

18115-01-001

CARPARK AT LANDS KNOWN AS
FLYNN'S FIELD,
CARRICK-ON-SHANNON

Traffic and Transport Assessment

for

LEITRIM COUNTY COUNCIL

November 2018



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1 INTRODUCTION

1.1 INTRODUCTION

Roadplan Consulting was commissioned by Leitrim County Council to prepare a Traffic and Transport Assessment (TTA) for the proposed development at lands known as Flynn's Field, Carrick-on-Shannon. The location of the proposed car park is shown in Fig 1.1 below.

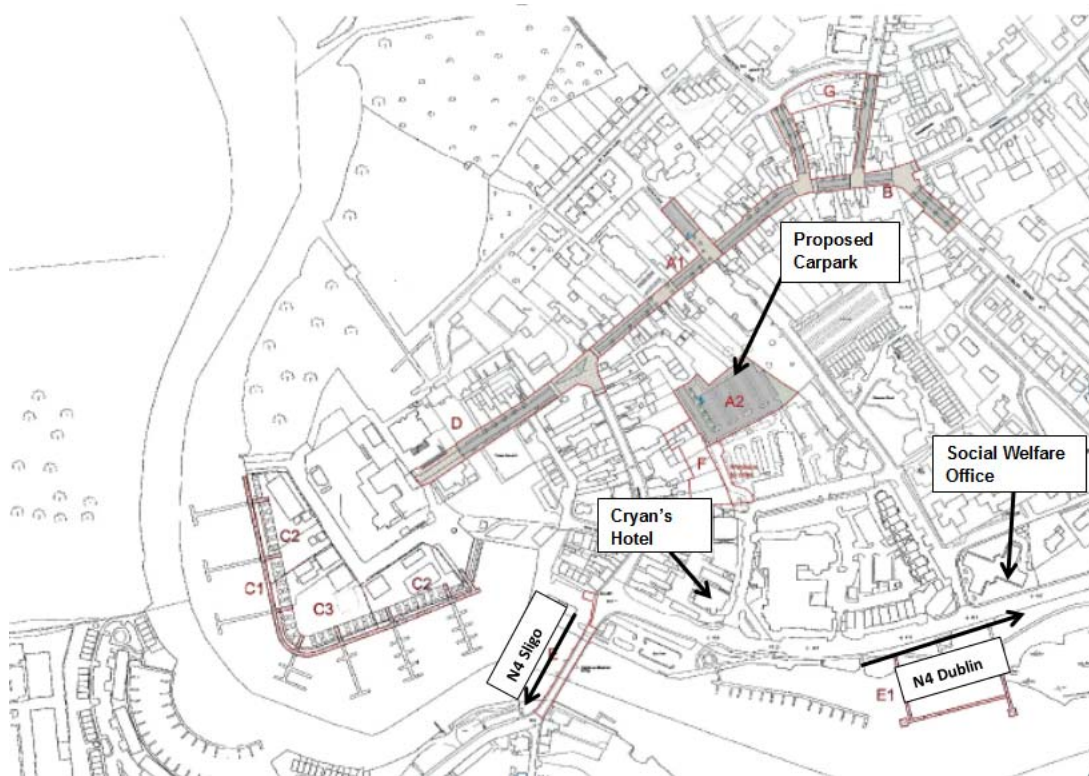


Fig 1.1 Proposed Carpark Location

In preparing this report, Roadplan Consulting has made reference to:

- 'The Institute of Highways and Transportation' Guidelines on the Preparation of Traffic Impact Assessments;
- Transport Infrastructure Ireland (TII) 'Traffic and Transport Assessment Guidelines' May 2014.

1.2 OBJECTIVES

The objective of this report is to examine the traffic implications associated with the proposed development in terms of how it can integrate with traffic in the area. The report will determine and quantify the extent of trips generated by the development, and the impact of such trips on the operational performance of the local road network and junctions, in particular the existing priority junctions on the N4 at Cryan's Hotel and at the Social Welfare Office (the locations of these junctions are shown on Figure 2.2).

1.3 STUDY METHODOLOGY

The methodology adopted for this report is summarised as follows:

- Surveys of existing traffic flows were carried out;
- Traffic volumes expected to be generated by the proposed car park were predicted;

- Traffic Assessment – The DO-NOTHING and DO-SOMETHING traffic flows were used to develop PICADY models of the existing junctions (Cryan's Hotel and Social Welfare Office).
- Future Year Assessment – The future year traffic volumes on the study area road network were predicted and used to assess the future operational performance of the roundabout both at the year of opening of the development and 15 years thereafter.

2 PROPOSED DEVELOPMENT

2.1 DESCRIPTION OF PROPOSED DEVELOPMENT

The proposed car park is to contain 105 spaces and its layout is shown in Fig. 2.1 below



Fig 2.1 Proposed Car Park Layout

It will be owned and operated by Leitrim County Council and will be available as a public car park. Details of the parking charges or of the payment methods - pay and display (disk or ticket) or pay on exit - have not been made available.

There are three possible access points to the car park.

- Cryan's Hotel Road
- Social Welfare Office Road
- Shannon Lodge

The three access points are shown on Fig 2.2 below.



Fig 2.2 Proposed Access points to Car Park

3 EXISTING TRAFFIC

Traffic surveys were undertaken on the 24th, 25th and 26th of October 2018, consisting of manually classified counts at the following adjacent junctions:

- N4 / Social Welfare Office Road
- N4 / Cryan's Hotel

Peak hour traffic flows corresponding to the period during which the car park would be expected to be most used were abstracted from the surveys and are shown below in Fig 3.1., where HGV numbers are in brackets.

