

A	12/19	REVISED FOR FINAL SUBMISSION	PJD	MD
REV.	DATE	AMENDMENT	DRN	APPD

STATUS **FOR INFORMATION**

**Waterman Moylan**  
Engineering Consultants  
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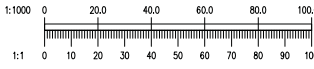
CLIENT **GERARD GANNON PROPERTIES**  
ARCHITECT **CONROY CROWE KELLY**

PROJECT **CLONGRIFFIN**

TITLE **PARKING SPACES LAYOUT**

DRAWN PJD	DESIGNED MD	APPROVED MD	DATE NOV 18'
SCALE 1:1000 @ A1	JOB NO. 18-059	DRG. NO. FIG. 4	REVISION A

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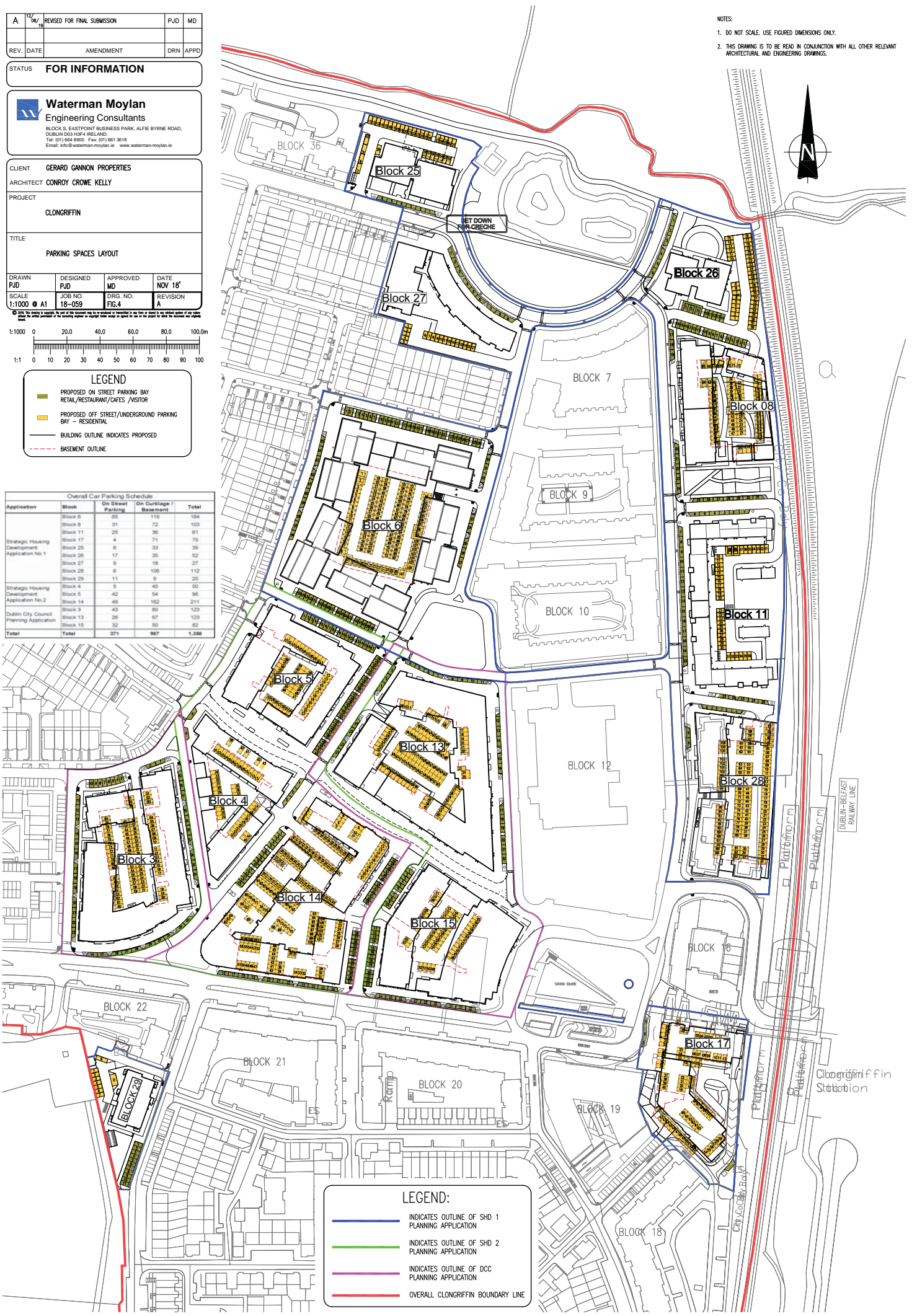
**LEGEND**

- PROPOSED ON STREET PARKING BAY RETAIL/RESTAURANT/CAFES /VISITOR
- PROPOSED OFF STREET/UNDERGROUND PARKING BAY - RESIDENTIAL
- BUILDING OUTLINE INDICATES PROPOSED
- BASEMENT OUTLINE

**Overall Car Parking Schedule**

Application	Block	On Street Parking	On Curtilage / Basement	Total
Strategic Housing Development Application No 1	Block 6	65	119	184
	Block 8	31	72	103
	Block 11	25	36	61
	Block 17	4	71	75
	Block 25	5	33	38
Strategic Housing Development Application No 2	Block 26	17	35	52
	Block 27	9	18	27
	Block 28	5	106	112
	Block 29	11	9	20
	Block 4	5	45	50
Dublin City Council Planning Application	Block 5	42	54	96
	Block 14	49	162	211
	Block 3	43	60	103
<b>Total</b>	<b>Total</b>	<b>371</b>	<b>967</b>	<b>1,338</b>

NOTES:  
1. DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.  
2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.



**LEGEND:**

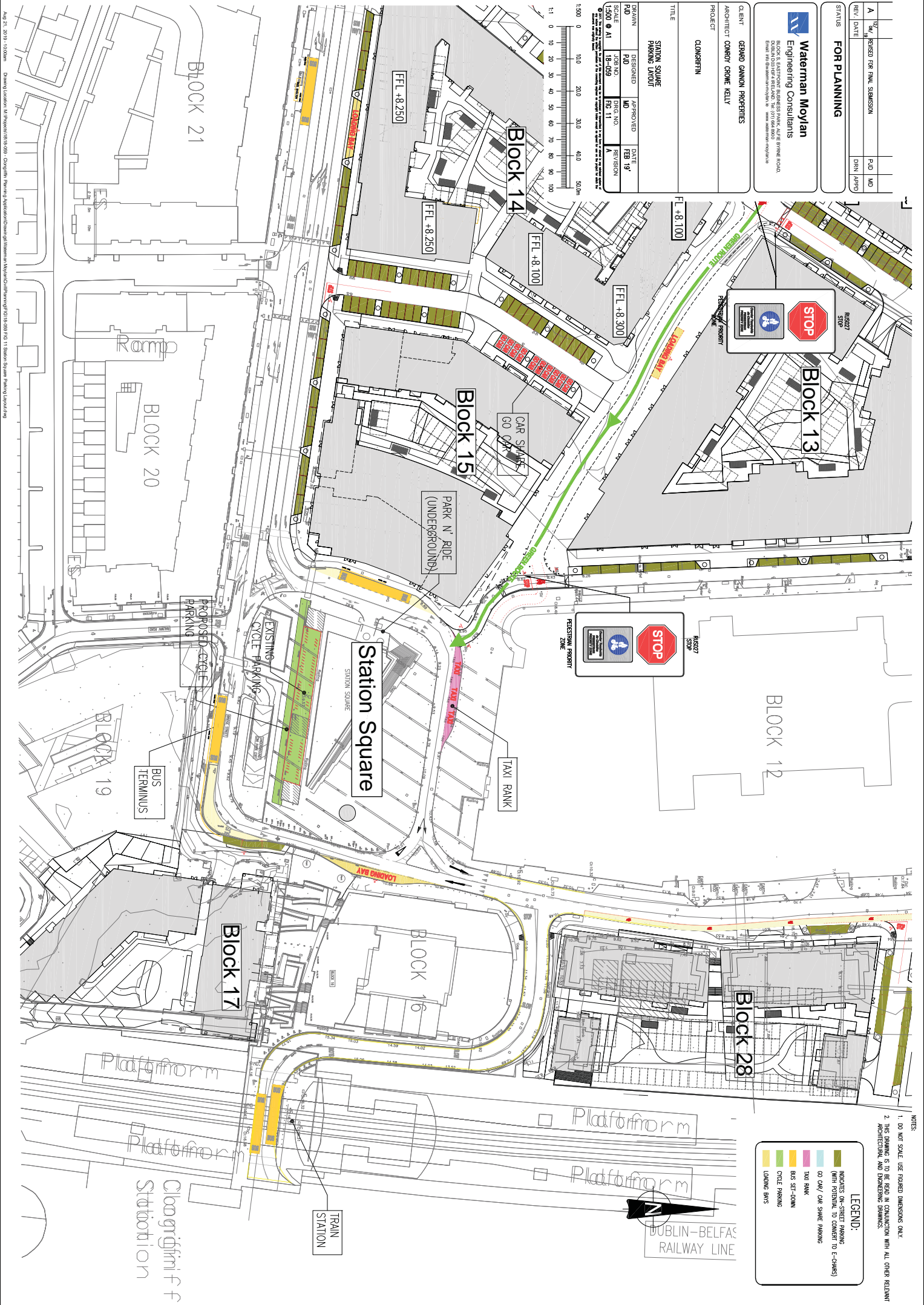
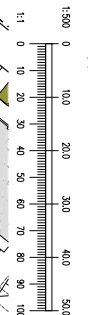
- INDICATES OUTLINE OF SHD 1 PLANNING APPLICATION
- INDICATES OUTLINE OF SHD 2 PLANNING APPLICATION
- INDICATES OUTLINE OF DCC PLANNING APPLICATION
- OVERALL CLONGRIFFIN BOUNDARY LINE

