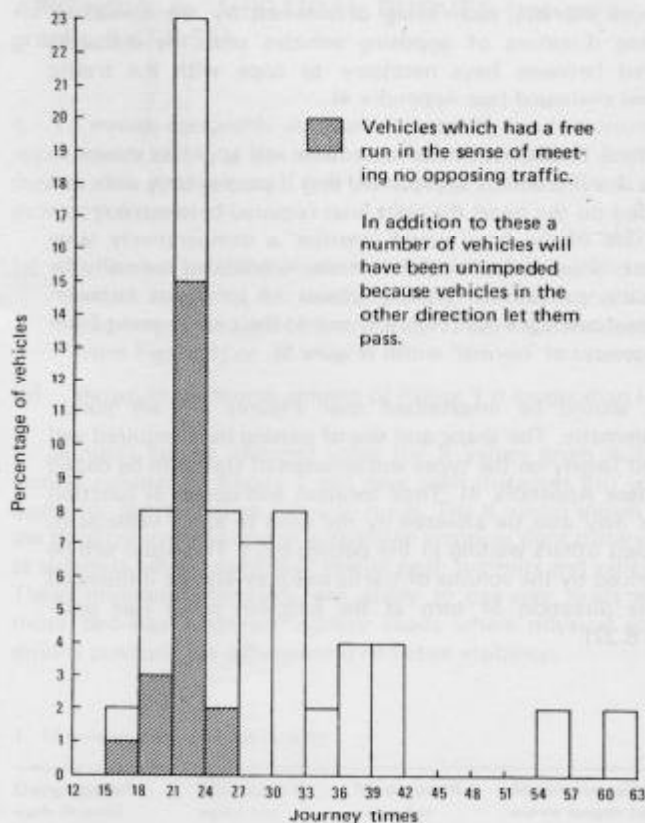
24. The discrepancies between the simulation and the experiment with respect to the difference in average delay per vehicle between the two flow directions, was even more marked. In the simulation this difference was variable; being large when the flows were unbalanced. The driver behaviour observed during the experiment was more flexible than that assumed in the simulation and this may have led to a smoothing out of differences. The observed differences between delay per vehicle for the two directions ranged from 0 to 2.6 seconds, and averaged 1.3 seconds (see first six rows of Figure 7).



6

7 Summary of results from controlled experiment

Number of passing places	Approximate flow rate (vph)		Average delay per vehicle (sec)		Combined
	High	Low	High	Low	
1	50	50	4.3	5.6	4.9
1	150	50	6.3	7.7	6.7
1	250	50	5.1	5.1	5.1
3	150	50	2.5	5.1	3.3
3	100	100	4.2	5.2	4.7
3	250	50	3.6	5.1	3.9
3	250	250	24.9	34.1	29.9



8 Journey time distribution from experiment. (Both directions of flow combined.) Three passing places: Nominal flow rate of 100 vph each way. (Total two-way count of 70 vehicles in 20 mins.)

9

Number of passing places	Flow rate (vph)	Average delay per vehicle both directions combined (sec)		Experiment minus simulation
		Experiment	Simulation	
1	50/ 50	4.9	3.4	+ 1.5
1	150/ 50	6.7	5.1	+ 1.6
1	250/ 50	5.1	5.3	- 0.2
3	150/ 50	3.3	2.2	+ 1.1
3	100/100	4.7	3.1	+ 1.6
3	250/ 50	3.9	2.6	+ 1.3

25. It was not possible to produce a delay/flow plot for the experiment like that for the simulation results given in Figure 2, because only seven tests were carried out. However, the seventh test with flows of 250 vph each way and three passing places showed a large increase in delay which suggests that the linear relationship between flow and delay in Figure 2 would not apply at higher flows, as the simplifying assumptions involved in the simulation (especially about driver behaviour) became increasingly unrealistic.

26. Since the simulation did not generally record individual journey times (this would have led to a large increase in program running time) no comparison is possible with the distribution of journey times recorded in the experiment (Figure 8). But a few extra simulation runs confirmed the experimental results, that a considerable proportion of vehicles were unimpeded, while a small proportion incurred delays well above the average; this must be borne in mind when assessing the acceptability of the various average delays recorded.

27. Although it was difficult to analyse the records of the use made of passing places during the experiment, they were clearly of adequate size for the flows used in the first six tests. The simulation showed that they were empty for much of the time and rarely occupied by more than two vehicles. Observers in the experiment agreed that this was an accurate representation of passing place use.

28. In making these comparisons it should be remembered that the simulation results are based on three one-hour simulated flows, whereas the tests during the controlled experiment were of only twenty minutes each.

29. It would seem, therefore, that while the results from the simulation may be suspect in detail, the values obtained for overall average delay per vehicle are of the right order. It also seems that the simulation provides reasonable guidance as to the frequency and size of passing place required. Figure 1 suggests that for two-way flows of up to 100 vph two passing places within 180m (i.e. a separation of 60m, centre-to-centre) are sufficient. For higher flows of up to a two-way total of 300 vph three passing places are probably necessary (separation of 45m, centre-to-centre).