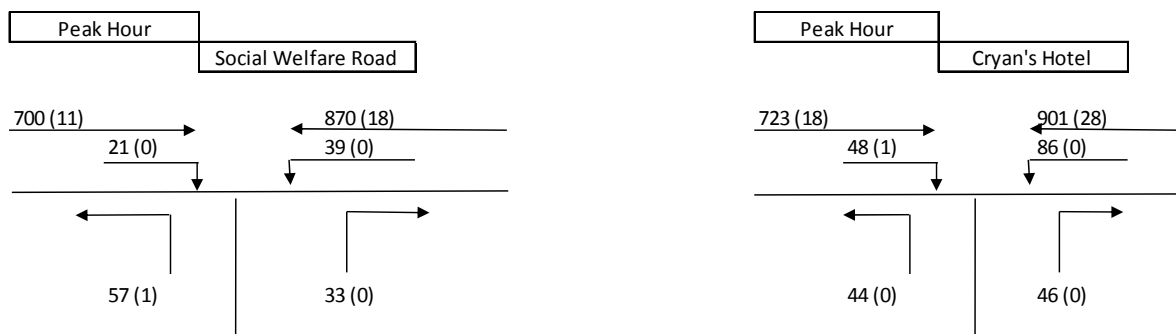


Fig 3.1 Existing Traffic Flows

Principal features of the traffic flows are:

- Traffic flow on the N4 is heavy; it is in the region of 1,600 or so vehicles two-way in the peak hour;
- Turning volumes are relatively low, particularly at the Social Welfare Road junction
- The largest entry flow in by left-turn from the north;
- Flow turning right from the N4 are low; it is likely that much of the right-turning traffic uses the preceding junction (Shannon Lodge).

4 TRIP GENERATION AND DISTRIBUTION

4.1 TRIP GENERATION

Trip generation of a car park is dependent on its use. Car parks generally used by employees for work tend to have a low number of trips because employees often park for the full day. On the other hand, car parks associated with convenience stores and the like have high numbers of trips because shopping trips are of short duration. Turnover at a car park is defined as the number of parking events per parking space per unit of time.

This car park is in the town centre, and the number and duration of parking events will be strongly influenced by the parking charges and the parking-time restrictions, if any. As previously stated, these factors are not decided at present and so, for the purpose of assessment, it is assumed that this car park will operate with use and charge criteria similar to town centre public car parks in other county towns.

Parking surveys we carried out on such car parks indicate that a typical turnover rate would be 6 vehicles per space in a 10-hour period i.e. 0.6 parking events per space per hour. This is for a busy town centre car park serving, in the main, shoppers and those visiting town centre businesses.

Taking that the rate of 0.6 parking events per space per hour, the number of parking events per hour for 105 spaces is 64. i.e. 64 trips to the car park and 64 from it, during the hour.

4.2 TRIP DISTRIBUTION

A significant number of such trips would route via the N4 / Shannon Lodge Roundabout, this would include trips to and from the east and the north town / north Leitrim areas. It is conservatively assumed that 30% of trips would use that roundabout, leaving 70% (45 trips in and 45 trips out, approximately) loaded onto the two priority junctions: Cryan's and Social Welfare Office.

It is assumed that the predicted trips would distribute at both T-junctions in the same proportions as do the existing traffic flows. Applying those existing splits to the predicted trips gives the distribution of development-generated trips shown in Fig 4.1.



Fig 4.1 Distribution of generated trips

The predicted trip matrix on opening of the car park (existing trips plus generated trips) is shown in Fig 4.2., where HGV numbers are in brackets

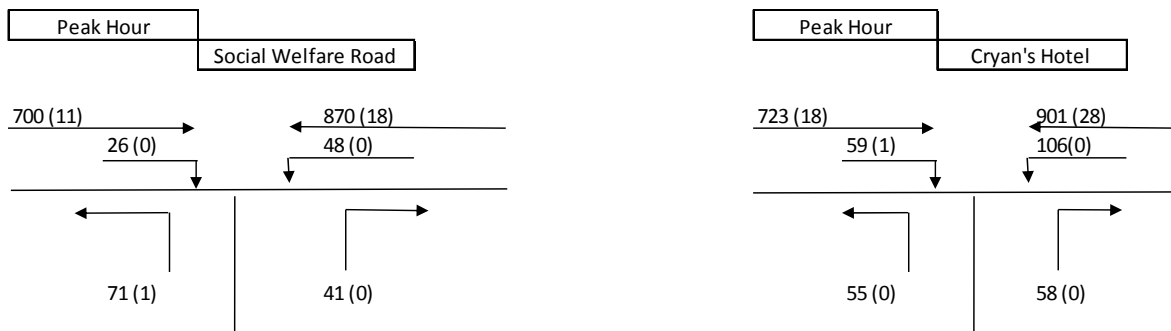


Fig 4.2 Predicted Traffic Flows on Opening of Car Park

4.3 TRIP GROWTH

Transport Infrastructure Ireland (TII) Traffic and Transport Guidelines require assessment of a development at year of opening and 15 years thereafter. TII publishes traffic growth factors predicting traffic growth in future years. The factors vary by location and by growth assumptions (low, medium or high). The site is located within Zone 102 of the TII National Traffic Model and, assuming a medium growth scenario, the TII prediction is an increase of 12.2% in 15 years.

Applying that growth to the existing traffic matrix and adding the predicted traffic of the development gives the predicted matrix for 15 years after opening, as shown in Fig 4.3 below, where HGV numbers are in brackets.

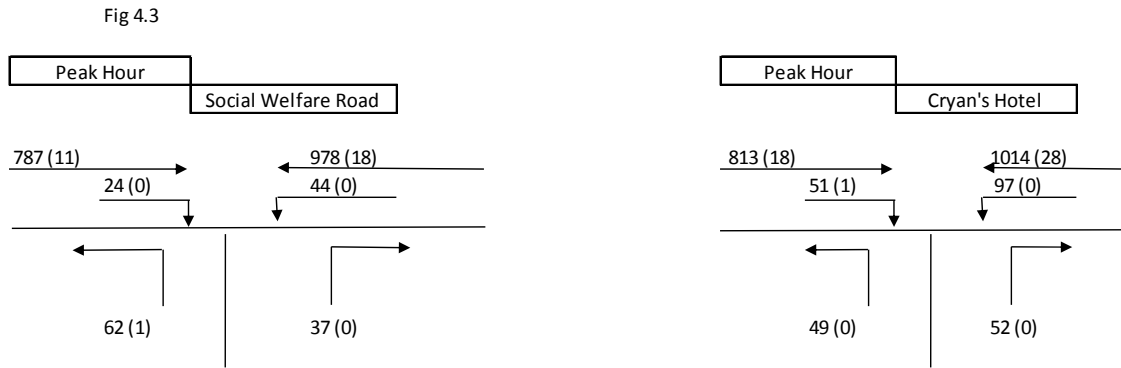


Fig 4.3 Predicted Traffic Flows 15 years after Opening of Car Park

5 OPERATIONAL ASSESSMENTS

5.1 CAPACITY ASSESSMENT

Capacity assessments have been undertaken for the existing scenario, for the opening year and for 15 years thereafter, using the computer program PICADY for the peak hour at each of the following junctions:

- Cryan's Hotel
- Social Welfare Office

Full PICADY printouts are provided in the Appendix.

