Cairn Homes Properties Ltd

# Strategic Housing Development, Castletreasure, Douglas, Co. Cork

# Traffic Modelling – Software Outputs

on behalf of Cairn Homes Properties Ltd.

March 2019

CIVIL • STRUCTURAL • ENVIRONMENTAL • TRANSPORTATION

Cairn Homes Properties Ltd

# Strategic Housing Development, Castletreasure, Douglas, Co. Cork

# Traffic Modelling – Software Outputs

March 2019



## Document Control Sheet

| | |
|---|---|
| **Client:** | **Cairn Homes Properties Ltd** |
| **Project Title:** | Strategic Housing Development, Castletreasure, Douglas, Co. Cork |
| **Document Title:** | Traffic Modelling – Software Outputs |
| **File Name:** | 18203-JBB-1B-XX-RP-T-0167_Traffic_Modelling_-_Software_Outputs_P01.01 |

| **Table of Contents** *(incl. Y/N)* | **List of Tables** *(incl. Y/N)* | **List of Figures** *(incl. Y/N)* | **Pages of Text** *(No.)* | **Appendices** *(No.)* |
|---|---|---|---|---|
| N | N | N | 533 No. | N |

| **Document Revision** | | | | **Document Verification** | | | |
|---|---|---|---|---|---|---|---|
| **Issue Date** *(DD/MM/YY)* | **Revision Code** | **Suitability Code** | **Author** *(Initials)* | **Checker** *(Initials)* | ***Reviewer*** As Per PMP *(Initials)* | **Approver** *As Per PMP (Initials)* | **Peer Review** *(Initials or N/A)* |
| Add hyperlink to Verification Email on PIM Register for each issue | | | | | | | |
| 19/03/19 | P01 | S3 | AO'N | **JF** | **TF** | TF | N/A |
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ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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RG40 3GA,UK



Run with file:- "C:\Castletreasure\Jct1_Fingerpost.vai" (drive-on-the-left ) at 10:47:18 on Thursday, 25 October 2018

FILE PROPERTIES
**********

RUN TITLE: Junction1_Fingerpost
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA
**********
ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.50 | 0.00 | 10.00 | 55.00 | 31.0 | 0.705 | 40.677 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 7.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.580 | 27.727 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle



TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: TrafficCount_2018AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.04 | 7.56 | 5.04 |
| ARM B | 15.00 | 45.00 | 75.00 | 6.46 | 9.69 | 6.46 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.03 | 3.04 | 2.03 |
| ARM D | 15.00 | 45.00 | 75.00 | 6.29 | 9.43 | 6.29 |
| ARM E | 15.00 | 45.00 | 75.00 | 6.54 | 9.81 | 6.54 |

DEMAND SET TITLE: TrafficCount_2018AM

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | | | | | | |
| | ARM A | 0.000 | 0.387 | 0.000 | 0.581 | 0.032 |
| | | 0.0 | 156.0 | 0.0 | 234.0 | 13.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.106 | 0.000 | 0.000 | 0.485 | 0.408 |
| | | 55.0 | 0.0 | 0.0 | 251.0 | 211.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.315 | 0.167 | 0.000 | 0.210 | 0.309 |
| | | 51.0 | 27.0 | 0.0 | 34.0 | 50.0 |
| | | ( 5.0) | ( 5.0) | ( 5.0) | ( 5.0) | ( 5.0) |
| | ARM D | 0.427 | 0.183 | 0.000 | 0.000 | 0.390 |
| | | 215.0 | 92.0 | 0.0 | 0.0 | 196.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM E | 0.033 | 0.323 | 0.000 | 0.644 | 0.000 |
| | | 17.0 | 169.0 | 0.0 | 337.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) |

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | ARM A | 5.04 | 20.74 | 0.243 | 2.0 | 0.0 | 0.3 | 4.7 | | 0.06 |
| | ARM B | 6.46 | 36.10 | 0.179 | 2.0 | 0.0 | 0.2 | 3.2 | | 0.03 |
| | ARM C | 2.03 | 29.37 | 0.069 | | 0.0 | 0.1 | 1.1 | | 0.04 |
| | ARM D | 6.29 | 36.02 | 0.175 | | 0.0 | 0.2 | 3.1 | | 0.03 |
| | ARM E | 6.54 | 23.75 | 0.275 | 2.0 | 0.0 | 0.4 | 5.5 | | 0.06 |
| 08.00-08.15 | ARM A | 6.02 | 19.74 | 0.305 | 3.0 | 0.3 | 0.4 | 6.4 | | 0.07 |
| | ARM B | 7.72 | 35.06 | 0.220 | 3.0 | 0.2 | 0.3 | 4.2 | | 0.04 |
| | ARM C | 2.42 | 27.52 | 0.088 | | 0.1 | 0.1 | 1.4 | | 0.04 |
| | ARM D | 7.51 | 35.29 | 0.213 | | 0.2 | 0.3 | 4.0 | | 0.04 |
| | ARM E | 7.81 | 23.11 | 0.338 | 3.0 | 0.4 | 0.5 | 7.5 | | 0.07 |
| 08.15-08.30 | ARM A | 7.37 | 18.44 | 0.400 | 3.0 | 0.4 | 0.7 | 9.6 | | 0.09 |
| | ARM B | 9.45 | 33.66 | 0.281 | 3.0 | 0.3 | 0.4 | 5.8 | | 0.04 |
| | ARM C | 2.96 | 25.01 | 0.118 | | 0.1 | 0.1 | 2.0 | | 0.05 |
| | ARM D | 9.20 | 34.28 | 0.268 | | 0.3 | 0.4 | 5.4 | | 0.04 |
| | ARM E | 9.56 | 22.26 | 0.429 | 3.0 | 0.5 | 0.7 | 10.9 | | 0.08 |
| 08.30-08.45 | ARM A | 7.37 | 18.51 | 0.398 | 2.0 | 0.7 | 0.7 | 9.9 | | 0.09 |
| | ARM B | 9.45 | 33.65 | 0.281 | 2.0 | 0.4 | 0.4 | 5.8 | | 0.04 |
| | ARM C | 2.96 | 24.99 | 0.119 | | 0.1 | 0.1 | 2.0 | | 0.05 |
| | ARM D | 9.20 | 34.28 | 0.268 | | 0.4 | 0.4 | 5.5 | | 0.04 |
| | ARM E | 9.56 | 22.28 | 0.429 | 2.0 | 0.7 | 0.7 | 11.2 | | 0.08 |



| TIME | ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | ARM A | 6.02 | 19.84 | 0.303 | 2.0 | 0.7 | 0.4 | 6.7 | | 0.07 |
| | ARM B | 7.72 | 35.04 | 0.220 | 1.0 | 0.4 | 0.3 | 4.3 | | 0.04 |
| | ARM C | 2.42 | 27.49 | 0.088 | | 0.1 | 0.1 | 1.5 | | 0.04 |
| | ARM D | 7.51 | 35.29 | 0.213 | | 0.4 | 0.3 | 4.1 | | 0.04 |
| | ARM E | 7.81 | 23.12 | 0.338 | 2.0 | 0.7 | 0.5 | 7.9 | | 0.07 |
| 09.00-09.15 | ARM A | 5.04 | 20.75 | 0.243 | 1.0 | 0.4 | 0.3 | 4.9 | | 0.06 |
| | ARM B | 6.46 | 36.07 | 0.179 | 1.0 | 0.3 | 0.2 | 3.3 | | 0.03 |
| | ARM C | 2.03 | 29.33 | 0.069 | | 0.1 | 0.1 | 1.1 | | 0.04 |
| | ARM D | 6.29 | 36.01 | 0.175 | | 0.3 | 0.2 | 3.2 | | 0.03 |
| | ARM E | 6.54 | 23.74 | 0.275 | 1.0 | 0.5 | 0.4 | 5.8 | | 0.06 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.4 | |
| 08.30 | 0.7 | * |
| 08.45 | 0.7 | * |
| 09.00 | 0.4 | |
| 09.15 | 0.3 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.2 |
| 08.15 | 0.3 |
| 08.30 | 0.4 |
| 08.45 | 0.4 |
| 09.00 | 0.3 |
| 09.15 | 0.2 |

QUEUE AT ARM C

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

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.2 | |
| 08.15 | 0.3 | |
| 08.30 | 0.4 | |
| 08.45 | 0.4 | |
| 09.00 | 0.3 | |
| 09.15 | 0.2 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.5 | * |
| 08.30 | 0.7 | * |
| 08.45 | 0.7 | * |
| 09.00 | 0.5 | * |
| 09.15 | 0.4 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 552.6 | 368.4 | 42.2 | 0.08 | 42.2 | 0.08 |
| B | 708.9 | 472.6 | 26.6 | 0.04 | 26.6 | 0.04 |
| C | 222.1 | 148.1 | 9.1 | 0.04 | 9.1 | 0.04 |
| D | 689.7 | 459.8 | 25.3 | 0.04 | 25.3 | 0.04 |
| E | 717.1 | 478.1 | 48.8 | 0.07 | 48.8 | 0.07 |
| ALL | 2890.5 | 1927.0 | 152.1 | 0.05 | 152.1 | 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

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

[Printed at 10:47:40 on 25/10/2018]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
program advice and maintenance, contact:

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Web: www.trlsoftware.co.uk



Run with file:- "C:\Castletreasure\Jct1_Fingerpost_PM.vai" (drive-on-the-left ) at 11:02:49 on Wednesday, 30 January 201

FILE PROPERTIES

RUN TITLE: FingerPost Roundabout
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.00 | 0.00 | 10.00 | 55.00 | 31.0 | 0.678 | 38.284 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 8.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.595 | 29.121 |

V = approach half-width
E = entry width
L = effective flare length
R = entry radius
D = inscribed circle diameter
PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioA_2024PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.88 | 5.81 | 3.88 |
| ARM B | 15.00 | 45.00 | 75.00 | 6.03 | 9.04 | 6.03 |
| ARM C | 15.00 | 45.00 | 75.00 | 6.19 | 9.28 | 6.19 |
| ARM D | 15.00 | 45.00 | 75.00 | 10.06 | 15.09 | 10.06 |
| ARM E | 15.00 | 45.00 | 75.00 | 6.56 | 9.84 | 6.56 |

DEMAND SET TITLE: ScenarioA_2024PM

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.345 | 0.000 | 0.590 | 0.065 |
| | | 0.0 | 107.0 | 0.0 | 183.0 | 20.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.193 | 0.000 | 0.000 | 0.367 | 0.440 |
| | | 93.0 | 0.0 | 0.0 | 177.0 | 212.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.408 | 0.202 | 0.000 | 0.089 | 0.301 |
| | | 202.0 | 100.0 | 0.0 | 44.0 | 149.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM D | 0.306 | 0.232 | 0.000 | 0.000 | 0.462 |
| | | 246.0 | 187.0 | 0.0 | 0.0 | 372.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.048 | 0.450 | 0.000 | 0.503 | 0.000 |
| | | 25.0 | 236.0 | 0.0 | 264.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |



PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | | |
| | ARM A | 3.88 | 19.71 | 0.197 | 2.0 | 0.0 | 0.2 | 3.6 | | 0.06 |
| | ARM B | 6.03 | 37.21 | 0.162 | 2.0 | 0.0 | 0.2 | 2.9 | | 0.03 |
| | ARM C | 6.19 | 29.59 | 0.209 | | 0.0 | 0.3 | 3.9 | | 0.04 |
| | ARM D | 10.06 | 33.03 | 0.305 | | 0.0 | 0.4 | 6.4 | | 0.04 |
| | ARM E | 6.56 | 22.66 | 0.290 | 2.0 | 0.0 | 0.4 | 5.9 | | 0.06 |
| 17.00-17.15 | | | | | | | | | | |
| | ARM A | 4.63 | 18.50 | 0.250 | 2.0 | 0.2 | 0.3 | 4.9 | | 0.07 |
| | ARM B | 7.19 | 36.40 | 0.198 | 2.0 | 0.2 | 0.2 | 3.6 | | 0.03 |
| | ARM C | 7.39 | 28.03 | 0.264 | | 0.3 | 0.4 | 5.3 | | 0.05 |
| | ARM D | 12.02 | 31.56 | 0.381 | | 0.4 | 0.6 | 9.0 | | 0.05 |
| | ARM E | 7.84 | 21.45 | 0.365 | 2.0 | 0.4 | 0.6 | 8.4 | | 0.07 |
| 17.15-17.30 | | | | | | | | | | |
| | ARM A | 5.67 | 16.68 | 0.340 | 3.0 | 0.3 | 0.5 | 7.5 | | 0.09 |
| | ARM B | 8.81 | 35.29 | 0.250 | 3.0 | 0.2 | 0.3 | 4.9 | | 0.04 |
| | ARM C | 9.05 | 25.90 | 0.349 | | 0.4 | 0.5 | 7.9 | | 0.06 |
| | ARM D | 14.72 | 29.21 | 0.504 | | 0.6 | 1.0 | 14.7 | | 0.07 |
| | ARM E | 9.60 | 19.78 | 0.485 | 3.0 | 0.6 | 0.9 | 13.5 | | 0.10 |
| 17.30-17.45 | | | | | | | | | | |
| | ARM A | 5.67 | 16.66 | 0.340 | 3.0 | 0.5 | 0.5 | 7.7 | | 0.09 |
| | ARM B | 8.81 | 35.27 | 0.250 | 3.0 | 0.3 | 0.3 | 5.0 | | 0.04 |
| | ARM C | 9.05 | 25.88 | 0.350 | | 0.5 | 0.5 | 8.0 | | 0.06 |
| | ARM D | 14.72 | 29.20 | 0.504 | | 1.0 | 1.0 | 15.1 | | 0.07 |
| | ARM E | 9.60 | 19.76 | 0.486 | 3.0 | 0.9 | 0.9 | 14.0 | | 0.10 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 4.63 | 18.36 | 0.252 | 3.0 | 0.5 | 0.3 | 5.2 | | 0.07 |
| ARM B | 7.19 | 36.37 | 0.198 | 3.0 | 0.3 | 0.2 | 3.7 | | 0.03 |
| ARM C | 7.39 | 28.00 | 0.264 | | 0.5 | 0.4 | 5.5 | | 0.05 |
| ARM D | 12.02 | 31.49 | 0.382 | | 1.0 | 0.6 | 9.5 | | 0.05 |
| ARM E | 7.84 | 21.42 | 0.366 | 3.0 | 0.9 | 0.6 | 8.9 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| ARM A | 3.88 | 19.68 | 0.197 | 2.0 | 0.3 | 0.2 | 3.8 | | 0.06 |
| ARM B | 6.03 | 37.18 | 0.162 | 2.0 | 0.2 | 0.2 | 2.9 | | 0.03 |
| ARM C | 6.19 | 29.56 | 0.209 | | 0.4 | 0.3 | 4.0 | | 0.04 |
| ARM D | 10.06 | 33.00 | 0.305 | | 0.6 | 0.4 | 6.7 | | 0.04 |
| ARM E | 6.56 | 22.64 | 0.290 | 2.0 | 0.6 | 0.4 | 6.3 | | 0.06 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.2 | |
| 17.15 | 0.3 | |
| 17.30 | 0.5 | * |
| 17.45 | 0.5 | * |
| 18.00 | 0.3 | |
| 18.15 | 0.2 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.2 |
| 17.30 | 0.3 |
| 17.45 | 0.3 |
| 18.00 | 0.2 |
| 18.15 | 0.2 |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.5 | * |
| 17.45 | 0.5 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |



QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.6 | * |
| 17.30 | 1.0 | * |
| 17.45 | 1.0 | * |
| 18.00 | 0.6 | * |
| 18.15 | 0.4 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.6 | * |
| 17.30 | 0.9 | * |
| 17.45 | 0.9 | * |
| 18.00 | 0.6 | * |
| 18.15 | 0.4 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 425.1 | 283.4 | 32.6 | 0.08 | 32.6 | 0.08 |
| B | 660.9 | 440.6 | 23.1 | 0.03 | 23.1 | 0.03 |
| C | 678.7 | 452.5 | 34.6 | 0.05 | 34.6 | 0.05 |
| D | 1103.8 | 735.9 | 61.5 | 0.06 | 61.5 | 0.06 |
| E | 719.9 | 479.9 | 57.1 | 0.08 | 57.1 | 0.08 |
| ALL | 3588.5 | 2392.3 | 208.8 | 0.06 | 208.8 | 0.06 |

* 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

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

[Printed at 11:03:36 on 30/01/2019]

# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK



Run with file:- "C:\Castletreasure\Jct1_Fingerpost_AM.vai" (drive-on-the-left ) at 10:56:28 on Wednesday, 30 January 201

## FILE PROPERTIES

RUN TITLE: Junction1_Fingerpost
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

## INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

## GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.50 | 0.00 | 10.00 | 55.00 | 31.0 | 0.705 | 40.677 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 7.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.580 | 27.727 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle



## TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioA_2024_AM

| | NUMBER OF MINUTES FROM START WHEN | | | RATE OF FLOW (VEH/MIN) | | |
|---|---|---|---|---|---|---|
| ARM | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS IFALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
| ARM A | 15.00 | 45.00 | 75.00 | 5.31 | 7.97 | 5.31 |
| ARM B | 15.00 | 45.00 | 75.00 | 7.56 | 11.34 | 7.56 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.04 | 3.06 | 2.04 |
| ARM D | 15.00 | 45.00 | 75.00 | 6.31 | 9.47 | 6.31 |
| ARM E | 15.00 | 45.00 | 75.00 | 6.79 | 10.18 | 6.79 |

DEMAND SET TITLE: ScenarioA_2024_AM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.445 | 0.000 | 0.527 | 0.028 |
| | | 0.0 | 189.0 | 0.0 | 224.0 | 12.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.106 | 0.000 | 0.000 | 0.486 | 0.408 |
| | | 64.0 | 0.0 | 0.0 | 294.0 | 247.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.301 | 0.202 | 0.000 | 0.202 | 0.294 |
| | | 49.0 | 33.0 | 0.0 | 33.0 | 48.0 |
| | | ( 5.0) | ( 5.0) | ( 5.0) | ( 5.0) | ( 5.0) |
| | ARM D | 0.408 | 0.222 | 0.000 | 0.000 | 0.370 |
| | | 206.0 | 112.0 | 0.0 | 0.0 | 187.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM E | 0.029 | 0.378 | 0.000 | 0.593 | 0.000 |
| | | 16.0 | 205.0 | 0.0 | 322.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) |

PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 5.31 | 20.31 | 0.262 | 2.0 | 0.0 | 0.4 | 5.2 | | 0.07 |
| ARM B | 7.56 | 36.33 | 0.208 | 2.0 | 0.0 | 0.3 | 3.9 | | 0.03 |
| ARM C | 2.04 | 28.85 | 0.071 | | 0.0 | 0.1 | 1.1 | | 0.04 |
| ARM D | 6.31 | 35.61 | 0.177 | | 0.0 | 0.2 | 3.2 | | 0.03 |
| ARM E | 6.79 | 23.58 | 0.288 | 2.0 | 0.0 | 0.4 | 5.9 | | 0.06 |
| 08.00-08.15 | | | | | | | | | |
| ARM A | 6.34 | 19.19 | 0.331 | 3.0 | 0.4 | 0.5 | 7.2 | | 0.08 |
| ARM B | 9.03 | 35.34 | 0.256 | 3.0 | 0.3 | 0.3 | 5.1 | | 0.04 |
| ARM C | 2.43 | 26.90 | 0.090 | | 0.1 | 0.1 | 1.5 | | 0.04 |
| ARM D | 7.54 | 34.80 | 0.217 | | 0.2 | 0.3 | 4.1 | | 0.04 |
| ARM E | 8.10 | 22.90 | 0.354 | 3.0 | 0.4 | 0.5 | 8.0 | | 0.07 |
| 08.15-08.30 | | | | | | | | | |
| ARM A | 7.77 | 17.73 | 0.438 | 3.0 | 0.5 | 0.8 | 11.2 | | 0.10 |
| ARM B | 11.06 | 34.00 | 0.325 | 3.0 | 0.3 | 0.5 | 7.1 | | 0.04 |
| ARM C | 2.98 | 24.24 | 0.123 | | 0.1 | 0.1 | 2.1 | | 0.05 |
| ARM D | 9.23 | 33.66 | 0.274 | | 0.3 | 0.4 | 5.6 | | 0.04 |
| ARM E | 9.93 | 22.01 | 0.451 | 3.0 | 0.5 | 0.8 | 11.9 | | 0.08 |
| 08.30-08.45 | | | | | | | | | |
| ARM A | 7.77 | 17.83 | 0.436 | 2.0 | 0.8 | 0.8 | 11.6 | | 0.10 |
| ARM B | 11.06 | 33.99 | 0.325 | 2.0 | 0.5 | 0.5 | 7.2 | | 0.04 |
| ARM C | 2.98 | 24.22 | 0.123 | | 0.1 | 0.1 | 2.1 | | 0.05 |
| ARM D | 9.23 | 33.67 | 0.274 | | 0.4 | 0.4 | 5.7 | | 0.04 |
| ARM E | 9.93 | 22.02 | 0.451 | 2.0 | 0.8 | 0.8 | 12.2 | | 0.08 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 6.34 | 19.33 | 0.328 | 2.0 | 0.8 | 0.5 | 7.6 | | 0.08 |
| ARM B | 9.03 | 35.32 | 0.256 | 1.0 | 0.5 | 0.3 | 5.2 | | 0.04 |
| ARM C | 2.43 | 26.87 | 0.091 | | 0.1 | 0.1 | 1.5 | | 0.04 |
| ARM D | 7.54 | 34.79 | 0.217 | | 0.4 | 0.3 | 4.2 | | 0.04 |
| ARM E | 8.10 | 22.92 | 0.354 | 2.0 | 0.8 | 0.6 | 8.4 | | 0.07 |
| 09.00-09.15 | | | | | | | | | |
| ARM A | 5.31 | 20.34 | 0.261 | 1.0 | 0.5 | 0.4 | 5.4 | | 0.07 |
| ARM B | 7.56 | 36.30 | 0.208 | 1.0 | 0.3 | 0.3 | 4.0 | | 0.03 |
| ARM C | 2.04 | 28.80 | 0.071 | | 0.1 | 0.1 | 1.2 | | 0.04 |
| ARM D | 6.31 | 35.60 | 0.177 | | 0.3 | 0.2 | 3.3 | | 0.03 |
| ARM E | 6.79 | 23.57 | 0.288 | 1.0 | 0.6 | 0.4 | 6.2 | | 0.06 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.5 | |
| 08.30 | 0.8 | * |
| 08.45 | 0.8 | * |
| 09.00 | 0.5 | |
| 09.15 | 0.4 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.3 |
| 08.15 | 0.3 |
| 08.30 | 0.5 |
| 08.45 | 0.5 |
| 09.00 | 0.3 |
| 09.15 | 0.3 |

QUEUE AT ARM C

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

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.2 | |
| 08.15 | 0.3 | |
| 08.30 | 0.4 | |
| 08.45 | 0.4 | |
| 09.00 | 0.3 | |
| 09.15 | 0.2 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.5 | * |
| 08.30 | 0.8 | * |
| 08.45 | 0.8 | * |
| 09.00 | 0.6 | * |
| 09.15 | 0.4 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 582.8 | 388.5 | 48.2 | 0.08 | 48.2 | 0.08 |
| B | 829.6 | 553.1 | 32.5 | 0.04 | 32.5 | 0.04 |
| C | 223.5 | 149.0 | 9.4 | 0.04 | 9.4 | 0.04 |
| D | 692.5 | 461.6 | 26.0 | 0.04 | 26.0 | 0.04 |
| E | 744.6 | 496.4 | 52.7 | 0.07 | 52.7 | 0.07 |
| ALL | 3072.9 | 2048.6 | 168.7 | 0.05 | 168.7 | 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

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

[Printed at 10:57:18 on 30/01/2019]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Run with file:- "C:\Castletreasure\Jct1_Fingerpost_PM.vai" (drive-on-the-left ) at 11:02:49 on Wednesday, 30 January 2019

FILE PROPERTIES

RUN TITLE: FingerPost Roundabout
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.00 | 0.00 | 10.00 | 55.00 | 31.0 | 0.678 | 38.284 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 8.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.595 | 29.121 |

V = approach half-width
E = entry width
L = effective flare length
R = entry radius
D = inscribed circle diameter
PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioA_2024PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.88 | 5.81 | 3.88 |
| ARM B | 15.00 | 45.00 | 75.00 | 6.03 | 9.04 | 6.03 |
| ARM C | 15.00 | 45.00 | 75.00 | 6.19 | 9.28 | 6.19 |
| ARM D | 15.00 | 45.00 | 75.00 | 10.06 | 15.09 | 10.06 |
| ARM E | 15.00 | 45.00 | 75.00 | 6.56 | 9.84 | 6.56 |

DEMAND SET TITLE: ScenarioA_2024PM

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.345 | 0.000 | 0.590 | 0.065 |
| | | 0.0 | 107.0 | 0.0 | 183.0 | 20.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.193 | 0.000 | 0.000 | 0.367 | 0.440 |
| | | 93.0 | 0.0 | 0.0 | 177.0 | 212.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.408 | 0.202 | 0.000 | 0.089 | 0.301 |
| | | 202.0 | 100.0 | 0.0 | 44.0 | 149.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM D | 0.306 | 0.232 | 0.000 | 0.000 | 0.462 |
| | | 246.0 | 187.0 | 0.0 | 0.0 | 372.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.048 | 0.450 | 0.000 | 0.503 | 0.000 |
| | | 25.0 | 236.0 | 0.0 | 264.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |



PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | | |
| | ARM A | 3.88 | 19.71 | 0.197 | 2.0 | 0.0 | 0.2 | 3.6 | | 0.06 |
| | ARM B | 6.03 | 37.21 | 0.162 | 2.0 | 0.0 | 0.2 | 2.9 | | 0.03 |
| | ARM C | 6.19 | 29.59 | 0.209 | | 0.0 | 0.3 | 3.9 | | 0.04 |
| | ARM D | 10.06 | 33.03 | 0.305 | | 0.0 | 0.4 | 6.4 | | 0.04 |
| | ARM E | 6.56 | 22.66 | 0.290 | 2.0 | 0.0 | 0.4 | 5.9 | | 0.06 |
| 17.00-17.15 | | | | | | | | | | |
| | ARM A | 4.63 | 18.50 | 0.250 | 2.0 | 0.2 | 0.3 | 4.9 | | 0.07 |
| | ARM B | 7.19 | 36.40 | 0.198 | 2.0 | 0.2 | 0.2 | 3.6 | | 0.03 |
| | ARM C | 7.39 | 28.03 | 0.264 | | 0.3 | 0.4 | 5.3 | | 0.05 |
| | ARM D | 12.02 | 31.56 | 0.381 | | 0.4 | 0.6 | 9.0 | | 0.05 |
| | ARM E | 7.84 | 21.45 | 0.365 | 2.0 | 0.4 | 0.6 | 8.4 | | 0.07 |
| 17.15-17.30 | | | | | | | | | | |
| | ARM A | 5.67 | 16.68 | 0.340 | 3.0 | 0.3 | 0.5 | 7.5 | | 0.09 |
| | ARM B | 8.81 | 35.29 | 0.250 | 3.0 | 0.2 | 0.3 | 4.9 | | 0.04 |
| | ARM C | 9.05 | 25.90 | 0.349 | | 0.4 | 0.5 | 7.9 | | 0.06 |
| | ARM D | 14.72 | 29.21 | 0.504 | | 0.6 | 1.0 | 14.7 | | 0.07 |
| | ARM E | 9.60 | 19.78 | 0.485 | 3.0 | 0.6 | 0.9 | 13.5 | | 0.10 |
| 17.30-17.45 | | | | | | | | | | |
| | ARM A | 5.67 | 16.66 | 0.340 | 3.0 | 0.5 | 0.5 | 7.7 | | 0.09 |
| | ARM B | 8.81 | 35.27 | 0.250 | 3.0 | 0.3 | 0.3 | 5.0 | | 0.04 |
| | ARM C | 9.05 | 25.88 | 0.350 | | 0.5 | 0.5 | 8.0 | | 0.06 |
| | ARM D | 14.72 | 29.20 | 0.504 | | 1.0 | 1.0 | 15.1 | | 0.07 |
| | ARM E | 9.60 | 19.76 | 0.486 | 3.0 | 0.9 | 0.9 | 14.0 | | 0.10 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 4.63 | 18.36 | 0.252 | 3.0 | 0.5 | 0.3 | 5.2 | | 0.07 |
| ARM B | 7.19 | 36.37 | 0.198 | 3.0 | 0.3 | 0.2 | 3.7 | | 0.03 |
| ARM C | 7.39 | 28.00 | 0.264 | | 0.5 | 0.4 | 5.5 | | 0.05 |
| ARM D | 12.02 | 31.49 | 0.382 | | 1.0 | 0.6 | 9.5 | | 0.05 |
| ARM E | 7.84 | 21.42 | 0.366 | 3.0 | 0.9 | 0.6 | 8.9 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| ARM A | 3.88 | 19.68 | 0.197 | 2.0 | 0.3 | 0.2 | 3.8 | | 0.06 |
| ARM B | 6.03 | 37.18 | 0.162 | 2.0 | 0.2 | 0.2 | 2.9 | | 0.03 |
| ARM C | 6.19 | 29.56 | 0.209 | | 0.4 | 0.3 | 4.0 | | 0.04 |
| ARM D | 10.06 | 33.00 | 0.305 | | 0.6 | 0.4 | 6.7 | | 0.04 |
| ARM E | 6.56 | 22.64 | 0.290 | 2.0 | 0.6 | 0.4 | 6.3 | | 0.06 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.2 | |
| 17.15 | 0.3 | |
| 17.30 | 0.5 | * |
| 17.45 | 0.5 | * |
| 18.00 | 0.3 | |
| 18.15 | 0.2 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.2 |
| 17.30 | 0.3 |
| 17.45 | 0.3 |
| 18.00 | 0.2 |
| 18.15 | 0.2 |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.5 | * |
| 17.45 | 0.5 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |



QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.6 | * |
| 17.30 | 1.0 | * |
| 17.45 | 1.0 | * |
| 18.00 | 0.6 | * |
| 18.15 | 0.4 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.6 | * |
| 17.30 | 0.9 | * |
| 17.45 | 0.9 | * |
| 18.00 | 0.6 | * |
| 18.15 | 0.4 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 425.1 | 283.4 | 32.6 | 0.08 | 32.6 | 0.08 |
| B | 660.9 | 440.6 | 23.1 | 0.03 | 23.1 | 0.03 |
| C | 678.7 | 452.5 | 34.6 | 0.05 | 34.6 | 0.05 |
| D | 1103.8 | 735.9 | 61.5 | 0.06 | 61.5 | 0.06 |
| E | 719.9 | 479.9 | 57.1 | 0.08 | 57.1 | 0.08 |
| ALL | 3588.5 | 2392.3 | 208.8 | 0.06 | 208.8 | 0.06 |

* 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

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

[Printed at 11:03:36 on 30/01/2019]

# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Run with file:- "C:\Castletreasure\Jct1_Fingerpost.vai" (drive-on-the-left ) at 10:49:30 on Thursday, 25 October 2018

## FILE PROPERTIES

RUN TITLE: Junction1_Fingerpost
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

## INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

## GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.50 | 0.00 | 10.00 | 55.00 | 31.0 | 0.705 | 40.677 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 7.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.580 | 27.727 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle



## TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioA_2039_AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) PEAK | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.65 | 8.48 | 5.65 | 5.65 |
| ARM B | 15.00 | 45.00 | 75.00 | 7.96 | 11.94 | 7.96 | 7.96 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.15 | 3.23 | 2.15 | 2.15 |
| ARM D | 15.00 | 45.00 | 75.00 | 6.71 | 10.07 | 6.71 | 6.71 |
| ARM E | 15.00 | 45.00 | 75.00 | 7.20 | 10.80 | 7.20 | 7.20 |

DEMAND SET TITLE: ScenarioA_2039_AM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.440 | 0.000 | 0.527 | 0.033 |
| | | 0.0 | 199.0 | 0.0 | 238.0 | 15.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.105 | 0.000 | 0.000 | 0.487 | 0.408 |
| | | 67.0 | 0.0 | 0.0 | 310.0 | 260.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.302 | 0.198 | 0.000 | 0.203 | 0.297 |
| | | 52.0 | 34.0 | 0.0 | 35.0 | 51.0 |
| | | ( 5.0) | ( 5.0) | ( 5.0) | ( 5.0) | ( 5.0) |
| | ARM D | 0.408 | 0.220 | 0.000 | 0.000 | 0.372 |
| | | 219.0 | 118.0 | 0.0 | 0.0 | 200.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM E | 0.030 | 0.375 | 0.000 | 0.595 | 0.000 |
| | | 17.0 | 216.0 | 0.0 | 343.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) |

PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 5.65 | 20.01 | 0.282 | 2.0 | 0.0 | 0.4 | 5.7 | | 0.07 |
| ARM B | 7.96 | 35.99 | 0.221 | 2.0 | 0.0 | 0.3 | 4.2 | | 0.04 |
| ARM C | 2.15 | 28.25 | 0.076 | | 0.0 | 0.1 | 1.2 | | 0.04 |
| ARM D | 6.71 | 35.37 | 0.190 | | 0.0 | 0.2 | 3.5 | | 0.03 |
| ARM E | 7.20 | 23.39 | 0.308 | 2.0 | 0.0 | 0.4 | 6.5 | | 0.06 |
| 08.00-08.15 | | | | | | | | | |
| ARM A | 6.75 | 18.82 | 0.358 | 3.0 | 0.4 | 0.6 | 8.1 | | 0.08 |
| ARM B | 9.51 | 34.93 | 0.272 | 3.0 | 0.3 | 0.4 | 5.5 | | 0.04 |
| ARM C | 2.57 | 26.19 | 0.098 | | 0.1 | 0.1 | 1.6 | | 0.04 |
| ARM D | 8.02 | 34.51 | 0.232 | | 0.2 | 0.3 | 4.5 | | 0.04 |
| ARM E | 8.60 | 22.68 | 0.379 | 3.0 | 0.4 | 0.6 | 8.9 | | 0.07 |
| 08.15-08.30 | | | | | | | | | |
| ARM A | 8.26 | 17.27 | 0.478 | 3.0 | 0.6 | 0.9 | 13.1 | | 0.11 |
| ARM B | 11.64 | 33.51 | 0.348 | 3.0 | 0.4 | 0.5 | 7.8 | | 0.05 |
| ARM C | 3.14 | 23.37 | 0.135 | | 0.1 | 0.2 | 2.3 | | 0.05 |
| ARM D | 9.82 | 33.30 | 0.295 | | 0.3 | 0.4 | 6.2 | | 0.04 |
| ARM E | 10.53 | 21.74 | 0.484 | 3.0 | 0.6 | 0.9 | 13.5 | | 0.09 |
| 08.30-08.45 | | | | | | | | | |
| ARM A | 8.26 | 17.38 | 0.475 | 2.0 | 0.9 | 0.9 | 13.6 | | 0.11 |
| ARM B | 11.64 | 33.49 | 0.348 | 2.0 | 0.5 | 0.5 | 8.0 | | 0.05 |
| ARM C | 3.14 | 23.35 | 0.135 | | 0.2 | 0.2 | 2.3 | | 0.05 |
| ARM D | 9.82 | 33.31 | 0.295 | | 0.4 | 0.4 | 6.3 | | 0.04 |
| ARM E | 10.53 | 21.75 | 0.484 | 2.0 | 0.9 | 0.9 | 14.0 | | 0.09 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 6.75 | 18.97 | 0.356 | 2.0 | 0.9 | 0.6 | 8.6 | | 0.08 |
| ARM B | 9.51 | 34.91 | 0.272 | 1.0 | 0.5 | 0.4 | 5.7 | | 0.04 |
| ARM C | 2.57 | 26.15 | 0.098 | | 0.2 | 0.1 | 1.7 | | 0.04 |
| ARM D | 8.02 | 34.51 | 0.232 | | 0.4 | 0.3 | 4.6 | | 0.04 |
| ARM E | 8.60 | 22.69 | 0.379 | 2.0 | 0.9 | 0.6 | 9.4 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 5.65 | 20.04 | 0.282 | 1.0 | 0.6 | 0.4 | 6.0 | | 0.07 |
| ARM B | 7.96 | 35.96 | 0.221 | 1.0 | 0.4 | 0.3 | 4.3 | | 0.04 |
| ARM C | 2.15 | 28.20 | 0.076 | | 0.1 | 0.1 | 1.3 | | 0.04 |
| ARM D | 6.71 | 35.36 | 0.190 | | 0.3 | 0.2 | 3.6 | | 0.03 |
| ARM E | 7.20 | 23.38 | 0.308 | 1.0 | 0.6 | 0.4 | 6.8 | | 0.06 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.6 | * |
| 08.30 | 0.9 | * |
| 08.45 | 0.9 | * |
| 09.00 | 0.6 | * |
| 09.15 | 0.4 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.4 | |
| 08.30 | 0.5 | * |
| 08.45 | 0.5 | * |
| 09.00 | 0.4 | |
| 09.15 | 0.3 | |

QUEUE AT ARM C

| 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 AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.2 | |
| 08.15 | 0.3 | |
| 08.30 | 0.4 | |
| 08.45 | 0.4 | |
| 09.00 | 0.3 | |
| 09.15 | 0.2 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.6 | * |
| 08.30 | 0.9 | * |
| 08.45 | 0.9 | * |
| 09.00 | 0.6 | * |
| 09.15 | 0.4 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 619.8 | 413.2 | 55.1 | 0.09 | 55.1 | 0.09 |
| B | 873.5 | 582.3 | 35.6 | 0.04 | 35.6 | 0.04 |
| C | 235.8 | 157.2 | 10.4 | 0.04 | 10.4 | 0.04 |
| D | 736.3 | 490.9 | 28.5 | 0.04 | 28.5 | 0.04 |
| E | 789.8 | 526.5 | 59.2 | 0.07 | 59.2 | 0.07 |
| ALL | 3255.3 | 2170.2 | 188.7 | 0.06 | 188.7 | 0.06 |

* 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

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

[Printed at 10:49:49 on 25/10/2018]



ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Run with file:- "C:\Castletreasure\Jct1_Fingerpost_PM.vai" (drive-on-the-left ) at 11:59:23 on Thursday, 25 October 2018

FILE PROPERTIES
**********

RUN TITLE: FingerPost Roundabout
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA
**********
ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.00 | 0.00 | 10.00 | 55.00 | 31.0 | 0.678 | 38.284 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 8.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.595 | 29.121 |

V = approach half-width
E = entry width
L = effective flare length
R = entry radius
D = inscribed circle diameter
PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioA_2039PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.13 | 6.19 | 4.13 |
| ARM B | 15.00 | 45.00 | 75.00 | 6.41 | 9.62 | 6.41 |
| ARM C | 15.00 | 45.00 | 75.00 | 6.60 | 9.90 | 6.60 |
| ARM D | 15.00 | 45.00 | 75.00 | 10.73 | 16.09 | 10.73 |
| ARM E | 15.00 | 45.00 | 75.00 | 6.99 | 10.48 | 6.99 |

DEMAND SET TITLE: ScenarioA_2039PM

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.345 | 0.000 | 0.591 | 0.064 |
| | | 0.0 | 114.0 | 0.0 | 195.0 | 21.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.193 | 0.000 | 0.000 | 0.366 | 0.441 |
| | | 99.0 | 0.0 | 0.0 | 188.0 | 226.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.407 | 0.203 | 0.000 | 0.089 | 0.301 |
| | | 215.0 | 107.0 | 0.0 | 47.0 | 159.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM D | 0.305 | 0.233 | 0.000 | 0.000 | 0.462 |
| | | 262.0 | 200.0 | 0.0 | 0.0 | 396.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.047 | 0.451 | 0.000 | 0.503 | 0.000 |
| | | 26.0 | 252.0 | 0.0 | 281.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME / ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 4.13 | 19.30 | 0.214 | 2.0 | 0.0 | 0.3 | 4.0 | | 0.07 |
| ARM B | 6.41 | 36.95 | 0.174 | 2.0 | 0.0 | 0.2 | 3.1 | | 0.03 |
| ARM C | 6.60 | 29.08 | 0.227 | | 0.0 | 0.3 | 4.3 | | 0.04 |
| ARM D | 10.73 | 32.54 | 0.330 | | 0.0 | 0.5 | 7.2 | | 0.05 |
| ARM E | 6.99 | 22.25 | 0.314 | 2.0 | 0.0 | 0.5 | 6.7 | | 0.07 |
| 17.00-17.15 | | | | | | | | | |
| ARM A | 4.93 | 18.00 | 0.274 | 2.0 | 0.3 | 0.4 | 5.5 | | 0.08 |
| ARM B | 7.66 | 36.08 | 0.212 | 2.0 | 0.2 | 0.3 | 4.0 | | 0.04 |
| ARM C | 7.88 | 27.42 | 0.287 | | 0.3 | 0.4 | 5.9 | | 0.05 |
| ARM D | 12.81 | 30.94 | 0.414 | | 0.5 | 0.7 | 10.3 | | 0.06 |
| ARM E | 8.34 | 20.96 | 0.398 | 2.0 | 0.5 | 0.7 | 9.6 | | 0.08 |
| 17.15-17.30 | | | | | | | | | |
| ARM A | 6.03 | 16.04 | 0.376 | 3.0 | 0.4 | 0.6 | 8.7 | | 0.10 |
| ARM B | 9.38 | 34.90 | 0.269 | 3.0 | 0.3 | 0.4 | 5.4 | | 0.04 |
| ARM C | 9.65 | 25.15 | 0.384 | | 0.4 | 0.6 | 9.1 | | 0.06 |
| ARM D | 15.68 | 28.29 | 0.554 | | 0.7 | 1.2 | 17.9 | | 0.08 |
| ARM E | 10.22 | 19.17 | 0.533 | 3.0 | 0.7 | 1.1 | 16.2 | | 0.11 |
| 17.30-17.45 | | | | | | | | | |
| ARM A | 6.03 | 16.02 | 0.377 | 3.0 | 0.6 | 0.6 | 9.0 | | 0.10 |
| ARM B | 9.38 | 34.89 | 0.269 | 3.0 | 0.4 | 0.4 | 5.5 | | 0.04 |
| ARM C | 9.65 | 25.13 | 0.384 | | 0.6 | 0.6 | 9.3 | | 0.06 |
| ARM D | 15.68 | 28.27 | 0.555 | | 1.2 | 1.2 | 18.5 | | 0.08 |
| ARM E | 10.22 | 19.16 | 0.533 | 3.0 | 1.1 | 1.1 | 17.0 | | 0.11 |
| 17.45-18.00 | | | | | | | | | |
| ARM A | 4.93 | 17.84 | 0.276 | 3.0 | 0.6 | 0.4 | 5.9 | | 0.08 |
| ARM B | 7.66 | 36.05 | 0.212 | 3.0 | 0.4 | 0.3 | 4.1 | | 0.04 |
| ARM C | 7.88 | 27.39 | 0.288 | | 0.6 | 0.4 | 6.2 | | 0.05 |
| ARM D | 12.81 | 30.85 | 0.415 | | 1.2 | 0.7 | 11.0 | | 0.06 |
| ARM E | 8.34 | 20.92 | 0.399 | 3.0 | 1.1 | 0.7 | 10.3 | | 0.08 |



| TIME / ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| ARM A | 4.13 | 19.26 | 0.214 | 2.0 | 0.4 | 0.3 | 4.2 | | 0.07 |
| ARM B | 6.41 | 36.92 | 0.174 | 2.0 | 0.3 | 0.2 | 3.2 | | 0.03 |
| ARM C | 6.60 | 29.04 | 0.227 | | 0.4 | 0.3 | 4.5 | | 0.04 |
| ARM D | 10.73 | 32.52 | 0.330 | | 0.7 | 0.5 | 7.5 | | 0.05 |
| ARM E | 6.99 | 22.23 | 0.314 | 2.0 | 0.7 | 0.5 | 7.1 | | 0.07 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.6 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.2 | |
| 17.15 | 0.3 | |
| 17.30 | 0.4 | |
| 17.45 | 0.4 | |
| 18.00 | 0.3 | |
| 18.15 | 0.2 | |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.6 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | |
| 17.15 | 0.7 | * |
| 17.30 | 1.2 | * |
| 17.45 | 1.2 | * |
| 18.00 | 0.7 | * |
| 18.15 | 0.5 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | |
| 17.15 | 0.7 | * |
| 17.30 | 1.1 | * |
| 17.45 | 1.1 | * |
| 18.00 | 0.7 | * |
| 18.15 | 0.5 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A | 452.5 | 301.7 | 37.2 | 0.08 | 37.2 | 0.08 |
| B | 703.4 | 469.0 | 25.3 | 0.04 | 25.3 | 0.04 |
| C | 724.0 | 482.7 | 39.3 | 0.05 | 39.3 | 0.05 |
| D | 1176.5 | 784.3 | 72.4 | 0.06 | 72.4 | 0.06 |
| E | 766.5 | 511.0 | 66.8 | 0.09 | 66.8 | 0.09 |
| ALL | 3822.9 | 2548.6 | 241.1 | 0.06 | 241.1 | 0.06 |

* 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

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

[Printed at 11:59:44 on 25/10/2018]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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RG40 3GA,UK



Run with file:- "C:\Castletreasure\Jct1_Fingerpost_AM.vai" (drive-on-the-left ) at 14:55:48 on Wednesday, 30 January 2019

FILE PROPERTIES

RUN TITLE: Junction1_Fingerpost
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.50 | 0.00 | 10.00 | 55.00 | 31.0 | 0.705 | 40.677 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 7.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.580 | 27.727 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioB_2024_AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK TO RISE | NUMBER OF MINUTES FROM START WHEN FLOW STOPS IS REACHED IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.41 | 11.12 | 7.41 |
| ARM B | 15.00 | 45.00 | 75.00 | 7.24 | 10.86 | 7.24 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.19 | 3.28 | 2.19 |
| ARM D | 15.00 | 45.00 | 75.00 | 6.32 | 9.49 | 6.32 |
| ARM E | 15.00 | 45.00 | 75.00 | 8.24 | 12.36 | 8.24 |

DEMAND SET TITLE: ScenarioB_2024_AM

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.371 | 0.000 | 0.536 | 0.093 |
| | | 0.0 | 220.0 | 0.0 | 318.0 | 55.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.166 | 0.000 | 0.000 | 0.466 | 0.368 |
| | | 96.0 | 0.0 | 0.0 | 270.0 | 213.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.171 | 0.131 | 0.000 | 0.029 | 0.669 |
| | | 30.0 | 23.0 | 0.0 | 5.0 | 117.0 |
| | | ( 5.0) | ( 5.0) | ( 5.0) | ( 5.0) | ( 5.0) |
| | ARM D | 0.370 | 0.231 | 0.000 | 0.000 | 0.399 |
| | | 187.0 | 117.0 | 0.0 | 0.0 | 202.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM E | 0.033 | 0.366 | 0.000 | 0.601 | 0.000 |
| | | 22.0 | 241.0 | 0.0 | 396.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) |



PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | | |
| | ARM A | 7.41 | 19.53 | 0.380 | 2.0 | 0.0 | 0.6 | 8.8 | | 0.08 |
| | ARM B | 7.24 | 34.45 | 0.210 | 2.0 | 0.0 | 0.3 | 3.9 | | 0.04 |
| | ARM C | 2.19 | 27.27 | 0.080 | | 0.0 | 0.1 | 1.3 | | 0.04 |
| | ARM D | 6.32 | 34.87 | 0.181 | | 0.0 | 0.2 | 3.3 | | 0.03 |
| | ARM E | 8.24 | 23.67 | 0.348 | 2.0 | 0.0 | 0.5 | 7.8 | | 0.06 |
| 08.00-08.15 | | | | | | | | | | |
| | ARM A | 8.85 | 18.23 | 0.486 | 3.0 | 0.6 | 0.9 | 13.5 | | 0.11 |
| | ARM B | 8.64 | 33.09 | 0.261 | 3.0 | 0.3 | 0.4 | 5.2 | | 0.04 |
| | ARM C | 2.61 | 25.01 | 0.104 | | 0.1 | 0.1 | 1.7 | | 0.04 |
| | ARM D | 7.55 | 33.88 | 0.223 | | 0.2 | 0.3 | 4.2 | | 0.04 |
| | ARM E | 9.84 | 23.01 | 0.428 | 3.0 | 0.5 | 0.7 | 10.9 | | 0.08 |
| 08.15-08.30 | | | | | | | | | | |
| | ARM A | 10.84 | 16.54 | 0.655 | 3.0 | 0.9 | 1.8 | 25.9 | | 0.17 |
| | ARM B | 10.58 | 31.26 | 0.339 | 3.0 | 0.4 | 0.5 | 7.5 | | 0.05 |
| | ARM C | 3.20 | 21.94 | 0.146 | | 0.1 | 0.2 | 2.5 | | 0.05 |
| | ARM D | 9.25 | 32.48 | 0.285 | | 0.3 | 0.4 | 5.9 | | 0.04 |
| | ARM E | 12.05 | 22.14 | 0.544 | 3.0 | 0.7 | 1.2 | 17.1 | | 0.10 |
| 08.30-08.45 | | | | | | | | | | |
| | ARM A | 10.84 | 16.66 | 0.651 | 2.0 | 1.8 | 1.8 | 27.7 | | 0.17 |
| | ARM B | 10.58 | 31.22 | 0.339 | 2.0 | 0.5 | 0.5 | 7.7 | | 0.05 |
| | ARM C | 3.20 | 21.90 | 0.146 | | 0.2 | 0.2 | 2.6 | | 0.05 |
| | ARM D | 9.25 | 32.51 | 0.285 | | 0.4 | 0.4 | 6.0 | | 0.04 |
| | ARM E | 12.05 | 22.15 | 0.544 | 2.0 | 1.2 | 1.2 | 17.7 | | 0.10 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 8.85 | 18.38 | 0.482 | 2.0 | 1.8 | 0.9 | 14.7 | | 0.11 |
| ARM B | 8.64 | 33.04 | 0.262 | 1.0 | 0.5 | 0.4 | 5.4 | | 0.04 |
| ARM C | 2.61 | 24.94 | 0.105 | | 0.2 | 0.1 | 1.8 | | 0.04 |
| ARM D | 7.55 | 33.88 | 0.223 | | 0.4 | 0.3 | 4.4 | | 0.04 |
| ARM E | 9.84 | 23.02 | 0.427 | 2.0 | 1.2 | 0.8 | 11.6 | | 0.08 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 7.41 | 19.56 | 0.379 | 1.0 | 0.9 | 0.6 | 9.5 | | 0.08 |
| ARM B | 7.24 | 34.40 | 0.210 | 1.0 | 0.4 | 0.3 | 4.1 | | 0.04 |
| ARM C | 2.19 | 27.20 | 0.080 | | 0.1 | 0.1 | 1.3 | | 0.04 |
| ARM D | 6.32 | 34.85 | 0.181 | | 0.3 | 0.2 | 3.4 | | 0.04 |
| ARM E | 8.24 | 23.66 | 0.348 | 1.0 | 0.8 | 0.5 | 8.2 | | 0.06 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.6 | * |
| 08.15 | 0.9 | * |
| 08.30 | 1.8 | ** |
| 08.45 | 1.8 | ** |
| 09.00 | 0.9 | * |
| 09.15 | 0.6 | * |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.4 | |
| 08.30 | 0.5 | * |
| 08.45 | 0.5 | * |
| 09.00 | 0.4 | |
| 09.15 | 0.3 | |

QUEUE AT ARM C

| 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 AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.2 |
| 08.15 | 0.3 |
| 08.30 | 0.4 |
| 08.45 | 0.4 |
| 09.00 | 0.3 |
| 09.15 | 0.2 |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.5 | * |
| 08.15 | 0.7 | * |
| 08.30 | 1.2 | * |
| 08.45 | 1.2 | * |
| 09.00 | 0.8 | * |
| 09.15 | 0.5 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 813.1 | 542.1 | 100.1 | 0.12 | 100.1 | 0.12 |
| B | 793.9 | 529.3 | 33.8 | 0.04 | 33.8 | 0.04 |
| C | 240.0 | 160.0 | 11.2 | 0.05 | 11.2 | 0.05 |
| D | 693.8 | 462.6 | 27.1 | 0.04 | 27.1 | 0.04 |
| E | 903.6 | 602.4 | 73.2 | 0.08 | 73.2 | 0.08 |
| ALL | 3444.5 | 2296.3 | 245.4 | 0.07 | 245.4 | 0.07 |

* 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

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

[Printed at 14:57:04 on 30/01/2019]

# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Run with file:- "C:\Castletreasure\Jct1_Fingerpost_PM.vai" (drive-on-the-left ) at 15:15:01 on Wednesday, 30 January 201

## FILE PROPERTIES

RUN TITLE: FingerPost Roundabout
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

## INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

### GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.00 | 0.00 | 10.00 | 55.00 | 31.0 | 0.678 | 38.284 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 8.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.595 | 29.121 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle



### TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioB_2024PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.43 | 8.14 | 5.43 |
| ARM B | 15.00 | 45.00 | 75.00 | 7.78 | 11.66 | 7.78 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.53 | 8.29 | 5.53 |
| ARM D | 15.00 | 45.00 | 75.00 | 9.50 | 14.25 | 9.50 |
| ARM E | 15.00 | 45.00 | 75.00 | 6.43 | 9.64 | 6.43 |

DEMAND SET TITLE: ScenarioB_2024PM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.364 | 0.000 | 0.396 | 0.240 |
| | | 0.0 | 158.0 | 0.0 | 172.0 | 104.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.172 | 0.000 | 0.000 | 0.273 | 0.555 |
| | | 107.0 | 0.0 | 0.0 | 170.0 | 345.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.382 | 0.061 | 0.000 | 0.005 | 0.552 |
| | | 169.0 | 27.0 | 0.0 | 2.0 | 244.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM D | 0.353 | 0.196 | 0.000 | 0.000 | 0.451 |
| | | 268.0 | 149.0 | 0.0 | 0.0 | 343.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.053 | 0.568 | 0.000 | 0.379 | 0.000 |
| | | 27.0 | 292.0 | 0.0 | 195.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 5.43 | 20.55 | 0.264 | 2.0 | 0.0 | 0.4 | 5.2 | | 0.07 |
| ARM B | 7.78 | 37.17 | 0.209 | 2.0 | 0.0 | 0.3 | 3.9 | | 0.03 |
| ARM C | 5.53 | 28.38 | 0.195 | | 0.0 | 0.2 | 3.6 | | 0.04 |
| ARM D | 9.50 | 30.77 | 0.309 | | 0.0 | 0.4 | 6.5 | | 0.05 |
| ARM E | 6.43 | 23.47 | 0.274 | 2.0 | 0.0 | 0.4 | 5.5 | | 0.06 |
| 17.00-17.15 | | | | | | | | | |
| ARM A | 6.48 | 19.49 | 0.332 | 2.0 | 0.4 | 0.5 | 7.3 | | 0.08 |
| ARM B | 9.28 | 36.35 | 0.255 | 2.0 | 0.3 | 0.3 | 5.1 | | 0.04 |
| ARM C | 6.60 | 26.58 | 0.248 | | 0.2 | 0.3 | 4.9 | | 0.05 |
| ARM D | 11.34 | 28.43 | 0.399 | | 0.4 | 0.7 | 9.7 | | 0.06 |
| ARM E | 7.67 | 22.42 | 0.342 | 2.0 | 0.4 | 0.5 | 7.6 | | 0.07 |
| 17.15-17.30 | | | | | | | | | |
| ARM A | 7.93 | 17.86 | 0.444 | 3.0 | 0.5 | 0.8 | 11.5 | | 0.10 |
| ARM B | 11.37 | 35.24 | 0.323 | 3.0 | 0.3 | 0.5 | 7.0 | | 0.04 |
| ARM C | 8.08 | 24.13 | 0.335 | | 0.3 | 0.5 | 7.4 | | 0.06 |
| ARM D | 13.89 | 23.43 | 0.593 | BB | 0.7 | 1.4 | 20.6 | | 0.10 |
| ARM E | 9.40 | 20.97 | 0.448 | 3.0 | 0.5 | 0.8 | 11.7 | | 0.09 |
| 17.30-17.45 | | | | | | | | | |
| ARM A | 7.93 | 17.84 | 0.445 | 3.0 | 0.8 | 0.8 | 11.9 | | 0.10 |
| ARM B | 11.37 | 35.22 | 0.323 | 3.0 | 0.5 | 0.5 | 7.1 | | 0.04 |
| ARM C | 8.08 | 24.11 | 0.335 | | 0.5 | 0.5 | 7.5 | | 0.06 |
| ARM D | 13.89 | 23.37 | 0.595 | BB | 1.4 | 1.5 | 21.7 | | 0.11 |
| ARM E | 9.40 | 20.95 | 0.449 | 3.0 | 0.8 | 0.8 | 12.1 | | 0.09 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 6.48 | 19.35 | 0.335 | 3.0 | 0.8 | 0.5 | 7.8 | | 0.08 |
| ARM B | 9.28 | 36.33 | 0.256 | 3.0 | 0.5 | 0.3 | 5.2 | | 0.04 |
| ARM C | 6.60 | 26.55 | 0.248 | | 0.5 | 0.3 | 5.1 | | 0.05 |
| ARM D | 11.34 | 28.11 | 0.404 | | 1.5 | 0.7 | 10.5 | | 0.06 |
| ARM E | 7.67 | 22.38 | 0.343 | 3.0 | 0.8 | 0.5 | 8.1 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| ARM A | 5.43 | 20.52 | 0.264 | 2.0 | 0.5 | 0.4 | 5.5 | | 0.07 |
| ARM B | 7.78 | 37.15 | 0.209 | 2.0 | 0.3 | 0.3 | 4.0 | | 0.03 |
| ARM C | 5.53 | 28.35 | 0.195 | | 0.3 | 0.2 | 3.7 | | 0.04 |
| ARM D | 9.50 | 30.73 | 0.309 | | 0.7 | 0.4 | 6.9 | | 0.05 |
| ARM E | 6.43 | 23.45 | 0.274 | 2.0 | 0.5 | 0.4 | 5.8 | | 0.06 |

**WARNING** Entry capacities in certain time segments
(flagged BB in Queue and Delay Table) are restricted due
to traffic queueing to leave the junction on an adjacent arm

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.5 | |
| 17.30 | 0.8 | * |
| 17.45 | 0.8 | * |
| 18.00 | 0.5 | * |
| 18.15 | 0.4 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.3 |
| 17.15 | 0.3 |
| 17.30 | 0.5 |
| 17.45 | 0.5 |
| 18.00 | 0.3 |
| 18.15 | 0.3 |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.2 | |
| 17.15 | 0.3 | |
| 17.30 | 0.5 | * |
| 17.45 | 0.5 | * |
| 18.00 | 0.3 | |
| 18.15 | 0.2 | |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.7 | * |
| 17.30 | 1.4 | * |
| 17.45 | 1.5 | * |
| 18.00 | 0.7 | * |
| 18.15 | 0.4 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.5 | * |
| 17.30 | 0.8 | * |
| 17.45 | 0.8 | * |
| 18.00 | 0.5 | * |
| 18.15 | 0.4 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 595.1 | 396.7 | 49.2 | 0.08 | 49.2 | 0.08 |
| B | 852.9 | 568.6 | 32.4 | 0.04 | 32.4 | 0.04 |
| C | 606.1 | 404.1 | 32.1 | 0.05 | 32.1 | 0.05 |
| D | 1042.1 | 694.7 | 75.9 | 0.07 | 75.9 | 0.07 |
| E | 704.8 | 469.9 | 50.8 | 0.07 | 50.8 | 0.07 |
| ALL | 3801.0 | 2534.0 | 240.3 | 0.06 | 240.3 | 0.06 |

* 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

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

[Printed at 15:16:00 on 30/01/2019]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Run with file:- "C:\Castletreasure\Jct1_Fingerpost_AM.vai" (drive-on-the-left ) at 15:40:55 on Wednesday, 30 January 2019

FILE PROPERTIES

RUN TITLE: Junction1_Fingerpost
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.50 | 0.00 | 10.00 | 55.00 | 31.0 | 0.705 | 40.677 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 7.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.580 | 27.727 |

V = approach half-width
E = entry width
L = effective flare length
R = entry radius
D = inscribed circle diameter
PHI = entry angle

## TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioB_2039_AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.71 | 10.07 | 6.71 |
| ARM B | 15.00 | 45.00 | 75.00 | 7.99 | 11.98 | 7.99 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.03 | 3.04 | 2.03 |
| ARM D | 15.00 | 45.00 | 75.00 | 8.69 | 13.03 | 8.69 |
| ARM E | 15.00 | 45.00 | 75.00 | 9.04 | 13.56 | 9.04 |

DEMAND SET TITLE: ScenarioB_2039_AM

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | | | | | | |
| | ARM A | 0.000 | 0.309 | 0.000 | 0.616 | 0.074 |
| | | 0.0 | 166.0 | 0.0 | 331.0 | 40.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.186 | 0.000 | 0.000 | 0.410 | 0.404 |
| | | 119.0 | 0.0 | 0.0 | 262.0 | 258.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.136 | 0.117 | 0.000 | 0.019 | 0.728 |
| | | 22.0 | 19.0 | 0.0 | 3.0 | 118.0 |
| | | ( 8.0) | ( 8.0) | ( 8.0) | ( 8.0) | ( 8.0) |
| | ARM D | 0.386 | 0.236 | 0.000 | 0.000 | 0.378 |
| | | 268.0 | 164.0 | 0.0 | 0.0 | 263.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM E | 0.036 | 0.355 | 0.000 | 0.609 | 0.000 |
| | | 26.0 | 257.0 | 0.0 | 440.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) |

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)



## PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

## ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

### QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | | |
| | ARM A | 6.71 | 18.83 | 0.356 | 2.0 | 0.0 | 0.5 | 8.0 | | 0.08 |
| | ARM B | 7.99 | 34.08 | 0.234 | 2.0 | 0.0 | 0.3 | 4.5 | | 0.04 |
| | ARM C | 2.03 | 25.67 | 0.079 | | 0.0 | 0.1 | 1.3 | | 0.04 |
| | ARM D | 8.69 | 34.44 | 0.252 | | 0.0 | 0.3 | 5.0 | | 0.04 |
| | ARM E | 9.04 | 22.67 | 0.399 | 2.0 | 0.0 | 0.7 | 9.6 | | 0.07 |
| 08.00-08.15 | | | | | | | | | | |
| | ARM A | 8.02 | 17.40 | 0.461 | 3.0 | 0.5 | 0.8 | 12.3 | | 0.11 |
| | ARM B | 9.54 | 32.64 | 0.292 | 3.0 | 0.3 | 0.4 | 6.1 | | 0.04 |
| | ARM C | 2.42 | 23.30 | 0.104 | | 0.1 | 0.1 | 1.7 | | 0.05 |
| | ARM D | 10.37 | 33.32 | 0.311 | | 0.3 | 0.5 | 6.7 | | 0.04 |
| | ARM E | 10.79 | 21.82 | 0.495 | 3.0 | 0.7 | 1.0 | 14.1 | | 0.09 |
| 08.15-08.30 | | | | | | | | | | |
| | ARM A | 9.82 | 15.55 | 0.631 | 3.0 | 0.8 | 1.7 | 23.4 | | 0.17 |
| | ARM B | 11.68 | 30.72 | 0.380 | 3.0 | 0.4 | 0.6 | 9.0 | | 0.05 |
| | ARM C | 2.96 | 20.11 | 0.147 | | 0.1 | 0.2 | 2.5 | | 0.06 |
| | ARM D | 12.71 | 31.65 | 0.401 | | 0.5 | 0.7 | 9.8 | | 0.05 |
| | ARM E | 13.22 | 20.68 | 0.639 | 3.0 | 1.0 | 1.7 | 24.7 | | 0.13 |
| 08.30-08.45 | | | | | | | | | | |
| | ARM A | 9.82 | 15.65 | 0.627 | 2.0 | 1.7 | 1.7 | 25.0 | | 0.17 |
| | ARM B | 11.68 | 30.67 | 0.381 | 2.0 | 0.6 | 0.6 | 9.2 | | 0.05 |
| | ARM C | 2.96 | 20.05 | 0.148 | | 0.2 | 0.2 | 2.6 | | 0.06 |
| | ARM D | 12.71 | 31.73 | 0.400 | | 0.7 | 0.7 | 10.0 | | 0.05 |
| | ARM E | 13.22 | 20.69 | 0.639 | 2.0 | 1.7 | 1.7 | 26.1 | | 0.13 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 8.02 | 17.54 | 0.457 | 2.0 | 1.7 | 0.9 | 13.3 | | 0.11 |
| ARM B | 9.54 | 32.57 | 0.293 | 1.0 | 0.6 | 0.4 | 6.3 | | 0.04 |
| ARM C | 2.42 | 23.23 | 0.104 | | 0.2 | 0.1 | 1.8 | | 0.05 |
| ARM D | 10.37 | 33.33 | 0.311 | | 0.7 | 0.5 | 6.9 | | 0.04 |
| ARM E | 10.79 | 21.82 | 0.495 | 2.0 | 1.7 | 1.0 | 15.4 | | 0.09 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 6.71 | 18.85 | 0.356 | 1.0 | 0.9 | 0.6 | 8.6 | | 0.08 |
| ARM B | 7.99 | 34.02 | 0.235 | 1.0 | 0.4 | 0.3 | 4.7 | | 0.04 |
| ARM C | 2.03 | 25.60 | 0.079 | | 0.1 | 0.1 | 1.3 | | 0.04 |
| ARM D | 8.69 | 34.42 | 0.252 | | 0.5 | 0.3 | 5.1 | | 0.04 |
| ARM E | 9.04 | 22.66 | 0.399 | 1.0 | 1.0 | 0.7 | 10.3 | | 0.07 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.5 | * |
| 08.15 | 0.8 | * |
| 08.30 | 1.7 | ** |
| 08.45 | 1.7 | ** |
| 09.00 | 0.9 | * |
| 09.15 | 0.6 | * |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.4 | |
| 08.30 | 0.6 | * |
| 08.45 | 0.6 | * |
| 09.00 | 0.4 | |
| 09.15 | 0.3 | |

QUEUE AT ARM C

| 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 AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.5 | |
| 08.30 | 0.7 | * |
| 08.45 | 0.7 | * |
| 09.00 | 0.5 | |
| 09.15 | 0.3 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.7 | * |
| 08.15 | 1.0 | * |
| 08.30 | 1.7 | ** |
| 08.45 | 1.7 | ** |
| 09.00 | 1.0 | * |
| 09.15 | 0.7 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 736.3 | 490.9 | 90.5 | 0.12 | 90.5 | 0.12 |
| B | 876.2 | 584.1 | 39.8 | 0.05 | 39.8 | 0.05 |
| C | 222.1 | 148.1 | 11.2 | 0.05 | 11.2 | 0.05 |
| D | 953.0 | 635.3 | 43.5 | 0.05 | 43.5 | 0.05 |
| E | 991.4 | 660.9 | 100.1 | 0.10 | 100.1 | 0.10 |
| ALL | 3779.1 | 2519.4 | 285.1 | 0.08 | 285.1 | 0.08 |

* 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

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

[Printed at 15:41:11 on 30/01/2019]

# A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
program advice and maintenance, contact:

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RG40 3GA,UK



Run with file:- "C:\Castletreasure\Jct1_Fingerpost_PM.vai" (drive-on-the-left ) at 15:47:06 on Wednesday, 30 January 201

## FILE PROPERTIES

RUN TITLE: FingerPost Roundabout
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

## INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

## GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.00 | 0.00 | 10.00 | 55.00 | 31.0 | 0.678 | 38.284 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 8.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.595 | 29.121 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle



## TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioB_2039PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.89 | 8.83 | 5.89 |
| ARM B | 15.00 | 45.00 | 75.00 | 9.25 | 13.88 | 9.25 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.72 | 8.59 | 5.72 |
| ARM D | 15.00 | 45.00 | 75.00 | 10.29 | 15.43 | 10.29 |
| ARM E | 15.00 | 45.00 | 75.00 | 7.78 | 11.66 | 7.78 |

DEMAND SET TITLE: ScenarioB_2039PM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.418 | 0.000 | 0.348 | 0.234 |
| | | 0.0 | 197.0 | 0.0 | 164.0 | 110.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.162 | 0.000 | 0.000 | 0.384 | 0.454 |
| | | 120.0 | 0.0 | 0.0 | 284.0 | 336.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.380 | 0.063 | 0.000 | 0.004 | 0.552 |
| | | 174.0 | 29.0 | 0.0 | 2.0 | 253.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM D | 0.307 | 0.202 | 0.000 | 0.000 | 0.491 |
| | | 253.0 | 166.0 | 0.0 | 0.0 | 404.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.051 | 0.609 | 0.000 | 0.339 | 0.000 |
| | | 32.0 | 379.0 | 0.0 | 211.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | | |
| | ARM A | 5.89 | 19.51 | 0.302 | 2.0 | 0.0 | 0.4 | 6.3 | | 0.07 |
| | ARM B | 9.25 | 37.05 | 0.250 | 2.0 | 0.0 | 0.3 | 4.9 | | 0.04 |
| | ARM C | 5.72 | 27.28 | 0.210 | | 0.0 | 0.3 | 3.9 | | 0.05 |
| | ARM D | 10.29 | 30.39 | 0.339 | | 0.0 | 0.5 | 7.5 | | 0.05 |
| | ARM E | 7.78 | 23.31 | 0.334 | 2.0 | 0.0 | 0.5 | 7.3 | | 0.06 |
| 17.00-17.15 | | | | | | | | | | |
| | ARM A | 7.03 | 18.22 | 0.386 | 2.0 | 0.4 | 0.6 | 9.1 | | 0.09 |
| | ARM B | 11.05 | 36.21 | 0.305 | 2.0 | 0.3 | 0.4 | 6.5 | | 0.04 |
| | ARM C | 6.84 | 25.26 | 0.271 | | 0.3 | 0.4 | 5.5 | | 0.05 |
| | ARM D | 12.28 | 27.76 | 0.443 | | 0.5 | 0.8 | 11.6 | | 0.06 |
| | ARM E | 9.28 | 22.23 | 0.418 | 2.0 | 0.5 | 0.7 | 10.4 | | 0.08 |
| 17.15-17.30 | | | | | | | | | | |
| | ARM A | 8.61 | 16.21 | 0.531 | 3.0 | 0.6 | 1.1 | 16.0 | | 0.13 |
| | ARM B | 13.53 | 35.06 | 0.386 | 3.0 | 0.4 | 0.6 | 9.2 | | 0.05 |
| | ARM C | 8.37 | 22.52 | 0.372 | | 0.4 | 0.6 | 8.6 | | 0.07 |
| | ARM D | 15.05 | 21.62 | 0.696 | BB | 0.8 | 2.2 | 31.0 | | 0.15 |
| | ARM E | 11.37 | 20.74 | 0.548 | 3.0 | 0.7 | 1.2 | 17.3 | | 0.11 |
| 17.30-17.45 | | | | | | | | | | |
| | ARM A | 8.61 | 16.17 | 0.532 | 3.0 | 1.1 | 1.1 | 16.8 | | 0.13 |
| | ARM B | 13.53 | 35.04 | 0.386 | 3.0 | 0.6 | 0.6 | 9.4 | | 0.05 |
| | ARM C | 8.37 | 22.49 | 0.372 | | 0.6 | 0.6 | 8.8 | | 0.07 |
| | ARM D | 15.05 | 21.50 | 0.700 | BB | 2.2 | 2.3 | 33.9 | | 0.15 |
| | ARM E | 11.37 | 20.70 | 0.549 | 3.0 | 1.2 | 1.2 | 18.0 | | 0.11 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | | |
| | ARM A | 7.03 | 18.00 | 0.390 | 3.0 | 1.1 | 0.6 | 10.0 | | 0.09 |
| | ARM B | 11.05 | 36.17 | 0.305 | 3.0 | 0.6 | 0.4 | 6.7 | | 0.04 |
| | ARM C | 6.84 | 25.22 | 0.271 | | 0.6 | 0.4 | 5.7 | | 0.05 |
| | ARM D | 12.28 | 27.29 | 0.450 | | 2.3 | 0.8 | 12.8 | | 0.07 |
| | ARM E | 9.28 | 22.17 | 0.419 | 3.0 | 1.2 | 0.7 | 11.2 | | 0.08 |
| 18.00-18.15 | | | | | | | | | | |
| | ARM A | 5.89 | 19.47 | 0.302 | 2.0 | 0.6 | 0.4 | 6.7 | | 0.07 |
| | ARM B | 9.25 | 37.02 | 0.250 | 2.0 | 0.4 | 0.3 | 5.1 | | 0.04 |
| | ARM C | 5.72 | 27.23 | 0.210 | | 0.4 | 0.3 | 4.1 | | 0.05 |
| | ARM D | 10.29 | 30.34 | 0.339 | | 0.8 | 0.5 | 7.9 | | 0.05 |
| | ARM E | 7.78 | 23.28 | 0.334 | 2.0 | 0.7 | 0.5 | 7.7 | | 0.06 |

**WARNING** Entry capacities in certain time segments
(flagged BB in Queue and Delay Table) are restricted due
to traffic queueing to leave the junction on an adjacent arm

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.6 | * |
| 17.30 | 1.1 | * |
| 17.45 | 1.1 | * |
| 18.00 | 0.6 | * |
| 18.15 | 0.4 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.6 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.6 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | * |
| 17.15 | 0.8 | * |
| 17.30 | 2.2 | ** |
| 17.45 | 2.3 | ** |
| 18.00 | 0.8 | * |
| 18.15 | 0.5 | * |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | |
| 17.15 | 0.7 | * |
| 17.30 | 1.2 | * |
| 17.45 | 1.2 | * |
| 18.00 | 0.7 | * |
| 18.15 | 0.5 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 645.8 | 430.6 | 64.9 | 0.10 | 64.9 | 0.10 |
| B | 1014.7 | 676.5 | 41.8 | 0.04 | 41.8 | 0.04 |
| C | 628.0 | 418.7 | 36.6 | 0.06 | 36.6 | 0.06 |
| D | 1128.5 | 752.3 | 104.7 | 0.09 | 104.7 | 0.09 |
| E | 852.9 | 568.6 | 72.0 | 0.08 | 72.0 | 0.08 |
| ALL | 4270.0 | 2846.6 | 319.9 | 0.07 | 319.9 | 0.07 |