REV	DATE	FOR PLANNING	REV	DATE
A				
FOR PLANNING			FOR PLANNING	

**Waterman Moylan**  
 Engineering Consultants  
 100, 102, 104, 106, 108, 110, 112, 114, 116, 118, 120, 122, 124, 126, 128, 130, 132, 134, 136, 138, 140, 142, 144, 146, 148, 150, 152, 154, 156, 158, 160, 162, 164, 166, 168, 170, 172, 174, 176, 178, 180, 182, 184, 186, 188, 190, 192, 194, 196, 198, 200, 202, 204, 206, 208, 210, 212, 214, 216, 218, 220, 222, 224, 226, 228, 230, 232, 234, 236, 238, 240, 242, 244, 246, 248, 250, 252, 254, 256, 258, 260, 262, 264, 266, 268, 270, 272, 274, 276, 278, 280, 282, 284, 286, 288, 290, 292, 294, 296, 298, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 320, 322, 324, 326, 328, 330, 332, 334, 336, 338, 340, 342, 344, 346, 348, 350, 352, 354, 356, 358, 360, 362, 364, 366, 368, 370, 372, 374, 376, 378, 380, 382, 384, 386, 388, 390, 392, 394, 396, 398, 400, 402, 404, 406, 408, 410, 412, 414, 416, 418, 420, 422, 424, 426, 428, 430, 432, 434, 436, 438, 440, 442, 444, 446, 448, 450, 452, 454, 456, 458, 460, 462, 464, 466, 468, 470, 472, 474, 476, 478, 480, 482, 484, 486, 488, 490, 492, 494, 496, 498, 500, 502, 504, 506, 508, 510, 512, 514, 516, 518, 520, 522, 524, 526, 528, 530, 532, 534, 536, 538, 540, 542, 544, 546, 548, 550, 552, 554, 556, 558, 560, 562, 564, 566, 568, 570, 572, 574, 576, 578, 580, 582, 584, 586, 588, 590, 592, 594, 596, 598, 600, 602, 604, 606, 608, 610, 612, 614, 616, 618, 620, 622, 624, 626, 628, 630, 632, 634, 636, 638, 640, 642, 644, 646, 648, 650, 652, 654, 656, 658, 660, 662, 664, 666, 668, 670, 672, 674, 676, 678, 680, 682, 684, 686, 688, 690, 692, 694, 696, 698, 700, 702, 704, 706, 708, 710, 712, 714, 716, 718, 720, 722, 724, 726, 728, 730, 732, 734, 736, 738, 740, 742, 744, 746, 748, 750, 752, 754, 756, 758, 760, 762, 764, 766, 768, 770, 772, 774, 776, 778, 780, 782, 784, 786, 788, 790, 792, 794, 796, 798, 800, 802, 804, 806, 808, 810, 812, 814, 816, 818, 820, 822, 824, 826, 828, 830, 832, 834, 836, 838, 840, 842, 844, 846, 848, 850, 852, 854, 856, 858, 860, 862, 864, 866, 868, 870, 872, 874, 876, 878, 880, 882, 884, 886, 888, 890, 892, 894, 896, 898, 900, 902, 904, 906, 908, 910, 912, 914, 916, 918, 920, 922, 924, 926, 928, 930, 932, 934, 936, 938, 940, 942, 944, 946, 948, 950, 952, 954, 956, 958, 960, 962, 964, 966, 968, 970, 972, 974, 976, 978, 980, 982, 984, 986, 988, 990, 992, 994, 996, 998, 1000

CLIENT: GERARD CANNON PROPERTIES  
 ARCHITECT: CAMDY CRONE KELLY  
 PROJECT: CLONGRIFIN  
 TITLE: STATION SQUARE PARKING LAYOUT

DESIGNED	APPROVED	DATE
18-09-20	18-09-20	18-09-20
18-09-20	18-09-20	18-09-20
18-09-20	18-09-20	18-09-20



**LEGEND:**

- INDICATES ON-STREET PARKING (WITH POTENTIAL TO CONVERT TO E-CARMS)
- GO CAR / CAR SHARE PARKING
- TAXI RANK
- BUS SET-DOWN
- CYCLE PARKING
- LOADING BAYS

NOTES:  
 1. DO NOT SCALE. USE DIMENSIONS ONLY.  
 2. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

REV.	DATE	AMENDMENT	DRN	APPD

STATUS **FOR PLANNING**

**Waterman Moylan**  
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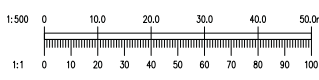
CLIENT **GERARD GANNON PROPERTIES**  
ARCHITECT **CONROY CROWE KELLY**

PROJECT **CLONGRIFFIN**

TITLE **PARKING & LOADING BAY LAYOUT**

DRAWN PJD	DESIGNED MD	APPROVED MD	DATE AUG 19'
SCALE 1:1000 @ A1	JOB NO. 18-059	DRG. NO. FIG.12	REVISION

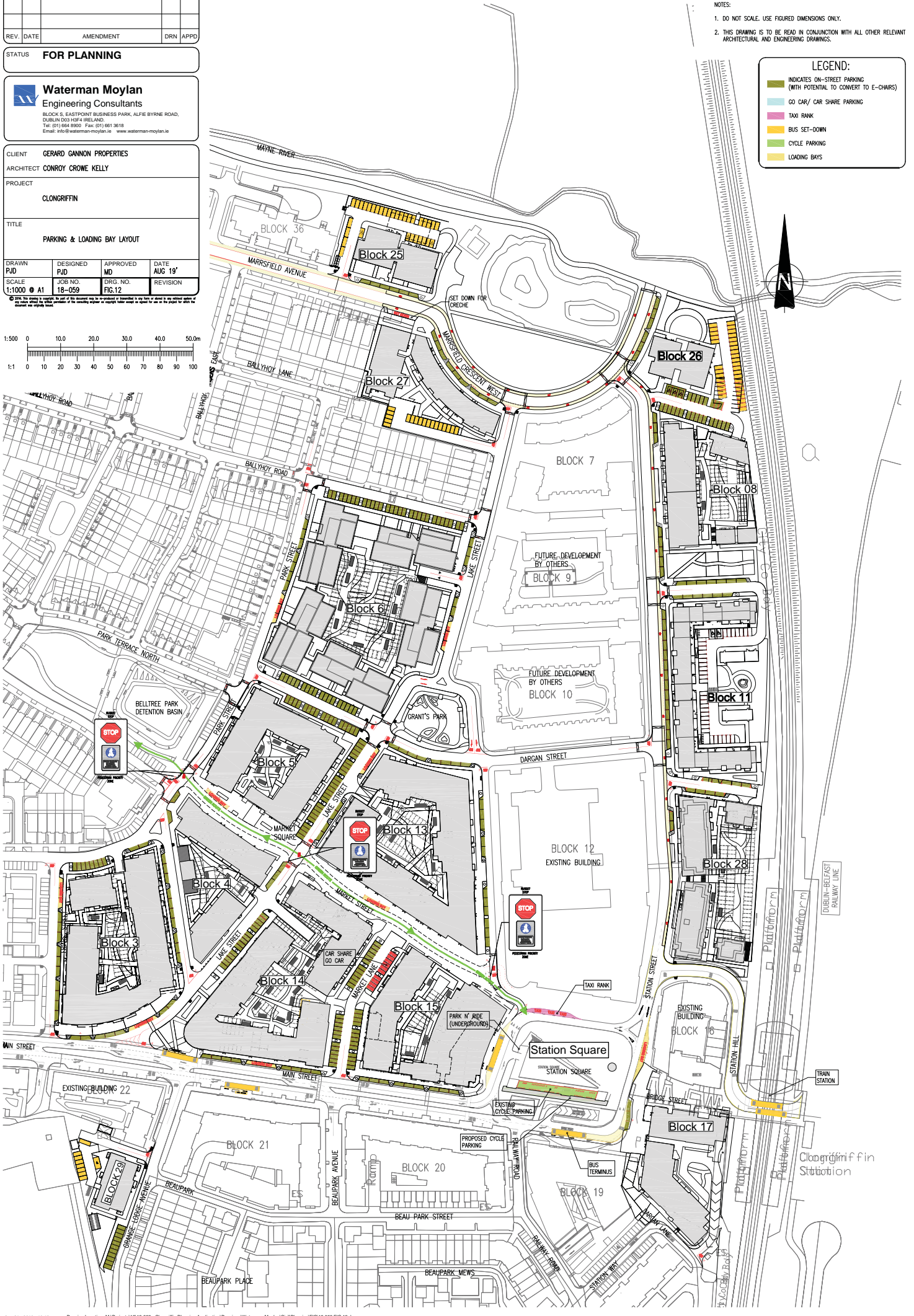
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- NOTES:
- DO NOT SCALE. USE FIGURED DIMENSIONS ONLY.
  - THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL OTHER RELEVANT ARCHITECTURAL AND ENGINEERING DRAWINGS.