The parameters shown in the tables are defined as follows:

Ratio of Flow to Capacity (RFC) is a factor indicating the flow on a junction arm relative to its capacity. An RFC of 1.0 means the junction has reached its ultimate capacity and an RFC of 0.85 means that the junction has reached its practical capacity.

Avg. Queue is the average number of vehicles queued over the time period on the junction approach.

Queue delay is the average number of seconds delay to each vehicle in the time period.

Total Delay is the total number of vehicle hours of delay to all vehicles at the junction over the time period.

5.1.1 EXISTING 2018 – NO CAR PARK

Cryan's Hotel 2018 – Existing – No Development

Approach	Predicted RFC value	Avg. Queue (vehicles)	Queue delay (secs/veh.)	Total Delay (veh hrs.)
N74 (west)	-	-	-	0.945
Cryans Hotel	0.506	1	23	
N4 (east)	0.128	0	8	

Social Welfare Office 2018 – Existing – No Development

Approach	Predicted RFC value	Avg. Queue (vehicles)	Queue delay (secs/veh.)	Total Delay (veh hrs.)
N74 (west)	-	-	-	0.608
Welfare	0.375	1	20	
N4 (east)	0.052	0	8	

The summary predictions shown in the tables above indicate that there are small queues and minimal delays in the peak hour at present.

5.1.2 2018 – WITH CARPARK IN OPERATION

Cryan's Hotel 2018 – with Car Park Operational

Approach	Predicted RFC value	Avg. Queue (vehicles)	Queue delay (secs/veh.)	Total Delay (veh hrs.)
N74 (west)	-	-	-	1.473
Cryans Hotel	0.662	1	29	
N4 (east)	0.159	0	9	

Social Welfare Office 2018 – with Car Park Operational

Approach	Predicted RFC value	Avg. Queue (vehicles)	Queue delay (secs/veh.)	Total Delay (veh hrs.)
N74 (west)	-	-	-	0.842
Welfare	0.471	1	18	
N4 (east)	0.064	0	8	

The summary predictions show that there will be no increase queues and minimal increase in delays in the peak hour when the car park becomes operational.

5.1.3 2033 – WITH CAR PARK OPERATIONAL

With the increase in traffic flows over a 15-year period the junctions become more heavily loaded. Were the distributions of traffic exiting the development to remain as they are at present then Cryan's junction would become overloaded, operating above capacity with queues and delays, while the Social Welfare junction would not be overloaded and would continue to operate well within capacity. In reality that would not occur because drivers would have the choice of re-distributing to the under-utilised adjacent Social Welfare junction. A driver, exiting the car park, would be able to see ahead to the junction at Cryan's and if traffic is queued to exit at that junction the driver would choose to use Social Welfare junction instead.

That re-distribution would occur has been assumed in the assessments carried out for year 2033 scenario. The summary predictions indicate that that both junctions would operate similarly with minor queues and delays in 2033 (fifteen years' time) during the peak hour, with the car park operational.

Cryan's Hotel – 2033 – with Car Park Operational

Approach	Predicted RFC value	Avg. Queue (vehicles)	Queue delay (secs/veh.)	Total Delay (veh hrs.)
N74 (west)	-	-	-	2.192
Cryans Hotel	0.855	2	54	
N4 (east)	0.193	0	10	

Social Welfare Office 2033 – with Car Park Operational

Approach	Predicted RFC value	Avg. Queue (vehicles)	Queue delay (secs/veh.)	Total Delay (veh hrs.)
N74 (west)	-	-	-	2.530
Welfare	0.853	3	41	
N4 (east)	0.078	0	8	

It should be noted that traffic would also re-distribute to the Shannon Lodge / Dublin Road junction. That re-distribution has not been included in the above assessments. There is therefore sufficient spare capacity in the adjoining junctions such that all junctions would operate within capacity in the peak-hour without significant queues or delays.

6 CONCLUSIONS AND RECOMMENDATIONS

Conclusions:

- Existing peak-time traffic flows on the N4 are high;
- Existing traffic flows turning to and from the access roads are relatively low;
- The existing priority junctions operate within capacity at present;
- The volume of traffic generated by the proposed car park is relatively low; it is assumed that its operational characteristics will be the same as town-centre short-stay public car parks in other county towns;
- The existing road network is capable of accommodating the generated flows when the car park opens;
- Traffic flows increase over time and fifteen years after opening the existing road network would retain sufficient traffic capacity to cater for the additional flows and the car park flows; traffic would, however, redistribute to make best use of spare capacity at the three possible egresses: Cryan's, Social Welfare Office and Shannon lodge.

Recommendations:

- Because it is likely that, in the future year 2033 and beyond, each of the three egresses (Cryan's, Social Welfare Office and Shannon Lodge), would not have significant capacity reserves at peak times, junction upgrading should be considered;
- The difficulty with right turning in light of the dominance of N4 traffic could be remedied by conversion of one junction to a roundabout or traffic signals. A roundabout might be the more effective option because it provides a location at which traffic to U-turn, facilitating the conversion of adjacent priority junctions to more efficient left-in-left-out operation.
- the junction at the Social Welfare Office is likely to be the preferable location for the upgraded junction for the reason that there is sufficient space available on the adjacent lands abutting the N4 to contain the footprint of the upgraded junction.