* 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

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

[Printed at 15:47:35 on 30/01/2019]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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Run with file:- "C:\Castletreasure\Jct1_Fingerpost_AM.vai" (drive-on-the-left ) at 11:08:14 on Wednesday, 30 January 2019

FILE PROPERTIES

RUN TITLE: Junction1_Fingerpost
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.50 | 0.00 | 10.00 | 55.00 | 31.0 | 0.705 | 40.677 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 7.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.580 | 27.727 |

V = approach half-width
E = entry width
L = effective flare length
R = entry radius
D = inscribed circle diameter
PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioC_2024_AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.45 | 8.17 | 5.45 |
| ARM B | 15.00 | 45.00 | 75.00 | 9.32 | 13.99 | 9.32 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.06 | 3.09 | 2.06 |
| ARM D | 15.00 | 45.00 | 75.00 | 6.40 | 9.60 | 6.40 |
| ARM E | 15.00 | 45.00 | 75.00 | 6.94 | 10.41 | 6.94 |

DEMAND SET TITLE: ScenarioC_2024_AM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.459 | 0.000 | 0.514 | 0.028 |
| | | 0.0 | 200.0 | 0.0 | 224.0 | 12.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.105 | 0.000 | 0.000 | 0.487 | 0.409 |
| | | 78.0 | 0.0 | 0.0 | 363.0 | 305.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.297 | 0.212 | 0.000 | 0.200 | 0.291 |
| | | 49.0 | 35.0 | 0.0 | 33.0 | 48.0 |
| | | ( 5.0) | ( 5.0) | ( 5.0) | ( 5.0) | ( 5.0) |
| | ARM D | 0.402 | 0.232 | 0.000 | 0.000 | 0.365 |
| | | 206.0 | 119.0 | 0.0 | 0.0 | 187.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM E | 0.029 | 0.391 | 0.000 | 0.580 | 0.000 |
| | | 16.0 | 217.0 | 0.0 | 322.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) |



PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | | |
| | ARM A | 5.45 | 20.13 | 0.271 | 2.0 | 0.0 | 0.4 | 5.4 | | 0.07 |
| | ARM B | 9.32 | 36.33 | 0.257 | 2.0 | 0.0 | 0.3 | 5.1 | | 0.04 |
| | ARM C | 2.06 | 27.66 | 0.075 | | 0.0 | 0.1 | 1.2 | | 0.04 |
| | ARM D | 6.40 | 34.95 | 0.183 | | 0.0 | 0.2 | 3.3 | | 0.03 |
| | ARM E | 6.94 | 23.41 | 0.296 | 2.0 | 0.0 | 0.4 | 6.1 | | 0.06 |
| 08.00-08.15 | | | | | | | | | | |
| | ARM A | 6.51 | 18.95 | 0.343 | 3.0 | 0.4 | 0.5 | 7.6 | | 0.08 |
| | ARM B | 11.13 | 35.34 | 0.315 | 3.0 | 0.3 | 0.5 | 6.8 | | 0.04 |
| | ARM C | 2.46 | 25.47 | 0.097 | | 0.1 | 0.1 | 1.6 | | 0.04 |
| | ARM D | 7.64 | 34.00 | 0.225 | | 0.2 | 0.3 | 4.3 | | 0.04 |
| | ARM E | 8.28 | 22.71 | 0.365 | 3.0 | 0.4 | 0.6 | 8.4 | | 0.07 |
| 08.15-08.30 | | | | | | | | | | |
| | ARM A | 7.97 | 17.43 | 0.457 | 3.0 | 0.5 | 0.8 | 12.1 | | 0.11 |
| | ARM B | 13.64 | 34.00 | 0.401 | 3.0 | 0.5 | 0.7 | 9.8 | | 0.05 |
| | ARM C | 3.02 | 22.50 | 0.134 | | 0.1 | 0.2 | 2.3 | | 0.05 |
| | ARM D | 9.36 | 32.65 | 0.287 | | 0.3 | 0.4 | 5.9 | | 0.04 |
| | ARM E | 10.15 | 21.77 | 0.466 | 3.0 | 0.6 | 0.9 | 12.6 | | 0.09 |
| 08.30-08.45 | | | | | | | | | | |
| | ARM A | 7.97 | 17.55 | 0.454 | 2.0 | 0.8 | 0.8 | 12.5 | | 0.10 |
| | ARM B | 13.64 | 33.99 | 0.401 | 2.0 | 0.7 | 0.7 | 10.0 | | 0.05 |
| | ARM C | 3.02 | 22.48 | 0.134 | | 0.2 | 0.2 | 2.3 | | 0.05 |
| | ARM D | 9.36 | 32.67 | 0.287 | | 0.4 | 0.4 | 6.0 | | 0.04 |
| | ARM E | 10.15 | 21.78 | 0.466 | 2.0 | 0.9 | 0.9 | 13.0 | | 0.09 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 6.51 | 19.11 | 0.341 | 2.0 | 0.8 | 0.5 | 8.0 | | 0.08 |
| ARM B | 11.13 | 35.32 | 0.315 | 1.0 | 0.7 | 0.5 | 7.0 | | 0.04 |
| ARM C | 2.46 | 25.44 | 0.097 | | 0.2 | 0.1 | 1.6 | | 0.04 |
| ARM D | 7.64 | 33.99 | 0.225 | | 0.4 | 0.3 | 4.4 | | 0.04 |
| ARM E | 8.28 | 22.72 | 0.365 | 2.0 | 0.9 | 0.6 | 8.9 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 5.45 | 20.16 | 0.270 | 1.0 | 0.5 | 0.4 | 5.7 | | 0.07 |
| ARM B | 9.32 | 36.30 | 0.257 | 1.0 | 0.5 | 0.3 | 5.3 | | 0.04 |
| ARM C | 2.06 | 27.61 | 0.075 | | 0.1 | 0.1 | 1.2 | | 0.04 |
| ARM D | 6.40 | 34.94 | 0.183 | | 0.3 | 0.2 | 3.4 | | 0.04 |
| ARM E | 6.94 | 23.41 | 0.296 | 1.0 | 0.6 | 0.4 | 6.5 | | 0.06 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.5 | * |
| 08.30 | 0.8 | * |
| 08.45 | 0.8 | * |
| 09.00 | 0.5 | * |
| 09.15 | 0.4 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.5 | |
| 08.30 | 0.7 | * |
| 08.45 | 0.7 | * |
| 09.00 | 0.5 | |
| 09.15 | 0.3 | |

QUEUE AT ARM C

| 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 AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.2 |
| 08.15 | 0.3 |
| 08.30 | 0.4 |
| 08.45 | 0.4 |
| 09.00 | 0.3 |
| 09.15 | 0.2 |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.6 | * |
| 08.30 | 0.9 | * |
| 08.45 | 0.9 | * |
| 09.00 | 0.6 | * |
| 09.15 | 0.4 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 597.8 | 398.6 | 51.3 | 0.09 | 51.3 | 0.09 |
| B | 1022.9 | 681.9 | 44.0 | 0.04 | 44.0 | 0.04 |
| C | 226.2 | 150.8 | 10.2 | 0.05 | 10.2 | 0.05 |
| D | 702.1 | 468.0 | 27.4 | 0.04 | 27.4 | 0.04 |
| E | 761.0 | 507.3 | 55.4 | 0.07 | 55.5 | 0.07 |
| ALL | 3310.1 | 2206.7 | 188.3 | 0.06 | 188.3 | 0.06 |

* 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

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

[Printed at 11:09:05 on 30/01/2019]

# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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RG40 3GA,UK



Run with file:- "C:\Castletreasure\Jct1_Fingerpost_PM.vai" (drive-on-the-left ) at 11:12:08 on Wednesday, 30 January 201

## FILE PROPERTIES

RUN TITLE: FingerPost Roundabout
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

## INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

### GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.00 | 0.00 | 10.00 | 55.00 | 31.0 | 0.678 | 38.284 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 8.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.595 | 29.121 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle



### TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioC_2024PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.10 | 6.15 | 4.10 |
| ARM B | 15.00 | 45.00 | 75.00 | 6.97 | 10.46 | 6.97 |
| ARM C | 15.00 | 45.00 | 75.00 | 6.40 | 9.60 | 6.40 |
| ARM D | 15.00 | 45.00 | 75.00 | 10.46 | 15.69 | 10.46 |
| ARM E | 15.00 | 45.00 | 75.00 | 7.05 | 10.58 | 7.05 |

DEMAND SET TITLE: ScenarioC_2024PM

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.381 | 0.000 | 0.558 | 0.061 |
| | | 0.0 | 125.0 | 0.0 | 183.0 | 20.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.192 | 0.000 | 0.000 | 0.367 | 0.441 |
| | | 107.0 | 0.0 | 0.0 | 205.0 | 246.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.395 | 0.229 | 0.000 | 0.086 | 0.291 |
| | | 202.0 | 117.0 | 0.0 | 44.0 | 149.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM D | 0.294 | 0.262 | 0.000 | 0.000 | 0.444 |
| | | 246.0 | 219.0 | 0.0 | 0.0 | 372.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.044 | 0.488 | 0.000 | 0.468 | 0.000 |
| | | 25.0 | 275.0 | 0.0 | 264.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | | |
| | ARM A | 4.10 | 18.97 | 0.216 | 2.0 | 0.0 | 0.3 | 4.0 | | 0.07 |
| | ARM B | 6.97 | 37.21 | 0.187 | 2.0 | 0.0 | 0.2 | 3.4 | | 0.03 |
| | ARM C | 6.40 | 28.95 | 0.221 | | 0.0 | 0.3 | 4.2 | | 0.04 |
| | ARM D | 10.46 | 32.43 | 0.323 | | 0.0 | 0.5 | 7.0 | | 0.05 |
| | ARM E | 7.05 | 22.20 | 0.318 | 2.0 | 0.0 | 0.5 | 6.8 | | 0.07 |
| 17.00-17.15 | | | | | | | | | | |
| | ARM A | 4.90 | 17.59 | 0.278 | 2.0 | 0.3 | 0.4 | 5.6 | | 0.08 |
| | ARM B | 8.33 | 36.40 | 0.229 | 2.0 | 0.2 | 0.3 | 4.4 | | 0.04 |
| | ARM C | 7.64 | 27.27 | 0.280 | | 0.3 | 0.4 | 5.7 | | 0.05 |
| | ARM D | 12.49 | 30.82 | 0.405 | | 0.5 | 0.7 | 10.0 | | 0.05 |
| | ARM E | 8.42 | 20.89 | 0.403 | 2.0 | 0.5 | 0.7 | 9.8 | | 0.08 |
| 17.15-17.30 | | | | | | | | | | |
| | ARM A | 6.00 | 15.50 | 0.387 | 3.0 | 0.4 | 0.6 | 9.1 | | 0.10 |
| | ARM B | 10.20 | 35.29 | 0.289 | 3.0 | 0.3 | 0.4 | 6.0 | | 0.04 |
| | ARM C | 9.36 | 24.97 | 0.375 | | 0.4 | 0.6 | 8.8 | | 0.06 |
| | ARM D | 15.30 | 28.20 | 0.543 | | 0.7 | 1.2 | 17.1 | | 0.08 |
| | ARM E | 10.31 | 19.09 | 0.540 | 3.0 | 0.7 | 1.2 | 16.7 | | 0.11 |
| 17.30-17.45 | | | | | | | | | | |
| | ARM A | 6.00 | 15.47 | 0.388 | 3.0 | 0.6 | 0.6 | 9.4 | | 0.11 |
| | ARM B | 10.20 | 35.27 | 0.289 | 3.0 | 0.4 | 0.4 | 6.1 | | 0.04 |
| | ARM C | 9.36 | 24.95 | 0.375 | | 0.6 | 0.6 | 9.0 | | 0.06 |
| | ARM D | 15.30 | 28.18 | 0.543 | | 1.2 | 1.2 | 17.7 | | 0.08 |
| | ARM E | 10.31 | 19.08 | 0.540 | 3.0 | 1.2 | 1.2 | 17.4 | | 0.11 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | | |
| | ARM A | 4.90 | 17.41 | 0.281 | 3.0 | 0.6 | 0.4 | 6.1 | | 0.08 |
| | ARM B | 8.33 | 36.36 | 0.229 | 3.0 | 0.4 | 0.3 | 4.5 | | 0.04 |
| | ARM C | 7.64 | 27.23 | 0.281 | | 0.6 | 0.4 | 6.0 | | 0.05 |
| | ARM D | 12.49 | 30.73 | 0.407 | | 1.2 | 0.7 | 10.6 | | 0.06 |
| | ARM E | 8.42 | 20.85 | 0.404 | 3.0 | 1.2 | 0.7 | 10.5 | | 0.08 |
| 18.00-18.15 | | | | | | | | | | |
| | ARM A | 4.10 | 18.93 | 0.217 | 2.0 | 0.4 | 0.3 | 4.2 | | 0.07 |
| | ARM B | 6.97 | 37.18 | 0.188 | 2.0 | 0.3 | 0.2 | 3.5 | | 0.03 |
| | ARM C | 6.40 | 28.92 | 0.221 | | 0.4 | 0.3 | 4.3 | | 0.04 |
| | ARM D | 10.46 | 32.40 | 0.323 | | 0.7 | 0.5 | 7.3 | | 0.05 |
| | ARM E | 7.05 | 22.17 | 0.318 | 2.0 | 0.7 | 0.5 | 7.2 | | 0.07 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.6 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.4 |
| 17.45 | 0.4 |
| 18.00 | 0.3 |
| 18.15 | 0.2 |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.6 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | |
| 17.15 | 0.7 | * |
| 17.30 | 1.2 | * |
| 17.45 | 1.2 | * |
| 18.00 | 0.7 | * |
| 18.15 | 0.5 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | |
| 17.15 | 0.7 | * |
| 17.30 | 1.2 | * |
| 17.45 | 1.2 | * |
| 18.00 | 0.7 | * |
| 18.15 | 0.5 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 449.8 | 299.8 | 38.4 | 0.09 | 38.4 | 0.09 |
| B | 765.1 | 510.1 | 27.9 | 0.04 | 27.9 | 0.04 |
| C | 702.1 | 468.0 | 37.9 | 0.05 | 37.9 | 0.05 |
| D | 1147.7 | 765.1 | 69.6 | 0.06 | 69.6 | 0.06 |
| E | 773.4 | 515.6 | 68.4 | 0.09 | 68.4 | 0.09 |
| ALL | 3838.0 | 2558.7 | 242.2 | 0.06 | 242.2 | 0.06 |

* 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

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

[Printed at 11:12:21 on 30/01/2019]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Web: www.trlsoftware.co.uk



Run with file:- "C:\Castletreasure\Jct1_Fingerpost.vai" (drive-on-the-left ) at 10:51:35 on Thursday, 25 October 2018

FILE PROPERTIES

RUN TITLE: Junction1_Fingerpost
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.50 | 0.00 | 10.00 | 55.00 | 31.0 | 0.705 | 40.677 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 7.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.580 | 27.727 |

V = approach half-width
E = entry width
L = effective flare length
R = entry radius
D = inscribed circle diameter
PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioC_2039_AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.76 | 8.64 | 5.76 |
| ARM B | 15.00 | 45.00 | 75.00 | 9.71 | 14.57 | 9.71 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.17 | 3.26 | 2.17 |
| ARM D | 15.00 | 45.00 | 75.00 | 6.79 | 10.18 | 6.79 |
| ARM E | 15.00 | 45.00 | 75.00 | 7.34 | 11.01 | 7.34 |

DEMAND SET TITLE: ScenarioC_2039_AM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.456 | 0.000 | 0.516 | 0.028 |
| | | 0.0 | 210.0 | 0.0 | 238.0 | 13.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.104 | 0.000 | 0.000 | 0.486 | 0.409 |
| | | 81.0 | 0.0 | 0.0 | 378.0 | 318.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.299 | 0.207 | 0.000 | 0.201 | 0.293 |
| | | 52.0 | 36.0 | 0.0 | 35.0 | 51.0 |
| | | ( 5.0) | ( 5.0) | ( 5.0) | ( 5.0) | ( 5.0) |
| | ARM D | 0.403 | 0.228 | 0.000 | 0.000 | 0.368 |
| | | 219.0 | 124.0 | 0.0 | 0.0 | 200.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM E | 0.029 | 0.387 | 0.000 | 0.584 | 0.000 |
| | | 17.0 | 227.0 | 0.0 | 343.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) |



PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME | ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | | |
| | ARM A | 5.76 | 19.85 | 0.290 | 2.0 | 0.0 | 0.4 | 5.9 | | 0.07 |
| | ARM B | 9.71 | 36.01 | 0.270 | 2.0 | 0.0 | 0.4 | 5.4 | | 0.04 |
| | ARM C | 2.17 | 27.09 | 0.080 | | 0.0 | 0.1 | 1.3 | | 0.04 |
| | ARM D | 6.79 | 34.73 | 0.195 | | 0.0 | 0.2 | 3.6 | | 0.04 |
| | ARM E | 7.34 | 23.23 | 0.316 | 2.0 | 0.0 | 0.5 | 6.7 | | 0.06 |
| 08.00-08.15 | | | | | | | | | | |
| | ARM A | 6.88 | 18.60 | 0.370 | 3.0 | 0.4 | 0.6 | 8.5 | | 0.09 |
| | ARM B | 11.60 | 34.95 | 0.332 | 3.0 | 0.4 | 0.5 | 7.3 | | 0.04 |
| | ARM C | 2.60 | 24.79 | 0.105 | | 0.1 | 0.1 | 1.7 | | 0.05 |
| | ARM D | 8.10 | 33.73 | 0.240 | | 0.2 | 0.3 | 4.7 | | 0.04 |
| | ARM E | 8.76 | 22.50 | 0.389 | 3.0 | 0.5 | 0.6 | 9.3 | | 0.07 |
| 08.15-08.30 | | | | | | | | | | |
| | ARM A | 8.43 | 17.00 | 0.496 | 3.0 | 0.6 | 1.0 | 14.0 | | 0.12 |
| | ARM B | 14.20 | 33.53 | 0.424 | 3.0 | 0.5 | 0.7 | 10.8 | | 0.05 |
| | ARM C | 3.18 | 21.67 | 0.147 | | 0.1 | 0.2 | 2.5 | | 0.05 |
| | ARM D | 9.93 | 32.29 | 0.307 | | 0.3 | 0.4 | 6.5 | | 0.04 |
| | ARM E | 10.73 | 21.51 | 0.499 | 3.0 | 0.6 | 1.0 | 14.3 | | 0.09 |
| 08.30-08.45 | | | | | | | | | | |
| | ARM A | 8.43 | 17.12 | 0.492 | 2.0 | 1.0 | 1.0 | 14.5 | | 0.12 |
| | ARM B | 14.20 | 33.52 | 0.424 | 2.0 | 0.7 | 0.7 | 11.0 | | 0.05 |
| | ARM C | 3.18 | 21.64 | 0.147 | | 0.2 | 0.2 | 2.6 | | 0.05 |
| | ARM D | 9.93 | 32.32 | 0.307 | | 0.4 | 0.4 | 6.6 | | 0.04 |
| | ARM E | 10.73 | 21.52 | 0.499 | 2.0 | 1.0 | 1.0 | 14.8 | | 0.09 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 6.88 | 18.77 | 0.367 | 2.0 | 1.0 | 0.6 | 9.0 | | 0.08 |
| ARM B | 11.60 | 34.93 | 0.332 | 1.0 | 0.7 | 0.5 | 7.6 | | 0.04 |
| ARM C | 2.60 | 24.75 | 0.105 | | 0.2 | 0.1 | 1.8 | | 0.05 |
| ARM D | 8.10 | 33.72 | 0.240 | | 0.4 | 0.3 | 4.8 | | 0.04 |
| ARM E | 8.76 | 22.51 | 0.389 | 2.0 | 1.0 | 0.6 | 9.9 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 5.76 | 19.88 | 0.290 | 1.0 | 0.6 | 0.4 | 6.3 | | 0.07 |
| ARM B | 9.71 | 35.98 | 0.270 | 1.0 | 0.5 | 0.4 | 5.6 | | 0.04 |
| ARM C | 2.17 | 27.03 | 0.080 | | 0.1 | 0.1 | 1.3 | | 0.04 |
| ARM D | 6.79 | 34.72 | 0.196 | | 0.3 | 0.2 | 3.7 | | 0.04 |
| ARM E | 7.34 | 23.23 | 0.316 | 1.0 | 0.6 | 0.5 | 7.1 | | 0.06 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.6 | * |
| 08.30 | 1.0 | * |
| 08.45 | 1.0 | * |
| 09.00 | 0.6 | * |
| 09.15 | 0.4 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.5 | |
| 08.30 | 0.7 | * |
| 08.45 | 0.7 | * |
| 09.00 | 0.5 | |
| 09.15 | 0.4 | |

QUEUE AT ARM C

| 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 AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.2 |
| 08.15 | 0.3 |
| 08.30 | 0.4 |
| 08.45 | 0.4 |
| 09.00 | 0.3 |
| 09.15 | 0.2 |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.5 | |
| 08.15 | 0.6 | * |
| 08.30 | 1.0 | * |
| 08.45 | 1.0 | * |
| 09.00 | 0.6 | * |
| 09.15 | 0.5 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 632.1 | 421.4 | 58.3 | 0.09 | 58.3 | 0.09 |
| B | 1065.4 | 710.3 | 47.7 | 0.04 | 47.7 | 0.04 |
| C | 238.6 | 159.1 | 11.2 | 0.05 | 11.2 | 0.05 |
| D | 744.6 | 496.4 | 29.9 | 0.04 | 29.9 | 0.04 |
| E | 804.9 | 536.6 | 62.1 | 0.08 | 62.1 | 0.08 |
| ALL | 3485.6 | 2323.7 | 209.3 | 0.06 | 209.3 | 0.06 |

* 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

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

[Printed at 10:51:49 on 25/10/2018]

# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Crowthorne House Fax: +44 (0) 1344 770864
Nine Mile Ride Email: softwarebureau@trl.co.uk
Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK



Run with file:- "C:\Castletreasure\Jct1_Fingerpost_PM.vai" (drive-on-the-left ) at 12:26:13 on Thursday, 25 October 2018

## FILE PROPERTIES

RUN TITLE: FingerPost Roundabout
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

## INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

## GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.00 | 0.00 | 10.00 | 55.00 | 31.0 | 0.678 | 38.284 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 8.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.595 | 29.121 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle



## TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioC_2039PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.35 | 6.52 | 4.35 |
| ARM B | 15.00 | 45.00 | 75.00 | 7.36 | 11.04 | 7.36 |
| ARM C | 15.00 | 45.00 | 75.00 | 6.81 | 10.22 | 6.81 |
| ARM D | 15.00 | 45.00 | 75.00 | 11.11 | 16.67 | 11.11 |
| ARM E | 15.00 | 45.00 | 75.00 | 7.47 | 11.21 | 7.47 |

DEMAND SET TITLE: ScenarioC_2039PM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.379 | 0.000 | 0.560 | 0.060 |
| | | 0.0 | 132.0 | 0.0 | 195.0 | 21.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.192 | 0.000 | 0.000 | 0.368 | 0.440 |
| | | 113.0 | 0.0 | 0.0 | 217.0 | 259.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.394 | 0.228 | 0.000 | 0.086 | 0.292 |
| | | 215.0 | 124.0 | 0.0 | 47.0 | 159.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM D | 0.295 | 0.260 | 0.000 | 0.000 | 0.445 |
| | | 262.0 | 231.0 | 0.0 | 0.0 | 396.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.043 | 0.487 | 0.000 | 0.470 | 0.000 |
| | | 26.0 | 291.0 | 0.0 | 281.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 4.35 | 18.56 | 0.234 | 2.0 | 0.0 | 0.3 | 4.5 | | 0.07 |
| ARM B | 7.36 | 36.95 | 0.199 | 2.0 | 0.0 | 0.2 | 3.7 | | 0.03 |
| ARM C | 6.81 | 28.44 | 0.240 | | 0.0 | 0.3 | 4.6 | | 0.05 |
| ARM D | 11.11 | 31.95 | 0.348 | | 0.0 | 0.5 | 7.8 | | 0.05 |
| ARM E | 7.47 | 21.79 | 0.343 | 2.0 | 0.0 | 0.5 | 7.6 | | 0.07 |
| 17.00-17.15 | | | | | | | | | |
| ARM A | 5.19 | 17.09 | 0.304 | 2.0 | 0.3 | 0.4 | 6.4 | | 0.08 |
| ARM B | 8.79 | 36.08 | 0.244 | 2.0 | 0.2 | 0.3 | 4.8 | | 0.04 |
| ARM C | 8.13 | 26.66 | 0.305 | | 0.3 | 0.4 | 6.5 | | 0.05 |
| ARM D | 13.27 | 30.20 | 0.439 | | 0.5 | 0.8 | 11.4 | | 0.06 |
| ARM E | 8.93 | 20.41 | 0.437 | 2.0 | 0.5 | 0.8 | 11.2 | | 0.09 |
| 17.15-17.30 | | | | | | | | | |
| ARM A | 6.36 | 14.88 | 0.428 | 3.0 | 0.4 | 0.7 | 10.7 | | 0.12 |
| ARM B | 10.77 | 34.91 | 0.308 | 3.0 | 0.3 | 0.4 | 6.6 | | 0.04 |
| ARM C | 9.96 | 24.22 | 0.411 | | 0.4 | 0.7 | 10.2 | | 0.07 |
| ARM D | 16.25 | 27.25 | 0.596 | | 0.8 | 1.5 | 21.0 | | 0.09 |
| ARM E | 10.93 | 18.50 | 0.591 | 3.0 | 0.8 | 1.4 | 20.2 | | 0.13 |
| 17.30-17.45 | | | | | | | | | |
| ARM A | 6.36 | 14.84 | 0.429 | 3.0 | 0.7 | 0.7 | 11.1 | | 0.12 |
| ARM B | 10.77 | 34.89 | 0.309 | 3.0 | 0.4 | 0.4 | 6.7 | | 0.04 |
| ARM C | 9.96 | 24.20 | 0.412 | | 0.7 | 0.7 | 10.4 | | 0.07 |
| ARM D | 16.25 | 27.23 | 0.597 | | 1.5 | 1.5 | 22.0 | | 0.09 |
| ARM E | 10.93 | 18.48 | 0.592 | 3.0 | 1.4 | 1.4 | 21.4 | | 0.13 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 5.19 | 16.89 | 0.308 | 3.0 | 0.7 | 0.4 | 6.9 | | 0.09 |
| ARM B | 8.79 | 36.04 | 0.244 | 3.0 | 0.4 | 0.3 | 4.9 | | 0.04 |
| ARM C | 8.13 | 26.62 | 0.306 | | 0.7 | 0.4 | 6.8 | | 0.05 |
| ARM D | 13.27 | 30.09 | 0.441 | | 1.5 | 0.8 | 12.2 | | 0.06 |
| ARM E | 8.93 | 20.37 | 0.438 | 3.0 | 1.4 | 0.8 | 12.2 | | 0.09 |
| 18.00-18.15 | | | | | | | | | |
| ARM A | 4.35 | 18.52 | 0.235 | 2.0 | 0.4 | 0.3 | 4.7 | | 0.07 |
| ARM B | 7.36 | 36.92 | 0.199 | 2.0 | 0.3 | 0.2 | 3.8 | | 0.03 |
| ARM C | 6.81 | 28.40 | 0.240 | | 0.4 | 0.3 | 4.8 | | 0.05 |
| ARM D | 11.11 | 31.92 | 0.348 | | 0.8 | 0.5 | 8.2 | | 0.05 |
| ARM E | 7.47 | 21.76 | 0.343 | 2.0 | 0.8 | 0.5 | 8.1 | | 0.07 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.7 | * |
| 17.45 | 0.7 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.4 |
| 17.45 | 0.4 |
| 18.00 | 0.3 |
| 18.15 | 0.2 |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.7 | * |
| 17.45 | 0.7 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | * |
| 17.15 | 0.8 | * |
| 17.30 | 1.5 | * |
| 17.45 | 1.5 | * |
| 18.00 | 0.8 | * |
| 18.15 | 0.5 | * |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | * |
| 17.15 | 0.8 | * |
| 17.30 | 1.4 | * |
| 17.45 | 1.4 | * |
| 18.00 | 0.8 | * |
| 18.15 | 0.5 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 477.2 | 318.1 | 44.2 | 0.09 | 44.2 | 0.09 |
| B | 807.6 | 538.4 | 30.4 | 0.04 | 30.4 | 0.04 |
| C | 747.3 | 498.2 | 43.2 | 0.06 | 43.2 | 0.06 |
| D | 1219.0 | 812.7 | 82.6 | 0.07 | 82.6 | 0.07 |
| E | 820.0 | 546.7 | 80.7 | 0.10 | 80.7 | 0.10 |
| ALL | 4071.1 | 2714.1 | 281.3 | 0.07 | 281.3 | 0.07 |

* 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

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

[Printed at 12:26:38 on 25/10/2018]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Run with file:- "C:\Castletreasure\Jct1_Fingerpost_AM.vai" (drive-on-the-left ) at 15:03:06 on Wednesday, 30 January 2019

FILE PROPERTIES

RUN TITLE: Junction1_Fingerpost
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.50 | 0.00 | 10.00 | 55.00 | 31.0 | 0.705 | 40.677 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 7.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.580 | 27.727 |

V = approach half-width
E = entry width
L = effective flare length
R = entry radius
D = inscribed circle diameter
PHI = entry angle

## TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioD_2024_AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK FLOW STOPS | NUMBER OF MINUTES FROM START WHEN FLOW STOPS BEFORE PEAK | NUMBER OF MINUTES FROM START WHEN FLOW STOPS AT TOP OF PEAK | NUMBER OF MINUTES FROM START WHEN FLOW STOPS AFTER PEAK | RATE OF FLOW (VEH/MIN) TO RISE | RATE OF FLOW (VEH/MIN) IS REACHED | RATE OF FLOW (VEH/MIN) FALLING AFTER PEAK |
|---|---|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.41 | 11.12 | 7.41 | | |
| ARM B | 15.00 | 45.00 | 75.00 | 8.63 | 12.94 | 8.63 | | |
| ARM C | 15.00 | 45.00 | 75.00 | 2.20 | 3.30 | 2.20 | | |
| ARM D | 15.00 | 45.00 | 75.00 | 6.45 | 9.67 | 6.45 | | |
| ARM E | 15.00 | 45.00 | 75.00 | 8.44 | 12.66 | 8.44 | | |

DEMAND SET TITLE: ScenarioD_2024_AM

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) / (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.371 | 0.000 | 0.536 | 0.093 |
| | | 0.0 | 220.0 | 0.0 | 318.0 | 55.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.139 | 0.000 | 0.000 | 0.471 | 0.390 |
| | | 96.0 | 0.0 | 0.0 | 325.0 | 269.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.170 | 0.136 | 0.000 | 0.028 | 0.665 |
| | | 30.0 | 24.0 | 0.0 | 5.0 | 117.0 |
| | | ( 8.0) | ( 8.0) | ( 8.0) | ( 8.0) | ( 8.0) |
| | ARM D | 0.362 | 0.246 | 0.000 | 0.000 | 0.391 |
| | | 187.0 | 127.0 | 0.0 | 0.0 | 202.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM E | 0.033 | 0.381 | 0.000 | 0.587 | 0.000 |
| | | 22.0 | 257.0 | 0.0 | 396.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) |



## PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME / ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 7.41 | 19.30 | 0.384 | 2.0 | 0.0 | 0.6 | 9.0 | | 0.08 |
| ARM B | 8.63 | 34.45 | 0.250 | 2.0 | 0.0 | 0.3 | 4.9 | | 0.04 |
| ARM C | 2.20 | 25.60 | 0.086 | | 0.0 | 0.1 | 1.4 | | 0.04 |
| ARM D | 6.45 | 34.31 | 0.188 | | 0.0 | 0.2 | 3.4 | | 0.04 |
| ARM E | 8.44 | 23.58 | 0.358 | 2.0 | 0.0 | 0.6 | 8.1 | | 0.07 |
| 08.00-08.15 | | | | | | | | | |
| ARM A | 8.85 | 17.95 | 0.493 | 3.0 | 0.6 | 1.0 | 13.9 | | 0.11 |
| ARM B | 10.30 | 33.09 | 0.311 | 3.0 | 0.3 | 0.5 | 6.7 | | 0.04 |
| ARM C | 2.63 | 23.22 | 0.113 | | 0.1 | 0.1 | 1.9 | | 0.05 |
| ARM D | 7.70 | 33.19 | 0.232 | | 0.2 | 0.3 | 4.5 | | 0.04 |
| ARM E | 10.08 | 22.90 | 0.440 | 3.0 | 0.6 | 0.8 | 11.4 | | 0.08 |
| 08.15-08.30 | | | | | | | | | |
| ARM A | 10.84 | 16.19 | 0.669 | 3.0 | 1.0 | 2.0 | 27.4 | | 0.18 |
| ARM B | 12.61 | 31.26 | 0.403 | 3.0 | 0.5 | 0.7 | 9.9 | | 0.05 |
| ARM C | 3.22 | 20.00 | 0.161 | | 0.1 | 0.2 | 2.8 | | 0.06 |
| ARM D | 9.43 | 31.56 | 0.299 | | 0.3 | 0.4 | 6.3 | | 0.05 |
| ARM E | 12.34 | 22.01 | 0.561 | 3.0 | 0.8 | 1.3 | 18.2 | | 0.10 |
| 08.30-08.45 | | | | | | | | | |
| ARM A | 10.84 | 16.32 | 0.664 | 2.0 | 2.0 | 2.0 | 29.4 | | 0.18 |
| ARM B | 12.61 | 31.22 | 0.404 | 2.0 | 0.7 | 0.7 | 10.1 | | 0.05 |
| ARM C | 3.22 | 19.95 | 0.161 | | 0.2 | 0.2 | 2.9 | | 0.06 |
| ARM D | 9.43 | 31.61 | 0.298 | | 0.4 | 0.4 | 6.4 | | 0.05 |
| ARM E | 12.34 | 22.02 | 0.560 | 2.0 | 1.3 | 1.3 | 18.9 | | 0.10 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 8.85 | 18.11 | 0.489 | 2.0 | 2.0 | 1.0 | 15.2 | | 0.11 |
| ARM B | 10.30 | 33.03 | 0.312 | 1.0 | 0.7 | 0.5 | 6.9 | | 0.04 |
| ARM C | 2.63 | 23.15 | 0.113 | | 0.2 | 0.1 | 2.0 | | 0.05 |
| ARM D | 7.70 | 33.19 | 0.232 | | 0.4 | 0.3 | 4.6 | | 0.04 |
| ARM E | 10.08 | 22.91 | 0.440 | 2.0 | 1.3 | 0.8 | 12.2 | | 0.08 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 7.41 | 19.33 | 0.383 | 1.0 | 1.0 | 0.6 | 9.7 | | 0.08 |
| ARM B | 8.63 | 34.40 | 0.251 | 1.0 | 0.5 | 0.3 | 5.1 | | 0.04 |
| ARM C | 2.20 | 25.53 | 0.086 | | 0.1 | 0.1 | 1.4 | | 0.04 |
| ARM D | 6.45 | 34.29 | 0.188 | | 0.3 | 0.2 | 3.5 | | 0.04 |
| ARM E | 8.44 | 23.57 | 0.358 | 1.0 | 0.8 | 0.6 | 8.6 | | 0.07 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.6 | * |
| 08.15 | 1.0 | * |
| 08.30 | 2.0 | ** |
| 08.45 | 2.0 | ** |
| 09.00 | 1.0 | * |
| 09.15 | 0.6 | * |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.5 | |
| 08.30 | 0.7 | * |
| 08.45 | 0.7 | * |
| 09.00 | 0.5 | |
| 09.15 | 0.3 | |

QUEUE AT ARM C

| 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 AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.2 |
| 08.15 | 0.3 |
| 08.30 | 0.4 |
| 08.45 | 0.4 |
| 09.00 | 0.3 |
| 09.15 | 0.2 |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.6 | * |
| 08.15 | 0.8 | * |
| 08.30 | 1.3 | * |
| 08.45 | 1.3 | * |
| 09.00 | 0.8 | * |
| 09.15 | 0.6 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 813.1 | 542.1 | 104.5 | 0.13 | 104.5 | 0.13 |
| B | 946.1 | 630.8 | 43.6 | 0.05 | 43.6 | 0.05 |
| C | 241.3 | 160.9 | 12.3 | 0.05 | 12.3 | 0.05 |
| D | 707.5 | 471.7 | 28.7 | 0.04 | 28.7 | 0.04 |
| E | 925.6 | 617.0 | 77.4 | 0.08 | 77.4 | 0.08 |
| ALL | 3633.7 | 2422.5 | 266.5 | 0.07 | 266.5 | 0.07 |

* 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

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

[Printed at 15:03:20 on 30/01/2019]

# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Run with file:- "C:\Castletreasure\Jct1_Fingerpost_PM.vai" (drive-on-the-left ) at 15:23:43 on Wednesday, 30 January 201

FILE PROPERTIES
**********

RUN TITLE: FingerPost Roundabout
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA
**********
ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

GEOMETRIC DATA
---

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.00 | 0.00 | 10.00 | 55.00 | 31.0 | 0.678 | 38.284 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 8.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.595 | 29.121 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle



TRAFFIC DEMAND DATA
---

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioD_2024PM

| ARM | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.71 | 8.57 | 5.71 |
| ARM B | 15.00 | 45.00 | 75.00 | 8.66 | 12.99 | 8.66 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.57 | 8.36 | 5.57 |
| ARM D | 15.00 | 45.00 | 75.00 | 9.73 | 14.59 | 9.73 |
| ARM E | 15.00 | 45.00 | 75.00 | 6.96 | 10.44 | 6.96 |

DEMAND SET TITLE: ScenarioD_2024PM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.396 | 0.000 | 0.376 | 0.228 |
| | | 0.0 | 181.0 | 0.0 | 172.0 | 104.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.172 | 0.000 | 0.000 | 0.284 | 0.544 |
| | | 119.0 | 0.0 | 0.0 | 197.0 | 377.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.379 | 0.070 | 0.000 | 0.004 | 0.547 |
| | | 169.0 | 31.0 | 0.0 | 2.0 | 244.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM D | 0.344 | 0.215 | 0.000 | 0.000 | 0.441 |
| | | 268.0 | 167.0 | 0.0 | 0.0 | 343.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.048 | 0.601 | 0.000 | 0.350 | 0.000 |
| | | 27.0 | 335.0 | 0.0 | 195.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | | | |
| ARM A | | 5.71 | 19.98 | 0.286 | 2.0 | | 0.0 | 0.4 | 5.8 | | 0.07 |
| ARM B | | 8.66 | 37.17 | 0.233 | 2.0 | | 0.0 | 0.3 | 4.5 | | 0.04 |
| ARM C | | 5.57 | 27.79 | 0.201 | | | 0.0 | 0.3 | 3.7 | | 0.04 |
| ARM D | | 9.73 | 30.28 | 0.321 | | | 0.0 | 0.5 | 6.9 | | 0.05 |
| ARM E | | 6.96 | 23.22 | 0.300 | 2.0 | | 0.0 | 0.4 | 6.2 | | 0.06 |
| 17.00-17.15 | | | | | | | | | | | |
| ARM A | | 6.82 | 18.79 | 0.363 | 2.0 | | 0.4 | 0.6 | 8.3 | | 0.08 |
| ARM B | | 10.34 | 36.36 | 0.285 | 2.0 | | 0.3 | 0.4 | 5.9 | | 0.04 |
| ARM C | | 6.66 | 25.87 | 0.257 | | | 0.3 | 0.3 | 5.1 | | 0.05 |
| ARM D | | 11.61 | 27.76 | 0.418 | | | 0.5 | 0.7 | 10.5 | | 0.06 |
| ARM E | | 8.31 | 22.12 | 0.376 | 2.0 | | 0.4 | 0.6 | 8.8 | | 0.07 |
| 17.15-17.30 | | | | | | | | | | | |
| ARM A | | 8.35 | 16.95 | 0.493 | 3.0 | | 0.6 | 1.0 | 13.8 | | 0.12 |
| ARM B | | 12.67 | 35.24 | 0.359 | 3.0 | | 0.4 | 0.6 | 8.3 | | 0.04 |
| ARM C | | 8.15 | 23.26 | 0.350 | | | 0.3 | 0.5 | 7.9 | | 0.07 |
| ARM D | | 14.22 | 22.22 | 0.640 | | BB | 0.7 | 1.7 | 24.7 | | 0.12 |
| ARM E | | 10.18 | 20.60 | 0.494 | 3.0 | | 0.6 | 1.0 | 14.0 | | 0.10 |
| 17.30-17.45 | | | | | | | | | | | |
| ARM A | | 8.35 | 16.92 | 0.494 | 3.0 | | 1.0 | 1.0 | 14.5 | | 0.12 |
| ARM B | | 12.67 | 35.22 | 0.360 | 3.0 | | 0.6 | 0.6 | 8.4 | | 0.04 |
| ARM C | | 8.15 | 23.24 | 0.351 | | | 0.5 | 0.5 | 8.1 | | 0.07 |
| ARM D | | 14.22 | 22.15 | 0.642 | | BB | 1.7 | 1.8 | 26.4 | | 0.13 |
| ARM E | | 10.18 | 20.57 | 0.495 | 3.0 | | 1.0 | 1.0 | 14.6 | | 0.10 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 6.82 | 18.61 | 0.367 | 3.0 | 1.0 | 0.6 | 9.0 | | 0.09 |
| ARM B | 10.34 | 36.32 | 0.285 | 3.0 | 0.6 | 0.4 | 6.1 | | 0.04 |
| ARM C | 6.66 | 25.84 | 0.258 | | 0.5 | 0.3 | 5.3 | | 0.05 |
| ARM D | 11.61 | 27.38 | 0.424 | | 1.8 | 0.7 | 11.5 | | 0.06 |
| ARM E | 8.31 | 22.07 | 0.377 | 3.0 | 1.0 | 0.6 | 9.4 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| ARM A | 5.71 | 19.95 | 0.286 | 2.0 | 0.6 | 0.4 | 6.2 | | 0.07 |
| ARM B | 8.66 | 37.15 | 0.233 | 2.0 | 0.4 | 0.3 | 4.6 | | 0.04 |
| ARM C | 5.57 | 27.75 | 0.201 | | 0.3 | 0.3 | 3.8 | | 0.05 |
| ARM D | 9.73 | 30.23 | 0.322 | | 0.7 | 0.5 | 7.3 | | 0.05 |
| ARM E | 6.96 | 23.20 | 0.300 | 2.0 | 0.6 | 0.4 | 6.6 | | 0.06 |

**WARNING** Entry capacities in certain time segments
(flagged BB in Queue and Delay Table) are restricted due
to traffic queueing to leave the junction on an adjacent arm

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.6 | * |
| 17.30 | 1.0 | * |
| 17.45 | 1.0 | * |
| 18.00 | 0.6 | * |
| 18.15 | 0.4 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.6 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.3 | |
| 17.30 | 0.5 | * |
| 17.45 | 0.5 | * |
| 18.00 | 0.3 | |
| 18.15 | 0.3 | |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | |
| 17.15 | 0.7 | * |
| 17.30 | 1.7 | ** |
| 17.45 | 1.8 | ** |
| 18.00 | 0.7 | * |
| 18.15 | 0.5 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.6 | * |
| 17.30 | 1.0 | * |
| 17.45 | 1.0 | * |
| 18.00 | 0.6 | * |
| 18.15 | 0.4 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 626.6 | 417.8 | 57.6 | 0.09 | 57.6 | 0.09 |
| B | 950.2 | 633.5 | 37.7 | 0.04 | 37.7 | 0.04 |
| C | 611.6 | 407.7 | 33.9 | 0.06 | 33.9 | 0.06 |
| D | 1066.8 | 711.2 | 87.3 | 0.08 | 87.3 | 0.08 |
| E | 763.8 | 509.2 | 59.6 | 0.08 | 59.6 | 0.08 |
| ALL | 4019.0 | 2679.3 | 276.0 | 0.07 | 276.0 | 0.07 |

* 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

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

[Printed at 15:24:02 on 30/01/2019]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Run with file:- "C:\Castletreasure\Jct1_Fingerpost_AM.vai" (drive-on-the-left ) at 15:44:18 on Wednesday, 30 January 2019

FILE PROPERTIES

RUN TITLE: Junction1_Fingerpost
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.50 | 0.00 | 10.00 | 55.00 | 31.0 | 0.705 | 40.677 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 7.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.580 | 27.727 |

V = approach half-width
E = entry width
L = effective flare length
R = entry radius
D = inscribed circle diameter
PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioD_2039_AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.71 | 10.07 | 6.71 |
| ARM B | 15.00 | 45.00 | 75.00 | 9.38 | 14.06 | 9.38 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.04 | 3.06 | 2.04 |
| ARM D | 15.00 | 45.00 | 75.00 | 8.81 | 13.22 | 8.81 |
| ARM E | 15.00 | 45.00 | 75.00 | 9.23 | 13.84 | 9.23 |

DEMAND SET TITLE: ScenarioD_2039_AM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.309 | 0.000 | 0.616 | 0.074 |
| | | 0.0 | 166.0 | 0.0 | 331.0 | 40.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.159 | 0.000 | 0.000 | 0.424 | 0.417 |
| | | 119.0 | 0.0 | 0.0 | 318.0 | 313.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.135 | 0.123 | 0.000 | 0.018 | 0.724 |
| | | 22.0 | 20.0 | 0.0 | 3.0 | 118.0 |
| | | ( 8.0) | ( 8.0) | ( 8.0) | ( 8.0) | ( 8.0) |
| | ARM D | 0.380 | 0.247 | 0.000 | 0.000 | 0.373 |
| | | 268.0 | 174.0 | 0.0 | 0.0 | 263.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM E | 0.035 | 0.369 | 0.000 | 0.596 | 0.000 |
| | | 26.0 | 272.0 | 0.0 | 440.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) | ( 3.0) |



PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 6.71 | 18.62 | 0.360 | 2.0 | 0.0 | 0.6 | 8.1 | | 0.08 |
| ARM B | 9.38 | 34.08 | 0.275 | 2.0 | 0.0 | 0.4 | 5.6 | | 0.04 |
| ARM C | 2.04 | 24.76 | 0.082 | | 0.0 | 0.1 | 1.3 | | 0.04 |
| ARM D | 8.81 | 33.92 | 0.260 | | 0.0 | 0.3 | 5.2 | | 0.04 |
| ARM E | 9.23 | 22.59 | 0.408 | 2.0 | 0.0 | 0.7 | 10.0 | | 0.07 |
| 08.00-08.15 | | | | | | | | | |
| ARM A | 8.02 | 17.14 | 0.468 | 3.0 | 0.6 | 0.9 | 12.6 | | 0.11 |
| ARM B | 11.19 | 32.64 | 0.343 | 3.0 | 0.4 | 0.5 | 7.7 | | 0.05 |
| ARM C | 2.43 | 22.22 | 0.110 | | 0.1 | 0.1 | 1.8 | | 0.05 |
| ARM D | 10.52 | 32.66 | 0.322 | | 0.3 | 0.5 | 7.0 | | 0.05 |
| ARM E | 11.02 | 21.72 | 0.507 | 3.0 | 0.7 | 1.0 | 14.8 | | 0.09 |
| 08.15-08.30 | | | | | | | | | |
| ARM A | 9.82 | 15.23 | 0.644 | 3.0 | 0.9 | 1.8 | 24.7 | | 0.18 |
| ARM B | 13.71 | 30.72 | 0.446 | 3.0 | 0.5 | 0.8 | 11.8 | | 0.06 |
| ARM C | 2.98 | 18.78 | 0.159 | | 0.1 | 0.2 | 2.8 | | 0.06 |
| ARM D | 12.89 | 30.72 | 0.420 | | 0.5 | 0.7 | 10.6 | | 0.06 |
| ARM E | 13.49 | 20.57 | 0.656 | 3.0 | 1.0 | 1.9 | 26.4 | | 0.14 |
| 08.30-08.45 | | | | | | | | | |
| ARM A | 9.82 | 15.34 | 0.640 | 2.0 | 1.8 | 1.8 | 26.4 | | 0.18 |
| ARM B | 13.71 | 30.67 | 0.447 | 2.0 | 0.8 | 0.8 | 12.1 | | 0.06 |
| ARM C | 2.98 | 18.71 | 0.159 | | 0.2 | 0.2 | 2.8 | | 0.06 |
| ARM D | 12.89 | 30.84 | 0.418 | | 0.7 | 0.7 | 10.8 | | 0.06 |
| ARM E | 13.49 | 20.57 | 0.656 | 2.0 | 1.9 | 1.9 | 28.1 | | 0.14 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 8.02 | 17.28 | 0.464 | 2.0 | 1.8 | 0.9 | 13.7 | | 0.11 |
| ARM B | 11.19 | 32.57 | 0.344 | 1.0 | 0.8 | 0.5 | 8.0 | | 0.05 |
| ARM C | 2.43 | 22.13 | 0.110 | | 0.2 | 0.1 | 1.9 | | 0.05 |
| ARM D | 10.52 | 32.68 | 0.322 | | 0.7 | 0.5 | 7.3 | | 0.05 |
| ARM E | 11.02 | 21.73 | 0.507 | 2.0 | 1.9 | 1.0 | 16.2 | | 0.09 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 6.71 | 18.64 | 0.360 | 1.0 | 0.9 | 0.6 | 8.7 | | 0.08 |
| ARM B | 9.38 | 34.02 | 0.276 | 1.0 | 0.5 | 0.4 | 5.8 | | 0.04 |
| ARM C | 2.04 | 24.68 | 0.083 | | 0.1 | 0.1 | 1.4 | | 0.04 |
| ARM D | 8.81 | 33.91 | 0.260 | | 0.5 | 0.4 | 5.4 | | 0.04 |
| ARM E | 9.23 | 22.58 | 0.409 | 1.0 | 1.0 | 0.7 | 10.7 | | 0.08 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.6 | * |
| 08.15 | 0.9 | * |
| 08.30 | 1.8 | ** |
| 08.45 | 1.8 | ** |
| 09.00 | 0.9 | * |
| 09.15 | 0.6 | * |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.5 | * |
| 08.30 | 0.8 | * |
| 08.45 | 0.8 | * |
| 09.00 | 0.5 | * |
| 09.15 | 0.4 | |

QUEUE AT ARM C

| 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 AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.5 | |
| 08.30 | 0.7 | * |
| 08.45 | 0.7 | * |
| 09.00 | 0.5 | |
| 09.15 | 0.4 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.7 | * |
| 08.15 | 1.0 | * |
| 08.30 | 1.9 | ** |
| 08.45 | 1.9 | ** |
| 09.00 | 1.0 | * |
| 09.15 | 0.7 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 736.3 | 490.9 | 94.2 | 0.13 | 94.2 | 0.13 |
| B | 1028.4 | 685.6 | 50.9 | 0.05 | 50.9 | 0.05 |
| C | 223.5 | 149.0 | 12.0 | 0.05 | 12.0 | 0.05 |
| D | 966.7 | 644.5 | 46.1 | 0.05 | 46.1 | 0.05 |
| E | 1012.0 | 674.6 | 106.1 | 0.10 | 106.1 | 0.10 |
| ALL | 3966.9 | 2644.6 | 309.3 | 0.08 | 309.3 | 0.08 |

* 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

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

[Printed at 15:44:34 on 30/01/2019]

# A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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Run with file:- "C:\Castletreasure\Jct1_Fingerpost_PM.vai" (drive-on-the-left ) at 15:51:16 on Wednesday, 30 January 201

## FILE PROPERTIES

RUN TITLE: FingerPost Roundabout
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

## INPUT DATA

ARM A - Maryborough Hill
ARM B - R609 Carrigaline Road
ARM C - East Douglas Street
ARM D - R610 Douglas Relief Road
ARM E - R610 Rochestwon Road

### GEOMETRIC DATA

ARM A HAS A ZEBRA CROSSING

ARM B HAS A ZEBRA CROSSING

ARM E HAS A ZEBRA CROSSING

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 12.00 | 12.00 | 55.00 | 32.0 | 0.545 | 25.757 |
| ARM B | 7.00 | 9.00 | 0.00 | 11.00 | 55.00 | 42.0 | 0.708 | 41.739 |
| ARM C | 7.00 | 8.00 | 0.00 | 10.00 | 55.00 | 31.0 | 0.678 | 38.284 |
| ARM D | 7.00 | 8.00 | 0.00 | 16.00 | 55.00 | 26.0 | 0.717 | 40.467 |
| ARM E | 3.50 | 8.00 | 14.00 | 18.00 | 55.00 | 26.0 | 0.595 | 29.121 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle



### TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioD_2039PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.18 | 9.26 | 6.18 |
| ARM B | 15.00 | 45.00 | 75.00 | 10.14 | 15.21 | 10.14 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.76 | 8.64 | 5.76 |
| ARM D | 15.00 | 45.00 | 75.00 | 10.52 | 15.79 | 10.52 |
| ARM E | 15.00 | 45.00 | 75.00 | 8.31 | 12.47 | 8.31 |

DEMAND SET TITLE: ScenarioD_2039PM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.445 | 0.000 | 0.332 | 0.223 |
| | | 0.0 | 220.0 | 0.0 | 164.0 | 110.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.163 | 0.000 | 0.000 | 0.383 | 0.454 |
| | | 132.0 | 0.0 | 0.0 | 311.0 | 368.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.377 | 0.069 | 0.000 | 0.004 | 0.549 |
| | | 174.0 | 32.0 | 0.0 | 2.0 | 253.0 |
| | | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) | ( 2.0) |
| | ARM D | 0.300 | 0.220 | 0.000 | 0.000 | 0.480 |
| | | 253.0 | 185.0 | 0.0 | 0.0 | 404.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.048 | 0.635 | 0.000 | 0.317 | 0.000 |
| | | 32.0 | 422.0 | 0.0 | 211.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

PEDESTRIAN CROSSING DATA

PEDESTRIAN CROSSING FLOW:

ARM A: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM B: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.
ARM E: PEDESTRIAN FLOWS ARE INPUT DIRECTLY.

ZEBRA CROSSINGS

| ARM | LENGTH OF CROSSING (M) (ENTRY) | (EXIT) | QUEUEING SPACE BETWEEN CROSSING AND JUNCTION ENTRY (VEHS) | QUEUEING SPACE WITHOUT BLOCKING BACK INTO JUNCTION (VEHS) |
|---|---|---|---|---|
| A | 12.50 | | 6.0 | 6.0 |
| B | 14.00 | | 6.0 | 3.0 |
| E | 8.00 | | 4.0 | 3.0 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | | | |
| ARM A | | 6.18 | 18.93 | 0.326 | | 2.0 | 0.0 | 0.5 | 7.0 | | 0.08 |
| ARM B | | 10.14 | 37.05 | 0.274 | | 2.0 | 0.0 | 0.4 | 5.5 | | 0.04 |
| ARM C | | 5.76 | 26.69 | 0.216 | | | 0.0 | 0.3 | 4.0 | | 0.05 |
| ARM D | | 10.52 | 29.89 | 0.352 | | | 0.0 | 0.5 | 7.9 | | 0.05 |
| ARM E | | 8.31 | 23.06 | 0.361 | | 2.0 | 0.0 | 0.6 | 8.2 | | 0.07 |
| 17.00-17.15 | | | | | | | | | | | |
| ARM A | | 7.37 | 17.50 | 0.421 | | 2.0 | 0.5 | 0.7 | 10.5 | | 0.10 |
| ARM B | | 12.11 | 36.21 | 0.334 | | 2.0 | 0.4 | 0.5 | 7.4 | | 0.04 |
| ARM C | | 6.88 | 24.55 | 0.280 | | | 0.3 | 0.4 | 5.7 | | 0.06 |
| ARM D | | 12.57 | 27.05 | 0.465 | | | 0.5 | 0.9 | 12.6 | | 0.07 |
| ARM E | | 9.93 | 21.92 | 0.453 | | 2.0 | 0.6 | 0.8 | 12.0 | | 0.08 |
| 17.15-17.30 | | | | | | | | | | | |
| ARM A | | 9.03 | 15.27 | 0.591 | BB | 3.0 | 0.7 | 1.4 | 20.0 | | 0.16 |
| ARM B | | 14.83 | 35.07 | 0.423 | | 3.0 | 0.5 | 0.7 | 10.7 | | 0.05 |
| ARM C | | 8.43 | 21.65 | 0.389 | | | 0.4 | 0.6 | 9.3 | | 0.08 |
| ARM D | | 15.39 | 20.25 | 0.760 | BB | | 0.9 | 3.0 | 40.9 | | 0.19 |
| ARM E | | 12.16 | 20.38 | 0.596 | | 3.0 | 0.8 | 1.4 | 20.8 | | 0.12 |
| 17.30-17.45 | | | | | | | | | | | |
| ARM A | | 9.03 | 15.22 | 0.593 | BB | 3.0 | 1.4 | 1.4 | 21.4 | | 0.16 |
| ARM B | | 14.83 | 35.04 | 0.423 | | 3.0 | 0.7 | 0.7 | 10.9 | | 0.05 |
| ARM C | | 8.43 | 21.62 | 0.390 | | | 0.6 | 0.6 | 9.5 | | 0.08 |
| ARM D | | 15.39 | 20.08 | 0.767 | BB | | 3.0 | 3.2 | 46.7 | | 0.21 |
| ARM E | | 12.16 | 20.33 | 0.598 | | 3.0 | 1.4 | 1.5 | 21.9 | | 0.12 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | | | |
| ARM A | | 7.37 | 17.23 | 0.428 | | 3.0 | 1.4 | 0.8 | 11.8 | | 0.10 |
| ARM B | | 12.11 | 36.16 | 0.335 | | 3.0 | 0.7 | 0.5 | 7.7 | | 0.04 |
| ARM C | | 6.88 | 24.50 | 0.281 | | | 0.6 | 0.4 | 6.0 | | 0.06 |
| ARM D | | 12.57 | 26.49 | 0.475 | | | 3.2 | 0.9 | 14.4 | | 0.07 |
| ARM E | | 9.93 | 21.85 | 0.454 | | 3.0 | 1.5 | 0.8 | 13.0 | | 0.08 |
| 18.00-18.15 | | | | | | | | | | | |
| ARM A | | 6.18 | 18.88 | 0.327 | | 2.0 | 0.8 | 0.5 | 7.5 | | 0.08 |
| ARM B | | 10.14 | 37.02 | 0.274 | | 2.0 | 0.5 | 0.4 | 5.7 | | 0.04 |
| ARM C | | 5.76 | 26.63 | 0.216 | | | 0.4 | 0.3 | 4.2 | | 0.05 |
| ARM D | | 10.52 | 29.83 | 0.353 | | | 0.9 | 0.5 | 8.4 | | 0.05 |
| ARM E | | 8.31 | 23.03 | 0.361 | | 2.0 | 0.8 | 0.6 | 8.7 | | 0.07 |

**WARNING** Entry capacities in certain time segments
(flagged BB in Queue and Delay Table) are restricted due
to traffic queueing to leave the junction on an adjacent arm

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | |
| 17.15 | 0.7 | * |
| 17.30 | 1.4 | * |
| 17.45 | 1.4 | * |
| 18.00 | 0.8 | * |
| 18.15 | 0.5 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.5 | * |
| 17.30 | 0.7 | * |
| 17.45 | 0.7 | * |
| 18.00 | 0.5 | * |
| 18.15 | 0.4 | |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.6 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | * |
| 17.15 | 0.9 | * |
| 17.30 | 3.0 | *** |
| 17.45 | 3.2 | *** |
| 18.00 | 0.9 | * |
| 18.15 | 0.5 | * |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.6 | * |
| 17.15 | 0.8 | * |
| 17.30 | 1.4 | * |
| 17.45 | 1.5 | * |
| 18.00 | 0.8 | * |
| 18.15 | 0.6 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 677.4 | 451.6 | 78.3 | 0.12 | 78.3 | 0.12 |
| B | 1112.1 | 741.4 | 48.1 | 0.04 | 48.1 | 0.04 |
| C | 632.1 | 421.4 | 38.7 | 0.06 | 38.8 | 0.06 |
| D | 1154.6 | 769.7 | 130.9 | 0.11 | 130.9 | 0.11 |
| E | 911.9 | 607.9 | 84.6 | 0.09 | 84.6 | 0.09 |
| ALL | 4488.0 | 2992.0 | 380.6 | 0.08 | 380.6 | 0.08 |

* 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

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

[Printed at 15:51:35 on 30/01/2019]



OSCADY 5

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039AM.voi" at 12:18:22 on Thursday, 7 February 2019

FILE PROPERTIES

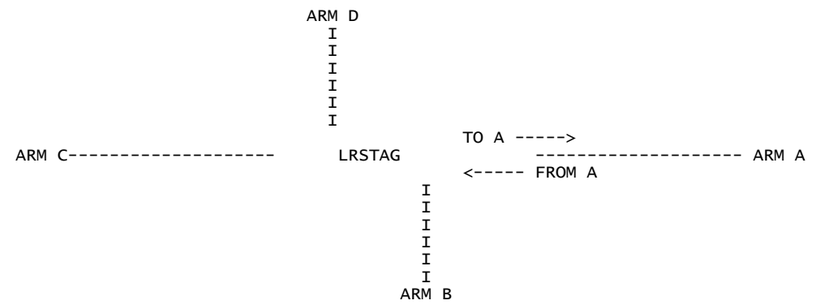
RUN TITLE: Junction2
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

**** ERROR AND WARNING MESSAGES ****

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS

INPUT DATA




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel

GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT<br>RIGHT | | STRAIGHT<br>LEFT | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 07.45 TO 09.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 08.00 TO 09.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioA_2024AM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|
| ARM A | 0.0 | 37.0 | 366.0 | 15.0 |
| ARM B | 133.0 | 0.0 | 56.0 | 1.0 |
| ARM C | 308.0 | 61.0 | 0.0 | 31.0 |
| ARM D | 11.0 | 0.0 | 12.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS<br>CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 08.00-09.00 | A | 0.970 | 0.000 | 0.030 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 0.910 | 0.000 | 0.090 | 0.000 | 0.000 | 0.000 |



DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 08.00 | 08.30 | 09.00 | 45.46 | 68.19 | 45.46 |
| | B | 08.00 | 08.30 | 09.00 | 8.98 | 13.46 | 8.98 |
| | C | 08.00 | 08.30 | 09.00 | 34.25 | 51.38 | 34.25 |
| | D | 08.00 | 08.30 | 09.00 | 0.88 | 1.31 | 0.88 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|---|
| LANES ON GREEN: | ARM A | 1 | | | | |
| | B | | | 1 | | |
| | C | 1 | 1 | | | |
| | D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| | A | 1 | L S R | 6.24 | 1619.9 | 25.99 | 22.8 | | 8.46 |
| | B | 1 | L S R | 2.84 | 1696.9 | 27.92 | 10.2 | | 4.07 |
| | C | 1 | L S R | 5.97 | 1231.8 | 20.27 | 32.8 | 41.6 | 12.06 |
| | D | 1 | L S R | 0.34 | 1502.3 | 22.42 | 6.5 | | 2.08 |
| 08.15-08.30 | | | | | | | | | |
| | A | 1 | L S R | 7.64 | 1613.7 | 25.89 | 23.1 | | 8.55 |
| | B | 1 | L S R | 3.47 | 1696.9 | 27.92 | 9.9 | | 3.94 |
| | C | 1 | L S R | 7.31 | 1139.4 | 18.75 | 33.1 | 42.0 | 11.24 |
| | D | 1 | L S R | 0.42 | 1502.3 | 22.42 | 6.5 | | 2.08 |
| 08.30-08.45 | | | | | | | | | |
| | A | 1 | L S R | 7.64 | 1613.7 | 25.89 | 23.1 | | 8.55 |
| | B | 1 | L S R | 3.47 | 1696.9 | 27.92 | 9.9 | | 3.94 |
| | C | 1 | L S R | 7.31 | 1139.4 | 18.75 | 33.1 | 42.0 | 11.24 |
| | D | 1 | L S R | 0.42 | 1502.3 | 22.42 | 6.5 | | 2.08 |
| 08.45-09.00 | | | | | | | | | |
| | A | 1 | L S R | 6.24 | 1619.9 | 25.99 | 22.8 | | 8.46 |
| | B | 1 | L S R | 2.84 | 1696.9 | 27.92 | 10.2 | | 4.07 |
| | C | 1 | L S R | 5.97 | 1231.8 | 20.27 | 32.8 | 41.6 | 12.06 |
| | D | 1 | L S R | 0.34 | 1502.3 | 22.42 | 6.5 | | 2.08 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME SEGMENT | ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT: MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT: MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | | |
| | A | 1 | L S R | 6.24 | 8.46 | 0.738 | 3.4 | 6.1 | 49.4 | |
| | B | 1 | L S R | 2.84 | 4.07 | 0.696 | 2.2 | 3.7 | 32.3 | |
| | C | 1 | L S R | 5.97 | 12.06 | 0.495 | 1.6 | 4.0 | 23.5 | |
| | D | 1 | L S R | 0.34 | 2.08 | 0.165 | 0.2 | 0.4 | 2.8 | |
| 08.15-08.30 | | | | | | | | | | |
| | A | 1 | L S R | 7.64 | 8.55 | 0.894 | 6.3 | 9.4 | 91.1 | |
| | B | 1 | L S R | 3.47 | 3.94 | 0.880 | 4.3 | 6.1 | 61.7 | |
| | C | 1 | L S R | 7.31 | 11.24 | 0.651 | 2.4 | 5.2 | 36.3 | |
| | D | 1 | L S R | 0.42 | 2.08 | 0.202 | 0.2 | 0.5 | 3.5 | |
| 08.30-08.45 | | | | | | | | | | |
| | A | 1 | L S R | 7.64 | 8.55 | 0.894 | 6.7 | 9.8 | 103.6 | |
| | B | 1 | L S R | 3.47 | 3.94 | 0.880 | 4.8 | 6.5 | 73.6 | |
| | C | 1 | L S R | 7.31 | 11.24 | 0.651 | 2.4 | 5.2 | 36.6 | |
| | D | 1 | L S R | 0.42 | 2.08 | 0.202 | 0.2 | 0.5 | 3.5 | |
| 08.45-09.00 | | | | | | | | | | |
| | A | 1 | L S R | 6.24 | 8.46 | 0.738 | 3.5 | 6.2 | 56.5 | |
| | B | 1 | L S R | 2.84 | 4.07 | 0.696 | 2.4 | 3.9 | 40.5 | |
| | C | 1 | L S R | 5.97 | 12.06 | 0.495 | 1.6 | 4.0 | 23.7 | |
| | D | 1 | L S R | 0.34 | 2.08 | 0.165 | 0.2 | 0.4 | 2.8 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 3.4 | 6.1 | ***+++ |
| 08.30 | 1 | 6.3 | 9.4 | ******+++ |
| 08.45 | 1 | 6.7 | 9.8 | *******+++ |
| 09.00 | 1 | 3.5 | 6.2 | ****++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 2.2 | 3.7 | **++ |
| 08.30 | 1 | 4.3 | 6.1 | ****++ |
| 08.45 | 1 | 4.8 | 6.5 | *****++ |
| 09.00 | 1 | 2.4 | 3.9 | **++ |



QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 1.6 | 4.0 | **++ |
| 08.30 | 1 | 2.4 | 5.2 | **+++ |
| 08.45 | 1 | 2.4 | 5.2 | **+++ |
| 09.00 | 1 | 1.6 | 4.0 | **++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 08.15 | 1 | 0.2 | 0.4 |
| 08.30 | 1 | 0.2 | 0.5 |
| 08.45 | 1 | 0.2 | 0.5 |
| 09.00 | 1 | 0.2 | 0.4 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (08.00-09.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | TOTAL DEMAND (EXCL 2-WHEEL) (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 36.9 | 36.9 | 26.6 | 0.72 | 26.7 | 0.72 |
| A-C | 364.6 | 364.6 | 263.1 | 0.72 | 263.7 | 0.72 |
| A-D | 14.9 | 14.9 | 10.8 | 0.72 | 10.8 | 0.72 |
| B-C | 55.8 | 55.8 | 61.4 | 1.10 | 61.6 | 1.10 |
| B-D | 1.0 | 1.0 | 1.1 | 1.10 | 1.1 | 1.10 |
| B-A | 132.5 | 132.5 | 145.7 | 1.10 | 146.2 | 1.10 |
| C-D | 30.9 | 30.9 | 9.3 | 0.30 | 9.3 | 0.30 |
| C-A | 306.8 | 306.8 | 92.4 | 0.30 | 92.5 | 0.30 |
| C-B | 60.8 | 60.8 | 18.3 | 0.30 | 18.3 | 0.30 |
| D-A | 11.0 | 11.0 | 6.1 | 0.55 | 6.1 | 0.55 |
| D-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-C | 12.0 | 12.0 | 6.6 | 0.55 | 6.6 | 0.55 |
| ALL | 1027.1 | 1027.1 | 641.4 | 0.62 | 642.9 | 0.63 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed

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

[Printed at 12:18:34 on 07/02/2019]

OSCADY 5

Analysis Program: Release 2.0 (Oct 2003)



For sales and distribution information,
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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039PM.voi" at 16:53:36 on Wednesday, 30 January 2019

## FILE PROPERTIES

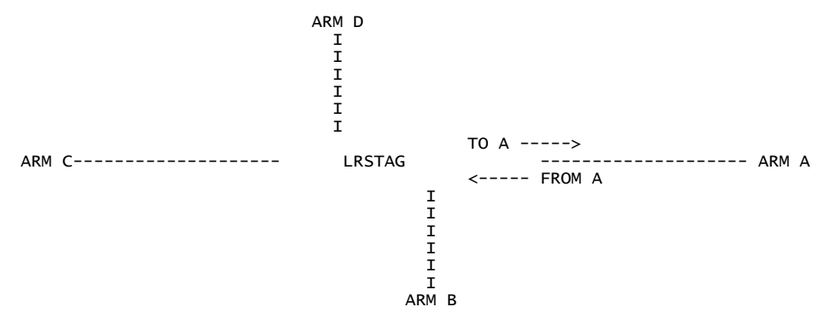
RUN TITLE: Junction2
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

## **** ERROR AND WARNING MESSAGES ****

No errors or warnings in the data.