**LEGEND:**

- INDICATES ON-STREET PARKING (WITH POTENTIAL TO CONVERT TO E-CHAIRS)
- GO CAR/ CAR SHARE PARKING
- TAXI RANK
- BUS SET-DOWN
- CYCLE PARKING
- LOADING BAYS



# SITE 1



Origin Arm A R123(E)

	Destination : Arm A R123(E)						Total
	Car	LGV	OGV1	OGV2	PSV	MC	
00:00	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0
05:30	0	0	0	0	0	0	0
05:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0
06:30	0	0	0	0	0	0	0
06:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
07:00	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0

Destination : Arm B Balgriffin Park

	Destination : Arm B Balgriffin Park						Total
	Car	LGV	OGV1	OGV2	PSV	MC	
5	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0
14	0	0	0	0	0	0	14
2	0	0	0	0	0	0	2
1	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
4	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
1	0	0	0	0	0	0	1
1	0	0	0	0	0	0	1
1	0	0	0	0	0	0	1
2	1	0	0	0	0	0	3
5	1	0	0	0	0	0	6
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
1	0	0	0	0	0	0	1
1	0	0	0	0	0	0	1
2	1	0	0	0	0	0	3
5	1	0	0	0	0	0	6
0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
1	0	0	0	0	0	0	1
2	1	0	0	0	0	0	3
17	2	0	0	0	0	0	20
11	0	0	0	0	0	0	11
21	2	0	0	0	1	0	25
30	3	0	0	0	0	0	34
43	5	0	0	0	1	0	50
105	10	0	0	2	0	3	120
48	0	0	1	0	0	0	49
65	1	0	0	0	0	1	67
52	3	0	0	0	0	0	55

Destination : Arm C R123(W)

	Destination : Arm C R123(W)						Total	Arm Totals
	Car	LGV	OGV1	OGV2	PSV	MC		
9	0	0	0	0	0	0	0	9
3	1	0	0	0	0	0	0	4
2	0	0	0	0	0	1	3	7
10	0	0	0	0	0	0	10	12
24	1	0	0	0	0	1	26	40
1	0	0	0	0	0	0	1	3
4	0	0	0	0	0	0	4	5
4	0	0	0	0	0	0	4	4
3	0	0	0	0	0	0	3	4
12	0	0	0	0	0	0	12	16
2	0	0	0	0	0	0	2	2
0	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	3	4
2	0	0	0	0	0	0	2	2
6	1	0	0	0	0	0	7	8
4	0	0	0	0	0	0	4	4
3	0	0	0	0	0	0	3	4
7	1	0	0	0	0	0	8	8
7	0	0	0	0	0	0	7	7
21	1	0	0	0	0	0	22	23
3	0	1	0	0	0	0	4	5
1	0	0	0	0	0	0	1	2
2	1	0	0	0	0	0	3	4
2	1	0	0	0	0	0	3	6
8	2	1	0	0	0	0	11	17
4	0	0	0	0	0	0	4	4
7	0	0	0	0	0	0	7	7
9	1	0	0	0	0	0	10	11
15	1	0	0	0	0	1	17	18
35	2	0	0	0	0	1	38	40
12	4	0	0	1	1	1	19	20
39	2	0	0	0	1	3	45	53
69	3	0	0	0	0	1	73	76
63	8	0	0	0	0	1	72	80
183	17	0	0	1	2	6	209	229
78	6	1	0	2	1	2	90	101
100	10	0	0	2	1	1	114	139
108	6	3	1	0	0	4	122	156
98	6	1	0	0	0	4	109	159
384	28	5	1	4	2	11	435	555
91	4	1	0	1	1	3	101	150
83	4	0	1	0	0	2	90	157
124	2	1	0	0	0	3	133	188

















23:45	10	0	0	0	0	0	0	0	0	10
1 Hr	54	0	0	0	0	0	0	0	0	54

3	0	0	0	0	0	0	0	0	0	3
7	1	0	0	0	0	0	0	0	0	8

0	0	0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0	0	0

Total	4241	451	74	25	15	16	50	4872
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1329	132	11	7	3	6	5	1493
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0	0	0	0	0	0	0	0	0	0	0
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ORIGIN SUMMARY

	Arm A R123(E)							Total
	Car	LGV	OGV1	OGV2	PSV	MC	PC	

	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total
00:00	14	0	0	0	0	0	0	14
00:15	6	1	0	0	0	0	0	7
00:30	6	0	0	0	0	0	1	7
00:45	12	0	0	0	0	0	0	12
1 Hr	38	1	0	0	0	0	1	40
01:00	3	0	0	0	0	0	0	3
01:15	5	0	0	0	0	0	0	5
01:30	4	0	0	0	0	0	0	4
01:45	4	0	0	0	0	0	0	4
1 Hr	16	0	0	0	0	0	0	16
02:00	2	0	0	0	0	0	0	2
02:15	0	0	0	0	0	0	0	0
02:30	3	1	0	0	0	0	0	4
02:45	2	0	0	0	0	0	0	2
1 Hr	7	1	0	0	0	0	0	8
03:00	4	0	0	0	0	0	0	4
03:15	4	0	0	0	0	0	0	4
03:30	7	1	0	0	0	0	0	8
03:45	7	0	0	0	0	0	0	7
1 Hr	22	1	0	0	0	0	0	23
04:00	4	0	1	0	0	0	0	5
04:15	2	0	0	0	0	0	0	2
04:30	3	1	0	0	0	0	0	4
04:45	4	2	0	0	0	0	0	6
1 Hr	13	3	1	0	0	0	0	17
05:00	4	0	0	0	0	0	0	4
05:15	7	0	0	0	0	0	0	7
05:30	10	1	0	0	0	0	0	11
05:45	16	1	0	0	0	0	1	18
1 Hr	37	2	0	0	0	0	1	40
06:00	13	4	0	0	1	1	1	20
06:15	46	3	0	0	0	1	3	53
06:30	71	4	0	0	0	0	1	76
06:45	70	8	0	0	0	0	2	80
1 Hr	200	19	0	0	1	2	7	229
07:00	89	6	1	0	2	1	2	101
07:15	121	12	0	0	3	1	2	139
07:30	138	9	3	1	0	0	5	156

	Arm B Balgriffin Park							Total
	Car	LGV	OGV1	OGV2	PSV	MC	PC	

	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total
6	0	0	0	0	0	0	0	6
4	0	0	0	0	0	0	0	4
5	1	0	0	0	0	0	0	6
1	0	0	0	0	0	0	0	1
16	1	0	0	0	0	0	0	17
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1
4	0	0	0	0	0	0	0	4
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	2
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1
4	0	0	0	0	0	0	0	4
0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	2
2	1	0	0	0	0	0	0	3
1	0	0	0	0	0	0	0	1
5	1	0	0	0	0	0	0	6
1	0	0	0	0	0	0	0	1
3	1	0	0	0	0	0	0	4
3	1	0	0	0	0	0	0	4
6	0	0	0	0	0	0	0	6
13	2	0	0	0	0	1	0	16
4	1	0	0	0	0	0	0	5
8	3	0	0	0	0	0	0	11
10	3	1	0	0	0	0	0	14
12	2	0	0	0	0	0	0	14
34	9	1	0	0	0	0	0	44
19	4	0	0	0	0	0	0	23
20	6	1	0	0	0	0	0	27
41	5	1	0	0	1	0	2	50

	Arm C R123(W)							Total
	Car	LGV	OGV1	OGV2	PSV	MC	PC	

	Car	LGV	OGV1	OGV2	PSV	MC	PC	Total
8	1	0	0	0	0	0	0	9
4	0	0	0	0	0	0	0	4
9	0	0	0	0	0	0	0	9
4	1	0	0	0	0	0	0	5
25	2	0	0	0	0	0	0	27
3	0	0	0	0	0	0	0	3
2	0	0	0	0	0	0	0	2
6	0	0	0	0	0	0	0	6
3	0	0	0	0	0	0	0	3
14	0	0	0	0	0	0	0	14
4	0	0	0	0	0	0	0	4
3	0	0	0	0	0	0	0	3
6	0	0	0	0	0	0	0	6
5	0	0	0	0	0	0	0	5
18	0	0	0	0	0	0	0	18
3	0	1	0	0	0	0	0	4
8	0	0	0	0	0	0	0	8
14	0	0	0	0	0	0	0	14
15	0	0	0	0	0	0	0	15
3	0	0	0	0	0	0	0	3
20	0	1	0	0	0	0	0	21
2	0	0	0	0	0	0	0	2
2	0	0	0	0	0	0	0	2
2	0	0	0	0	0	0	1	3
3	2	0	0	0	0	0	1	6
9	2	0	0	0	0	0	2	13
0	1	0	0	0	0	0	0	1
4	0	0	0	0	1	0	0	5
2	0	0	0	0	0	0	0	2
2	0	0	0	0	0	0	0	2
15	4	1	0	0	1	0	0	21
11	3	0	0	0	0	0	0	14
19	4	0	0	0	0	0	0	23
21	6	0	0	0	0	1	0	28
36	10	1	0	0	0	0	1	48
87	23	1	0	0	0	1	1	113
39	17	2	0	0	0	1	0	59
53	18	0	2	0	0	0	1	74
64	21	0	0	0	2	0	0	88