PICADY APPENDIX

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Run with file:- "C:\PICADY\2018\18115-01\Cryans existing.vpi" (drive-on-the-left) at 12:32:40 on Tuesday, 6 November 2018

.RUN INFORMATION

RUN TITLE: 18115-01 Carrick on Shannon - No development
LOCATION: Cryans T-junction
DATE: 04/11/18
CLIENT:
ENUMERATOR: user [RICHARDFRISBY]
JOB NUMBER: 18115-01
STATUS:
DESCRIPTION:

.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 Sligo
ARM B IS Cryans
ARM C IS Dublin

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)	6.50 M.	I
I	CENTRAL RESERVE WIDTH	I (WCR)	0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I (WC-B)	3.30 M.	I
I	- VISIBILITY	I (VC-B)	150.0 M.	I
I	- BLOCKS TRAFFIC	I	NO	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I (VB-C)	80.0 M.	I
I	- VISIBILITY TO RIGHT	I (VB-A)	80.0 M.	I
I	- LANE 1 WIDTH	I (WB-C)	3.00 M.	I
I	- LANE 2 WIDTH	I (WB-A)	0.00 M.	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity

will be adjusted)

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	674.30	0.26	0.10	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	543.66	0.24	0.10	0.15	0.35	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	739.94	0.28	0.28	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 18115-01 Carrick on Shannon - No development

TIME PERIOD BEGINS 13.00 AND ENDS 14.30

LENGTH OF TIME PERIOD - 90 MINUTES.

LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	I	TOP OF PEAK IS REACHED	I	FLOW STOPS FALLING	I	RATE OF FLOW (VEH/MIN) BEFORE PEAK	I	AT TOP OF PEAK	I	AFTER PEAK
I	ARM A	I	15.00	I	45.00	I	75.00	I	12.69	I	19.03	I	12.69
I	ARM B	I	15.00	I	45.00	I	75.00	I	1.13	I	1.69	I	1.13
I	ARM C	I	15.00	I	45.00	I	75.00	I	9.88	I	14.81	I	9.88

I	TIME	I	FROM/TO	I	ARM A	I	ARM B	I	ARM C	I
I	13.00 - 14.30	I	ARM A	I	0.000	I	0.085	I	0.915	I
I		I		I	0.0	I	86.0	I	929.0	I
I		I		I	(0.0)	I	(0.0)	I	(2.0)	I
I		I	ARM B	I	0.511	I	0.000	I	0.489	I
I		I		I	46.0	I	0.0	I	44.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I
I		I	ARM C	I	0.938	I	0.062	I	0.000	I
I		I		I	741.0	I	49.0	I	0.0	I
I		I		I	(2.0)	I	(0.0)	I	(0.0)	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
FOR COMBINED DEMAND SETS

AND FOR TIME PERIOD 1

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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.00-13.15										I
I	B-AC	1.13	5.64	0.200		0.00	0.25	3.5		0.22	I
I	C-A	9.30									I
I	C-B	0.61	8.70	0.071		0.00	0.08	1.1		0.12	I
I	A-B	1.08									I
I	A-C	11.66									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.15-13.30										I
I	B-AC	1.35	4.69	0.288		0.25	0.39	5.6		0.30	I
I	C-A	11.10									I
I	C-B	0.73	7.99	0.092		0.08	0.10	1.5		0.14	I
I	A-B	1.29									I
I	A-C	13.92									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.30-13.45										I
I	B-AC	1.65	3.27	0.506		0.39	0.95	12.7		0.59	I
I	C-A	13.60									I
I	C-B	0.90	7.01	0.128		0.10	0.15	2.1		0.16	I
I	A-B	1.58									I
I	A-C	17.05									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.45-14.00										I
I	B-AC	1.65	3.26	0.506		0.95	0.98	14.6		0.62	I
I	C-A	13.60									I
I	C-B	0.90	7.01	0.128		0.15	0.15	2.2		0.16	I
I	A-B	1.58									I
I	A-C	17.05									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	14.00-14.15										I
I	B-AC	1.35	4.69	0.288		0.98	0.41	6.7		0.31	I
I	C-A	11.10									I
I	C-B	0.73	7.99	0.092		0.15	0.10	1.6		0.14	I
I	A-B	1.29									I
I	A-C	13.92									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	14.15-14.30										I
I	B-AC	1.13	5.63	0.200		0.41	0.26	4.0		0.22	I
I	C-A	9.30									I
I	C-B	0.61	8.70	0.071		0.10	0.08	1.2		0.12	I
I	A-B	1.08									I
I	A-C	11.66									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
13.15	0.2	
13.30	0.4	
13.45	0.9	*
14.00	1.0	*
14.15	0.4	
14.30	0.3	

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
13.15	0.1
13.30	0.1
13.45	0.1
14.00	0.1
14.15	0.1
14.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I
I	I	I	I	I	* DELAY *	I	* DELAY *	I
I	I	I	I	I	I	I	I	I
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I	B-AC	I 123.9	I 82.6	I	47.1	I 0.38	I 47.1	I 0.38
I	C-A	I 1019.9	I 680.0	I	I	I	I	I
I	C-B	I 67.4	I 45.0	I	9.6	I 0.14	I 9.6	I 0.14
I	A-B	I 118.4	I 78.9	I	I	I	I	I
I	A-C	I 1278.7	I 852.5	I	I	I	I	I
I	ALL	I 2608.3	I 1738.9	I	56.7	I 0.02	I 56.7	I 0.02

* 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

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November 2018

.RUN INFORMATION

RUN TITLE: 18115-01 Carrick on Shannon - With development
LOCATION: Cryans T-junction
DATE: 04/11/18
CLIENT:
ENUMERATOR: user [RICHARDFRISBY]
JOB NUMBER: 18115-01
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

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

ARM A IS Sligo
ARM B IS Cryans
ARM C IS Dublin

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) 6.50 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00 M. I
I I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 3.30 M. I
I - VISIBILITY I (VC-B) 150.0 M. I
I - BLOCKS TRAFFIC I NO I
I I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 80.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 80.0 M. I
I - LANE 1 WIDTH I (WB-C) 3.00 M. I
I - LANE 2 WIDTH I (WB-A) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity

will be adjusted)

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	674.30	0.26	0.10	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	543.66	0.24	0.10	0.15	0.35	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	739.94	0.28	0.28	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 18115-01 Carrick on Shannon - No development

TIME PERIOD BEGINS 13.00 AND ENDS 14.30

LENGTH OF TIME PERIOD - 90 MINUTES.

LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	I	TOP OF PEAK IS REACHED	I	FLOW STOPS FALLING	I	RATE OF FLOW (VEH/MIN) BEFORE PEAK	I	AT TOP OF PEAK	I	AFTER PEAK
I	ARM A	I	15.00	I	45.00	I	75.00	I	12.94	I	19.41	I	12.94
I	ARM B	I	15.00	I	45.00	I	75.00	I	1.41	I	2.12	I	1.41
I	ARM C	I	15.00	I	45.00	I	75.00	I	10.01	I	15.02	I	10.01

I	TIME	I	FROM/TO	I	ARM A	I	ARM B	I	ARM C	I	TURNING PROPORTIONS TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S)
I	13.00 - 14.30	I	ARM A	I	0.000	I	0.102	I	0.898	I	
I		I		I	0.0	I	106.0	I	929.0	I	
I		I		I	(0.0)	I	(0.0)	I	(2.0)	I	
I		I	ARM B	I	0.513	I	0.000	I	0.487	I	
I		I		I	58.0	I	0.0	I	55.0	I	
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I	
I		I	ARM C	I	0.925	I	0.075	I	0.000	I	
I		I		I	741.0	I	60.0	I	0.0	I	
I		I		I	(2.0)	I	(0.0)	I	(0.0)	I	

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 18115-01 Carrick on Shannon - No development
AND FOR TIME PERIOD 1

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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.00-13.15										I
I	B-AC	1.42	5.56	0.255		0.00	0.33	4.7		0.24	I
I	C-A	9.30									I
I	C-B	0.75	8.62	0.087		0.00	0.09	1.4		0.13	I
I	A-B	1.33									I
I	A-C	11.66									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.15-13.30										I
I	B-AC	1.69	4.59	0.368		0.33	0.56	8.0		0.34	I
I	C-A	11.10									I
I	C-B	0.90	7.91	0.114		0.09	0.13	1.9		0.14	I
I	A-B	1.59									I
I	A-C	13.92									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.30-13.45										I
I	B-AC	2.07	3.13	0.662		0.56	1.68	21.4		0.83	I
I	C-A	13.60									I
I	C-B	1.10	6.91	0.159		0.13	0.19	2.7		0.17	I
I	A-B	1.95									I
I	A-C	17.05									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.45-14.00										I
I	B-AC	2.07	3.13	0.662		1.68	1.80	26.3		0.92	I
I	C-A	13.60									I
I	C-B	1.10	6.91	0.159		0.19	0.19	2.8		0.17	I
I	A-B	1.95									I
I	A-C	17.05									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	14.00-14.15										I
I	B-AC	1.69	4.59	0.369		1.80	0.60	10.2		0.36	I
I	C-A	11.10									I
I	C-B	0.90	7.91	0.114		0.19	0.13	2.0		0.14	I
I	A-B	1.59									I
I	A-C	13.92									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	14.15-14.30										I
I	B-AC	1.42	5.56	0.255		0.60	0.35	5.5		0.24	I
I	C-A	9.30									I
I	C-B	0.75	8.62	0.087		0.13	0.10	1.5		0.13	I
I	A-B	1.33									I
I	A-C	11.66									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
13.15	0.3
13.30	0.6 *
13.45	1.7 **
14.00	1.8 **
14.15	0.6 *
14.30	0.3

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
13.15	0.1
13.30	0.1
13.45	0.2
14.00	0.2
14.15	0.1
14.30	0.1

 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I						
I	I	I	I	I	* DELAY *	I	* DELAY *	I						
I	I	I	I	I	I	I	I	I						
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)						
I	B-AC	I	155.5	I	103.7	I	76.1	I	0.49	I	76.1	I	0.49	I
I	C-A	I	1019.9	I	680.0	I	I	I	I	I	I	I	I	I
I	C-B	I	82.6	I	55.1	I	12.3	I	0.15	I	12.3	I	0.15	I
I	A-B	I	145.9	I	97.3	I	I	I	I	I	I	I	I	I
I	A-C	I	1278.7	I	852.5	I	I	I	I	I	I	I	I	I
I	ALL	I	2682.7	I	1788.4	I	88.4	I	0.03	I	88.4	I	0.03	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

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

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RELEASE 3.0 (JUNE 2006)

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Run with file:-
"C:\PICADY\2018\18115-01\Cryans 2033 with development + Redistribution.vpi"
(drive-on-the-left) at 16:17:56 on Tuesday, 6 November 2018

.RUN INFORMATION

RUN TITLE: 18115-01 Carrick on Shannon - No development
LOCATION: Cryans T-junction
DATE: 04/11/18
CLIENT:
ENUMERATOR: user [RICHARDFRISBY]
JOB NUMBER: 18115-01
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

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

ARM A IS Sligo
ARM B IS Cryans
ARM C IS Dublin

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)	6.50 M.	I
I	CENTRAL RESERVE WIDTH	I (WCR)	0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I (WC-B)	3.30 M.	I
I	- VISIBILITY	I (VC-B)	150.0 M.	I
I	- BLOCKS TRAFFIC	I	NO	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I (VB-C)	80.0 M.	I
I	- VISIBILITY TO RIGHT	I (VB-A)	80.0 M.	I
I	- LANE 1 WIDTH	I (WB-C)	3.00 M.	I
I	- LANE 2 WIDTH	I (WB-A)	0.00 M.	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	674.30	0.26	0.10	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	543.66	0.24	0.10	0.15	0.35	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	739.94	0.28	0.28	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 18115-01 Carrick on Shannon - No development

TIME PERIOD BEGINS 13.00 AND ENDS 14.30

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	I	TOP OF PEAK IS REACHED	I	FLOW STOPS FALLING	I	RATE OF FLOW (VEH/MIN) BEFORE PEAK	I	AT TOP OF PEAK	I	AFTER PEAK
I	ARM A	I	15.00	I	45.00	I	75.00	I	14.49	I	21.73	I	14.49
I	ARM B	I	15.00	I	45.00	I	75.00	I	1.17	I	1.76	I	1.17
I	ARM C	I	15.00	I	45.00	I	75.00	I	11.21	I	16.82	I	11.21