## TRAFFIC SIGNAL JUNCTION ANALYSIS

### INPUT DATA




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel



### GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT | STRAIGHT | STRAIGHT<br>LEFT | |
| | | RIGHT | | | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

### TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 16.45 TO 18.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 17.00 TO 18.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioA_2024PM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|
| ARM A | 0.0 | 45.0 | 281.0 | 20.0 |
| ARM B | 61.0 | 0.0 | 25.0 | 4.0 |
| ARM C | 464.0 | 105.0 | 0.0 | 69.0 |
| ARM D | 37.0 | 1.0 | 26.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS: CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 17.00-18.00 | A | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 17.00 | 17.30 | 18.00 | 13.47 | 20.21 | 13.47 |
| | B | 17.00 | 17.30 | 18.00 | 3.51 | 5.27 | 3.51 |
| | C | 17.00 | 17.30 | 18.00 | 24.61 | 36.92 | 24.61 |
| | D | 17.00 | 17.30 | 18.00 | 2.46 | 3.69 | 2.46 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|
| LANES ON GREEN: ARM A | 1 | | | | |
| B | | | 1 | | |
| C | 1 | 1 | | | |
| D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | |
| A | 1 | L S R | 5.16 | 1551.7 | 25.53 | 26.5 | | 9.66 |
| B | 1 | L S R | 1.34 | 1692.3 | 27.84 | 6.5 | | 2.59 |
| C | 1 | L S R | 9.52 | 1344.8 | 22.13 | 36.5 | 45.4 | 14.34 |
| D | 1 | L S R | 0.96 | 1488.5 | 24.81 | 6.5 | | 2.30 |
| 17.15-17.30 | | | | | | | | |
| A | 1 | L S R | 6.33 | 1539.0 | 25.32 | 26.5 | | 9.59 |
| B | 1 | L S R | 1.65 | 1692.3 | 27.84 | 6.5 | | 2.59 |
| C | 1 | L S R | 11.66 | 1272.2 | 20.93 | 36.5 | 45.4 | 13.56 |
| D | 1 | L S R | 1.17 | 1488.5 | 24.81 | 6.5 | | 2.30 |
| 17.30-17.45 | | | | | | | | |
| A | 1 | L S R | 6.33 | 1539.0 | 25.32 | 26.5 | | 9.59 |
| B | 1 | L S R | 1.65 | 1692.3 | 27.84 | 6.5 | | 2.59 |
| C | 1 | L S R | 11.66 | 1272.2 | 20.93 | 36.5 | 45.4 | 13.56 |
| D | 1 | L S R | 1.17 | 1488.5 | 24.81 | 6.5 | | 2.30 |
| 17.45-18.00 | | | | | | | | |
| A | 1 | L S R | 5.16 | 1551.7 | 25.53 | 26.5 | | 9.66 |
| B | 1 | L S R | 1.34 | 1692.3 | 27.84 | 6.5 | | 2.59 |
| C | 1 | L S R | 9.52 | 1344.8 | 22.13 | 36.5 | 45.4 | 14.34 |
| D | 1 | L S R | 0.96 | 1488.5 | 24.81 | 6.5 | | 2.30 |



QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| A | 1 | L S R | 5.16 | 9.66 | 0.534 | 1.8 | 4.1 | 27.2 | |
| B | 1 | L S R | 1.34 | 2.59 | 0.520 | 1.0 | 1.7 | 14.8 | |
| C | 1 | L S R | 9.52 | 14.34 | 0.664 | 2.7 | 6.1 | 40.5 | |
| D | 1 | L S R | 0.96 | 2.30 | 0.415 | 0.6 | 1.2 | 9.6 | |
| 17.15-17.30 | | | | | | | | | |
| A | 1 | L S R | 6.33 | 9.59 | 0.660 | 2.6 | 5.3 | 39.7 | |
| B | 1 | L S R | 1.65 | 2.59 | 0.636 | 1.5 | 2.4 | 21.8 | |
| C | 1 | L S R | 11.66 | 13.56 | 0.860 | 5.6 | 9.3 | 82.5 | |
| D | 1 | L S R | 1.17 | 2.30 | 0.508 | 0.9 | 1.5 | 13.4 | |
| 17.30-17.45 | | | | | | | | | |
| A | 1 | L S R | 6.33 | 9.59 | 0.660 | 2.7 | 5.3 | 40.0 | |
| B | 1 | L S R | 1.65 | 2.59 | 0.636 | 1.5 | 2.4 | 22.5 | |
| C | 1 | L S R | 11.66 | 13.56 | 0.860 | 5.8 | 9.5 | 88.7 | |
| D | 1 | L S R | 1.17 | 2.30 | 0.508 | 0.9 | 1.5 | 13.5 | |
| 17.45-18.00 | | | | | | | | | |
| A | 1 | L S R | 5.16 | 9.66 | 0.534 | 1.8 | 4.1 | 27.6 | |
| B | 1 | L S R | 1.34 | 2.59 | 0.520 | 1.0 | 1.8 | 15.7 | |
| C | 1 | L S R | 9.52 | 14.34 | 0.664 | 2.8 | 6.1 | 42.5 | |
| D | 1 | L S R | 0.96 | 2.30 | 0.415 | 0.7 | 1.2 | 9.9 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 1.8 | 4.1 | **++ |
| 17.30 | 1 | 2.6 | 5.3 | ***++ |
| 17.45 | 1 | 2.7 | 5.3 | ***++ |
| 18.00 | 1 | 1.8 | 4.1 | **++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 1.0 | 1.7 | *+ |
| 17.30 | 1 | 1.5 | 2.4 | *+ |
| 17.45 | 1 | 1.5 | 2.4 | *+ |
| 18.00 | 1 | 1.0 | 1.8 | *+ |

QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 2.7 | 6.1 | ***+++ |
| 17.30 | 1 | 5.6 | 9.3 | ******+++ |
| 17.45 | 1 | 5.8 | 9.5 | ******+++ |
| 18.00 | 1 | 2.8 | 6.1 | ***+++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 0.6 | 1.2 | * |
| 17.30 | 1 | 0.9 | 1.5 | *+ |
| 17.45 | 1 | 0.9 | 1.5 | *+ |
| 18.00 | 1 | 0.7 | 1.2 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (17.00-18.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | (VEH/H) | * QUEUEING * DELAY * (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 44.8 | 44.8 | 17.5 | 0.39 | 17.5 | 0.39 |
| A-C | 279.9 | 279.9 | 109.2 | 0.39 | 109.3 | 0.39 |
| A-D | 19.9 | 19.9 | 7.8 | 0.39 | 7.8 | 0.39 |
| B-C | 24.9 | 24.9 | 20.7 | 0.83 | 20.8 | 0.84 |
| B-D | 4.0 | 4.0 | 3.3 | 0.83 | 3.3 | 0.84 |
| B-A | 60.8 | 60.8 | 50.6 | 0.83 | 50.7 | 0.84 |
| C-D | 68.7 | 68.7 | 27.5 | 0.40 | 27.5 | 0.40 |
| C-A | 462.2 | 462.2 | 184.9 | 0.40 | 185.1 | 0.40 |
| C-B | 104.6 | 104.6 | 41.8 | 0.40 | 41.9 | 0.40 |
| D-A | 36.9 | 36.9 | 26.9 | 0.73 | 26.9 | 0.73 |
| D-B | 1.0 | 1.0 | 0.7 | 0.73 | 0.7 | 0.73 |
| D-C | 25.9 | 25.9 | 18.9 | 0.73 | 18.9 | 0.73 |
| ALL | 1133.7 | 1133.7 | 509.7 | 0.45 | 510.5 | 0.45 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed
========== end of file ==========

[Printed at 16:54:00 on 30/01/2019]



_____ O S C A D Y 5 _____

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039AM.voi" at 16:39:51 on Wednesday, 25 July 2018

FILE PROPERTIES

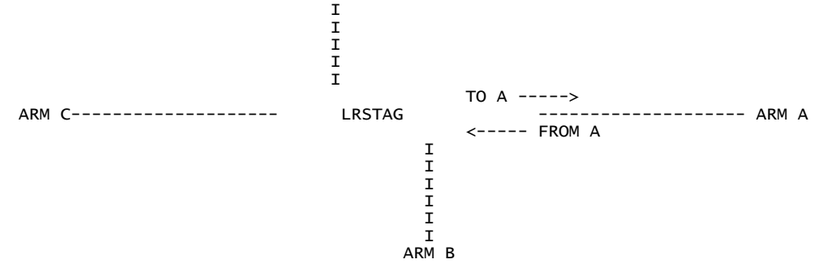
RUN TITLE: ScenarioA_2039AM
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

**** ERROR AND WARNING MESSAGES ****

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS

INPUT DATA




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel

GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT<br>RIGHT | | STRAIGHT<br>LEFT | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 07.45 TO 09.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 08.00 TO 09.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioA_2039AM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|
| ARM A | 0.0 | 38.0 | 387.0 | 16.0 |
| ARM B | 141.0 | 0.0 | 60.0 | 1.0 |
| ARM C | 327.0 | 65.0 | 0.0 | 33.0 |
| ARM D | 12.0 | 0.0 | 12.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS<br>CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 08.00-09.00 | A | 0.970 | 0.000 | 0.030 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 0.910 | 0.000 | 0.090 | 0.000 | 0.000 | 0.000 |



DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 08.00 | 08.30 | 09.00 | 5.51 | 8.27 | 5.51 |
| | B | 08.00 | 08.30 | 09.00 | 2.53 | 3.79 | 2.53 |
| | C | 08.00 | 08.30 | 09.00 | 5.31 | 7.97 | 5.31 |
| | D | 08.00 | 08.30 | 09.00 | 0.30 | 0.45 | 0.30 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|---|
| LANES ON GREEN: | ARM A | 1 | | | | |
| | B | | | 1 | | |
| | C | 1 | 1 | | | |
| | D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| | A | 1 | L S R | 6.58 | 1618.0 | 25.95 | 22.7 | | 8.42 |
| | B | 1 | L S R | 3.02 | 1696.5 | 27.91 | 10.3 | | 4.10 |
| | C | 1 | L S R | 6.34 | 1205.6 | 19.84 | 32.7 | 41.6 | 11.78 |
| | D | 1 | L S R | 0.36 | 1499.7 | 22.38 | 6.5 | | 2.08 |
| 08.15-08.30 | | | | | | | | | |
| | A | 1 | L S R | 8.06 | 1611.2 | 25.85 | 23.2 | | 8.56 |
| | B | 1 | L S R | 3.69 | 1696.5 | 27.91 | 9.8 | | 3.92 |
| | C | 1 | L S R | 7.77 | 1112.0 | 18.29 | 33.2 | 42.0 | 10.98 |
| | D | 1 | L S R | 0.44 | 1499.7 | 22.38 | 6.5 | | 2.08 |
| 08.30-08.45 | | | | | | | | | |
| | A | 1 | L S R | 8.06 | 1611.2 | 25.85 | 23.2 | | 8.56 |
| | B | 1 | L S R | 3.69 | 1696.5 | 27.91 | 9.8 | | 3.92 |
| | C | 1 | L S R | 7.77 | 1112.0 | 18.29 | 33.2 | 42.0 | 10.98 |
| | D | 1 | L S R | 0.44 | 1499.7 | 22.38 | 6.5 | | 2.08 |
| 08.45-09.00 | | | | | | | | | |
| | A | 1 | L S R | 6.58 | 1618.0 | 25.95 | 22.7 | | 8.42 |
| | B | 1 | L S R | 3.02 | 1696.5 | 27.91 | 10.3 | | 4.10 |
| | C | 1 | L S R | 6.34 | 1205.6 | 19.84 | 32.7 | 41.6 | 11.78 |
| | D | 1 | L S R | 0.36 | 1499.7 | 22.38 | 6.5 | | 2.08 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME SEGMENT ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| A | 1 | L S R | 6.58 | 8.42 | 0.782 | 3.9 | 6.7 | 56.7 | |
| B | 1 | L S R | 3.02 | 4.10 | 0.735 | 2.5 | 4.1 | 36.5 | |
| C | 1 | L S R | 6.34 | 11.78 | 0.539 | 1.8 | 4.3 | 26.6 | |
| D | 1 | L S R | 0.36 | 2.08 | 0.172 | 0.2 | 0.4 | 2.9 | |
| 08.15-08.30 | | | | | | | | | |
| A | 1 | L S R | 8.06 | 8.56 | 0.942 | 8.2 | 11.4 | 114.5 | |
| B | 1 | L S R | 3.69 | 3.92 | 0.942 | 5.7 | 7.6 | 77.7 | |
| C | 1 | L S R | 7.77 | 10.98 | 0.707 | 2.9 | 5.8 | 43.0 | |
| D | 1 | L S R | 0.44 | 2.08 | 0.211 | 0.2 | 0.5 | 3.7 | |
| 08.30-08.45 | | | | | | | | | |
| A | 1 | L S R | 8.06 | 8.56 | 0.942 | 9.3 | 12.5 | 143.2 | |
| B | 1 | L S R | 3.69 | 3.92 | 0.942 | 6.8 | 8.7 | 103.3 | |
| C | 1 | L S R | 7.77 | 10.98 | 0.707 | 2.9 | 5.8 | 43.7 | |
| D | 1 | L S R | 0.44 | 2.08 | 0.211 | 0.2 | 0.5 | 3.7 | |
| 08.45-09.00 | | | | | | | | | |
| A | 1 | L S R | 6.58 | 8.42 | 0.782 | 4.2 | 7.0 | 74.5 | |
| B | 1 | L S R | 3.02 | 4.10 | 0.735 | 2.8 | 4.4 | 55.8 | |
| C | 1 | L S R | 6.34 | 11.78 | 0.539 | 1.8 | 4.3 | 26.9 | |
| D | 1 | L S R | 0.36 | 2.08 | 0.172 | 0.2 | 0.4 | 2.9 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 3.9 | 6.7 | ****+++ |
| 08.30 | 1 | 8.2 | 11.4 | ********+++ |
| 08.45 | 1 | 9.3 | 12.5 | *********++++ |
| 09.00 | 1 | 4.2 | 7.0 | ****+++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 2.5 | 4.1 | ***+ |
| 08.30 | 1 | 5.7 | 7.6 | ******++ |
| 08.45 | 1 | 6.8 | 8.7 | *******++ |
| 09.00 | 1 | 2.8 | 4.4 | ***+ |



QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 1.8 | 4.3 | **++ |
| 08.30 | 1 | 2.9 | 5.8 | ***+++ |
| 08.45 | 1 | 2.9 | 5.8 | ***+++ |
| 09.00 | 1 | 1.8 | 4.3 | **++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 08.15 | 1 | 0.2 | 0.4 |
| 08.30 | 1 | 0.2 | 0.5 |
| 08.45 | 1 | 0.2 | 0.5 |
| 09.00 | 1 | 0.2 | 0.4 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (08.00-09.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | TOTAL DEMAND (EXCL 2-WHEEL) (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 37.9 | 37.9 | 33.5 | 0.89 | 33.6 | 0.89 |
| A-C | 385.5 | 385.5 | 341.4 | 0.89 | 342.3 | 0.89 |
| A-D | 15.9 | 15.9 | 14.1 | 0.89 | 14.2 | 0.89 |
| B-C | 59.8 | 59.8 | 81.2 | 1.36 | 81.5 | 1.36 |
| B-D | 1.0 | 1.0 | 1.4 | 1.36 | 1.4 | 1.36 |
| B-A | 140.5 | 140.5 | 190.7 | 1.36 | 191.4 | 1.36 |
| C-D | 32.9 | 32.9 | 10.9 | 0.33 | 10.9 | 0.33 |
| C-A | 325.8 | 325.8 | 107.8 | 0.33 | 107.9 | 0.33 |
| C-B | 64.8 | 64.8 | 21.4 | 0.33 | 21.5 | 0.33 |
| D-A | 12.0 | 12.0 | 6.7 | 0.56 | 6.7 | 0.56 |
| D-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-C | 12.0 | 12.0 | 6.7 | 0.56 | 6.7 | 0.56 |
| ALL | 1087.9 | 1087.9 | 815.7 | 0.75 | 817.9 | 0.75 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed

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

[Printed at 16:40:04 on 25/07/2018]

_____ O S C A D Y 5 _____

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039PM.voi" at 16:43:30 on Wednesday, 25 July 2018

FILE PROPERTIES
**********

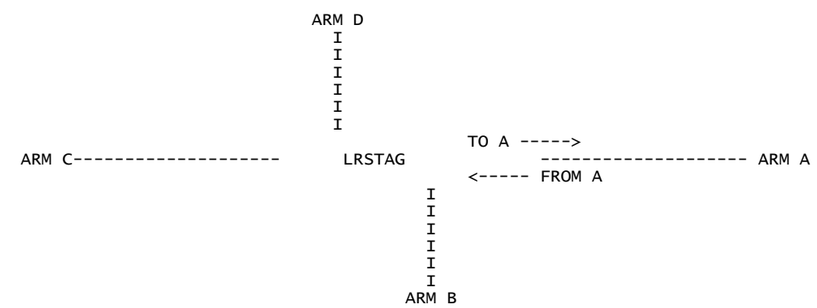
RUN TITLE: ScenarioA_2039PM
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

**** ERROR AND WARNING MESSAGES ****
==========

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS
**********

INPUT DATA
---




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel



GEOMETRIC DATA
---

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT RIGHT | STRAIGHT | STRAIGHT LEFT | STRAIGHT |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

TRAFFIC DEMAND DATA
---

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 16.45 TO 18.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 17.00 TO 18.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioA_2039PM

| TOTAL TRAFFIC DEMAND (VEHICLES / HOUR) | | | | |
|---|---|---|---|---|
| FROM/TO | ARM A | ARM B | ARM C | ARM D |
| ARM A | 0.0 | 48.0 | 299.0 | 21.0 |
| ARM B | 65.0 | 0.0 | 26.0 | 4.0 |
| ARM C | 494.0 | 112.0 | 0.0 | 73.0 |
| ARM D | 40.0 | 1.0 | 27.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS | | | | | |
|---|---|---|---|---|---|---|---|
| | | CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
| 17.00-18.00 | A | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 17.00 | 17.30 | 18.00 | 4.60 | 6.90 | 4.60 |
| | B | 17.00 | 17.30 | 18.00 | 1.19 | 1.78 | 1.19 |
| | C | 17.00 | 17.30 | 18.00 | 8.49 | 12.73 | 8.49 |
| | D | 17.00 | 17.30 | 18.00 | 0.85 | 1.28 | 0.85 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|---|
| LANES ON GREEN: | ARM A | 1 | | | | |
| | B | | | 1 | | |
| | C | 1 | 1 | | | |
| | D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | |
| A | 1 | L S R | 5.49 | 1549.4 | 25.49 | 26.5 | | 9.65 |
| B | 1 | L S R | 1.42 | 1693.6 | 27.87 | 6.5 | | 2.59 |
| C | 1 | L S R | 10.13 | 1323.9 | 21.78 | 36.5 | 45.4 | 14.11 |
| D | 1 | L S R | 1.01 | 1487.4 | 24.79 | 6.5 | | 2.30 |
| 17.15-17.30 | | | | | | | | |
| A | 1 | L S R | 6.73 | 1536.2 | 25.27 | 26.5 | | 9.57 |
| B | 1 | L S R | 1.74 | 1693.6 | 27.87 | 6.5 | | 2.59 |
| C | 1 | L S R | 12.41 | 1245.6 | 20.49 | 36.5 | 45.4 | 13.28 |
| D | 1 | L S R | 1.24 | 1487.4 | 24.79 | 6.5 | | 2.30 |
| 17.30-17.45 | | | | | | | | |
| A | 1 | L S R | 6.73 | 1536.2 | 25.27 | 26.5 | | 9.57 |
| B | 1 | L S R | 1.74 | 1693.6 | 27.87 | 6.5 | | 2.59 |
| C | 1 | L S R | 12.41 | 1245.6 | 20.49 | 36.5 | 45.4 | 13.28 |
| D | 1 | L S R | 1.24 | 1487.4 | 24.79 | 6.5 | | 2.30 |
| 17.45-18.00 | | | | | | | | |
| A | 1 | L S R | 5.49 | 1549.4 | 25.49 | 26.5 | | 9.65 |
| B | 1 | L S R | 1.42 | 1693.6 | 27.87 | 6.5 | | 2.59 |
| C | 1 | L S R | 10.13 | 1323.9 | 21.78 | 36.5 | 45.4 | 14.11 |
| D | 1 | L S R | 1.01 | 1487.4 | 24.79 | 6.5 | | 2.30 |



QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| A | 1 | L S R | 5.49 | 9.65 | 0.569 | 2.0 | 4.4 | 30.2 | |
| B | 1 | L S R | 1.42 | 2.59 | 0.548 | 1.1 | 1.9 | 16.1 | |
| C | 1 | L S R | 10.13 | 14.11 | 0.718 | 3.2 | 6.7 | 48.0 | |
| D | 1 | L S R | 1.01 | 2.30 | 0.441 | 0.7 | 1.3 | 10.5 | |
| 17.15-17.30 | | | | | | | | | |
| A | 1 | L S R | 6.73 | 9.57 | 0.703 | 3.0 | 5.8 | 45.3 | |
| B | 1 | L S R | 1.74 | 2.59 | 0.671 | 1.6 | 2.6 | 24.4 | |
| C | 1 | L S R | 12.41 | 13.28 | 0.935 | 8.6 | 12.3 | 119.6 | |
| D | 1 | L S R | 1.24 | 2.30 | 0.540 | 1.0 | 1.7 | 14.8 | |
| 17.30-17.45 | | | | | | | | | |
| A | 1 | L S R | 6.73 | 9.57 | 0.703 | 3.0 | 5.9 | 45.9 | |
| B | 1 | L S R | 1.74 | 2.59 | 0.671 | 1.7 | 2.6 | 25.4 | |
| C | 1 | L S R | 12.41 | 13.28 | 0.935 | 9.5 | 13.2 | 147.6 | |
| D | 1 | L S R | 1.24 | 2.30 | 0.540 | 1.0 | 1.7 | 15.1 | |
| 17.45-18.00 | | | | | | | | | |
| A | 1 | L S R | 5.49 | 9.65 | 0.569 | 2.0 | 4.4 | 30.7 | |
| B | 1 | L S R | 1.42 | 2.59 | 0.548 | 1.1 | 1.9 | 17.4 | |
| C | 1 | L S R | 10.13 | 14.11 | 0.718 | 3.3 | 6.8 | 54.6 | |
| D | 1 | L S R | 1.01 | 2.30 | 0.441 | 0.7 | 1.3 | 10.9 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 2.0 | 4.4 | **++ |
| 17.30 | 1 | 3.0 | 5.8 | ***+++ |
| 17.45 | 1 | 3.0 | 5.9 | ***+++ |
| 18.00 | 1 | 2.0 | 4.4 | **++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 1.1 | 1.9 | *+ |
| 17.30 | 1 | 1.6 | 2.6 | **+ |
| 17.45 | 1 | 1.7 | 2.6 | **+ |
| 18.00 | 1 | 1.1 | 1.9 | *+ |

QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 3.2 | 6.7 | ***++++ |
| 17.30 | 1 | 8.6 | 12.3 | *********+++ |
| 17.45 | 1 | 9.5 | 13.2 | **********+++ |
| 18.00 | 1 | 3.3 | 6.8 | ***++++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 0.7 | 1.3 | * |
| 17.30 | 1 | 1.0 | 1.7 | *+ |
| 17.45 | 1 | 1.0 | 1.7 | *+ |
| 18.00 | 1 | 0.7 | 1.3 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (17.00-18.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | (VEH/H) | * QUEUEING * DELAY * (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 47.8 | 47.8 | 19.8 | 0.41 | 19.9 | 0.42 |
| A-C | 297.9 | 297.9 | 123.6 | 0.41 | 123.8 | 0.42 |
| A-D | 20.9 | 20.9 | 8.7 | 0.41 | 8.7 | 0.42 |
| B-C | 25.9 | 25.9 | 22.8 | 0.88 | 22.9 | 0.88 |
| B-D | 4.0 | 4.0 | 3.5 | 0.88 | 3.5 | 0.88 |
| B-A | 64.8 | 64.8 | 57.0 | 0.88 | 57.2 | 0.88 |
| C-D | 72.7 | 72.7 | 39.8 | 0.55 | 39.8 | 0.55 |
| C-A | 492.1 | 492.1 | 269.0 | 0.55 | 269.3 | 0.55 |
| C-B | 111.6 | 111.6 | 61.0 | 0.55 | 61.1 | 0.55 |
| D-A | 39.8 | 39.8 | 30.2 | 0.76 | 30.3 | 0.76 |
| D-B | 1.0 | 1.0 | 0.8 | 0.76 | 0.8 | 0.76 |
| D-C | 26.9 | 26.9 | 20.4 | 0.76 | 20.4 | 0.76 |
| ALL | 1205.4 | 1205.4 | 656.6 | 0.54 | 657.6 | 0.55 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed
========== end of file ==========

[Printed at 16:43:50 on 25/07/2018]



_____ O S C A D Y 5 _____

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039AM.voi" at 17:14:43 on Wednesday, 30 January 2019

FILE PROPERTIES

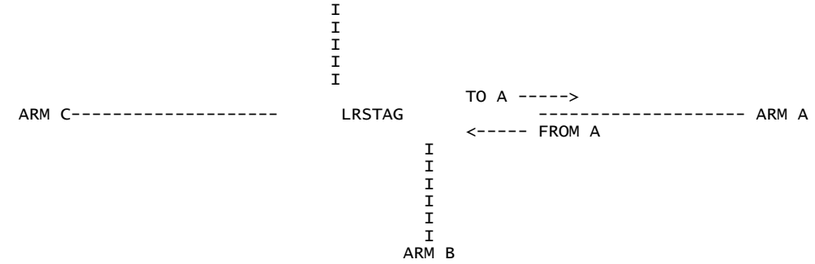
RUN TITLE: Junction2
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

**** ERROR AND WARNING MESSAGES ****

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS

INPUT DATA




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel

GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT<br>RIGHT | | STRAIGHT<br>LEFT | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 07.45 TO 09.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 08.00 TO 09.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioB_2024AM

| TOTAL TRAFFIC DEMAND (VEHICLES / HOUR) | | | | |
|---|---|---|---|---|
| FROM/TO | ARM A | ARM B | ARM C | ARM D |
| ARM A | 0.0 | 20.0 | 561.0 | 0.0 |
| ARM B | 7.0 | 0.0 | 7.0 | 0.0 |
| ARM C | 276.0 | 57.0 | 0.0 | 0.0 |
| ARM D | 0.0 | 0.0 | 0.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS: CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 08.00-09.00 | A | 0.970 | 0.000 | 0.030 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |



DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 08.00 | 08.30 | 09.00 | 23.38 | 35.06 | 23.38 |
| | B | 08.00 | 08.30 | 09.00 | 6.89 | 10.33 | 6.89 |
| | C | 08.00 | 08.30 | 09.00 | 19.64 | 29.46 | 19.64 |
| | D | 08.00 | 08.30 | 09.00 | 0.88 | 1.31 | 0.88 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|---|
| LANES ON GREEN: | ARM A | 1 | | | | |
| | B | | | 1 | | |
| | C | 1 | 1 | | | |
| | D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| | A | 1 | L S R | 8.67 | 1695.8 | 27.20 | 26.5 | | 10.30 |
| | B | 1 | L S R | 0.21 | 1656.4 | 27.25 | 6.5 | | 2.53 |
| | C | 1 | L S R | 4.97 | 1078.9 | 17.75 | 36.5 | 45.4 | 11.50 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 08.15-08.30 | | | | | | | | | |
| | A | 1 | L S R | 10.62 | 1695.8 | 27.20 | 26.5 | | 10.30 |
| | B | 1 | L S R | 0.26 | 1656.4 | 27.25 | 6.5 | | 2.53 |
| | C | 1 | L S R | 6.09 | 980.5 | 16.13 | 36.5 | 45.4 | 10.45 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 08.30-08.45 | | | | | | | | | |
| | A | 1 | L S R | 10.62 | 1695.8 | 27.20 | 26.5 | | 10.30 |
| | B | 1 | L S R | 0.26 | 1656.4 | 27.25 | 6.5 | | 2.53 |
| | C | 1 | L S R | 6.09 | 980.5 | 16.13 | 36.5 | 45.4 | 10.45 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 08.45-09.00 | | | | | | | | | |
| | A | 1 | L S R | 8.67 | 1695.8 | 27.20 | 26.5 | | 10.30 |
| | B | 1 | L S R | 0.21 | 1656.4 | 27.25 | 6.5 | | 2.53 |
| | C | 1 | L S R | 4.97 | 1078.9 | 17.75 | 36.5 | 45.4 | 11.50 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME SEGMENT | ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT: MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT: MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | | |
| | A | 1 | L S R | 8.67 | 10.30 | 0.842 | 5.2 | 8.7 | 75.2 | |
| | B | 1 | L S R | 0.21 | 2.53 | 0.083 | 0.1 | 0.2 | 1.6 | |
| | C | 1 | L S R | 4.97 | 11.50 | 0.432 | 1.1 | 3.0 | 15.8 | |
| | D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 08.15-08.30 | | | | | | | | | | |
| | A | 1 | L S R | 10.62 | 10.30 | 1.031 | 16.2 | 20.0 | 194.6 | |
| | B | 1 | L S R | 0.26 | 2.53 | 0.101 | 0.1 | 0.3 | 2.0 | |
| | C | 1 | L S R | 6.09 | 10.45 | 0.582 | 1.6 | 3.9 | 24.7 | |
| | D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 08.30-08.45 | | | | | | | | | | |
| | A | 1 | L S R | 10.62 | 10.30 | 1.031 | 23.1 | 26.9 | 317.1 | |
| | B | 1 | L S R | 0.26 | 2.53 | 0.101 | 0.1 | 0.3 | 2.0 | |
| | C | 1 | L S R | 6.09 | 10.45 | 0.582 | 1.7 | 3.9 | 24.8 | |
| | D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 08.45-09.00 | | | | | | | | | | |
| | A | 1 | L S R | 8.67 | 10.30 | 0.842 | 6.9 | 10.6 | 217.0 | |
| | B | 1 | L S R | 0.21 | 2.53 | 0.083 | 0.1 | 0.2 | 1.6 | |
| | C | 1 | L S R | 4.97 | 11.50 | 0.432 | 1.1 | 3.0 | 15.9 | |
| | D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 5.2 | 8.7 | *****++++ |
| 08.30 | 1 | 16.2 | 20.0 | ***************++++ |
| 08.45 | 1 | 23.1 | 26.9 | ***********************++++ |
| 09.00 | 1 | 6.9 | 10.6 | *******++++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 08.15 | 1 | 0.1 | 0.2 |
| 08.30 | 1 | 0.1 | 0.3 |
| 08.45 | 1 | 0.1 | 0.3 |
| 09.00 | 1 | 0.1 | 0.2 |



QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 1.1 | 3.0 | *++ |
| 08.30 | 1 | 1.6 | 3.9 | **++ |
| 08.45 | 1 | 1.7 | 3.9 | **++ |
| 09.00 | 1 | 1.1 | 3.0 | *++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 08.15 | 1 | 0.0 | 0.0 |
| 08.30 | 1 | 0.0 | 0.0 |
| 08.45 | 1 | 0.0 | 0.0 |
| 09.00 | 1 | 0.0 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (08.00-09.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL): (VEH) | (VEH/H) | * QUEUEING * DELAY *: (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY *: (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 19.9 | 19.9 | 27.7 | 1.39 | 27.8 | 1.39 |
| A-C | 558.9 | 558.9 | 776.2 | 1.39 | 778.4 | 1.39 |
| A-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-C | 7.0 | 7.0 | 3.5 | 0.51 | 3.5 | 0.51 |
| B-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-A | 7.0 | 7.0 | 3.5 | 0.51 | 3.5 | 0.51 |
| C-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-A | 275.0 | 275.0 | 67.3 | 0.24 | 67.3 | 0.24 |
| C-B | 56.8 | 56.8 | 13.9 | 0.24 | 13.9 | 0.24 |
| D-A | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-C | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| ALL | 924.5 | 924.5 | 892.1 | 0.96 | 894.5 | 0.97 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed

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

[Printed at 17:14:58 on 30/01/2019]

OSCADY 5

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039PM.voi" at 17:21:51 on Wednesday, 30 January 2019

## FILE PROPERTIES

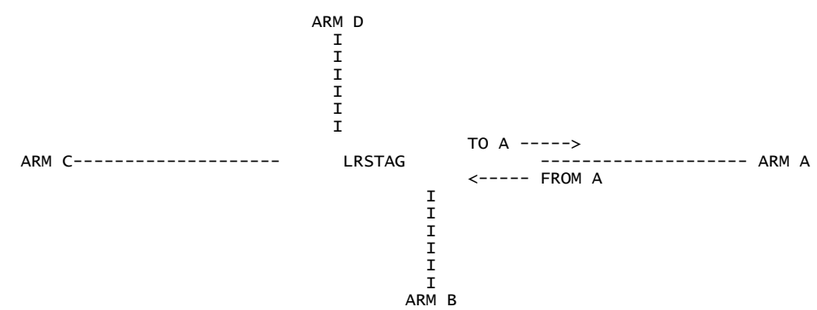
RUN TITLE: Junction2
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

## **** ERROR AND WARNING MESSAGES ****

No errors or warnings in the data.

## TRAFFIC SIGNAL JUNCTION ANALYSIS

### INPUT DATA




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel



### GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT | STRAIGHT | STRAIGHT<br>LEFT | |
| | | RIGHT | | | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

### TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 16.45 TO 18.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 17.00 TO 18.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioB_2024PM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|
| ARM A | 0.0 | 21.0 | 318.0 | 0.0 |
| ARM B | 7.0 | 0.0 | 21.0 | 0.0 |
| ARM C | 481.0 | 119.0 | 0.0 | 0.0 |
| ARM D | 0.0 | 0.0 | 0.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS<br>CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 17.00-18.00 | A | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 17.00 | 17.30 | 18.00 | 17.71 | 26.57 | 17.71 |
| | B | 17.00 | 17.30 | 18.00 | 3.86 | 5.79 | 3.86 |
| | C | 17.00 | 17.30 | 18.00 | 32.11 | 48.17 | 32.11 |
| | D | 17.00 | 17.30 | 18.00 | 2.46 | 3.69 | 2.46 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|
| LANES ON GREEN: ARM A | 1 | | | | |
| B | | | 1 | | |
| C | 1 | 1 | | | |
| D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | |
| A | 1 | L S R | 5.06 | 1691.8 | 27.83 | 26.5 | | 10.54 |
| B | 1 | L S R | 0.42 | 1608.3 | 26.46 | 6.5 | | 2.46 |
| C | 1 | L S R | 8.96 | 1299.4 | 21.38 | 36.5 | 45.4 | 13.85 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 17.15-17.30 | | | | | | | | |
| A | 1 | L S R | 6.20 | 1691.8 | 27.83 | 26.5 | | 10.54 |
| B | 1 | L S R | 0.51 | 1608.3 | 26.46 | 6.5 | | 2.46 |
| C | 1 | L S R | 10.97 | 1214.3 | 19.98 | 36.5 | 45.4 | 12.94 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 17.30-17.45 | | | | | | | | |
| A | 1 | L S R | 6.20 | 1691.8 | 27.83 | 26.5 | | 10.54 |
| B | 1 | L S R | 0.51 | 1608.3 | 26.46 | 6.5 | | 2.46 |
| C | 1 | L S R | 10.97 | 1214.3 | 19.98 | 36.5 | 45.4 | 12.94 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 17.45-18.00 | | | | | | | | |
| A | 1 | L S R | 5.06 | 1691.8 | 27.83 | 26.5 | | 10.54 |
| B | 1 | L S R | 0.42 | 1608.3 | 26.46 | 6.5 | | 2.46 |
| C | 1 | L S R | 8.96 | 1299.4 | 21.38 | 36.5 | 45.4 | 13.85 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |



QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| A | 1 | L S R | 5.06 | 10.54 | 0.480 | 1.7 | 3.9 | 24.8 | |
| B | 1 | L S R | 0.42 | 2.46 | 0.170 | 0.2 | 0.5 | 3.4 | |
| C | 1 | L S R | 8.96 | 13.85 | 0.647 | 2.5 | 5.7 | 37.3 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 17.15-17.30 | | | | | | | | | |
| A | 1 | L S R | 6.20 | 10.54 | 0.588 | 2.3 | 5.0 | 34.4 | |
| B | 1 | L S R | 0.51 | 2.46 | 0.208 | 0.3 | 0.6 | 4.2 | |
| C | 1 | L S R | 10.97 | 12.94 | 0.847 | 5.2 | 8.6 | 75.7 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 17.30-17.45 | | | | | | | | | |
| A | 1 | L S R | 6.20 | 10.54 | 0.588 | 2.3 | 5.0 | 34.5 | |
| B | 1 | L S R | 0.51 | 2.46 | 0.208 | 0.3 | 0.6 | 4.3 | |
| C | 1 | L S R | 10.97 | 12.94 | 0.847 | 5.3 | 8.8 | 80.8 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 17.45-18.00 | | | | | | | | | |
| A | 1 | L S R | 5.06 | 10.54 | 0.480 | 1.7 | 3.9 | 25.0 | |
| B | 1 | L S R | 0.42 | 2.46 | 0.170 | 0.2 | 0.5 | 3.4 | |
| C | 1 | L S R | 8.96 | 13.85 | 0.647 | 2.5 | 5.7 | 38.9 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 1.7 | 3.9 | **++ |
| 17.30 | 1 | 2.3 | 5.0 | **+++ |
| 17.45 | 1 | 2.3 | 5.0 | **+++ |
| 18.00 | 1 | 1.7 | 3.9 | **++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 0.2 | 0.5 | |
| 17.30 | 1 | 0.3 | 0.6 | + |
| 17.45 | 1 | 0.3 | 0.6 | + |
| 18.00 | 1 | 0.2 | 0.5 | |

QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 2.5 | 5.7 | ***+++ |
| 17.30 | 1 | 5.2 | 8.6 | *****++++ |
| 17.45 | 1 | 5.3 | 8.8 | *****++++ |
| 18.00 | 1 | 2.5 | 5.7 | ***+++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 17.15 | 1 | 0.0 | 0.0 |
| 17.30 | 1 | 0.0 | 0.0 |
| 17.45 | 1 | 0.0 | 0.0 |
| 18.00 | 1 | 0.0 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (17.00-18.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | TOTAL DEMAND (EXCL 2-WHEEL) (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 20.9 | 20.9 | 7.3 | 0.35 | 7.4 | 0.35 |
| A-C | 316.8 | 316.8 | 111.3 | 0.35 | 111.4 | 0.35 |
| A-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-C | 20.9 | 20.9 | 11.4 | 0.55 | 11.4 | 0.55 |
| B-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-A | 7.0 | 7.0 | 3.8 | 0.55 | 3.8 | 0.55 |
| C-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-A | 479.2 | 479.2 | 186.6 | 0.39 | 186.8 | 0.39 |
| C-B | 118.5 | 118.5 | 46.2 | 0.39 | 46.2 | 0.39 |
| D-A | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-C | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| ALL | 963.3 | 963.3 | 366.6 | 0.38 | 367.0 | 0.38 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed
========== end of file ==========

[Printed at 17:22:18 on 30/01/2019]



_____ O S C A D Y 5 _____

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039AM.voi" at 17:40:03 on Wednesday, 30 January 2019

FILE PROPERTIES
**********

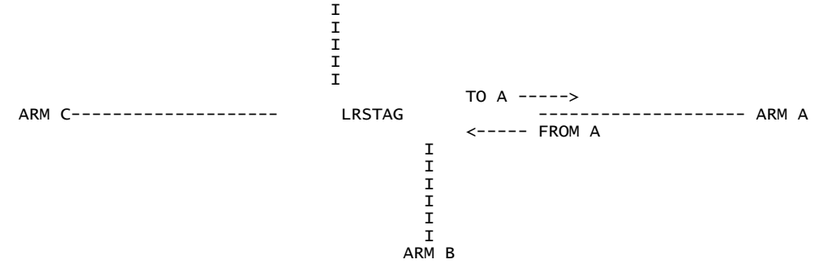
RUN TITLE: Junction2
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

**** ERROR AND WARNING MESSAGES ****
==========

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS
**********

INPUT DATA
---




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel

GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT<br>RIGHT | | STRAIGHT<br>LEFT | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 07.45 TO 09.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 08.00 TO 09.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioB_2039AM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|
| ARM A | 0.0 | 73.0 | 520.0 | 0.0 |
| ARM B | 39.0 | 0.0 | 10.0 | 0.0 |
| ARM C | 347.0 | 71.0 | 0.0 | 0.0 |
| ARM D | 0.0 | 0.0 | 0.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS<br>CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 08.00-09.00 | A | 0.970 | 0.000 | 0.030 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |



DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 08.00 | 08.30 | 09.00 | 38.05 | 57.07 | 38.05 |
| | B | 08.00 | 08.30 | 09.00 | 7.68 | 11.51 | 7.68 |
| | C | 08.00 | 08.30 | 09.00 | 29.03 | 43.54 | 29.03 |
| | D | 08.00 | 08.30 | 09.00 | 0.88 | 1.31 | 0.88 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|---|
| LANES ON GREEN: | ARM A | 1 | | | | |
| | B | | | 1 | | |
| | C | 1 | 1 | | | |
| | D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| | A | 1 | L S R | 8.85 | 1682.7 | 26.99 | 26.5 | | 10.22 |
| | B | 1 | L S R | 0.73 | 1717.1 | 28.25 | 6.5 | | 2.62 |
| | C | 1 | L S R | 6.24 | 1065.8 | 17.53 | 36.5 | 45.4 | 11.36 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 08.15-08.30 | | | | | | | | | |
| | A | 1 | L S R | 10.84 | 1682.7 | 26.99 | 26.5 | | 10.22 |
| | B | 1 | L S R | 0.90 | 1717.1 | 28.25 | 6.5 | | 2.62 |
| | C | 1 | L S R | 7.64 | 983.3 | 16.18 | 36.5 | 45.4 | 10.48 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 08.30-08.45 | | | | | | | | | |
| | A | 1 | L S R | 10.84 | 1682.7 | 26.99 | 26.5 | | 10.22 |
| | B | 1 | L S R | 0.90 | 1717.1 | 28.25 | 6.5 | | 2.62 |
| | C | 1 | L S R | 7.64 | 983.3 | 16.18 | 36.5 | 45.4 | 10.48 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 08.45-09.00 | | | | | | | | | |
| | A | 1 | L S R | 8.85 | 1682.7 | 26.99 | 26.5 | | 10.22 |
| | B | 1 | L S R | 0.73 | 1717.1 | 28.25 | 6.5 | | 2.62 |
| | C | 1 | L S R | 6.24 | 1065.8 | 17.53 | 36.5 | 45.4 | 11.36 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME SEGMENT / ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT: MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT: MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| A | 1 | L S R | 8.85 | 10.22 | 0.866 | 5.8 | 9.2 | 82.1 | |
| B | 1 | L S R | 0.73 | 2.62 | 0.279 | 0.4 | 0.8 | 6.3 | |
| C | 1 | L S R | 6.24 | 11.36 | 0.549 | 1.6 | 3.9 | 23.4 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 08.15-08.30 | | | | | | | | | |
| A | 1 | L S R | 10.84 | 10.22 | 1.061 | 19.7 | 23.4 | 223.7 | |
| B | 1 | L S R | 0.90 | 2.62 | 0.341 | 0.5 | 1.1 | 8.2 | |
| C | 1 | L S R | 7.64 | 10.48 | 0.729 | 2.8 | 5.4 | 41.4 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 08.30-08.45 | | | | | | | | | |
| A | 1 | L S R | 10.84 | 10.22 | 1.061 | 30.1 | 33.8 | 394.1 | |
| B | 1 | L S R | 0.90 | 2.62 | 0.341 | 0.5 | 1.1 | 8.3 | |
| C | 1 | L S R | 7.64 | 10.48 | 0.729 | 2.8 | 5.4 | 42.3 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 08.45-09.00 | | | | | | | | | |
| A | 1 | L S R | 8.85 | 10.22 | 0.866 | 12.9 | 16.6 | 333.0 | |
| B | 1 | L S R | 0.73 | 2.62 | 0.279 | 0.4 | 0.8 | 6.4 | |
| C | 1 | L S R | 6.24 | 11.36 | 0.549 | 1.6 | 3.9 | 23.8 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 5.8 | 9.2 | ******+++ |
| 08.30 | 1 | 19.7 | 23.4 | ********************+++ |
| 08.45 | 1 | 30.1 | 33.8 | ******************************++++ |
| 09.00 | 1 | 12.9 | 16.6 | *************++++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 0.4 | 0.8 | + |
| 08.30 | 1 | 0.5 | 1.1 | * |
| 08.45 | 1 | 0.5 | 1.1 | * |
| 09.00 | 1 | 0.4 | 0.8 | + |



QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 1.6 | 3.9 | **++ |
| 08.30 | 1 | 2.8 | 5.4 | ***++ |
| 08.45 | 1 | 2.8 | 5.4 | ***++ |
| 09.00 | 1 | 1.6 | 3.9 | **++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 08.15 | 1 | 0.0 | 0.0 |
| 08.30 | 1 | 0.0 | 0.0 |
| 08.45 | 1 | 0.0 | 0.0 |
| 09.00 | 1 | 0.0 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (08.00-09.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL): (VEH) | (VEH/H) | * QUEUEING * DELAY *: (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY *: (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 72.7 | 72.7 | 127.1 | 1.75 | 128.2 | 1.76 |
| A-C | 518.0 | 518.0 | 905.7 | 1.75 | 912.9 | 1.76 |
| A-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-C | 10.0 | 10.0 | 6.0 | 0.60 | 6.0 | 0.60 |
| B-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-A | 38.9 | 38.9 | 23.3 | 0.60 | 23.3 | 0.60 |
| C-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-A | 345.7 | 345.7 | 108.6 | 0.31 | 108.7 | 0.31 |
| C-B | 70.7 | 70.7 | 22.2 | 0.31 | 22.2 | 0.31 |
| D-A | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-C | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| ALL | 1056.0 | 1056.0 | 1192.9 | 1.13 | 1201.3 | 1.14 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed

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

[Printed at 17:40:33 on 30/01/2019]

OSCADY 5

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039PM.voi" at 17:43:12 on Wednesday, 30 January 2019

## FILE PROPERTIES

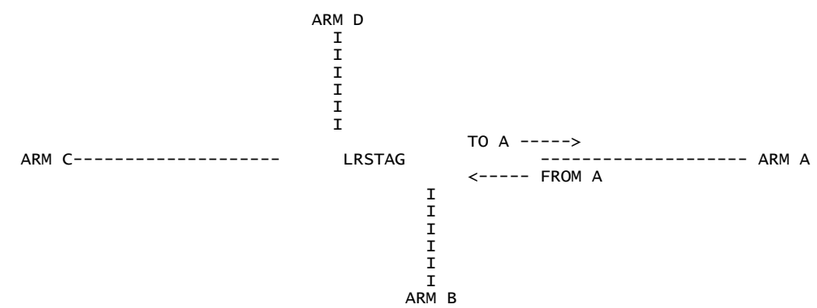
RUN TITLE: Junction2
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

## **** ERROR AND WARNING MESSAGES ****

No errors or warnings in the data.

## TRAFFIC SIGNAL JUNCTION ANALYSIS

### INPUT DATA




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel



### GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT | STRAIGHT | STRAIGHT<br>LEFT | |
| | | RIGHT | | | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

### TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 16.45 TO 18.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 17.00 TO 18.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioB_2039PM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|
| ARM A | 0.0 | 72.0 | 331.0 | 0.0 |
| ARM B | 10.0 | 0.0 | 29.0 | 0.0 |
| ARM C | 519.0 | 113.0 | 0.0 | 0.0 |
| ARM D | 0.0 | 0.0 | 0.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS<br>CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 17.00-18.00 | A | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 17.00 | 17.30 | 18.00 | 26.99 | 40.48 | 26.99 |
| | B | 17.00 | 17.30 | 18.00 | 4.70 | 7.05 | 4.70 |
| | C | 17.00 | 17.30 | 18.00 | 47.51 | 71.27 | 47.51 |
| | D | 17.00 | 17.30 | 18.00 | 2.46 | 3.69 | 2.46 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|
| LANES ON GREEN: ARM A | 1 | | | | |
| B | | | 1 | | |
| C | 1 | 1 | | | |
| D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | |
| A | 1 | L S R | 6.02 | 1674.6 | 27.55 | 26.5 | | 10.43 |
| B | 1 | L S R | 0.58 | 1609.5 | 26.48 | 6.5 | | 2.46 |
| C | 1 | L S R | 9.43 | 1254.9 | 20.65 | 36.5 | 45.4 | 13.38 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 17.15-17.30 | | | | | | | | |
| A | 1 | L S R | 7.37 | 1674.6 | 27.55 | 26.5 | | 10.43 |
| B | 1 | L S R | 0.71 | 1609.5 | 26.48 | 6.5 | | 2.46 |
| C | 1 | L S R | 11.55 | 1158.5 | 19.06 | 36.5 | 45.4 | 12.35 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 17.30-17.45 | | | | | | | | |
| A | 1 | L S R | 7.37 | 1674.6 | 27.55 | 26.5 | | 10.43 |
| B | 1 | L S R | 0.71 | 1609.5 | 26.48 | 6.5 | | 2.46 |
| C | 1 | L S R | 11.55 | 1158.5 | 19.06 | 36.5 | 45.4 | 12.35 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 17.45-18.00 | | | | | | | | |
| A | 1 | L S R | 6.02 | 1674.6 | 27.55 | 26.5 | | 10.43 |
| B | 1 | L S R | 0.58 | 1609.5 | 26.48 | 6.5 | | 2.46 |
| C | 1 | L S R | 9.43 | 1254.9 | 20.65 | 36.5 | 45.4 | 13.38 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |



QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| A | 1 | L S R | 6.02 | 10.43 | 0.577 | 2.2 | 4.8 | 32.8 | |
| B | 1 | L S R | 0.58 | 2.46 | 0.237 | 0.3 | 0.7 | 4.9 | |
| C | 1 | L S R | 9.43 | 13.38 | 0.705 | 3.0 | 6.2 | 44.2 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 17.15-17.30 | | | | | | | | | |
| A | 1 | L S R | 7.37 | 10.43 | 0.706 | 3.2 | 6.3 | 48.7 | |
| B | 1 | L S R | 0.71 | 2.46 | 0.290 | 0.4 | 0.8 | 6.3 | |
| C | 1 | L S R | 11.55 | 12.35 | 0.936 | 8.3 | 11.8 | 114.7 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 17.30-17.45 | | | | | | | | | |
| A | 1 | L S R | 7.37 | 10.43 | 0.706 | 3.3 | 6.3 | 49.2 | |
| B | 1 | L S R | 0.71 | 2.46 | 0.290 | 0.4 | 0.8 | 6.3 | |
| C | 1 | L S R | 11.55 | 12.35 | 0.936 | 9.3 | 12.7 | 143.6 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 17.45-18.00 | | | | | | | | | |
| A | 1 | L S R | 6.02 | 10.43 | 0.577 | 2.2 | 4.8 | 33.3 | |
| B | 1 | L S R | 0.58 | 2.46 | 0.237 | 0.3 | 0.7 | 5.0 | |
| C | 1 | L S R | 9.43 | 13.38 | 0.705 | 3.0 | 6.3 | 50.6 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 2.2 | 4.8 | **+++ |
| 17.30 | 1 | 3.2 | 6.3 | ***+++ |
| 17.45 | 1 | 3.3 | 6.3 | ***+++ |
| 18.00 | 1 | 2.2 | 4.8 | **+++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 0.3 | 0.7 | + |
| 17.30 | 1 | 0.4 | 0.8 | + |
| 17.45 | 1 | 0.4 | 0.8 | + |
| 18.00 | 1 | 0.3 | 0.7 | + |

QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 3.0 | 6.2 | ***+++ |
| 17.30 | 1 | 8.3 | 11.8 | ********++++ |
| 17.45 | 1 | 9.3 | 12.7 | *********++++ |
| 18.00 | 1 | 3.0 | 6.3 | ***+++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 17.15 | 1 | 0.0 | 0.0 |
| 17.30 | 1 | 0.0 | 0.0 |
| 17.45 | 1 | 0.0 | 0.0 |
| 18.00 | 1 | 0.0 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (17.00-18.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | (VEH/H) | * QUEUEING * DELAY * (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 71.7 | 71.7 | 29.3 | 0.41 | 29.4 | 0.41 |
| A-C | 329.7 | 329.7 | 134.8 | 0.41 | 134.9 | 0.41 |
| A-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-C | 28.9 | 28.9 | 16.8 | 0.58 | 16.8 | 0.58 |
| B-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-A | 10.0 | 10.0 | 5.8 | 0.58 | 5.8 | 0.58 |
| C-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-A | 517.0 | 517.0 | 290.0 | 0.56 | 290.3 | 0.56 |
| C-B | 112.6 | 112.6 | 63.2 | 0.56 | 63.2 | 0.56 |
| D-A | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-C | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| ALL | 1069.9 | 1069.9 | 539.8 | 0.50 | 540.4 | 0.51 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed
========== end of file ==========

[Printed at 17:43:25 on 30/01/2019]



_____ O S C A D Y 5 _____

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039AM.voi" at 16:57:07 on Wednesday, 30 January 2019

FILE PROPERTIES
**********

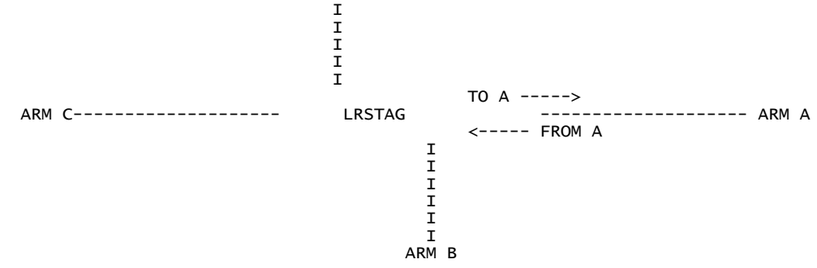
RUN TITLE: Junction2
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

**** ERROR AND WARNING MESSAGES ****
==========

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS
**********

INPUT DATA
---




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel

GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT<br>RIGHT | | STRAIGHT<br>LEFT | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 07.45 TO 09.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 08.00 TO 09.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioC_2024AM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|
| ARM A | 0.0 | 38.0 | 377.0 | 15.0 |
| ARM B | 143.0 | 0.0 | 1.0 | 56.0 |
| ARM C | 320.0 | 61.0 | 0.0 | 32.0 |
| ARM D | 11.0 | 0.0 | 12.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS<br>CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 08.00-09.00 | A | 0.970 | 0.000 | 0.030 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 0.910 | 0.000 | 0.090 | 0.000 | 0.000 | 0.000 |



DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 08.00 | 08.30 | 09.00 | 16.11 | 24.17 | 16.11 |
| | B | 08.00 | 08.30 | 09.00 | 6.71 | 10.07 | 6.71 |
| | C | 08.00 | 08.30 | 09.00 | 15.48 | 23.21 | 15.48 |
| | D | 08.00 | 08.30 | 09.00 | 0.88 | 1.31 | 0.88 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|---|
| LANES ON GREEN: | ARM A | 1 | | | | |
| | B | | | 1 | | |
| | C | 1 | 1 | | | |
| | D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| | A | 1 | L S R | 6.42 | 1621.0 | 26.00 | 22.6 | | 8.40 |
| | B | 1 | L S R | 2.99 | 1700.0 | 27.97 | 10.4 | | 4.15 |
| | C | 1 | L S R | 6.16 | 1225.3 | 20.16 | 32.6 | 41.5 | 11.94 |
| | D | 1 | L S R | 0.34 | 1502.3 | 22.42 | 6.5 | | 2.08 |
| 08.15-08.30 | | | | | | | | | |
| | A | 1 | L S R | 7.86 | 1614.6 | 25.90 | 23.1 | | 8.53 |
| | B | 1 | L S R | 3.66 | 1700.0 | 27.97 | 9.9 | | 3.97 |
| | C | 1 | L S R | 7.55 | 1133.9 | 18.66 | 33.1 | 41.9 | 11.17 |
| | D | 1 | L S R | 0.42 | 1502.3 | 22.42 | 6.5 | | 2.08 |
| 08.30-08.45 | | | | | | | | | |
| | A | 1 | L S R | 7.86 | 1614.6 | 25.90 | 23.1 | | 8.53 |
| | B | 1 | L S R | 3.66 | 1700.0 | 27.97 | 9.9 | | 3.97 |
| | C | 1 | L S R | 7.55 | 1133.9 | 18.66 | 33.1 | 41.9 | 11.17 |
| | D | 1 | L S R | 0.42 | 1502.3 | 22.42 | 6.5 | | 2.08 |
| 08.45-09.00 | | | | | | | | | |
| | A | 1 | L S R | 6.42 | 1621.0 | 26.00 | 22.6 | | 8.40 |
| | B | 1 | L S R | 2.99 | 1700.0 | 27.97 | 10.4 | | 4.15 |
| | C | 1 | L S R | 6.16 | 1225.3 | 20.16 | 32.6 | 41.5 | 11.94 |
| | D | 1 | L S R | 0.34 | 1502.3 | 22.42 | 6.5 | | 2.08 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME SEGMENT ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| A | 1 | L S R | 6.42 | 8.40 | 0.764 | 3.7 | 6.4 | 53.6 | |
| B | 1 | L S R | 2.99 | 4.15 | 0.720 | 2.4 | 4.0 | 35.0 | |
| C | 1 | L S R | 6.16 | 11.94 | 0.516 | 1.7 | 4.2 | 25.1 | |
| D | 1 | L S R | 0.34 | 2.08 | 0.165 | 0.2 | 0.4 | 2.8 | |
| 08.15-08.30 | | | | | | | | | |
| A | 1 | L S R | 7.86 | 8.53 | 0.921 | 7.3 | 10.4 | 103.3 | |
| B | 1 | L S R | 3.66 | 3.97 | 0.921 | 5.2 | 7.1 | 72.1 | |
| C | 1 | L S R | 7.55 | 11.17 | 0.676 | 2.6 | 5.5 | 39.3 | |
| D | 1 | L S R | 0.42 | 2.08 | 0.202 | 0.2 | 0.5 | 3.5 | |
| 08.30-08.45 | | | | | | | | | |
| A | 1 | L S R | 7.86 | 8.53 | 0.921 | 8.0 | 11.1 | 123.2 | |
| B | 1 | L S R | 3.66 | 3.97 | 0.921 | 6.0 | 7.8 | 92.1 | |
| C | 1 | L S R | 7.55 | 11.17 | 0.676 | 2.6 | 5.5 | 39.7 | |
| D | 1 | L S R | 0.42 | 2.08 | 0.202 | 0.2 | 0.5 | 3.5 | |
| 08.45-09.00 | | | | | | | | | |
| A | 1 | L S R | 6.42 | 8.40 | 0.764 | 3.9 | 6.7 | 65.3 | |
| B | 1 | L S R | 2.99 | 4.15 | 0.720 | 2.6 | 4.2 | 48.9 | |
| C | 1 | L S R | 6.16 | 11.94 | 0.516 | 1.7 | 4.2 | 25.4 | |
| D | 1 | L S R | 0.34 | 2.08 | 0.165 | 0.2 | 0.4 | 2.8 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 3.7 | 6.4 | ****++ |
| 08.30 | 1 | 7.3 | 10.4 | ********+++ |
| 08.45 | 1 | 8.0 | 11.1 | *********+++ |
| 09.00 | 1 | 3.9 | 6.7 | ****+++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 2.4 | 4.0 | **++ |
| 08.30 | 1 | 5.2 | 7.1 | *****++ |
| 08.45 | 1 | 6.0 | 7.8 | ******++ |
| 09.00 | 1 | 2.6 | 4.2 | ***+ |



QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 1.7 | 4.2 | **++ |
| 08.30 | 1 | 2.6 | 5.5 | ***++ |
| 08.45 | 1 | 2.6 | 5.5 | ***++ |
| 09.00 | 1 | 1.7 | 4.2 | **++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 08.15 | 1 | 0.2 | 0.4 |
| 08.30 | 1 | 0.2 | 0.5 |
| 08.45 | 1 | 0.2 | 0.5 |
| 09.00 | 1 | 0.2 | 0.4 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (08.00-09.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | TOTAL DEMAND (EXCL 2-WHEEL) (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 37.9 | 37.9 | 30.5 | 0.81 | 30.6 | 0.81 |
| A-C | 375.6 | 375.6 | 302.8 | 0.81 | 303.6 | 0.81 |
| A-D | 14.9 | 14.9 | 12.0 | 0.81 | 12.1 | 0.81 |
| B-C | 1.0 | 1.0 | 1.2 | 1.25 | 1.2 | 1.25 |
| B-D | 55.8 | 55.8 | 69.5 | 1.25 | 69.7 | 1.25 |
| B-A | 142.5 | 142.5 | 177.4 | 1.25 | 178.0 | 1.25 |
| C-D | 31.9 | 31.9 | 10.0 | 0.31 | 10.0 | 0.31 |
| C-A | 318.8 | 318.8 | 100.3 | 0.31 | 100.4 | 0.31 |
| C-B | 60.8 | 60.8 | 19.1 | 0.31 | 19.1 | 0.31 |
| D-A | 11.0 | 11.0 | 6.1 | 0.55 | 6.1 | 0.55 |
| D-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-C | 12.0 | 12.0 | 6.6 | 0.55 | 6.6 | 0.55 |
| ALL | 1062.0 | 1062.0 | 735.5 | 0.69 | 737.4 | 0.69 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed

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

[Printed at 16:57:23 on 30/01/2019]

OSCADY 5

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039PM.voi" at 16:54:25 on Wednesday, 30 January 2019

## FILE PROPERTIES

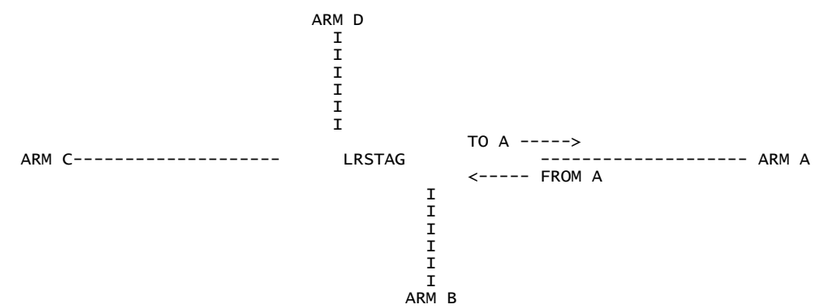
RUN TITLE: Junction2
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

## **** ERROR AND WARNING MESSAGES ****

No errors or warnings in the data.

## TRAFFIC SIGNAL JUNCTION ANALYSIS

### INPUT DATA




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel



### GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT | STRAIGHT | STRAIGHT<br>LEFT | |
| | | RIGHT | | | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

### TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 16.45 TO 18.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 17.00 TO 18.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioC_2024PM

| TOTAL TRAFFIC DEMAND (VEHICLES / HOUR) | | | | |
|---|---|---|---|---|
| FROM/TO | ARM A | ARM B | ARM C | ARM D |
| ARM A | 0.0 | 46.0 | 298.0 | 20.0 |
| ARM B | 67.0 | 0.0 | 25.0 | 4.0 |
| ARM C | 476.0 | 105.0 | 0.0 | 71.0 |
| ARM D | 37.0 | 1.0 | 27.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS | | | | | |
|---|---|---|---|---|---|---|---|
| | | CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
| 17.00-18.00 | A | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 17.00 | 17.30 | 18.00 | 13.47 | 20.21 | 13.47 |
| | B | 17.00 | 17.30 | 18.00 | 3.51 | 5.27 | 3.51 |
| | C | 17.00 | 17.30 | 18.00 | 24.61 | 36.92 | 24.61 |
| | D | 17.00 | 17.30 | 18.00 | 2.46 | 3.69 | 2.46 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|---|
| LANES ON GREEN: ARM | A | 1 | | | | |
| | B | | | 1 | | |
| | C | 1 | 1 | | | |
| | D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | |
| A | 1 | L S R | 5.43 | 1556.5 | 25.61 | 26.5 | | 9.69 |
| B | 1 | L S R | 1.43 | 1696.5 | 27.91 | 6.5 | | 2.59 |
| C | 1 | L S R | 9.73 | 1332.5 | 21.92 | 36.5 | 45.4 | 14.21 |
| D | 1 | L S R | 0.97 | 1489.5 | 24.83 | 6.5 | | 2.31 |
| 17.15-17.30 | | | | | | | | |
| A | 1 | L S R | 6.65 | 1544.0 | 25.40 | 26.5 | | 9.62 |
| B | 1 | L S R | 1.75 | 1696.5 | 27.91 | 6.5 | | 2.59 |
| C | 1 | L S R | 11.92 | 1256.1 | 20.67 | 36.5 | 45.4 | 13.39 |
| D | 1 | L S R | 1.19 | 1489.5 | 24.83 | 6.5 | | 2.31 |
| 17.30-17.45 | | | | | | | | |
| A | 1 | L S R | 6.65 | 1544.0 | 25.40 | 26.5 | | 9.62 |
| B | 1 | L S R | 1.75 | 1696.5 | 27.91 | 6.5 | | 2.59 |
| C | 1 | L S R | 11.92 | 1256.1 | 20.67 | 36.5 | 45.4 | 13.39 |
| D | 1 | L S R | 1.19 | 1489.5 | 24.83 | 6.5 | | 2.31 |
| 17.45-18.00 | | | | | | | | |
| A | 1 | L S R | 5.43 | 1556.5 | 25.61 | 26.5 | | 9.69 |
| B | 1 | L S R | 1.43 | 1696.5 | 27.91 | 6.5 | | 2.59 |
| C | 1 | L S R | 9.73 | 1332.5 | 21.92 | 36.5 | 45.4 | 14.21 |
| D | 1 | L S R | 0.97 | 1489.5 | 24.83 | 6.5 | | 2.31 |



QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| A | 1 | L S R | 5.43 | 9.69 | 0.560 | 2.0 | 4.4 | 29.5 | |
| B | 1 | L S R | 1.43 | 2.59 | 0.553 | 1.1 | 1.9 | 16.4 | |
| C | 1 | L S R | 9.73 | 14.21 | 0.685 | 2.9 | 6.3 | 43.1 | |
| D | 1 | L S R | 0.97 | 2.31 | 0.421 | 0.7 | 1.2 | 9.8 | |
| 17.15-17.30 | | | | | | | | | |
| A | 1 | L S R | 6.65 | 9.62 | 0.692 | 2.9 | 5.7 | 43.9 | |
| B | 1 | L S R | 1.75 | 2.59 | 0.677 | 1.7 | 2.6 | 24.9 | |
| C | 1 | L S R | 11.92 | 13.39 | 0.890 | 6.6 | 10.2 | 94.7 | |
| D | 1 | L S R | 1.19 | 2.31 | 0.515 | 0.9 | 1.6 | 13.7 | |
| 17.30-17.45 | | | | | | | | | |
| A | 1 | L S R | 6.65 | 9.62 | 0.692 | 2.9 | 5.7 | 44.4 | |
| B | 1 | L S R | 1.75 | 2.59 | 0.677 | 1.7 | 2.7 | 26.0 | |
| C | 1 | L S R | 11.92 | 13.39 | 0.890 | 6.9 | 10.5 | 105.9 | |
| D | 1 | L S R | 1.19 | 2.31 | 0.515 | 0.9 | 1.6 | 13.9 | |
| 17.45-18.00 | | | | | | | | | |
| A | 1 | L S R | 5.43 | 9.69 | 0.560 | 2.0 | 4.4 | 30.0 | |
| B | 1 | L S R | 1.43 | 2.59 | 0.553 | 1.2 | 1.9 | 17.7 | |
| C | 1 | L S R | 9.73 | 14.21 | 0.685 | 2.9 | 6.4 | 46.2 | |
| D | 1 | L S R | 0.97 | 2.31 | 0.421 | 0.7 | 1.2 | 10.2 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 2.0 | 4.4 | **++ |
| 17.30 | 1 | 2.9 | 5.7 | ***+++ |
| 17.45 | 1 | 2.9 | 5.7 | ***+++ |
| 18.00 | 1 | 2.0 | 4.4 | **++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 1.1 | 1.9 | *+ |
| 17.30 | 1 | 1.7 | 2.6 | **+ |
| 17.45 | 1 | 1.7 | 2.7 | **+ |
| 18.00 | 1 | 1.2 | 1.9 | *+ |

QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 2.9 | 6.3 | ***+++ |
| 17.30 | 1 | 6.6 | 10.2 | *******+++ |
| 17.45 | 1 | 6.9 | 10.5 | *******++++ |
| 18.00 | 1 | 2.9 | 6.4 | ***+++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 0.7 | 1.2 | * |
| 17.30 | 1 | 0.9 | 1.6 | *+ |
| 17.45 | 1 | 0.9 | 1.6 | *+ |
| 18.00 | 1 | 0.7 | 1.2 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (17.00-18.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | (VEH/H) | * QUEUEING * DELAY * (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 45.8 | 45.8 | 18.7 | 0.41 | 18.7 | 0.41 |
| A-C | 296.9 | 296.9 | 121.0 | 0.41 | 121.2 | 0.41 |
| A-D | 19.9 | 19.9 | 8.1 | 0.41 | 8.1 | 0.41 |
| B-C | 24.9 | 24.9 | 22.1 | 0.89 | 22.2 | 0.89 |
| B-D | 4.0 | 4.0 | 3.5 | 0.89 | 3.6 | 0.89 |
| B-A | 66.7 | 66.7 | 59.3 | 0.89 | 59.5 | 0.89 |
| C-D | 70.7 | 70.7 | 31.6 | 0.45 | 31.6 | 0.45 |
| C-A | 474.2 | 474.2 | 211.6 | 0.45 | 211.9 | 0.45 |
| C-B | 104.6 | 104.6 | 46.7 | 0.45 | 46.7 | 0.45 |
| D-A | 36.9 | 36.9 | 27.1 | 0.74 | 27.2 | 0.74 |
| D-B | 1.0 | 1.0 | 0.7 | 0.74 | 0.7 | 0.74 |
| D-C | 26.9 | 26.9 | 19.8 | 0.74 | 19.8 | 0.74 |
| ALL | 1172.5 | 1172.5 | 570.3 | 0.49 | 571.1 | 0.49 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed
========== end of file ==========

[Printed at 16:54:36 on 30/01/2019]



OSCADY 5

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioC_2039AM.voi" at 16:51:57 on Wednesday, 25 July 2018

FILE PROPERTIES

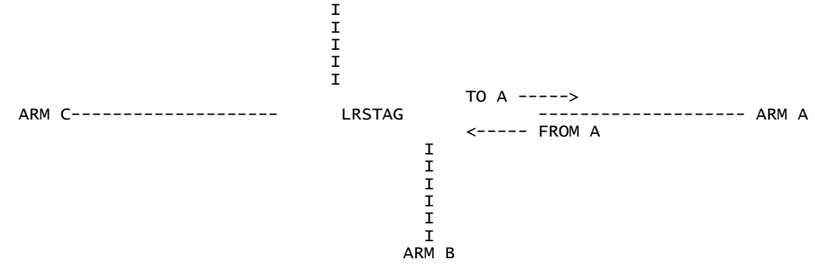
RUN TITLE: ScenarioC_2039AM
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

**** ERROR AND WARNING MESSAGES ****

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS

INPUT DATA




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel

GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT<br>RIGHT | | STRAIGHT<br>LEFT | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 07.45 TO 09.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 08.00 TO 09.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioC_2039AM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|
| ARM A | 0.0 | 40.0 | 398.0 | 16.0 |
| ARM B | 151.0 | 0.0 | 60.0 | 1.0 |
| ARM C | 340.0 | 68.0 | 0.0 | 34.0 |
| ARM D | 12.0 | 0.0 | 12.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS<br>CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 08.00-09.00 | A | 0.970 | 0.000 | 0.030 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 0.910 | 0.000 | 0.090 | 0.000 | 0.000 | 0.000 |



DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 08.00 | 08.30 | 09.00 | 5.68 | 8.51 | 5.68 |
| | B | 08.00 | 08.30 | 09.00 | 2.65 | 3.98 | 2.65 |
| | C | 08.00 | 08.30 | 09.00 | 5.53 | 8.29 | 5.53 |
| | D | 08.00 | 08.30 | 09.00 | 0.30 | 0.45 | 0.30 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|---|
| LANES ON GREEN: | ARM A | 1 | | | | |
| | B | | | 1 | | |
| | C | 1 | 1 | | | |
| | D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| | A | 1 | L S R | 6.78 | 1618.5 | 25.96 | 22.6 | | 8.38 |
| | B | 1 | L S R | 3.16 | 1699.5 | 27.96 | 10.4 | | 4.15 |
| | C | 1 | L S R | 6.60 | 1187.7 | 19.54 | 32.6 | 41.5 | 11.57 |
| | D | 1 | L S R | 0.36 | 1499.7 | 22.38 | 6.5 | | 2.08 |
| 08.15-08.30 | | | | | | | | | |
| | A | 1 | L S R | 8.30 | 1611.7 | 25.85 | 23.0 | | 8.51 |
| | B | 1 | L S R | 3.88 | 1699.5 | 27.96 | 10.0 | | 3.98 |
| | C | 1 | L S R | 8.08 | 1091.8 | 17.96 | 33.0 | 41.9 | 10.75 |
| | D | 1 | L S R | 0.44 | 1499.7 | 22.38 | 6.5 | | 2.08 |
| 08.30-08.45 | | | | | | | | | |
| | A | 1 | L S R | 8.30 | 1611.7 | 25.85 | 23.0 | | 8.51 |
| | B | 1 | L S R | 3.88 | 1699.5 | 27.96 | 10.0 | | 3.98 |
| | C | 1 | L S R | 8.08 | 1091.8 | 17.96 | 33.0 | 41.9 | 10.75 |
| | D | 1 | L S R | 0.44 | 1499.7 | 22.38 | 6.5 | | 2.08 |
| 08.45-09.00 | | | | | | | | | |
| | A | 1 | L S R | 6.78 | 1618.5 | 25.96 | 22.6 | | 8.38 |
| | B | 1 | L S R | 3.16 | 1699.5 | 27.96 | 10.4 | | 4.15 |
| | C | 1 | L S R | 6.60 | 1187.7 | 19.54 | 32.6 | 41.5 | 11.57 |
| | D | 1 | L S R | 0.36 | 1499.7 | 22.38 | 6.5 | | 2.08 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME SEGMENT ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| A | 1 | L S R | 6.78 | 8.38 | 0.808 | 4.3 | 7.2 | 62.0 | |
| B | 1 | L S R | 3.16 | 4.15 | 0.762 | 2.8 | 4.4 | 39.9 | |
| C | 1 | L S R | 6.60 | 11.57 | 0.570 | 1.9 | 4.6 | 29.0 | |
| D | 1 | L S R | 0.36 | 2.08 | 0.172 | 0.2 | 0.4 | 2.9 | |
| 08.15-08.30 | | | | | | | | | |
| A | 1 | L S R | 8.30 | 8.51 | 0.975 | 10.1 | 13.4 | 134.7 | |
| B | 1 | L S R | 3.88 | 3.98 | 0.975 | 6.8 | 8.7 | 89.1 | |
| C | 1 | L S R | 8.08 | 10.75 | 0.751 | 3.3 | 6.3 | 49.6 | |
| D | 1 | L S R | 0.44 | 2.08 | 0.211 | 0.2 | 0.5 | 3.7 | |
| 08.30-08.45 | | | | | | | | | |
| A | 1 | L S R | 8.30 | 8.51 | 0.975 | 12.2 | 15.5 | 183.5 | |
| B | 1 | L S R | 3.88 | 3.98 | 0.975 | 8.5 | 10.4 | 126.0 | |
| C | 1 | L S R | 8.08 | 10.75 | 0.751 | 3.4 | 6.3 | 50.9 | |
| D | 1 | L S R | 0.44 | 2.08 | 0.211 | 0.2 | 0.5 | 3.7 | |
| 08.45-09.00 | | | | | | | | | |
| A | 1 | L S R | 6.78 | 8.38 | 0.808 | 4.8 | 7.7 | 98.7 | |
| B | 1 | L S R | 3.16 | 4.15 | 0.762 | 3.2 | 4.9 | 72.8 | |
| C | 1 | L S R | 6.60 | 11.57 | 0.570 | 2.0 | 4.6 | 29.6 | |
| D | 1 | L S R | 0.36 | 2.08 | 0.172 | 0.2 | 0.4 | 2.9 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 4.3 | 7.2 | ****+++ |
| 08.30 | 1 | 10.1 | 13.4 | **********+++ |
| 08.45 | 1 | 12.2 | 15.5 | ************++++ |
| 09.00 | 1 | 4.8 | 7.7 | *****+++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 2.8 | 4.4 | ***+ |
| 08.30 | 1 | 6.8 | 8.7 | *******++ |
| 08.45 | 1 | 8.5 | 10.4 | ********++ |
| 09.00 | 1 | 3.2 | 4.9 | ***++ |



QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 1.9 | 4.6 | **+++ |
| 08.30 | 1 | 3.3 | 6.3 | ***+++ |
| 08.45 | 1 | 3.4 | 6.3 | ***+++ |
| 09.00 | 1 | 2.0 | 4.6 | **+++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 08.15 | 1 | 0.2 | 0.4 |
| 08.30 | 1 | 0.2 | 0.5 |
| 08.45 | 1 | 0.2 | 0.5 |
| 09.00 | 1 | 0.2 | 0.4 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (08.00-09.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | TOTAL DEMAND (EXCL 2-WHEEL) (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 39.8 | 39.8 | 42.2 | 1.06 | 42.3 | 1.06 |
| A-C | 396.5 | 396.5 | 419.9 | 1.06 | 421.1 | 1.06 |
| A-D | 15.9 | 15.9 | 16.9 | 1.06 | 16.9 | 1.06 |
| B-C | 59.8 | 59.8 | 92.8 | 1.55 | 93.1 | 1.56 |
| B-D | 1.0 | 1.0 | 1.5 | 1.55 | 1.6 | 1.56 |
| B-A | 150.4 | 150.4 | 233.4 | 1.55 | 234.3 | 1.56 |
| C-D | 33.9 | 33.9 | 12.2 | 0.36 | 12.3 | 0.36 |
| C-A | 338.7 | 338.7 | 122.4 | 0.36 | 122.6 | 0.36 |
| C-B | 67.7 | 67.7 | 24.5 | 0.36 | 24.5 | 0.36 |
| D-A | 12.0 | 12.0 | 6.7 | 0.56 | 6.7 | 0.56 |
| D-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-C | 12.0 | 12.0 | 6.7 | 0.56 | 6.7 | 0.56 |
| ALL | 1127.7 | 1127.7 | 979.2 | 0.87 | 982.0 | 0.87 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed

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

[Printed at 16:52:11 on 25/07/2018]

_____ O S C A D Y 5 _____

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioC_2039PM.voi" at 16:47:54 on Wednesday, 25 July 2018

FILE PROPERTIES
**********

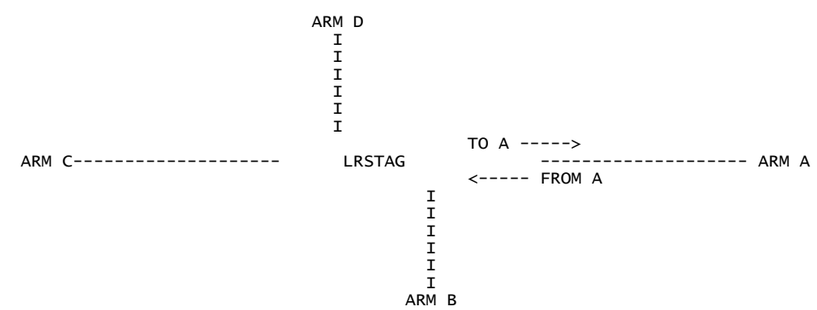
RUN TITLE: ScenarioC_2039PM
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill
and Maryborough Woods

**** ERROR AND WARNING MESSAGES ****
==========

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS
**********

INPUT DATA
---




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel



GEOMETRIC DATA
---

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT<br>RIGHT | STRAIGHT | STRAIGHT<br>LEFT | STRAIGHT |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

TRAFFIC DEMAND DATA
---

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 16.45 TO 18.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 17.00 TO 18.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioC_2039PM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|
| ARM A | 0.0 | 48.0 | 312.0 | 21.0 |
| ARM B | 70.0 | 0.0 | 26.0 | 4.0 |
| ARM C | 501.0 | 113.0 | 0.0 | 74.0 |
| ARM D | 39.0 | 1.0 | 29.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS<br>CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 17.00-18.00 | A | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 17.00 | 17.30 | 18.00 | 4.76 | 7.14 | 4.76 |
| | B | 17.00 | 17.30 | 18.00 | 1.25 | 1.88 | 1.25 |
| | C | 17.00 | 17.30 | 18.00 | 8.60 | 12.90 | 8.60 |
| | D | 17.00 | 17.30 | 18.00 | 0.86 | 1.29 | 0.86 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|
| LANES ON GREEN: ARM A | 1 | | | | |
| B | | | 1 | | |
| C | 1 | 1 | | | |
| D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | |
| A | 1 | L S R | 5.69 | 1552.9 | 25.55 | 26.5 | | 9.67 |
| B | 1 | L S R | 1.49 | 1696.9 | 27.92 | 6.5 | | 2.59 |
| C | 1 | L S R | 10.27 | 1312.3 | 21.59 | 36.5 | 45.4 | 13.99 |
| D | 1 | L S R | 1.03 | 1490.1 | 24.84 | 6.5 | | 2.31 |
| 17.15-17.30 | | | | | | | | |
| A | 1 | L S R | 6.96 | 1539.9 | 25.34 | 26.5 | | 9.59 |
| B | 1 | L S R | 1.83 | 1696.9 | 27.92 | 6.5 | | 2.59 |
| C | 1 | L S R | 12.58 | 1230.9 | 20.25 | 36.5 | 45.4 | 13.12 |
| D | 1 | L S R | 1.26 | 1490.1 | 24.84 | 6.5 | | 2.31 |
| 17.30-17.45 | | | | | | | | |
| A | 1 | L S R | 6.96 | 1539.9 | 25.34 | 26.5 | | 9.59 |
| B | 1 | L S R | 1.83 | 1696.9 | 27.92 | 6.5 | | 2.59 |
| C | 1 | L S R | 12.58 | 1230.9 | 20.25 | 36.5 | 45.4 | 13.12 |
| D | 1 | L S R | 1.26 | 1490.1 | 24.84 | 6.5 | | 2.31 |
| 17.45-18.00 | | | | | | | | |
| A | 1 | L S R | 5.69 | 1552.9 | 25.55 | 26.5 | | 9.67 |
| B | 1 | L S R | 1.49 | 1696.9 | 27.92 | 6.5 | | 2.59 |
| C | 1 | L S R | 10.27 | 1312.3 | 21.59 | 36.5 | 45.4 | 13.99 |
| D | 1 | L S R | 1.03 | 1490.1 | 24.84 | 6.5 | | 2.31 |



QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| A | 1 | L S R | 5.69 | 9.67 | 0.588 | 2.1 | 4.6 | 32.0 | |
| B | 1 | L S R | 1.49 | 2.59 | 0.576 | 1.2 | 2.0 | 17.6 | |
| C | 1 | L S R | 10.27 | 13.99 | 0.734 | 3.4 | 6.9 | 50.4 | |
| D | 1 | L S R | 1.03 | 2.31 | 0.447 | 0.7 | 1.3 | 10.8 | |
| 17.15-17.30 | | | | | | | | | |
| A | 1 | L S R | 6.96 | 9.59 | 0.726 | 3.3 | 6.2 | 48.9 | |
| B | 1 | L S R | 1.83 | 2.59 | 0.705 | 1.8 | 2.8 | 27.3 | |
| C | 1 | L S R | 12.58 | 13.12 | 0.958 | 10.2 | 13.8 | 135.9 | |
| D | 1 | L S R | 1.26 | 2.31 | 0.547 | 1.0 | 1.7 | 15.2 | |
| 17.30-17.45 | | | | | | | | | |
| A | 1 | L S R | 6.96 | 9.59 | 0.726 | 3.3 | 6.2 | 49.7 | |
| B | 1 | L S R | 1.83 | 2.59 | 0.705 | 1.9 | 2.9 | 28.8 | |
| C | 1 | L S R | 12.58 | 13.12 | 0.958 | 11.8 | 15.4 | 181.0 | |
| D | 1 | L S R | 1.26 | 2.31 | 0.547 | 1.0 | 1.7 | 15.5 | |
| 17.45-18.00 | | | | | | | | | |
| A | 1 | L S R | 5.69 | 9.67 | 0.588 | 2.2 | 4.6 | 32.6 | |
| B | 1 | L S R | 1.49 | 2.59 | 0.576 | 1.3 | 2.1 | 19.3 | |
| C | 1 | L S R | 10.27 | 13.99 | 0.734 | 3.5 | 7.0 | 61.4 | |
| D | 1 | L S R | 1.03 | 2.31 | 0.447 | 0.7 | 1.3 | 11.2 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 2.1 | 4.6 | **+++ |
| 17.30 | 1 | 3.3 | 6.2 | ***+++ |
| 17.45 | 1 | 3.3 | 6.2 | ***+++ |
| 18.00 | 1 | 2.2 | 4.6 | **+++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 1.2 | 2.0 | *+ |
| 17.30 | 1 | 1.8 | 2.8 | **+ |
| 17.45 | 1 | 1.9 | 2.9 | **+ |
| 18.00 | 1 | 1.3 | 2.1 | *+ |

QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 3.4 | 6.9 | ***++++ |
| 17.30 | 1 | 10.2 | 13.8 | **********++++ |
| 17.45 | 1 | 11.8 | 15.4 | ***********+++ |
| 18.00 | 1 | 3.5 | 7.0 | ***++++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 0.7 | 1.3 | * |
| 17.30 | 1 | 1.0 | 1.7 | *+ |
| 17.45 | 1 | 1.0 | 1.7 | *+ |
| 18.00 | 1 | 0.7 | 1.3 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (17.00-18.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | (VEH/H) | * QUEUEING * DELAY * (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 47.8 | 47.8 | 20.6 | 0.43 | 20.6 | 0.43 |
| A-C | 310.8 | 310.8 | 133.7 | 0.43 | 133.9 | 0.43 |
| A-D | 20.9 | 20.9 | 9.0 | 0.43 | 9.0 | 0.43 |
| B-C | 25.9 | 25.9 | 24.2 | 0.93 | 24.3 | 0.94 |
| B-D | 4.0 | 4.0 | 3.7 | 0.93 | 3.7 | 0.94 |
| B-A | 69.7 | 69.7 | 65.1 | 0.93 | 65.3 | 0.94 |
| C-D | 73.7 | 73.7 | 46.1 | 0.63 | 46.2 | 0.63 |
| C-A | 499.1 | 499.1 | 312.2 | 0.63 | 312.5 | 0.63 |
| C-B | 112.6 | 112.6 | 70.4 | 0.63 | 70.5 | 0.63 |
| D-A | 38.9 | 38.9 | 29.7 | 0.76 | 29.8 | 0.77 |
| D-B | 1.0 | 1.0 | 0.8 | 0.76 | 0.8 | 0.77 |
| D-C | 28.9 | 28.9 | 22.1 | 0.76 | 22.1 | 0.77 |
| ALL | 1233.3 | 1233.3 | 737.5 | 0.60 | 738.6 | 0.60 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed
========== end of file ==========

[Printed at 16:48:17 on 25/07/2018]



OSCADY 5

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039AM.voi" at 17:18:41 on Wednesday, 30 January 2019

FILE PROPERTIES

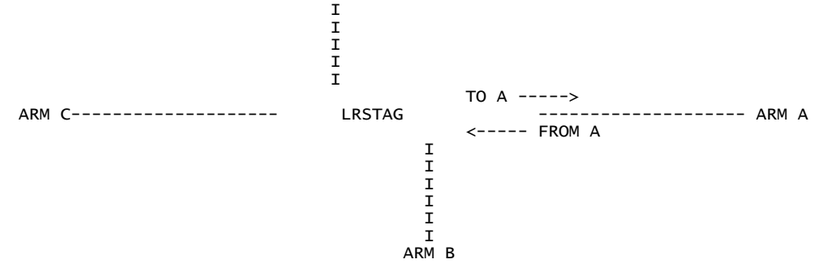
RUN TITLE: Junction2
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

**** ERROR AND WARNING MESSAGES ****

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS

INPUT DATA




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel

GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT<br>RIGHT | | STRAIGHT<br>LEFT | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 07.45 TO 09.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 08.00 TO 09.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioD_2024AM

| TOTAL TRAFFIC DEMAND (VEHICLES / HOUR) | | | | |
|---|---|---|---|---|
| FROM/TO | ARM A | ARM B | ARM C | ARM D |
| ARM A | 0.0 | 20.0 | 561.0 | 0.0 |
| ARM B | 7.0 | 0.0 | 7.0 | 0.0 |
| ARM C | 276.0 | 57.0 | 0.0 | 0.0 |
| ARM D | 0.0 | 0.0 | 0.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS: CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 08.00-09.00 | A | 0.970 | 0.000 | 0.030 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |



DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 08.00 | 08.30 | 09.00 | 30.64 | 45.96 | 30.64 |
| | B | 08.00 | 08.30 | 09.00 | 7.06 | 10.59 | 7.06 |
| | C | 08.00 | 08.30 | 09.00 | 23.80 | 35.70 | 23.80 |
| | D | 08.00 | 08.30 | 09.00 | 0.88 | 1.31 | 0.88 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|---|
| LANES ON GREEN: | ARM A | 1 | | | | |
| | B | | | 1 | | |
| | C | 1 | 1 | | | |
| | D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| | A | 1 | L S R | 8.67 | 1695.8 | 27.20 | 26.5 | | 10.30 |
| | B | 1 | L S R | 0.21 | 1656.4 | 27.25 | 6.5 | | 2.53 |
| | C | 1 | L S R | 4.97 | 1078.9 | 17.75 | 36.5 | 45.4 | 11.50 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 08.15-08.30 | | | | | | | | | |
| | A | 1 | L S R | 10.62 | 1695.8 | 27.20 | 26.5 | | 10.30 |
| | B | 1 | L S R | 0.26 | 1656.4 | 27.25 | 6.5 | | 2.53 |
| | C | 1 | L S R | 6.09 | 980.5 | 16.13 | 36.5 | 45.4 | 10.45 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 08.30-08.45 | | | | | | | | | |
| | A | 1 | L S R | 10.62 | 1695.8 | 27.20 | 26.5 | | 10.30 |
| | B | 1 | L S R | 0.26 | 1656.4 | 27.25 | 6.5 | | 2.53 |
| | C | 1 | L S R | 6.09 | 980.5 | 16.13 | 36.5 | 45.4 | 10.45 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 08.45-09.00 | | | | | | | | | |
| | A | 1 | L S R | 8.67 | 1695.8 | 27.20 | 26.5 | | 10.30 |
| | B | 1 | L S R | 0.21 | 1656.4 | 27.25 | 6.5 | | 2.53 |
| | C | 1 | L S R | 4.97 | 1078.9 | 17.75 | 36.5 | 45.4 | 11.50 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME SEGMENT | ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT: MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT: MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | | |
| | A | 1 | L S R | 8.67 | 10.30 | 0.842 | 5.2 | 8.7 | 75.2 | |
| | B | 1 | L S R | 0.21 | 2.53 | 0.083 | 0.1 | 0.2 | 1.6 | |
| | C | 1 | L S R | 4.97 | 11.50 | 0.432 | 1.1 | 3.0 | 15.8 | |
| | D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 08.15-08.30 | | | | | | | | | | |
| | A | 1 | L S R | 10.62 | 10.30 | 1.031 | 16.2 | 20.0 | 194.6 | |
| | B | 1 | L S R | 0.26 | 2.53 | 0.101 | 0.1 | 0.3 | 2.0 | |
| | C | 1 | L S R | 6.09 | 10.45 | 0.582 | 1.6 | 3.9 | 24.7 | |
| | D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 08.30-08.45 | | | | | | | | | | |
| | A | 1 | L S R | 10.62 | 10.30 | 1.031 | 23.1 | 26.9 | 317.1 | |
| | B | 1 | L S R | 0.26 | 2.53 | 0.101 | 0.1 | 0.3 | 2.0 | |
| | C | 1 | L S R | 6.09 | 10.45 | 0.582 | 1.7 | 3.9 | 24.8 | |
| | D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 08.45-09.00 | | | | | | | | | | |
| | A | 1 | L S R | 8.67 | 10.30 | 0.842 | 6.9 | 10.6 | 217.0 | |
| | B | 1 | L S R | 0.21 | 2.53 | 0.083 | 0.1 | 0.2 | 1.6 | |
| | C | 1 | L S R | 4.97 | 11.50 | 0.432 | 1.1 | 3.0 | 15.9 | |
| | D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 5.2 | 8.7 | *****++++ |
| 08.30 | 1 | 16.2 | 20.0 | ***************++++ |
| 08.45 | 1 | 23.1 | 26.9 | ***********************++++ |
| 09.00 | 1 | 6.9 | 10.6 | *******++++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 08.15 | 1 | 0.1 | 0.2 |
| 08.30 | 1 | 0.1 | 0.3 |
| 08.45 | 1 | 0.1 | 0.3 |
| 09.00 | 1 | 0.1 | 0.2 |



QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 1.1 | 3.0 | *++ |
| 08.30 | 1 | 1.6 | 3.9 | **++ |
| 08.45 | 1 | 1.7 | 3.9 | **++ |
| 09.00 | 1 | 1.1 | 3.0 | *++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 08.15 | 1 | 0.0 | 0.0 |
| 08.30 | 1 | 0.0 | 0.0 |
| 08.45 | 1 | 0.0 | 0.0 |
| 09.00 | 1 | 0.0 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (08.00-09.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL): (VEH) | (VEH/H) | * QUEUEING * DELAY *: (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY *: (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 19.9 | 19.9 | 27.7 | 1.39 | 27.8 | 1.39 |
| A-C | 558.9 | 558.9 | 776.2 | 1.39 | 778.4 | 1.39 |
| A-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-C | 7.0 | 7.0 | 3.5 | 0.51 | 3.5 | 0.51 |
| B-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-A | 7.0 | 7.0 | 3.5 | 0.51 | 3.5 | 0.51 |
| C-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-A | 275.0 | 275.0 | 67.3 | 0.24 | 67.3 | 0.24 |
| C-B | 56.8 | 56.8 | 13.9 | 0.24 | 13.9 | 0.24 |
| D-A | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-C | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| ALL | 924.5 | 924.5 | 892.1 | 0.96 | 894.5 | 0.97 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed

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

[Printed at 17:18:52 on 30/01/2019]

_____ O S C A D Y 5 _____

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039PM.voi" at 17:23:23 on Wednesday, 30 January 2019

FILE PROPERTIES
**********

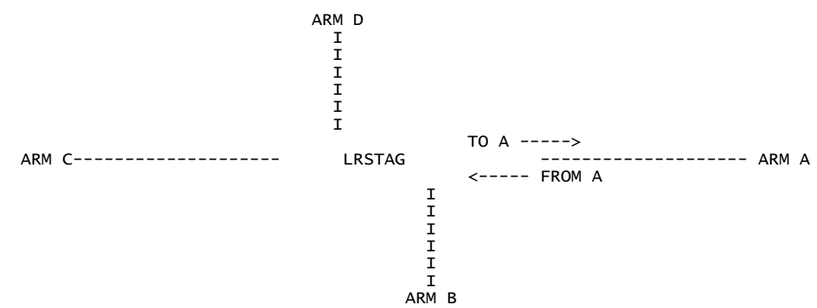
RUN TITLE: Junction2
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

**** ERROR AND WARNING MESSAGES ****
==========

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS
**********

INPUT DATA
---




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel



GEOMETRIC DATA
---

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT | STRAIGHT | STRAIGHT<br>LEFT | |
| | | RIGHT | | | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

TRAFFIC DEMAND DATA
---

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 16.45 TO 18.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 17.00 TO 18.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioD_2024PM

| TOTAL TRAFFIC DEMAND (VEHICLES / HOUR) | | | | |
|---|---|---|---|---|
| FROM/TO | ARM A | ARM B | ARM C | ARM D |
| ARM A | 0.0 | 21.0 | 318.0 | 0.0 |
| ARM B | 7.0 | 0.0 | 21.0 | 0.0 |
| ARM C | 481.0 | 119.0 | 0.0 | 0.0 |
| ARM D | 0.0 | 0.0 | 0.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS | | | | | |
|---|---|---|---|---|---|---|---|
| | | CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
| 17.00-18.00 | A | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 17.00 | 17.30 | 18.00 | 21.95 | 32.92 | 21.95 |
| | B | 17.00 | 17.30 | 18.00 | 4.21 | 6.32 | 4.21 |
| | C | 17.00 | 17.30 | 18.00 | 39.61 | 59.42 | 39.61 |
| | D | 17.00 | 17.30 | 18.00 | 2.46 | 3.69 | 2.46 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|---|
| LANES ON GREEN: ARM | A | 1 | | | | |
| | B | | | 1 | | |
| | C | 1 | 1 | | | |
| | D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | |
| A | 1 | L S R | 5.06 | 1691.8 | 27.83 | 26.5 | | 10.54 |
| B | 1 | L S R | 0.42 | 1608.3 | 26.46 | 6.5 | | 2.46 |
| C | 1 | L S R | 8.96 | 1299.4 | 21.38 | 36.5 | 45.4 | 13.85 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 17.15-17.30 | | | | | | | | |
| A | 1 | L S R | 6.20 | 1691.8 | 27.83 | 26.5 | | 10.54 |
| B | 1 | L S R | 0.51 | 1608.3 | 26.46 | 6.5 | | 2.46 |
| C | 1 | L S R | 10.97 | 1214.3 | 19.98 | 36.5 | 45.4 | 12.94 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 17.30-17.45 | | | | | | | | |
| A | 1 | L S R | 6.20 | 1691.8 | 27.83 | 26.5 | | 10.54 |
| B | 1 | L S R | 0.51 | 1608.3 | 26.46 | 6.5 | | 2.46 |
| C | 1 | L S R | 10.97 | 1214.3 | 19.98 | 36.5 | 45.4 | 12.94 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 17.45-18.00 | | | | | | | | |
| A | 1 | L S R | 5.06 | 1691.8 | 27.83 | 26.5 | | 10.54 |
| B | 1 | L S R | 0.42 | 1608.3 | 26.46 | 6.5 | | 2.46 |
| C | 1 | L S R | 8.96 | 1299.4 | 21.38 | 36.5 | 45.4 | 13.85 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |



QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| A | 1 | L S R | 5.06 | 10.54 | 0.480 | 1.7 | 3.9 | 24.8 | |
| B | 1 | L S R | 0.42 | 2.46 | 0.170 | 0.2 | 0.5 | 3.4 | |
| C | 1 | L S R | 8.96 | 13.85 | 0.647 | 2.5 | 5.7 | 37.3 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 17.15-17.30 | | | | | | | | | |
| A | 1 | L S R | 6.20 | 10.54 | 0.588 | 2.3 | 5.0 | 34.4 | |
| B | 1 | L S R | 0.51 | 2.46 | 0.208 | 0.3 | 0.6 | 4.2 | |
| C | 1 | L S R | 10.97 | 12.94 | 0.847 | 5.2 | 8.6 | 75.7 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 17.30-17.45 | | | | | | | | | |
| A | 1 | L S R | 6.20 | 10.54 | 0.588 | 2.3 | 5.0 | 34.5 | |
| B | 1 | L S R | 0.51 | 2.46 | 0.208 | 0.3 | 0.6 | 4.3 | |
| C | 1 | L S R | 10.97 | 12.94 | 0.847 | 5.3 | 8.8 | 80.8 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 17.45-18.00 | | | | | | | | | |
| A | 1 | L S R | 5.06 | 10.54 | 0.480 | 1.7 | 3.9 | 25.0 | |
| B | 1 | L S R | 0.42 | 2.46 | 0.170 | 0.2 | 0.5 | 3.4 | |
| C | 1 | L S R | 8.96 | 13.85 | 0.647 | 2.5 | 5.7 | 38.9 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 1.7 | 3.9 | **++ |
| 17.30 | 1 | 2.3 | 5.0 | **+++ |
| 17.45 | 1 | 2.3 | 5.0 | **+++ |
| 18.00 | 1 | 1.7 | 3.9 | **++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 0.2 | 0.5 | |
| 17.30 | 1 | 0.3 | 0.6 | + |
| 17.45 | 1 | 0.3 | 0.6 | + |
| 18.00 | 1 | 0.2 | 0.5 | |

QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 2.5 | 5.7 | ***+++ |
| 17.30 | 1 | 5.2 | 8.6 | *****++++ |
| 17.45 | 1 | 5.3 | 8.8 | *****++++ |
| 18.00 | 1 | 2.5 | 5.7 | ***+++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 17.15 | 1 | 0.0 | 0.0 |
| 17.30 | 1 | 0.0 | 0.0 |
| 17.45 | 1 | 0.0 | 0.0 |
| 18.00 | 1 | 0.0 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (17.00-18.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A-B | 20.9 | 20.9 | 7.3 | 0.35 | 7.4 | 0.35 |
| A-C | 316.8 | 316.8 | 111.3 | 0.35 | 111.4 | 0.35 |
| A-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-C | 20.9 | 20.9 | 11.4 | 0.55 | 11.4 | 0.55 |
| B-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-A | 7.0 | 7.0 | 3.8 | 0.55 | 3.8 | 0.55 |
| C-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-A | 479.2 | 479.2 | 186.6 | 0.39 | 186.8 | 0.39 |
| C-B | 118.5 | 118.5 | 46.2 | 0.39 | 46.2 | 0.39 |
| D-A | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-C | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| ALL | 963.3 | 963.3 | 366.6 | 0.38 | 367.0 | 0.38 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed
========== end of file ==========

[Printed at 17:23:33 on 30/01/2019]



_____ O S C A D Y 5 _____

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039AM.voi" at 17:41:08 on Wednesday, 30 January 2019

FILE PROPERTIES
**********

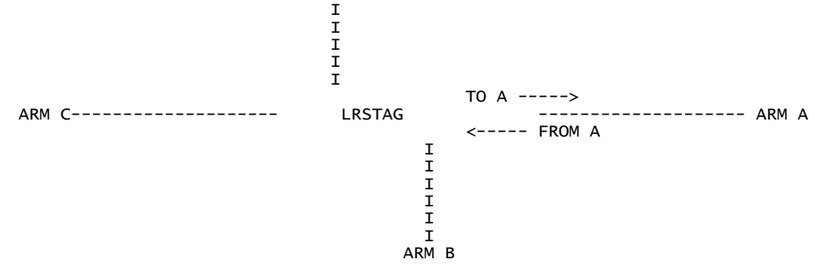
RUN TITLE: Junction2
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

**** ERROR AND WARNING MESSAGES ****
==========

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS
**********

INPUT DATA
---




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel

GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT<br>RIGHT | | STRAIGHT<br>LEFT | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 07.45 TO 09.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 08.00 TO 09.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioD_2039AM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|
| ARM A | 0.0 | 73.0 | 520.0 | 0.0 |
| ARM B | 39.0 | 0.0 | 10.0 | 0.0 |
| ARM C | 347.0 | 71.0 | 0.0 | 0.0 |
| ARM D | 0.0 | 0.0 | 0.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS<br>CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 08.00-09.00 | A | 0.970 | 0.000 | 0.030 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |



DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 08.00 | 08.30 | 09.00 | 45.46 | 68.19 | 45.46 |
| | B | 08.00 | 08.30 | 09.00 | 8.29 | 12.43 | 8.29 |
| | C | 08.00 | 08.30 | 09.00 | 34.25 | 51.38 | 34.25 |
| | D | 08.00 | 08.30 | 09.00 | 0.88 | 1.31 | 0.88 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|---|
| LANES ON GREEN: | ARM A | 1 | | | | |
| | B | | | 1 | | |
| | C | 1 | 1 | | | |
| | D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| | A | 1 | L S R | 8.85 | 1682.7 | 26.99 | 26.5 | | 10.22 |
| | B | 1 | L S R | 0.73 | 1717.1 | 28.25 | 6.5 | | 2.62 |
| | C | 1 | L S R | 6.24 | 1065.8 | 17.53 | 36.5 | 45.4 | 11.36 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 08.15-08.30 | | | | | | | | | |
| | A | 1 | L S R | 10.84 | 1682.7 | 26.99 | 26.5 | | 10.22 |
| | B | 1 | L S R | 0.90 | 1717.1 | 28.25 | 6.5 | | 2.62 |
| | C | 1 | L S R | 7.64 | 983.3 | 16.18 | 36.5 | 45.4 | 10.48 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 08.30-08.45 | | | | | | | | | |
| | A | 1 | L S R | 10.84 | 1682.7 | 26.99 | 26.5 | | 10.22 |
| | B | 1 | L S R | 0.90 | 1717.1 | 28.25 | 6.5 | | 2.62 |
| | C | 1 | L S R | 7.64 | 983.3 | 16.18 | 36.5 | 45.4 | 10.48 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 08.45-09.00 | | | | | | | | | |
| | A | 1 | L S R | 8.85 | 1682.7 | 26.99 | 26.5 | | 10.22 |
| | B | 1 | L S R | 0.73 | 1717.1 | 28.25 | 6.5 | | 2.62 |
| | C | 1 | L S R | 6.24 | 1065.8 | 17.53 | 36.5 | 45.4 | 11.36 |
| | D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME SEGMENT | ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT: MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT: MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | | |
| | A | 1 | L S R | 8.85 | 10.22 | 0.866 | 5.8 | 9.2 | 82.1 | |
| | B | 1 | L S R | 0.73 | 2.62 | 0.279 | 0.4 | 0.8 | 6.3 | |
| | C | 1 | L S R | 6.24 | 11.36 | 0.549 | 1.6 | 3.9 | 23.4 | |
| | D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 08.15-08.30 | | | | | | | | | | |
| | A | 1 | L S R | 10.84 | 10.22 | 1.061 | 19.7 | 23.4 | 223.7 | |
| | B | 1 | L S R | 0.90 | 2.62 | 0.341 | 0.5 | 1.1 | 8.2 | |
| | C | 1 | L S R | 7.64 | 10.48 | 0.729 | 2.8 | 5.4 | 41.4 | |
| | D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 08.30-08.45 | | | | | | | | | | |
| | A | 1 | L S R | 10.84 | 10.22 | 1.061 | 30.1 | 33.8 | 394.1 | |
| | B | 1 | L S R | 0.90 | 2.62 | 0.341 | 0.5 | 1.1 | 8.3 | |
| | C | 1 | L S R | 7.64 | 10.48 | 0.729 | 2.8 | 5.4 | 42.3 | |
| | D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 08.45-09.00 | | | | | | | | | | |
| | A | 1 | L S R | 8.85 | 10.22 | 0.866 | 12.9 | 16.6 | 333.0 | |
| | B | 1 | L S R | 0.73 | 2.62 | 0.279 | 0.4 | 0.8 | 6.4 | |
| | C | 1 | L S R | 6.24 | 11.36 | 0.549 | 1.6 | 3.9 | 23.8 | |
| | D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 5.8 | 9.2 | ******+++ |
| 08.30 | 1 | 19.7 | 23.4 | ********************+++ |
| 08.45 | 1 | 30.1 | 33.8 | ******************************++++ |
| 09.00 | 1 | 12.9 | 16.6 | *************++++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 0.4 | 0.8 | + |
| 08.30 | 1 | 0.5 | 1.1 | * |
| 08.45 | 1 | 0.5 | 1.1 | * |
| 09.00 | 1 | 0.4 | 0.8 | + |



QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 1.6 | 3.9 | **++ |
| 08.30 | 1 | 2.8 | 5.4 | ***++ |
| 08.45 | 1 | 2.8 | 5.4 | ***++ |
| 09.00 | 1 | 1.6 | 3.9 | **++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE: MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + |
|---|---|---|---|
| 08.15 | 1 | 0.0 | 0.0 |
| 08.30 | 1 | 0.0 | 0.0 |
| 08.45 | 1 | 0.0 | 0.0 |
| 09.00 | 1 | 0.0 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (08.00-09.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL): (VEH) | (VEH/H) | * QUEUEING * DELAY *: (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY *: (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 72.7 | 72.7 | 127.1 | 1.75 | 128.2 | 1.76 |
| A-C | 518.0 | 518.0 | 905.7 | 1.75 | 912.9 | 1.76 |
| A-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-C | 10.0 | 10.0 | 6.0 | 0.60 | 6.0 | 0.60 |
| B-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-A | 38.9 | 38.9 | 23.3 | 0.60 | 23.3 | 0.60 |
| C-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-A | 345.7 | 345.7 | 108.6 | 0.31 | 108.7 | 0.31 |
| C-B | 70.7 | 70.7 | 22.2 | 0.31 | 22.2 | 0.31 |
| D-A | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-C | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| ALL | 1056.0 | 1056.0 | 1192.9 | 1.13 | 1201.3 | 1.14 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed

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

[Printed at 17:41:20 on 30/01/2019]

_____ O S C A D Y 5 _____

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Junction2\ScenarioA_2039PM.voi" at 17:44:06 on Wednesday, 30 January 2019

FILE PROPERTIES
**********

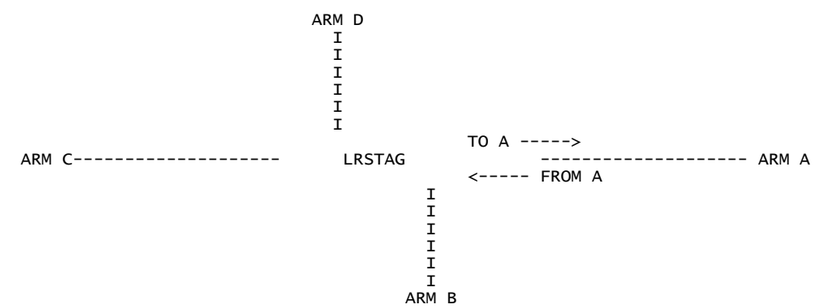
RUN TITLE: Junction2
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of Maryborough Hill and Maryborough Woods

**** ERROR AND WARNING MESSAGES ****
==========

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS
**********

INPUT DATA
---




ARM A IS Maryborough Hill (Northbound)
ARM B IS Maryborough Woods
ARM C IS Maryborough Hill (Southbound)
ARM D IS Maryborough Hotel



GEOMETRIC DATA
---

| DATA ITEM | | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| GRADIENT | | 2.0 % | 2.0 % | 2.0 % | 5.0 % |
| NUMBER OF LANES | | 1 | 1 | 1 | 1 |
| PERMITTED MOVEMENTS | LANE 1 | LSR | LSR | LSR | LSR |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 4.00 M | 3.25 M | 3.25 M | 3.25 M |
| LEFT TURN RADII | LANE 1 | 17.0 M | 8.0 M | 14.0 M | 7.5 M |
| RIGHT TURN RADII | LANE 1 | 21.5 M | 28.0 M | 5.0 M | 14.0 M |
| OPPOSING TRAFFIC MOVEMENTS FROM OPPOSITE ARM | | STRAIGHT | STRAIGHT | STRAIGHT<br>LEFT | |
| | | RIGHT | | | |
| STORAGE BEYOND STOPLINE | LANE 1 | 2.5 VEHS | 0.0 VEHS | 2.0 VEHS | 0.0 VEHS |

| | |
|---|---|
| LENGTH OF STAGGER | 11.0 M |
| AVERAGE TOTAL ROAD WIDTH OF STAGGERED ARMS ( B AND D ) | 7.0 M |

| FLARES | ADJACENT LANE | STORAGE (PCU) | RATIO SF THIS BAY /SF ADJACENT LANE |
|---|---|---|---|
| ARM C; BAY 1 | 1 | 4 | 1.00 |

TRAFFIC DEMAND DATA
---

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 16.45 TO 18.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 17.00 TO 18.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioD_2039PM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|
| ARM A | 0.0 | 72.0 | 331.0 | 0.0 |
| ARM B | 10.0 | 0.0 | 29.0 | 0.0 |
| ARM C | 519.0 | 113.0 | 0.0 | 0.0 |
| ARM D | 0.0 | 0.0 | 0.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS<br>CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 17.00-18.00 | A | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | B | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | D | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 17.00 | 17.30 | 18.00 | 32.03 | 48.04 | 32.03 |
| | B | 17.00 | 17.30 | 18.00 | 5.19 | 7.78 | 5.19 |
| | C | 17.00 | 17.30 | 18.00 | 55.41 | 83.12 | 55.41 |
| | D | 17.00 | 17.30 | 18.00 | 2.46 | 3.69 | 2.46 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 70.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 | STAGE 5 |
|---|---|---|---|---|---|
| LANES ON GREEN: ARM A | 1 | | | | |
| B | | | 1 | | |
| C | 1 | 1 | | | |
| D | | | | 1 | |
| MINIMUM GREEN TIME (SECS) | 10.0 | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | 5.0 | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | |
| A | 1 | L S R | 6.02 | 1674.6 | 27.55 | 26.5 | | 10.43 |
| B | 1 | L S R | 0.58 | 1609.5 | 26.48 | 6.5 | | 2.46 |
| C | 1 | L S R | 9.43 | 1254.9 | 20.65 | 36.5 | 45.4 | 13.38 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 17.15-17.30 | | | | | | | | |
| A | 1 | L S R | 7.37 | 1674.6 | 27.55 | 26.5 | | 10.43 |
| B | 1 | L S R | 0.71 | 1609.5 | 26.48 | 6.5 | | 2.46 |
| C | 1 | L S R | 11.55 | 1158.5 | 19.06 | 36.5 | 45.4 | 12.35 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 17.30-17.45 | | | | | | | | |
| A | 1 | L S R | 7.37 | 1674.6 | 27.55 | 26.5 | | 10.43 |
| B | 1 | L S R | 0.71 | 1609.5 | 26.48 | 6.5 | | 2.46 |
| C | 1 | L S R | 11.55 | 1158.5 | 19.06 | 36.5 | 45.4 | 12.35 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |
| 17.45-18.00 | | | | | | | | |
| A | 1 | L S R | 6.02 | 1674.6 | 27.55 | 26.5 | | 10.43 |
| B | 1 | L S R | 0.58 | 1609.5 | 26.48 | 6.5 | | 2.46 |
| C | 1 | L S R | 9.43 | 1254.9 | 20.65 | 36.5 | 45.4 | 13.38 |
| D | 1 | L S R | 0.00 | 1479.8 | 24.66 | 6.5 | | 2.29 |



QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 17.00 AND 18.00

| TIME ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| A | 1 | L S R | 6.02 | 10.43 | 0.577 | 2.2 | 4.8 | 32.8 | |
| B | 1 | L S R | 0.58 | 2.46 | 0.237 | 0.3 | 0.7 | 4.9 | |
| C | 1 | L S R | 9.43 | 13.38 | 0.705 | 3.0 | 6.2 | 44.2 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 17.15-17.30 | | | | | | | | | |
| A | 1 | L S R | 7.37 | 10.43 | 0.706 | 3.2 | 6.3 | 48.7 | |
| B | 1 | L S R | 0.71 | 2.46 | 0.290 | 0.4 | 0.8 | 6.3 | |
| C | 1 | L S R | 11.55 | 12.35 | 0.936 | 8.3 | 11.8 | 114.7 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 17.30-17.45 | | | | | | | | | |
| A | 1 | L S R | 7.37 | 10.43 | 0.706 | 3.3 | 6.3 | 49.2 | |
| B | 1 | L S R | 0.71 | 2.46 | 0.290 | 0.4 | 0.8 | 6.3 | |
| C | 1 | L S R | 11.55 | 12.35 | 0.936 | 9.3 | 12.7 | 143.6 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |
| 17.45-18.00 | | | | | | | | | |
| A | 1 | L S R | 6.02 | 10.43 | 0.577 | 2.2 | 4.8 | 33.3 | |
| B | 1 | L S R | 0.58 | 2.46 | 0.237 | 0.3 | 0.7 | 5.0 | |
| C | 1 | L S R | 9.43 | 13.38 | 0.705 | 3.0 | 6.3 | 50.6 | |
| D | 1 | L S R | 0.00 | 2.29 | 0.000 | 0.0 | 0.0 | 0.0 | |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 2.2 | 4.8 | **+++ |
| 17.30 | 1 | 3.2 | 6.3 | ***+++ |
| 17.45 | 1 | 3.3 | 6.3 | ***+++ |
| 18.00 | 1 | 2.2 | 4.8 | **+++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 0.3 | 0.7 | + |
| 17.30 | 1 | 0.4 | 0.8 | + |
| 17.45 | 1 | 0.4 | 0.8 | + |
| 18.00 | 1 | 0.3 | 0.7 | + |

QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 3.0 | 6.2 | ***+++ |
| 17.30 | 1 | 8.3 | 11.8 | ********++++ |
| 17.45 | 1 | 9.3 | 12.7 | *********++++ |
| 18.00 | 1 | 3.0 | 6.3 | ***+++ |

QUEUES FOR ARM D

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 17.15 | 1 | 0.0 | 0.0 | |
| 17.30 | 1 | 0.0 | 0.0 | |
| 17.45 | 1 | 0.0 | 0.0 | |
| 18.00 | 1 | 0.0 | 0.0 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (17.00-18.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | (VEH/H) | * QUEUEING * DELAY * (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 71.7 | 71.7 | 29.3 | 0.41 | 29.4 | 0.41 |
| A-C | 329.7 | 329.7 | 134.8 | 0.41 | 134.9 | 0.41 |
| A-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-C | 28.9 | 28.9 | 16.8 | 0.58 | 16.8 | 0.58 |
| B-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| B-A | 10.0 | 10.0 | 5.8 | 0.58 | 5.8 | 0.58 |
| C-D | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-A | 517.0 | 517.0 | 290.0 | 0.56 | 290.3 | 0.56 |
| C-B | 112.6 | 112.6 | 63.2 | 0.56 | 63.2 | 0.56 |
| D-A | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-B | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| D-C | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| ALL | 1069.9 | 1069.9 | 539.8 | 0.50 | 540.4 | 0.51 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed
========== end of file ==========

[Printed at 17:44:15 on 30/01/2019]



TRL LIMITED



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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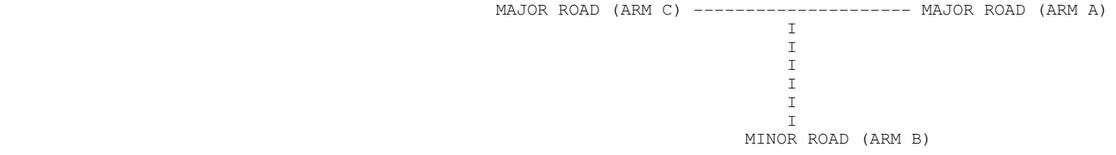
Run with file:-
"C:\Castletreasure\Junction3_MaryboroughHill_N28SlipRd\ScenarioA_2039AM&PM.vpi"
(drive-on-the-left ) at 12:31:02 on Thursday, 31 January 2019

RUN INFORMATION
**********

RUN TITLE: Junction 3
LOCATION: Douglas
DATE: 09/07/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for junction between Maryborough Hill and the N28 Slip road northbound.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY
**********

INPUT DATA
----------




ARM A IS Maryborough Hill Southbound
ARM B IS N28 Slip Road
ARM C IS Maryborough Hill Northbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 9.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 60.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 60.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 60.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 678.27 | 0.23 | 0.09 |

| 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 |
|---|---|---|---|---|
| 540.01 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.21 | 0.21 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction3_MaryboroughHill_N28SlipRd\ScenarioA_2039AM&PM.vpo - Page

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioA_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.16 | 9.24 | 6.16 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.00 | 0.00 | 0.00 |
| ARM C | 15.00 | 45.00 | 75.00 | 9.73 | 14.59 | 9.73 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.282 | 0.718 |
| | | 0.0 | 139.0 | 354.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.000 | 0.000 | 0.000 |
| | | 0.0 | 0.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.486 | 0.514 | 0.000 |
| | | 378.0 | 400.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.00 | 6.56 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.02 | 8.59 | 0.584 | | 0.00 | 1.57 | 22.5 | | 0.27 |
| A-B | 1.74 | | | | | | | | |
| A-C | 4.44 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.00 | 5.97 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.99 | 8.35 | 0.718 | | 1.57 | 3.07 | 44.8 | | 0.41 |
| A-B | 2.08 | | | | | | | | |
| A-C | 5.30 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.00 | 5.10 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 7.34 | 8.01 | 0.916 | | 3.07 | 10.58 | 131.1 | | 0.91 |
| A-B | 2.55 | | | | | | | | |
| A-C | 6.50 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.00 | 4.96 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 7.34 | 8.01 | 0.916 | | 10.58 | 12.88 | 195.1 | | 1.46 |
| A-B | 2.55 | | | | | | | | |
| A-C | 6.50 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.00 | 5.77 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.99 | 8.35 | 0.718 | | 12.88 | 3.85 | 77.1 | | 0.75 |
| A-B | 2.08 | | | | | | | | |
| A-C | 5.30 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.00 | 6.50 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.02 | 8.59 | 0.584 | | 3.85 | 1.77 | 27.7 | | 0.31 |
| A-B | 1.74 | | | | | | | | |
| A-C | 4.44 | | | | | | | | |

QUEUE FOR STREAM B-AC

| 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 |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 1.6 | ** |
| 08.15 | 3.1 | *** |
| 08.30 | 10.6 | ********** |
| 08.45 | 12.9 | ********** |
| 09.00 | 3.9 | **** |
| 09.15 | 1.8 | ** |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-AB | 550.6 | 367.0 | 498.3 | 0.91 | 498.5 | 0.91 |
| A-B | 191.3 | 127.5 | | | | |
| A-C | 487.3 | 324.8 | | | | |
| ALL | 1749.4 | 1166.3 | 498.3 | 0.28 | 498.5 | 0.28 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 678.27 | 0.23 | 0.09 |

| 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 |
|---|---|---|---|---|
| 540.01 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.21 | 0.21 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioA_2024PM

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

| | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.30 | 9.45 | 6.30 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.00 | 0.00 | 0.00 |
| ARM C | 15.00 | 45.00 | 75.00 | 8.79 | 13.18 | 8.79 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.129 | 0.871 |
| | | 0.0 | 65.0 | 439.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.000 | 0.000 | 0.000 |
| | | 0.0 | 0.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.501 | 0.499 | 0.000 |
| | | 352.0 | 351.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.00 | 6.58 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 4.40 | 8.57 | 0.514 | | 0.00 | 1.15 | 16.6 | | 0.23 |
| A-B | 0.82 | | | | | | | | |
| A-C | 5.51 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.00 | 6.02 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.26 | 8.32 | 0.632 | | 1.15 | 2.00 | 29.6 | | 0.32 |
| A-B | 0.97 | | | | | | | | |
| A-C | 6.58 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.00 | 5.20 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 6.44 | 7.97 | 0.808 | | 2.00 | 5.24 | 72.5 | | 0.57 |
| A-B | 1.19 | | | | | | | | |
| A-C | 8.06 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.00 | 5.14 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 6.44 | 7.97 | 0.808 | | 5.24 | 5.73 | 89.6 | | 0.70 |
| A-B | 1.19 | | | | | | | | |
| A-C | 8.06 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.00 | 5.94 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.26 | 8.32 | 0.632 | | 5.73 | 2.33 | 37.4 | | 0.39 |
| A-B | 0.97 | | | | | | | | |
| A-C | 6.58 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.00 | 6.55 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 4.40 | 8.57 | 0.514 | | 2.33 | 1.25 | 19.4 | | 0.25 |
| A-B | 0.82 | | | | | | | | |
| A-C | 5.51 | | | | | | | | |

QUEUE FOR STREAM B-AC

| 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 |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 1.2 | * |
| 17.15 | 2.0 | ** |
| 17.30 | 5.2 | ***** |
| 17.45 | 5.7 | ****** |
| 18.00 | 2.3 | ** |
| 18.15 | 1.3 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-AB | 483.1 | 322.1 | 265.3 | 0.55 | 265.4 | 0.55 |
| A-B | 89.5 | 59.6 | | | | |
| A-C | 604.3 | 402.8 | | | | |
| ALL | 1661.3 | 1107.6 | 265.3 | 0.16 | 265.4 | 0.16 |

* 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

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

[Printed at 12:31:39 on 31/01/2019]

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction3_MaryboroughHill_N28SlipRd\ScenarioA_2039AM&PM.vpo - Page

TRL LIMITED



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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PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk



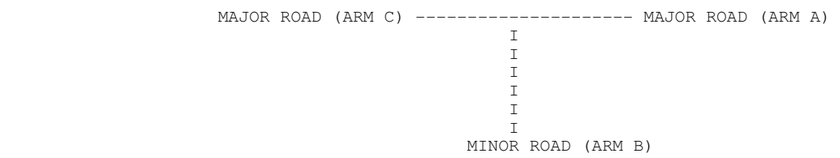
Run with file:-
"C:\Castletreasure\Junction3_MaryboroughHill_N28SlipRd\ScenarioA_2039AM&PM.vpi"
(drive-on-the-left ) at 17:00:25 on Wednesday, 25 July 2018

RUN INFORMATION

RUN TITLE: ScenarioA_2039AM&PM
LOCATION: Douglas
DATE: 09/07/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for junction between Maryborough Hill and the N28 Slip road northbound.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS Maryborough Hill Southbound
ARM B IS N28 Slip Road
ARM C IS Maryborough Hill Northbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 9.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 60.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 60.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 60.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 678.27 | 0.23 | 0.09 |

| 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 |
|---|---|---|---|---|
| 540.01 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.21 | 0.21 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction3_MaryboroughHill_N28SlipRd\ScenarioA_2039AM&PM.vpo - Page

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioA_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.55 | 9.83 | 6.55 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.00 | 0.00 | 0.00 |
| ARM C | 15.00 | 45.00 | 75.00 | 10.31 | 15.47 | 10.31 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.282 | 0.718 |
| | | 0.0 | 148.0 | 376.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.000 | 0.000 | 0.000 |
| | | 0.0 | 0.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.484 | 0.516 | 0.000 |
| | | 399.0 | 426.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.00 | 6.38 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.35 | 8.51 | 0.628 | | 0.00 | 1.92 | 27.4 | | 0.30 |
| A-B | 1.86 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.00 | 5.74 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 6.38 | 8.26 | 0.773 | | 1.92 | 4.19 | 59.8 | | 0.49 |
| A-B | 2.22 | | | | | | | | |
| A-C | 5.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.00 | 4.78 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 7.82 | 7.90 | 0.990 | | 4.19 | 17.84 | 197.8 | | 1.31 |
| A-B | 2.72 | | | | | | | | |
| A-C | 6.90 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.00 | 4.50 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 7.82 | 7.90 | 0.990 | | 17.84 | 25.06 | 348.8 | | 2.66 |
| A-B | 2.72 | | | | | | | | |
| A-C | 6.90 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.00 | 5.31 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 6.38 | 8.26 | 0.773 | | 25.06 | 5.85 | 206.7 | | 1.92 |
| A-B | 2.22 | | | | | | | | |
| A-C | 5.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.00 | 6.28 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.35 | 8.51 | 0.628 | | 5.85 | 2.23 | 36.2 | | 0.37 |
| A-B | 1.86 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

QUEUE FOR STREAM B-AC

| 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 |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 1.9 | ** |
| 08.15 | 4.2 | **** |
| 08.30 | 17.8 | ****************** |
| 08.45 | 25.1 | ************************* |
| 09.00 | 5.9 | ****** |
| 09.15 | 2.2 | ** |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-AB | 586.4 | 390.9 | 876.5 | 1.49 | 876.8 | 1.50 |
| A-B | 203.7 | 135.8 | | | | |
| A-C | 517.5 | 345.0 | | | | |
| ALL | 1856.8 | 1237.9 | 876.5 | 0.47 | 876.8 | 0.47 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 678.27 | 0.23 | 0.09 |

| 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 |
|---|---|---|---|---|
| 540.01 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.21 | 0.21 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction3_MaryboroughHill_N28SlipRd\ScenarioA_2039AM&PM.vpo - Page

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioA_2039PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.70 | 10.05 | 6.70 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.00 | 0.00 | 0.00 |
| ARM C | 15.00 | 45.00 | 75.00 | 9.36 | 14.04 | 9.36 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.129 | 0.871 |
| | | 0.0 | 69.0 | 467.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.000 | 0.000 | 0.000 |
| | | 0.0 | 0.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.501 | 0.499 | 0.000 |
| | | 375.0 | 374.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.00 | 6.40 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 4.69 | 8.48 | 0.553 | | 0.00 | 1.37 | 19.7 | | 0.25 |
| A-B | 0.87 | | | | | | | | |
| A-C | 5.86 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.00 | 5.79 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.60 | 8.22 | 0.682 | | 1.37 | 2.57 | 37.7 | | 0.37 |
| A-B | 1.03 | | | | | | | | |
| A-C | 7.00 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.00 | 4.89 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 6.86 | 7.85 | 0.874 | | 2.57 | 8.02 | 104.5 | | 0.76 |
| A-B | 1.27 | | | | | | | | |
| A-C | 8.57 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.00 | 4.78 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 6.86 | 7.85 | 0.874 | | 8.02 | 9.26 | 143.4 | | 1.08 |
| A-B | 1.27 | | | | | | | | |
| A-C | 8.57 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.00 | 5.65 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.60 | 8.22 | 0.682 | | 9.26 | 3.11 | 54.7 | | 0.54 |
| A-B | 1.03 | | | | | | | | |
| A-C | 7.00 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.00 | 6.36 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 4.69 | 8.48 | 0.553 | | 3.11 | 1.52 | 23.7 | | 0.28 |
| A-B | 0.87 | | | | | | | | |
| A-C | 5.86 | | | | | | | | |

QUEUE FOR STREAM B-AC

| 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 |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 1.4 | * |
| 17.15 | 2.6 | *** |
| 17.30 | 8.0 | ******** |
| 17.45 | 9.3 | ********* |
| 18.00 | 3.1 | *** |
| 18.15 | 1.5 | ** |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-AB | 514.8 | 343.2 | 383.8 | 0.75 | 383.9 | 0.75 |
| A-B | 95.0 | 63.3 | | | | |
| A-C | 642.8 | 428.5 | | | | |
| ALL | 1768.7 | 1179.1 | 383.8 | 0.22 | 383.9 | 0.22 |

* 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

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

[Printed at 17:01:08 on 25/07/2018]





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

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)



FOR SALES AND DISTRIBUTION INFORMATION,
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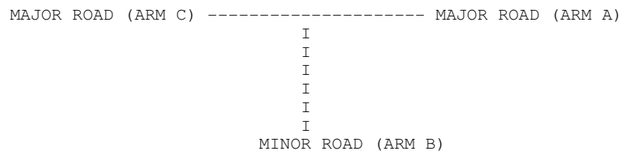
Run with file:-
"C:\Castletreasure\Junction3_MaryboroughHill_N28SlipRd\ScenarioC_2039AM&PM.vpi"
(drive-on-the-left ) at 12:35:01 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction3
LOCATION: Douglas
DATE: 09/07/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for junction between Maryborough Hill and the N28 Slip road northbound.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS Maryborough Hill Southbound
ARM B IS N28 Slip Road
ARM C IS Maryborough Hill Northbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 9.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 60.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 60.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 60.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 678.27 | 0.23 | 0.09 |

| 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 |
|---|---|---|---|---|
| 540.01 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.21 | 0.21 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction3_MaryboroughHill_N28SlipRd\ScenarioC_2039AM&PM.vpo - Page

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.46 | 9.69 | 6.46 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.00 | 0.00 | 0.00 |
| ARM C | 15.00 | 45.00 | 75.00 | 9.88 | 14.81 | 9.88 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| | | TURNING PROPORTIONS | | |
| | | TURNING COUNTS (VEH/HR) | | |
| | | (PERCENTAGE OF H.V.S) | | |
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.282 | 0.718 |
| | | 0.0 | 146.0 | 371.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.000 | 0.000 | 0.000 |
| | | 0.0 | 0.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.494 | 0.506 | 0.000 |
| | | 390.0 | 400.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.00 | 6.49 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.02 | 8.53 | 0.588 | | 0.00 | 1.61 | 23.0 | | 0.27 |
| A-B | 1.83 | | | | | | | | |
| A-C | 4.66 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.00 | 5.88 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.99 | 8.28 | 0.724 | | 1.61 | 3.20 | 46.6 | | 0.42 |
| A-B | 2.19 | | | | | | | | |
| A-C | 5.56 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.00 | 4.99 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 7.34 | 7.92 | 0.926 | | 3.20 | 11.49 | 140.1 | | 0.96 |
| A-B | 2.68 | | | | | | | | |
| A-C | 6.81 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.00 | 4.82 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 7.34 | 7.92 | 0.926 | | 11.49 | 14.24 | 213.9 | | 1.61 |
| A-B | 2.68 | | | | | | | | |
| A-C | 6.81 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.00 | 5.66 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.99 | 8.28 | 0.724 | | 14.24 | 4.06 | 86.1 | | 0.84 |
| A-B | 2.19 | | | | | | | | |
| A-C | 5.56 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.00 | 6.42 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.02 | 8.53 | 0.588 | | 4.06 | 1.82 | 28.6 | | 0.31 |
| A-B | 1.83 | | | | | | | | |
| A-C | 4.66 | | | | | | | | |

QUEUE FOR STREAM B-AC

| 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 |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 1.6 | ** |
| 08.15 | 3.2 | *** |
| 08.30 | 11.5 | *********** |
| 08.45 | 14.2 | ************** |
| 09.00 | 4.1 | **** |
| 09.15 | 1.8 | ** |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-AB | 550.6 | 367.0 | 538.3 | 0.98 | 538.5 | 0.98 |
| A-B | 201.0 | 134.0 | | | | |
| A-C | 510.7 | 340.4 | | | | |
| ALL | 1799.0 | 1199.3 | 538.3 | 0.30 | 538.5 | 0.30 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 678.27 | 0.23 | 0.09 |

| 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 |
|---|---|---|---|---|
| 540.01 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.21 | 0.21 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction3_MaryboroughHill_N28SlipRd\ScenarioC_2039AM&PM.vpo - Page

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2024PM

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

| | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.53 | 9.79 | 6.53 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.00 | 0.00 | 0.00 |
| ARM C | 15.00 | 45.00 | 75.00 | 9.00 | 13.50 | 9.00 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.128 | 0.872 |
| | | 0.0 | 67.0 | 455.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.000 | 0.000 | 0.000 |
| | | 0.0 | 0.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.512 | 0.488 | 0.000 |
| | | 369.0 | 351.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.00 | 6.52 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 4.40 | 8.52 | 0.517 | | 0.00 | 1.17 | 16.9 | | 0.24 |
| A-B | 0.84 | | | | | | | | |
| A-C | 5.71 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.00 | 5.93 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.26 | 8.26 | 0.637 | | 1.17 | 2.05 | 30.5 | | 0.33 |
| A-B | 1.00 | | | | | | | | |
| A-C | 6.82 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.00 | 5.09 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 6.44 | 7.90 | 0.815 | | 2.05 | 5.55 | 76.3 | | 0.59 |
| A-B | 1.23 | | | | | | | | |
| A-C | 8.35 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.00 | 5.02 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 6.44 | 7.90 | 0.815 | | 5.55 | 6.09 | 95.4 | | 0.73 |
| A-B | 1.23 | | | | | | | | |
| A-C | 8.35 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.00 | 5.85 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.26 | 8.26 | 0.637 | | 6.09 | 2.41 | 39.0 | | 0.40 |
| A-B | 1.00 | | | | | | | | |
| A-C | 6.82 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.00 | 6.48 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 4.40 | 8.52 | 0.517 | | 2.41 | 1.28 | 19.8 | | 0.25 |
| A-B | 0.84 | | | | | | | | |
| A-C | 5.71 | | | | | | | | |

QUEUE FOR STREAM B-AC

| 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 |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 1.2 | * |
| 17.15 | 2.1 | ** |
| 17.30 | 5.5 | ****** |
| 17.45 | 6.1 | ****** |
| 18.00 | 2.4 | ** |
| 18.15 | 1.3 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-AB | 483.1 | 322.1 | 278.0 | 0.58 | 278.0 | 0.58 |
| A-B | 92.2 | 61.5 | | | | |
| A-C | 626.3 | 417.5 | | | | |
| ALL | 1709.5 | 1139.7 | 278.0 | 0.16 | 278.0 | 0.16 |

* 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

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

[Printed at 12:35:25 on 31/01/2019]





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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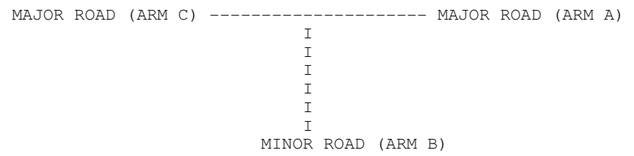
Run with file:-
"C:\Castletreasure\Junction3_MaryboroughHill_N28SlipRd\ScenarioC_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 12:00:12 on Monday, 4 February 2019

RUN INFORMATION

RUN TITLE: Junction3
LOCATION: Douglas
DATE: 09/07/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for junction between Maryborough Hill and the N28 Slip road northbound.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS Maryborough Hill Southbound
ARM B IS N28 Slip Road
ARM C IS Maryborough Hill Northbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 9.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 60.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 60.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 60.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 678.27 | 0.23 | 0.09 |

| 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 |
|---|---|---|---|---|
| 540.01 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.21 | 0.21 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction3_MaryboroughHill_N28SlipRd\ScenarioC_2024-2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.84 | 10.26 | 6.84 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.00 | 0.00 | 0.00 |
| ARM C | 15.00 | 45.00 | 75.00 | 10.48 | 15.71 | 10.48 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.282 | 0.718 |
| | | 0.0 | 154.0 | 393.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.000 | 0.000 | 0.000 |
| | | 0.0 | 0.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.492 | 0.508 | 0.000 |
| | | 412.0 | 426.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.00 | 6.31 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.35 | 8.46 | 0.632 | | 0.00 | 1.97 | 28.1 | | 0.30 |
| A-B | 1.93 | | | | | | | | |
| A-C | 4.93 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.00 | 5.65 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 6.38 | 8.19 | 0.780 | | 1.97 | 4.39 | 62.4 | | 0.51 |
| A-B | 2.31 | | | | | | | | |
| A-C | 5.89 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.00 | 4.66 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 7.82 | 7.81 | 1.001 | | 4.39 | 19.42 | 211.4 | | 1.39 |
| A-B | 2.83 | | | | | | | | |
| A-C | 7.21 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.00 | 4.34 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 7.82 | 7.81 | 1.001 | | 19.42 | 27.93 | 382.6 | | 2.93 |
| A-B | 2.83 | | | | | | | | |
| A-C | 7.21 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.00 | 5.16 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 6.38 | 8.19 | 0.780 | | 27.93 | 6.30 | 251.4 | | 2.28 |
| A-B | 2.31 | | | | | | | | |
| A-C | 5.89 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.00 | 6.20 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.35 | 8.46 | 0.632 | | 6.30 | 2.31 | 37.7 | | 0.39 |
| A-B | 1.93 | | | | | | | | |
| A-C | 4.93 | | | | | | | | |

QUEUE FOR STREAM B-AC

| 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 |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 2.0 | ** |
| 08.15 | 4.4 | **** |
| 08.30 | 19.4 | ******************* |
| 08.45 | 27.9 | **************************** |
| 09.00 | 6.3 | ****** |
| 09.15 | 2.3 | ** |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-AB | 586.4 | 390.9 | 973.7 | 1.66 | 974.0 | 1.66 |
| A-B | 212.0 | 141.3 | | | | |
| A-C | 540.9 | 360.6 | | | | |
| ALL | 1906.4 | 1270.9 | 973.7 | 0.51 | 974.0 | 0.51 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 678.27 | 0.23 | 0.09 |

| 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 |
|---|---|---|---|---|
| 540.01 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.21 | 0.21 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction3_MaryboroughHill_N28SlipRd\ScenarioC_2024-2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2039PM

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

| | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.94 | 10.41 | 6.94 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.00 | 0.00 | 0.00 |
| ARM C | 15.00 | 45.00 | 75.00 | 9.57 | 14.36 | 9.57 |

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 | 0.130 | 0.870 |
| | | 0.0 | 72.0 | 483.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.000 | 0.000 | 0.000 |
| | | 0.0 | 0.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.512 | 0.488 | 0.000 |
| | | 392.0 | 374.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.00 | 6.33 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 4.69 | 8.44 | 0.556 | | 0.00 | 1.40 | 20.1 | | 0.26 |
| A-B | 0.90 | | | | | | | | |
| A-C | 6.06 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.00 | 5.70 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.60 | 8.16 | 0.687 | | 1.40 | 2.66 | 39.0 | | 0.38 |
| A-B | 1.08 | | | | | | | | |
| A-C | 7.24 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.00 | 4.77 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 6.86 | 7.78 | 0.882 | | 2.66 | 8.59 | 110.7 | | 0.80 |
| A-B | 1.32 | | | | | | | | |
| A-C | 8.86 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.00 | 4.65 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 6.86 | 7.78 | 0.882 | | 8.59 | 10.02 | 154.8 | | 1.17 |
| A-B | 1.32 | | | | | | | | |
| A-C | 8.86 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.00 | 5.55 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 5.60 | 8.16 | 0.687 | | 10.02 | 3.25 | 58.4 | | 0.58 |
| A-B | 1.08 | | | | | | | | |
| A-C | 7.24 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.00 | 6.28 | 0.000 | | 0.00 | 0.00 | 0.0 | | 0.00 |
| C-AB | 4.69 | 8.44 | 0.556 | | 3.25 | 1.56 | 24.3 | | 0.29 |
| A-B | 0.90 | | | | | | | | |
| A-C | 6.06 | | | | | | | | |

QUEUE FOR STREAM B-AC

| 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 |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 1.4 | * |
| 17.15 | 2.7 | *** |
| 17.30 | 8.6 | ********* |
| 17.45 | 10.0 | ********** |
| 18.00 | 3.2 | *** |
| 18.15 | 1.6 | ** |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 0.0 | 0.0 | 0.0 | 0.00 | 0.0 | 0.00 |
| C-AB | 514.8 | 343.2 | 407.4 | 0.79 | 407.5 | 0.79 |
| A-B | 99.1 | 66.1 | | | | |
| A-C | 664.8 | 443.2 | | | | |
| ALL | 1818.3 | 1212.2 | 407.4 | 0.22 | 407.5 | 0.22 |

* 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

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

[Printed at 12:00:29 on 04/02/2019]



TRL LIMITED



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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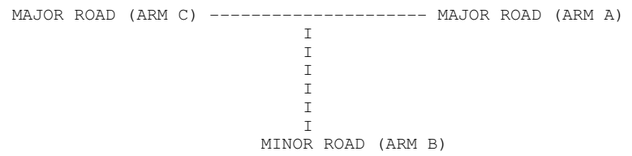
Run with file:-
"C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioA_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 13:10:03 on Thursday, 31 January 2019

RUN INFORMATION
**********

RUN TITLE: Junction5
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for priority junction between C rrigaline Road and the Vicarage residential estate.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY
**********

INPUT DATA
----------




ARM A IS R609 Westbound
ARM B IS The Vicarage
ARM C IS R609 Eastbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.50 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 40.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 40.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 40.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioA_2024-2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioA_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.05 | 9.08 | 6.05 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.57 | 0.86 | 0.57 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.22 | 4.84 | 3.22 |

| | 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 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 484.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.043 | 0.000 | 0.957 |
| | | 2.0 | 0.0 | 44.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.977 | 0.023 | 0.000 |
| | | 252.0 | 6.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.58 | 9.45 | 0.061 | | 0.00 | 0.06 | 0.9 | | 0.11 |
| C-AB | 0.08 | 8.54 | 0.009 | | 0.00 | 0.01 | 0.1 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 6.07 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.69 | 9.15 | 0.075 | | 0.06 | 0.08 | 1.2 | | 0.12 |
| C-AB | 0.09 | 8.29 | 0.011 | | 0.01 | 0.01 | 0.2 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 7.25 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.84 | 8.74 | 0.097 | | 0.08 | 0.11 | 1.6 | | 0.13 |
| C-AB | 0.11 | 7.93 | 0.014 | | 0.01 | 0.01 | 0.2 | | 0.13 |
| A-B | 0.00 | | | | | | | | |
| A-C | 8.88 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.84 | 8.74 | 0.097 | | 0.11 | 0.11 | 1.6 | | 0.13 |
| C-AB | 0.11 | 7.93 | 0.014 | | 0.01 | 0.01 | 0.2 | | 0.13 |
| A-B | 0.00 | | | | | | | | |
| A-C | 8.88 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.69 | 9.15 | 0.075 | | 0.11 | 0.08 | 1.3 | | 0.12 |
| C-AB | 0.09 | 8.29 | 0.011 | | 0.01 | 0.01 | 0.2 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 7.25 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.58 | 9.45 | 0.061 | | 0.08 | 0.07 | 1.0 | | 0.11 |
| C-AB | 0.08 | 8.54 | 0.009 | | 0.01 | 0.01 | 0.1 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 6.07 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 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

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 63.3 | 42.2 | 7.5 | 0.12 | 7.5 | 0.12 |
| C-AB | 8.3 | 5.5 | 1.0 | 0.12 | 1.0 | 0.12 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 666.2 | 444.1 | | | | |
| ALL | 1084.6 | 723.1 | 8.6 | 0.01 | 8.6 | 0.01 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioA_2024PM

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

| | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.85 | 5.77 | 3.85 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.32 | 0.49 | 0.32 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.53 | 3.79 | 2.53 |

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 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 308.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.192 | 0.000 | 0.808 |
| | | 5.0 | 0.0 | 21.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.891 | 0.109 | 0.000 |
| | | 180.0 | 22.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.33 | 9.48 | 0.034 | | 0.00 | 0.04 | 0.5 | | 0.11 |
| C-AB | 0.28 | 9.02 | 0.031 | | 0.00 | 0.03 | 0.5 | | 0.11 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.86 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.39 | 9.27 | 0.042 | | 0.04 | 0.04 | 0.6 | | 0.11 |
| C-AB | 0.33 | 8.86 | 0.037 | | 0.03 | 0.04 | 0.6 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 4.61 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.48 | 8.98 | 0.053 | | 0.04 | 0.06 | 0.8 | | 0.12 |
| C-AB | 0.40 | 8.63 | 0.047 | | 0.04 | 0.05 | 0.7 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 5.65 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.48 | 8.98 | 0.053 | | 0.06 | 0.06 | 0.8 | | 0.12 |
| C-AB | 0.40 | 8.63 | 0.047 | | 0.05 | 0.05 | 0.8 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 5.65 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.39 | 9.27 | 0.042 | | 0.06 | 0.04 | 0.7 | | 0.11 |
| C-AB | 0.33 | 8.86 | 0.037 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 4.61 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.33 | 9.48 | 0.034 | | 0.04 | 0.04 | 0.5 | | 0.11 |
| C-AB | 0.28 | 9.02 | 0.031 | | 0.04 | 0.03 | 0.5 | | 0.11 |
| A-B | 0.00 | | | | | | | | |
| A-C | 3.86 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.0 |
| 18.15 | 0.0 |

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

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 35.8 | 23.9 | 4.0 | 0.11 | 4.0 | 0.11 |
| C-AB | 30.3 | 20.2 | 3.6 | 0.12 | 3.6 | 0.12 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 423.9 | 282.6 | | | | |
| ALL | 737.8 | 491.8 | 7.7 | 0.01 | 7.7 | 0.01 |

* 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

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

[Printed at 13:10:31 on 31/01/2019]





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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TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk



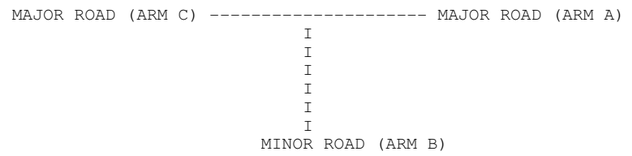
Run with file:-
"C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioA_2039AM&PM.vpi"
(drive-on-the-left ) at 17:18:40 on Wednesday, 25 July 2018

RUN INFORMATION

RUN TITLE: ScenarioA_2039AM&PM
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for priority junction between C rrigaline Road and the Vicarage residential estate.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Westbound
ARM B IS The Vicarage
ARM C IS R609 Eastbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.50 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 40.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 40.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 40.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioA_2039AM&PM.vpo - Page

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioA_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.34 | 9.51 | 6.34 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.61 | 0.92 | 0.61 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.31 | 4.97 | 3.31 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | TURNING PROPORTIONS | | | |
| | TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 507.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.041 | 0.000 | 0.959 |
| | | 2.0 | 0.0 | 47.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.977 | 0.023 | 0.000 |
| | | 259.0 | 6.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.61 | 9.39 | 0.066 | | 0.00 | 0.07 | 1.0 | | 0.11 |
| C-AB | 0.08 | 8.48 | 0.009 | | 0.00 | 0.01 | 0.1 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 6.36 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.73 | 9.08 | 0.081 | | 0.07 | 0.09 | 1.3 | | 0.12 |
| C-AB | 0.09 | 8.21 | 0.011 | | 0.01 | 0.01 | 0.2 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 7.60 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.90 | 8.65 | 0.104 | | 0.09 | 0.11 | 1.7 | | 0.13 |
| C-AB | 0.11 | 7.84 | 0.014 | | 0.01 | 0.01 | 0.2 | | 0.13 |
| A-B | 0.00 | | | | | | | | |
| A-C | 9.30 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.90 | 8.65 | 0.104 | | 0.11 | 0.12 | 1.7 | | 0.13 |
| C-AB | 0.11 | 7.84 | 0.014 | | 0.01 | 0.01 | 0.2 | | 0.13 |
| A-B | 0.00 | | | | | | | | |
| A-C | 9.30 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.73 | 9.08 | 0.081 | | 0.12 | 0.09 | 1.4 | | 0.12 |
| C-AB | 0.09 | 8.21 | 0.011 | | 0.01 | 0.01 | 0.2 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 7.60 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.61 | 9.39 | 0.066 | | 0.09 | 0.07 | 1.1 | | 0.11 |
| C-AB | 0.08 | 8.48 | 0.009 | | 0.01 | 0.01 | 0.1 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 6.36 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 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

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 67.4 | 45.0 | 8.2 | 0.12 | 8.2 | 0.12 |
| C-AB | 8.3 | 5.5 | 1.0 | 0.13 | 1.0 | 0.13 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 697.8 | 465.2 | | | | |
| ALL | 1130.0 | 753.4 | 9.2 | 0.01 | 9.2 | 0.01 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioA_2039AM&PM.vpo - Page