13
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0
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3
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10
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62
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0
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7
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54
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6365
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1329
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4872
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Origin Totals
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Origin :
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Origin :
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Origin :
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29
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8
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6
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14
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15
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4
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7
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22
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9
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18
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7
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3
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8
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6
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4
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11
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5
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4
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34
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14
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4
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16
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7
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4
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4
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3
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1
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0
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10
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6
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0
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17:00	93	24	2	1	0	0	2	3	125
17:15	92	13	2	0	0	0	2	109	
17:30	91	10	1	0	0	0	2	104	
17:45	76	6	0	1	0	0	1	84	
1 Hr	352	53	5	2	0	2	8	422	
18:00	118	5	0	0	0	0	1	124	
18:15	109	14	1	0	0	0	0	124	
18:30	93	7	0	0	0	0	2	102	
18:45	103	10	1	0	1	0	2	117	
1 Hr	423	36	2	0	1	0	5	467	
19:00	80	9	0	0	0	0	1	90	
19:15	96	6	0	0	1	1	2	106	
19:30	105	10	1	0	0	1	0	117	
19:45	101	4	0	0	0	1	2	108	
1 Hr	382	29	1	0	1	3	5	421	
20:00	72	0	1	0	0	0	1	74	
20:15	50	5	0	0	0	2	1	58	
20:30	83	6	2	1	0	0	0	92	
20:45	78	5	0	1	0	0	1	84	
1 Hr	283	16	3	1	0	2	3	308	
21:00	79	3	0	0	1	1	1	85	
21:15	69	5	0	0	0	1	1	75	
21:30	60	2	0	0	0	0	3	65	
21:45	54	1	0	0	0	0	0	55	
1 Hr	262	11	0	0	1	1	5	280	
22:00	39	2	0	0	0	0	0	41	
22:15	31	0	0	0	0	1	1	33	
22:30	25	2	0	0	0	0	0	27	
22:45	21	1	0	0	0	0	0	22	
1 Hr	116	5	0	0	0	1	1	123	
23:00	22	1	0	0	0	0	0	23	
23:15	16	0	0	0	0	1	1	17	
23:30	18	0	0	0	0	0	0	18	
23:45	9	0	0	0	0	0	0	9	
1 Hr	65	1	0	0	0	0	1	67	
Total	6389	638	83	31	19	30	86	7276	

DESTINATION SUMMARY

	Destination : Arm A R123(E)						Total
	Car	LGV	OGV1	OGV2	PSV	MC	
00:00	13	0	0	0	0	0	13
00:15	6	0	0	0	0	0	6
00:30	11	0	0	0	0	0	11
00:45	4	1	0	0	0	0	5
1 Hr	34	1	0	0	0	0	35

66	4	0	0	0	0	0	0	2	72
64	7	0	0	0	0	0	0	0	71
86	8	0	0	1	1	1	1	1	97
90	4	0	0	0	0	0	2	96	
306	23	0	0	1	1	5	336		
74	8	0	0	0	0	0	0	82	
88	1	0	0	0	0	3	92		
65	5	0	0	0	1	3	74		
73	2	0	0	0	0	0	75		
300	16	0	0	0	1	6	323		
84	6	0	0	0	0	0	90		
53	7	0	0	0	1	0	61		
56	1	0	0	0	1	3	61		
37	7	0	0	0	0	0	44		
230	21	1	0	0	2	3	256		
35	2	0	0	0	1	0	38		
35	3	0	0	0	0	0	38		
51	0	1	0	0	0	0	52		
38	1	0	0	0	0	0	39		
159	6	1	0	0	1	0	167		
29	1	0	0	0	0	0	31		
31	1	0	0	0	0	0	32		
20	1	0	0	0	0	0	21		
30	0	0	0	0	0	0	30		
110	3	0	0	0	0	1	114		
17	0	0	0	0	0	0	17		
15	0	0	0	0	0	0	15		
16	0	0	0	0	0	0	16		
10	0	0	0	1	0	0	11		
58	0	0	0	1	0	0	59		
9	1	0	0	0	0	0	10		
9	0	0	0	0	0	0	9		
4	0	0	0	0	0	0	4		
5	0	0	0	0	0	0	5		
27	1	0	0	0	0	0	28		
3152	308	38	8	9	14	34	3563		

	Destination : Arm B Balgriffin Park						Total
	Car	LGV	OGV1	OGV2	PSV	MC	
5	1	0	0	0	0	0	6
3	0	0	0	0	0	0	3
4	0	0	0	0	0	0	4
2	0	0	0	0	0	0	2
14	1	0	0	0	0	0	15

111	14	1	0	0	1	1	128
133	13	1	0	0	1	2	150
138	10	1	0	1	1	2	153
152	9	0	0	1	2	4	168
534	46	3	0	2	5	9	599
153	13	1	0	0	1	5	173
150	8	2	0	1	1	4	166
130	5	0	0	0	1	9	145
124	12	0	0	0	1	1	138
557	38	3	0	1	4	19	622
110	3	0	0	0	0	0	113
110	4	0	0	0	0	1	115
111	5	1	0	0	1	0	118
83	6	0	0	0	0	0	89
414	18	1	0	0	1	1	435
78	4	1	0	0	0	0	83
73	5	1	0	0	1	1	81
59	4	0	0	0	0	0	63
61	4	0	0	0	0	0	65
271	17	2	0	0	1	1	292
67	5	0	0	0	1	1	74
53	2	0	0	0	0	0	55
36	4	0	0	1	0	0	41
33	2	0	0	0	0	0	35
189	13	0	0	1	1	1	205
44	1	0	0	0	0	0	45
35	1	0	0	0	0	0	36
34	0	0	0	0	0	1	35
35	0	0	0	0	0	0	35
148	2	0	0	0	0	1	151
28	1	0	0	0	0	0	29
9	0	0	0	0	0	0	9
11	0	0	0	0	0	0	11
13	0	0	0	0	0	0	13
61	1	0	0	0	0	0	62
5570	583	85	32	18	22	55	6363

Dest Totals	Destination : Arm C R123(W)						Total
	Car	LGV	OGV1	OGV2	PSV	MC	
10	0	0	0	0	0	0	10
5	1	0	0	0	0	0	6
5	1	0	0	0	0	1	7
11	0	0	0	0	0	0	11
31	2	0	0	0	0	0	34





10:30	53	13	1	2	0	0	0	1	70	33	6	0	0	0	0	0	0	0	1	40	80	10	2	1	0	0	0	1	93	203
10:45	60	12	2	0	0	0	0	0	74	40	9	1	0	0	0	0	0	0	1	50	85	8	3	1	0	0	0	1	98	222
11 Hr	228	48	8	3	0	0	2	289		143	23	4	0	0	0	1	171				334	30	10	4	1	3	1	383	843	
11:00	75	16	0	0	0	0	0	91		35	5	0	1	0	0	2	43				58	5	3	0	0	0	0	66	200	
11:15	71	7	2	0	0	0	1	81		29	3	0	0	0	0	32	32				76	4	3	2	0	0	1	86	199	
11:30	62	9	3	0	1	0	0	75		32	5	1	0	0	0	38	38				81	9	1	1	0	0	1	94	207	
11:45	77	7	2	0	0	0	0	86		37	2	0	0	0	0	40	40				68	19	1	0	0	0	0	88	214	
1 Hr	285	39	7	0	1	0	1	333		133	15	1	1	0	0	3	153				283	37	8	3	0	1	2	334	820	
12:00	78	9	4	1	0	0	0	92		47	5	0	0	0	0	52	52				74	11	1	0	0	1	0	87	231	
12:15	80	8	3	0	0	1	0	92		37	4	1	0	0	0	42	42				58	5	2	1	1	0	1	68	202	
12:30	67	15	0	0	1	0	0	83		37	4	0	0	0	1	43	43				79	5	1	1	0	1	2	89	215	
12:45	89	5	1	0	0	0	0	95		50	3	0	0	0	0	1	54				68	14	2	0	0	0	0	84	233	
1 Hr	314	37	8	1	1	1	0	362		171	16	1	0	0	1	2	191				279	35	6	2	1	2	3	328	881	
13:00	95	12	1	0	0	0	1	109		39	3	0	0	0	1	0	43				57	14	2	1	0	0	0	74	226	
13:15	72	6	3	2	0	0	0	83		60	3	0	0	0	0	63	63				95	8	1	0	1	0	0	105	251	
13:30	89	10	2	1	1	0	1	104		43	7	0	0	0	0	50	50				92	12	3	1	0	1	1	110	264	
13:45	82	11	1	1	0	0	0	95		48	7	1	0	0	0	56	56				86	11	4	0	0	0	1	102	253	
1 Hr	338	39	7	4	1	0	2	391		190	20	1	0	0	1	0	212				330	45	10	2	1	1	2	391	994	
14:00	107	6	1	1	0	0	0	115		68	2	0	0	0	0	70	70				86	6	4	0	0	0	1	97	282	
14:15	107	10	1	0	0	0	0	118		56	3	0	0	0	0	59	59				77	12	2	2	0	0	0	93	270	
14:30	97	16	1	1	0	0	1	116		52	4	0	0	0	0	56	56				101	10	2	2	1	0	1	117	289	
14:45	99	9	6	1	0	0	0	115		59	4	0	1	0	0	64	64				102	10	0	0	1	1	0	114	293	
1 Hr	410	41	9	3	0	0	1	464		235	13	0	1	0	0	0	249				366	38	8	4	2	1	2	421	1134	
15:00	86	10	2	0	2	0	0	100		59	7	0	1	1	0	1	69				78	18	4	0	0	1	1	102	271	
15:15	110	12	2	0	0	1	0	125		52	4	0	1	0	0	1	58				68	11	5	2	0	0	0	86	269	
15:30	108	6	2	2	1	1	0	120		62	4	0	1	0	0	68	68				101	13	3	1	1	0	1	120	308	
15:45	132	13	3	1	1	1	1	152		56	6	1	0	0	0	63	63				115	20	3	1	0	0	1	140	355	
1 Hr	436	41	9	3	4	3	1	497		229	21	1	3	1	1	2	258				362	62	15	4	1	1	3	448	1203	
16:00	127	9	1	0	1	1	1	140		69	6	1	0	0	0	76	76				129	23	1	1	1	0	1	156	372	
16:15	121	15	3	0	0	0	1	140		79	6	1	1	1	0	3	91				111	20	2	2	0	1	1	137	368	
16:30	130	12	1	0	1	0	1	145		65	9	1	0	0	0	1	76				104	25	1	1	0	0	2	134	355	
16:45	123	12	3	0	0	2	3	143		61	6	0	0	0	0	68	68				83	15	0	1	0	0	0	99	310	
1 Hr	501	48	8	0	2	3	6	568		274	27	3	1	1	0	5	311				427	83	4	5	1	3	3	526	1405	
17:00	127	12	0	0	0	1	2	142		53	8	2	0	0	0	2	65				90	22	1	1	0	2	2	118	325	
17:15	130	16	1	0	0	1	2	150		68	6	0	0	0	0	1	75				91	11	2	0	0	0	1	105	330	
17:30	147	13	1	0	2	1	2	166		64	7	0	0	0	1	73	73				104	8	1	0	0	0	2	115	354	
17:45	171	11	0	0	1	2	5	190		62	3	0	0	0	0	1	66				85	5	0	1	0	0	1	92	348	
1 Hr	575	52	2	0	3	5	11	648		247	24	2	0	0	1	5	279				370	46	4	2	0	2	6	430	1357	
18:00	172	18	1	0	0	1	4	196		73	3	0	0	0	0	2	78				100	5	0	0	0	0	0	105	379	
18:15	182	8	2	0	1	0	4	197		71	6	0	0	0	1	0	78				94	9	1	0	0	0	3	107	382	
18:30	131	7	0	0	0	2	10	150		73	3	0	0	0	0	3	79				84	7	0	0	0	0	1	92	321	
18:45	137	8	0	0	0	1	1	147		70	7	0	0	0	0	1	78				93	9	1	0	1	0	1	105	330	
1 Hr	622	41	3	0	1	4	19	690		287	19	0	0	0	1	6	313				371	30	2	0	1	0	1	409	1412	
19:00	143	4	0	0	0	0	0	147		47	5	0	0	0	0	0	52				84	9	0	0	0	0	1	94	293	
19:15	129	10	0	0	0	0	1	140		71	3	0	0	0	0	0	74				59	4	0	0	1	2	2	68	282	
19:30	122	5	1	0	0	2	2	132		66	5	0	0	0	0	0	71				84	6	1	0	0	1	1	93	296	
19:45	95	7	0	0	0	0	0	102		57	4	0	0	0	0	0	61				69	6	0	0	0	1	2	78	241	