The Hurlstone Partnership

APPENDIX E

PICADY Results

TRL LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 4.1 ANALYSIS PROGRAM
RELEASE 3.0 (MAR 2001)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
BY PERMISSION OF THE CONTROLLER OF HMSO

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
IN NO WAY RELIEVED OF HIS RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-
"C:\Users\Jeremy\Documents\Jez Work\160101 - Lower Caldecote, South Bedfordshire\Welwyn Site\AM With Daily.vpi"
at 17:20:46 on Tuesday, 17 March 2026

RUN TITLE

Danesbury Park Road AM With 12 Hour

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)
I
I
I
I
I
I
I
MINOR ROAD (ARM B)

ARM A IS Pottersheath Road (S)
ARM B IS Danesbury Park Road
ARM C IS Pottersheath Road (N)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B
STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C
ETC.

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I (W)	6.00 M.	I
I	CENTRAL RESERVE WIDTH	I (WCR)	0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I (WC-B)	2.20 M.	I
I	- VISIBILITY	I (VC-B)	105.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I (VB-C)	5.0 M.	I
I	- VISIBILITY TO RIGHT	I (VB-A)	16.0 M.	I
I	- LANE 1 WIDTH	I (WB-C)	2.20 M.	I
I	- LANE 2 WIDTH	I (WB-A)	0.00 M.	I

TRAFFIC DEMAND DATA

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUMBER OF MINUTES FROM START WHEN			I	RATE OF FLOW (VEH/MIN)			I
		I	I	I		I	I	I	
I	ARM	I	TO RISE	I	IS REACHED	I	BEFORE	I	AT TOP
I	I	I	I	I	I	I	I	I	I
I	ARM A	I	15.00	I	45.00	I	75.00	I	1.00
I	ARM B	I	15.00	I	45.00	I	75.00	I	0.76
I	ARM C	I	15.00	I	45.00	I	75.00	I	1.10

		TURNING PROPORTIONS						
		TURNING COUNTS (VEH/HR)						
		(PERCENTAGE OF H.V.S)						
	TIME	FROM/TO	ARM A	ARM B	ARM C			
07.45 - 09.15								
	ARM A	0.000	0.525	0.475				
		0.0	42.0	38.0				
		(0.0)	(0.0)	(15.8)				
	ARM B	0.574	0.000	0.426				
		35.0	0.0	26.0				
		(0.0)	(0.0)	(0.0)				
	ARM C	0.761	0.239	0.000				
		67.0	21.0	0.0				
		(3.0)	(0.0)	(0.0)				

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	I
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	I
I	07.45-08.00									I
I	B-AC	0.76	7.99	0.095		0.0	0.1	1.5		I
I	C-AB	0.28	10.86	0.026		0.0	0.0	0.5		I
I	C-A	0.82								I
I	A-B	0.52								I
I	A-C	0.47								I

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	I
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	I
I	08.00-08.15									I
I	B-AC	0.91	7.93	0.115		0.1	0.1	1.9		I
I	C-AB	0.34	10.91	0.032		0.0	0.0	0.6		I
I	C-A	0.97								I
I	A-B	0.63								I
I	A-C	0.57								I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	I
I	08.15-08.30									I
I	B-AC	1.12	7.85	0.142		0.1	0.2	2.4		I
I	C-AB	0.43	10.99	0.039		0.0	0.0	0.7		I
I	C-A	1.18								I
I	A-B	0.77								I
I	A-C	0.69								I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	I
I	08.30-08.45									I
I	B-AC	1.12	7.85	0.142		0.2	0.2	2.5		I
I	C-AB	0.43	10.99	0.039		0.0	0.0	0.7		I
I	C-A	1.18								I
I	A-B	0.77								I
I	A-C	0.69								I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	I
I	08.45-09.00									I
I	B-AC	0.91	7.93	0.115		0.2	0.1	2.0		I
I	C-AB	0.34	10.91	0.032		0.0	0.0	0.6		I
I	C-A	0.97								I
I	A-B	0.63								I
I	A-C	0.57								I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	I
I	09.00-09.15									I
I	B-AC	0.76	7.99	0.095		0.1	0.1	1.6		I
I	C-AB	0.28	10.86	0.026		0.0	0.0	0.5		I
I	C-A	0.82								I
I	A-B	0.52								I
I	A-C	0.47								I

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.1
09.15	0.1

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.0
08.15	0.0
08.30	0.0
08.45	0.0
09.00	0.0
09.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL	I	DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	I	(VEH/H)	I	(MIN)	I	(MIN)	I
I	I	I	I	I	I	I	(MIN/VEH)	I	(MIN/VEH)	I
I	B-AC	I	83.6	I	55.8	I	11.9	I	0.14	I
I	C-AB	I	31.8	I	21.2	I	3.6	I	0.11	I
I	C-A	I	88.8	I	59.2	I	I	I	I	I
I	A-B	I	57.6	I	38.4	I	I	I	I	I
I	A-C	I	52.1	I	34.7	I	I	I	I	I
I	ALL	I	314.0	I	209.3	I	15.5	I	0.05	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