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioA_2039PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.10 | 6.15 | 4.10 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.34 | 0.51 | 0.34 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.67 | 4.01 | 2.67 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.000 | 1.000 |
| | | 0.0 | 0.0 | 328.0 |
| | | ( 0.0) | ( 4.0) | ( 4.0) |
| | ARM B | 0.185 | 0.000 | 0.815 |
| | | 5.0 | 0.0 | 22.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.893 | 0.107 | 0.000 |
| | | 191.0 | 23.0 | 0.0 |
| | | ( 4.0) | ( 4.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.34 | 9.40 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.11 |
| C-AB | 0.29 | 8.68 | 0.033 | | 0.00 | 0.03 | 0.5 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 4.12 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.40 | 9.17 | 0.044 | | 0.04 | 0.05 | 0.7 | | 0.11 |
| C-AB | 0.34 | 8.51 | 0.041 | | 0.03 | 0.04 | 0.6 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 4.91 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.50 | 8.86 | 0.056 | | 0.05 | 0.06 | 0.9 | | 0.12 |
| C-AB | 0.42 | 8.27 | 0.051 | | 0.04 | 0.05 | 0.8 | | 0.13 |
| A-B | 0.00 | | | | | | | | |
| A-C | 6.02 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.50 | 8.86 | 0.056 | | 0.06 | 0.06 | 0.9 | | 0.12 |
| C-AB | 0.42 | 8.27 | 0.051 | | 0.05 | 0.05 | 0.8 | | 0.13 |
| A-B | 0.00 | | | | | | | | |
| A-C | 6.02 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.40 | 9.17 | 0.044 | | 0.06 | 0.05 | 0.7 | | 0.11 |
| C-AB | 0.34 | 8.51 | 0.041 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 4.91 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.34 | 9.40 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.11 |
| C-AB | 0.29 | 8.68 | 0.033 | | 0.04 | 0.04 | 0.5 | | 0.12 |
| A-B | 0.00 | | | | | | | | |
| A-C | 4.12 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.0 |
| 18.15 | 0.0 |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.0 |
| 18.15 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 37.2 | 24.8 | 4.2 | 0.11 | 4.2 | 0.11 |
| C-AB | 31.7 | 21.1 | 4.0 | 0.13 | 4.0 | 0.13 |
| A-B | 0.0 | 0.0 | | | | |
| A-C | 451.5 | 301.0 | | | | |
| ALL | 783.2 | 522.1 | 8.2 | 0.01 | 8.2 | 0.01 |

* 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

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

[Printed at 17:19:21 on 25/07/2018]





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

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)



FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk



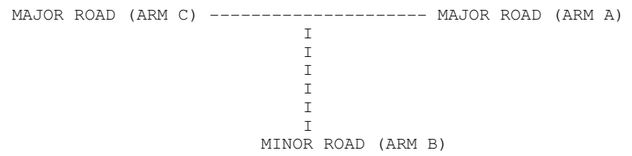
Run with file:-
"C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioB_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 14:17:13 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction5
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for priority junction between C rrigaline Road and the Vicarage residential estate.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Westbound
ARM B IS The Vicarage
ARM C IS R609 Eastbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.50 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 40.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 40.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 40.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioB_2024-2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.15 | 9.23 | 6.15 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.11 | 0.17 | 0.11 |
| ARM C | 15.00 | 45.00 | 75.00 | 4.39 | 6.58 | 4.39 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.057 | 0.943 |
| | | 0.0 | 28.0 | 464.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.222 | 0.000 | 0.778 |
| | | 2.0 | 0.0 | 7.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.932 | 0.068 | 0.000 |
| | | 327.0 | 24.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.11 | 8.77 | 0.013 | | 0.00 | 0.01 | 0.2 | | 0.12 |
| C-AB | 0.30 | 8.52 | 0.035 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| A-B | 0.35 | | | | | | | | |
| A-C | 5.82 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.13 | 8.44 | 0.016 | | 0.01 | 0.02 | 0.2 | | 0.12 |
| C-AB | 0.36 | 8.26 | 0.044 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| A-B | 0.42 | | | | | | | | |
| A-C | 6.95 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.17 | 7.97 | 0.021 | | 0.02 | 0.02 | 0.3 | | 0.13 |
| C-AB | 0.44 | 7.90 | 0.056 | | 0.05 | 0.06 | 0.9 | | 0.13 |
| A-B | 0.51 | | | | | | | | |
| A-C | 8.51 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.17 | 7.97 | 0.021 | | 0.02 | 0.02 | 0.3 | | 0.13 |
| C-AB | 0.44 | 7.90 | 0.056 | | 0.06 | 0.06 | 0.9 | | 0.13 |
| A-B | 0.51 | | | | | | | | |
| A-C | 8.51 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.13 | 8.44 | 0.016 | | 0.02 | 0.02 | 0.3 | | 0.12 |
| C-AB | 0.36 | 8.26 | 0.044 | | 0.06 | 0.05 | 0.7 | | 0.13 |
| A-B | 0.42 | | | | | | | | |
| A-C | 6.95 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.11 | 8.77 | 0.013 | | 0.02 | 0.01 | 0.2 | | 0.12 |
| C-AB | 0.30 | 8.52 | 0.035 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| A-B | 0.35 | | | | | | | | |
| A-C | 5.82 | | | | | | | | |

QUEUE FOR STREAM B-AC

| 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 |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.0 |
| 08.15 | 0.0 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 09.00 | 0.0 |
| 09.15 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 12.4 | 8.3 | 1.5 | 0.12 | 1.5 | 0.12 |
| C-AB | 33.0 | 22.0 | 4.3 | 0.13 | 4.3 | 0.13 |
| A-B | 38.5 | 25.7 | | | | |
| A-C | 638.7 | 425.8 | | | | |
| ALL | 1172.7 | 781.8 | 5.8 | 0.00 | 5.8 | 0.00 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioB_2024-2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2024PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.50 | 8.25 | 5.50 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.51 | 0.77 | 0.51 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.97 | 4.46 | 2.97 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.084 | 0.916 |
| | | 0.0 | 37.0 | 403.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.415 | 0.000 | 0.585 |
| | | 17.0 | 0.0 | 24.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.807 | 0.193 | 0.000 |
| | | 192.0 | 46.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.51 | 8.41 | 0.061 | | 0.00 | 0.06 | 0.9 | | 0.13 |
| C-AB | 0.58 | 8.66 | 0.067 | | 0.00 | 0.07 | 1.1 | | 0.12 |
| A-B | 0.46 | | | | | | | | |
| A-C | 5.06 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.61 | 8.10 | 0.076 | | 0.06 | 0.08 | 1.2 | | 0.13 |
| C-AB | 0.69 | 8.43 | 0.082 | | 0.07 | 0.09 | 1.4 | | 0.13 |
| A-B | 0.55 | | | | | | | | |
| A-C | 6.04 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.75 | 7.67 | 0.098 | | 0.08 | 0.11 | 1.6 | | 0.14 |
| C-AB | 0.84 | 8.11 | 0.104 | | 0.09 | 0.12 | 1.8 | | 0.14 |
| A-B | 0.68 | | | | | | | | |
| A-C | 7.40 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.75 | 7.67 | 0.098 | | 0.11 | 0.11 | 1.6 | | 0.14 |
| C-AB | 0.84 | 8.11 | 0.104 | | 0.12 | 0.12 | 1.8 | | 0.14 |
| A-B | 0.68 | | | | | | | | |
| A-C | 7.40 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.61 | 8.10 | 0.076 | | 0.11 | 0.08 | 1.3 | | 0.13 |
| C-AB | 0.69 | 8.43 | 0.082 | | 0.12 | 0.09 | 1.4 | | 0.13 |
| A-B | 0.55 | | | | | | | | |
| A-C | 6.04 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.51 | 8.41 | 0.061 | | 0.08 | 0.07 | 1.0 | | 0.13 |
| C-AB | 0.58 | 8.66 | 0.067 | | 0.09 | 0.07 | 1.1 | | 0.12 |
| A-B | 0.46 | | | | | | | | |
| A-C | 5.06 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 56.4 | 37.6 | 7.6 | 0.13 | 7.6 | 0.13 |
| C-AB | 63.3 | 42.2 | 8.5 | 0.13 | 8.5 | 0.13 |
| A-B | 50.9 | 34.0 | | | | |
| A-C | 554.7 | 369.8 | | | | |
| ALL | 989.7 | 659.8 | 16.1 | 0.02 | 16.1 | 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

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

[Printed at 14:17:32 on 31/01/2019]

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioB_2024-2039AM&PM.vpo -



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

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)



FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk



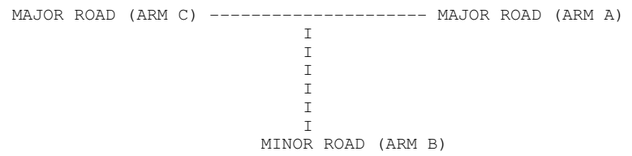
Run with file:-
"C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioB_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 14:21:38 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction5
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for priority junction between C rrigaline Road and the Vicarage residential estate.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Westbound
ARM B IS The Vicarage
ARM C IS R609 Eastbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.50 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 40.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 40.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 40.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioB_2024-2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.29 | 10.93 | 7.29 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.57 | 0.86 | 0.57 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.41 | 8.12 | 5.41 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| | | TURNING PROPORTIONS | | |
| | | TURNING COUNTS (VEH/HR) | | |
| | | (PERCENTAGE OF H.V.S) | | |
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.050 | 0.950 |
| | | 0.0 | 29.0 | 554.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.043 | 0.000 | 0.957 |
| | | 2.0 | 0.0 | 44.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.928 | 0.072 | 0.000 |
| | | 402.0 | 31.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.58 | 9.16 | 0.063 | | 0.00 | 0.07 | 1.0 | | 0.12 |
| C-AB | 0.39 | 8.27 | 0.047 | | 0.00 | 0.05 | 0.7 | | 0.13 |
| A-B | 0.36 | | | | | | | | |
| A-C | 6.95 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.69 | 8.81 | 0.078 | | 0.07 | 0.08 | 1.2 | | 0.12 |
| C-AB | 0.46 | 7.96 | 0.058 | | 0.05 | 0.06 | 1.0 | | 0.13 |
| A-B | 0.43 | | | | | | | | |
| A-C | 8.30 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.84 | 8.32 | 0.101 | | 0.08 | 0.11 | 1.6 | | 0.13 |
| C-AB | 0.57 | 7.54 | 0.075 | | 0.06 | 0.09 | 1.3 | | 0.14 |
| A-B | 0.53 | | | | | | | | |
| A-C | 10.17 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.84 | 8.32 | 0.101 | | 0.11 | 0.11 | 1.7 | | 0.13 |
| C-AB | 0.57 | 7.54 | 0.075 | | 0.09 | 0.09 | 1.3 | | 0.14 |
| A-B | 0.53 | | | | | | | | |
| A-C | 10.17 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.69 | 8.81 | 0.078 | | 0.11 | 0.09 | 1.3 | | 0.12 |
| C-AB | 0.46 | 7.96 | 0.058 | | 0.09 | 0.07 | 1.0 | | 0.13 |
| A-B | 0.43 | | | | | | | | |
| A-C | 8.30 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.58 | 9.16 | 0.063 | | 0.09 | 0.07 | 1.0 | | 0.12 |
| C-AB | 0.39 | 8.27 | 0.047 | | 0.07 | 0.05 | 0.8 | | 0.13 |
| A-B | 0.36 | | | | | | | | |
| A-C | 6.95 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 63.3 | 42.2 | 7.9 | 0.12 | 7.9 | 0.12 |
| C-AB | 42.7 | 28.4 | 6.1 | 0.14 | 6.1 | 0.14 |
| A-B | 39.9 | 26.6 | | | | |
| A-C | 762.5 | 508.4 | | | | |
| ALL | 1461.8 | 974.5 | 13.9 | 0.01 | 13.9 | 0.01 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioB_2024-2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2039PM

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

| | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.24 | 10.86 | 7.24 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.59 | 0.88 | 0.59 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.67 | 5.51 | 3.67 |

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 | 0.192 | 0.808 |
| | | 0.0 | 111.0 | 468.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.447 | 0.000 | 0.553 |
| | | 21.0 | 0.0 | 26.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.639 | 0.361 | 0.000 |
| | | 188.0 | 106.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.59 | 7.88 | 0.075 | | 0.00 | 0.08 | 1.2 | | 0.14 |
| C-AB | 1.33 | 8.28 | 0.161 | | 0.00 | 0.20 | 2.9 | | 0.14 |
| A-B | 1.39 | | | | | | | | |
| A-C | 5.87 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.70 | 7.47 | 0.094 | | 0.08 | 0.10 | 1.5 | | 0.15 |
| C-AB | 1.59 | 7.98 | 0.199 | | 0.20 | 0.26 | 3.9 | | 0.16 |
| A-B | 1.66 | | | | | | | | |
| A-C | 7.01 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.86 | 6.91 | 0.125 | | 0.10 | 0.14 | 2.1 | | 0.17 |
| C-AB | 1.95 | 7.56 | 0.257 | | 0.26 | 0.38 | 5.7 | | 0.18 |
| A-B | 2.04 | | | | | | | | |
| A-C | 8.59 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.86 | 6.90 | 0.125 | | 0.14 | 0.14 | 2.1 | | 0.17 |
| C-AB | 1.95 | 7.56 | 0.257 | | 0.38 | 0.38 | 5.8 | | 0.18 |
| A-B | 2.04 | | | | | | | | |
| A-C | 8.59 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.70 | 7.47 | 0.094 | | 0.14 | 0.11 | 1.6 | | 0.15 |
| C-AB | 1.59 | 7.98 | 0.199 | | 0.38 | 0.27 | 4.1 | | 0.16 |
| A-B | 1.66 | | | | | | | | |
| A-C | 7.01 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.59 | 7.87 | 0.075 | | 0.11 | 0.08 | 1.3 | | 0.14 |
| C-AB | 1.33 | 8.28 | 0.161 | | 0.27 | 0.20 | 3.0 | | 0.14 |
| A-B | 1.39 | | | | | | | | |
| A-C | 5.87 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.4 |
| 17.45 | 0.4 |
| 18.00 | 0.3 |
| 18.15 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 64.7 | 43.1 | 9.7 | 0.15 | 9.7 | 0.15 |
| C-AB | 145.9 | 97.3 | 25.5 | 0.17 | 25.5 | 0.17 |
| A-B | 152.8 | 101.9 | | | | |
| A-C | 644.2 | 429.4 | | | | |
| ALL | 1266.3 | 844.2 | 35.2 | 0.03 | 35.2 | 0.03 |

* 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

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

[Printed at 14:23:12 on 31/01/2019]





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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EMAIL: SoftwareBureau@trl.co.uk



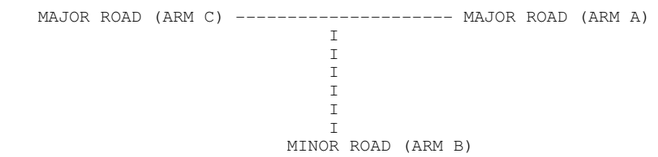
Run with file:-
"C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioC_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 13:14:46 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction 5
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for priority junction between C rrigaline Road and the Vicarage residential estate.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Westbound
ARM B IS The Vicarage
ARM C IS R609 Eastbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.50 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 40.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 40.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 40.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.63 | 11.44 | 7.63 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.98 | 1.46 | 0.98 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.76 | 5.64 | 3.76 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.003 | 0.997 |
| | | 0.0 | 2.0 | 608.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.115 | 0.000 | 0.885 |
| | | 9.0 | 0.0 | 69.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.957 | 0.043 | 0.000 |
| | | 288.0 | 13.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.98 | 8.78 | 0.111 | | 0.00 | 0.12 | 1.8 | | 0.13 |
| C-AB | 0.16 | 8.20 | 0.020 | | 0.00 | 0.02 | 0.3 | | 0.12 |
| A-B | 0.03 | | | | | | | | |
| A-C | 7.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 1.17 | 8.40 | 0.139 | | 0.12 | 0.16 | 2.3 | | 0.14 |
| C-AB | 0.19 | 7.88 | 0.025 | | 0.02 | 0.03 | 0.4 | | 0.13 |
| A-B | 0.03 | | | | | | | | |
| A-C | 9.11 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 1.43 | 7.86 | 0.182 | | 0.16 | 0.22 | 3.2 | | 0.16 |
| C-AB | 0.24 | 7.43 | 0.032 | | 0.03 | 0.03 | 0.5 | | 0.14 |
| A-B | 0.04 | | | | | | | | |
| A-C | 11.16 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 1.43 | 7.86 | 0.182 | | 0.22 | 0.22 | 3.3 | | 0.16 |
| C-AB | 0.24 | 7.43 | 0.032 | | 0.03 | 0.03 | 0.5 | | 0.14 |
| A-B | 0.04 | | | | | | | | |
| A-C | 11.16 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 1.17 | 8.40 | 0.139 | | 0.22 | 0.16 | 2.5 | | 0.14 |
| C-AB | 0.19 | 7.88 | 0.025 | | 0.03 | 0.03 | 0.4 | | 0.13 |
| A-B | 0.03 | | | | | | | | |
| A-C | 9.11 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.98 | 8.78 | 0.111 | | 0.16 | 0.13 | 1.9 | | 0.13 |
| C-AB | 0.16 | 8.20 | 0.020 | | 0.03 | 0.02 | 0.3 | | 0.12 |
| A-B | 0.03 | | | | | | | | |
| A-C | 7.63 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 107.4 | 71.6 | 15.1 | 0.14 | 15.1 | 0.14 |
| C-AB | 17.9 | 11.9 | 2.4 | 0.13 | 2.4 | 0.13 |
| A-B | 2.8 | 1.8 | | | | |
| A-C | 836.9 | 557.9 | | | | |
| ALL | 1361.3 | 907.5 | 17.5 | 0.01 | 17.5 | 0.01 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2024PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.78 | 7.16 | 4.78 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.54 | 0.81 | 0.54 |
| ARM C | 15.00 | 45.00 | 75.00 | 4.16 | 6.24 | 4.16 |

| | 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 | 0.016 | 0.984 |
| | | 0.0 | 6.0 | 376.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.186 | 0.000 | 0.814 |
| | | 8.0 | 0.0 | 35.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.868 | 0.132 | 0.000 |
| | | 289.0 | 44.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.54 | 9.20 | 0.059 | | 0.00 | 0.06 | 0.9 | | 0.12 |
| C-AB | 0.55 | 8.82 | 0.063 | | 0.00 | 0.07 | 1.0 | | 0.12 |
| A-B | 0.08 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.64 | 8.92 | 0.072 | | 0.06 | 0.08 | 1.1 | | 0.12 |
| C-AB | 0.66 | 8.62 | 0.077 | | 0.07 | 0.09 | 1.3 | | 0.13 |
| A-B | 0.09 | | | | | | | | |
| A-C | 5.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.79 | 8.55 | 0.092 | | 0.08 | 0.10 | 1.5 | | 0.13 |
| C-AB | 0.81 | 8.34 | 0.097 | | 0.09 | 0.11 | 1.7 | | 0.13 |
| A-B | 0.11 | | | | | | | | |
| A-C | 6.90 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.79 | 8.55 | 0.092 | | 0.10 | 0.10 | 1.5 | | 0.13 |
| C-AB | 0.81 | 8.34 | 0.097 | | 0.11 | 0.11 | 1.7 | | 0.13 |
| A-B | 0.11 | | | | | | | | |
| A-C | 6.90 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.64 | 8.92 | 0.072 | | 0.10 | 0.08 | 1.2 | | 0.12 |
| C-AB | 0.66 | 8.62 | 0.077 | | 0.11 | 0.09 | 1.3 | | 0.13 |
| A-B | 0.09 | | | | | | | | |
| A-C | 5.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.54 | 9.20 | 0.059 | | 0.08 | 0.06 | 1.0 | | 0.12 |
| C-AB | 0.55 | 8.82 | 0.063 | | 0.09 | 0.07 | 1.0 | | 0.12 |
| A-B | 0.08 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 59.2 | 39.5 | 7.2 | 0.12 | 7.2 | 0.12 |
| C-AB | 60.6 | 40.4 | 8.0 | 0.13 | 8.0 | 0.13 |
| A-B | 8.3 | 5.5 | | | | |
| A-C | 517.5 | 345.0 | | | | |
| ALL | 1043.3 | 695.6 | 15.2 | 0.01 | 15.2 | 0.01 |

* 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

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

[Printed at 13:15:09 on 31/01/2019]





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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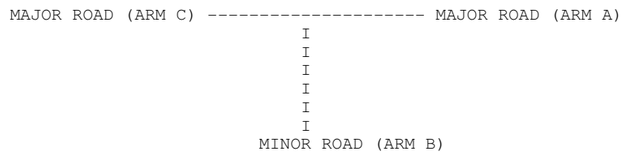
Run with file:-
"C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioB_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 14:21:38 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction5
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for priority junction between C rrigaline Road and the Vicarage residential estate.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Westbound
ARM B IS The Vicarage
ARM C IS R609 Eastbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.50 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 40.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 40.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 40.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioB_2024-2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.29 | 10.93 | 7.29 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.57 | 0.86 | 0.57 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.41 | 8.12 | 5.41 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| | | TURNING PROPORTIONS | | |
| | | TURNING COUNTS (VEH/HR) | | |
| | | (PERCENTAGE OF H.V.S) | | |
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.050 | 0.950 |
| | | 0.0 | 29.0 | 554.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.043 | 0.000 | 0.957 |
| | | 2.0 | 0.0 | 44.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.928 | 0.072 | 0.000 |
| | | 402.0 | 31.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.58 | 9.16 | 0.063 | | 0.00 | 0.07 | 1.0 | | 0.12 |
| C-AB | 0.39 | 8.27 | 0.047 | | 0.00 | 0.05 | 0.7 | | 0.13 |
| A-B | 0.36 | | | | | | | | |
| A-C | 6.95 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.69 | 8.81 | 0.078 | | 0.07 | 0.08 | 1.2 | | 0.12 |
| C-AB | 0.46 | 7.96 | 0.058 | | 0.05 | 0.06 | 1.0 | | 0.13 |
| A-B | 0.43 | | | | | | | | |
| A-C | 8.30 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.84 | 8.32 | 0.101 | | 0.08 | 0.11 | 1.6 | | 0.13 |
| C-AB | 0.57 | 7.54 | 0.075 | | 0.06 | 0.09 | 1.3 | | 0.14 |
| A-B | 0.53 | | | | | | | | |
| A-C | 10.17 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.84 | 8.32 | 0.101 | | 0.11 | 0.11 | 1.7 | | 0.13 |
| C-AB | 0.57 | 7.54 | 0.075 | | 0.09 | 0.09 | 1.3 | | 0.14 |
| A-B | 0.53 | | | | | | | | |
| A-C | 10.17 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.69 | 8.81 | 0.078 | | 0.11 | 0.09 | 1.3 | | 0.12 |
| C-AB | 0.46 | 7.96 | 0.058 | | 0.09 | 0.07 | 1.0 | | 0.13 |
| A-B | 0.43 | | | | | | | | |
| A-C | 8.30 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.58 | 9.16 | 0.063 | | 0.09 | 0.07 | 1.0 | | 0.12 |
| C-AB | 0.39 | 8.27 | 0.047 | | 0.07 | 0.05 | 0.8 | | 0.13 |
| A-B | 0.36 | | | | | | | | |
| A-C | 6.95 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 63.3 | 42.2 | 7.9 | 0.12 | 7.9 | 0.12 |
| C-AB | 42.7 | 28.4 | 6.1 | 0.14 | 6.1 | 0.14 |
| A-B | 39.9 | 26.6 | | | | |
| A-C | 762.5 | 508.4 | | | | |
| ALL | 1461.8 | 974.5 | 13.9 | 0.01 | 13.9 | 0.01 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioB_2024-2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2039PM

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

| | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.24 | 10.86 | 7.24 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.59 | 0.88 | 0.59 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.67 | 5.51 | 3.67 |

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 | 0.192 | 0.808 |
| | | 0.0 | 111.0 | 468.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.447 | 0.000 | 0.553 |
| | | 21.0 | 0.0 | 26.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.639 | 0.361 | 0.000 |
| | | 188.0 | 106.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.59 | 7.88 | 0.075 | | 0.00 | 0.08 | 1.2 | | 0.14 |
| C-AB | 1.33 | 8.28 | 0.161 | | 0.00 | 0.20 | 2.9 | | 0.14 |
| A-B | 1.39 | | | | | | | | |
| A-C | 5.87 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.70 | 7.47 | 0.094 | | 0.08 | 0.10 | 1.5 | | 0.15 |
| C-AB | 1.59 | 7.98 | 0.199 | | 0.20 | 0.26 | 3.9 | | 0.16 |
| A-B | 1.66 | | | | | | | | |
| A-C | 7.01 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.86 | 6.91 | 0.125 | | 0.10 | 0.14 | 2.1 | | 0.17 |
| C-AB | 1.95 | 7.56 | 0.257 | | 0.26 | 0.38 | 5.7 | | 0.18 |
| A-B | 2.04 | | | | | | | | |
| A-C | 8.59 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.86 | 6.90 | 0.125 | | 0.14 | 0.14 | 2.1 | | 0.17 |
| C-AB | 1.95 | 7.56 | 0.257 | | 0.38 | 0.38 | 5.8 | | 0.18 |
| A-B | 2.04 | | | | | | | | |
| A-C | 8.59 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.70 | 7.47 | 0.094 | | 0.14 | 0.11 | 1.6 | | 0.15 |
| C-AB | 1.59 | 7.98 | 0.199 | | 0.38 | 0.27 | 4.1 | | 0.16 |
| A-B | 1.66 | | | | | | | | |
| A-C | 7.01 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.59 | 7.87 | 0.075 | | 0.11 | 0.08 | 1.3 | | 0.14 |
| C-AB | 1.33 | 8.28 | 0.161 | | 0.27 | 0.20 | 3.0 | | 0.14 |
| A-B | 1.39 | | | | | | | | |
| A-C | 5.87 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.4 |
| 17.45 | 0.4 |
| 18.00 | 0.3 |
| 18.15 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 64.7 | 43.1 | 9.7 | 0.15 | 9.7 | 0.15 |
| C-AB | 145.9 | 97.3 | 25.5 | 0.17 | 25.5 | 0.17 |
| A-B | 152.8 | 101.9 | | | | |
| A-C | 644.2 | 429.4 | | | | |
| ALL | 1266.3 | 844.2 | 35.2 | 0.03 | 35.2 | 0.03 |

* 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

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

[Printed at 14:23:12 on 31/01/2019]





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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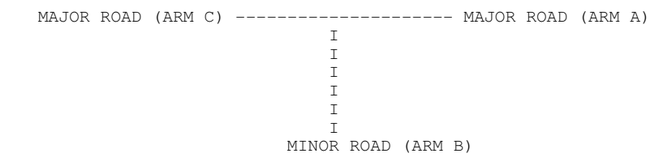
Run with file:-
"C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioC_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 13:14:46 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction 5
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for priority junction between C rrigaline Road and the Vicarage residential estate.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Westbound
ARM B IS The Vicarage
ARM C IS R609 Eastbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.50 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 40.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 40.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 40.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.63 | 11.44 | 7.63 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.98 | 1.46 | 0.98 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.76 | 5.64 | 3.76 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.003 | 0.997 |
| | | 0.0 | 2.0 | 608.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.115 | 0.000 | 0.885 |
| | | 9.0 | 0.0 | 69.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.957 | 0.043 | 0.000 |
| | | 288.0 | 13.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.98 | 8.78 | 0.111 | | 0.00 | 0.12 | 1.8 | | 0.13 |
| C-AB | 0.16 | 8.20 | 0.020 | | 0.00 | 0.02 | 0.3 | | 0.12 |
| A-B | 0.03 | | | | | | | | |
| A-C | 7.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 1.17 | 8.40 | 0.139 | | 0.12 | 0.16 | 2.3 | | 0.14 |
| C-AB | 0.19 | 7.88 | 0.025 | | 0.02 | 0.03 | 0.4 | | 0.13 |
| A-B | 0.03 | | | | | | | | |
| A-C | 9.11 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 1.43 | 7.86 | 0.182 | | 0.16 | 0.22 | 3.2 | | 0.16 |
| C-AB | 0.24 | 7.43 | 0.032 | | 0.03 | 0.03 | 0.5 | | 0.14 |
| A-B | 0.04 | | | | | | | | |
| A-C | 11.16 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 1.43 | 7.86 | 0.182 | | 0.22 | 0.22 | 3.3 | | 0.16 |
| C-AB | 0.24 | 7.43 | 0.032 | | 0.03 | 0.03 | 0.5 | | 0.14 |
| A-B | 0.04 | | | | | | | | |
| A-C | 11.16 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 1.17 | 8.40 | 0.139 | | 0.22 | 0.16 | 2.5 | | 0.14 |
| C-AB | 0.19 | 7.88 | 0.025 | | 0.03 | 0.03 | 0.4 | | 0.13 |
| A-B | 0.03 | | | | | | | | |
| A-C | 9.11 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.98 | 8.78 | 0.111 | | 0.16 | 0.13 | 1.9 | | 0.13 |
| C-AB | 0.16 | 8.20 | 0.020 | | 0.03 | 0.02 | 0.3 | | 0.12 |
| A-B | 0.03 | | | | | | | | |
| A-C | 7.63 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 107.4 | 71.6 | 15.1 | 0.14 | 15.1 | 0.14 |
| C-AB | 17.9 | 11.9 | 2.4 | 0.13 | 2.4 | 0.13 |
| A-B | 2.8 | 1.8 | | | | |
| A-C | 836.9 | 557.9 | | | | |
| ALL | 1361.3 | 907.5 | 17.5 | 0.01 | 17.5 | 0.01 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2024PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.78 | 7.16 | 4.78 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.54 | 0.81 | 0.54 |
| ARM C | 15.00 | 45.00 | 75.00 | 4.16 | 6.24 | 4.16 |

| | 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 | 0.016 | 0.984 |
| | | 0.0 | 6.0 | 376.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.186 | 0.000 | 0.814 |
| | | 8.0 | 0.0 | 35.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.868 | 0.132 | 0.000 |
| | | 289.0 | 44.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.54 | 9.20 | 0.059 | | 0.00 | 0.06 | 0.9 | | 0.12 |
| C-AB | 0.55 | 8.82 | 0.063 | | 0.00 | 0.07 | 1.0 | | 0.12 |
| A-B | 0.08 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.64 | 8.92 | 0.072 | | 0.06 | 0.08 | 1.1 | | 0.12 |
| C-AB | 0.66 | 8.62 | 0.077 | | 0.07 | 0.09 | 1.3 | | 0.13 |
| A-B | 0.09 | | | | | | | | |
| A-C | 5.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.79 | 8.55 | 0.092 | | 0.08 | 0.10 | 1.5 | | 0.13 |
| C-AB | 0.81 | 8.34 | 0.097 | | 0.09 | 0.11 | 1.7 | | 0.13 |
| A-B | 0.11 | | | | | | | | |
| A-C | 6.90 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.79 | 8.55 | 0.092 | | 0.10 | 0.10 | 1.5 | | 0.13 |
| C-AB | 0.81 | 8.34 | 0.097 | | 0.11 | 0.11 | 1.7 | | 0.13 |
| A-B | 0.11 | | | | | | | | |
| A-C | 6.90 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.64 | 8.92 | 0.072 | | 0.10 | 0.08 | 1.2 | | 0.12 |
| C-AB | 0.66 | 8.62 | 0.077 | | 0.11 | 0.09 | 1.3 | | 0.13 |
| A-B | 0.09 | | | | | | | | |
| A-C | 5.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.54 | 9.20 | 0.059 | | 0.08 | 0.06 | 1.0 | | 0.12 |
| C-AB | 0.55 | 8.82 | 0.063 | | 0.09 | 0.07 | 1.0 | | 0.12 |
| A-B | 0.08 | | | | | | | | |
| A-C | 4.72 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 59.2 | 39.5 | 7.2 | 0.12 | 7.2 | 0.12 |
| C-AB | 60.6 | 40.4 | 8.0 | 0.13 | 8.0 | 0.13 |
| A-B | 8.3 | 5.5 | | | | |
| A-C | 517.5 | 345.0 | | | | |
| ALL | 1043.3 | 695.6 | 15.2 | 0.01 | 15.2 | 0.01 |

* 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

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

[Printed at 13:15:09 on 31/01/2019]





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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TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk



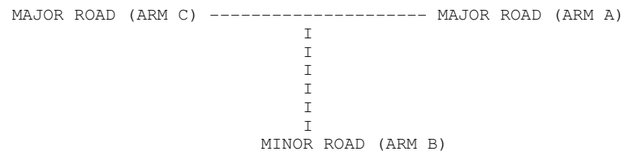
Run with file:-
"C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioC_2039AM&PM.vpi"
(drive-on-the-left ) at 17:24:00 on Wednesday, 25 July 2018

RUN INFORMATION

RUN TITLE: ScenarioC_2039AM&PM
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for priority junction between C rrigaline Road and the Vicarage residential estate.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Westbound
ARM B IS The Vicarage
ARM C IS R609 Eastbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.50 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 40.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 40.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 40.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioC_2039AM&PM.vpo - Page

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.93 | 11.89 | 7.93 |
| ARM B | 15.00 | 45.00 | 75.00 | 1.01 | 1.52 | 1.01 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.85 | 5.77 | 3.85 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.003 | 0.997 |
| | | 0.0 | 2.0 | 632.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.111 | 0.000 | 0.889 |
| | | 9.0 | 0.0 | 72.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.958 | 0.042 | 0.000 |
| | | 295.0 | 13.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 1.02 | 8.72 | 0.117 | | 0.00 | 0.13 | 1.9 | | 0.13 |
| C-AB | 0.16 | 8.13 | 0.020 | | 0.00 | 0.02 | 0.3 | | 0.13 |
| A-B | 0.03 | | | | | | | | |
| A-C | 7.93 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 1.21 | 8.32 | 0.146 | | 0.13 | 0.17 | 2.5 | | 0.14 |
| C-AB | 0.19 | 7.80 | 0.025 | | 0.02 | 0.03 | 0.4 | | 0.13 |
| A-B | 0.03 | | | | | | | | |
| A-C | 9.47 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 1.49 | 7.76 | 0.191 | | 0.17 | 0.23 | 3.4 | | 0.16 |
| C-AB | 0.24 | 7.34 | 0.033 | | 0.03 | 0.03 | 0.5 | | 0.14 |
| A-B | 0.04 | | | | | | | | |
| A-C | 11.60 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 1.49 | 7.76 | 0.191 | | 0.23 | 0.24 | 3.5 | | 0.16 |
| C-AB | 0.24 | 7.34 | 0.033 | | 0.03 | 0.03 | 0.5 | | 0.14 |
| A-B | 0.04 | | | | | | | | |
| A-C | 11.60 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 1.21 | 8.32 | 0.146 | | 0.24 | 0.17 | 2.7 | | 0.14 |
| C-AB | 0.19 | 7.80 | 0.025 | | 0.03 | 0.03 | 0.4 | | 0.13 |
| A-B | 0.03 | | | | | | | | |
| A-C | 9.47 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 1.02 | 8.72 | 0.117 | | 0.17 | 0.13 | 2.0 | | 0.13 |
| C-AB | 0.16 | 8.13 | 0.020 | | 0.03 | 0.02 | 0.3 | | 0.13 |
| A-B | 0.03 | | | | | | | | |
| A-C | 7.93 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 111.5 | 74.3 | 16.0 | 0.14 | 16.0 | 0.14 |
| C-AB | 17.9 | 11.9 | 2.4 | 0.14 | 2.4 | 0.14 |
| A-B | 2.8 | 1.8 | | | | |
| A-C | 869.9 | 579.9 | | | | |
| ALL | 1408.1 | 938.7 | 18.4 | 0.01 | 18.4 | 0.01 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioC_2039AM&PM.vpo - Page

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2039PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.97 | 7.46 | 4.97 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.55 | 0.83 | 0.55 |
| ARM C | 15.00 | 45.00 | 75.00 | 4.29 | 6.43 | 4.29 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.015 | 0.985 |
| | | 0.0 | 6.0 | 392.0 |
| | | ( 0.0) | ( 3.0) | ( 3.0) |
| | ARM B | 0.182 | 0.000 | 0.818 |
| | | 8.0 | 0.0 | 36.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.869 | 0.131 | 0.000 |
| | | 298.0 | 45.0 | 0.0 |
| | | ( 4.0) | ( 4.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.55 | 9.13 | 0.061 | | 0.00 | 0.06 | 0.9 | | 0.12 |
| C-AB | 0.56 | 8.50 | 0.066 | | 0.00 | 0.07 | 1.1 | | 0.13 |
| A-B | 0.08 | | | | | | | | |
| A-C | 4.92 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.66 | 8.84 | 0.075 | | 0.06 | 0.08 | 1.2 | | 0.12 |
| C-AB | 0.67 | 8.29 | 0.081 | | 0.07 | 0.09 | 1.4 | | 0.13 |
| A-B | 0.09 | | | | | | | | |
| A-C | 5.87 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.81 | 8.43 | 0.096 | | 0.08 | 0.10 | 1.5 | | 0.13 |
| C-AB | 0.83 | 8.01 | 0.103 | | 0.09 | 0.12 | 1.8 | | 0.14 |
| A-B | 0.11 | | | | | | | | |
| A-C | 7.19 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.81 | 8.43 | 0.096 | | 0.10 | 0.11 | 1.6 | | 0.13 |
| C-AB | 0.83 | 8.01 | 0.103 | | 0.12 | 0.12 | 1.8 | | 0.14 |
| A-B | 0.11 | | | | | | | | |
| A-C | 7.19 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.66 | 8.84 | 0.075 | | 0.11 | 0.08 | 1.2 | | 0.12 |
| C-AB | 0.67 | 8.29 | 0.081 | | 0.12 | 0.09 | 1.4 | | 0.13 |
| A-B | 0.09 | | | | | | | | |
| A-C | 5.87 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.55 | 9.12 | 0.061 | | 0.08 | 0.06 | 1.0 | | 0.12 |
| C-AB | 0.56 | 8.50 | 0.066 | | 0.09 | 0.07 | 1.1 | | 0.13 |
| A-B | 0.08 | | | | | | | | |
| A-C | 4.92 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 60.6 | 40.4 | 7.5 | 0.12 | 7.5 | 0.12 |
| C-AB | 61.9 | 41.3 | 8.6 | 0.14 | 8.6 | 0.14 |
| A-B | 8.3 | 5.5 | | | | |
| A-C | 539.6 | 359.7 | | | | |
| ALL | 1080.5 | 720.3 | 16.1 | 0.01 | 16.1 | 0.01 |

* 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

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

[Printed at 17:24:27 on 25/07/2018]





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

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)



FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk



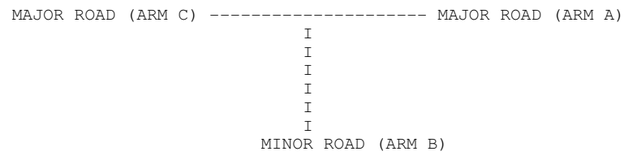
Run with file:-
"C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioD_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 14:25:57 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction5
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for priority junction between C rrigaline Road and the Vicarage residential estate.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Westbound
ARM B IS The Vicarage
ARM C IS R609 Eastbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.50 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 40.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 40.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 40.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioD_2024-2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.71 | 11.57 | 7.71 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.46 | 0.69 | 0.46 |
| ARM C | 15.00 | 45.00 | 75.00 | 4.86 | 7.29 | 4.86 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.075 | 0.925 |
| | | 0.0 | 46.0 | 571.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.649 | 0.000 | 0.351 |
| | | 24.0 | 0.0 | 13.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.920 | 0.080 | 0.000 |
| | | 358.0 | 31.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.46 | 7.08 | 0.066 | | 0.00 | 0.07 | 1.0 | | 0.15 |
| C-AB | 0.39 | 8.18 | 0.048 | | 0.00 | 0.05 | 0.8 | | 0.13 |
| A-B | 0.58 | | | | | | | | |
| A-C | 7.16 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.55 | 6.61 | 0.084 | | 0.07 | 0.09 | 1.3 | | 0.17 |
| C-AB | 0.46 | 7.85 | 0.059 | | 0.05 | 0.06 | 1.0 | | 0.14 |
| A-B | 0.69 | | | | | | | | |
| A-C | 8.56 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.68 | 5.96 | 0.114 | | 0.09 | 0.13 | 1.8 | | 0.19 |
| C-AB | 0.57 | 7.41 | 0.077 | | 0.06 | 0.09 | 1.3 | | 0.15 |
| A-B | 0.84 | | | | | | | | |
| A-C | 10.48 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.68 | 5.96 | 0.114 | | 0.13 | 0.13 | 1.9 | | 0.19 |
| C-AB | 0.57 | 7.41 | 0.077 | | 0.09 | 0.09 | 1.3 | | 0.15 |
| A-B | 0.84 | | | | | | | | |
| A-C | 10.48 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.55 | 6.61 | 0.084 | | 0.13 | 0.09 | 1.4 | | 0.17 |
| C-AB | 0.46 | 7.85 | 0.059 | | 0.09 | 0.07 | 1.0 | | 0.14 |
| A-B | 0.69 | | | | | | | | |
| A-C | 8.56 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.46 | 7.08 | 0.066 | | 0.09 | 0.07 | 1.1 | | 0.15 |
| C-AB | 0.39 | 8.18 | 0.048 | | 0.07 | 0.05 | 0.8 | | 0.13 |
| A-B | 0.58 | | | | | | | | |
| A-C | 7.16 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 50.9 | 34.0 | 8.6 | 0.17 | 8.6 | 0.17 |
| C-AB | 42.7 | 28.4 | 6.1 | 0.14 | 6.1 | 0.14 |
| A-B | 63.3 | 42.2 | | | | |
| A-C | 785.9 | 524.0 | | | | |
| ALL | 1435.6 | 957.1 | 14.7 | 0.01 | 14.7 | 0.01 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioD_2024-2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2024PM

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

| | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.35 | 9.52 | 6.35 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.86 | 1.29 | 0.86 |
| ARM C | 15.00 | 45.00 | 75.00 | 4.39 | 6.58 | 4.39 |

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 | 0.093 | 0.907 |
| | | 0.0 | 47.0 | 461.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.420 | 0.000 | 0.580 |
| | | 29.0 | 0.0 | 40.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.815 | 0.185 | 0.000 |
| | | 286.0 | 65.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.87 | 8.05 | 0.108 | | 0.00 | 0.12 | 1.7 | | 0.14 |
| C-AB | 0.82 | 8.48 | 0.096 | | 0.00 | 0.11 | 1.6 | | 0.13 |
| A-B | 0.59 | | | | | | | | |
| A-C | 5.78 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 1.03 | 7.67 | 0.135 | | 0.12 | 0.15 | 2.3 | | 0.15 |
| C-AB | 0.97 | 8.21 | 0.119 | | 0.11 | 0.14 | 2.1 | | 0.14 |
| A-B | 0.70 | | | | | | | | |
| A-C | 6.91 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 1.27 | 7.13 | 0.177 | | 0.15 | 0.21 | 3.1 | | 0.17 |
| C-AB | 1.19 | 7.84 | 0.152 | | 0.14 | 0.19 | 2.9 | | 0.15 |
| A-B | 0.86 | | | | | | | | |
| A-C | 8.46 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 1.27 | 7.13 | 0.178 | | 0.21 | 0.21 | 3.2 | | 0.17 |
| C-AB | 1.19 | 7.84 | 0.152 | | 0.19 | 0.20 | 3.0 | | 0.15 |
| A-B | 0.86 | | | | | | | | |
| A-C | 8.46 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 1.03 | 7.67 | 0.135 | | 0.21 | 0.16 | 2.4 | | 0.15 |
| C-AB | 0.97 | 8.21 | 0.119 | | 0.20 | 0.14 | 2.2 | | 0.14 |
| A-B | 0.70 | | | | | | | | |
| A-C | 6.91 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.87 | 8.05 | 0.108 | | 0.16 | 0.12 | 1.9 | | 0.14 |
| C-AB | 0.82 | 8.48 | 0.096 | | 0.14 | 0.11 | 1.7 | | 0.13 |
| A-B | 0.59 | | | | | | | | |
| A-C | 5.78 | | | | | | | | |

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 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.2 |
| 17.45 | 0.2 |
| 18.00 | 0.1 |
| 18.15 | 0.1 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 95.0 | 63.3 | 14.6 | 0.15 | 14.6 | 0.15 |
| C-AB | 89.5 | 59.6 | 13.5 | 0.15 | 13.5 | 0.15 |
| A-B | 64.7 | 43.1 | | | | |
| A-C | 634.5 | 423.0 | | | | |
| ALL | 1277.3 | 851.5 | 28.1 | 0.02 | 28.1 | 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

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

[Printed at 14:26:12 on 31/01/2019]

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioD_2024-2039AM&PM.vpo -



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

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)



FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk



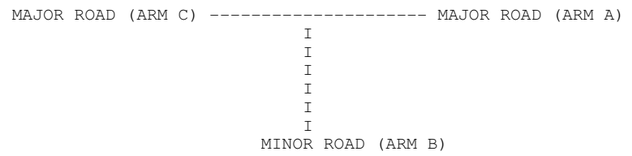
Run with file:-
"C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioD_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 14:29:51 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction5
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capacity Assessment for priority junction between C rrigaline Road and the Vicarage residential estate.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Westbound
ARM B IS The Vicarage
ARM C IS R609 Eastbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.50 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 40.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 40.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 40.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.25 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction5_CarrigalineRd_TheVicarage\ScenarioD_2024-2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 8.85 | 13.28 | 8.85 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.91 | 1.37 | 0.91 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.88 | 8.81 | 5.88 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.065 | 0.935 |
| | | 0.0 | 46.0 | 662.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.329 | 0.000 | 0.671 |
| | | 24.0 | 0.0 | 49.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.921 | 0.079 | 0.000 |
| | | 433.0 | 37.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.92 | 7.65 | 0.120 | | 0.00 | 0.13 | 1.9 | | 0.15 |
| C-AB | 0.46 | 7.93 | 0.059 | | 0.00 | 0.06 | 1.0 | | 0.13 |
| A-B | 0.58 | | | | | | | | |
| A-C | 8.31 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 1.09 | 7.14 | 0.153 | | 0.13 | 0.18 | 2.6 | | 0.17 |
| C-AB | 0.55 | 7.56 | 0.073 | | 0.06 | 0.08 | 1.3 | | 0.14 |
| A-B | 0.69 | | | | | | | | |
| A-C | 9.92 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 1.34 | 6.41 | 0.209 | | 0.18 | 0.26 | 3.8 | | 0.20 |
| C-AB | 0.68 | 7.04 | 0.096 | | 0.08 | 0.12 | 1.7 | | 0.16 |
| A-B | 0.84 | | | | | | | | |
| A-C | 12.15 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 1.34 | 6.41 | 0.209 | | 0.26 | 0.26 | 3.9 | | 0.20 |
| C-AB | 0.68 | 7.04 | 0.096 | | 0.12 | 0.12 | 1.8 | | 0.16 |
| A-B | 0.84 | | | | | | | | |
| A-C | 12.15 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 1.09 | 7.14 | 0.153 | | 0.26 | 0.18 | 2.8 | | 0.17 |
| C-AB | 0.55 | 7.56 | 0.073 | | 0.12 | 0.09 | 1.3 | | 0.14 |
| A-B | 0.69 | | | | | | | | |
| A-C | 9.92 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.92 | 7.65 | 0.120 | | 0.18 | 0.14 | 2.1 | | 0.15 |
| C-AB | 0.46 | 7.93 | 0.059 | | 0.09 | 0.07 | 1.0 | | 0.13 |
| A-B | 0.58 | | | | | | | | |
| A-C | 8.31 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.1 |
| 08.15 | 0.2 |
| 08.30 | 0.3 |
| 08.45 | 0.3 |
| 09.00 | 0.2 |
| 09.15 | 0.1 |

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 100.5 | 67.0 | 17.2 | 0.17 | 17.2 | 0.17 |
| C-AB | 50.9 | 34.0 | 8.0 | 0.16 | 8.0 | 0.16 |
| A-B | 63.3 | 42.2 | | | | |
| A-C | 911.2 | 607.5 | | | | |
| ALL | 1721.9 | 1147.9 | 25.2 | 0.01 | 25.2 | 0.01 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 665.36 | 0.24 | 0.10 |

| 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 |
|---|---|---|---|---|
| 523.02 | 0.23 | 0.09 | 0.14 | 0.32 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 597.13 | 0.22 | 0.22 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2039PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 8.10 | 12.15 | 8.10 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.94 | 1.41 | 0.94 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.09 | 7.63 | 5.09 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.187 | 0.813 |
| | | 0.0 | 121.0 | 527.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.440 | 0.000 | 0.560 |
| | | 33.0 | 0.0 | 42.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.693 | 0.307 | 0.000 |
| | | 282.0 | 125.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.94 | 7.54 | 0.125 | | 0.00 | 0.14 | 2.0 | | 0.15 |
| C-AB | 1.57 | 8.10 | 0.194 | | 0.00 | 0.26 | 3.8 | | 0.15 |
| A-B | 1.52 | | | | | | | | |
| A-C | 6.61 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 1.12 | 7.06 | 0.159 | | 0.14 | 0.19 | 2.7 | | 0.17 |
| C-AB | 1.87 | 7.75 | 0.242 | | 0.26 | 0.35 | 5.3 | | 0.17 |
| A-B | 1.81 | | | | | | | | |
| A-C | 7.90 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 1.38 | 6.37 | 0.216 | | 0.19 | 0.27 | 3.9 | | 0.20 |
| C-AB | 2.29 | 7.28 | 0.315 | | 0.35 | 0.55 | 8.2 | | 0.20 |
| A-B | 2.22 | | | | | | | | |
| A-C | 9.67 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 1.38 | 6.37 | 0.216 | | 0.27 | 0.27 | 4.1 | | 0.20 |
| C-AB | 2.29 | 7.28 | 0.315 | | 0.55 | 0.55 | 8.4 | | 0.20 |
| A-B | 2.22 | | | | | | | | |
| A-C | 9.67 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 1.12 | 7.05 | 0.159 | | 0.27 | 0.19 | 3.0 | | 0.17 |
| C-AB | 1.87 | 7.75 | 0.242 | | 0.55 | 0.37 | 5.6 | | 0.17 |
| A-B | 1.81 | | | | | | | | |
| A-C | 7.90 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.94 | 7.54 | 0.125 | | 0.19 | 0.14 | 2.2 | | 0.15 |
| C-AB | 1.57 | 8.10 | 0.194 | | 0.37 | 0.26 | 4.0 | | 0.15 |
| A-B | 1.52 | | | | | | | | |
| A-C | 6.61 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.1 | |
| 17.15 | 0.2 | |
| 17.30 | 0.3 | |
| 17.45 | 0.3 | |
| 18.00 | 0.2 | |
| 18.15 | 0.1 | |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.5 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 103.2 | 68.8 | 18.0 | 0.17 | 18.0 | 0.17 |
| C-AB | 172.1 | 114.7 | 35.2 | 0.20 | 35.2 | 0.20 |
| A-B | 166.5 | 111.0 | | | | |
| A-C | 725.4 | 483.6 | | | | |
| ALL | 1555.4 | 1036.9 | 53.2 | 0.03 | 53.2 | 0.03 |

* 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

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

[Printed at 14:30:08 on 31/01/2019]





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

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)



FOR SALES AND DISTRIBUTION INFORMATION,
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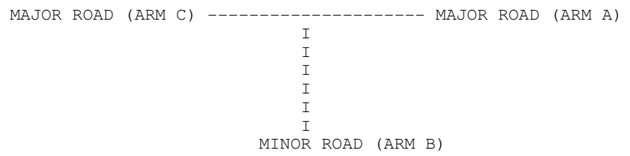
Run with file:-
"C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioA_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 14:57:18 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction 6
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between the R609 Carrigaline Road and Maryborough Hill.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Eastbound
ARM B IS Maryborough Hill
ARM C IS R609 Westbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 60.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 50.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 50.0 M. |
| - LANE 1 WIDTH | (WB-C) | 4.00 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioA_2024-2039AM&PM.v

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioA_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.15 | 4.73 | 3.15 |
| ARM B | 15.00 | 45.00 | 75.00 | 2.22 | 3.34 | 2.22 |
| ARM C | 15.00 | 45.00 | 75.00 | 6.60 | 9.90 | 6.60 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | TURNING PROPORTIONS | | |
| | | TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) | | |
| | ARM A | 0.000 | 0.119 | 0.881 |
| | | 0.0 | 30.0 | 222.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.798 | 0.000 | 0.202 |
| | | 142.0 | 0.0 | 36.0 |
| | | ( 1.0) | ( 0.0) | ( 1.0) |
| | ARM C | 0.932 | 0.068 | 0.000 |
| | | 492.0 | 36.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 2.23 | 8.06 | 0.277 | | 0.00 | 0.38 | 5.4 | | 0.17 |
| C-AB | 0.45 | 9.32 | 0.048 | | 0.00 | 0.05 | 0.8 | | 0.11 |
| A-B | 0.38 | | | | | | | | |
| A-C | 2.79 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 2.67 | 7.70 | 0.346 | | 0.38 | 0.52 | 7.5 | | 0.20 |
| C-AB | 0.54 | 9.18 | 0.059 | | 0.05 | 0.06 | 1.0 | | 0.12 |
| A-B | 0.45 | | | | | | | | |
| A-C | 3.33 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 3.27 | 7.21 | 0.453 | | 0.52 | 0.80 | 11.4 | | 0.25 |
| C-AB | 0.66 | 8.99 | 0.073 | | 0.06 | 0.08 | 1.3 | | 0.12 |
| A-B | 0.55 | | | | | | | | |
| A-C | 4.07 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 3.27 | 7.21 | 0.453 | | 0.80 | 0.82 | 12.2 | | 0.25 |
| C-AB | 0.66 | 8.99 | 0.073 | | 0.08 | 0.08 | 1.3 | | 0.12 |
| A-B | 0.55 | | | | | | | | |
| A-C | 4.07 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 2.67 | 7.70 | 0.346 | | 0.82 | 0.54 | 8.5 | | 0.20 |
| C-AB | 0.54 | 9.18 | 0.059 | | 0.08 | 0.07 | 1.0 | | 0.12 |
| A-B | 0.45 | | | | | | | | |
| A-C | 3.33 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 2.23 | 8.05 | 0.277 | | 0.54 | 0.39 | 6.1 | | 0.17 |
| C-AB | 0.45 | 9.32 | 0.048 | | 0.07 | 0.05 | 0.8 | | 0.11 |
| A-B | 0.38 | | | | | | | | |
| A-C | 2.79 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.5 | * |
| 08.30 | 0.8 | * |
| 08.45 | 0.8 | * |
| 09.00 | 0.5 | * |
| 09.15 | 0.4 | |

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 245.0 | 163.3 | 51.0 | 0.21 | 51.0 | 0.21 |
| C-AB | 49.6 | 33.0 | 6.1 | 0.12 | 6.1 | 0.12 |
| A-B | 41.3 | 27.5 | | | | |
| A-C | 305.6 | 203.7 | | | | |
| ALL | 1318.6 | 879.1 | 57.1 | 0.04 | 57.1 | 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioA_2024-2039AM&PM.

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioA_2024PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.56 | 5.34 | 3.56 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.55 | 0.83 | 0.55 |
| ARM C | 15.00 | 45.00 | 75.00 | 4.13 | 6.19 | 4.13 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000<br>0.0<br>( 0.0) | 0.312<br>89.0<br>( 1.0) | 0.688<br>196.0<br>( 1.0) |
| | ARM B | 0.864<br>38.0<br>( 8.0) | 0.000<br>0.0<br>( 0.0) | 0.136<br>6.0<br>( 8.0) |
| | ARM C | 0.930<br>307.0<br>( 2.0) | 0.070<br>23.0<br>( 2.0) | 0.000<br>0.0<br>( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.55 | 7.75 | 0.071 | | 0.00 | 0.08 | 1.1 | | 0.14 |
| C-AB | 0.29 | 9.15 | 0.032 | | 0.00 | 0.03 | 0.5 | | 0.11 |
| A-B | 1.12 | | | | | | | | |
| A-C | 2.46 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.66 | 7.49 | 0.088 | | 0.08 | 0.10 | 1.4 | | 0.15 |
| C-AB | 0.34 | 8.99 | 0.038 | | 0.03 | 0.04 | 0.6 | | 0.12 |
| A-B | 1.33 | | | | | | | | |
| A-C | 2.94 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.81 | 7.14 | 0.113 | | 0.10 | 0.13 | 1.8 | | 0.16 |
| C-AB | 0.42 | 8.78 | 0.048 | | 0.04 | 0.05 | 0.8 | | 0.12 |
| A-B | 1.63 | | | | | | | | |
| A-C | 3.60 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.81 | 7.13 | 0.113 | | 0.13 | 0.13 | 1.9 | | 0.16 |
| C-AB | 0.42 | 8.78 | 0.048 | | 0.05 | 0.05 | 0.8 | | 0.12 |
| A-B | 1.63 | | | | | | | | |
| A-C | 3.60 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.66 | 7.49 | 0.088 | | 0.13 | 0.10 | 1.5 | | 0.15 |
| C-AB | 0.34 | 8.99 | 0.038 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| A-B | 1.33 | | | | | | | | |
| A-C | 2.94 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.55 | 7.75 | 0.071 | | 0.10 | 0.08 | 1.2 | | 0.14 |
| C-AB | 0.29 | 9.15 | 0.032 | | 0.04 | 0.03 | 0.5 | | 0.11 |
| A-B | 1.12 | | | | | | | | |
| A-C | 2.46 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |
| 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 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.0 |
| 18.15 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 60.6 | 40.4 | 8.9 | 0.15 | 8.9 | 0.15 |
| C-AB | 31.7 | 21.1 | 3.8 | 0.12 | 3.8 | 0.12 |
| A-B | 122.5 | 81.7 | | | | |
| A-C | 269.8 | 179.9 | | | | |
| ALL | 907.1 | 604.7 | 12.7 | 0.01 | 12.7 | 0.01 |

* 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

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

[Printed at 14:57:30 on 31/01/2019]





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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TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk



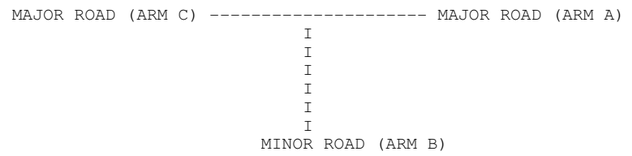
Run with file:-
"C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioA_2039AM&PM.vpi"
(drive-on-the-left ) at 17:55:24 on Wednesday, 25 July 2018

RUN INFORMATION

RUN TITLE: ScenarioA_2039AM&PM
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between the R609 Carrigaline Road and Maryborough Hill.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Eastbound
ARM B IS Maryborough Hill
ARM C IS R609 Westbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 60.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 50.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 50.0 M. |
| - LANE 1 WIDTH | (WB-C) | 4.00 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioA_2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioA_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.25 | 4.88 | 3.25 |
| ARM B | 15.00 | 45.00 | 75.00 | 2.35 | 3.52 | 2.35 |
| ARM C | 15.00 | 45.00 | 75.00 | 6.93 | 10.39 | 6.93 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.123 | 0.877 |
| | | 0.0 | 32.0 | 228.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.803 | 0.000 | 0.197 |
| | | 151.0 | 0.0 | 37.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.931 | 0.069 | 0.000 |
| | | 516.0 | 38.0 | 0.0 |
| | | ( 2.0) | ( 2.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 2.36 | 8.03 | 0.294 | | 0.00 | 0.41 | 5.8 | | 0.17 |
| C-AB | 0.48 | 9.21 | 0.052 | | 0.00 | 0.06 | 0.8 | | 0.11 |
| A-B | 0.40 | | | | | | | | |
| A-C | 2.86 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 2.82 | 7.66 | 0.368 | | 0.41 | 0.57 | 8.2 | | 0.21 |
| C-AB | 0.57 | 9.07 | 0.063 | | 0.06 | 0.07 | 1.1 | | 0.12 |
| A-B | 0.48 | | | | | | | | |
| A-C | 3.42 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 3.45 | 7.14 | 0.483 | | 0.57 | 0.90 | 12.8 | | 0.27 |
| C-AB | 0.70 | 8.87 | 0.079 | | 0.07 | 0.09 | 1.4 | | 0.12 |
| A-B | 0.59 | | | | | | | | |
| A-C | 4.18 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 3.45 | 7.14 | 0.483 | | 0.90 | 0.92 | 13.7 | | 0.27 |
| C-AB | 0.70 | 8.87 | 0.079 | | 0.09 | 0.09 | 1.4 | | 0.12 |
| A-B | 0.59 | | | | | | | | |
| A-C | 4.18 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 2.82 | 7.66 | 0.368 | | 0.92 | 0.59 | 9.3 | | 0.21 |
| C-AB | 0.57 | 9.07 | 0.063 | | 0.09 | 0.07 | 1.1 | | 0.12 |
| A-B | 0.48 | | | | | | | | |
| A-C | 3.42 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 2.36 | 8.03 | 0.294 | | 0.59 | 0.42 | 6.6 | | 0.18 |
| C-AB | 0.48 | 9.21 | 0.052 | | 0.07 | 0.06 | 0.9 | | 0.11 |
| A-B | 0.40 | | | | | | | | |
| A-C | 2.86 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.6 | * |
| 08.30 | 0.9 | * |
| 08.45 | 0.9 | * |
| 09.00 | 0.6 | * |
| 09.15 | 0.4 | |

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 258.8 | 172.5 | 56.5 | 0.22 | 56.5 | 0.22 |
| C-AB | 52.3 | 34.9 | 6.6 | 0.13 | 6.6 | 0.13 |
| A-B | 44.0 | 29.4 | | | | |
| A-C | 313.8 | 209.2 | | | | |
| ALL | 1379.2 | 919.5 | 63.0 | 0.05 | 63.0 | 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioA_2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioA_2039PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.80 | 5.70 | 3.80 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.59 | 0.88 | 0.59 |
| ARM C | 15.00 | 45.00 | 75.00 | 4.39 | 6.58 | 4.39 |

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 | 0.313 | 0.688 |
| | | 0.0 | 95.0 | 209.0 |
| | | ( 0.0) | ( 3.0) | ( 3.0) |
| | ARM B | 0.872 | 0.000 | 0.128 |
| | | 41.0 | 0.0 | 6.0 |
| | | ( 25.0) | ( 0.0) | ( 25.0) |
| | ARM C | 0.932 | 0.068 | 0.000 |
| | | 327.0 | 24.0 | 0.0 |
| | | ( 5.0) | ( 5.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.59 | 6.57 | 0.090 | | 0.00 | 0.10 | 1.4 | | 0.17 |
| C-AB | 0.30 | 8.82 | 0.034 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| A-B | 1.19 | | | | | | | | |
| A-C | 2.62 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.70 | 6.33 | 0.111 | | 0.10 | 0.12 | 1.8 | | 0.18 |
| C-AB | 0.36 | 8.65 | 0.042 | | 0.04 | 0.04 | 0.7 | | 0.12 |
| A-B | 1.42 | | | | | | | | |
| A-C | 3.13 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.86 | 5.99 | 0.144 | | 0.12 | 0.17 | 2.4 | | 0.19 |
| C-AB | 0.44 | 8.43 | 0.052 | | 0.04 | 0.06 | 0.9 | | 0.13 |
| A-B | 1.74 | | | | | | | | |
| A-C | 3.84 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.86 | 5.99 | 0.144 | | 0.17 | 0.17 | 2.5 | | 0.20 |
| C-AB | 0.44 | 8.43 | 0.052 | | 0.06 | 0.06 | 0.9 | | 0.13 |
| A-B | 1.74 | | | | | | | | |
| A-C | 3.84 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.70 | 6.33 | 0.111 | | 0.17 | 0.13 | 2.0 | | 0.18 |
| C-AB | 0.36 | 8.65 | 0.042 | | 0.06 | 0.04 | 0.7 | | 0.12 |
| A-B | 1.42 | | | | | | | | |
| A-C | 3.13 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.59 | 6.57 | 0.090 | | 0.13 | 0.10 | 1.5 | | 0.17 |
| C-AB | 0.30 | 8.82 | 0.034 | | 0.04 | 0.04 | 0.5 | | 0.12 |
| A-B | 1.19 | | | | | | | | |
| A-C | 2.62 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.1 |
| 17.15 | 0.1 |
| 17.30 | 0.2 |
| 17.45 | 0.2 |
| 18.00 | 0.1 |
| 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 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.0 |
| 18.15 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 64.7 | 43.1 | 11.6 | 0.18 | 11.6 | 0.18 |
| C-AB | 33.0 | 22.0 | 4.1 | 0.12 | 4.1 | 0.12 |
| A-B | 130.8 | 87.2 | | | | |
| A-C | 287.7 | 191.8 | | | | |
| ALL | 966.3 | 644.2 | 15.7 | 0.02 | 15.7 | 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

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

[Printed at 18:04:02 on 25/07/2018]





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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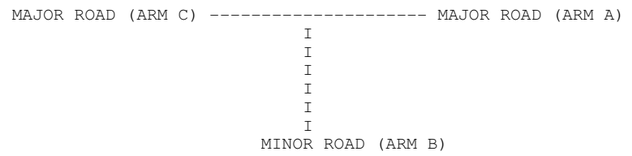
Run with file:-
"C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioB_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 15:09:49 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction 6
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between the R609 Carrigaline Road and Maryborough Hill.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Eastbound
ARM B IS Maryborough Hill
ARM C IS R609 Westbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 60.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 50.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 50.0 M. |
| - LANE 1 WIDTH | (WB-C) | 4.00 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioB_2024-2039AM&PM.v

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.50 | 5.25 | 3.50 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.30 | 4.95 | 3.30 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.90 | 8.85 | 5.90 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| | | TURNING PROPORTIONS | | |
| | | TURNING COUNTS (VEH/HR) | | |
| | | (PERCENTAGE OF H.V.S) | | |
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.136 | 0.864 |
| | | 0.0 | 38.0 | 242.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.583 | 0.000 | 0.417 |
| | | 154.0 | 0.0 | 110.0 |
| | | ( 1.0) | ( 0.0) | ( 1.0) |
| | ARM C | 0.892 | 0.108 | 0.000 |
| | | 421.0 | 51.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 3.31 | 8.68 | 0.382 | | 0.00 | 0.61 | 8.6 | | 0.18 |
| C-AB | 0.64 | 9.24 | 0.069 | | 0.00 | 0.08 | 1.1 | | 0.12 |
| A-B | 0.48 | | | | | | | | |
| A-C | 3.04 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 3.96 | 8.35 | 0.474 | | 0.61 | 0.88 | 12.5 | | 0.23 |
| C-AB | 0.76 | 9.09 | 0.084 | | 0.08 | 0.10 | 1.4 | | 0.12 |
| A-B | 0.57 | | | | | | | | |
| A-C | 3.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 4.84 | 7.88 | 0.614 | | 0.88 | 1.51 | 21.0 | | 0.32 |
| C-AB | 0.94 | 8.87 | 0.105 | | 0.10 | 0.13 | 1.9 | | 0.13 |
| A-B | 0.70 | | | | | | | | |
| A-C | 4.44 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 4.84 | 7.88 | 0.614 | | 1.51 | 1.55 | 23.1 | | 0.33 |
| C-AB | 0.94 | 8.87 | 0.105 | | 0.13 | 0.13 | 1.9 | | 0.13 |
| A-B | 0.70 | | | | | | | | |
| A-C | 4.44 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 3.96 | 8.35 | 0.474 | | 1.55 | 0.93 | 14.7 | | 0.23 |
| C-AB | 0.76 | 9.09 | 0.084 | | 0.13 | 0.10 | 1.5 | | 0.12 |
| A-B | 0.57 | | | | | | | | |
| A-C | 3.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 3.31 | 8.68 | 0.382 | | 0.93 | 0.63 | 9.9 | | 0.19 |
| C-AB | 0.64 | 9.24 | 0.069 | | 0.10 | 0.08 | 1.2 | | 0.12 |
| A-B | 0.48 | | | | | | | | |
| A-C | 3.04 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.6 | * |
| 08.15 | 0.9 | * |
| 08.30 | 1.5 | ** |
| 08.45 | 1.6 | ** |
| 09.00 | 0.9 | * |
| 09.15 | 0.6 | * |

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 363.4 | 242.3 | 89.8 | 0.25 | 89.8 | 0.25 |
| C-AB | 70.2 | 46.8 | 9.1 | 0.13 | 9.1 | 0.13 |
| A-B | 52.3 | 34.9 | | | | |
| A-C | 333.1 | 222.1 | | | | |
| ALL | 1398.4 | 932.3 | 98.8 | 0.07 | 98.8 | 0.07 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioB_2024-2039AM&PM.

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2024PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 2.69 | 4.03 | 2.69 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.73 | 1.09 | 0.73 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.34 | 8.01 | 5.34 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.116 | 0.884 |
| | | 0.0 | 25.0 | 190.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.172 | 0.000 | 0.828 |
| | | 10.0 | 0.0 | 48.0 |
| | | ( 1.0) | ( 0.0) | ( 1.0) |
| | ARM C | 0.892 | 0.108 | 0.000 |
| | | 381.0 | 46.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.73 | 10.44 | 0.070 | | 0.00 | 0.07 | 1.1 | | 0.10 |
| C-AB | 0.58 | 9.44 | 0.061 | | 0.00 | 0.07 | 1.0 | | 0.11 |
| A-B | 0.31 | | | | | | | | |
| A-C | 2.38 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.87 | 10.25 | 0.085 | | 0.07 | 0.09 | 1.4 | | 0.11 |
| C-AB | 0.69 | 9.32 | 0.074 | | 0.07 | 0.08 | 1.2 | | 0.12 |
| A-B | 0.37 | | | | | | | | |
| A-C | 2.85 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | | |
| | B-AC | 1.06 | 9.99 | 0.107 | | 0.09 | 0.12 | 1.7 | | 0.11 |
| | C-AB | 0.84 | 9.15 | 0.092 | | 0.08 | 0.11 | 1.6 | | 0.12 |
| | A-B | 0.46 | | | | | | | | |
| | A-C | 3.49 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | | |
| | B-AC | 1.06 | 9.99 | 0.107 | | 0.12 | 0.12 | 1.8 | | 0.11 |
| | C-AB | 0.84 | 9.15 | 0.092 | | 0.11 | 0.11 | 1.6 | | 0.12 |
| | A-B | 0.46 | | | | | | | | |
| | A-C | 3.49 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | | |
| | B-AC | 0.87 | 10.25 | 0.085 | | 0.12 | 0.09 | 1.4 | | 0.11 |
| | C-AB | 0.69 | 9.32 | 0.074 | | 0.11 | 0.08 | 1.3 | | 0.12 |
| | A-B | 0.37 | | | | | | | | |
| | A-C | 2.85 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | | |
| | B-AC | 0.73 | 10.44 | 0.070 | | 0.09 | 0.08 | 1.2 | | 0.10 |
| | C-AB | 0.58 | 9.44 | 0.061 | | 0.08 | 0.07 | 1.0 | | 0.11 |
| | A-B | 0.31 | | | | | | | | |
| | A-C | 2.38 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 79.8 | 53.2 | 8.5 | 0.11 | 8.5 | 0.11 |
| C-AB | 63.3 | 42.2 | 7.8 | 0.12 | 7.8 | 0.12 |
| A-B | 34.4 | 22.9 | | | | |
| A-C | 261.5 | 174.3 | | | | |
| ALL | 963.5 | 642.3 | 16.3 | 0.02 | 16.3 | 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

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

[Printed at 15:10:00 on 31/01/2019]

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioB_2024-2039AM&PM.v



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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TRL SOFTWARE BUREAU
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EMAIL: SoftwareBureau@trl.co.uk



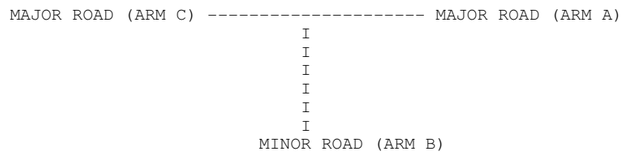
Run with file:-
"C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioB_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 15:14:23 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction 6
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between the R609 Carrigaline Road and Maryborough Hill.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Eastbound
ARM B IS Maryborough Hill
ARM C IS R609 Westbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 60.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 50.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 50.0 M. |
| - LANE 1 WIDTH | (WB-C) | 4.00 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioB_2024-2039AM&PM.v

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.46 | 6.69 | 4.46 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.04 | 6.06 | 4.04 |
| ARM C | 15.00 | 45.00 | 75.00 | 7.47 | 11.21 | 7.47 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.115 | 0.885 |
| | | 0.0 | 41.0 | 316.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.641 | 0.000 | 0.359 |
| | | 207.0 | 0.0 | 116.0 |
| | | ( 1.0) | ( 0.0) | ( 1.0) |
| | ARM C | 0.856 | 0.144 | 0.000 |
| | | 512.0 | 86.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS (PERCENTAGE OF H.V.S)
TURNING COUNTS (VEH/HR)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 4.05 | 7.97 | 0.509 | | 0.00 | 1.00 | 13.8 | | 0.25 |
| C-AB | 1.08 | 9.02 | 0.120 | | 0.00 | 0.15 | 2.2 | | 0.13 |
| A-B | 0.51 | | | | | | | | |
| A-C | 3.97 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 4.84 | 7.52 | 0.644 | | 1.00 | 1.70 | 23.4 | | 0.36 |
| C-AB | 1.29 | 8.83 | 0.146 | | 0.15 | 0.19 | 2.9 | | 0.13 |
| A-B | 0.61 | | | | | | | | |
| A-C | 4.73 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 5.93 | 6.88 | 0.861 | | 1.70 | 4.56 | 55.3 | | 0.77 |
| C-AB | 1.58 | 8.55 | 0.185 | | 0.19 | 0.27 | 4.0 | | 0.14 |
| A-B | 0.75 | | | | | | | | |
| A-C | 5.80 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 5.93 | 6.88 | 0.862 | | 4.56 | 5.15 | 73.5 | | 0.94 |
| C-AB | 1.58 | 8.55 | 0.185 | | 0.27 | 0.27 | 4.1 | | 0.14 |
| A-B | 0.75 | | | | | | | | |
| A-C | 5.80 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 4.84 | 7.51 | 0.644 | | 5.15 | 1.93 | 34.4 | | 0.44 |
| C-AB | 1.29 | 8.83 | 0.146 | | 0.27 | 0.20 | 2.9 | | 0.13 |
| A-B | 0.61 | | | | | | | | |
| A-C | 4.73 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 4.05 | 7.96 | 0.509 | | 1.93 | 1.07 | 17.2 | | 0.26 |
| C-AB | 1.08 | 9.02 | 0.120 | | 0.20 | 0.15 | 2.2 | | 0.13 |
| A-B | 0.51 | | | | | | | | |
| A-C | 3.97 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 1.0 | * |
| 08.15 | 1.7 | ** |
| 08.30 | 4.6 | ***** |
| 08.45 | 5.1 | ***** |
| 09.00 | 1.9 | ** |
| 09.15 | 1.1 | * |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.1 |
| 08.15 | 0.2 |
| 08.30 | 0.3 |
| 08.45 | 0.3 |
| 09.00 | 0.2 |
| 09.15 | 0.1 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 444.6 | 296.4 | 217.6 | 0.49 | 217.6 | 0.49 |
| C-AB | 118.4 | 78.9 | 18.3 | 0.15 | 18.3 | 0.15 |
| A-B | 56.4 | 37.6 | | | | |
| A-C | 435.0 | 290.0 | | | | |
| ALL | 1759.1 | 1172.7 | 235.8 | 0.13 | 235.9 | 0.13 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioB_2024-2039AM&PM.