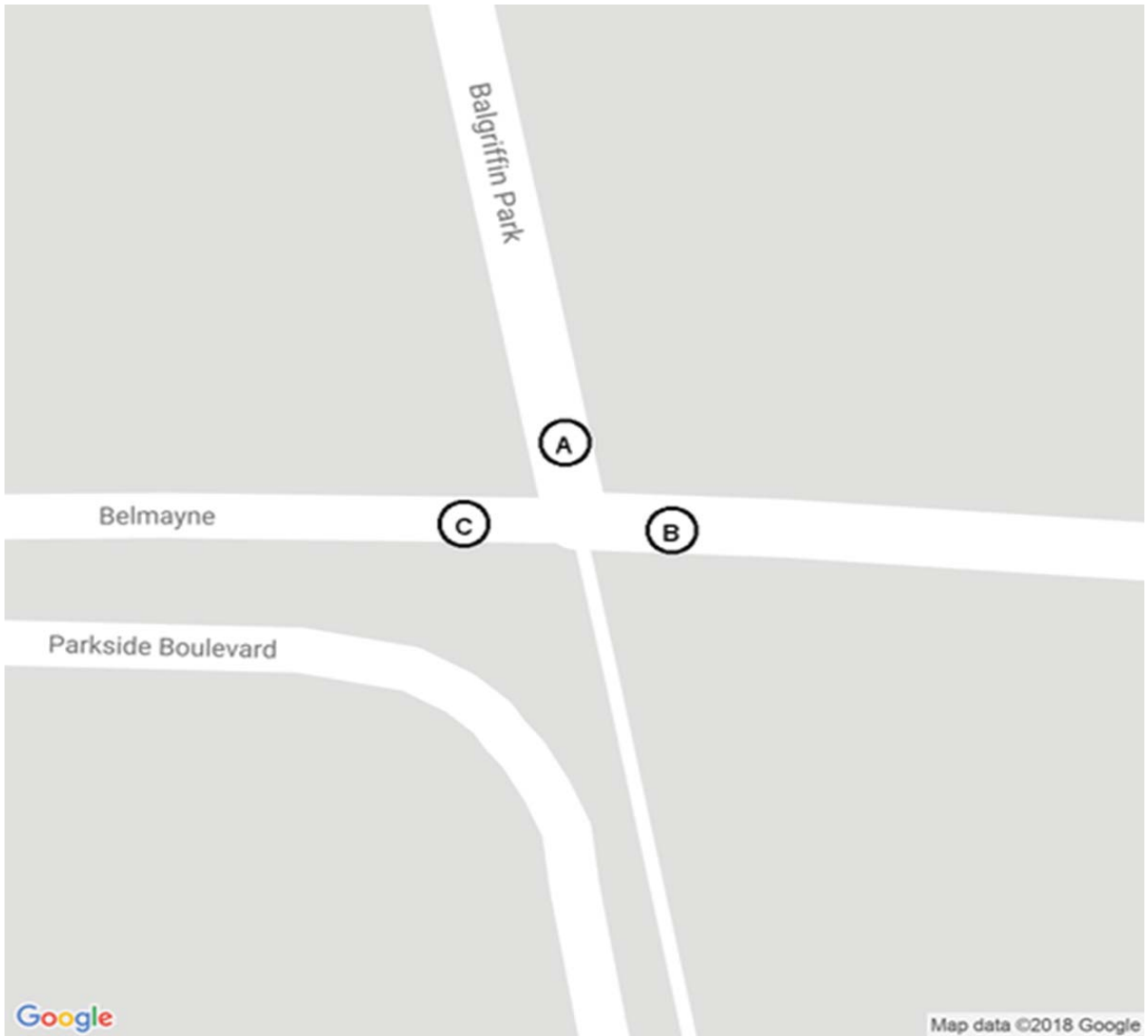
1 Hr	489	26	1	0	0	2	3	521
20:00	82	4	1	0	0	0	0	87
20:15	80	7	1	0	0	1	1	89
20:30	79	2	0	0	0	0	0	81
20:45	70	4	0	0	0	0	0	74
1 Hr	311	17	2	0	0	1	331	
21:00	71	5	0	0	1	1	78	
21:15	66	1	0	0	0	0	67	
21:30	40	2	0	1	0	0	43	
21:45	50	1	0	0	0	0	51	
1 Hr	227	9	0	0	1	1	239	
22:00	47	0	0	0	0	0	47	
22:15	38	1	0	0	0	0	39	
22:30	38	0	0	0	0	1	39	
22:45	33	0	0	1	0	0	34	
1 Hr	156	1	0	0	1	0	159	
23:00	29	1	0	0	0	0	30	
23:15	15	0	0	0	0	0	15	
23:30	12	0	0	0	0	0	12	
23:45	13	0	0	0	0	0	13	
1 Hr	69	1	0	0	0	0	70	
Total	6058	638	96	26	22	23	66	6929

241	17	0	0	0	0	0	258
50	2	1	0	0	0	1	54
40	1	0	0	1	0	0	42
51	6	0	0	0	0	0	57
41	5	0	0	0	0	1	47
182	14	1	0	0	1	2	200
42	1	0	0	0	0	2	45
31	2	0	0	0	0	0	33
28	3	0	0	0	0	2	33
16	1	0	0	0	0	0	17
117	7	0	0	0	0	4	128
16	1	0	0	0	0	0	17
15	0	0	0	0	0	1	16
15	0	0	0	0	0	0	15
19	0	0	0	0	0	0	19
65	1	0	0	0	0	1	67
7	1	0	0	0	0	0	8
8	0	0	0	0	0	1	9
6	0	0	0	0	0	0	6
5	0	0	0	0	0	0	5
26	1	0	0	0	0	1	28
3352	302	21	9	7	7	39	3737

296	25	1	0	0	1	4	333
53	0	0	0	0	1	0	54
38	5	0	0	2	1	1	46
63	2	3	1	0	0	0	69
66	1	0	0	0	0	0	67
220	8	3	1	0	3	1	236
62	3	0	0	1	1	0	67
56	5	0	0	0	0	1	62
48	2	0	0	0	0	1	51
51	1	0	0	0	0	0	52
217	11	0	0	1	1	2	232
37	2	0	0	0	0	0	39
28	0	0	0	0	1	0	29
22	2	0	0	0	0	0	24
14	1	0	0	0	0	0	15
101	5	0	0	0	1	0	107
23	1	0	0	0	0	0	24
11	0	0	0	0	0	0	11
15	0	0	0	0	0	0	15
9	0	0	0	0	0	0	9
58	1	0	0	0	0	0	59
5701	589	89	36	17	36	70	6538