I	TIME	I	FROM/TO	I	ARM A	I	ARM B	I	ARM C	I
I	13.00 - 14.30	I	ARM A	I	0.000	I	0.101	I	0.899	I
I		I		I	0.0	I	117.0	I	1042.0	I
I		I		I	(0.0)	I	(0.0)	I	(2.0)	I
I		I	ARM B	I	0.521	I	0.000	I	0.479	I
I		I		I	49.0	I	0.0	I	45.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I
I		I	ARM C	I	0.926	I	0.074	I	0.000	I
I		I		I	831.0	I	66.0	I	0.0	I
I		I		I	(2.0)	I	(0.0)	I	(0.0)	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.00-13.15										I
I	B-AC	1.18	4.94	0.239		0.00	0.31	4.3		0.26	I
I	C-A	10.43									I
I	C-B	0.83	8.18	0.101		0.00	0.11	1.6		0.14	I
I	A-B	1.47									I
I	A-C	13.07									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.15-13.30										I
I	B-AC	1.41	3.81	0.370		0.31	0.56	7.9		0.41	I
I	C-A	12.45									I
I	C-B	0.99	7.37	0.134		0.11	0.15	2.2		0.16	I
I	A-B	1.75									I
I	A-C	15.61									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.30-13.45										I
I	B-AC	1.72	2.02	0.853		0.56	3.09	33.7		1.77	I
I	C-A	15.25									I
I	C-B	1.21	6.26	0.193		0.15	0.24	3.4		0.20	I
I	A-B	2.15									I
I	A-C	19.12									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.45-14.00										I
I	B-AC	1.72	2.02	0.855		3.09	3.82	52.4		2.45	I
I	C-A	15.25									I
I	C-B	1.21	6.26	0.193		0.24	0.24	3.6		0.20	I
I	A-B	2.15									I
I	A-C	19.12									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	14.00-14.15										I
I	B-AC	1.41	3.81	0.370		3.82	0.61	13.1		0.50	I
I	C-A	12.45									I
I	C-B	0.99	7.37	0.134		0.24	0.16	2.4		0.16	I
I	A-B	1.75									I
I	A-C	15.61									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	14.15-14.30										I
I	B-AC	1.18	4.94	0.239		0.61	0.32	5.1		0.27	I
I	C-A	10.43									I
I	C-B	0.83	8.18	0.101		0.16	0.11	1.8		0.14	I
I	A-B	1.47									I
I	A-C	13.07									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
13.15	0.3
13.30	0.6 *
13.45	3.1 ***
14.00	3.8 ****
14.15	0.6 *
14.30	0.3

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
13.15	0.1
13.30	0.2
13.45	0.2
14.00	0.2
14.15	0.2
14.30	0.1

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)	
I	B-AC	I	129.4	I	86.3	I	116.5	I	0.90
I	C-A	I	1143.8	I	762.5	I	I	I	I
I	C-B	I	90.8	I	60.6	I	15.0	I	0.17
I	A-B	I	161.0	I	107.4	I	I	I	I
I	A-C	I	1434.2	I	956.2	I	I	I	I
I	ALL	I	2959.3	I	1972.9	I	131.5	I	0.04

- * 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

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

PICADY 5.0 ANALYSIS PROGRAM
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Run with file:- "C:\PICADY\2018\18115-01\Welfare Junction - No development.vpi" (drive-on-the-left) at 12:33:43 on
Tuesday, 6 November 2018

.RUN INFORMATION

RUN TITLE: 18115-01 Carrick on Shannon - No development
LOCATION: Welfare T-junction
DATE: 04/11/18
CLIENT:
ENUMERATOR: user [RICHARDFRISBY]
JOB NUMBER: 18115-01
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

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

ARM A IS Sligo
ARM B IS Welfare
ARM C IS Dublin

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)	6.50 M.	I
I	CENTRAL RESERVE WIDTH	I (WCR)	0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I (WC-B)	3.30 M.	I
I	- VISIBILITY	I (VC-B)	150.0 M.	I
I	- BLOCKS TRAFFIC	I	NO	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I (VB-C)	80.0 M.	I
I	- VISIBILITY TO RIGHT	I (VB-A)	80.0 M.	I
I	- LANE 1 WIDTH	I (WB-C)	3.00 M.	I
I	- LANE 2 WIDTH	I (WB-A)	0.00 M.	I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	674.30	0.26	0.10	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	543.66	0.24	0.10	0.15	0.35	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	739.94	0.28	0.28	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 18115-01 Carrick on Shannon - No development

TIME PERIOD BEGINS 13.00 AND ENDS 14.30

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

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	I	TOP OF PEAK IS REACHED	I	FLOW STOPS FALLING	I	RATE OF FLOW (VEH/MIN) BEFORE PEAK	I	AT TOP OF PEAK	I	AFTER PEAK
I	ARM A	I	15.00	I	45.00	I	75.00	I	11.59	I	17.38	I	11.59
I	ARM B	I	15.00	I	45.00	I	75.00	I	1.14	I	1.71	I	1.14
I	ARM C	I	15.00	I	45.00	I	75.00	I	9.15	I	13.72	I	9.15

I	TIME	I	FROM/TO	I	ARM A	I	ARM B	I	ARM C	I	TURNING PROPORTIONS	I
I		I		I		I		I		I	TURNING COUNTS (VEH/HR)	I
I		I		I		I		I		I	(PERCENTAGE OF H.V.S)	I
I	13.00 - 14.30	I	ARM A	I	0.000	I	0.042	I	0.958	I		I
I		I		I	0.0	I	39.0	I	888.0	I		I
I		I		I	(0.0)	I	(0.0)	I	(2.0)	I		I
I		I	ARM B	I	0.363	I	0.000	I	0.637	I		I
I		I		I	33.0	I	0.0	I	58.0	I		I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I		I
I		I	ARM C	I	0.971	I	0.029	I	0.000	I		I
I		I		I	711.0	I	21.0	I	0.0	I		I
I		I		I	(2.0)	I	(0.0)	I	(0.0)	I		I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 18115-01 Carrick on Shannon - No development
AND FOR TIME PERIOD 1