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2039PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.29 | 4.93 | 3.29 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.95 | 1.42 | 0.95 |
| ARM C | 15.00 | 45.00 | 75.00 | 6.19 | 9.28 | 6.19 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.122 | 0.878 |
| | | 0.0 | 32.0 | 231.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.171 | 0.000 | 0.829 |
| | | 13.0 | 0.0 | 63.0 |
| | | ( 1.0) | ( 0.0) | ( 1.0) |
| | ARM C | 0.976 | 0.024 | 0.000 |
| | | 483.0 | 12.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.95 | 10.28 | 0.093 | | 0.00 | 0.10 | 1.5 | | 0.11 |
| C-AB | 0.15 | 9.29 | 0.016 | | 0.00 | 0.02 | 0.2 | | 0.11 |
| A-B | 0.40 | | | | | | | | |
| A-C | 2.90 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 1.14 | 10.05 | 0.113 | | 0.10 | 0.13 | 1.9 | | 0.11 |
| C-AB | 0.18 | 9.15 | 0.020 | | 0.02 | 0.02 | 0.3 | | 0.11 |
| A-B | 0.48 | | | | | | | | |
| A-C | 3.46 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | | |
| | B-AC | 1.39 | 9.74 | 0.143 | | 0.13 | 0.17 | 2.4 | | 0.12 |
| | C-AB | 0.22 | 8.95 | 0.025 | | 0.02 | 0.03 | 0.4 | | 0.11 |
| | A-B | 0.59 | | | | | | | | |
| | A-C | 4.24 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | | |
| | B-AC | 1.39 | 9.74 | 0.143 | | 0.17 | 0.17 | 2.5 | | 0.12 |
| | C-AB | 0.22 | 8.95 | 0.025 | | 0.03 | 0.03 | 0.4 | | 0.11 |
| | A-B | 0.59 | | | | | | | | |
| | A-C | 4.24 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | | |
| | B-AC | 1.14 | 10.05 | 0.113 | | 0.17 | 0.13 | 2.0 | | 0.11 |
| | C-AB | 0.18 | 9.15 | 0.020 | | 0.03 | 0.02 | 0.3 | | 0.11 |
| | A-B | 0.48 | | | | | | | | |
| | A-C | 3.46 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | | |
| | B-AC | 0.95 | 10.28 | 0.093 | | 0.13 | 0.10 | 1.6 | | 0.11 |
| | C-AB | 0.15 | 9.29 | 0.016 | | 0.02 | 0.02 | 0.3 | | 0.11 |
| | A-B | 0.40 | | | | | | | | |
| | A-C | 2.90 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 104.6 | 69.7 | 11.8 | 0.11 | 11.8 | 0.11 |
| C-AB | 16.5 | 11.0 | 1.9 | 0.11 | 1.9 | 0.11 |
| A-B | 44.0 | 29.4 | | | | |
| A-C | 318.0 | 212.0 | | | | |
| ALL | 1147.9 | 765.3 | 13.7 | 0.01 | 13.7 | 0.01 |

* 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

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

[Printed at 15:14:36 on 31/01/2019]





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

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)



FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk



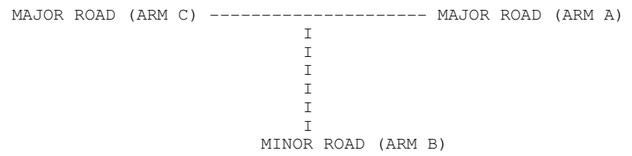
Run with file:-
"C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioC_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 15:04:13 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction 6
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between the R609 Carrigaline Road and Maryborough Hill.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Eastbound
ARM B IS Maryborough Hill
ARM C IS R609 Westbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 60.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 50.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 50.0 M. |
| - LANE 1 WIDTH | (WB-C) | 4.00 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioC_2024-2039AM&PM.v

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.54 | 5.31 | 3.54 |
| ARM B | 15.00 | 45.00 | 75.00 | 2.29 | 3.43 | 2.29 |
| ARM C | 15.00 | 45.00 | 75.00 | 8.48 | 12.71 | 8.48 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | TURNING PROPORTIONS | | |
| | | TURNING COUNTS (VEH/HR) | | |
| | | (PERCENTAGE OF H.V.S) | | |
| | ARM A | 0.000 | 0.106 | 0.894 |
| | | 0.0 | 30.0 | 253.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.776 | 0.000 | 0.224 |
| | | 142.0 | 0.0 | 41.0 |
| | | ( 2.0) | ( 0.0) | ( 2.0) |
| | ARM C | 0.931 | 0.069 | 0.000 |
| | | 631.0 | 47.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 2.30 | 7.64 | 0.300 | | 0.00 | 0.42 | 6.0 | | 0.19 |
| C-AB | 0.59 | 9.24 | 0.064 | | 0.00 | 0.07 | 1.1 | | 0.12 |
| A-B | 0.38 | | | | | | | | |
| A-C | 3.17 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 2.74 | 7.22 | 0.380 | | 0.42 | 0.60 | 8.6 | | 0.22 |
| C-AB | 0.70 | 9.08 | 0.078 | | 0.07 | 0.09 | 1.4 | | 0.12 |
| A-B | 0.45 | | | | | | | | |
| A-C | 3.79 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 3.36 | 6.62 | 0.508 | | 0.60 | 0.99 | 13.9 | | 0.30 |
| C-AB | 0.86 | 8.86 | 0.097 | | 0.09 | 0.12 | 1.8 | | 0.12 |
| A-B | 0.55 | | | | | | | | |
| A-C | 4.64 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 3.36 | 6.62 | 0.508 | | 0.99 | 1.01 | 15.0 | | 0.31 |
| C-AB | 0.86 | 8.86 | 0.097 | | 0.12 | 0.12 | 1.8 | | 0.13 |
| A-B | 0.55 | | | | | | | | |
| A-C | 4.64 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 2.74 | 7.21 | 0.380 | | 1.01 | 0.63 | 9.9 | | 0.23 |
| C-AB | 0.70 | 9.08 | 0.078 | | 0.12 | 0.09 | 1.4 | | 0.12 |
| A-B | 0.45 | | | | | | | | |
| A-C | 3.79 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 2.30 | 7.64 | 0.300 | | 0.63 | 0.44 | 6.8 | | 0.19 |
| C-AB | 0.59 | 9.24 | 0.064 | | 0.09 | 0.07 | 1.1 | | 0.12 |
| A-B | 0.38 | | | | | | | | |
| A-C | 3.17 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.6 | * |
| 08.30 | 1.0 | * |
| 08.45 | 1.0 | * |
| 09.00 | 0.6 | * |
| 09.15 | 0.4 | |

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 251.9 | 167.9 | 60.3 | 0.24 | 60.3 | 0.24 |
| C-AB | 64.7 | 43.1 | 8.5 | 0.13 | 8.5 | 0.13 |
| A-B | 41.3 | 27.5 | | | | |
| A-C | 348.2 | 232.2 | | | | |
| ALL | 1574.6 | 1049.8 | 68.8 | 0.04 | 68.8 | 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioC_2024-2039AM&PM.

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2024PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.89 | 7.33 | 4.89 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.59 | 0.88 | 0.59 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.15 | 7.73 | 5.15 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.228 | 0.772 |
| | | 0.0 | 89.0 | 302.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.809 | 0.000 | 0.191 |
| | | 38.0 | 0.0 | 9.0 |
| | | ( 8.0) | ( 0.0) | ( 8.0) |
| | ARM C | 0.930 | 0.070 | 0.000 |
| | | 383.0 | 29.0 | 0.0 |
| | | ( 2.0) | ( 2.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.59 | 7.39 | 0.080 | | 0.00 | 0.09 | 1.2 | | 0.15 |
| C-AB | 0.36 | 8.84 | 0.041 | | 0.00 | 0.04 | 0.6 | | 0.12 |
| A-B | 1.12 | | | | | | | | |
| A-C | 3.79 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.70 | 7.04 | 0.100 | | 0.09 | 0.11 | 1.6 | | 0.16 |
| C-AB | 0.43 | 8.62 | 0.050 | | 0.04 | 0.05 | 0.8 | | 0.12 |
| A-B | 1.33 | | | | | | | | |
| A-C | 4.52 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.86 | 6.56 | 0.131 | | 0.11 | 0.15 | 2.2 | | 0.18 |
| C-AB | 0.53 | 8.33 | 0.064 | | 0.05 | 0.07 | 1.1 | | 0.13 |
| A-B | 1.63 | | | | | | | | |
| A-C | 5.54 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.86 | 6.56 | 0.132 | | 0.15 | 0.15 | 2.3 | | 0.18 |
| C-AB | 0.53 | 8.33 | 0.064 | | 0.07 | 0.07 | 1.1 | | 0.13 |
| A-B | 1.63 | | | | | | | | |
| A-C | 5.54 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.70 | 7.04 | 0.100 | | 0.15 | 0.11 | 1.7 | | 0.16 |
| C-AB | 0.43 | 8.62 | 0.050 | | 0.07 | 0.06 | 0.8 | | 0.12 |
| A-B | 1.33 | | | | | | | | |
| A-C | 4.52 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.59 | 7.39 | 0.080 | | 0.11 | 0.09 | 1.3 | | 0.15 |
| C-AB | 0.36 | 8.84 | 0.041 | | 0.06 | 0.04 | 0.7 | | 0.12 |
| A-B | 1.12 | | | | | | | | |
| A-C | 3.79 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.0 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |
| 18.15 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 64.7 | 43.1 | 10.4 | 0.16 | 10.4 | 0.16 |
| C-AB | 39.9 | 26.6 | 5.1 | 0.13 | 5.1 | 0.13 |
| A-B | 122.5 | 81.7 | | | | |
| A-C | 415.7 | 277.1 | | | | |
| ALL | 1170.0 | 780.0 | 15.5 | 0.01 | 15.5 | 0.01 |

* 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

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

[Printed at 15:04:24 on 31/01/2019]





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

PICADY 5.0 ANALYSIS PROGRAM
RELEASE 3.0 (JUNE 2006)



FOR SALES AND DISTRIBUTION INFORMATION,
PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk



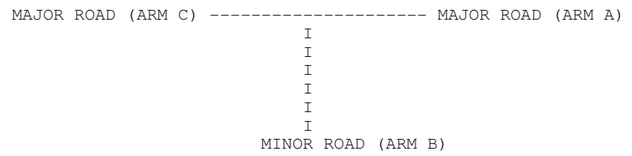
Run with file:-
"C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioC_2039AM&PM.vpi"
(drive-on-the-left ) at 18:16:31 on Wednesday, 25 July 2018

RUN INFORMATION

RUN TITLE: ScenarioC_2039AM&PM
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between the R609 Carrigaline Road and Maryborough Hill.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Eastbound
ARM B IS Maryborough Hill
ARM C IS R609 Westbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 60.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 50.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 50.0 M. |
| - LANE 1 WIDTH | (WB-C) | 4.00 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioC_2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.65 | 5.48 | 3.65 |
| ARM B | 15.00 | 45.00 | 75.00 | 2.41 | 3.62 | 2.41 |
| ARM C | 15.00 | 45.00 | 75.00 | 8.80 | 13.20 | 8.80 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | TURNING PROPORTIONS | | |
| | | TURNING COUNTS (VEH/HR) | | |
| | | (PERCENTAGE OF H.V.S) | | |
| | ARM A | 0.000 | 0.110 | 0.890 |
| | | 0.0 | 32.0 | 260.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.782 | 0.000 | 0.218 |
| | | 151.0 | 0.0 | 42.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.932 | 0.068 | 0.000 |
| | | 656.0 | 48.0 | 0.0 |
| | | ( 2.0) | ( 2.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 2.42 | 7.69 | 0.315 | | 0.00 | 0.45 | 6.4 | | 0.19 |
| C-AB | 0.60 | 9.12 | 0.066 | | 0.00 | 0.07 | 1.1 | | 0.12 |
| A-B | 0.40 | | | | | | | | |
| A-C | 3.26 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 2.89 | 7.23 | 0.400 | | 0.45 | 0.65 | 9.3 | | 0.23 |
| C-AB | 0.72 | 8.96 | 0.080 | | 0.07 | 0.09 | 1.4 | | 0.12 |
| A-B | 0.48 | | | | | | | | |
| A-C | 3.90 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 3.54 | 6.59 | 0.537 | | 0.65 | 1.11 | 15.5 | | 0.32 |
| C-AB | 0.88 | 8.74 | 0.101 | | 0.09 | 0.13 | 1.9 | | 0.13 |
| A-B | 0.59 | | | | | | | | |
| A-C | 4.77 | | | | | | | | |

| 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) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 3.54 | 6.59 | 0.537 | | 1.11 | 1.14 | 16.9 | | 0.33 |
| C-AB | 0.88 | 8.74 | 0.101 | | 0.13 | 0.13 | 1.9 | | 0.13 |
| A-B | 0.59 | | | | | | | | |
| A-C | 4.77 | | | | | | | | |

| 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) | AVERAGE DELAY PER ARRIVING VEHICLE (MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 2.89 | 7.23 | 0.400 | | 1.14 | 0.68 | 10.8 | | 0.23 |
| C-AB | 0.72 | 8.96 | 0.080 | | 0.13 | 0.10 | 1.4 | | 0.12 |
| A-B | 0.48 | | | | | | | | |
| A-C | 3.90 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 2.42 | 7.69 | 0.315 | | 0.68 | 0.47 | 7.3 | | 0.19 |
| C-AB | 0.60 | 9.12 | 0.066 | | 0.10 | 0.08 | 1.1 | | 0.12 |
| A-B | 0.40 | | | | | | | | |
| A-C | 3.26 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.5 | |
| 08.15 | 0.7 | * |
| 08.30 | 1.1 | * |
| 08.45 | 1.1 | * |
| 09.00 | 0.7 | * |
| 09.15 | 0.5 | |

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 265.7 | 177.1 | 66.3 | 0.25 | 66.3 | 0.25 |
| C-AB | 66.1 | 44.0 | 8.9 | 0.13 | 8.9 | 0.13 |
| A-B | 44.0 | 29.4 | | | | |
| A-C | 357.9 | 238.6 | | | | |
| ALL | 1636.6 | 1091.0 | 75.2 | 0.05 | 75.2 | 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioC_2039AM&PM.vpo -

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2039PM

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

| ARM | FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.07 | 7.61 | 5.07 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.61 | 0.92 | 0.61 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.36 | 8.04 | 5.36 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.232 | 0.768 |
| | | 0.0 | 94.0 | 312.0 |
| | | ( 0.0) | ( 4.0) | ( 4.0) |
| | ARM B | 0.816 | 0.000 | 0.184 |
| | | 40.0 | 0.0 | 9.0 |
| | | ( 24.0) | ( 0.0) | ( 24.0) |
| | ARM C | 0.930 | 0.070 | 0.000 |
| | | 399.0 | 30.0 | 0.0 |
| | | ( 3.0) | ( 3.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.61 | 6.34 | 0.097 | | 0.00 | 0.11 | 1.5 | | 0.17 |
| C-AB | 0.38 | 8.69 | 0.043 | | 0.00 | 0.05 | 0.7 | | 0.12 |
| A-B | 1.18 | | | | | | | | |
| A-C | 3.91 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.73 | 6.02 | 0.122 | | 0.11 | 0.14 | 2.0 | | 0.19 |
| C-AB | 0.45 | 8.46 | 0.053 | | 0.05 | 0.06 | 0.9 | | 0.12 |
| A-B | 1.41 | | | | | | | | |
| A-C | 4.67 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.90 | 5.57 | 0.161 | | 0.14 | 0.19 | 2.7 | | 0.21 |
| C-AB | 0.55 | 8.15 | 0.068 | | 0.06 | 0.08 | 1.1 | | 0.13 |
| A-B | 1.72 | | | | | | | | |
| A-C | 5.73 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.90 | 5.57 | 0.161 | | 0.19 | 0.19 | 2.9 | | 0.21 |
| C-AB | 0.55 | 8.15 | 0.068 | | 0.08 | 0.08 | 1.2 | | 0.13 |
| A-B | 1.72 | | | | | | | | |
| A-C | 5.73 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.73 | 6.02 | 0.122 | | 0.19 | 0.14 | 2.2 | | 0.19 |
| C-AB | 0.45 | 8.46 | 0.053 | | 0.08 | 0.06 | 0.9 | | 0.12 |
| A-B | 1.41 | | | | | | | | |
| A-C | 4.67 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.61 | 6.34 | 0.097 | | 0.14 | 0.11 | 1.7 | | 0.17 |
| C-AB | 0.38 | 8.69 | 0.043 | | 0.06 | 0.05 | 0.7 | | 0.12 |
| A-B | 1.18 | | | | | | | | |
| A-C | 3.91 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.0 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |
| 18.15 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 67.4 | 45.0 | 13.0 | 0.19 | 13.0 | 0.19 |
| C-AB | 41.3 | 27.5 | 5.4 | 0.13 | 5.4 | 0.13 |
| A-B | 129.4 | 86.3 | | | | |
| A-C | 429.4 | 286.3 | | | | |
| ALL | 1216.8 | 811.2 | 18.4 | 0.02 | 18.4 | 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

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

[Printed at 18:16:41 on 25/07/2018]





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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EMAIL: SoftwareBureau@trl.co.uk



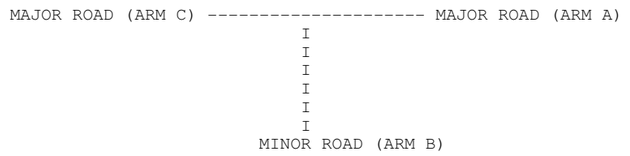
Run with file:-
"C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioD_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 15:18:11 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction 6
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between the R609 Carrigaline Road and Maryborough Hill.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Eastbound
ARM B IS Maryborough Hill
ARM C IS R609 Westbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 60.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 50.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 50.0 M. |
| - LANE 1 WIDTH | (WB-C) | 4.00 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioD_2024-2039AM&PM.v

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.84 | 5.76 | 3.84 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.42 | 5.14 | 3.42 |
| ARM C | 15.00 | 45.00 | 75.00 | 7.51 | 11.27 | 7.51 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.124 | 0.876 |
| | | 0.0 | 38.0 | 269.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.562 | 0.000 | 0.438 |
| | | 154.0 | 0.0 | 120.0 |
| | | ( 1.0) | ( 0.0) | ( 1.0) |
| | ARM C | 0.885 | 0.115 | 0.000 |
| | | 532.0 | 69.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 3.44 | 8.42 | 0.408 | | 0.00 | 0.67 | 9.5 | | 0.20 |
| C-AB | 0.87 | 9.17 | 0.094 | | 0.00 | 0.11 | 1.6 | | 0.12 |
| A-B | 0.48 | | | | | | | | |
| A-C | 3.38 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 4.11 | 8.02 | 0.512 | | 0.67 | 1.01 | 14.4 | | 0.25 |
| C-AB | 1.03 | 9.00 | 0.115 | | 0.11 | 0.14 | 2.1 | | 0.13 |
| A-B | 0.57 | | | | | | | | |
| A-C | 4.03 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 5.03 | 7.46 | 0.674 | | 1.01 | 1.92 | 26.1 | | 0.39 |
| C-AB | 1.27 | 8.76 | 0.145 | | 0.14 | 0.19 | 2.9 | | 0.13 |
| A-B | 0.70 | | | | | | | | |
| A-C | 4.94 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 5.03 | 7.46 | 0.674 | | 1.92 | 1.99 | 29.4 | | 0.41 |
| C-AB | 1.27 | 8.76 | 0.145 | | 0.19 | 0.19 | 2.9 | | 0.13 |
| A-B | 0.70 | | | | | | | | |
| A-C | 4.94 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 4.11 | 8.02 | 0.512 | | 1.99 | 1.08 | 17.4 | | 0.26 |
| C-AB | 1.03 | 9.00 | 0.115 | | 0.19 | 0.14 | 2.2 | | 0.13 |
| A-B | 0.57 | | | | | | | | |
| A-C | 4.03 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 3.44 | 8.42 | 0.408 | | 1.08 | 0.71 | 11.1 | | 0.20 |
| C-AB | 0.87 | 9.17 | 0.094 | | 0.14 | 0.11 | 1.7 | | 0.12 |
| A-B | 0.48 | | | | | | | | |
| A-C | 3.38 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.7 | * |
| 08.15 | 1.0 | * |
| 08.30 | 1.9 | ** |
| 08.45 | 2.0 | ** |
| 09.00 | 1.1 | * |
| 09.15 | 0.7 | * |

QUEUE FOR STREAM C-AB

| 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 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 377.1 | 251.4 | 107.9 | 0.29 | 107.9 | 0.29 |
| C-AB | 95.0 | 63.3 | 13.5 | 0.14 | 13.5 | 0.14 |
| A-B | 52.3 | 34.9 | | | | |
| A-C | 370.3 | 246.8 | | | | |
| ALL | 1626.9 | 1084.6 | 121.4 | 0.07 | 121.4 | 0.07 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioD_2024-2039AM&PM.

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2024PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.79 | 5.68 | 3.79 |
| ARM B | 15.00 | 45.00 | 75.00 | 1.04 | 1.56 | 1.04 |
| ARM C | 15.00 | 45.00 | 75.00 | 6.26 | 9.39 | 6.26 |

| ARM | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| TIME 16.45 - 18.15 | | | | |
| ARM A | | 0.000 | 0.083 | 0.917 |
| | | 0.0 | 25.0 | 278.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| ARM B | | 0.120 | 0.000 | 0.880 |
| | | 10.0 | 0.0 | 73.0 |
| | | ( 1.0) | ( 0.0) | ( 1.0) |
| ARM C | | 0.904 | 0.096 | 0.000 |
| | | 453.0 | 48.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 1.04 | 10.33 | 0.101 | | 0.00 | 0.11 | 1.6 | | 0.11 |
| C-AB | 0.60 | 9.18 | 0.066 | | 0.00 | 0.07 | 1.1 | | 0.12 |
| A-B | 0.31 | | | | | | | | |
| A-C | 3.49 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 1.24 | 10.08 | 0.123 | | 0.11 | 0.14 | 2.1 | | 0.11 |
| C-AB | 0.72 | 9.01 | 0.080 | | 0.07 | 0.09 | 1.4 | | 0.12 |
| A-B | 0.37 | | | | | | | | |
| A-C | 4.17 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | | |
| | B-AC | 1.52 | 9.74 | 0.156 | | 0.14 | 0.18 | 2.7 | | 0.12 |
| | C-AB | 0.88 | 8.78 | 0.100 | | 0.09 | 0.12 | 1.8 | | 0.13 |
| | A-B | 0.46 | | | | | | | | |
| | A-C | 5.10 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | | |
| | B-AC | 1.52 | 9.74 | 0.156 | | 0.18 | 0.18 | 2.8 | | 0.12 |
| | C-AB | 0.88 | 8.78 | 0.100 | | 0.12 | 0.12 | 1.8 | | 0.13 |
| | A-B | 0.46 | | | | | | | | |
| | A-C | 5.10 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | | |
| | B-AC | 1.24 | 10.08 | 0.123 | | 0.18 | 0.14 | 2.2 | | 0.11 |
| | C-AB | 0.72 | 9.01 | 0.080 | | 0.12 | 0.09 | 1.4 | | 0.12 |
| | A-B | 0.37 | | | | | | | | |
| | A-C | 4.17 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | | |
| | B-AC | 1.04 | 10.33 | 0.101 | | 0.14 | 0.11 | 1.7 | | 0.11 |
| | C-AB | 0.60 | 9.18 | 0.066 | | 0.09 | 0.07 | 1.1 | | 0.12 |
| | A-B | 0.31 | | | | | | | | |
| | A-C | 3.49 | | | | | | | | |

QUEUE FOR STREAM B-AC

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

QUEUE FOR STREAM C-AB

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

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 114.2 | 76.2 | 13.0 | 0.11 | 13.0 | 0.11 |
| C-AB | 66.1 | 44.0 | 8.6 | 0.13 | 8.6 | 0.13 |
| A-B | 34.4 | 22.9 | | | | |
| A-C | 382.6 | 255.1 | | | | |
| ALL | 1220.9 | 813.9 | 21.6 | 0.02 | 21.6 | 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

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

[Printed at 15:18:26 on 31/01/2019]

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioD_2024-2039AM&PM.v



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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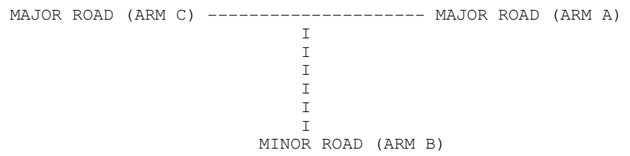
Run with file:-
"C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioD_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 16:00:58 on Thursday, 31 January 2019

RUN INFORMATION

RUN TITLE: Junction 6
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between the R609 Carrigaline Road and Maryborough Hill.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS R609 Eastbound
ARM B IS Maryborough Hill
ARM C IS R609 Westbound

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 7.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 60.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 50.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 50.0 M. |
| - LANE 1 WIDTH | (WB-C) | 4.00 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioD_2024-2039AM&PM.v

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.81 | 7.22 | 4.81 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.16 | 6.24 | 4.16 |
| ARM C | 15.00 | 45.00 | 75.00 | 9.09 | 13.63 | 9.09 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.106 | 0.894 |
| | | 0.0 | 41.0 | 344.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.622 | 0.000 | 0.378 |
| | | 207.0 | 0.0 | 126.0 |
| | | ( 1.0) | ( 0.0) | ( 1.0) |
| | ARM C | 0.857 | 0.143 | 0.000 |
| | | 623.0 | 104.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 4.18 | 7.68 | 0.544 | | 0.00 | 1.15 | 15.7 | | 0.27 |
| C-AB | 1.30 | 8.94 | 0.146 | | 0.00 | 0.19 | 2.8 | | 0.13 |
| A-B | 0.51 | | | | | | | | |
| A-C | 4.32 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 4.99 | 7.16 | 0.697 | | 1.15 | 2.11 | 28.5 | | 0.44 |
| C-AB | 1.56 | 8.73 | 0.178 | | 0.19 | 0.25 | 3.8 | | 0.14 |
| A-B | 0.61 | | | | | | | | |
| A-C | 5.15 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 6.11 | 6.41 | 0.954 | | 2.11 | 7.46 | 81.8 | | 1.15 |
| C-AB | 1.91 | 8.44 | 0.226 | | 0.25 | 0.37 | 5.6 | | 0.15 |
| A-B | 0.75 | | | | | | | | |
| A-C | 6.31 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 6.11 | 6.40 | 0.954 | | 7.46 | 9.62 | 129.5 | | 1.67 |
| C-AB | 1.91 | 8.44 | 0.226 | | 0.37 | 0.38 | 5.7 | | 0.15 |
| A-B | 0.75 | | | | | | | | |
| A-C | 6.31 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 4.99 | 7.15 | 0.698 | | 9.62 | 2.56 | 57.4 | | 0.71 |
| C-AB | 1.56 | 8.73 | 0.178 | | 0.38 | 0.26 | 4.0 | | 0.14 |
| A-B | 0.61 | | | | | | | | |
| A-C | 5.15 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 4.18 | 7.68 | 0.544 | | 2.56 | 1.24 | 20.3 | | 0.30 |
| C-AB | 1.30 | 8.94 | 0.146 | | 0.26 | 0.20 | 2.9 | | 0.13 |
| A-B | 0.51 | | | | | | | | |
| A-C | 4.32 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 1.1 | * |
| 08.15 | 2.1 | ** |
| 08.30 | 7.5 | ******* |
| 08.45 | 9.6 | ********** |
| 09.00 | 2.6 | *** |
| 09.15 | 1.2 | * |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.2 |
| 08.15 | 0.3 |
| 08.30 | 0.4 |
| 08.45 | 0.4 |
| 09.00 | 0.3 |
| 09.15 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 458.3 | 305.6 | 333.2 | 0.73 | 333.3 | 0.73 |
| C-AB | 143.1 | 95.4 | 24.9 | 0.17 | 24.9 | 0.17 |
| A-B | 56.4 | 37.6 | | | | |
| A-C | 473.5 | 315.7 | | | | |
| ALL | 1988.9 | 1326.0 | 358.1 | 0.18 | 358.2 | 0.18 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.03 | 0.27 | 0.11 |

| 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 |
|---|---|---|---|---|
| 570.42 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 608.71 | 0.23 | 0.23 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction6_CarrigalineRd_MaryboroughHill\ScenarioD_2024-2039AM&PM.

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2039PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.38 | 6.56 | 4.38 |
| ARM B | 15.00 | 45.00 | 75.00 | 1.26 | 1.89 | 1.26 |
| ARM C | 15.00 | 45.00 | 75.00 | 7.11 | 10.67 | 7.11 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.091 | 0.909 |
| | | 0.0 | 32.0 | 318.0 |
| | | ( 0.0) | ( 2.0) | ( 2.0) |
| | ARM B | 0.129 | 0.000 | 0.871 |
| | | 13.0 | 0.0 | 88.0 |
| | | ( 1.0) | ( 0.0) | ( 1.0) |
| | ARM C | 0.975 | 0.025 | 0.000 |
| | | 555.0 | 14.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 1.27 | 10.13 | 0.125 | | 0.00 | 0.14 | 2.1 | | 0.11 |
| C-AB | 0.18 | 9.04 | 0.019 | | 0.00 | 0.02 | 0.3 | | 0.11 |
| A-B | 0.40 | | | | | | | | |
| A-C | 3.99 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 1.51 | 9.85 | 0.154 | | 0.14 | 0.18 | 2.6 | | 0.12 |
| C-AB | 0.21 | 8.85 | 0.024 | | 0.02 | 0.02 | 0.4 | | 0.12 |
| A-B | 0.48 | | | | | | | | |
| A-C | 4.76 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | | |
| | B-AC | 1.85 | 9.45 | 0.196 | | 0.18 | 0.24 | 3.5 | | 0.13 |
| | C-AB | 0.26 | 8.58 | 0.030 | | 0.02 | 0.03 | 0.5 | | 0.12 |
| | A-B | 0.59 | | | | | | | | |
| | A-C | 5.84 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | | |
| | B-AC | 1.85 | 9.45 | 0.196 | | 0.24 | 0.24 | 3.6 | | 0.13 |
| | C-AB | 0.26 | 8.58 | 0.030 | | 0.03 | 0.03 | 0.5 | | 0.12 |
| | A-B | 0.59 | | | | | | | | |
| | A-C | 5.84 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | | |
| | B-AC | 1.51 | 9.85 | 0.154 | | 0.24 | 0.18 | 2.8 | | 0.12 |
| | C-AB | 0.21 | 8.85 | 0.024 | | 0.03 | 0.03 | 0.4 | | 0.12 |
| | A-B | 0.48 | | | | | | | | |
| | A-C | 4.76 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | | |
| | B-AC | 1.27 | 10.13 | 0.125 | | 0.18 | 0.14 | 2.2 | | 0.11 |
| | C-AB | 0.18 | 9.04 | 0.019 | | 0.03 | 0.02 | 0.3 | | 0.11 |
| | A-B | 0.40 | | | | | | | | |
| | A-C | 3.99 | | | | | | | | |

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

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 139.0 | 92.7 | 16.9 | 0.12 | 16.9 | 0.12 |
| C-AB | 19.3 | 12.8 | 2.3 | 0.12 | 2.3 | 0.12 |
| A-B | 44.0 | 29.4 | | | | |
| A-C | 437.7 | 291.8 | | | | |
| ALL | 1404.0 | 936.0 | 19.2 | 0.01 | 19.2 | 0.01 |

* 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

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

[Printed at 16:01:12 on 31/01/2019]



OSCADY 5

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Residential Access 1\Res_Access1-24.10.18.voi" at 14:01:48 on Wednesday, 24 October 20

FILE PROPERTIES

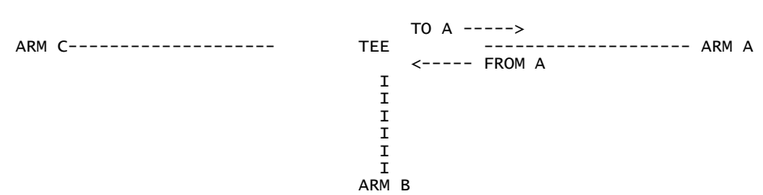
RUN TITLE: Res+Sch_Access_2039AM
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of proposed residential access and the R609

**** ERROR AND WARNING MESSAGES ****

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS

INPUT DATA




ARM A IS R609 (Southbound)
ARM B IS Residential Access 1
ARM C IS R609 (Northbound)

GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| GRADIENT | | 0.0 % | 0.0 % | 0.0 % |
| NUMBER OF LANES | | 1 | 2 | 2 |
| PERMITTED MOVEMENTS | LANE 1 | LS | L | S |
| | LANE 2 | | R | R |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 3.00 M | 3.25 M | 3.00 M |
| | LANE 2 | 0.00 M | 3.25 M | 3.00 M |
| LEFT TURN RADII | LANE 1 | 7.0 M | 7.0 M | N/A |
| RIGHT TURN RADII | LANE 2 | N/A | 10.0 M | 10.0 M |

EXIT WIDTH FOR IMAGINARY ARM D = 50.10

TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 07.45 TO 09.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 08.00 TO 09.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioB_2039AM

| TOTAL TRAFFIC DEMAND (VEHICLES / HOUR) | | | |
|---|---|---|---|
| FROM/TO | ARM A | ARM B | ARM C |
| ARM A | 0.0 | 76.0 | 555.0 |
| ARM B | 67.0 | 0.0 | 82.0 |
| ARM C | 608.0 | 92.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS | | | | | |
|---|---|---|---|---|---|---|---|
| | | CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
| 08.00-09.00 | A | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | B | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |

DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 08.00 | 08.30 | 09.00 | 22.02 | 33.04 | 22.02 |
| | B | 08.00 | 08.30 | 09.00 | 9.14 | 13.71 | 9.14 |
| | C | 08.00 | 08.30 | 09.00 | 21.74 | 32.61 | 21.74 |



SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 120.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 |
|---|---|---|---|---|
| LANES ON GREEN: ARM A | 1 | | | |
| B | | 1 | 1 2 | |
| C | 1 | 1 2 | | |
| MINIMUM GREEN TIME (SECS) | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| | A | 1 | L S | 9.42 | 1866.8 | 30.71 | 45.0 | | 17.25 |
| | B | 1 | L | 1.22 | 1597.6 | 26.63 | 18.1 | | 6.02 |
| | | 2 | R | 1.00 | 1808.7 | 30.14 | 6.5 | | 2.44 |
| | C | 1 | S | 9.08 | 1915.0 | 31.51 | 56.7 | | 22.27 |
| | | 2 | R | 1.37 | 1787.0 | 29.40 | 8.1 | | 2.98 |
| 08.15-08.30 | | | | | | | | | |
| | A | 1 | L S | 11.54 | 1866.8 | 30.71 | 49.0 | | 17.71 |
| | B | 1 | L | 1.50 | 1597.6 | 26.63 | 19.0 | | 5.96 |
| | | 2 | R | 1.22 | 1808.7 | 30.14 | 6.5 | | 2.30 |
| | C | 1 | S | 11.11 | 1915.0 | 31.51 | 61.6 | | 22.80 |
| | | 2 | R | 1.68 | 1787.0 | 29.40 | 9.0 | | 3.12 |
| 08.30-08.45 | | | | | | | | | |
| | A | 1 | L S | 11.54 | 1866.8 | 30.71 | 49.0 | | 17.71 |
| | B | 1 | L | 1.50 | 1597.6 | 26.63 | 19.0 | | 5.96 |
| | | 2 | R | 1.22 | 1808.7 | 30.14 | 6.5 | | 2.30 |
| | C | 1 | S | 11.11 | 1915.0 | 31.51 | 61.6 | | 22.80 |
| | | 2 | R | 1.68 | 1787.0 | 29.40 | 9.0 | | 3.12 |
| 08.45-09.00 | | | | | | | | | |
| | A | 1 | L S | 9.42 | 1866.8 | 30.71 | 45.0 | | 17.25 |
| | B | 1 | L | 1.22 | 1597.6 | 26.63 | 18.1 | | 6.02 |
| | | 2 | R | 1.00 | 1808.7 | 30.14 | 6.5 | | 2.44 |
| | C | 1 | S | 9.08 | 1915.0 | 31.51 | 56.7 | | 22.27 |
| | | 2 | R | 1.37 | 1787.0 | 29.40 | 8.1 | | 2.98 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | | |
| | A | 1 | L S | 9.42 | 17.25 | 0.546 | 2.1 | 5.9 | 31.9 | |
| | B | 1 | L | 1.22 | 6.02 | 0.203 | 0.5 | 1.3 | 8.2 | |
| | | 2 | R | 1.00 | 2.44 | 0.409 | 0.7 | 1.4 | 11.2 | |
| | C | 1 | S | 9.08 | 22.27 | 0.408 | 0.9 | 3.7 | 13.5 | |
| | | 2 | R | 1.37 | 2.98 | 0.461 | 1.0 | 1.9 | 15.0 | |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | |
| A | 1 | L S | 11.54 | 17.71 | 0.652 | 3.1 | 7.6 | 46.0 |
| B | 1 | L | 1.50 | 5.96 | 0.252 | 0.7 | 1.7 | 10.9 |
| | 2 | R | 1.22 | 2.30 | 0.532 | 1.1 | 1.9 | 16.7 |
| C | 1 | S | 11.11 | 22.80 | 0.487 | 1.2 | 4.6 | 18.1 |
| | 2 | R | 1.68 | 3.12 | 0.539 | 1.4 | 2.5 | 20.6 |
| 08.30-08.45 | | | | | | | | |
| A | 1 | L S | 11.54 | 17.71 | 0.652 | 3.1 | 7.7 | 46.2 |
| B | 1 | L | 1.50 | 5.96 | 0.252 | 0.7 | 1.7 | 10.9 |
| | 2 | R | 1.22 | 2.30 | 0.532 | 1.1 | 2.0 | 17.0 |
| C | 1 | S | 11.11 | 22.80 | 0.487 | 1.2 | 4.6 | 18.1 |
| | 2 | R | 1.68 | 3.12 | 0.539 | 1.4 | 2.5 | 20.8 |
| 08.45-09.00 | | | | | | | | |
| A | 1 | L S | 9.42 | 17.25 | 0.546 | 2.1 | 5.9 | 32.1 |
| B | 1 | L | 1.22 | 6.02 | 0.203 | 0.5 | 1.3 | 8.2 |
| | 2 | R | 1.00 | 2.44 | 0.409 | 0.8 | 1.4 | 11.5 |
| C | 1 | S | 9.08 | 22.27 | 0.408 | 0.9 | 3.7 | 13.5 |
| | 2 | R | 1.37 | 2.98 | 0.461 | 1.0 | 1.9 | 15.3 |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 2.1 | 5.9 | **++++ |
| 08.30 | 1 | 3.1 | 7.6 | ***+++++ |
| 08.45 | 1 | 3.1 | 7.7 | ***+++++ |
| 09.00 | 1 | 2.1 | 5.9 | **++++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 2 | 0.7 | 1.4 | * |
| | 1 | 0.5 | 1.3 | * |
| 08.30 | 2 | 1.1 | 1.9 | *+ |
| | 1 | 0.7 | 1.7 | *+ |
| 08.45 | 2 | 1.1 | 2.0 | *+ |
| | 1 | 0.7 | 1.7 | *+ |
| 09.00 | 2 | 0.8 | 1.4 | * |
| | 1 | 0.5 | 1.3 | * |

QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 2 | 1.0 | 1.9 | *+ |
| | 1 | 0.9 | 3.7 | *+++ |
| 08.30 | 2 | 1.4 | 2.5 | *+ |
| | 1 | 1.2 | 4.6 | *++++ |
| 08.45 | 2 | 1.4 | 2.5 | *++ |
| | 1 | 1.2 | 4.6 | *++++ |
| 09.00 | 2 | 1.0 | 1.9 | *+ |
| | 1 | 0.9 | 3.7 | *+++ |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (08.00-09.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | (VEH/H) | * QUEUEING * DELAY * (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 75.7 | 75.7 | 18.8 | 0.25 | 18.8 | 0.25 |
| A-C | 552.9 | 552.9 | 137.5 | 0.25 | 137.6 | 0.25 |
| B-C | 81.7 | 81.7 | 38.2 | 0.47 | 38.2 | 0.47 |
| B-A | 66.7 | 66.7 | 56.3 | 0.84 | 56.4 | 0.85 |
| C-A | 605.7 | 605.7 | 63.2 | 0.10 | 63.2 | 0.10 |
| C-B | 91.7 | 91.7 | 71.7 | 0.78 | 71.9 | 0.78 |
| ALL | 1474.4 | 1474.4 | 385.7 | 0.26 | 386.2 | 0.26 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed
========== end of file ==========

[Printed at 14:02:11 on 24/10/2018]

_____ O S C A D Y 5 _____

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Residential Access 1\Res_Access1-24.10.18.voi" at 16:09:29 on Wednesday, 24 October 2(

FILE PROPERTIES
**********

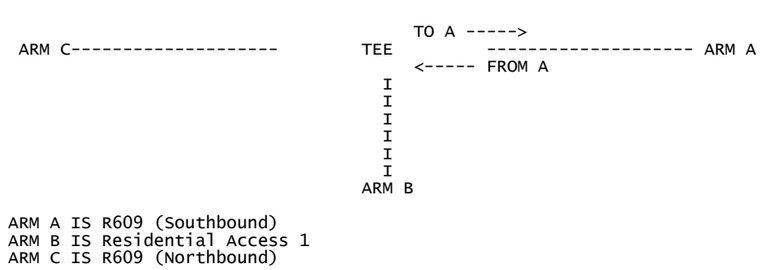
RUN TITLE: Res+Sch_Access_2039AM
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of proposed residential access and the R609

**** ERROR AND WARNING MESSAGES ****
==========

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS
**********

INPUT DATA
---




ARM A IS R609 (Southbound)
ARM B IS Residential Access 1
ARM C IS R609 (Northbound)



GEOMETRIC DATA
---

| DATA ITEM | | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| GRADIENT | | 0.0 % | 0.0 % | 0.0 % |
| NUMBER OF LANES | | 1 | 2 | 2 |
| PERMITTED MOVEMENTS | LANE 1 | LS | L | S |
| | LANE 2 | | R | R |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 3.00 M | 3.25 M | 3.00 M |
| | LANE 2 | 0.00 M | 3.25 M | 3.00 M |
| LEFT TURN RADII | LANE 1 | 7.0 M | 7.0 M | N/A |
| RIGHT TURN RADII | LANE 2 | N/A | 10.0 M | 10.0 M |

EXIT WIDTH FOR IMAGINARY ARM D = 50.10

TRAFFIC DEMAND DATA
---

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 07.45 TO 09.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 08.00 TO 09.00

THE FOLLOWING DATA HAS BEEN INPUT
TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioA_2039AM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|
| ARM A | 0.0 | 34.0 | 384.0 |
| ARM B | 30.0 | 0.0 | 119.0 |
| ARM C | 127.0 | 134.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS | | | | | |
|---|---|---|---|---|---|---|---|
| | | CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
| 08.00-09.00 | A | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | B | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |

DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 08.00 | 08.30 | 09.00 | 27.25 | 40.88 | 27.25 |
| | B | 08.00 | 08.30 | 09.00 | 11.00 | 16.50 | 11.00 |
| | C | 08.00 | 08.30 | 09.00 | 25.00 | 37.50 | 25.00 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 120.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 |
|---|---|---|---|---|
| LANES ON GREEN: ARM A | 1 | | | |
| B | | 1 | 1 2 | |
| C | 1 | 1 2 | | |
| MINIMUM GREEN TIME (SECS) | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| | A | 1 | L S | 6.24 | 1882.2 | 30.97 | 25.4 | | 12.63 |
| | B | 1 | L | 1.78 | 1597.6 | 26.63 | 19.8 | | 8.49 |
| | | 2 | R | 0.45 | 1808.7 | 30.14 | 6.5 | | 3.15 |
| | C | 1 | S | 1.90 | 1915.0 | 31.51 | 38.7 | | 19.60 |
| | | 2 | R | 2.00 | 1787.0 | 29.40 | 9.8 | | 4.64 |
| 08.15-08.30 | | | | | | | | | |
| | A | 1 | L S | 7.64 | 1882.2 | 30.97 | 29.2 | | 13.40 |
| | B | 1 | L | 2.18 | 1597.6 | 26.63 | 21.3 | | 8.41 |
| | | 2 | R | 0.55 | 1808.7 | 30.14 | 6.5 | | 2.90 |
| | C | 1 | S | 2.32 | 1915.0 | 31.51 | 44.0 | | 20.55 |
| | | 2 | R | 2.45 | 1787.0 | 29.40 | 11.3 | | 4.93 |
| 08.30-08.45 | | | | | | | | | |
| | A | 1 | L S | 7.64 | 1882.2 | 30.97 | 29.2 | | 13.40 |
| | B | 1 | L | 2.18 | 1597.6 | 26.63 | 21.3 | | 8.41 |
| | | 2 | R | 0.55 | 1808.7 | 30.14 | 6.5 | | 2.90 |
| | C | 1 | S | 2.32 | 1915.0 | 31.51 | 44.0 | | 20.55 |
| | | 2 | R | 2.45 | 1787.0 | 29.40 | 11.3 | | 4.93 |
| 08.45-09.00 | | | | | | | | | |
| | A | 1 | L S | 6.24 | 1882.2 | 30.97 | 25.4 | | 12.63 |
| | B | 1 | L | 1.78 | 1597.6 | 26.63 | 19.8 | | 8.49 |
| | | 2 | R | 0.45 | 1808.7 | 30.14 | 6.5 | | 3.15 |
| | C | 1 | S | 1.90 | 1915.0 | 31.51 | 38.7 | | 19.60 |
| | | 2 | R | 2.00 | 1787.0 | 29.40 | 9.8 | | 4.64 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | | |
| | A | 1 | L S | 6.24 | 12.63 | 0.494 | 1.7 | 4.1 | 25.6 | |
| | B | 1 | L | 1.78 | 8.49 | 0.209 | 0.5 | 1.3 | 7.4 | |
| | | 2 | R | 0.45 | 3.15 | 0.142 | 0.2 | 0.4 | 3.0 | |
| | C | 1 | S | 1.90 | 19.60 | 0.097 | 0.2 | 0.7 | 2.3 | |
| | | 2 | R | 2.00 | 4.64 | 0.431 | 1.0 | 1.9 | 14.7 | |



| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | |
| A | 1 | L S | 7.64 | 13.40 | 0.570 | 2.3 | 5.3 | 34.3 |
| B | 1 | L | 2.18 | 8.41 | 0.259 | 0.7 | 1.7 | 10.2 |
| | 2 | R | 0.55 | 2.90 | 0.189 | 0.3 | 0.6 | 4.2 |
| C | 1 | S | 2.32 | 20.55 | 0.113 | 0.2 | 0.9 | 2.7 |
| | 2 | R | 2.45 | 4.93 | 0.497 | 1.3 | 2.6 | 20.0 |
| 08.30-08.45 | | | | | | | | |
| A | 1 | L S | 7.64 | 13.40 | 0.570 | 2.3 | 5.3 | 34.4 |
| B | 1 | L | 2.18 | 8.41 | 0.259 | 0.7 | 1.7 | 10.2 |
| | 2 | R | 0.55 | 2.90 | 0.189 | 0.3 | 0.6 | 4.2 |
| C | 1 | S | 2.32 | 20.55 | 0.113 | 0.2 | 0.9 | 2.7 |
| | 2 | R | 2.45 | 4.93 | 0.497 | 1.3 | 2.6 | 20.0 |
| 08.45-09.00 | | | | | | | | |
| A | 1 | L S | 6.24 | 12.63 | 0.494 | 1.7 | 4.1 | 25.7 |
| B | 1 | L | 1.78 | 8.49 | 0.209 | 0.5 | 1.3 | 7.4 |
| | 2 | R | 0.45 | 3.15 | 0.142 | 0.2 | 0.4 | 3.0 |
| C | 1 | S | 1.90 | 19.60 | 0.097 | 0.2 | 0.7 | 2.3 |
| | 2 | R | 2.00 | 4.64 | 0.431 | 1.0 | 1.9 | 14.8 |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 1.7 | 4.1 | **++ |
| 08.30 | 1 | 2.3 | 5.3 | **+++ |
| 08.45 | 1 | 2.3 | 5.3 | **+++ |
| 09.00 | 1 | 1.7 | 4.1 | **++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 2 | 0.2 | 0.4 | |
| | 1 | 0.5 | 1.3 | + |
| 08.30 | 2 | 0.3 | 0.6 | + |
| | 1 | 0.7 | 1.7 | *+ |
| 08.45 | 2 | 0.3 | 0.6 | + |
| | 1 | 0.7 | 1.7 | *+ |
| 09.00 | 2 | 0.2 | 0.4 | |
| | 1 | 0.5 | 1.3 | + |

QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 2 | 1.0 | 1.9 | *+ |
| | 1 | 0.2 | 0.7 | + |
| 08.30 | 2 | 1.3 | 2.6 | *++ |
| | 1 | 0.2 | 0.9 | + |
| 08.45 | 2 | 1.3 | 2.6 | *++ |
| | 1 | 0.2 | 0.9 | + |
| 09.00 | 2 | 1.0 | 1.9 | *+ |
| | 1 | 0.2 | 0.7 | + |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (08.00-09.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | (VEH/H) | * QUEUEING * DELAY * (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 33.9 | 33.9 | 9.8 | 0.29 | 9.8 | 0.29 |
| A-C | 382.5 | 382.5 | 110.2 | 0.29 | 110.3 | 0.29 |
| B-C | 118.5 | 118.5 | 35.1 | 0.30 | 35.1 | 0.30 |
| B-A | 29.9 | 29.9 | 14.6 | 0.49 | 14.6 | 0.49 |
| C-A | 126.5 | 126.5 | 10.0 | 0.08 | 10.0 | 0.08 |
| C-B | 133.5 | 133.5 | 69.5 | 0.52 | 69.6 | 0.52 |
| ALL | 824.9 | 824.9 | 249.2 | 0.30 | 249.4 | 0.30 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed
========== end of file ==========

[Printed at 16:10:24 on 24/10/2018]



_____ O S C A D Y 5 _____

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Residential Access 1\Res_Access1.voi" at 12:46:43 on Wednesday, 24 October 2018

FILE PROPERTIES
**********

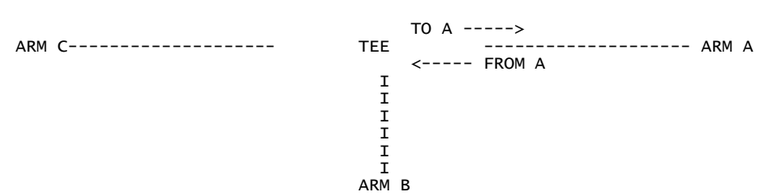
RUN TITLE: ScenarioC_2039AM
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of proposed residential
access and the R609

**** ERROR AND WARNING MESSAGES ****
==========

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS
**********

INPUT DATA
----------




ARM A IS R609 (Southbound)
ARM B IS Residential Access 1
ARM C IS R609 (Northbound)

GEOMETRIC DATA

| DATA ITEM | | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| GRADIENT | | 0.0 % | 0.0 % | 0.0 % |
| NUMBER OF LANES | | 1 | 2 | 2 |
| PERMITTED MOVEMENTS | LANE 1 | LS | L | S |
| | LANE 2 | | R | R |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 3.00 M | 3.25 M | 3.00 M |
| | LANE 2 | 0.00 M | 3.25 M | 3.00 M |
| LEFT TURN RADII | LANE 1 | 7.0 M | 7.0 M | N/A |
| RIGHT TURN RADII | LANE 2 | N/A | 10.0 M | 10.0 M |

EXIT WIDTH FOR IMAGINARY ARM D = 50.10

TRAFFIC DEMAND DATA

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 07.45 TO 09.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 08.00 TO 09.00

THE FOLLOWING DATA HAS BEEN INPUT

TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioC_2039AM

| TOTAL TRAFFIC DEMAND (VEHICLES / HOUR) | | | |
|---|---|---|---|
| FROM/TO | ARM A | ARM B | ARM C |
| ARM A | 0.0 | 41.0 | 414.0 |
| ARM B | 55.0 | 0.0 | 220.0 |
| ARM C | 131.0 | 164.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS | | | | | |
|---|---|---|---|---|---|---|---|
| | | CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
| 08.00-09.00 | A | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | B | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |

DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 08.00 | 08.30 | 09.00 | 5.69 | 8.53 | 5.69 |
| | B | 08.00 | 08.30 | 09.00 | 3.44 | 5.16 | 3.44 |
| | C | 08.00 | 08.30 | 09.00 | 3.69 | 5.53 | 3.69 |



SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 120.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 |
|---|---|---|---|---|
| LANES ON GREEN: ARM A | 1 | | | |
| B | | 1 | 1 2 | |
| C | 1 | 1 2 | | |
| MINIMUM GREEN TIME (SECS) | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| | A | 1 | L S | 6.79 | 1878.7 | 30.91 | 23.0 | | 11.71 |
| | B | 1 | L | 3.28 | 1597.6 | 26.63 | 20.7 | | 9.09 |
| | | 2 | R | 0.82 | 1808.7 | 30.14 | 6.5 | | 3.23 |
| | C | 1 | S | 1.96 | 1915.0 | 31.51 | 37.2 | | 19.32 |
| | | 2 | R | 2.45 | 1787.0 | 29.40 | 10.7 | | 5.19 |
| 08.15-08.30 | | | | | | | | | |
| | A | 1 | L S | 8.32 | 1878.7 | 30.91 | 27.3 | | 12.62 |
| | B | 1 | L | 4.02 | 1597.6 | 26.63 | 22.5 | | 8.98 |
| | | 2 | R | 1.01 | 1808.7 | 30.14 | 6.5 | | 2.93 |
| | C | 1 | S | 2.39 | 1915.0 | 31.51 | 43.3 | | 20.43 |
| | | 2 | R | 3.00 | 1787.0 | 29.40 | 12.5 | | 5.52 |
| 08.30-08.45 | | | | | | | | | |
| | A | 1 | L S | 8.32 | 1878.7 | 30.91 | 27.3 | | 12.62 |
| | B | 1 | L | 4.02 | 1597.6 | 26.63 | 22.5 | | 8.98 |
| | | 2 | R | 1.01 | 1808.7 | 30.14 | 6.5 | | 2.93 |
| | C | 1 | S | 2.39 | 1915.0 | 31.51 | 43.3 | | 20.43 |
| | | 2 | R | 3.00 | 1787.0 | 29.40 | 12.5 | | 5.52 |
| 08.45-09.00 | | | | | | | | | |
| | A | 1 | L S | 6.79 | 1878.7 | 30.91 | 23.0 | | 11.71 |
| | B | 1 | L | 3.28 | 1597.6 | 26.63 | 20.7 | | 9.09 |
| | | 2 | R | 0.82 | 1808.7 | 30.14 | 6.5 | | 3.23 |
| | C | 1 | S | 1.96 | 1915.0 | 31.51 | 37.2 | | 19.32 |
| | | 2 | R | 2.45 | 1787.0 | 29.40 | 10.7 | | 5.19 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | | |
| | A | 1 | L S | 6.79 | 11.71 | 0.580 | 2.2 | 4.7 | 32.5 | |
| | B | 1 | L | 3.28 | 9.09 | 0.361 | 0.9 | 2.3 | 14.2 | |
| | | 2 | R | 0.82 | 3.23 | 0.254 | 0.4 | 0.8 | 5.9 | |
| | C | 1 | S | 1.96 | 19.32 | 0.101 | 0.2 | 0.8 | 2.5 | |
| | | 2 | R | 2.45 | 5.19 | 0.471 | 1.2 | 2.3 | 17.4 | |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| I 08.15-08.30 | | | | | | | | | I |
| I A | 1 | L S | 8.32 | 12.62 | 0.659 | 3.0 | 6.2 | 44.5 | I |
| I B | 1 | L | 4.02 | 8.98 | 0.448 | 1.4 | 3.2 | 20.6 | I |
| I | 2 | R | 1.01 | 2.93 | 0.343 | 0.6 | 1.1 | 8.7 | I |
| I C | 1 | S | 2.39 | 20.43 | 0.117 | 0.2 | 0.9 | 2.8 | I |
| I | 2 | R | 3.00 | 5.52 | 0.543 | 1.6 | 3.1 | 24.1 | I |
| I 08.30-08.45 | | | | | | | | | I |
| I A | 1 | L S | 8.32 | 12.62 | 0.659 | 3.0 | 6.2 | 44.7 | I |
| I B | 1 | L | 4.02 | 8.98 | 0.448 | 1.4 | 3.2 | 20.7 | I |
| I | 2 | R | 1.01 | 2.93 | 0.343 | 0.6 | 1.1 | 8.7 | I |
| I C | 1 | S | 2.39 | 20.43 | 0.117 | 0.2 | 0.9 | 2.8 | I |
| I | 2 | R | 3.00 | 5.52 | 0.543 | 1.6 | 3.1 | 24.2 | I |
| I 08.45-09.00 | | | | | | | | | I |
| I A | 1 | L S | 6.79 | 11.71 | 0.580 | 2.2 | 4.8 | 32.8 | I |
| I B | 1 | L | 3.28 | 9.09 | 0.361 | 0.9 | 2.3 | 14.2 | I |
| I | 2 | R | 0.82 | 3.23 | 0.254 | 0.4 | 0.8 | 5.9 | I |
| I C | 1 | S | 1.96 | 19.32 | 0.101 | 0.2 | 0.8 | 2.5 | I |
| I | 2 | R | 2.45 | 5.19 | 0.471 | 1.2 | 2.3 | 17.6 | I |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 2.2 | 4.7 | **+++ |
| 08.30 | 1 | 3.0 | 6.2 | ***+++ |
| 08.45 | 1 | 3.0 | 6.2 | ***+++ |
| 09.00 | 1 | 2.2 | 4.8 | **+++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 2 | 0.4 | 0.8 | + |
| | 1 | 0.9 | 2.3 | *+ |
| 08.30 | 2 | 0.6 | 1.1 | * |
| | 1 | 1.4 | 3.2 | *++ |
| 08.45 | 2 | 0.6 | 1.1 | * |
| | 1 | 1.4 | 3.2 | *++ |
| 09.00 | 2 | 0.4 | 0.8 | + |
| | 1 | 0.9 | 2.3 | *+ |

QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 2 | 1.2 | 2.3 | *+ |
| | 1 | 0.2 | 0.8 | + |
| 08.30 | 2 | 1.6 | 3.1 | **+ |
| | 1 | 0.2 | 0.9 | + |
| 08.45 | 2 | 1.6 | 3.1 | **+ |
| | 1 | 0.2 | 0.9 | + |
| 09.00 | 2 | 1.2 | 2.3 | *+ |
| | 1 | 0.2 | 0.8 | + |



QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (08.00-09.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | (VEH/H) | * QUEUEING * DELAY * (MIN) | (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 40.8 | 40.8 | 13.9 | 0.34 | 13.9 | 0.34 |
| A-C | 412.4 | 412.4 | 140.7 | 0.34 | 140.8 | 0.34 |
| B-C | 219.2 | 219.2 | 69.6 | 0.32 | 69.7 | 0.32 |
| B-A | 54.8 | 54.8 | 29.1 | 0.53 | 29.2 | 0.53 |
| C-A | 130.5 | 130.5 | 10.6 | 0.08 | 10.6 | 0.08 |
| C-B | 163.4 | 163.4 | 83.3 | 0.51 | 83.4 | 0.51 |
| ALL | 1021.1 | 1021.1 | 347.3 | 0.34 | 347.7 | 0.34 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed

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

[Printed at 12:52:01 on 24/10/2018]

_____ O S C A D Y 5 _____

Analysis Program: Release 2.0 (Oct 2003)



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Run with file:- "C:\Castletreasure\Residential Access 1\Res_Access1-24.10.18.voi" at 13:17:55 on Wednesday, 24 October 2(

FILE PROPERTIES
**********

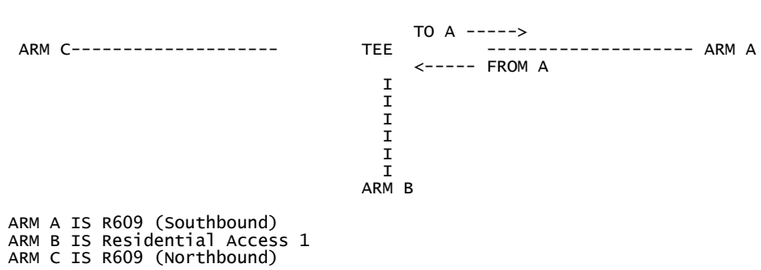
RUN TITLE: ScenarioC&D_2039AM
LOCATION: Douglas
DATE: 18 July 2018
CLIENT: Cairn Homes
ENUMERATOR: AO'N
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction Capcity Assessment for junction of proposed residential access and the R609

**** ERROR AND WARNING MESSAGES ****
==========

No errors or warnings in the data.

TRAFFIC SIGNAL JUNCTION ANALYSIS
**********

INPUT DATA
---




ARM A IS R609 (Southbound)
ARM B IS Residential Access 1
ARM C IS R609 (Northbound)



GEOMETRIC DATA
---

| DATA ITEM | | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| GRADIENT | | 0.0 % | 0.0 % | 0.0 % |
| NUMBER OF LANES | | 1 | 2 | 2 |
| PERMITTED MOVEMENTS | LANE 1 | LS | L | S |
| | LANE 2 | | R | R |
| TOTAL EXIT WIDTH FOR STRAIGHT-AHEAD VEHICLES FROM THIS ARM | | N/A | N/A | N/A |
| LANE WIDTHS | LANE 1 | 3.00 M | 3.25 M | 3.00 M |
| | LANE 2 | 0.00 M | 3.25 M | 3.00 M |
| LEFT TURN RADII | LANE 1 | 7.0 M | 7.0 M | N/A |
| RIGHT TURN RADII | LANE 2 | N/A | 10.0 M | 10.0 M |

EXIT WIDTH FOR IMAGINARY ARM D = 50.10

TRAFFIC DEMAND DATA
---

DEMAND PROFILES ARE SYNTHESISED USING THE ** ODTAB ** OPTION

DEMAND DATA SUPPLIED BETWEEN TIMES - 07.45 TO 09.15
PERIOD OF INTEREST (FOR QUEUE AND DELAY CALCULATIONS) - 08.00 TO 09.00

THE FOLLOWING DATA HAS BEEN INPUT
TRAFFIC SCALING FACTOR HAS BEEN SET TO 100 %

ScenarioD_2039AM

TOTAL TRAFFIC DEMAND (VEHICLES / HOUR)

| FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|
| ARM A | 0.0 | 96.0 | 580.0 |
| ARM B | 138.0 | 0.0 | 169.0 |
| ARM C | 626.0 | 118.0 | 0.0 |

| TIME PERIOD | ARM | VEHICLE TYPE PROPORTIONS: CARS AND LIGHT GOODS | MEDIUM GOODS | HEAVY GOODS | BUSES AND COACHES | MOTOR CYCLES | PEDAL CYCLES |
|---|---|---|---|---|---|---|---|
| 08.00-09.00 | A | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |
| | B | 1.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| | C | 0.990 | 0.000 | 0.010 | 0.000 | 0.000 | 0.000 |

DATA DETERMINED FOR USE IN SYNTHESIS OF DEMAND PROFILES ARE AS FOLLOWS-

| ENTRY/EXIT FLOWS | ARM | TIME WHEN FLOW STARTS TO RISE | TIME WHEN TOP OF PEAK IS REACHED | TIME WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|---|
| ENTRY | A | 08.00 | 08.30 | 09.00 | 14.14 | 21.21 | 14.14 |
| | B | 08.00 | 08.30 | 09.00 | 7.28 | 10.91 | 7.28 |
| | C | 08.00 | 08.30 | 09.00 | 12.99 | 19.48 | 12.99 |

SIGNAL TIMING DETAILS FOR SIGNAL SET 1

TIMING OPTION- VEHICLE ACTUATED MODE

MAXIMUM CYCLE TIME- 120.0 SECONDS

GLOBAL EFFECTIVE GREEN DISPLACEMENTS - START = 1.4
END = 2.9

| DATA ITEM | | STAGE 1 | STAGE 2 | STAGE 3 | STAGE 4 |
|---|---|---|---|---|---|
| LANES ON GREEN: ARM | A | 1 | | | |
| | B | | 1 | 1 2 | |
| | C | 1 | 1 2 | | |
| MINIMUM GREEN TIME (SECS) | | 5.0 | 5.0 | 5.0 | 5.0 |
| PRECEDING INTERSTAGE | | 5.0 | 5.0 | 5.0 | 5.0 |

DEMAND AND CAPACITY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND (VEHS/MIN) | SAT FLOW (PCU/HR) | SAT FLOW (VEHS/MIN) | EFFECTIVE GREEN-TIME TRUE (SECS) | EFFECTIVE GREEN-TIME FLARE+NOTIONL (SECS) | CAPACITY (VEHS /MIN) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| | A | 1 | L S | 10.09 | 1858.4 | 30.58 | 35.0 | | 14.94 |
| | B | 1 | L | 2.52 | 1597.6 | 26.63 | 19.6 | | 7.30 |
| | | 2 | R | 2.06 | 1808.7 | 30.14 | 8.1 | | 3.43 |
| | C | 1 | S | 9.34 | 1915.0 | 31.51 | 46.5 | | 20.45 |
| | | 2 | R | 1.76 | 1787.0 | 29.40 | 8.0 | | 3.28 |
| 08.15-08.30 | | | | | | | | | |
| | A | 1 | L S | 12.36 | 1858.4 | 30.58 | 45.7 | | 16.08 |
| | B | 1 | L | 3.09 | 1597.6 | 26.63 | 24.2 | | 7.42 |
| | | 2 | R | 2.52 | 1808.7 | 30.14 | 10.6 | | 3.68 |
| | C | 1 | S | 11.44 | 1915.0 | 31.51 | 59.3 | | 21.49 |
| | | 2 | R | 2.16 | 1787.0 | 29.40 | 10.1 | | 3.41 |
| 08.30-08.45 | | | | | | | | | |
| | A | 1 | L S | 12.36 | 1858.4 | 30.58 | 45.7 | | 16.08 |
| | B | 1 | L | 3.09 | 1597.6 | 26.63 | 24.2 | | 7.42 |
| | | 2 | R | 2.52 | 1808.7 | 30.14 | 10.6 | | 3.68 |
| | C | 1 | S | 11.44 | 1915.0 | 31.51 | 59.3 | | 21.49 |
| | | 2 | R | 2.16 | 1787.0 | 29.40 | 10.1 | | 3.41 |
| 08.45-09.00 | | | | | | | | | |
| | A | 1 | L S | 10.09 | 1858.4 | 30.58 | 35.0 | | 14.94 |
| | B | 1 | L | 2.52 | 1597.6 | 26.63 | 19.6 | | 7.30 |
| | | 2 | R | 2.06 | 1808.7 | 30.14 | 8.1 | | 3.43 |
| | C | 1 | S | 9.34 | 1915.0 | 31.51 | 46.5 | | 20.45 |
| | | 2 | R | 1.76 | 1787.0 | 29.40 | 8.0 | | 3.28 |

QUEUE AND DELAY INFORMATION FOR EACH 15 MINUTE TIME SEGMENT BETWEEN 08.00 AND 09.00

| TIME | ARM | LANES | MOVEMENT | DEMAND EXCL 2-WHEEL (VEHS/MIN) | CAPACITY (VEHS/MIN) | DEGREE OF SAT (RFC) | QUEUE AT END OF SEGMENT MEAN (PHASE AVERAGED) (VEHS/LANE) | QUEUE AT END OF SEGMENT MAXIMUM (END OF RED) (VEHS/LANE) | QUEUEING DELAY (VEH.MIN/ TIME SEGMENT) | GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | | |
| | A | 1 | L S | 10.09 | 14.94 | 0.676 | 3.2 | 7.0 | 47.4 | |
| | B | 1 | L | 2.52 | 7.30 | 0.346 | 1.0 | 2.3 | 14.8 | |
| | | 2 | R | 2.06 | 3.43 | 0.601 | 1.6 | 2.7 | 22.9 | |
| | C | 1 | S | 9.34 | 20.45 | 0.457 | 1.2 | 4.1 | 18.1 | |
| | | 2 | R | 1.76 | 3.28 | 0.537 | 1.2 | 2.2 | 18.4 | |



| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | |
| A | 1 | L S | 12.36 | 16.08 | 0.769 | 4.8 | 10.0 | 72.8 |
| B | 1 | L | 3.09 | 7.42 | 0.417 | 1.5 | 3.4 | 22.4 |
| | 2 | R | 2.52 | 3.68 | 0.685 | 2.4 | 4.0 | 35.5 |
| C | 1 | S | 11.44 | 21.49 | 0.532 | 1.7 | 5.6 | 25.2 |
| | 2 | R | 2.16 | 3.41 | 0.632 | 1.9 | 3.4 | 29.0 |
| 08.30-08.45 | | | | | | | | |
| A | 1 | L S | 12.36 | 16.08 | 0.769 | 4.9 | 10.0 | 73.5 |
| B | 1 | L | 3.09 | 7.42 | 0.417 | 1.5 | 3.4 | 22.4 |
| | 2 | R | 2.52 | 3.68 | 0.685 | 2.4 | 4.1 | 36.3 |
| C | 1 | S | 11.44 | 21.49 | 0.532 | 1.7 | 5.6 | 25.2 |
| | 2 | R | 2.16 | 3.41 | 0.632 | 1.9 | 3.4 | 29.5 |
| 08.45-09.00 | | | | | | | | |
| A | 1 | L S | 10.09 | 14.94 | 0.676 | 3.2 | 7.0 | 48.4 |
| B | 1 | L | 2.52 | 7.30 | 0.346 | 1.0 | 2.3 | 14.8 |
| | 2 | R | 2.06 | 3.43 | 0.601 | 1.6 | 2.8 | 24.2 |
| C | 1 | S | 9.34 | 20.45 | 0.457 | 1.2 | 4.1 | 18.1 |
| | 2 | R | 1.76 | 3.28 | 0.537 | 1.3 | 2.3 | 19.2 |

QUEUES FOR ARM A

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 1 | 3.2 | 7.0 | ***++++ |
| 08.30 | 1 | 4.8 | 10.0 | *****+++++ |
| 08.45 | 1 | 4.9 | 10.0 | *****+++++ |
| 09.00 | 1 | 3.2 | 7.0 | ***++++ |

QUEUES FOR ARM B

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 2 | 1.6 | 2.7 | **+ |
| | 1 | 1.0 | 2.3 | *+ |
| 08.30 | 2 | 2.4 | 4.0 | **++ |
| | 1 | 1.5 | 3.4 | *++ |
| 08.45 | 2 | 2.4 | 4.1 | **++ |
| | 1 | 1.5 | 3.4 | *++ |
| 09.00 | 2 | 1.6 | 2.8 | **+ |
| | 1 | 1.0 | 2.3 | *+ |

QUEUES FOR ARM C

| TIME SEGMENT ENDING | LANE | NUMBER OF VEHICLES IN QUEUE MEAN (PHASE AVERAGED) * | MAXIMUM (AT END OF RED) + | |
|---|---|---|---|---|
| 08.15 | 2 | 1.2 | 2.2 | *+ |
| | 1 | 1.2 | 4.1 | *+++ |
| 08.30 | 2 | 1.9 | 3.4 | **+ |
| | 1 | 1.7 | 5.6 | **++++ |
| 08.45 | 2 | 1.9 | 3.4 | **+ |
| | 1 | 1.7 | 5.6 | **++++ |
| 09.00 | 2 | 1.3 | 2.3 | *+ |
| | 1 | 1.2 | 4.1 | *+++ |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD (08.00-09.00)

| STREAM | TOTAL DEMAND (EXCL 2-WHEEL) (VEH) | TOTAL DEMAND (EXCL 2-WHEEL) (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A-B | 95.6 | 95.6 | 34.4 | 0.36 | 34.4 | 0.36 |
| A-C | 577.8 | 577.8 | 207.7 | 0.36 | 208.0 | 0.36 |
| B-C | 168.4 | 168.4 | 74.4 | 0.44 | 74.5 | 0.44 |
| B-A | 137.5 | 137.5 | 118.9 | 0.86 | 119.3 | 0.87 |
| C-A | 623.6 | 623.6 | 86.5 | 0.14 | 86.6 | 0.14 |
| C-B | 117.6 | 117.6 | 96.0 | 0.82 | 96.2 | 0.82 |
| ALL | 1720.5 | 1720.5 | 617.9 | 0.36 | 619.0 | 0.36 |

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

* TOTAL GEOMETRIC DELAY INCLUDES DELAY SUFFERED BY VEHICLES STILL QUEUEING AT THE END OF THE WHOLE TIME PERIOD.
* THE SUM OF DELAYS FOR EACH SEGMENT AND THE TOTAL GEOMETRIC DELAY WILL BE SIGNIFICANTLY DIFFERENT ONLY IF THERE IS
* A LARGE QUEUE AT THE END OF THE TIME PERIOD.