1112
195
177
207
188
767
190
162
127
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17204

SITE 2























07:45	86	8	0	2	3	0	1	100
1 Hr	206	24	0	2	4	0	2	238
08:00	95	7	2	0	0	0	1	105
08:15	108	2	0	0	0	0	1	111
08:30	66	3	2	1	0	0	0	72
08:45	69	5	0	1	0	0	1	76
1 Hr	338	17	4	2	0	0	3	364
09:00	63	11	1	1	0	0	0	76
09:15	68	5	0	0	0	0	0	73
09:30	31	7	0	1	0	0	0	39
09:45	35	5	1	1	0	0	0	42
1 Hr	197	28	2	3	0	0	0	230
10:00	43	7	3	0	0	0	0	53
10:15	39	6	3	0	0	0	0	48
10:30	34	2	0	0	0	0	0	36
10:45	36	3	1	1	0	1	0	42
1 Hr	152	18	7	1	0	1	0	179
11:00	35	3	0	0	0	0	1	39
11:15	32	3	0	0	0	0	0	35
11:30	38	5	0	0	0	0	0	43
11:45	42	3	1	0	0	0	0	46
1 Hr	147	14	1	0	0	0	1	163
12:00	51	3	0	0	0	0	0	54
12:15	36	5	0	0	0	0	0	41
12:30	41	8	1	0	0	0	0	50
12:45	46	4	0	0	0	0	0	50
1 Hr	174	20	1	0	0	0	0	195
13:00	45	7	0	0	1	0	0	53
13:15	65	9	1	0	0	1	0	76
13:30	52	4	1	0	0	0	0	57
13:45	53	7	0	0	0	0	0	60
1 Hr	215	27	2	0	1	1	0	246
14:00	49	3	0	0	0	0	1	53
14:15	55	5	0	0	2	0	0	62
14:30	49	5	0	0	0	0	0	54
14:45	86	1	0	0	1	0	0	88
1 Hr	239	14	0	0	3	0	1	257
15:00	60	4	0	0	0	0	2	66
15:15	59	7	0	0	0	1	1	68
15:30	46	5	0	0	0	0	0	51
15:45	61	5	0	0	0	0	1	67
1 Hr	226	21	0	0	0	1	4	252
16:00	53	4	1	0	0	0	0	58
16:15	64	7	1	0	0	0	0	72
16:30	59	7	1	0	0	0	3	70
16:45	64	7	1	0	0	1	0	73
1 Hr	240	25	4	0	0	1	3	273

78	5	1	1	0	0	0	2	87
223	20	4	3	2	2	2	2	256
88	9	0	2	0	1	2	2	102
113	9	0	1	0	2	0	0	125
97	10	0	0	0	0	1	1	108
88	4	4	1	1	0	1	0	99
386	32	4	4	1	3	4	4	434
52	3	1	3	0	0	0	0	59
51	7	2	0	0	0	0	0	60
46	4	2	2	0	0	0	0	54
36	8	1	0	0	0	0	0	45
185	22	6	5	0	0	0	0	218
46	4	3	0	0	0	0	0	53
40	9	2	1	0	0	1	1	53
44	4	2	0	0	0	1	1	51
44	11	4	2	0	1	0	0	62
174	28	11	3	0	1	2	2	219
30	4	1	0	0	1	0	0	36
48	8	1	1	0	1	0	0	59
44	10	1	1	0	0	1	1	57
53	6	0	0	0	1	1	1	61
175	28	3	2	0	3	2	2	213
37	4	5	0	0	1	0	0	47
45	4	1	1	0	0	0	0	51
51	7	1	0	0	0	0	0	59
67	6	4	1	0	0	1	1	79
200	21	11	2	0	1	1	1	236
61	6	0	1	0	0	1	1	69
62	4	1	1	0	0	1	1	69
54	12	1	0	0	0	0	0	67
65	4	0	0	0	0	2	1	71
242	26	2	2	0	0	4	2	276
71	5	1	1	0	0	0	0	78
91	6	2	0	1	0	2	2	102
48	8	1	2	1	0	1	1	61
48	7	2	0	0	0	2	2	60
258	26	6	3	2	1	5	3	301
47	6	0	0	1	0	0	0	54
61	2	0	0	1	0	0	0	64
54	9	2	0	1	0	0	0	66
66	9	2	0	0	1	1	1	79
228	26	4	0	3	1	1	1	263
83	11	2	0	1	1	0	0	98
92	7	2	0	0	0	0	0	101
77	8	1	0	0	0	0	0	86
75	10	1	0	0	1	3	3	90
327	36	6	0	1	2	3	3	375

29	2	0	0	1	0	0	0	32
88	15	2	2	1	0	0	0	108
36	5	0	1	0	0	0	0	42
31	3	0	0	1	0	0	0	35
42	6	0	1	0	0	1	1	50
39	3	1	1	0	0	1	1	45
148	17	1	3	1	0	2	1	172
31	2	1	0	1	0	0	0	35
17	3	0	1	0	0	0	0	21
5	2	2	0	0	0	0	0	9
12	2	0	1	0	0	1	1	16
65	9	3	2	1	0	1	1	81
9	1	0	0	0	1	0	0	11
15	3	0	1	0	0	0	0	19
15	3	0	1	0	1	0	0	20
6	3	1	0	0	0	0	0	10
45	10	1	2	0	2	0	0	60
7	1	0	1	0	0	0	0	9
13	1	0	0	0	0	0	0	14
20	3	0	0	0	0	0	0	23
16	3	2	0	0	0	0	0	21
56	8	2	1	0	0	0	0	67
24	7	1	1	0	0	0	0	33
20	1	1	1	0	0	0	0	23
17	2	0	0	0	0	0	0	19
21	1	0	1	0	0	0	0	23
82	11	2	3	0	0	0	0	98
17	2	0	2	0	0	0	0	21
33	4	0	0	0	0	0	0	37
36	5	0	1	0	0	0	0	42
20	1	1	0	0	0	0	0	22
106	12	1	3	0	0	0	0	122
17	1	0	0	0	0	1	1	19
31	3	0	0	0	0	0	0	34
56	3	0	0	0	0	0	0	60
32	1	0	0	0	0	0	0	33
136	8	0	0	0	0	2	1	146
16	3	1	0	0	0	0	0	20
31	4	1	0	0	0	0	0	36
26	6	0	0	0	1	0	0	33
14	3	1	0	0	0	0	0	18
87	16	3	0	0	1	0	0	107
23	4	0	0	1	0	0	0	28
36	3	0	0	0	0	2	4	41
36	7	0	0	0	1	0	0	44
39	6	0	0	0	0	0	0	45
134	20	0	0	1	1	2	2	158

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17:00	68	7	0	0	0	0	0	0	1	76
17:15	66	5	1	0	0	0	1	0	1	73
17:30	65	2	1	0	0	2	0	2	0	70
17:45	60	4	0	0	0	2	3	69		
1 Hr	259	18	2	0	0	4	5	288		
18:00	76	5	0	0	0	0	1	82		
18:15	71	2	0	0	0	1	0	74		
18:30	49	3	1	0	0	1	0	54		
18:45	72	8	0	0	1	0	0	81		
1 Hr	268	18	1	0	1	2	1	291		
19:00	39	3	0	0	0	0	0	42		
19:15	63	2	0	1	0	0	0	66		
19:30	45	2	0	0	0	0	0	47		
19:45	40	4	0	0	0	0	3	47		
1 Hr	187	11	0	1	0	0	3	202		
20:00	45	2	1	0	0	0	0	48		
20:15	33	4	0	0	0	0	0	37		
20:30	32	2	0	0	0	0	1	35		
20:45	40	4	0	0	0	0	2	46		
1 Hr	150	12	1	0	0	0	3	166		
21:00	53	1	0	0	0	0	0	54		
21:15	38	1	0	0	0	0	0	39		
21:30	28	2	0	0	0	0	0	30		
21:45	26	1	0	0	0	1	0	28		
1 Hr	145	5	0	0	0	1	0	151		
22:00	20	1	0	0	0	0	1	22		
22:15	32	0	0	0	0	0	1	33		
22:30	13	0	0	0	0	0	0	13		
22:45	17	0	0	0	0	0	0	17		
1 Hr	82	1	0	0	0	0	2	85		
23:00	9	0	0	0	0	0	0	9		
23:15	14	1	0	0	0	0	0	15		
23:30	5	0	0	0	0	0	0	5		
23:45	4	0	0	0	0	0	0	4		
1 Hr	32	1	0	0	0	0	0	33		
<b>Total</b>	<b>3331</b>	<b>283</b>	<b>25</b>	<b>9</b>	<b>9</b>	<b>11</b>	<b>29</b>	<b>3697</b>		