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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.00-13.15										I
I	B-AC	1.14	6.52	0.175		0.00	0.21	3.0		0.18	I
I	C-A	8.92									I
I	C-B	0.26	9.01	0.029		0.00	0.03	0.4		0.11	I
I	A-B	0.49									I
I	A-C	11.14									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.15-13.30										I
I	B-AC	1.36	5.69	0.240		0.21	0.31	4.5		0.23	I
I	C-A	10.65									I
I	C-B	0.31	8.36	0.038		0.03	0.04	0.6		0.12	I
I	A-B	0.58									I
I	A-C	13.30									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.30-13.45										I
I	B-AC	1.67	4.45	0.375		0.31	0.58	8.1		0.35	I
I	C-A	13.05									I
I	C-B	0.39	7.47	0.052		0.04	0.05	0.8		0.14	I
I	A-B	0.72									I
I	A-C	16.30									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.45-14.00										I
I	B-AC	1.67	4.45	0.375		0.58	0.59	8.8		0.36	I
I	C-A	13.05									I
I	C-B	0.39	7.47	0.052		0.05	0.05	0.8		0.14	I
I	A-B	0.72									I
I	A-C	16.30									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	14.00-14.15										I
I	B-AC	1.36	5.69	0.240		0.59	0.32	5.1		0.23	I
I	C-A	10.65									I
I	C-B	0.31	8.36	0.038		0.05	0.04	0.6		0.12	I
I	A-B	0.58									I
I	A-C	13.30									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	14.15-14.30										I
I	B-AC	1.14	6.51	0.175		0.32	0.22	3.4		0.19	I
I	C-A	8.92									I
I	C-B	0.26	9.01	0.029		0.04	0.03	0.5		0.11	I
I	A-B	0.49									I
I	A-C	11.14									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
13.15	0.2
13.30	0.3
13.45	0.6 *
14.00	0.6 *
14.15	0.3
14.30	0.2

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
13.15	0.0
13.30	0.0
13.45	0.1
14.00	0.1
14.15	0.0
14.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I		
I	I	I	I	I	* DELAY *	I	* DELAY *	I		
I	I	I	I	I	I	I	I	I		
I	I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)	(MIN/VEH)	I
I	B-AC	I 125.3	I 83.5	I	32.8	I 0.26	I	32.8	I 0.26	I
I	C-A	I 978.6	I 652.4	I		I	I	I	I	I
I	C-B	I 28.9	I 19.3	I	3.7	I 0.13	I	3.7	I 0.13	I
I	A-B	I 53.7	I 35.8	I		I	I	I	I	I
I	A-C	I 1222.3	I 814.8	I		I	I	I	I	I
I	ALL	I 2408.7	I 1605.8	I	36.4	I 0.02	I	36.5	I 0.02	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

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

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)

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Run with file:- "C:\PICADY\2018\18115-01\Welfare Junction - with development.vpi" (drive-on-the-left) at 12:33:50 on
Tuesday, 6 November 2018

.RUN INFORMATION

RUN TITLE: 18115-01 Carrick on Shannon - With development
LOCATION: Welfare T-junction
DATE: 04/11/18
CLIENT:
ENUMERATOR: user [RICHARDFRISBY]
JOB NUMBER: 18115-01
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

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

ARM A IS Sligo
ARM B IS Welfare
ARM C IS Dublin

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) 6.50 M. I
I CENTRAL RESERVE WIDTH I (WCR) 0.00 M. I
I I I
I MAJOR ROAD RIGHT TURN - WIDTH I (WC-B) 3.30 M. I
I - VISIBILITY I (VC-B) 150.0 M. I
I - BLOCKS TRAFFIC I NO I
I I I
I MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 80.0 M. I
I - VISIBILITY TO RIGHT I (VB-A) 80.0 M. I
I - LANE 1 WIDTH I (WB-C) 3.00 M. I
I - LANE 2 WIDTH I (WB-A) 0.00 M. I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity

will be adjusted)

I	Intercept For Stream B-C	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	674.30	0.26	0.10	I

I	Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B	I
I	543.66	0.24	0.10	0.15	0.35	I

I	Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	I
I	739.94	0.28	0.28	I

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

I	ARM	I	FLOW SCALE (%)	I
I	A	I	100	I
I	B	I	100	I
I	C	I	100	I

Demand set: 18115-01 Carrick on Shannon - No development

TIME PERIOD BEGINS 13.00 AND ENDS 14.30

LENGTH OF TIME PERIOD - 90 MINUTES.

LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	ARM	I	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	I	TOP OF PEAK IS REACHED	I	FLOW STOPS FALLING	I	RATE OF FLOW (VEH/MIN) BEFORE PEAK	I	AT TOP OF PEAK	I	AFTER PEAK
I	ARM A	I	15.00	I	45.00	I	75.00	I	11.70	I	17.55	I	11.70
I	ARM B	I	15.00	I	45.00	I	75.00	I	1.41	I	2.12	I	1.41
I	ARM C	I	15.00	I	45.00	I	75.00	I	9.21	I	13.82	I	9.21

I	TIME	I	FROM/TO	I	ARM A	I	ARM B	I	ARM C	I
I	13.00 - 14.30	I	ARM A	I	0.000	I	0.051	I	0.949	I
I		I		I	0.0	I	48.0	I	888.0	I
I		I		I	(0.0)	I	(0.0)	I	(2.0)	I
I		I	ARM B	I	0.363	I	0.000	I	0.637	I
I		I		I	41.0	I	0.0	I	72.0	I
I		I		I	(0.0)	I	(0.0)	I	(0.0)	I
I		I	ARM C	I	0.965	I	0.035	I	0.000	I
I		I		I	711.0	I	26.0	I	0.0	I
I		I		I	(2.0)	I	(0.0)	I	(0.0)	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
 FOR COMBINED DEMAND SETS
 AND FOR TIME PERIOD 1