***** PICADY 4 run completed.

===== end of file =====

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 4.1 ANALYSIS PROGRAM
RELEASE 3.0 (MAR 2001)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
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Run with file:-
"C:\Users\Jeremy\Documents\Jez Work\160101 - Lower Caldecote, South Bedfordshire\Welwyn Site\PM With Daily.vpi"
at 17:23:12 on Tuesday, 17 March 2026

RUN TITLE

Danesbury Park Road PM With 12 Hr

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

I
I
I
I
I
I
I

MINOR ROAD (ARM B)

ARM A IS Pottersheath Road (S)
ARM B IS Danesbury Park Road
ARM C IS Pottersheath Road (N)

STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I
I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	I (W)	6.00 M.	I
I	CENTRAL RESERVE WIDTH	I (WCR)	0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I (WC-B)	2.20 M.	I
I	- VISIBILITY	I (VC-B)	105.0 M.	I
I	- BLOCKS TRAFFIC	I	YES	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I (VB-C)	5.0 M.	I
I	- VISIBILITY TO RIGHT	I (VB-A)	16.0 M.	I
I	- LANE 1 WIDTH	I (WB-C)	2.20 M.	I
I	- LANE 2 WIDTH	I (WB-A)	0.00 M.	I

TRAFFIC DEMAND DATA -----

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MINUTES.

LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I			NUMBER OF MINUTES FROM START WHEN			I			RATE OF FLOW (VEH/MIN)			I	
I	ARM	I	FLOW STARTS	I	TOP OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER
I	I	I	TO RISE	I	IS REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK
I	ARM A	I	15.00	I	45.00	I	75.00	I	1.40	I	2.10	I	1.40
I	ARM B	I	15.00	I	45.00	I	75.00	I	0.93	I	1.39	I	0.93
I	ARM C	I	15.00	I	45.00	I	75.00	I	0.69	I	1.03	I	0.69

		TURNING PROPORTIONS					
		TURNING COUNTS (VEH/HR)					
		(PERCENTAGE OF H.V.S)					
TIME		FROM/TO	ARM A	ARM B	ARM C		
16.45 - 18.15		ARM A	0.000	0.446	0.554		
			0.0	50.0	62.0		
			(0.0)	(0.0)	(0.0)		
		ARM B	0.743	0.000	0.257		
			55.0	0.0	19.0		
			(0.0)	(0.0)	(0.0)		
		ARM C	0.691	0.309	0.000		
			38.0	17.0	0.0		
			(2.6)	(0.0)	(0.0)		

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
16.45-17.00								
B-AC	0.93	7.62	0.121		0.0	0.1	2.0	
C-AB	0.22	10.54	0.021		0.0	0.0	0.4	
C-A	0.47							
A-B	0.63							
A-C	0.77							

TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)
17.00-17.15								
B-AC	1.10	7.55	0.146		0.1	0.2	2.5	
C-AB	0.27	10.54	0.025		0.0	0.0	0.4	
C-A	0.55							
A-B	0.75							
A-C	0.93							

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	I
I	17.15-17.30									I
I	B-AC	1.35	7.47	0.181		0.2	0.2	3.2		I
I	C-AB	0.33	10.53	0.032		0.0	0.0	0.6		I
I	C-A	0.67								I
I	A-B	0.91								I
I	A-C	1.13								I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	I
I	17.30-17.45									I
I	B-AC	1.35	7.47	0.181		0.2	0.2	3.3		I
I	C-AB	0.33	10.53	0.032		0.0	0.0	0.6		I
I	C-A	0.67								I
I	A-B	0.91								I
I	A-C	1.13								I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	I
I	17.45-18.00									I
I	B-AC	1.10	7.55	0.146		0.2	0.2	2.7		I
I	C-AB	0.27	10.54	0.025		0.0	0.0	0.4		I
I	C-A	0.55								I
I	A-B	0.75								I
I	A-C	0.93								I

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	I
I	18.00-18.15									I
I	B-AC	0.93	7.62	0.121		0.2	0.1	2.1		I
I	C-AB	0.22	10.54	0.021		0.0	0.0	0.4		I
I	C-A	0.46								I
I	A-B	0.63								I
I	A-C	0.77								I

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.2
18.15	0.1

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
18.00	0.0
18.15	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL	I	DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I	I	I
I	I	I	(VEH)	I	(VEH/H)	I	(MIN)	I	(MIN)	I
I	I	I	I	I	I	I	(MIN/VEH)	I	(MIN/VEH)	I
I	B-AC	I	101.5	I	67.6	I	15.7	I	0.16	I
I	C-AB	I	24.7	I	16.5	I	2.7	I	0.11	I
I	C-A	I	50.7	I	33.8	I	I	I	I	I
I	A-B	I	68.6	I	45.7	I	I	I	I	I
I	A-C	I	85.0	I	56.7	I	I	I	I	I
I	ALL	I	330.5	I	220.3	I	18.4	I	0.06	I

* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD .

* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

***** PICADY 4 run completed.

===== end of file =====

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