****** OSCADY 5 run completed
========== end of file ==========

[Printed at 13:50:22 on 24/10/2018]



ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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Run with file:-
"C:\Castletreasure\Junction8_CarrsHillWest_RA\Jct1_Fingerpost_AM.vai"
(drive-on-the-left ) at 14:22:10 on Friday, 1 February 2019

FILE PROPERTIES

RUN TITLE: Junction8
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for proposed Carrs Hill West roundabout in Douglas.

INPUT DATA

ARM A - R609 Carrigaline Road
ARM B - Maryborough/CarrsHill Link
ARM C - M28 On-Slip
ARM D - Carrs Hill Underbridge
ARM E - M28 Off-Slip

GEOMETRIC DATA

ARM C IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 6.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.452 | 23.936 |
| ARM B | 3.50 | 7.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.466 | 25.421 |
| ARM D | 3.50 | 8.00 | 12.00 | 15.00 | 70.00 | 45.0 | 0.468 | 26.090 |
| ARM E | 3.00 | 7.00 | 20.00 | 25.00 | 70.00 | 45.0 | 0.476 | 26.306 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioB_2024AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.71 | 8.57 | 5.71 |
| ARM B | 15.00 | 45.00 | 75.00 | 11.66 | 17.49 | 11.66 |
| ARM D | 15.00 | 45.00 | 75.00 | 6.64 | 9.96 | 6.64 |
| ARM E | 15.00 | 45.00 | 75.00 | 3.39 | 5.08 | 3.39 |

DEMAND SET TITLE: ScenarioB_2024AM

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | | | | | | |
| | ARM A | 0.000 | 0.004 | 0.179 | 0.816 | 0.000 |
| | | 0.0 | 2.0 | 82.0 | 373.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.000 | 0.000 | 0.972 | 0.028 | 0.000 |
| | | 0.0 | 0.0 | 907.0 | 26.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM D | 0.407 | 0.079 | 0.514 | 0.000 | 0.000 |
| | | 216.0 | 42.0 | 273.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.989 | 0.011 | 0.000 | 0.000 | 0.000 |
| | | 268.0 | 3.0 | 0.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 5.71 | 21.91 | 0.261 | | 0.0 | 0.4 | 5.1 | | 0.06 |
| ARM B | 11.66 | 21.16 | 0.551 | | 0.0 | 1.2 | 17.3 | | 0.10 |
| ARM D | 6.64 | 25.83 | 0.257 | | 0.0 | 0.3 | 5.1 | | 0.05 |
| ARM E | 3.39 | 22.89 | 0.148 | | 0.0 | 0.2 | 2.5 | | 0.05 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 6.82 | 21.56 | 0.316 | | 0.4 | 0.5 | 6.8 | | 0.07 |
| ARM B | 13.93 | 20.32 | 0.685 | | 1.2 | 2.1 | 29.9 | | 0.15 |
| ARM D | 7.93 | 25.83 | 0.307 | | 0.3 | 0.4 | 6.5 | | 0.06 |
| ARM E | 4.05 | 22.27 | 0.182 | | 0.2 | 0.2 | 3.3 | | 0.05 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 8.35 | 21.08 | 0.396 | | 0.5 | 0.7 | 9.5 | | 0.08 |
| ARM B | 17.06 | 19.17 | 0.890 | | 2.1 | 6.6 | 81.4 | | 0.38 |
| ARM D | 9.71 | 25.83 | 0.376 | | 0.4 | 0.6 | 8.8 | | 0.06 |
| ARM E | 4.95 | 21.43 | 0.231 | | 0.2 | 0.3 | 4.4 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 8.35 | 21.07 | 0.396 | | 0.7 | 0.7 | 9.8 | | 0.08 |
| ARM B | 17.06 | 19.16 | 0.890 | | 6.6 | 7.2 | 103.8 | | 0.45 |
| ARM D | 9.71 | 25.83 | 0.376 | | 0.6 | 0.6 | 9.0 | | 0.06 |
| ARM E | 4.95 | 21.42 | 0.231 | | 0.3 | 0.3 | 4.5 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 6.82 | 21.55 | 0.317 | | 0.7 | 0.5 | 7.1 | | 0.07 |
| ARM B | 13.93 | 20.30 | 0.686 | | 7.2 | 2.3 | 38.7 | | 0.17 |
| ARM D | 7.93 | 25.83 | 0.307 | | 0.6 | 0.4 | 6.8 | | 0.06 |
| ARM E | 4.05 | 22.27 | 0.182 | | 0.3 | 0.2 | 3.4 | | 0.05 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 5.71 | 21.90 | 0.261 | | 0.5 | 0.4 | 5.4 | | 0.06 |
| ARM B | 11.66 | 21.14 | 0.552 | | 2.3 | 1.2 | 19.6 | | 0.11 |
| ARM D | 6.64 | 25.83 | 0.257 | | 0.4 | 0.3 | 5.3 | | 0.05 |
| ARM E | 3.39 | 22.88 | 0.148 | | 0.2 | 0.2 | 2.7 | | 0.05 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.5 | |
| 08.30 | 0.7 | * |
| 08.45 | 0.7 | * |
| 09.00 | 0.5 | |
| 09.15 | 0.4 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 1.2 | * |
| 08.15 | 2.1 | ** |
| 08.30 | 6.6 | ******* |
| 08.45 | 7.2 | ******* |
| 09.00 | 2.3 | ** |
| 09.15 | 1.2 | * |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.4 | |
| 08.30 | 0.6 | * |
| 08.45 | 0.6 | * |
| 09.00 | 0.4 | |
| 09.15 | 0.3 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.3 |
| 08.45 | 0.3 |
| 09.00 | 0.2 |
| 09.15 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 626.6 | 417.8 | 43.8 | 0.07 | 43.8 | 0.07 |
| B | 1279.3 | 852.9 | 290.6 | 0.23 | 290.7 | 0.23 |
| D | 728.1 | 485.4 | 41.4 | 0.06 | 41.4 | 0.06 |
| E | 371.6 | 247.7 | 20.8 | 0.06 | 20.8 | 0.06 |
| ALL | 3005.7 | 2003.8 | 396.7 | 0.13 | 396.7 | 0.13 |

* 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

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

[Printed at 14:22:22 on 01/02/2019]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Web: www.trlsoftware.co.uk



Run with file:-
"C:\Castletreasure\Junction8_CarrsHillWest_RA\Jct1_Fingerpost_PM.vai"
(drive-on-the-left ) at 14:05:41 on Friday, 1 February 2019

FILE PROPERTIES
**********

RUN TITLE: Junction8
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA
**********
ARM A - R609 Carrigaline Road
ARM B - Maryborough/Carrs Hill Link
ARM C - M28 On-Ramp
ARM D - Carrs Hill Underbridge
ARM E - M28 Off-Ramp

GEOMETRIC DATA

ARM C IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 6.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.452 | 23.936 |
| ARM B | 3.50 | 7.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.466 | 25.421 |
| ARM D | 3.50 | 8.00 | 12.00 | 15.00 | 70.00 | 45.0 | 0.468 | 26.090 |
| ARM E | 3.50 | 8.00 | 20.00 | 25.00 | 70.00 | 45.0 | 0.507 | 29.582 |

V = approach half-width
E = entry width
L = effective flare length
R = entry radius
D = inscribed circle diameter
PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioB_2024PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 2.61 | 3.92 | 2.61 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.00 | 4.50 | 3.00 |
| ARM D | 15.00 | 45.00 | 75.00 | 4.49 | 6.73 | 4.49 |
| ARM E | 15.00 | 45.00 | 75.00 | 5.44 | 8.16 | 5.44 |

DEMAND SET TITLE: ScenarioB_2024PM

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | | | | | | |
| | ARM A | 0.000 | 0.005 | 0.148 | 0.847 | 0.000 |
| | | 0.0 | 1.0 | 31.0 | 177.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.013 | 0.000 | 0.579 | 0.408 | 0.000 |
| | | 3.0 | 0.0 | 139.0 | 98.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM D | 0.409 | 0.443 | 0.148 | 0.000 | 0.000 |
| | | 147.0 | 159.0 | 53.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.669 | 0.331 | 0.000 | 0.000 | 0.000 |
| | | 291.0 | 144.0 | 0.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 2.61 | 21.69 | 0.120 | | 0.0 | 0.1 | 2.0 | | 0.05 |
| ARM B | 3.00 | 23.89 | 0.126 | | 0.0 | 0.1 | 2.1 | | 0.05 |
| ARM D | 4.49 | 25.81 | 0.174 | | 0.0 | 0.2 | 3.1 | | 0.05 |
| ARM E | 5.44 | 26.99 | 0.201 | | 0.0 | 0.3 | 3.7 | | 0.05 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| ARM A | 3.12 | 21.30 | 0.146 | | 0.1 | 0.2 | 2.5 | | 0.05 |
| ARM B | 3.58 | 23.59 | 0.152 | | 0.1 | 0.2 | 2.6 | | 0.05 |
| ARM D | 5.36 | 25.81 | 0.208 | | 0.2 | 0.3 | 3.9 | | 0.05 |
| ARM E | 6.49 | 26.55 | 0.245 | | 0.3 | 0.3 | 4.8 | | 0.05 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 3.82 | 20.76 | 0.184 | | 0.2 | 0.2 | 3.3 | | 0.06 |
| ARM B | 4.39 | 23.18 | 0.189 | | 0.2 | 0.2 | 3.4 | | 0.05 |
| ARM D | 6.56 | 25.81 | 0.254 | | 0.3 | 0.3 | 5.0 | | 0.05 |
| ARM E | 7.95 | 25.93 | 0.307 | | 0.3 | 0.4 | 6.5 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 3.82 | 20.76 | 0.184 | | 0.2 | 0.2 | 3.4 | | 0.06 |
| ARM B | 4.39 | 23.18 | 0.189 | | 0.2 | 0.2 | 3.5 | | 0.05 |
| ARM D | 6.56 | 25.81 | 0.254 | | 0.3 | 0.3 | 5.1 | | 0.05 |
| ARM E | 7.95 | 25.93 | 0.307 | | 0.4 | 0.4 | 6.6 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 3.12 | 21.30 | 0.146 | | 0.2 | 0.2 | 2.6 | | 0.05 |
| ARM B | 3.58 | 23.59 | 0.152 | | 0.2 | 0.2 | 2.7 | | 0.05 |
| ARM D | 5.36 | 25.81 | 0.208 | | 0.3 | 0.3 | 4.0 | | 0.05 |
| ARM E | 6.49 | 26.55 | 0.245 | | 0.4 | 0.3 | 5.0 | | 0.05 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| ARM A | 2.61 | 21.68 | 0.120 | | 0.2 | 0.1 | 2.1 | | 0.05 |
| ARM B | 3.00 | 23.88 | 0.126 | | 0.2 | 0.1 | 2.2 | | 0.05 |
| ARM D | 4.49 | 25.81 | 0.174 | | 0.3 | 0.2 | 3.2 | | 0.05 |
| ARM E | 5.44 | 26.98 | 0.202 | | 0.3 | 0.3 | 3.8 | | 0.05 |

QUEUE AT ARM A

| 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 AT ARM B

| 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 AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.3 |
| 17.45 | 0.3 |
| 18.00 | 0.3 |
| 18.15 | 0.2 |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.3 |
| 17.15 | 0.3 |
| 17.30 | 0.4 |
| 17.45 | 0.4 |
| 18.00 | 0.3 |
| 18.15 | 0.3 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 286.6 | 191.1 | 15.9 | 0.06 | 15.9 | 0.06 |
| B | 329.1 | 219.4 | 16.6 | 0.05 | 16.6 | 0.05 |
| D | 492.3 | 328.2 | 24.3 | 0.05 | 24.3 | 0.05 |
| E | 596.5 | 397.7 | 30.4 | 0.05 | 30.4 | 0.05 |
| ALL | 1704.4 | 1136.3 | 87.2 | 0.05 | 87.2 | 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

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

[Printed at 14:05:57 on 01/02/2019]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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Run with file:-
"C:\Castletreasure\Junction8_CarrsHillWest_RA\Jct8_CarrsHillWest_AM.vai"
(drive-on-the-left ) at 12:49:52 on Monday, 4 February 2019

FILE PROPERTIES

RUN TITLE: Junction8
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for proposed Carrs Hill West roundabout in Douglas.

INPUT DATA

ARM A - R609 Carrigaline Road
ARM B - Maryborough/CarrsHill Link
ARM C - M28 On-Slip
ARM D - Carrs Hill Underbridge
ARM E - M28 Off-Slip

GEOMETRIC DATA

ARM C IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 6.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.452 | 23.936 |
| ARM B | 3.50 | 7.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.466 | 25.421 |
| ARM D | 3.50 | 8.00 | 12.00 | 15.00 | 70.00 | 45.0 | 0.468 | 26.090 |
| ARM E | 3.00 | 7.00 | 20.00 | 25.00 | 70.00 | 45.0 | 0.476 | 26.306 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioB_2039AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.69 | 11.53 | 7.69 |
| ARM B | 15.00 | 45.00 | 75.00 | 11.20 | 16.80 | 11.20 |
| ARM D | 15.00 | 45.00 | 75.00 | 7.82 | 11.74 | 7.82 |
| ARM E | 15.00 | 45.00 | 75.00 | 4.25 | 6.38 | 4.25 |

DEMAND SET TITLE: ScenarioB_2039AM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.003 | 0.143 | 0.854 | 0.000 |
| | | 0.0 | 2.0 | 88.0 | 525.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.000 | 0.000 | 0.984 | 0.016 | 0.000 |
| | | 0.0 | 0.0 | 882.0 | 14.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM D | 0.457 | 0.083 | 0.460 | 0.000 | 0.000 |
| | | 286.0 | 52.0 | 288.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.850 | 0.150 | 0.000 | 0.000 | 0.000 |
| | | 289.0 | 51.0 | 0.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 7.69 | 21.50 | 0.358 | | 0.0 | 0.6 | 8.1 | | 0.07 |
| ARM B | 11.20 | 20.15 | 0.556 | | 0.0 | 1.2 | 17.6 | | 0.11 |
| ARM D | 7.82 | 25.83 | 0.303 | | 0.0 | 0.4 | 6.3 | | 0.06 |
| ARM E | 4.25 | 22.33 | 0.190 | | 0.0 | 0.2 | 3.4 | | 0.06 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 9.18 | 21.07 | 0.436 | | 0.6 | 0.8 | 11.2 | | 0.08 |
| ARM B | 13.37 | 19.10 | 0.700 | | 1.2 | 2.3 | 31.6 | | 0.17 |
| ARM D | 9.34 | 25.83 | 0.362 | | 0.4 | 0.6 | 8.3 | | 0.06 |
| ARM E | 5.07 | 21.60 | 0.235 | | 0.2 | 0.3 | 4.5 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 11.24 | 20.47 | 0.549 | | 0.8 | 1.2 | 17.3 | | 0.11 |
| ARM B | 16.38 | 17.69 | 0.926 | | 2.3 | 8.5 | 99.7 | | 0.49 |
| ARM D | 11.44 | 25.83 | 0.443 | | 0.6 | 0.8 | 11.6 | | 0.07 |
| ARM E | 6.22 | 20.60 | 0.302 | | 0.3 | 0.4 | 6.3 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 11.24 | 20.47 | 0.549 | | 1.2 | 1.2 | 18.1 | | 0.11 |
| ARM B | 16.38 | 17.67 | 0.927 | | 8.5 | 9.9 | 139.5 | | 0.65 |
| ARM D | 11.44 | 25.83 | 0.443 | | 0.8 | 0.8 | 11.9 | | 0.07 |
| ARM E | 6.22 | 20.59 | 0.302 | | 0.4 | 0.4 | 6.5 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 9.18 | 21.06 | 0.436 | | 1.2 | 0.8 | 12.1 | | 0.08 |
| ARM B | 13.37 | 19.08 | 0.701 | | 9.9 | 2.4 | 45.6 | | 0.21 |
| ARM D | 9.34 | 25.83 | 0.362 | | 0.8 | 0.6 | 8.7 | | 0.06 |
| ARM E | 5.07 | 21.59 | 0.235 | | 0.4 | 0.3 | 4.7 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 7.69 | 21.49 | 0.358 | | 0.8 | 0.6 | 8.6 | | 0.07 |
| ARM B | 11.20 | 20.12 | 0.557 | | 2.4 | 1.3 | 20.1 | | 0.11 |
| ARM D | 7.82 | 25.83 | 0.303 | | 0.6 | 0.4 | 6.7 | | 0.06 |
| ARM E | 4.25 | 22.31 | 0.190 | | 0.3 | 0.2 | 3.6 | | 0.06 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.6 | * |
| 08.15 | 0.8 | * |
| 08.30 | 1.2 | * |
| 08.45 | 1.2 | * |
| 09.00 | 0.8 | * |
| 09.15 | 0.6 | * |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 1.2 | * |
| 08.15 | 2.3 | ** |
| 08.30 | 8.5 | ********* |
| 08.45 | 9.9 | ********** |
| 09.00 | 2.4 | ** |
| 09.15 | 1.3 | * |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.6 | * |
| 08.30 | 0.8 | * |
| 08.45 | 0.8 | * |
| 09.00 | 0.6 | * |
| 09.15 | 0.4 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.2 |
| 08.15 | 0.3 |
| 08.30 | 0.4 |
| 08.45 | 0.4 |
| 09.00 | 0.3 |
| 09.15 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A | 843.3 | 562.2 | 75.3 | 0.09 | 75.3 | 0.09 |
| B | 1228.6 | 819.1 | 354.1 | 0.29 | 354.1 | 0.29 |
| D | 858.4 | 572.3 | 53.5 | 0.06 | 53.5 | 0.06 |
| E | 466.2 | 310.8 | 29.0 | 0.06 | 29.0 | 0.06 |
| ALL | 3396.5 | 2264.3 | 511.9 | 0.15 | 511.9 | 0.15 |

* 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

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

[Printed at 12:50:07 on 04/02/2019]



ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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Run with file:-
"C:\Castletreasure\Junction8_CarrsHillWest_RA\Jct1_Fingerpost_PM.vai"
(drive-on-the-left ) at 14:07:56 on Friday, 1 February 2019

FILE PROPERTIES

RUN TITLE: Junction8
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA

ARM A - R609 Carrigaline Road
ARM B - Maryborough/Carrs Hill Link
ARM C - M28 On-Ramp
ARM D - Carrs Hill Underbridge
ARM E - M28 Off-Ramp

GEOMETRIC DATA

ARM C IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 6.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.452 | 23.936 |
| ARM B | 3.50 | 7.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.466 | 25.421 |
| ARM D | 3.50 | 8.00 | 12.00 | 15.00 | 70.00 | 45.0 | 0.468 | 26.090 |
| ARM E | 3.50 | 8.00 | 20.00 | 25.00 | 70.00 | 45.0 | 0.507 | 29.582 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioB_2039PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 2.61 | 3.92 | 2.61 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.78 | 5.66 | 3.78 |
| ARM D | 15.00 | 45.00 | 75.00 | 6.65 | 9.98 | 6.65 |
| ARM E | 15.00 | 45.00 | 75.00 | 5.41 | 8.12 | 5.41 |

DEMAND SET TITLE: ScenarioB_2039PM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.010 | 0.206 | 0.785 | 0.000 |
| | | 0.0 | 2.0 | 43.0 | 164.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.033 | 0.000 | 0.526 | 0.440 | 0.000 |
| | | 10.0 | 0.0 | 159.0 | 133.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM D | 0.412 | 0.474 | 0.115 | 0.000 | 0.000 |
| | | 219.0 | 252.0 | 61.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.813 | 0.187 | 0.000 | 0.000 | 0.000 |
| | | 352.0 | 81.0 | 0.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | | |
| | ARM A | 2.61 | 21.48 | 0.122 | | 0.0 | 0.1 | 2.0 | | 0.05 |
| | ARM B | 3.78 | 23.85 | 0.158 | | 0.0 | 0.2 | 2.8 | | 0.05 |
| | ARM D | 6.65 | 25.77 | 0.258 | | 0.0 | 0.3 | 5.1 | | 0.05 |
| | ARM E | 5.41 | 25.86 | 0.209 | | 0.0 | 0.3 | 3.9 | | 0.05 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | | |
| | ARM A | 3.12 | 21.04 | 0.148 | | 0.1 | 0.2 | 2.6 | | 0.06 |
| | ARM B | 4.51 | 23.54 | 0.191 | | 0.2 | 0.2 | 3.5 | | 0.05 |
| | ARM D | 7.94 | 25.76 | 0.308 | | 0.3 | 0.4 | 6.5 | | 0.06 |
| | ARM E | 6.46 | 25.19 | 0.257 | | 0.3 | 0.3 | 5.1 | | 0.05 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | | |
| | ARM A | 3.82 | 20.45 | 0.187 | | 0.2 | 0.2 | 3.4 | | 0.06 |
| | ARM B | 5.52 | 23.12 | 0.239 | | 0.2 | 0.3 | 4.6 | | 0.06 |
| | ARM D | 9.73 | 25.75 | 0.378 | | 0.4 | 0.6 | 8.9 | | 0.06 |
| | ARM E | 7.92 | 24.27 | 0.326 | | 0.3 | 0.5 | 7.1 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | | |
| | ARM A | 3.82 | 20.45 | 0.187 | | 0.2 | 0.2 | 3.4 | | 0.06 |
| | ARM B | 5.52 | 23.12 | 0.239 | | 0.3 | 0.3 | 4.7 | | 0.06 |
| | ARM D | 9.73 | 25.75 | 0.378 | | 0.6 | 0.6 | 9.1 | | 0.06 |
| | ARM E | 7.92 | 24.26 | 0.326 | | 0.5 | 0.5 | 7.2 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | | |
| | ARM A | 3.12 | 21.04 | 0.148 | | 0.2 | 0.2 | 2.7 | | 0.06 |
| | ARM B | 4.51 | 23.54 | 0.192 | | 0.3 | 0.2 | 3.6 | | 0.05 |
| | ARM D | 7.94 | 25.76 | 0.308 | | 0.6 | 0.4 | 6.8 | | 0.06 |
| | ARM E | 6.46 | 25.18 | 0.257 | | 0.5 | 0.3 | 5.3 | | 0.05 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | | |
| | ARM A | 2.61 | 21.47 | 0.122 | | 0.2 | 0.1 | 2.1 | | 0.05 |
| | ARM B | 3.78 | 23.84 | 0.158 | | 0.2 | 0.2 | 2.9 | | 0.05 |
| | ARM D | 6.65 | 25.77 | 0.258 | | 0.4 | 0.3 | 5.3 | | 0.05 |
| | ARM E | 5.41 | 25.85 | 0.209 | | 0.3 | 0.3 | 4.0 | | 0.05 |

QUEUE AT ARM A

| 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 AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.2 | |
| 17.15 | 0.2 | |
| 17.30 | 0.3 | |
| 17.45 | 0.3 | |
| 18.00 | 0.2 | |
| 18.15 | 0.2 | |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.6 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.3 |
| 17.15 | 0.3 |
| 17.30 | 0.5 |
| 17.45 | 0.5 |
| 18.00 | 0.3 |
| 18.15 | 0.3 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 286.6 | 191.1 | 16.2 | 0.06 | 16.2 | 0.06 |
| B | 414.1 | 276.1 | 22.0 | 0.05 | 22.0 | 0.05 |
| D | 729.5 | 486.3 | 41.7 | 0.06 | 41.7 | 0.06 |
| E | 593.7 | 395.8 | 32.6 | 0.05 | 32.6 | 0.05 |
| ALL | 2023.9 | 1349.3 | 112.6 | 0.06 | 112.6 | 0.06 |

* 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

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

[Printed at 14:08:11 on 01/02/2019]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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Run with file:-
"C:\Castletreasure\Junction8_CarrsHillWest_RA\Jct1_Fingerpost_AM.vai"
(drive-on-the-left ) at 14:28:20 on Friday, 1 February 2019

FILE PROPERTIES

RUN TITLE: Junction8
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for proposed Carrs Hill West roundabout in Douglas.

INPUT DATA

ARM A - R609 Carrigaline Road
ARM B - Maryborough/CarrsHill Link
ARM C - M28 On-Slip
ARM D - Carrs Hill Underbridge
ARM E - M28 Off-Slip

GEOMETRIC DATA

ARM C IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 6.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.452 | 23.936 |
| ARM B | 3.50 | 7.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.466 | 25.421 |
| ARM D | 3.50 | 8.00 | 12.00 | 15.00 | 70.00 | 45.0 | 0.468 | 26.090 |
| ARM E | 3.00 | 7.00 | 20.00 | 25.00 | 70.00 | 45.0 | 0.476 | 26.306 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioD_2024AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.03 | 10.54 | 7.03 |
| ARM B | 15.00 | 45.00 | 75.00 | 11.70 | 17.55 | 11.70 |
| ARM D | 15.00 | 45.00 | 75.00 | 6.82 | 10.24 | 6.82 |
| ARM E | 15.00 | 45.00 | 75.00 | 3.59 | 5.38 | 3.59 |

DEMAND SET TITLE: ScenarioD_2024AM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.005 | 0.171 | 0.824 | 0.000 |
| | | 0.0 | 3.0 | 96.0 | 463.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.003 | 0.000 | 0.969 | 0.028 | 0.000 |
| | | 3.0 | 0.0 | 907.0 | 26.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM D | 0.423 | 0.077 | 0.500 | 0.000 | 0.000 |
| | | 231.0 | 42.0 | 273.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.990 | 0.010 | 0.000 | 0.000 | 0.000 |
| | | 284.0 | 3.0 | 0.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 7.03 | 21.91 | 0.321 | | 0.0 | 0.5 | 6.9 | | 0.07 |
| ARM B | 11.70 | 20.55 | 0.569 | | 0.0 | 1.3 | 18.5 | | 0.11 |
| ARM D | 6.82 | 25.81 | 0.264 | | 0.0 | 0.4 | 5.3 | | 0.05 |
| ARM E | 3.59 | 22.79 | 0.157 | | 0.0 | 0.2 | 2.7 | | 0.05 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 8.39 | 21.56 | 0.389 | | 0.5 | 0.6 | 9.3 | | 0.08 |
| ARM B | 13.97 | 19.59 | 0.713 | | 1.3 | 2.4 | 33.5 | | 0.17 |
| ARM D | 8.15 | 25.81 | 0.316 | | 0.4 | 0.5 | 6.8 | | 0.06 |
| ARM E | 4.28 | 22.15 | 0.193 | | 0.2 | 0.2 | 3.5 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 10.27 | 21.08 | 0.487 | | 0.6 | 0.9 | 13.7 | | 0.09 |
| ARM B | 17.11 | 18.28 | 0.936 | | 2.4 | 9.3 | 107.8 | | 0.51 |
| ARM D | 9.98 | 25.81 | 0.387 | | 0.5 | 0.6 | 9.2 | | 0.06 |
| ARM E | 5.25 | 21.27 | 0.247 | | 0.2 | 0.3 | 4.8 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 10.27 | 21.07 | 0.488 | | 0.9 | 0.9 | 14.2 | | 0.09 |
| ARM B | 17.11 | 18.27 | 0.937 | | 9.3 | 11.0 | 154.3 | | 0.69 |
| ARM D | 9.98 | 25.81 | 0.387 | | 0.6 | 0.6 | 9.4 | | 0.06 |
| ARM E | 5.25 | 21.27 | 0.247 | | 0.3 | 0.3 | 4.9 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 8.39 | 21.55 | 0.389 | | 0.9 | 0.6 | 9.9 | | 0.08 |
| ARM B | 13.97 | 19.57 | 0.714 | | 11.0 | 2.6 | 50.1 | | 0.22 |
| ARM D | 8.15 | 25.81 | 0.316 | | 0.6 | 0.5 | 7.1 | | 0.06 |
| ARM E | 4.28 | 22.14 | 0.194 | | 0.3 | 0.2 | 3.7 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 7.03 | 21.90 | 0.321 | | 0.6 | 0.5 | 7.3 | | 0.07 |
| ARM B | 11.70 | 20.52 | 0.570 | | 2.6 | 1.3 | 21.2 | | 0.12 |
| ARM D | 6.82 | 25.81 | 0.264 | | 0.5 | 0.4 | 5.5 | | 0.05 |
| ARM E | 3.59 | 22.77 | 0.158 | | 0.2 | 0.2 | 2.9 | | 0.05 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.5 | |
| 08.15 | 0.6 | * |
| 08.30 | 0.9 | * |
| 08.45 | 0.9 | * |
| 09.00 | 0.6 | * |
| 09.15 | 0.5 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 1.3 | * |
| 08.15 | 2.4 | ** |
| 08.30 | 9.3 | ********* |
| 08.45 | 11.0 | *********** |
| 09.00 | 2.6 | *** |
| 09.15 | 1.3 | * |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.5 | |
| 08.30 | 0.6 | * |
| 08.45 | 0.6 | * |
| 09.00 | 0.5 | |
| 09.15 | 0.4 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.3 |
| 08.45 | 0.3 |
| 09.00 | 0.2 |
| 09.15 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 770.6 | 513.7 | 61.1 | 0.08 | 61.1 | 0.08 |
| B | 1283.5 | 855.6 | 385.5 | 0.30 | 385.5 | 0.30 |
| D | 748.7 | 499.1 | 43.3 | 0.06 | 43.3 | 0.06 |
| E | 393.5 | 262.4 | 22.5 | 0.06 | 22.5 | 0.06 |
| ALL | 3196.3 | 2130.9 | 512.4 | 0.16 | 512.4 | 0.16 |

* 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

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

[Printed at 14:28:34 on 01/02/2019]



ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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Run with file:-
"C:\Castletreasure\Junction8_CarrsHillWest_RA\Jct8_CarrsHillWest_PM.vai"
(drive-on-the-left ) at 13:05:37 on Monday, 4 February 2019

FILE PROPERTIES

RUN TITLE: Junction8
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA

ARM A - R609 Carrigaline Road
ARM B - Maryborough/Carrs Hill Link
ARM C - M28 On-Ramp
ARM D - Carrs Hill Underbridge
ARM E - M28 Off-Ramp

GEOMETRIC DATA

ARM C IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 6.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.452 | 23.936 |
| ARM B | 3.50 | 7.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.466 | 25.421 |
| ARM D | 3.50 | 8.00 | 12.00 | 15.00 | 70.00 | 45.0 | 0.468 | 26.090 |
| ARM E | 3.50 | 8.00 | 20.00 | 25.00 | 70.00 | 45.0 | 0.507 | 29.582 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioD_2024PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.36 | 5.04 | 3.36 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.03 | 4.54 | 3.03 |
| ARM D | 15.00 | 45.00 | 75.00 | 4.90 | 7.35 | 4.90 |
| ARM E | 15.00 | 45.00 | 75.00 | 6.09 | 9.13 | 6.09 |

DEMAND SET TITLE: ScenarioD_2024PM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.007 | 0.160 | 0.833 | 0.000 |
| | | 0.0 | 2.0 | 43.0 | 224.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.021 | 0.000 | 0.574 | 0.405 | 0.000 |
| | | 5.0 | 0.0 | 139.0 | 98.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM D | 0.459 | 0.406 | 0.135 | 0.000 | 0.000 |
| | | 180.0 | 159.0 | 53.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.704 | 0.296 | 0.000 | 0.000 | 0.000 |
| | | 343.0 | 144.0 | 0.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 3.36 | 21.69 | 0.155 | | 0.0 | 0.2 | 2.7 | | 0.05 |
| ARM B | 3.03 | 23.54 | 0.129 | | 0.0 | 0.1 | 2.2 | | 0.05 |
| ARM D | 4.90 | 25.80 | 0.190 | | 0.0 | 0.2 | 3.4 | | 0.05 |
| ARM E | 6.09 | 26.77 | 0.227 | | 0.0 | 0.3 | 4.3 | | 0.05 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| ARM A | 4.02 | 21.30 | 0.189 | | 0.2 | 0.2 | 3.4 | | 0.06 |
| ARM B | 3.61 | 23.18 | 0.156 | | 0.1 | 0.2 | 2.7 | | 0.05 |
| ARM D | 5.85 | 25.80 | 0.227 | | 0.2 | 0.3 | 4.3 | | 0.05 |
| ARM E | 7.27 | 26.29 | 0.277 | | 0.3 | 0.4 | 5.6 | | 0.05 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 4.92 | 20.76 | 0.237 | | 0.2 | 0.3 | 4.6 | | 0.06 |
| ARM B | 4.42 | 22.67 | 0.195 | | 0.2 | 0.2 | 3.6 | | 0.05 |
| ARM D | 7.17 | 25.79 | 0.278 | | 0.3 | 0.4 | 5.7 | | 0.05 |
| ARM E | 8.90 | 25.61 | 0.348 | | 0.4 | 0.5 | 7.8 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 4.92 | 20.76 | 0.237 | | 0.3 | 0.3 | 4.6 | | 0.06 |
| ARM B | 4.42 | 22.67 | 0.195 | | 0.2 | 0.2 | 3.6 | | 0.05 |
| ARM D | 7.17 | 25.79 | 0.278 | | 0.4 | 0.4 | 5.8 | | 0.05 |
| ARM E | 8.90 | 25.61 | 0.348 | | 0.5 | 0.5 | 8.0 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 4.02 | 21.30 | 0.189 | | 0.3 | 0.2 | 3.6 | | 0.06 |
| ARM B | 3.61 | 23.17 | 0.156 | | 0.2 | 0.2 | 2.8 | | 0.05 |
| ARM D | 5.85 | 25.80 | 0.227 | | 0.4 | 0.3 | 4.5 | | 0.05 |
| ARM E | 7.27 | 26.28 | 0.277 | | 0.5 | 0.4 | 5.9 | | 0.05 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| ARM A | 3.36 | 21.68 | 0.155 | | 0.2 | 0.2 | 2.8 | | 0.05 |
| ARM B | 3.03 | 23.53 | 0.129 | | 0.2 | 0.1 | 2.2 | | 0.05 |
| ARM D | 4.90 | 25.80 | 0.190 | | 0.3 | 0.2 | 3.6 | | 0.05 |
| ARM E | 6.09 | 26.76 | 0.227 | | 0.4 | 0.3 | 4.5 | | 0.05 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.2 |
| 17.30 | 0.3 |
| 17.45 | 0.3 |
| 18.00 | 0.2 |
| 18.15 | 0.2 |

QUEUE AT ARM B

| 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 AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.2 | |
| 17.15 | 0.3 | |
| 17.30 | 0.4 | |
| 17.45 | 0.4 | |
| 18.00 | 0.3 | |
| 18.15 | 0.2 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.5 | * |
| 17.45 | 0.5 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A | 368.9 | 245.9 | 21.7 | 0.06 | 21.7 | 0.06 |
| B | 331.8 | 221.2 | 17.2 | 0.05 | 17.2 | 0.05 |
| D | 537.5 | 358.3 | 27.2 | 0.05 | 27.2 | 0.05 |
| E | 667.8 | 445.2 | 36.1 | 0.05 | 36.1 | 0.05 |
| ALL | 1906.0 | 1270.7 | 102.1 | 0.05 | 102.1 | 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

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

[Printed at 13:05:50 on 04/02/2019]



ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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Run with file:-
"C:\Castletreasure\Junction8_CarrsHillWest_RA\Jct8_CarrsHillWest_AM.vai"
(drive-on-the-left ) at 15:12:11 on Friday, 1 February 2019

FILE PROPERTIES

RUN TITLE: Junction8
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for proposed Carrs Hill West roundabout in Douglas.

INPUT DATA

ARM A - R609 Carrigaline Road
ARM B - Maryborough/CarrsHill Link
ARM C - M28 On-Slip
ARM D - Carrs Hill Underbridge
ARM E - M28 Off-Slip

GEOMETRIC DATA

ARM C IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 6.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.452 | 23.936 |
| ARM B | 3.50 | 7.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.466 | 25.421 |
| ARM D | 3.50 | 8.00 | 12.00 | 15.00 | 70.00 | 45.0 | 0.468 | 26.090 |
| ARM E | 3.00 | 7.00 | 20.00 | 25.00 | 70.00 | 45.0 | 0.476 | 26.306 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioD_2039AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 9.00 | 13.50 | 9.00 |
| ARM B | 15.00 | 45.00 | 75.00 | 11.20 | 16.80 | 11.20 |
| ARM D | 15.00 | 45.00 | 75.00 | 8.02 | 12.04 | 8.02 |
| ARM E | 15.00 | 45.00 | 75.00 | 4.44 | 6.66 | 4.44 |

DEMAND SET TITLE: ScenarioD_2039AM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.004 | 0.143 | 0.853 | 0.000 |
| | | 0.0 | 3.0 | 103.0 | 614.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.000 | 0.000 | 0.984 | 0.016 | 0.000 |
| | | 0.0 | 0.0 | 882.0 | 14.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM D | 0.470 | 0.081 | 0.449 | 0.000 | 0.000 |
| | | 302.0 | 52.0 | 288.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.856 | 0.144 | 0.000 | 0.000 | 0.000 |
| | | 304.0 | 51.0 | 0.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 9.00 | 21.50 | 0.419 | | 0.0 | 0.7 | 10.4 | | 0.08 |
| ARM B | 11.20 | 19.54 | 0.573 | | 0.0 | 1.3 | 18.7 | | 0.12 |
| ARM D | 8.02 | 25.83 | 0.311 | | 0.0 | 0.4 | 6.6 | | 0.06 |
| ARM E | 4.44 | 22.24 | 0.200 | | 0.0 | 0.2 | 3.6 | | 0.06 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 10.75 | 21.07 | 0.510 | | 0.7 | 1.0 | 15.0 | | 0.10 |
| ARM B | 13.37 | 18.38 | 0.728 | | 1.3 | 2.6 | 35.5 | | 0.19 |
| ARM D | 9.58 | 25.83 | 0.371 | | 0.4 | 0.6 | 8.6 | | 0.06 |
| ARM E | 5.30 | 21.49 | 0.247 | | 0.2 | 0.3 | 4.8 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 13.16 | 20.47 | 0.643 | | 1.0 | 1.8 | 25.1 | | 0.13 |
| ARM B | 16.38 | 16.81 | 0.975 | | 2.6 | 12.6 | 134.9 | | 0.68 |
| ARM D | 11.74 | 25.83 | 0.454 | | 0.6 | 0.8 | 12.1 | | 0.07 |
| ARM E | 6.49 | 20.46 | 0.317 | | 0.3 | 0.5 | 6.8 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 13.16 | 20.47 | 0.643 | | 1.8 | 1.8 | 26.6 | | 0.14 |
| ARM B | 16.38 | 16.78 | 0.976 | | 12.6 | 16.6 | 221.8 | | 1.05 |
| ARM D | 11.74 | 25.83 | 0.454 | | 0.8 | 0.8 | 12.4 | | 0.07 |
| ARM E | 6.49 | 20.45 | 0.317 | | 0.5 | 0.5 | 6.9 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 10.75 | 21.06 | 0.510 | | 1.8 | 1.1 | 16.4 | | 0.10 |
| ARM B | 13.37 | 18.34 | 0.729 | | 16.6 | 2.8 | 69.2 | | 0.30 |
| ARM D | 9.58 | 25.83 | 0.371 | | 0.8 | 0.6 | 9.1 | | 0.06 |
| ARM E | 5.30 | 21.47 | 0.247 | | 0.5 | 0.3 | 5.0 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 9.00 | 21.49 | 0.419 | | 1.1 | 0.7 | 11.2 | | 0.08 |
| ARM B | 11.20 | 19.50 | 0.574 | | 2.8 | 1.4 | 21.7 | | 0.12 |
| ARM D | 8.02 | 25.83 | 0.311 | | 0.6 | 0.5 | 6.9 | | 0.06 |
| ARM E | 4.44 | 22.22 | 0.200 | | 0.3 | 0.3 | 3.8 | | 0.06 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.7 | * |
| 08.15 | 1.0 | * |
| 08.30 | 1.8 | ** |
| 08.45 | 1.8 | ** |
| 09.00 | 1.1 | * |
| 09.15 | 0.7 | * |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 1.3 | * |
| 08.15 | 2.6 | *** |
| 08.30 | 12.6 | ************ |
| 08.45 | 16.6 | ***************** |
| 09.00 | 2.8 | *** |
| 09.15 | 1.4 | * |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.6 | * |
| 08.30 | 0.8 | * |
| 08.45 | 0.8 | * |
| 09.00 | 0.6 | * |
| 09.15 | 0.5 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.2 |
| 08.15 | 0.3 |
| 08.30 | 0.5 |
| 08.45 | 0.5 |
| 09.00 | 0.3 |
| 09.15 | 0.3 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A | 987.3 | 658.2 | 104.6 | 0.11 | 104.6 | 0.11 |
| B | 1228.6 | 819.1 | 501.9 | 0.41 | 501.9 | 0.41 |
| D | 880.3 | 586.9 | 55.7 | 0.06 | 55.7 | 0.06 |
| E | 486.8 | 324.5 | 31.0 | 0.06 | 31.0 | 0.06 |
| ALL | 3583.0 | 2388.7 | 693.2 | 0.19 | 693.2 | 0.19 |

* 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

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

[Printed at 15:12:25 on 01/02/2019]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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Run with file:-
"C:\Castletreasure\Junction8_CarrsHillWest_RA\Jct1_Fingerpost_PM.vai"
(drive-on-the-left ) at 14:18:32 on Friday, 1 February 2019

FILE PROPERTIES

RUN TITLE: Junction8
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Fingerpost roundabout in Douglas.

INPUT DATA

ARM A - R609 Carrigaline Road
ARM B - Maryborough/Carrs Hill Link
ARM C - M28 On-Ramp
ARM D - Carrs Hill Underbridge
ARM E - M28 Off-Ramp

GEOMETRIC DATA

ARM C IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 6.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.452 | 23.936 |
| ARM B | 3.50 | 7.00 | 12.00 | 20.00 | 70.00 | 45.0 | 0.466 | 25.421 |
| ARM D | 3.50 | 8.00 | 12.00 | 15.00 | 70.00 | 45.0 | 0.468 | 26.090 |
| ARM E | 3.50 | 8.00 | 20.00 | 25.00 | 70.00 | 45.0 | 0.507 | 29.582 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |
| E | 100 |

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

DEMAND SET TITLE: ScenarioD_2039PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.34 | 5.01 | 3.34 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.80 | 5.70 | 3.80 |
| ARM D | 15.00 | 45.00 | 75.00 | 7.06 | 10.59 | 7.06 |
| ARM E | 15.00 | 45.00 | 75.00 | 6.05 | 9.08 | 6.05 |

DEMAND SET TITLE: ScenarioD_2039PM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D | ARM E |
|---|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.007 | 0.202 | 0.790 | 0.000 |
| | | 0.0 | 2.0 | 54.0 | 211.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.039 | 0.000 | 0.523 | 0.438 | 0.000 |
| | | 12.0 | 0.0 | 159.0 | 133.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM D | 0.446 | 0.446 | 0.108 | 0.000 | 0.000 |
| | | 252.0 | 252.0 | 61.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM E | 0.833 | 0.167 | 0.000 | 0.000 | 0.000 |
| | | 403.0 | 81.0 | 0.0 | 0.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 3.34 | 21.48 | 0.155 | | 0.0 | 0.2 | 2.7 | | 0.06 |
| ARM B | 3.80 | 23.51 | 0.162 | | 0.0 | 0.2 | 2.8 | | 0.05 |
| ARM D | 7.06 | 25.76 | 0.274 | | 0.0 | 0.4 | 5.5 | | 0.05 |
| ARM E | 6.05 | 25.64 | 0.236 | | 0.0 | 0.3 | 4.5 | | 0.05 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| ARM A | 3.99 | 21.04 | 0.189 | | 0.2 | 0.2 | 3.4 | | 0.06 |
| ARM B | 4.54 | 23.13 | 0.196 | | 0.2 | 0.2 | 3.6 | | 0.05 |
| ARM D | 8.43 | 25.75 | 0.328 | | 0.4 | 0.5 | 7.2 | | 0.06 |
| ARM E | 7.22 | 24.92 | 0.290 | | 0.3 | 0.4 | 6.0 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 4.88 | 20.45 | 0.239 | | 0.2 | 0.3 | 4.6 | | 0.06 |
| ARM B | 5.56 | 22.62 | 0.246 | | 0.2 | 0.3 | 4.8 | | 0.06 |
| ARM D | 10.33 | 25.73 | 0.401 | | 0.5 | 0.7 | 9.8 | | 0.06 |
| ARM E | 8.85 | 23.95 | 0.370 | | 0.4 | 0.6 | 8.6 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 4.88 | 20.45 | 0.239 | | 0.3 | 0.3 | 4.7 | | 0.06 |
| ARM B | 5.56 | 22.62 | 0.246 | | 0.3 | 0.3 | 4.9 | | 0.06 |
| ARM D | 10.33 | 25.73 | 0.401 | | 0.7 | 0.7 | 10.0 | | 0.06 |
| ARM E | 8.85 | 23.94 | 0.370 | | 0.6 | 0.6 | 8.8 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 3.99 | 21.04 | 0.189 | | 0.3 | 0.2 | 3.6 | | 0.06 |
| ARM B | 4.54 | 23.13 | 0.196 | | 0.3 | 0.2 | 3.7 | | 0.05 |
| ARM D | 8.43 | 25.75 | 0.328 | | 0.7 | 0.5 | 7.5 | | 0.06 |
| ARM E | 7.22 | 24.91 | 0.290 | | 0.6 | 0.4 | 6.3 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| ARM A | 3.34 | 21.47 | 0.155 | | 0.2 | 0.2 | 2.8 | | 0.06 |
| ARM B | 3.80 | 23.50 | 0.162 | | 0.2 | 0.2 | 2.9 | | 0.05 |
| ARM D | 7.06 | 25.76 | 0.274 | | 0.5 | 0.4 | 5.8 | | 0.05 |
| ARM E | 6.05 | 25.63 | 0.236 | | 0.4 | 0.3 | 4.7 | | 0.05 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.2 |
| 17.30 | 0.3 |
| 17.45 | 0.3 |
| 18.00 | 0.2 |
| 18.15 | 0.2 |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.2 | |
| 17.15 | 0.2 | |
| 17.30 | 0.3 | |
| 17.45 | 0.3 | |
| 18.00 | 0.2 | |
| 18.15 | 0.2 | |

QUEUE AT ARM D

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.5 | |
| 17.30 | 0.7 | * |
| 17.45 | 0.7 | * |
| 18.00 | 0.5 | |
| 18.15 | 0.4 | |

QUEUE AT ARM E

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.6 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 366.1 | 244.1 | 21.8 | 0.06 | 21.8 | 0.06 |
| B | 416.8 | 277.9 | 22.8 | 0.05 | 22.8 | 0.05 |
| D | 774.7 | 516.5 | 45.7 | 0.06 | 45.7 | 0.06 |
| E | 663.7 | 442.4 | 38.8 | 0.06 | 38.8 | 0.06 |
| ALL | 2221.4 | 1480.9 | 129.1 | 0.06 | 129.1 | 0.06 |

* 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

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

[Printed at 14:19:09 on 01/02/2019]



# A R C A D Y 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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Run with file:-
"C:\Castletreasure\Junction9_CarrsHillEast_RA\Jct8_CarrsHillEast_AM.vai"
(drive-on-the-left ) at 16:14:18 on Friday, 1 February 2019

FILE PROPERTIES

RUN TITLE: Junction9
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for proposed Carrs Hill East roundabout in Douglas.

INPUT DATA

ARM A - Carrs Hill Underbridge
ARM B - M28 Off-Ramp
ARM C - Carrs Hill South Link
ARM D - M28 On-Ramp

GEOMETRIC DATA

ARM D IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 15.00 | 10.00 | 45.00 | 45.0 | 0.559 | 24.988 |
| ARM B | 3.00 | 7.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.519 | 21.586 |
| ARM C | 3.00 | 6.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.507 | 20.570 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |

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

DEMAND SET TITLE: ScenarioB_2024AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.99 | 7.48 | 4.99 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.08 | 4.61 | 3.08 |
| ARM C | 15.00 | 45.00 | 75.00 | 4.29 | 6.43 | 4.29 |

DEMAND SET TITLE: ScenarioB_2024AM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.000 | 0.348 | 0.652 |
| | | 0.0 | 0.0 | 139.0 | 260.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.894 | 0.000 | 0.106 | 0.000 |
| | | 220.0 | 0.0 | 26.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.907 | 0.000 | 0.000 | 0.093 |
| | | 311.0 | 0.0 | 0.0 | 32.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 4.99 | 24.74 | 0.202 | | 0.0 | 0.3 | 3.7 | | 0.05 |
| ARM B | 3.08 | 18.79 | 0.164 | | 0.0 | 0.2 | 2.9 | | 0.06 |
| ARM C | 4.29 | 17.34 | 0.247 | | 0.0 | 0.3 | 4.8 | | 0.08 |
| 08.00-08.15 | | | | | | | | | |
| ARM A | 5.96 | 24.74 | 0.241 | | 0.3 | 0.3 | 4.7 | | 0.05 |
| ARM B | 3.67 | 18.28 | 0.201 | | 0.2 | 0.2 | 3.7 | | 0.07 |
| ARM C | 5.12 | 16.74 | 0.306 | | 0.3 | 0.4 | 6.4 | | 0.09 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 7.29 | 24.74 | 0.295 | | 0.3 | 0.4 | 6.1 | | 0.06 |
| ARM B | 4.50 | 17.59 | 0.256 | | 0.2 | 0.3 | 5.0 | | 0.08 |
| ARM C | 6.27 | 15.92 | 0.394 | | 0.4 | 0.6 | 9.4 | | 0.10 |
| 08.30-08.45 | | | | | | | | | |
| ARM A | 7.29 | 24.74 | 0.295 | | 0.4 | 0.4 | 6.2 | | 0.06 |
| ARM B | 4.50 | 17.59 | 0.256 | | 0.3 | 0.3 | 5.1 | | 0.08 |
| ARM C | 6.27 | 15.92 | 0.394 | | 0.6 | 0.6 | 9.7 | | 0.10 |
| 08.45-09.00 | | | | | | | | | |
| ARM A | 5.96 | 24.74 | 0.241 | | 0.4 | 0.3 | 4.8 | | 0.05 |
| ARM B | 3.67 | 18.28 | 0.201 | | 0.3 | 0.3 | 3.9 | | 0.07 |
| ARM C | 5.12 | 16.73 | 0.306 | | 0.6 | 0.4 | 6.8 | | 0.09 |
| 09.00-09.15 | | | | | | | | | |
| ARM A | 4.99 | 24.74 | 0.202 | | 0.3 | 0.3 | 3.9 | | 0.05 |
| ARM B | 3.08 | 18.78 | 0.164 | | 0.3 | 0.2 | 3.0 | | 0.06 |
| ARM C | 4.29 | 17.32 | 0.248 | | 0.4 | 0.3 | 5.1 | | 0.08 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.3 |
| 08.15 | 0.3 |
| 08.30 | 0.4 |
| 08.45 | 0.4 |
| 09.00 | 0.3 |
| 09.15 | 0.3 |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.2 |
| 08.15 | 0.2 |
| 08.30 | 0.3 |
| 08.45 | 0.3 |
| 09.00 | 0.3 |
| 09.15 | 0.2 |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.4 | |
| 08.30 | 0.6 | * |
| 08.45 | 0.6 | * |
| 09.00 | 0.4 | |
| 09.15 | 0.3 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A | 547.1 | 364.7 | 29.5 | 0.05 | 29.5 | 0.05 |
| B | 337.3 | 224.9 | 23.6 | 0.07 | 23.6 | 0.07 |
| C | 470.3 | 313.6 | 42.1 | 0.09 | 42.1 | 0.09 |
| ALL | 1354.8 | 903.2 | 95.1 | 0.07 | 95.2 | 0.07 |

* 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

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

[Printed at 16:14:45 on 01/02/2019]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
program advice and maintenance, contact:

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Crowthorne House Fax: +44 (0) 1344 770864
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RG40 3GA,UK



Run with file:-
"C:\Castletreasure\Junction9_CarrsHillEast_RA\Jct8_CarrsHillEast_PM.vai"
(drive-on-the-left ) at 16:28:41 on Friday, 1 February 2019

FILE PROPERTIES
**********

RUN TITLE: Junction9
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Carrs Hill East roundabout in Douglas.

INPUT DATA
**********
ARM A - Carrs Hill Underbridge
ARM B - M28 Off-Ramp
ARM C - Carrs Hill South Link
ARM D - M28 On-Ramp

GEOMETRIC DATA

ARM D IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 15.00 | 10.00 | 45.00 | 45.0 | 0.559 | 24.988 |
| ARM B | 3.00 | 7.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.519 | 21.586 |
| ARM C | 3.00 | 6.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.507 | 20.570 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |

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

DEMAND SET TITLE: ScenarioB_2024PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.26 | 4.89 | 3.26 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.65 | 5.48 | 3.65 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.09 | 3.13 | 2.09 |

DEMAND SET TITLE: ScenarioB_2024PM

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| 16.45 - 18.15 | | TURNING PROPORTIONS | | | |
| | | TURNING COUNTS (VEH/HR) | | | |
| | | (PERCENTAGE OF H.V.S) | | | |
| | ARM A | 0.000 | 0.000 | 1.000 | 0.000 |
| | | 0.0 | 0.0 | 261.0 | 0.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM B | 0.692 | 0.000 | 0.308 | 0.000 |
| | | 202.0 | 0.0 | 90.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.952 | 0.000 | 0.000 | 0.048 |
| | | 159.0 | 0.0 | 0.0 | 8.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 3.26 | 24.99 | 0.131 | | 0.0 | 0.1 | 2.2 | | 0.05 |
| ARM B | 3.65 | 19.70 | 0.185 | | 0.0 | 0.2 | 3.3 | | 0.06 |
| ARM C | 2.09 | 19.09 | 0.109 | | 0.0 | 0.1 | 1.8 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| ARM A | 3.90 | 24.99 | 0.156 | | 0.1 | 0.2 | 2.7 | | 0.05 |
| ARM B | 4.36 | 19.37 | 0.225 | | 0.2 | 0.3 | 4.3 | | 0.07 |
| ARM C | 2.49 | 18.83 | 0.132 | | 0.1 | 0.2 | 2.2 | | 0.06 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 4.77 | 24.99 | 0.191 | | 0.2 | 0.2 | 3.5 | | 0.05 |
| ARM B | 5.34 | 18.92 | 0.282 | | 0.3 | 0.4 | 5.7 | | 0.07 |
| ARM C | 3.05 | 18.50 | 0.165 | | 0.2 | 0.2 | 2.9 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 4.77 | 24.99 | 0.191 | | 0.2 | 0.2 | 3.5 | | 0.05 |
| ARM B | 5.34 | 18.92 | 0.282 | | 0.4 | 0.4 | 5.9 | | 0.07 |
| ARM C | 3.05 | 18.49 | 0.165 | | 0.2 | 0.2 | 3.0 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 3.90 | 24.99 | 0.156 | | 0.2 | 0.2 | 2.8 | | 0.05 |
| ARM B | 4.36 | 19.36 | 0.225 | | 0.4 | 0.3 | 4.5 | | 0.07 |
| ARM C | 2.49 | 18.83 | 0.132 | | 0.2 | 0.2 | 2.3 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| ARM A | 3.26 | 24.99 | 0.131 | | 0.2 | 0.2 | 2.3 | | 0.05 |
| ARM B | 3.65 | 19.69 | 0.185 | | 0.3 | 0.2 | 3.5 | | 0.06 |
| ARM C | 2.09 | 19.08 | 0.109 | | 0.2 | 0.1 | 1.9 | | 0.06 |

QUEUE AT ARM A

| 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 | 0.2 |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.4 |
| 17.45 | 0.4 |
| 18.00 | 0.3 |
| 18.15 | 0.2 |

QUEUE AT ARM C

| 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 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 357.9 | 238.6 | 17.1 | 0.05 | 17.1 | 0.05 |
| B | 400.4 | 266.9 | 27.1 | 0.07 | 27.1 | 0.07 |
| C | 229.0 | 152.7 | 14.1 | 0.06 | 14.1 | 0.06 |
| ALL | 987.3 | 658.2 | 58.3 | 0.06 | 58.3 | 0.06 |

* 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

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

[Printed at 16:28:53 on 01/02/2019]



# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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RG40 3GA,UK



Run with file:-
"C:\Castletreasure\Junction9_CarrsHillEast_RA\Jct8_CarrsHillEast_AM.vai"
(drive-on-the-left ) at 16:21:03 on Friday, 1 February 2019

FILE PROPERTIES
**********

RUN TITLE: Junction9
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for proposed Carrs Hill East roundabout in Douglas.

INPUT DATA
**********
ARM A - Carrs Hill Underbridge
ARM B - M28 Off-Ramp
ARM C - Carrs Hill South Link
ARM D - M28 On-Ramp

GEOMETRIC DATA
---

ARM D IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 15.00 | 10.00 | 45.00 | 45.0 | 0.559 | 24.988 |
| ARM B | 3.00 | 7.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.519 | 21.586 |
| ARM C | 3.00 | 6.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.507 | 20.570 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA
---

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |

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

DEMAND SET TITLE: ScenarioB_2039AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK | NUMBER OF MINUTES FROM START WHEN FLOW STOPS | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| | TO RISE | IS REACHED | IFALLING | | | |
| ARM A | 15.00 | 45.00 | 75.00 | 6.72 | 10.09 | 6.72 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.67 | 5.51 | 3.67 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.05 | 7.58 | 5.05 |

DEMAND SET TITLE: ScenarioB_2039AM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| 07.45 - 09.15 | | | | | |
| | ARM A | 0.000 | 0.000 | 0.273 | 0.727 |
| | | 0.0 | 0.0 | 147.0 | 391.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.922 | 0.000 | 0.078 | 0.000 |
| | | 271.0 | 0.0 | 23.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.879 | 0.000 | 0.000 | 0.121 |
| | | 355.0 | 0.0 | 0.0 | 49.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | | |
| | ARM A | 6.72 | 24.74 | 0.272 | | 0.0 | 0.4 | 5.5 | | 0.06 |
| | ARM B | 3.67 | 17.90 | 0.205 | | 0.0 | 0.3 | 3.8 | | 0.07 |
| | ARM C | 5.05 | 16.19 | 0.312 | | 0.0 | 0.4 | 6.5 | | 0.09 |
| 08.00-08.15 | | | | | | | | | | |
| | ARM A | 8.03 | 24.74 | 0.325 | | 0.4 | 0.5 | 7.1 | | 0.06 |
| | ARM B | 4.39 | 17.21 | 0.255 | | 0.3 | 0.3 | 5.0 | | 0.08 |
| | ARM C | 6.03 | 15.36 | 0.393 | | 0.4 | 0.6 | 9.3 | | 0.11 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | | |
| | ARM A | 9.84 | 24.74 | 0.398 | | 0.5 | 0.7 | 9.6 | | 0.07 |
| | ARM B | 5.37 | 16.27 | 0.330 | | 0.3 | 0.5 | 7.2 | | 0.09 |
| | ARM C | 7.39 | 14.24 | 0.519 | | 0.6 | 1.1 | 15.2 | | 0.14 |
| 08.30-08.45 | | | | | | | | | | |
| | ARM A | 9.84 | 24.74 | 0.398 | | 0.7 | 0.7 | 9.8 | | 0.07 |
| | ARM B | 5.37 | 16.27 | 0.330 | | 0.5 | 0.5 | 7.4 | | 0.09 |
| | ARM C | 7.39 | 14.23 | 0.519 | | 1.1 | 1.1 | 16.0 | | 0.15 |
| 08.45-09.00 | | | | | | | | | | |
| | ARM A | 8.03 | 24.74 | 0.325 | | 0.7 | 0.5 | 7.4 | | 0.06 |
| | ARM B | 4.39 | 17.20 | 0.255 | | 0.5 | 0.3 | 5.3 | | 0.08 |
| | ARM C | 6.03 | 15.35 | 0.393 | | 1.1 | 0.7 | 10.2 | | 0.11 |
| 09.00-09.15 | | | | | | | | | | |
| | ARM A | 6.72 | 24.74 | 0.272 | | 0.5 | 0.4 | 5.7 | | 0.06 |
| | ARM B | 3.67 | 17.88 | 0.206 | | 0.3 | 0.3 | 4.0 | | 0.07 |
| | ARM C | 5.05 | 16.17 | 0.312 | | 0.7 | 0.5 | 7.0 | | 0.09 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.5 | |
| 08.30 | 0.7 | * |
| 08.45 | 0.7 | * |
| 09.00 | 0.5 | |
| 09.15 | 0.4 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.3 |
| 08.15 | 0.3 |
| 08.30 | 0.5 |
| 08.45 | 0.5 |
| 09.00 | 0.3 |
| 09.15 | 0.3 |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.4 | |
| 08.15 | 0.6 | * |
| 08.30 | 1.1 | * |
| 08.45 | 1.1 | * |
| 09.00 | 0.7 | * |
| 09.15 | 0.5 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A | 737.7 | 491.8 | 45.1 | 0.06 | 45.1 | 0.06 |
| B | 403.1 | 268.8 | 32.5 | 0.08 | 32.5 | 0.08 |
| C | 554.0 | 369.3 | 64.2 | 0.12 | 64.2 | 0.12 |
| ALL | 1694.8 | 1129.9 | 141.8 | 0.08 | 141.8 | 0.08 |

* 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

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

[Printed at 16:21:14 on 01/02/2019]



ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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Wokingham, Berks. Web: www.trlsoftware.co.uk
RG40 3GA,UK



Run with file:-
"C:\Castletreasure\Junction9_CarrsHillEast_RA\Jct8_CarrsHillEast_PM.vai"
(drive-on-the-left ) at 16:32:19 on Friday, 1 February 2019

FILE PROPERTIES

RUN TITLE: Junction9
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Carrs Hill East roundabout in Douglas.

INPUT DATA

ARM A - Carrs Hill Underbridge
ARM B - M28 Off-Ramp
ARM C - Carrs Hill South Link
ARM D - M28 On-Ramp

GEOMETRIC DATA

ARM D IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 15.00 | 10.00 | 45.00 | 45.0 | 0.559 | 24.988 |
| ARM B | 3.00 | 7.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.519 | 21.586 |
| ARM C | 3.00 | 6.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.507 | 20.570 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |

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

DEMAND SET TITLE: ScenarioB_2039PM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 3.70 | 5.55 | 3.70 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.63 | 6.94 | 4.63 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.26 | 4.89 | 3.26 |

DEMAND SET TITLE: ScenarioB_2039PM

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| 16.45 - 18.15 | | | | | |
| | ARM A | 0.000 | 0.000 | 0.943 | 0.057 |
| | | 0.0 | 0.0 | 279.0 | 17.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM B | 0.751 | 0.000 | 0.249 | 0.000 |
| | | 278.0 | 0.0 | 92.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.977 | 0.000 | 0.000 | 0.023 |
| | | 255.0 | 0.0 | 0.0 | 6.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | | |
| | ARM A | 3.70 | 24.99 | 0.148 | | 0.0 | 0.2 | 2.6 | | 0.05 |
| | ARM B | 4.63 | 19.48 | 0.237 | | 0.0 | 0.3 | 4.5 | | 0.07 |
| | ARM C | 3.26 | 18.51 | 0.176 | | 0.0 | 0.2 | 3.1 | | 0.07 |
| 17.00-17.15 | | | | | | | | | | |
| | ARM A | 4.42 | 24.99 | 0.177 | | 0.2 | 0.2 | 3.2 | | 0.05 |
| | ARM B | 5.52 | 19.10 | 0.289 | | 0.3 | 0.4 | 5.9 | | 0.07 |
| | ARM C | 3.90 | 18.14 | 0.215 | | 0.2 | 0.3 | 4.0 | | 0.07 |



| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | | |
| | ARM A | 5.41 | 24.99 | 0.217 | | 0.2 | 0.3 | 4.1 | | 0.05 |
| | ARM B | 6.76 | 18.59 | 0.364 | | 0.4 | 0.6 | 8.3 | | 0.08 |
| | ARM C | 4.77 | 17.64 | 0.271 | | 0.3 | 0.4 | 5.4 | | 0.08 |
| 17.30-17.45 | | | | | | | | | | |
| | ARM A | 5.41 | 24.99 | 0.217 | | 0.3 | 0.3 | 4.1 | | 0.05 |
| | ARM B | 6.76 | 18.59 | 0.364 | | 0.6 | 0.6 | 8.5 | | 0.08 |
| | ARM C | 4.77 | 17.63 | 0.271 | | 0.4 | 0.4 | 5.5 | | 0.08 |
| 17.45-18.00 | | | | | | | | | | |
| | ARM A | 4.42 | 24.99 | 0.177 | | 0.3 | 0.2 | 3.3 | | 0.05 |
| | ARM B | 5.52 | 19.10 | 0.289 | | 0.6 | 0.4 | 6.3 | | 0.07 |
| | ARM C | 3.90 | 18.13 | 0.215 | | 0.4 | 0.3 | 4.2 | | 0.07 |
| 18.00-18.15 | | | | | | | | | | |
| | ARM A | 3.70 | 24.99 | 0.148 | | 0.2 | 0.2 | 2.6 | | 0.05 |
| | ARM B | 4.63 | 19.47 | 0.238 | | 0.4 | 0.3 | 4.8 | | 0.07 |
| | ARM C | 3.26 | 18.50 | 0.176 | | 0.3 | 0.2 | 3.3 | | 0.07 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.2 |
| 17.30 | 0.3 |
| 17.45 | 0.3 |
| 18.00 | 0.2 |
| 18.15 | 0.2 |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.6 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.4 |
| 17.45 | 0.4 |
| 18.00 | 0.3 |
| 18.15 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A | 405.9 | 270.6 | 19.9 | 0.05 | 19.9 | 0.05 |
| B | 507.3 | 338.2 | 38.4 | 0.08 | 38.4 | 0.08 |
| C | 357.9 | 238.6 | 25.6 | 0.07 | 25.6 | 0.07 |
| ALL | 1271.1 | 847.4 | 83.8 | 0.07 | 83.8 | 0.07 |

* 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

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

[Printed at 16:32:40 on 01/02/2019]



ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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Run with file:-
"C:\Castletreasure\Junction9_CarrsHillEast_RA\Jct8_CarrsHillEast_AM.vai"
(drive-on-the-left ) at 16:23:42 on Friday, 1 February 2019

FILE PROPERTIES

RUN TITLE: Junction9
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for proposed Carrs Hill East roundabout in Douglas.

INPUT DATA

ARM A - Carrs Hill Underbridge
ARM B - M28 Off-Ramp
ARM C - Carrs Hill South Link
ARM D - M28 On-Ramp

GEOMETRIC DATA

ARM D IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 15.00 | 10.00 | 45.00 | 45.0 | 0.559 | 24.988 |
| ARM B | 3.00 | 7.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.519 | 21.586 |
| ARM C | 3.00 | 6.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.507 | 20.570 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |

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

DEMAND SET TITLE: ScenarioD_2024AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 6.10 | 9.15 | 6.10 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.15 | 4.73 | 3.15 |
| ARM C | 15.00 | 45.00 | 75.00 | 4.40 | 6.60 | 4.40 |

DEMAND SET TITLE: ScenarioD_2024AM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.000 | 0.334 | 0.666 |
| | | 0.0 | 0.0 | 163.0 | 325.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.897 | 0.000 | 0.103 | 0.000 |
| | | 226.0 | 0.0 | 26.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.909 | 0.000 | 0.000 | 0.091 |
| | | 320.0 | 0.0 | 0.0 | 32.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 6.10 | 24.74 | 0.247 | | 0.0 | 0.3 | 4.8 | | 0.05 |
| ARM B | 3.15 | 18.22 | 0.173 | | 0.0 | 0.2 | 3.0 | | 0.07 |
| ARM C | 4.40 | 16.89 | 0.261 | | 0.0 | 0.3 | 5.1 | | 0.08 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 7.28 | 24.74 | 0.294 | | 0.3 | 0.4 | 6.1 | | 0.06 |
| ARM B | 3.76 | 17.60 | 0.214 | | 0.2 | 0.3 | 4.0 | | 0.07 |
| ARM C | 5.25 | 16.20 | 0.324 | | 0.3 | 0.5 | 7.0 | | 0.09 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 8.92 | 24.74 | 0.361 | | 0.4 | 0.6 | 8.3 | | 0.06 |
| ARM B | 4.61 | 16.75 | 0.275 | | 0.3 | 0.4 | 5.5 | | 0.08 |
| ARM C | 6.43 | 15.27 | 0.422 | | 0.5 | 0.7 | 10.5 | | 0.11 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 8.92 | 24.74 | 0.361 | | 0.6 | 0.6 | 8.4 | | 0.06 |
| ARM B | 4.61 | 16.74 | 0.275 | | 0.4 | 0.4 | 5.7 | | 0.08 |
| ARM C | 6.43 | 15.26 | 0.422 | | 0.7 | 0.7 | 10.8 | | 0.11 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 7.28 | 24.74 | 0.294 | | 0.6 | 0.4 | 6.4 | | 0.06 |
| ARM B | 3.76 | 17.59 | 0.214 | | 0.4 | 0.3 | 4.2 | | 0.07 |
| ARM C | 5.25 | 16.19 | 0.325 | | 0.7 | 0.5 | 7.5 | | 0.09 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 6.10 | 24.74 | 0.247 | | 0.4 | 0.3 | 5.0 | | 0.05 |
| ARM B | 3.15 | 18.20 | 0.173 | | 0.3 | 0.2 | 3.2 | | 0.07 |
| ARM C | 4.40 | 16.87 | 0.261 | | 0.5 | 0.4 | 5.4 | | 0.08 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.4 | |
| 08.30 | 0.6 | * |
| 08.45 | 0.6 | * |
| 09.00 | 0.4 | |
| 09.15 | 0.3 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.2 |
| 08.15 | 0.3 |
| 08.30 | 0.4 |
| 08.45 | 0.4 |
| 09.00 | 0.3 |
| 09.15 | 0.2 |



QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.5 | |
| 08.30 | 0.7 | * |
| 08.45 | 0.7 | * |
| 09.00 | 0.5 | |
| 09.15 | 0.4 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 669.2 | 446.1 | 39.0 | 0.06 | 39.0 | 0.06 |
| B | 345.5 | 230.4 | 25.6 | 0.07 | 25.6 | 0.07 |
| C | 482.7 | 321.8 | 46.3 | 0.10 | 46.3 | 0.10 |
| ALL | 1497.4 | 998.2 | 110.9 | 0.07 | 110.9 | 0.07 |

* 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

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

[Printed at 16:23:48 on 01/02/2019]

# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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Run with file:-
"C:\Castletreasure\Junction9_CarrsHillEast_RA\Jct8_CarrsHillEast_PM.vai"
(drive-on-the-left ) at 16:34:56 on Friday, 1 February 2019

## FILE PROPERTIES

RUN TITLE: Junction9
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Carrs Hill East roundabout in Douglas.

## INPUT DATA

ARM A - Carrs Hill Underbridge
ARM B - M28 Off-Ramp
ARM C - Carrs Hill South Link
ARM D - M28 On-Ramp

## GEOMETRIC DATA

ARM D IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 15.00 | 10.00 | 45.00 | 45.0 | 0.559 | 24.988 |
| ARM B | 3.00 | 7.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.519 | 21.586 |
| ARM C | 3.00 | 6.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.507 | 20.570 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

## TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |

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

DEMAND SET TITLE: ScenarioD_2024PM

| ARM | NUMBER OF MINUTES FROM START TO RISE | NUMBER OF MINUTES FROM START WHEN FLOW STARTS IS REACHED | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.04 | 6.06 | 4.04 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.86 | 5.79 | 3.86 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.29 | 3.43 | 2.29 |

DEMAND SET TITLE: ScenarioD_2024PM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.000 | 0.944 | 0.056 |
| | | 0.0 | 0.0 | 305.0 | 18.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM B | 0.709 | 0.000 | 0.291 | 0.000 |
| | | 219.0 | 0.0 | 90.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.956 | 0.000 | 0.000 | 0.044 |
| | | 175.0 | 0.0 | 0.0 | 8.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| ARM A | 4.04 | 24.99 | 0.162 | | 0.0 | 0.2 | 2.8 | | 0.05 |
| ARM B | 3.86 | 19.30 | 0.200 | | 0.0 | 0.2 | 3.6 | | 0.06 |
| ARM C | 2.29 | 18.87 | 0.121 | | 0.0 | 0.1 | 2.0 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| ARM A | 4.82 | 24.99 | 0.193 | | 0.2 | 0.2 | 3.5 | | 0.05 |
| ARM B | 4.61 | 18.90 | 0.244 | | 0.2 | 0.3 | 4.7 | | 0.07 |
| ARM C | 2.73 | 18.58 | 0.147 | | 0.1 | 0.2 | 2.5 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 5.90 | 24.99 | 0.236 | | 0.2 | 0.3 | 4.6 | | 0.05 |
| ARM B | 5.65 | 18.34 | 0.308 | | 0.3 | 0.4 | 6.5 | | 0.08 |
| ARM C | 3.35 | 18.17 | 0.184 | | 0.2 | 0.2 | 3.3 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 5.90 | 24.99 | 0.236 | | 0.3 | 0.3 | 4.6 | | 0.05 |
| ARM B | 5.65 | 18.34 | 0.308 | | 0.4 | 0.4 | 6.6 | | 0.08 |
| ARM C | 3.35 | 18.17 | 0.184 | | 0.2 | 0.2 | 3.4 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 4.82 | 24.99 | 0.193 | | 0.3 | 0.2 | 3.6 | | 0.05 |
| ARM B | 4.61 | 18.89 | 0.244 | | 0.4 | 0.3 | 5.0 | | 0.07 |
| ARM C | 2.73 | 18.57 | 0.147 | | 0.2 | 0.2 | 2.6 | | 0.06 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| ARM A | 4.04 | 24.99 | 0.162 | | 0.2 | 0.2 | 2.9 | | 0.05 |
| ARM B | 3.86 | 19.29 | 0.200 | | 0.3 | 0.3 | 3.8 | | 0.06 |
| ARM C | 2.29 | 18.86 | 0.121 | | 0.2 | 0.1 | 2.1 | | 0.06 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.2 |
| 17.30 | 0.3 |
| 17.45 | 0.3 |
| 18.00 | 0.2 |
| 18.15 | 0.2 |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.4 |
| 17.45 | 0.4 |
| 18.00 | 0.3 |
| 18.15 | 0.3 |



QUEUE AT ARM C

| 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 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 442.9 | 295.3 | 22.1 | 0.05 | 22.1 | 0.05 |
| B | 423.7 | 282.5 | 30.3 | 0.07 | 30.3 | 0.07 |
| C | 250.9 | 167.3 | 16.0 | 0.06 | 16.0 | 0.06 |
| ALL | 1117.5 | 745.0 | 68.4 | 0.06 | 68.4 | 0.06 |

* 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

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

[Printed at 16:35:08 on 01/02/2019]

# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



For sales and distribution information,
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RG40 3GA,UK



Run with file:-
"C:\Castletreasure\Junction9_CarrsHillEast_RA\Jct8_CarrsHillEast_AM.vai"
(drive-on-the-left ) at 16:17:32 on Friday, 1 February 2019

## FILE PROPERTIES

RUN TITLE: Junction9
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for proposed Carrs Hill East roundabout in Douglas.