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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.00-13.15										I
I	B-AC	1.42	6.49	0.219		0.00	0.28	3.9		0.20	I
I	C-A	8.92									I
I	C-B	0.33	8.98	0.036		0.00	0.04	0.5		0.12	I
I	A-B	0.60									I
I	A-C	11.14									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.15-13.30										I
I	B-AC	1.69	5.66	0.299		0.28	0.42	6.0		0.25	I
I	C-A	10.65									I
I	C-B	0.39	8.32	0.047		0.04	0.05	0.7		0.13	I
I	A-B	0.72									I
I	A-C	13.30									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.30-13.45										I
I	B-AC	2.07	4.40	0.471		0.42	0.85	11.7		0.42	I
I	C-A	13.05									I
I	C-B	0.48	7.42	0.064		0.05	0.07	1.0		0.14	I
I	A-B	0.88									I
I	A-C	16.30									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.45-14.00										I
I	B-AC	2.07	4.40	0.471		0.85	0.87	12.9		0.43	I
I	C-A	13.05									I
I	C-B	0.48	7.42	0.064		0.07	0.07	1.0		0.14	I
I	A-B	0.88									I
I	A-C	16.30									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	14.00-14.15										I
I	B-AC	1.69	5.65	0.299		0.87	0.44	7.0		0.26	I
I	C-A	10.65									I
I	C-B	0.39	8.32	0.047		0.07	0.05	0.8		0.13	I
I	A-B	0.72									I
I	A-C	13.30									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	14.15-14.30										I
I	B-AC	1.42	6.49	0.219		0.44	0.28	4.4		0.20	I
I	C-A	8.92									I
I	C-B	0.33	8.98	0.036		0.05	0.04	0.6		0.12	I
I	A-B	0.60									I
I	A-C	11.14									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
13.15	0.3	
13.30	0.4	
13.45	0.8	*
14.00	0.9	*
14.15	0.4	
14.30	0.3	

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
13.15	0.0
13.30	0.0
13.45	0.1
14.00	0.1
14.15	0.0
14.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I STREAM I	TOTAL DEMAND		* QUEUEING *		* INCLUSIVE QUEUEING *	
	I	I	I	I	I	I
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
I B-AC I	155.5 I	103.7 I	45.9 I	0.30 I	45.9 I	0.30 I
I C-A I	978.6 I	652.4 I	I	I	I	I
I C-B I	35.8 I	23.9 I	4.6 I	0.13 I	4.6 I	0.13 I
I A-B I	66.1 I	44.0 I	I	I	I	I
I A-C I	1222.3 I	814.8 I	I	I	I	I
I ALL I	2458.3 I	1638.9 I	50.5 I	0.02 I	50.5 I	0.02 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

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

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)

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Run with file:-
"C:\PICADY\2018\18115-01\Welfare Junction 2033 with development + Redistribution.vpi"
(drive-on-the-left) at 16:17:24 on Tuesday, 6 November 2018

.RUN INFORMATION

RUN TITLE: 18115-01 Carrick on Shannon - No development
LOCATION: Welfare T-junction
DATE: 04/11/18
CLIENT:
ENUMERATOR: user [RICHARDFRISBY]
JOB NUMBER: 18115-01
STATUS:
DESCRIPTION:

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

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

ARM A IS Sligo
ARM B IS Welfare
ARM C IS Dublin

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)	6.50 M.	I
I	CENTRAL RESERVE WIDTH	I (WCR)	0.00 M.	I
I		I		I
I	MAJOR ROAD RIGHT TURN - WIDTH	I (WC-B)	3.30 M.	I
I	- VISIBILITY	I (VC-B)	150.0 M.	I
I	- BLOCKS TRAFFIC	I	NO	I
I		I		I
I	MINOR ROAD - VISIBILITY TO LEFT	I (VB-C)	80.0 M.	I
I	- VISIBILITY TO RIGHT	I (VB-A)	80.0 M.	I
I	- LANE 1 WIDTH	I (WB-C)	3.00 M.	I
I	- LANE 2 WIDTH	I (WB-A)	0.00 M.	I

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR DEMAND SET 18115-01 Carrick on Shannon - No development
AND FOR TIME PERIOD 1

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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.00-13.15										I
I	B-AC	1.93	5.84	0.331		0.00	0.48	6.7		0.25	I
I	C-A	10.01									I
I	C-B	0.36	8.57	0.042		0.00	0.04	0.6		0.12	I
I	A-B	0.67									I
I	A-C	12.50									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.15-13.30										I
I	B-AC	2.31	4.86	0.475		0.48	0.86	12.0		0.38	I
I	C-A	11.96									I
I	C-B	0.43	7.84	0.055		0.04	0.06	0.9		0.13	I
I	A-B	0.79									I
I	A-C	14.92									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.30-13.45										I
I	B-AC	2.83	3.32	0.852		0.86	3.61	41.1		1.25	I
I	C-A	14.64									I
I	C-B	0.53	6.83	0.078		0.06	0.08	1.2		0.16	I
I	A-B	0.97									I
I	A-C	18.28									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	13.45-14.00										I
I	B-AC	2.83	3.31	0.853		3.61	4.28	59.8		1.66	I
I	C-A	14.64									I
I	C-B	0.53	6.83	0.078		0.08	0.08	1.3		0.16	I
I	A-B	0.97									I
I	A-C	18.28									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	14.00-14.15										I
I	B-AC	2.31	4.86	0.475		4.28	0.95	18.7		0.47	I
I	C-A	11.96									I
I	C-B	0.43	7.84	0.055		0.08	0.06	0.9		0.14	I
I	A-B	0.79									I
I	A-C	14.92									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)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I	14.15-14.30										I
I	B-AC	1.93	5.84	0.331		0.95	0.51	8.1		0.26	I
I	C-A	10.01									I
I	C-B	0.36	8.57	0.042		0.06	0.04	0.7		0.12	I
I	A-B	0.67									I
I	A-C	12.50									I

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
13.15	0.5
13.30	0.9 *
13.45	3.6 ****
14.00	4.3 ****
14.15	1.0 *
14.30	0.5 *

QUEUE FOR STREAM C-B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
13.15	0.0
13.30	0.1
13.45	0.1
14.00	0.1
14.15	0.1
14.30	0.0

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL DEMAND	I	* QUEUEING *	I	* INCLUSIVE QUEUEING *	I	
I	I	I	I	I	* DELAY *	I	* DELAY *	I	
I	I	I	I	I	I	I	I	I	
I	I	I	(VEH)	I	(VEH/H)	I	(MIN)	I	
I	I	I	I	I	(MIN)	I	(MIN/VEH)	I	
I	I	I	I	I	I	I	I	I	
I	B-AC	I	212.0	I	141.3	I	146.4	I	0.69
I	C-A	I	1098.4	I	732.3	I	I	I	I
I	C-B	I	39.9	I	26.6	I	5.6	I	0.14
I	A-B	I	73.0	I	48.6	I	I	I	I
I	A-C	I	1370.9	I	913.9	I	I	I	I
I	ALL	I	2794.1	I	1862.8	I	152.0	I	0.05

- * 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