100	11	1	0	0	0	0	0	2	114
81	7	0	1	0	0	0	1	90	
80	8	1	0	0	2	0	0	91	
113	9	0	1	0	2	0	0	125	
374	35	2	2	0	4	3	420		
83	8	0	0	0	0	0	91		
119	9	0	0	0	2	130			
78	4	0	0	0	0	82			
65	9	1	0	0	0	77			
345	30	1	0	0	0	4	380		
89	1	0	0	0	0	90			
58	4	0	0	0	0	62			
48	6	0	0	0	0	55			
78	3	0	0	0	0	81			
273	14	0	0	0	0	1	288		
48	3	0	0	0	0	2	53		
50	2	1	0	0	0	0	53		
44	2	0	0	0	0	0	46		
32	2	0	0	0	0	0	34		
174	9	1	0	0	0	2	186		
30	1	1	0	0	0	0	32		
27	0	0	0	0	0	0	27		
35	0	0	0	0	0	0	35		
21	3	0	0	0	0	0	24		
113	4	1	0	0	0	0	118		
25	0	0	0	0	0	0	25		
17	1	0	0	0	0	0	18		
15	0	0	0	0	0	0	15		
8	0	0	0	0	0	0	8		
65	1	0	0	0	0	0	66		
9	1	0	0	0	0	0	10		
11	0	0	0	0	0	0	11		
9	0	0	0	0	0	1	10		
9	0	0	0	0	0	0	9		
38	1	0	0	0	0	1	40		
<b>Total</b>	<b>3893</b>	<b>373</b>	<b>64</b>	<b>26</b>	<b>9</b>	<b>18</b>	<b>37</b>	<b>4420</b>	

31	4	1	0	0	0	0	0	36
41	2	0	0	0	1	0	0	44
40	2	0	0	0	0	1	43	
41	3	0	0	0	0	1	45	
153	11	1	0	0	2	1	168	
46	1	0	0	0	0	0	47	
43	3	0	0	0	0	2	48	
42	1	0	0	0	0	1	44	
27	2	0	0	0	0	1	30	
158	7	0	0	0	0	4	169	
19	1	0	0	0	0	0	20	
27	1	0	0	0	0	0	28	
19	2	0	0	0	0	2	23	
22	0	0	0	0	0	0	22	
87	4	0	0	0	0	2	93	
18	1	0	0	0	0	0	19	
15	2	0	0	0	0	0	17	
16	2	0	0	0	0	0	18	
11	2	0	0	0	0	0	13	
60	7	0	0	0	0	0	67	
9	0	0	0	0	0	0	9	
16	0	0	0	0	0	2	18	
4	1	0	0	0	0	0	5	
7	0	0	0	0	0	0	7	
36	1	0	0	0	0	2	39	
10	0	0	0	0	0	0	10	
11	2	0	0	0	0	0	13	
10	0	0	0	0	0	0	10	
5	1	0	0	0	0	0	6	
36	3	0	0	0	0	0	39	
5	0	0	0	0	0	0	5	
1	0	0	0	0	0	0	1	
5	0	0	0	0	0	0	5	
3	0	0	0	0	0	0	3	
14	0	0	0	0	0	0	14	
<b>Total</b>	<b>1531</b>	<b>172</b>	<b>17</b>	<b>17</b>	<b>4</b>	<b>6</b>	<b>16</b>	<b>1763</b>

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1531	172	17	17	4	6	16	1763
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3893	373	64	26	9	18	37	4420
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3331	283	25	9	9	11	29	3697
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DESTINATION SUMMARY

Destination : Arm C Belmayne(W)	Total						
	Car	LGV	OGV1	OGV2	PSV	MC	PC
1	1	0	0	0	0	0	2
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
2	0	0	0	0	0	0	2
4	1	0	0	0	0	0	5

Destination : Arm B Belmayne(E)	Total						
	Car	LGV	OGV1	OGV2	PSV	MC	PC
5	0	0	0	0	0	0	5
4	1	0	0	0	0	0	5
4	0	0	0	0	0	0	4
2	0	0	0	0	0	0	2
15	1	0	0	0	0	0	16

Destination : Arm A Balgriffin Park	Total						
	Car	LGV	OGV1	OGV2	PSV	MC	PC
5	1	0	0	0	0	1	7
5	0	0	0	0	0	1	6
3	0	0	0	0	0	0	3
1	0	0	0	0	0	0	1
14	1	0	0	0	0	2	17

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11
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5
38

1	1	0	0	0	0	0	2
0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	1
2	0	0	0	0	0	0	2
4	1	0	0	0	0	0	5

5	0	0	0	0	0	0	5
4	1	0	0	0	0	0	5
4	0	0	0	0	0	0	4
2	0	0	0	0	0	0	2
15	1	0	0	0	0	0	16

5	1	0	0	0	0	1	7
5	0	0	0	0	0	1	6
3	0	0	0	0	0	0	3
1	0	0	0	0	0	0	1
14	1	0	0	0	0	2	17



10:30	40	2	1	0	0	0	1	44
10:45	40	5	4	1	0	1	0	51
1 Hr	159	19	9	1	0	2	2	192
11:00	26	4	1	0	0	0	0	31
11:15	49	6	1	1	0	1	0	58
11:30	41	6	1	0	0	0	1	49
11:45	43	7	1	0	0	1	1	53
1 Hr	159	23	4	1	0	2	2	191
12:00	38	7	3	0	0	1	0	49
12:15	46	4	0	0	0	0	0	50
12:30	46	5	0	0	0	0	0	51
12:45	56	5	3	0	0	0	0	64
1 Hr	186	21	6	0	0	1	0	214
13:00	51	5	0	0	0	0	0	56
13:15	51	4	1	0	0	0	0	56
13:30	47	11	1	0	0	0	0	59
13:45	55	2	0	0	0	0	2	59
1 Hr	204	22	2	0	0	0	2	230
14:00	53	5	1	0	0	0	0	59
14:15	66	5	2	0	1	0	1	75
14:30	45	7	0	1	1	0	1	55
14:45	50	6	2	0	0	1	2	61
1 Hr	214	23	5	1	2	1	4	250
15:00	43	5	0	0	1	0	0	49
15:15	49	1	1	0	1	0	0	52
15:30	52	7	1	0	1	0	0	62
15:45	53	5	1	0	0	1	0	60
1 Hr	197	18	3	0	3	2	0	223
16:00	57	3	1	0	1	1	0	63
16:15	71	5	1	0	0	0	0	77
16:30	65	8	1	0	0	0	0	74
16:45	60	9	1	0	0	1	3	74
1 Hr	253	25	4	0	1	2	3	288
17:00	92	8	2	0	0	0	2	104
17:15	69	4	0	0	0	0	0	73
17:30	69	8	1	0	0	2	0	80
17:45	84	6	0	1	0	1	0	92
1 Hr	314	26	3	1	0	3	2	349
18:00	76	8	0	0	0	0	0	84
18:15	93	8	0	0	0	0	1	102
18:30	60	4	0	0	0	0	0	64
18:45	57	8	1	0	0	0	1	67
1 Hr	286	28	1	0	0	0	2	317
19:00	65	1	0	0	0	0	0	66
19:15	52	3	0	0	0	0	0	55
19:30	34	5	0	0	0	0	0	39
19:45	64	2	0	0	0	0	0	66

39	5	0	1	0	1	0	1	0	44
34	6	2	1	0	1	0	1	0	46
160	24	6	3	0	2	0	2	0	195
38	2	0	1	0	0	0	1	0	42
35	3	0	0	0	0	0	0	0	38
51	5	0	0	0	0	0	0	0	56
47	4	2	0	0	0	0	0	0	53
171	14	2	1	0	1	0	0	1	189
58	5	1	1	0	0	0	0	0	65
45	5	1	1	0	0	0	0	0	52
51	9	1	0	0	0	0	0	0	61
60	5	0	1	0	0	0	0	0	66
214	24	3	3	0	0	0	0	0	244
52	8	0	2	1	0	0	0	0	63
79	9	1	0	0	1	0	0	0	90
77	6	0	1	0	0	0	0	0	84
60	7	1	0	0	0	0	0	0	68
288	30	2	3	1	1	0	0	0	305
49	4	0	0	0	0	0	2	0	55
64	6	0	0	2	0	0	0	0	72
90	7	0	0	0	0	0	1	0	98
92	2	0	0	1	0	0	0	0	95
295	19	0	0	0	3	0	0	0	320
61	7	1	0	0	0	0	2	0	71
73	10	0	0	0	0	0	1	0	84
63	9	0	0	0	0	0	0	0	72
63	7	1	0	0	0	0	1	0	72
260	33	2	0	0	0	0	4	0	299
61	6	1	0	1	0	0	0	0	69
89	9	1	0	0	0	0	2	0	101
79	11	1	0	0	0	1	2	0	94
81	9	1	0	0	0	1	0	0	92
310	35	4	0	1	2	4	0	0	356
76	10	0	0	0	0	0	1	0	87
88	6	1	0	0	1	0	0	0	96
83	3	1	0	0	0	2	1	0	90
88	5	0	0	0	0	3	2	0	98
335	24	2	0	0	0	6	4	0	371
100	6	0	0	0	0	1	1	0	107
96	3	0	0	0	0	1	2	0	102
76	4	1	0	0	0	1	1	0	83
80	8	0	0	1	0	0	0	0	89
362	21	1	0	0	1	2	4	0	381
49	3	0	0	0	0	0	0	0	52
65	1	0	1	0	0	0	0	0	67
50	4	0	0	0	0	0	2	0	56
52	4	0	0	0	0	0	0	0	56