## INPUT DATA

ARM A - Carrs Hill Underbridge
ARM B - M28 Off-Ramp
ARM C - Carrs Hill South Link
ARM D - M28 On-Ramp

## GEOMETRIC DATA

ARM D IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 15.00 | 10.00 | 45.00 | 45.0 | 0.559 | 24.988 |
| ARM B | 3.00 | 7.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.519 | 21.586 |
| ARM C | 3.00 | 6.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.507 | 20.570 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

## TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |

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

DEMAND SET TITLE: ScenarioD_2039AM

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS IFALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.85 | 11.77 | 7.85 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.76 | 5.64 | 3.76 |
| ARM C | 15.00 | 45.00 | 75.00 | 5.16 | 7.74 | 5.16 |

DEMAND SET TITLE: ScenarioD_2039AM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| 07.45 - 09.15 | ARM A | 0.000 | 0.000 | 0.274 | 0.726 |
| | | 0.0 | 0.0 | 172.0 | 456.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.924 | 0.000 | 0.076 | 0.000 |
| | | 278.0 | 0.0 | 23.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.881 | 0.000 | 0.000 | 0.119 |
| | | 364.0 | 0.0 | 0.0 | 49.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| TIME / ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| ARM A | 7.85 | 24.74 | 0.317 | | 0.0 | 0.5 | 6.8 | | 0.06 |
| ARM B | 3.76 | 17.31 | 0.217 | | 0.0 | 0.3 | 4.0 | | 0.07 |
| ARM C | 5.16 | 15.73 | 0.328 | | 0.0 | 0.5 | 7.0 | | 0.09 |

| TIME / ARM | 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| ARM A | 9.37 | 24.74 | 0.379 | | 0.5 | 0.6 | 8.9 | | 0.07 |
| ARM B | 4.49 | 16.51 | 0.272 | | 0.3 | 0.4 | 5.5 | | 0.08 |
| ARM C | 6.16 | 14.82 | 0.416 | | 0.5 | 0.7 | 10.2 | | 0.12 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| ARM A | 11.48 | 24.74 | 0.464 | | 0.6 | 0.9 | 12.6 | | 0.08 |
| ARM B | 5.50 | 15.42 | 0.357 | | 0.4 | 0.5 | 8.0 | | 0.10 |
| ARM C | 7.55 | 13.58 | 0.556 | | 0.7 | 1.2 | 17.4 | | 0.16 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| ARM A | 11.48 | 24.74 | 0.464 | | 0.9 | 0.9 | 12.9 | | 0.08 |
| ARM B | 5.50 | 15.42 | 0.357 | | 0.5 | 0.6 | 8.3 | | 0.10 |
| ARM C | 7.55 | 13.56 | 0.557 | | 1.2 | 1.2 | 18.5 | | 0.17 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| ARM A | 9.37 | 24.74 | 0.379 | | 0.9 | 0.6 | 9.4 | | 0.07 |
| ARM B | 4.49 | 16.50 | 0.272 | | 0.6 | 0.4 | 5.8 | | 0.08 |
| ARM C | 6.16 | 14.80 | 0.417 | | 1.2 | 0.7 | 11.3 | | 0.12 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| ARM A | 7.85 | 24.74 | 0.317 | | 0.6 | 0.5 | 7.1 | | 0.06 |
| ARM B | 3.76 | 17.29 | 0.218 | | 0.4 | 0.3 | 4.3 | | 0.07 |
| ARM C | 5.16 | 15.71 | 0.329 | | 0.7 | 0.5 | 7.6 | | 0.10 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.5 | |
| 08.15 | 0.6 | * |
| 08.30 | 0.9 | * |
| 08.45 | 0.9 | * |
| 09.00 | 0.6 | * |
| 09.15 | 0.5 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.3 | |
| 08.15 | 0.4 | |
| 08.30 | 0.5 | * |
| 08.45 | 0.6 | * |
| 09.00 | 0.4 | |
| 09.15 | 0.3 | |



QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.5 | |
| 08.15 | 0.7 | * |
| 08.30 | 1.2 | * |
| 08.45 | 1.2 | * |
| 09.00 | 0.7 | * |
| 09.15 | 0.5 | |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| A | 861.1 | 574.1 | 57.7 | 0.07 | 57.7 | 0.07 |
| B | 412.7 | 275.2 | 35.8 | 0.09 | 35.8 | 0.09 |
| C | 566.3 | 377.5 | 72.1 | 0.13 | 72.1 | 0.13 |
| ALL | 1840.2 | 1226.8 | 165.6 | 0.09 | 165.6 | 0.09 |

* 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

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

[Printed at 16:17:43 on 01/02/2019]

# ARCADY 6

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 4.0 (FEBRUARY 2006)



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program advice and maintenance, contact:

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Run with file:-
"C:\Castletreasure\Junction9_CarrsHillEast_RA\Jct8_CarrsHillEast_PM.vai"
(drive-on-the-left ) at 16:36:57 on Friday, 1 February 2019

## FILE PROPERTIES

RUN TITLE: Junction9
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for Carrs Hill East roundabout in Douglas.

## INPUT DATA

ARM A - Carrs Hill Underbridge
ARM B - M28 Off-Ramp
ARM C - Carrs Hill South Link
ARM D - M28 On-Ramp

## GEOMETRIC DATA

ARM D IS JUNCTION EXIT ONLY

| ARM | V (M) | E (M) | L (M) | R (M) | D (M) | PHI (DEG) | SLOPE | INTERCEPT (PCU/MIN) |
|---|---|---|---|---|---|---|---|---|
| ARM A | 3.50 | 7.00 | 15.00 | 10.00 | 45.00 | 45.0 | 0.559 | 24.988 |
| ARM B | 3.00 | 7.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.519 | 21.586 |
| ARM C | 3.00 | 6.00 | 10.00 | 10.00 | 45.00 | 45.0 | 0.507 | 20.570 |

V = approach half-width L = effective flare length D = inscribed circle diameter
E = entry width R = entry radius PHI = entry angle

## TRAFFIC DEMAND DATA

(Only sets included in the current run are shown)



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |
| D | 100 |

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

DEMAND SET TITLE: ScenarioD_2039PM

| ARM | FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS IFALLING | NUMBER OF MINUTES FROM START WHEN PEAK | BEFORE TOP OF PEAK | AT TOP PEAK | AFTER TOP OF PEAK | RATE OF FLOW (VEH/MIN) PEAK |
|---|---|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.30 | 6.45 | 4.30 | | |
| ARM B | 15.00 | 45.00 | 75.00 | 4.84 | 7.26 | 4.84 | | |
| ARM C | 15.00 | 45.00 | 75.00 | 3.46 | 5.19 | 3.46 | | |

DEMAND SET TITLE: ScenarioD_2039PM

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

| TIME | FROM/TO | ARM A | ARM B | ARM C | ARM D |
|---|---|---|---|---|---|
| 16.45 - 18.15 | ARM A | 0.000 | 0.000 | 0.942 | 0.058 |
| | | 0.0 | 0.0 | 324.0 | 20.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM B | 0.762 | 0.000 | 0.238 | 0.000 |
| | | 295.0 | 0.0 | 92.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |
| | ARM C | 0.978 | 0.000 | 0.000 | 0.022 |
| | | 271.0 | 0.0 | 0.0 | 6.0 |
| | | ( 1.0) | ( 1.0) | ( 1.0) | ( 1.0) |

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | | |
| | ARM A | 4.30 | 24.99 | 0.172 | | 0.0 | 0.2 | 3.1 | | 0.05 |
| | ARM B | 4.84 | 19.17 | 0.252 | | 0.0 | 0.3 | 4.9 | | 0.07 |
| | ARM C | 3.46 | 18.38 | 0.188 | | 0.0 | 0.2 | 3.4 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | | |
| | ARM A | 5.13 | 24.99 | 0.205 | | 0.2 | 0.3 | 3.8 | | 0.05 |
| | ARM B | 5.78 | 18.74 | 0.308 | | 0.3 | 0.4 | 6.5 | | 0.08 |
| | ARM C | 4.13 | 17.99 | 0.230 | | 0.2 | 0.3 | 4.4 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| ARM A | 6.29 | 24.99 | 0.252 | | 0.3 | 0.3 | 5.0 | | 0.05 |
| ARM B | 7.07 | 18.14 | 0.390 | | 0.4 | 0.6 | 9.3 | | 0.09 |
| ARM C | 5.06 | 17.45 | 0.290 | | 0.3 | 0.4 | 6.0 | | 0.08 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| ARM A | 6.29 | 24.99 | 0.252 | | 0.3 | 0.3 | 5.0 | | 0.05 |
| ARM B | 7.07 | 18.14 | 0.390 | | 0.6 | 0.6 | 9.5 | | 0.09 |
| ARM C | 5.06 | 17.45 | 0.290 | | 0.4 | 0.4 | 6.1 | | 0.08 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| ARM A | 5.13 | 24.99 | 0.205 | | 0.3 | 0.3 | 3.9 | | 0.05 |
| ARM B | 5.78 | 18.73 | 0.308 | | 0.6 | 0.4 | 6.9 | | 0.08 |
| ARM C | 4.13 | 17.98 | 0.230 | | 0.4 | 0.3 | 4.6 | | 0.07 |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| ARM A | 4.30 | 24.99 | 0.172 | | 0.3 | 0.2 | 3.2 | | 0.05 |
| ARM B | 4.84 | 19.16 | 0.252 | | 0.4 | 0.3 | 5.2 | | 0.07 |
| ARM C | 3.46 | 18.37 | 0.189 | | 0.3 | 0.2 | 3.6 | | 0.07 |

QUEUE AT ARM A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.2 | |
| 17.15 | 0.3 | |
| 17.30 | 0.3 | |
| 17.45 | 0.3 | |
| 18.00 | 0.3 | |
| 18.15 | 0.2 | |

QUEUE AT ARM B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.3 | |
| 17.15 | 0.4 | |
| 17.30 | 0.6 | * |
| 17.45 | 0.6 | * |
| 18.00 | 0.4 | |
| 18.15 | 0.3 | |

QUEUE AT ARM C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.4 |
| 17.45 | 0.4 |
| 18.00 | 0.3 |
| 18.15 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| ARM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| A | 471.7 | 314.5 | 24.0 | 0.05 | 24.0 | 0.05 |
| B | 530.7 | 353.8 | 42.3 | 0.08 | 42.3 | 0.08 |
| C | 379.8 | 253.2 | 28.0 | 0.07 | 28.0 | 0.07 |
| ALL | 1382.2 | 921.5 | 94.2 | 0.07 | 94.2 | 0.07 |

* 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

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

[Printed at 16:37:11 on 01/02/2019]





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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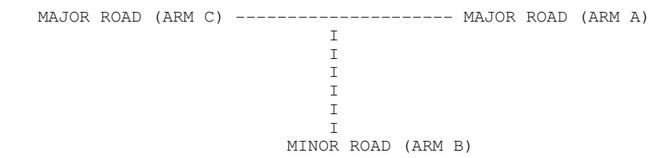
Run with file:-
"C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 09:53:27 on Monday, 4 February 2019

RUN INFORMATION

RUN TITLE: Junction 10
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between M
ryborough Hill and the proposed Carrs Hill Link Road.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS Maryborough Hill (N)
ARM B IS Carrs Hill Link Road
ARM C IS Maryborough Hill (S)

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 8.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 3.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 3.50 M. |
| - VISIBILITY | (VC-B) | 100.0 M. |
| - BLOCKS TRAFFIC | | NO |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 100.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 100.0 M. |
| - LANE 1 WIDTH | (WB-C) | - |
| - LANE 2 WIDTH | (WB-A) | - |
| - WIDTH AT 0 M FROM JUNC. | | 10.00 M. |
| - WIDTH AT 5 M FROM JUNC. | | 8.00 M. |
| - WIDTH AT 10 M FROM JUNC. | | 6.00 M. |
| - WIDTH AT 15 M FROM JUNC. | | 6.00 M. |
| - WIDTH AT 20 M FROM JUNC. | | 6.00 M. |
| - LENGTH OF FLARED SECTION | | 5 VEHS |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 631.87 | 0.22 | 0.09 |

| 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 |
|---|---|---|---|---|
| 550.39 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.27 | 0.26 | 0.26 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB_2024-2039AM&I

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 13.56 | 20.34 | 13.56 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.89 | 1.33 | 0.89 |
| ARM C | 15.00 | 45.00 | 75.00 | 7.04 | 10.56 | 7.04 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.563 | 0.437 |
| | | 0.0 | 611.0 | 474.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.761 | 0.000 | 0.239 |
| | | 54.0 | 0.0 | 17.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.423 | 0.577 | 0.000 |
| | | 238.0 | 325.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-C | 0.21 | 8.54 | 0.025 | | 0.00 | 0.03 | 0.4 | | 0.12 |
| B-A | 0.68 | 7.04 | 0.096 | | 0.00 | 0.11 | 1.5 | | 0.16 |
| C-A | 2.99 | | | | | | | | |
| C-B | 4.08 | 8.43 | 0.484 | | 0.00 | 0.91 | 12.7 | | 0.22 |
| A-B | 7.67 | | | | | | | | |
| A-C | 5.95 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-C | 0.25 | 8.06 | 0.032 | | 0.03 | 0.03 | 0.5 | | 0.13 |
| B-A | 0.81 | 6.11 | 0.132 | | 0.11 | 0.15 | 2.2 | | 0.19 |
| C-A | 3.57 | | | | | | | | |
| C-B | 4.87 | 7.75 | 0.628 | | 0.91 | 1.60 | 22.1 | | 0.34 |
| A-B | 9.15 | | | | | | | | |
| A-C | 7.10 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-C | 0.31 | 7.38 | 0.042 | | 0.03 | 0.04 | 0.6 | | 0.14 |
| B-A | 0.99 | 4.85 | 0.205 | | 0.15 | 0.25 | 3.6 | | 0.26 |
| C-A | 4.37 | | | | | | | | |
| C-B | 5.96 | 6.82 | 0.874 | | 1.60 | 4.86 | 57.8 | | 0.80 |
| A-B | 11.21 | | | | | | | | |
| A-C | 8.70 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-C | 0.31 | 7.37 | 0.042 | | 0.04 | 0.04 | 0.7 | | 0.14 |
| B-A | 0.99 | 4.76 | 0.208 | | 0.25 | 0.26 | 3.9 | | 0.27 |
| C-A | 4.37 | | | | | | | | |
| C-B | 5.96 | 6.82 | 0.874 | | 4.86 | 5.57 | 79.0 | | 1.01 |
| A-B | 11.21 | | | | | | | | |
| A-C | 8.70 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-C | 0.25 | 8.05 | 0.032 | | 0.04 | 0.03 | 0.5 | | 0.13 |
| B-A | 0.81 | 5.99 | 0.135 | | 0.26 | 0.16 | 2.5 | | 0.19 |
| C-A | 3.57 | | | | | | | | |
| C-B | 4.87 | 7.75 | 0.628 | | 5.57 | 1.79 | 32.8 | | 0.41 |
| A-B | 9.15 | | | | | | | | |
| A-C | 7.10 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-C | 0.21 | 8.53 | 0.025 | | 0.03 | 0.03 | 0.4 | | 0.12 |
| B-A | 0.68 | 7.00 | 0.097 | | 0.16 | 0.11 | 1.7 | | 0.16 |
| C-A | 2.99 | | | | | | | | |
| C-B | 4.08 | 8.43 | 0.484 | | 1.79 | 0.96 | 15.4 | | 0.24 |
| A-B | 7.67 | | | | | | | | |
| A-C | 5.95 | | | | | | | | |

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB_2024-2039AM&I

QUEUE FOR STREAM B-C

| 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 | |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.1 | |
| 08.15 | 0.2 | |
| 08.30 | 0.3 | |
| 08.45 | 0.3 | |
| 09.00 | 0.2 | |
| 09.15 | 0.1 | |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.9 | * |
| 08.15 | 1.6 | ** |
| 08.30 | 4.9 | ***** |
| 08.45 | 5.6 | ****** |
| 09.00 | 1.8 | ** |
| 09.15 | 1.0 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-C | 23.4 | 15.6 | 3.0 | 0.13 | 3.0 | 0.13 |
| B-A | 74.3 | 49.6 | 15.3 | 0.21 | 15.3 | 0.21 |
| C-A | 327.6 | 218.4 | | | | |
| C-B | 447.3 | 298.2 | 219.7 | 0.49 | 219.8 | 0.49 |
| A-B | 841.0 | 560.7 | | | | |
| A-C | 652.4 | 435.0 | | | | |
| ALL | 2366.1 | 1577.4 | 238.1 | 0.10 | 238.1 | 0.10 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 631.87 | 0.22 | 0.09 |

| 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 |
|---|---|---|---|---|
| 550.39 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.27 | 0.26 | 0.26 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB_2024-2039AM&I

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2024PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.74 | 7.11 | 4.74 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.81 | 5.72 | 3.81 |
| ARM C | 15.00 | 45.00 | 75.00 | 6.46 | 9.69 | 6.46 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000<br>0.0<br>( 0.0) | 0.317<br>120.0<br>( 1.0) | 0.683<br>259.0<br>( 1.0) |
| | ARM B | 0.620<br>189.0<br>( 1.0) | 0.000<br>0.0<br>( 0.0) | 0.380<br>116.0<br>( 1.0) |
| | ARM C | 0.768<br>397.0<br>( 1.0) | 0.232<br>120.0<br>( 1.0) | 0.000<br>0.0<br>( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 1.46 | 9.67 | 0.151 | | 0.00 | 0.18 | 2.5 | | 0.12 |
| B-A | 2.37 | 8.67 | 0.274 | | 0.00 | 0.37 | 5.3 | | 0.16 |
| C-A | 4.98 | | | | | | | | |
| C-B | 1.51 | 10.69 | 0.141 | | 0.00 | 0.16 | 2.4 | | 0.11 |
| A-B | 1.51 | | | | | | | | |
| A-C | 3.25 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 1.74 | 9.30 | 0.187 | | 0.18 | 0.23 | 3.3 | | 0.13 |
| B-A | 2.83 | 8.19 | 0.346 | | 0.37 | 0.52 | 7.5 | | 0.19 |
| C-A | 5.95 | | | | | | | | |
| C-B | 1.80 | 10.45 | 0.172 | | 0.16 | 0.21 | 3.0 | | 0.12 |
| A-B | 1.80 | | | | | | | | |
| A-C | 3.88 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 2.13 | 8.77 | 0.243 | | 0.23 | 0.32 | 4.6 | | 0.15 |
| B-A | 3.47 | 7.54 | 0.460 | | 0.52 | 0.83 | 11.8 | | 0.24 |
| C-A | 7.29 | | | | | | | | |
| C-B | 2.20 | 10.13 | 0.217 | | 0.21 | 0.27 | 4.0 | | 0.13 |
| A-B | 2.20 | | | | | | | | |
| A-C | 4.75 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 2.13 | 8.76 | 0.243 | | 0.32 | 0.32 | 4.8 | | 0.15 |
| B-A | 3.47 | 7.54 | 0.460 | | 0.83 | 0.84 | 12.5 | | 0.25 |
| C-A | 7.29 | | | | | | | | |
| C-B | 2.20 | 10.13 | 0.217 | | 0.27 | 0.28 | 4.1 | | 0.13 |
| A-B | 2.20 | | | | | | | | |
| A-C | 4.75 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 1.74 | 9.29 | 0.187 | | 0.32 | 0.23 | 3.6 | | 0.13 |
| B-A | 2.83 | 8.19 | 0.346 | | 0.84 | 0.54 | 8.4 | | 0.19 |
| C-A | 5.95 | | | | | | | | |
| C-B | 1.80 | 10.45 | 0.172 | | 0.28 | 0.21 | 3.2 | | 0.12 |
| A-B | 1.80 | | | | | | | | |
| A-C | 3.88 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-C | 1.46 | 9.66 | 0.151 | | 0.23 | 0.18 | 2.8 | | 0.12 |
| B-A | 2.37 | 8.66 | 0.274 | | 0.54 | 0.38 | 5.9 | | 0.16 |
| C-A | 4.98 | | | | | | | | |
| C-B | 1.51 | 10.69 | 0.141 | | 0.21 | 0.17 | 2.5 | | 0.11 |
| A-B | 1.51 | | | | | | | | |
| A-C | 3.25 | | | | | | | | |

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB_2024-2039AM&I

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.2 |
| 17.30 | 0.3 |
| 17.45 | 0.3 |
| 18.00 | 0.2 |
| 18.15 | 0.2 |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.5 | * |
| 17.30 | 0.8 | * |
| 17.45 | 0.8 | * |
| 18.00 | 0.5 | * |
| 18.15 | 0.4 | |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.2 |
| 17.30 | 0.3 |
| 17.45 | 0.3 |
| 18.00 | 0.2 |
| 18.15 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 159.7 | 106.4 | 21.6 | 0.14 | 21.6 | 0.14 |
| B-A | 260.1 | 173.4 | 51.5 | 0.20 | 51.5 | 0.20 |
| C-A | 546.4 | 364.3 | | | | |
| C-B | 165.2 | 110.1 | 19.3 | 0.12 | 19.3 | 0.12 |
| A-B | 165.2 | 110.1 | | | | |
| A-C | 356.5 | 237.7 | | | | |
| ALL | 1653.1 | 1102.1 | 92.3 | 0.06 | 92.4 | 0.06 |

* 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

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

[Printed at 09:54:20 on 04/02/2019]

TRL LIMITED



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:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 10:00:11 on Monday, 4 February 2019

RUN INFORMATION
**********

RUN TITLE: Junction 10
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between M
ryborough Hill and the proposed Carrs Hill Link Road.

.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 Maryborough Hill (N)
ARM B IS Carrs Hill Link Road
ARM C IS Maryborough Hill (S)

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.

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB_2024-2039AM&I

GEOMETRIC DATA
---

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 8.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 3.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 3.50 M. |
| - VISIBILITY | (VC-B) | 100.0 M. |
| - BLOCKS TRAFFIC | | NO |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 100.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 100.0 M. |
| - LANE 1 WIDTH | (WB-C) | - |
| - LANE 2 WIDTH | (WB-A) | - |
| - WIDTH AT 0 M FROM JUNC. | | 10.00 M. |
| - WIDTH AT 5 M FROM JUNC. | | 8.00 M. |
| - WIDTH AT 10 M FROM JUNC. | | 6.00 M. |
| - WIDTH AT 15 M FROM JUNC. | | 6.00 M. |
| - WIDTH AT 20 M FROM JUNC. | | 6.00 M. |
| - LENGTH OF FLARED SECTION | | 5 VEHS |

.SLOPES AND INTERCEPT
---

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 631.87 | 0.22 | 0.09 |

| 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 |
|---|---|---|---|---|
| 550.39 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.27 | 0.26 | 0.26 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA
---

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 13.41 | 20.12 | 13.41 |
| ARM B | 15.00 | 45.00 | 75.00 | 1.30 | 1.95 | 1.30 |
| ARM C | 15.00 | 45.00 | 75.00 | 8.59 | 12.88 | 8.59 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.511 | 0.489 |
| | | 0.0 | 548.0 | 525.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.769 | 0.000 | 0.231 |
| | | 80.0 | 0.0 | 24.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.492 | 0.508 | 0.000 |
| | | 338.0 | 349.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-C | 0.30 | 8.31 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| B-A | 1.00 | 6.63 | 0.151 | | 0.00 | 0.18 | 2.5 | | 0.18 |
| C-A | 4.24 | | | | | | | | |
| C-B | 4.38 | 8.47 | 0.517 | | 0.00 | 1.04 | 14.3 | | 0.24 |
| A-B | 6.88 | | | | | | | | |
| A-C | 6.59 | | | | | | | | |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-C | 0.36 | 7.78 | 0.046 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| B-A | 1.20 | 5.61 | 0.214 | | 0.18 | 0.27 | 3.8 | | 0.23 |
| C-A | 5.06 | | | | | | | | |
| C-B | 5.23 | 7.80 | 0.670 | | 1.04 | 1.90 | 25.9 | | 0.37 |
| A-B | 8.21 | | | | | | | | |
| A-C | 7.87 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-C | 0.44 | 6.97 | 0.063 | | 0.05 | 0.07 | 1.0 | | 0.15 |
| B-A | 1.47 | 4.22 | 0.348 | | 0.27 | 0.52 | 7.2 | | 0.36 |
| C-A | 6.20 | | | | | | | | |
| C-B | 6.40 | 6.88 | 0.931 | | 1.90 | 6.70 | 75.1 | | 1.00 |
| A-B | 10.06 | | | | | | | | |
| A-C | 9.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-C | 0.44 | 6.94 | 0.063 | | 0.07 | 0.07 | 1.0 | | 0.15 |
| B-A | 1.47 | 4.09 | 0.359 | | 0.52 | 0.55 | 8.0 | | 0.38 |
| C-A | 6.20 | | | | | | | | |
| C-B | 6.40 | 6.88 | 0.931 | | 6.70 | 8.28 | 113.6 | | 1.38 |
| A-B | 10.06 | | | | | | | | |
| A-C | 9.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-C | 0.36 | 7.75 | 0.046 | | 0.07 | 0.05 | 0.8 | | 0.14 |
| B-A | 1.20 | 5.42 | 0.221 | | 0.55 | 0.29 | 4.6 | | 0.24 |
| C-A | 5.06 | | | | | | | | |
| C-B | 5.23 | 7.80 | 0.670 | | 8.28 | 2.20 | 45.8 | | 0.53 |
| A-B | 8.21 | | | | | | | | |
| A-C | 7.87 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-C | 0.30 | 8.31 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.12 |
| B-A | 1.00 | 6.57 | 0.153 | | 0.29 | 0.18 | 2.8 | | 0.18 |
| C-A | 4.24 | | | | | | | | |
| C-B | 4.38 | 8.47 | 0.517 | | 2.20 | 1.11 | 17.8 | | 0.25 |
| A-B | 6.88 | | | | | | | | |
| A-C | 6.59 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.0 | |
| 08.15 | 0.0 | |
| 08.30 | 0.1 | |
| 08.45 | 0.1 | |
| 09.00 | 0.0 | |
| 09.15 | 0.0 | |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.2 | |
| 08.15 | 0.3 | |
| 08.30 | 0.5 | * |
| 08.45 | 0.5 | * |
| 09.00 | 0.3 | |
| 09.15 | 0.2 | |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 1.0 | * |
| 08.15 | 1.9 | ** |
| 08.30 | 6.7 | ******* |
| 08.45 | 8.3 | ******** |
| 09.00 | 2.2 | ** |
| 09.15 | 1.1 | * |

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB_2024-2039AM&I

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 33.0 | 22.0 | 4.6 | 0.14 | 4.6 | 0.14 |
| B-A | 110.1 | 73.4 | 29.1 | 0.26 | 29.1 | 0.26 |
| C-A | 465.2 | 310.2 | | | | |
| C-B | 480.4 | 320.2 | 292.7 | 0.61 | 292.7 | 0.61 |
| A-B | 754.3 | 502.9 | | | | |
| A-C | 722.6 | 481.7 | | | | |
| ALL | 2565.7 | 1710.4 | 326.3 | 0.13 | 326.4 | 0.13 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 631.87 | 0.22 | 0.09 |

| 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 |
|---|---|---|---|---|
| 550.39 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.27 | 0.26 | 0.26 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioB_2039PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.79 | 8.68 | 5.79 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.19 | 6.28 | 4.19 |
| ARM C | 15.00 | 45.00 | 75.00 | 7.13 | 10.69 | 7.13 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.326 | 0.674 |
| | | 0.0 | 151.0 | 312.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.618 | 0.000 | 0.382 |
| | | 207.0 | 0.0 | 128.0 |
| | | ( 1.0) | ( 0.0) | ( 1.0) |
| | ARM C | 0.735 | 0.265 | 0.000 |
| | | 419.0 | 151.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 1.61 | 9.38 | 0.171 | | 0.00 | 0.20 | 3.0 | | 0.13 |
| B-A | 2.60 | 8.25 | 0.315 | | 0.00 | 0.45 | 6.4 | | 0.18 |
| C-A | 5.26 | | | | | | | | |
| C-B | 1.89 | 10.42 | 0.182 | | 0.00 | 0.22 | 3.2 | | 0.12 |
| A-B | 1.89 | | | | | | | | |
| A-C | 3.91 | | | | | | | | |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 1.92 | 8.95 | 0.214 | | 0.20 | 0.27 | 3.9 | | 0.14 |
| B-A | 3.10 | 7.70 | 0.403 | | 0.45 | 0.66 | 9.5 | | 0.22 |
| C-A | 6.28 | | | | | | | | |
| C-B | 2.26 | 10.13 | 0.223 | | 0.22 | 0.28 | 4.2 | | 0.13 |
| A-B | 2.26 | | | | | | | | |
| A-C | 4.67 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 2.35 | 8.26 | 0.284 | | 0.27 | 0.39 | 5.7 | | 0.17 |
| B-A | 3.80 | 6.94 | 0.548 | | 0.66 | 1.16 | 16.2 | | 0.31 |
| C-A | 7.69 | | | | | | | | |
| C-B | 2.77 | 9.73 | 0.285 | | 0.28 | 0.39 | 5.7 | | 0.14 |
| A-B | 2.77 | | | | | | | | |
| A-C | 5.73 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 2.35 | 8.24 | 0.285 | | 0.39 | 0.40 | 5.9 | | 0.17 |
| B-A | 3.80 | 6.93 | 0.548 | | 1.16 | 1.18 | 17.6 | | 0.32 |
| C-A | 7.69 | | | | | | | | |
| C-B | 2.77 | 9.73 | 0.285 | | 0.39 | 0.40 | 5.9 | | 0.14 |
| A-B | 2.77 | | | | | | | | |
| A-C | 5.73 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 1.92 | 8.93 | 0.215 | | 0.40 | 0.28 | 4.3 | | 0.14 |
| B-A | 3.10 | 7.69 | 0.403 | | 1.18 | 0.69 | 11.0 | | 0.22 |
| C-A | 6.28 | | | | | | | | |
| C-B | 2.26 | 10.13 | 0.223 | | 0.40 | 0.29 | 4.5 | | 0.13 |
| A-B | 2.26 | | | | | | | | |
| A-C | 4.67 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-C | 1.61 | 9.37 | 0.171 | | 0.28 | 0.21 | 3.2 | | 0.13 |
| B-A | 2.60 | 8.24 | 0.315 | | 0.69 | 0.47 | 7.3 | | 0.18 |
| C-A | 5.26 | | | | | | | | |
| C-B | 1.89 | 10.42 | 0.182 | | 0.29 | 0.22 | 3.4 | | 0.12 |
| A-B | 1.89 | | | | | | | | |
| A-C | 3.91 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.2 | |
| 17.15 | 0.3 | |
| 17.30 | 0.4 | |
| 17.45 | 0.4 | |
| 18.00 | 0.3 | |
| 18.15 | 0.2 | |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | |
| 17.15 | 0.7 | * |
| 17.30 | 1.2 | * |
| 17.45 | 1.2 | * |
| 18.00 | 0.7 | * |
| 18.15 | 0.5 | |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.4 |
| 17.45 | 0.4 |
| 18.00 | 0.3 |
| 18.15 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 176.2 | 117.5 | 26.0 | 0.15 | 26.0 | 0.15 |
| B-A | 284.9 | 189.9 | 68.0 | 0.24 | 68.0 | 0.24 |
| C-A | 576.7 | 384.5 | | | | |
| C-B | 207.8 | 138.6 | 26.9 | 0.13 | 26.9 | 0.13 |
| A-B | 207.8 | 138.6 | | | | |
| A-C | 429.4 | 286.3 | | | | |
| ALL | 1883.0 | 1255.3 | 120.9 | 0.06 | 120.9 | 0.06 |

* 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

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

[Printed at 10:00:48 on 04/02/2019]



TRL LIMITED



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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EMAIL: SoftwareBureau@trl.co.uk



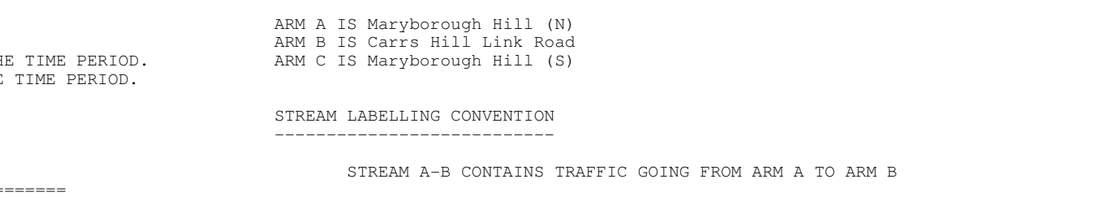
Run with file:-
"C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB&D_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 10:09:58 on Monday, 4 February 2019

RUN INFORMATION

RUN TITLE: Junction 10
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between M ryborough Hill and the proposed Carrs Hill Link Road.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS Maryborough Hill (N)
ARM B IS Carrs Hill Link Road
ARM C IS Maryborough Hill (S)

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 8.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 3.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 3.50 M. |
| - VISIBILITY | (VC-B) | 100.0 M. |
| - BLOCKS TRAFFIC | | NO |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 100.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 100.0 M. |
| - LANE 1 WIDTH | (WB-C) | - |
| - LANE 2 WIDTH | (WB-A) | - |
| - WIDTH AT 0 M FROM JUNC. | | 10.00 M. |
| - WIDTH AT 5 M FROM JUNC. | | 8.00 M. |
| - WIDTH AT 10 M FROM JUNC. | | 6.00 M. |
| - WIDTH AT 15 M FROM JUNC. | | 6.00 M. |
| - WIDTH AT 20 M FROM JUNC. | | 6.00 M. |
| - LENGTH OF FLARED SECTION | | 5 VEHS |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 631.87 | 0.22 | 0.09 |

| 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 |
|---|---|---|---|---|
| 550.39 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.27 | 0.26 | 0.26 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB&D_2024-2039AM

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2024AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 13.56 | 20.34 | 13.56 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.90 | 1.35 | 0.90 |
| ARM C | 15.00 | 45.00 | 75.00 | 7.04 | 10.56 | 7.04 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.563 | 0.437 |
| | | 0.0 | 611.0 | 474.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.764 | 0.000 | 0.236 |
| | | 55.0 | 0.0 | 17.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.423 | 0.577 | 0.000 |
| | | 238.0 | 325.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | | |
| | B-C | 0.21 | 8.52 | 0.025 | | 0.00 | 0.03 | 0.4 | | 0.12 |
| | B-A | 0.69 | 7.05 | 0.098 | | 0.00 | 0.11 | 1.5 | | 0.16 |
| | C-A | 2.99 | | | | | | | | |
| | C-B | 4.08 | 8.43 | 0.484 | | 0.00 | 0.91 | 12.7 | | 0.22 |
| | A-B | 7.67 | | | | | | | | |
| | A-C | 5.95 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-C | 0.25 | 8.05 | 0.032 | | 0.03 | 0.03 | 0.5 | | 0.13 |
| B-A | 0.82 | 6.12 | 0.135 | | 0.11 | 0.15 | 2.2 | | 0.19 |
| C-A | 3.57 | | | | | | | | |
| C-B | 4.87 | 7.75 | 0.628 | | 0.91 | 1.60 | 22.1 | | 0.34 |
| A-B | 9.15 | | | | | | | | |
| A-C | 7.10 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-C | 0.31 | 7.36 | 0.042 | | 0.03 | 0.04 | 0.6 | | 0.14 |
| B-A | 1.01 | 4.85 | 0.208 | | 0.15 | 0.26 | 3.7 | | 0.26 |
| C-A | 4.37 | | | | | | | | |
| C-B | 5.96 | 6.82 | 0.874 | | 1.60 | 4.86 | 57.8 | | 0.80 |
| A-B | 11.21 | | | | | | | | |
| A-C | 8.70 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-C | 0.31 | 7.35 | 0.042 | | 0.04 | 0.04 | 0.7 | | 0.14 |
| B-A | 1.01 | 4.76 | 0.212 | | 0.26 | 0.26 | 3.9 | | 0.27 |
| C-A | 4.37 | | | | | | | | |
| C-B | 5.96 | 6.82 | 0.874 | | 4.86 | 5.57 | 79.0 | | 1.01 |
| A-B | 11.21 | | | | | | | | |
| A-C | 8.70 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-C | 0.25 | 8.04 | 0.032 | | 0.04 | 0.03 | 0.5 | | 0.13 |
| B-A | 0.82 | 6.00 | 0.137 | | 0.26 | 0.16 | 2.5 | | 0.19 |
| C-A | 3.57 | | | | | | | | |
| C-B | 4.87 | 7.75 | 0.628 | | 5.57 | 1.79 | 32.8 | | 0.41 |
| A-B | 9.15 | | | | | | | | |
| A-C | 7.10 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-C | 0.21 | 8.52 | 0.025 | | 0.03 | 0.03 | 0.4 | | 0.12 |
| B-A | 0.69 | 7.00 | 0.099 | | 0.16 | 0.11 | 1.7 | | 0.16 |
| C-A | 2.99 | | | | | | | | |
| C-B | 4.08 | 8.43 | 0.484 | | 1.79 | 0.96 | 15.4 | | 0.24 |
| A-B | 7.67 | | | | | | | | |
| A-C | 5.95 | | | | | | | | |

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB&D_2024-2039AM

QUEUE FOR STREAM B-C

| 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 |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.1 |
| 08.15 | 0.2 |
| 08.30 | 0.3 |
| 08.45 | 0.3 |
| 09.00 | 0.2 |
| 09.15 | 0.1 |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.9 | * |
| 08.15 | 1.6 | ** |
| 08.30 | 4.9 | ***** |
| 08.45 | 5.6 | ****** |
| 09.00 | 1.8 | ** |
| 09.15 | 1.0 | * |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 23.4 | 15.6 | 3.1 | 0.13 | 3.1 | 0.13 |
| B-A | 75.7 | 50.5 | 15.6 | 0.21 | 15.6 | 0.21 |
| C-A | 327.6 | 218.4 | | | | |
| C-B | 447.3 | 298.2 | 219.7 | 0.49 | 219.8 | 0.49 |
| A-B | 841.0 | 560.7 | | | | |
| A-C | 652.4 | 435.0 | | | | |
| ALL | 2367.5 | 1578.3 | 238.4 | 0.10 | 238.5 | 0.10 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 631.87 | 0.22 | 0.09 |

| 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 |
|---|---|---|---|---|
| 550.39 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.27 | 0.26 | 0.26 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB&D_2024-2039AM

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2024PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.75 | 7.13 | 4.75 |
| ARM B | 15.00 | 45.00 | 75.00 | 3.84 | 5.76 | 3.84 |
| ARM C | 15.00 | 45.00 | 75.00 | 6.47 | 9.71 | 6.47 |

| TIME | FROM/TO | TURNING PROPORTIONS / TURNING COUNTS (VEH/HR) (PERCENTAGE OF H.V.S) ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.318 | 0.682 |
| | | 0.0 | 121.0 | 259.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.619 | 0.000 | 0.381 |
| | | 190.0 | 0.0 | 117.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.766 | 0.234 | 0.000 |
| | | 397.0 | 121.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 1.47 | 9.77 | 0.150 | | 0.00 | 0.18 | 2.5 | | 0.12 |
| B-A | 2.38 | 8.74 | 0.273 | | 0.00 | 0.37 | 5.3 | | 0.16 |
| C-A | 4.98 | | | | | | | | |
| C-B | 1.52 | 10.69 | 0.142 | | 0.00 | 0.16 | 2.4 | | 0.11 |
| A-B | 1.52 | | | | | | | | |
| A-C | 3.25 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 1.75 | 9.40 | 0.186 | | 0.18 | 0.23 | 3.3 | | 0.13 |
| B-A | 2.85 | 8.26 | 0.344 | | 0.37 | 0.52 | 7.5 | | 0.18 |
| C-A | 5.95 | | | | | | | | |
| C-B | 1.81 | 10.45 | 0.173 | | 0.16 | 0.21 | 3.1 | | 0.12 |
| A-B | 1.81 | | | | | | | | |
| A-C | 3.88 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 2.15 | 8.86 | 0.242 | | 0.23 | 0.32 | 4.6 | | 0.15 |
| B-A | 3.49 | 7.61 | 0.458 | | 0.52 | 0.82 | 11.7 | | 0.24 |
| C-A | 7.29 | | | | | | | | |
| C-B | 2.22 | 10.12 | 0.219 | | 0.21 | 0.28 | 4.1 | | 0.13 |
| A-B | 2.22 | | | | | | | | |
| A-C | 4.75 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 2.15 | 8.86 | 0.242 | | 0.32 | 0.32 | 4.8 | | 0.15 |
| B-A | 3.49 | 7.61 | 0.458 | | 0.82 | 0.83 | 12.4 | | 0.24 |
| C-A | 7.29 | | | | | | | | |
| C-B | 2.22 | 10.12 | 0.219 | | 0.28 | 0.28 | 4.2 | | 0.13 |
| A-B | 2.22 | | | | | | | | |
| A-C | 4.75 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 1.75 | 9.39 | 0.187 | | 0.32 | 0.23 | 3.6 | | 0.13 |
| B-A | 2.85 | 8.26 | 0.345 | | 0.83 | 0.54 | 8.4 | | 0.19 |
| C-A | 5.95 | | | | | | | | |
| C-B | 1.81 | 10.45 | 0.173 | | 0.28 | 0.21 | 3.3 | | 0.12 |
| A-B | 1.81 | | | | | | | | |
| A-C | 3.88 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-C | 1.47 | 9.76 | 0.150 | | 0.23 | 0.18 | 2.7 | | 0.12 |
| B-A | 2.38 | 8.74 | 0.273 | | 0.54 | 0.38 | 5.9 | | 0.16 |
| C-A | 4.98 | | | | | | | | |
| C-B | 1.52 | 10.69 | 0.142 | | 0.21 | 0.17 | 2.6 | | 0.11 |
| A-B | 1.52 | | | | | | | | |
| A-C | 3.25 | | | | | | | | |

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB&D_2024-2039AM

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.2 | |
| 17.15 | 0.2 | |
| 17.30 | 0.3 | |
| 17.45 | 0.3 | |
| 18.00 | 0.2 | |
| 18.15 | 0.2 | |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.4 | |
| 17.15 | 0.5 | * |
| 17.30 | 0.8 | * |
| 17.45 | 0.8 | * |
| 18.00 | 0.5 | * |
| 18.15 | 0.4 | |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.2 |
| 17.30 | 0.3 |
| 17.45 | 0.3 |
| 18.00 | 0.2 |
| 18.15 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 161.0 | 107.4 | 21.5 | 0.13 | 21.5 | 0.13 |
| B-A | 261.5 | 174.3 | 51.2 | 0.20 | 51.2 | 0.20 |
| C-A | 546.4 | 364.3 | | | | |
| C-B | 166.5 | 111.0 | 19.5 | 0.12 | 19.5 | 0.12 |
| A-B | 166.5 | 111.0 | | | | |
| A-C | 356.5 | 237.7 | | | | |
| ALL | 1658.6 | 1105.7 | 92.2 | 0.06 | 92.2 | 0.06 |

* 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

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

[Printed at 10:10:19 on 04/02/2019]

TRL LIMITED



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:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB&D_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 10:09:15 on Monday, 4 February 2019

RUN INFORMATION
**********

RUN TITLE: Junction 10
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between M
ryborough Hill and the proposed Carrs Hill Link Road.

.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 Maryborough Hill (N)
ARM B IS Carrs Hill Link Road
ARM C IS Maryborough Hill (S)

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.

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB&D_2024-2039AM

GEOMETRIC DATA
---

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 8.00 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 3.00 M. |
| | | |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 3.50 M. |
| - VISIBILITY | (VC-B) | 100.0 M. |
| - BLOCKS TRAFFIC | | NO |
| | | |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 100.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 100.0 M. |
| - LANE 1 WIDTH | (WB-C) | - |
| - LANE 2 WIDTH | (WB-A) | - |
| - WIDTH AT 0 M FROM JUNC. | | 10.00 M. |
| - WIDTH AT 5 M FROM JUNC. | | 8.00 M. |
| - WIDTH AT 10 M FROM JUNC. | | 6.00 M. |
| - WIDTH AT 15 M FROM JUNC. | | 6.00 M. |
| - WIDTH AT 20 M FROM JUNC. | | 6.00 M. |
| - LENGTH OF FLARED SECTION | | 5 VEHS |

.SLOPES AND INTERCEPT
---

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 631.87 | 0.22 | 0.09 |

| 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 |
|---|---|---|---|---|
| 550.39 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.27 | 0.26 | 0.26 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA
---

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 13.41 | 20.12 | 13.41 |
| ARM B | 15.00 | 45.00 | 75.00 | 1.31 | 1.97 | 1.31 |
| ARM C | 15.00 | 45.00 | 75.00 | 8.59 | 12.88 | 8.59 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | | | |
| | ARM A | 0.000 | 0.511 | 0.489 |
| | | 0.0 | 548.0 | 525.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.771 | 0.000 | 0.229 |
| | | 81.0 | 0.0 | 24.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.492 | 0.508 | 0.000 |
| | | 338.0 | 349.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-C | 0.30 | 8.30 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.12 |
| B-A | 1.02 | 6.63 | 0.153 | | 0.00 | 0.18 | 2.6 | | 0.18 |
| C-A | 4.24 | | | | | | | | |
| C-B | 4.38 | 8.47 | 0.517 | | 0.00 | 1.04 | 14.3 | | 0.24 |
| A-B | 6.88 | | | | | | | | |
| A-C | 6.59 | | | | | | | | |



| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-C | 0.36 | 7.77 | 0.046 | | 0.04 | 0.05 | 0.7 | | 0.13 |
| B-A | 1.21 | 5.61 | 0.216 | | 0.18 | 0.27 | 3.9 | | 0.23 |
| C-A | 5.06 | | | | | | | | |
| C-B | 5.23 | 7.80 | 0.670 | | 1.04 | 1.90 | 25.9 | | 0.37 |
| A-B | 8.21 | | | | | | | | |
| A-C | 7.87 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-C | 0.44 | 6.95 | 0.063 | | 0.05 | 0.07 | 1.0 | | 0.15 |
| B-A | 1.49 | 4.22 | 0.352 | | 0.27 | 0.52 | 7.4 | | 0.36 |
| C-A | 6.20 | | | | | | | | |
| C-B | 6.40 | 6.88 | 0.931 | | 1.90 | 6.70 | 75.1 | | 1.00 |
| A-B | 10.06 | | | | | | | | |
| A-C | 9.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-C | 0.44 | 6.92 | 0.064 | | 0.07 | 0.07 | 1.0 | | 0.15 |
| B-A | 1.49 | 4.09 | 0.363 | | 0.52 | 0.56 | 8.2 | | 0.38 |
| C-A | 6.20 | | | | | | | | |
| C-B | 6.40 | 6.88 | 0.931 | | 6.70 | 8.28 | 113.6 | | 1.38 |
| A-B | 10.06 | | | | | | | | |
| A-C | 9.63 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-C | 0.36 | 7.74 | 0.046 | | 0.07 | 0.05 | 0.8 | | 0.14 |
| B-A | 1.21 | 5.42 | 0.224 | | 0.56 | 0.29 | 4.7 | | 0.24 |
| C-A | 5.06 | | | | | | | | |
| C-B | 5.23 | 7.80 | 0.670 | | 8.28 | 2.20 | 45.8 | | 0.53 |
| A-B | 8.21 | | | | | | | | |
| A-C | 7.87 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-C | 0.30 | 8.29 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.13 |
| B-A | 1.02 | 6.58 | 0.155 | | 0.29 | 0.19 | 2.9 | | 0.18 |
| C-A | 4.24 | | | | | | | | |
| C-B | 4.38 | 8.47 | 0.517 | | 2.20 | 1.11 | 17.8 | | 0.25 |
| A-B | 6.88 | | | | | | | | |
| A-C | 6.59 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.0 | |
| 08.15 | 0.0 | |
| 08.30 | 0.1 | |
| 08.45 | 0.1 | |
| 09.00 | 0.0 | |
| 09.15 | 0.0 | |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 0.2 | |
| 08.15 | 0.3 | |
| 08.30 | 0.5 | * |
| 08.45 | 0.6 | * |
| 09.00 | 0.3 | |
| 09.15 | 0.2 | |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 08.00 | 1.0 | * |
| 08.15 | 1.9 | ** |
| 08.30 | 6.7 | ******* |
| 08.45 | 8.3 | ******** |
| 09.00 | 2.2 | ** |
| 09.15 | 1.1 | * |

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB&D_2024-2039AM

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 33.0 | 22.0 | 4.6 | 0.14 | 4.6 | 0.14 |
| B-A | 111.5 | 74.3 | 29.5 | 0.26 | 29.5 | 0.26 |
| C-A | 465.2 | 310.2 | | | | |
| C-B | 480.4 | 320.2 | 292.7 | 0.61 | 292.7 | 0.61 |
| A-B | 754.3 | 502.9 | | | | |
| A-C | 722.6 | 481.7 | | | | |
| ALL | 2567.0 | 1711.4 | 326.8 | 0.13 | 326.8 | 0.13 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 631.87 | 0.22 | 0.09 |

| 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 |
|---|---|---|---|---|
| 550.39 | 0.22 | 0.09 | 0.14 | 0.31 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 721.27 | 0.26 | 0.26 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA

| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2039PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.80 | 8.70 | 5.80 |
| ARM B | 15.00 | 45.00 | 75.00 | 4.21 | 6.32 | 4.21 |
| ARM C | 15.00 | 45.00 | 75.00 | 7.14 | 10.71 | 7.14 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.328 | 0.672 |
| | | 0.0 | 152.0 | 312.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.617 | 0.000 | 0.383 |
| | | 208.0 | 0.0 | 129.0 |
| | | ( 1.0) | ( 0.0) | ( 1.0) |
| | ARM C | 0.734 | 0.266 | 0.000 |
| | | 419.0 | 152.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-C | 1.62 | 9.38 | 0.173 | | 0.00 | 0.21 | 3.0 | | 0.13 |
| B-A | 2.61 | 8.24 | 0.317 | | 0.00 | 0.46 | 6.5 | | 0.18 |
| C-A | 5.26 | | | | | | | | |
| C-B | 1.91 | 10.42 | 0.183 | | 0.00 | 0.22 | 3.2 | | 0.12 |
| A-B | 1.91 | | | | | | | | |
| A-C | 3.91 | | | | | | | | |

TRL TRL VIEWER 3.1 AD C:\Castletreasure\Junction10_MaryboroughHill-CarrsHillLinkRd\ScenarioB&D_2024-2039AM

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-C | 1.93 | 8.94 | 0.216 | | 0.21 | 0.27 | 4.0 | | 0.14 |
| B-A | 3.12 | 7.69 | 0.405 | | 0.46 | 0.67 | 9.6 | | 0.22 |
| C-A | 6.28 | | | | | | | | |
| C-B | 2.28 | 10.13 | 0.225 | | 0.22 | 0.29 | 4.2 | | 0.13 |
| A-B | 2.28 | | | | | | | | |
| A-C | 4.67 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-C | 2.37 | 8.25 | 0.287 | | 0.27 | 0.40 | 5.7 | | 0.17 |
| B-A | 3.82 | 6.93 | 0.551 | | 0.67 | 1.18 | 16.4 | | 0.31 |
| C-A | 7.69 | | | | | | | | |
| C-B | 2.79 | 9.73 | 0.287 | | 0.29 | 0.40 | 5.8 | | 0.14 |
| A-B | 2.79 | | | | | | | | |
| A-C | 5.73 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-C | 2.37 | 8.23 | 0.288 | | 0.40 | 0.40 | 6.0 | | 0.17 |
| B-A | 3.82 | 6.92 | 0.551 | | 1.18 | 1.20 | 17.9 | | 0.32 |
| C-A | 7.69 | | | | | | | | |
| C-B | 2.79 | 9.73 | 0.287 | | 0.40 | 0.40 | 6.0 | | 0.14 |
| A-B | 2.79 | | | | | | | | |
| A-C | 5.73 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-C | 1.93 | 8.92 | 0.217 | | 0.40 | 0.28 | 4.3 | | 0.14 |
| B-A | 3.12 | 7.68 | 0.406 | | 1.20 | 0.70 | 11.1 | | 0.22 |
| C-A | 6.28 | | | | | | | | |
| C-B | 2.28 | 10.13 | 0.225 | | 0.40 | 0.29 | 4.5 | | 0.13 |
| A-B | 2.28 | | | | | | | | |
| A-C | 4.67 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-C | 1.62 | 9.37 | 0.173 | | 0.28 | 0.21 | 3.2 | | 0.13 |
| B-A | 2.61 | 8.23 | 0.317 | | 0.70 | 0.47 | 7.4 | | 0.18 |
| C-A | 5.26 | | | | | | | | |
| C-B | 1.91 | 10.42 | 0.183 | | 0.29 | 0.23 | 3.5 | | 0.12 |
| A-B | 1.91 | | | | | | | | |
| A-C | 3.91 | | | | | | | | |

QUEUE FOR STREAM B-C

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.2 | |
| 17.15 | 0.3 | |
| 17.30 | 0.4 | |
| 17.45 | 0.4 | |
| 18.00 | 0.3 | |
| 18.15 | 0.2 | |

QUEUE FOR STREAM B-A

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE | |
|---|---|---|
| 17.00 | 0.5 | |
| 17.15 | 0.7 | * |
| 17.30 | 1.2 | * |
| 17.45 | 1.2 | * |
| 18.00 | 0.7 | * |
| 18.15 | 0.5 | |

QUEUE FOR STREAM C-B

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.2 |
| 17.15 | 0.3 |
| 17.30 | 0.4 |
| 17.45 | 0.4 |
| 18.00 | 0.3 |
| 18.15 | 0.2 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-C | 177.6 | 118.4 | 26.3 | 0.15 | 26.3 | 0.15 |
| B-A | 286.3 | 190.9 | 68.7 | 0.24 | 68.8 | 0.24 |
| C-A | 576.7 | 384.5 | | | | |
| C-B | 209.2 | 139.5 | 27.2 | 0.13 | 27.2 | 0.13 |
| A-B | 209.2 | 139.5 | | | | |
| A-C | 429.4 | 286.3 | | | | |
| ALL | 1888.5 | 1259.0 | 122.2 | 0.06 | 122.2 | 0.06 |

* 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

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

[Printed at 10:09:36 on 04/02/2019]





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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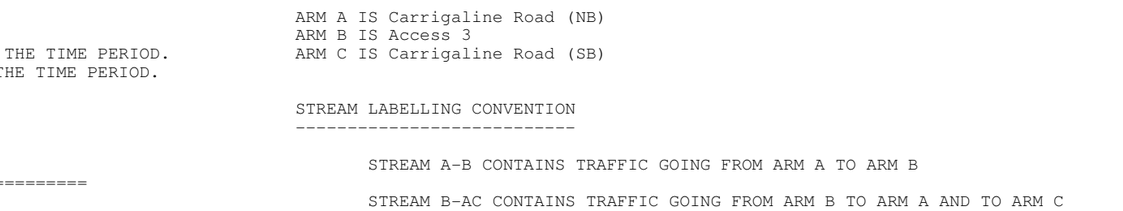
Run with file:-
"C:\Castletreasure\Junction11_Access3-R609\ScenarioB&D_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 16:44:48 on Tuesday, 12 February 2019

RUN INFORMATION
**********

RUN TITLE: Junction 11
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between C rrigaline Roadl and the proposed residential access 3.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY
**********

INPUT DATA
----------




ARM A IS Carrigaline Road (NB)
ARM B IS Access 3
ARM C IS Carrigaline Road (SB)

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 6.50 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 90.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 100.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 90.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.00 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 680.59 | 0.26 | 0.10 |

| 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 |
|---|---|---|---|---|
| 555.61 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 626.08 | 0.24 | 0.24 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 5.41 | 8.12 | 5.41 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.51 | 0.77 | 0.51 |
| ARM C | 15.00 | 45.00 | 75.00 | 2.35 | 3.52 | 2.35 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 07.45 - 09.15 | | TURNING PROPORTIONS | | |
| | | TURNING COUNTS (VEH/HR) | | |
| | | (PERCENTAGE OF H.V.S) | | |
| | ARM A | 0.000 | 0.005 | 0.995 |
| | | 0.0 | 2.0 | 431.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.195 | 0.000 | 0.805 |
| | | 8.0 | 0.0 | 33.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.947 | 0.053 | 0.000 |
| | | 178.0 | 10.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.51 | 9.34 | 0.055 | | 0.00 | 0.06 | 0.8 | | 0.11 |
| C-AB | 0.13 | 9.04 | 0.014 | | 0.00 | 0.01 | 0.2 | | 0.11 |
| A-B | 0.03 | | | | | | | | |
| A-C | 5.41 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.61 | 9.04 | 0.068 | | 0.06 | 0.07 | 1.1 | | 0.12 |
| C-AB | 0.15 | 8.79 | 0.017 | | 0.01 | 0.02 | 0.3 | | 0.12 |
| A-B | 0.03 | | | | | | | | |
| A-C | 6.46 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.75 | 8.62 | 0.087 | | 0.07 | 0.09 | 1.4 | | 0.13 |
| C-AB | 0.18 | 8.45 | 0.022 | | 0.02 | 0.02 | 0.3 | | 0.12 |
| A-B | 0.04 | | | | | | | | |
| A-C | 7.91 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.75 | 8.62 | 0.087 | | 0.09 | 0.10 | 1.4 | | 0.13 |
| C-AB | 0.18 | 8.45 | 0.022 | | 0.02 | 0.02 | 0.3 | | 0.12 |
| A-B | 0.04 | | | | | | | | |
| A-C | 7.91 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.61 | 9.04 | 0.068 | | 0.10 | 0.07 | 1.1 | | 0.12 |
| C-AB | 0.15 | 8.79 | 0.017 | | 0.02 | 0.02 | 0.3 | | 0.12 |
| A-B | 0.03 | | | | | | | | |
| A-C | 6.46 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.51 | 9.34 | 0.055 | | 0.07 | 0.06 | 0.9 | | 0.11 |
| C-AB | 0.13 | 9.04 | 0.014 | | 0.02 | 0.01 | 0.2 | | 0.11 |
| A-B | 0.03 | | | | | | | | |
| A-C | 5.41 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 08.00 | 0.1 |
| 08.15 | 0.1 |
| 08.30 | 0.1 |
| 08.45 | 0.1 |
| 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

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 56.4 | 37.6 | 6.7 | 0.12 | 6.7 | 0.12 |
| C-AB | 13.8 | 9.2 | 1.6 | 0.12 | 1.6 | 0.12 |
| A-B | 2.8 | 1.8 | | | | |
| A-C | 593.2 | 395.5 | | | | |
| ALL | 911.2 | 607.5 | 8.4 | 0.01 | 8.4 | 0.01 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 680.59 | 0.26 | 0.10 |

| 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 |
|---|---|---|---|---|
| 555.61 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 626.08 | 0.24 | 0.24 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioC_2039PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 4.49 | 6.73 | 4.49 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.29 | 0.43 | 0.29 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.45 | 5.18 | 3.45 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.019 | 0.981 |
| | | 0.0 | 7.0 | 352.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.217 | 0.000 | 0.783 |
| | | 5.0 | 0.0 | 18.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.895 | 0.105 | 0.000 |
| | | 247.0 | 29.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.29 | 9.45 | 0.031 | | 0.00 | 0.03 | 0.5 | | 0.11 |
| C-AB | 0.36 | 9.26 | 0.039 | | 0.00 | 0.04 | 0.6 | | 0.11 |
| A-B | 0.09 | | | | | | | | |
| A-C | 4.42 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.34 | 9.18 | 0.038 | | 0.03 | 0.04 | 0.6 | | 0.11 |
| C-AB | 0.43 | 9.05 | 0.048 | | 0.04 | 0.05 | 0.8 | | 0.12 |
| A-B | 0.10 | | | | | | | | |
| A-C | 5.27 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.42 | 8.81 | 0.048 | | 0.04 | 0.05 | 0.7 | | 0.12 |
| C-AB | 0.53 | 8.77 | 0.061 | | 0.05 | 0.07 | 1.0 | | 0.12 |
| A-B | 0.13 | | | | | | | | |
| A-C | 6.46 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.42 | 8.81 | 0.048 | | 0.05 | 0.05 | 0.8 | | 0.12 |
| C-AB | 0.53 | 8.77 | 0.061 | | 0.07 | 0.07 | 1.0 | | 0.12 |
| A-B | 0.13 | | | | | | | | |
| A-C | 6.46 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.34 | 9.18 | 0.038 | | 0.05 | 0.04 | 0.6 | | 0.11 |
| C-AB | 0.43 | 9.05 | 0.048 | | 0.07 | 0.05 | 0.8 | | 0.12 |
| A-B | 0.10 | | | | | | | | |
| A-C | 5.27 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.29 | 9.45 | 0.031 | | 0.04 | 0.03 | 0.5 | | 0.11 |
| C-AB | 0.36 | 9.26 | 0.039 | | 0.05 | 0.04 | 0.6 | | 0.11 |
| A-B | 0.09 | | | | | | | | |
| A-C | 4.42 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.0 |
| 17.45 | 0.1 |
| 18.00 | 0.0 |
| 18.15 | 0.0 |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.0 |
| 17.15 | 0.1 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.1 |
| 18.15 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 31.7 | 21.1 | 3.6 | 0.11 | 3.6 | 0.11 |
| C-AB | 39.9 | 26.6 | 4.8 | 0.12 | 4.8 | 0.12 |
| A-B | 9.6 | 6.4 | | | | |
| A-C | 484.5 | 323.0 | | | | |
| ALL | 905.7 | 603.8 | 8.4 | 0.01 | 8.4 | 0.01 |

* 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

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

[Printed at 16:45:24 on 12/02/2019]





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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TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770864
EMAIL: SoftwareBureau@trl.co.uk



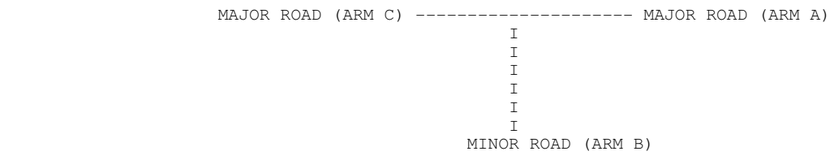
Run with file:-
"C:\Castletreasure\Junction11_Access3-R609\ScenarioB&D_2024-2039AM&PM.vpi"
(drive-on-the-left ) at 17:19:06 on Tuesday, 12 February 2019

RUN INFORMATION

RUN TITLE: Junction 11
LOCATION: Douglas
DATE: 22/06/18
CLIENT: Cairn Homes
ENUMERATOR: AON
JOB NUMBER: 18203
STATUS: TIA
DESCRIPTION: Junction capacity assessment for priority junction between C rrigaline Roadl and the proposed residential access 3.

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA




ARM A IS Carrigaline Road (NB)
ARM B IS Access 3
ARM C IS Carrigaline Road (SB)

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

| DATA ITEM | | MINOR ROAD B |
|---|---|---|
| TOTAL MAJOR ROAD CARRIAGEWAY WIDTH | ( W ) | 6.50 M. |
| CENTRAL RESERVE WIDTH | (WCR ) | 0.00 M. |
| MAJOR ROAD RIGHT TURN - WIDTH | (WC-B) | 2.20 M. |
| - VISIBILITY | (VC-B) | 90.0 M. |
| - BLOCKS TRAFFIC | | YES |
| MINOR ROAD - VISIBILITY TO LEFT | (VB-C) | 100.0 M. |
| - VISIBILITY TO RIGHT | (VB-A) | 90.0 M. |
| - LANE 1 WIDTH | (WB-C) | 3.00 M. |
| - LANE 2 WIDTH | (WB-A) | 0.00 M. |

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 680.59 | 0.26 | 0.10 |

| 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 |
|---|---|---|---|---|
| 555.61 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 626.08 | 0.24 | 0.24 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2039AM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | TOP OF PEAK IS REACHED | FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | AT TOP OF PEAK | AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 7.81 | 11.72 | 7.81 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.52 | 0.79 | 0.52 |
| ARM C | 15.00 | 45.00 | 75.00 | 9.64 | 14.46 | 9.64 |

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 | 0.008 | 0.992 |
| | | 0.0 | 5.0 | 620.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.452 | 0.000 | 0.548 |
| | | 19.0 | 0.0 | 23.0 |
| | | ( 0.0) | ( 0.0) | ( 0.0) |
| | ARM C | 0.991 | 0.009 | 0.000 |
| | | 764.0 | 7.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 07.45-08.00 | | | | | | | | | |
| B-AC | 0.53 | 7.26 | 0.073 | | 0.00 | 0.08 | 1.1 | | 0.15 |
| C-AB | 0.09 | 8.47 | 0.010 | | 0.00 | 0.01 | 0.2 | | 0.12 |
| A-B | 0.06 | | | | | | | | |
| A-C | 7.78 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.00-08.15 | | | | | | | | | |
| B-AC | 0.63 | 6.62 | 0.095 | | 0.08 | 0.10 | 1.5 | | 0.17 |
| C-AB | 0.10 | 8.11 | 0.013 | | 0.01 | 0.01 | 0.2 | | 0.12 |
| A-B | 0.07 | | | | | | | | |
| A-C | 9.29 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.15-08.30 | | | | | | | | | |
| B-AC | 0.77 | 5.69 | 0.135 | | 0.10 | 0.15 | 2.2 | | 0.20 |
| C-AB | 0.13 | 7.61 | 0.017 | | 0.01 | 0.02 | 0.3 | | 0.13 |
| A-B | 0.09 | | | | | | | | |
| A-C | 11.38 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.30-08.45 | | | | | | | | | |
| B-AC | 0.77 | 5.69 | 0.135 | | 0.15 | 0.16 | 2.3 | | 0.20 |
| C-AB | 0.13 | 7.61 | 0.017 | | 0.02 | 0.02 | 0.3 | | 0.13 |
| A-B | 0.09 | | | | | | | | |
| A-C | 11.38 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 08.45-09.00 | | | | | | | | | |
| B-AC | 0.63 | 6.62 | 0.095 | | 0.16 | 0.11 | 1.6 | | 0.17 |
| C-AB | 0.10 | 8.11 | 0.013 | | 0.02 | 0.01 | 0.2 | | 0.12 |
| A-B | 0.07 | | | | | | | | |
| A-C | 9.29 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 09.00-09.15 | | | | | | | | | |
| B-AC | 0.53 | 7.26 | 0.073 | | 0.11 | 0.08 | 1.2 | | 0.15 |
| C-AB | 0.09 | 8.47 | 0.010 | | 0.01 | 0.01 | 0.2 | | 0.12 |
| A-B | 0.06 | | | | | | | | |
| A-C | 7.78 | | | | | | | | |

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

| STREAM | TOTAL DEMAND (VEH) | TOTAL DEMAND (VEH/H) | * QUEUEING * DELAY * (MIN) | * QUEUEING * DELAY * (MIN/VEH) | * INCLUSIVE QUEUEING * DELAY * (MIN) | * INCLUSIVE QUEUEING * DELAY * (MIN/VEH) |
|---|---|---|---|---|---|---|
| B-AC | 57.8 | 38.5 | 10.1 | 0.17 | 10.1 | 0.17 |
| C-AB | 9.6 | 6.4 | 1.2 | 0.13 | 1.2 | 0.13 |
| A-B | 6.9 | 4.6 | | | | |
| A-C | 853.4 | 568.9 | | | | |
| ALL | 1979.3 | 1319.5 | 11.3 | 0.01 | 11.3 | 0.01 |

* 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

.SLOPES AND INTERCEPT

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

will be adjusted )

| Intercept For Stream B-C | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 680.59 | 0.26 | 0.10 |

| 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 |
|---|---|---|---|---|
| 555.61 | 0.25 | 0.10 | 0.16 | 0.36 |

| Intercept For Stream C-B | Slope For Opposing Stream A-C | Slope For Opposing Stream A-B |
|---|---|---|
| 626.08 | 0.24 | 0.24 |

NB These values do not allow for any site specific corrections

TRAFFIC DEMAND DATA



| ARM | FLOW SCALE(%) |
|---|---|
| A | 100 |
| B | 100 |
| C | 100 |

Demand set: ScenarioD_2039PM

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

| ARM | NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE | NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED | NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING | RATE OF FLOW (VEH/MIN) BEFORE PEAK | RATE OF FLOW (VEH/MIN) AT TOP OF PEAK | RATE OF FLOW (VEH/MIN) AFTER PEAK |
|---|---|---|---|---|---|---|
| ARM A | 15.00 | 45.00 | 75.00 | 8.71 | 13.07 | 8.71 |
| ARM B | 15.00 | 45.00 | 75.00 | 0.28 | 0.41 | 0.28 |
| ARM C | 15.00 | 45.00 | 75.00 | 3.78 | 5.66 | 3.78 |

| TIME | FROM/TO | ARM A | ARM B | ARM C |
|---|---|---|---|---|
| 16.45 - 18.15 | | | | |
| | ARM A | 0.000 | 0.023 | 0.977 |
| | | 0.0 | 16.0 | 681.0 |
| | | ( 0.0) | ( 1.0) | ( 1.0) |
| | ARM B | 0.455 | 0.000 | 0.545 |
| | | 10.0 | 0.0 | 12.0 |
| | | ( 1.0) | ( 0.0) | ( 1.0) |
| | ARM C | 0.934 | 0.066 | 0.000 |
| | | 282.0 | 20.0 | 0.0 |
| | | ( 1.0) | ( 1.0) | ( 0.0) |

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 2

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 16.45-17.00 | | | | | | | | | |
| B-AC | 0.28 | 7.58 | 0.036 | | 0.00 | 0.04 | 0.5 | | 0.14 |
| C-AB | 0.25 | 8.26 | 0.030 | | 0.00 | 0.03 | 0.5 | | 0.12 |
| A-B | 0.20 | | | | | | | | |
| A-C | 8.54 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.00-17.15 | | | | | | | | | |
| B-AC | 0.33 | 7.06 | 0.047 | | 0.04 | 0.05 | 0.7 | | 0.15 |
| C-AB | 0.30 | 7.85 | 0.038 | | 0.03 | 0.04 | 0.6 | | 0.13 |
| A-B | 0.24 | | | | | | | | |
| A-C | 10.20 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.15-17.30 | | | | | | | | | |
| B-AC | 0.40 | 6.32 | 0.064 | | 0.05 | 0.07 | 1.0 | | 0.17 |
| C-AB | 0.37 | 7.30 | 0.050 | | 0.04 | 0.05 | 0.8 | | 0.14 |
| A-B | 0.29 | | | | | | | | |
| A-C | 12.50 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.30-17.45 | | | | | | | | | |
| B-AC | 0.40 | 6.32 | 0.064 | | 0.07 | 0.07 | 1.0 | | 0.17 |
| C-AB | 0.37 | 7.30 | 0.050 | | 0.05 | 0.05 | 0.8 | | 0.14 |
| A-B | 0.29 | | | | | | | | |
| A-C | 12.50 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 17.45-18.00 | | | | | | | | | |
| B-AC | 0.33 | 7.06 | 0.047 | | 0.07 | 0.05 | 0.8 | | 0.15 |
| C-AB | 0.30 | 7.85 | 0.038 | | 0.05 | 0.04 | 0.6 | | 0.13 |
| A-B | 0.24 | | | | | | | | |
| A-C | 10.20 | | | | | | | | |

| 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) |
|---|---|---|---|---|---|---|---|---|---|
| 18.00-18.15 | | | | | | | | | |
| B-AC | 0.28 | 7.58 | 0.036 | | 0.05 | 0.04 | 0.6 | | 0.14 |
| C-AB | 0.25 | 8.26 | 0.030 | | 0.04 | 0.03 | 0.5 | | 0.12 |
| A-B | 0.20 | | | | | | | | |
| A-C | 8.54 | | | | | | | | |

QUEUE FOR STREAM B-AC

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.0 |
| 18.15 | 0.0 |

QUEUE FOR STREAM C-AB

| TIME SEGMENT ENDING | NO. OF VEHICLES IN QUEUE |
|---|---|
| 17.00 | 0.0 |
| 17.15 | 0.0 |
| 17.30 | 0.1 |
| 17.45 | 0.1 |
| 18.00 | 0.0 |
| 18.15 | 0.0 |

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

| STREAM | TOTAL DEMAND | | * QUEUEING * DELAY * | | * INCLUSIVE QUEUEING * DELAY * | |
|---|---|---|---|---|---|---|
| | (VEH) | (VEH/H) | (MIN) | (MIN/VEH) | (MIN) | (MIN/VEH) |
| B-AC | 30.3 | 20.2 | 4.6 | 0.15 | 4.6 | 0.15 |
| C-AB | 27.5 | 18.4 | 3.8 | 0.14 | 3.8 | 0.14 |
| A-B | 22.0 | 14.7 | | | | |
| A-C | 937.3 | 624.9 | | | | |
| ALL | 1405.3 | 936.9 | 8.4 | 0.01 | 8.4 | 0.01 |

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* 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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