14	2	1	0	0	0	0	0	17
12	6	0	1	0	0	0	0	19
52	13	4	2	0	0	0	0	71
8	2	0	0	0	1	0	0	11
9	3	0	0	0	0	0	0	12
10	7	0	1	0	0	0	0	18
21	1	0	0	0	0	0	0	22
48	13	0	1	0	1	0	0	63
16	2	2	0	0	0	0	0	20
10	1	1	1	0	0	0	0	13
12	3	1	0	0	0	0	0	16
18	1	1	1	0	0	1	1	22
56	7	5	2	0	0	0	1	71
20	2	0	1	0	0	1	1	24
30	4	0	1	0	0	1	1	36
18	4	1	0	0	0	0	0	23
23	3	0	0	0	0	0	0	26
91	13	1	2	0	0	0	2	109
35	0	0	1	0	0	0	0	36
47	3	0	0	0	0	1	1	51
18	2	1	1	0	0	0	0	22
24	1	0	0	0	0	0	0	25
124	6	1	2	0	0	0	1	134
19	1	0	0	0	0	0	0	20
29	2	0	0	0	1	0	0	32
11	4	1	0	0	0	0	0	16
25	5	1	0	0	0	0	1	32
84	12	2	0	0	1	1	1	100
41	10	1	0	0	0	0	0	52
32	3	1	0	0	0	0	0	36
28	3	0	0	0	0	1	1	32
37	5	0	0	0	0	0	0	42
138	21	2	0	0	0	1	1	162
31	4	0	0	0	0	0	0	35
31	4	0	1	0	0	0	2	38
33	1	0	0	0	0	0	0	34
42	5	0	0	0	0	1	1	49
137	14	0	1	0	1	0	3	156
29	0	0	0	0	0	0	0	29
44	3	0	0	0	0	1	1	48
33	0	0	0	0	0	0	0	33
27	3	0	0	0	0	0	2	32
133	6	0	0	0	0	0	3	142
33	1	0	0	0	0	0	0	34
31	3	0	0	0	0	0	0	34
28	1	0	0	0	0	0	1	30
24	1	0	0	0	0	0	0	28

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1 Hr	215	11	0	0	0	0	0	0	0	226
20:00	41	3	0	0	0	0	0	0	0	44
20:15	41	2	1	0	0	0	0	0	0	44
20:30	34	1	0	0	0	0	0	0	0	35
20:45	28	0	0	0	0	0	0	0	0	28
1 Hr	144	6	1	0	0	0	0	0	0	151
21:00	33	1	1	0	0	0	0	0	0	35
21:15	24	0	0	0	0	0	0	0	0	24
21:30	29	0	0	0	0	0	0	0	0	29
21:45	19	3	0	0	0	0	0	0	0	22
1 Hr	105	4	1	0	0	0	0	0	0	110
22:00	20	0	0	0	0	0	0	0	0	20
22:15	18	1	0	0	0	0	0	0	0	19
22:30	13	0	0	0	0	0	0	0	0	13
22:45	5	0	0	0	0	0	0	0	0	5
1 Hr	56	1	0	0	0	0	0	0	0	57
23:00	8	1	0	0	0	0	0	0	0	9
23:15	6	0	0	0	0	0	0	0	0	6
23:30	9	0	0	0	0	0	0	0	0	9
23:45	7	0	0	0	0	0	0	0	0	7
1 Hr	30	1	0	0	0	0	0	0	0	31
Total	3135	300	49	8	10	17	23	3542		

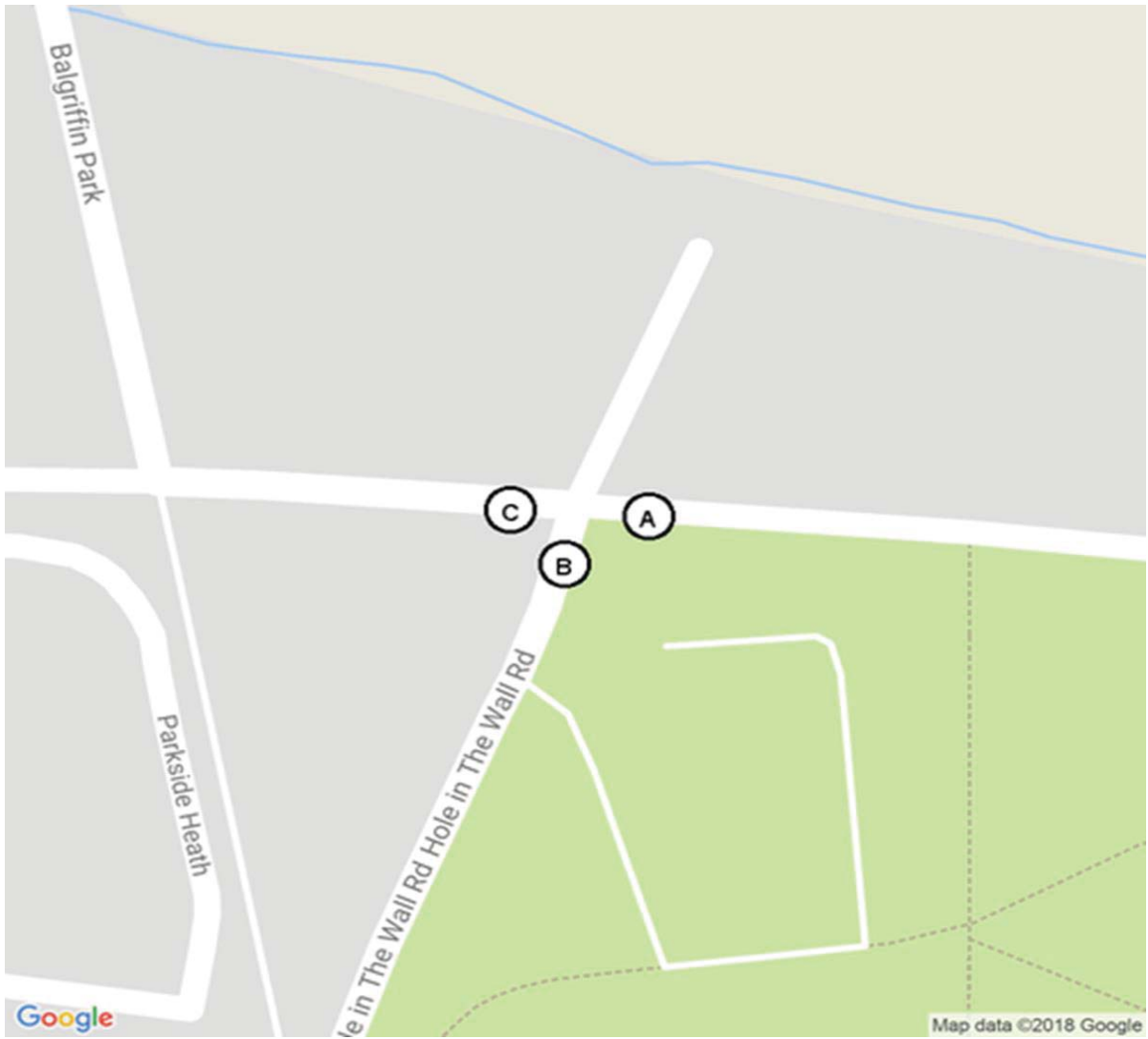
216	12	0	1	0	0	0	2	231
52	2	0	0	0	0	0	0	54
42	4	0	0	0	0	0	0	46
40	4	0	0	0	0	1	1	45
43	5	0	0	0	0	1	1	49
177	15	0	0	0	0	2	194	
48	1	0	0	0	0	0	0	49
43	1	0	0	0	0	2	46	
27	3	0	0	0	0	0	30	
25	1	0	0	0	1	0	27	
143	6	0	0	0	1	2	152	
21	1	0	0	0	0	1	23	
38	2	0	0	0	0	1	41	
20	0	0	0	0	0	0	20	
17	1	0	0	0	0	0	18	
96	4	0	0	0	0	2	102	
13	0	0	0	0	0	0	13	
14	0	0	0	0	0	0	14	
9	0	0	0	0	0	0	9	
6	0	0	0	0	0	0	6	
42	0	0	0	0	0	0	42	
3893	372	33	25	12	14	35	4384	

116	6	0	0	0	0	4	126
18	1	1	0	0	0	2	22
15	2	0	0	0	0	0	17
18	1	0	0	0	0	0	19
12	3	0	0	0	0	1	16
63	7	1	0	0	0	3	74
11	0	0	0	0	0	0	11
14	0	0	0	0	0	0	14
11	0	0	0	0	0	0	11
10	0	0	0	0	0	0	10
46	0	0	0	0	0	0	46
14	0	0	0	0	0	0	14
4	0	0	0	0	0	0	4
5	0	0	0	0	0	0	5
8	0	0	0	0	0	0	8
31	0	0	0	0	0	0	31
2	0	0	0	0	0	0	2
6	1	0	0	0	0	0	7
1	0	0	0	0	0	1	2
3	0	0	0	0	0	0	3
12	1	0	0	0	0	1	14
1727	156	24	19	0	4	24	1954

583
120
107
99
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419
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84
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308
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190
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9880
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SITE 3



**Origin** Arm A Belmayne(E)

	Destination : Arm A Belmayne(E)					Total	
	Car	LGV	OGV1	OGV2	PSV		MC
00:00	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0
05:30	0	0	0	0	0	0	0
05:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0
06:30	0	0	0	0	0	0	0
06:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
07:00	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0
07:30	0	1	0	0	0	0	1
07:45	0	0	0	0	0	0	0
1 Hr	0	1	0	0	0	0	1
08:00	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0

**Destination :** Arm B Hole in The Wall Road

	Destination : Arm B Hole in The Wall Road					Total	
	Car	LGV	OGV1	OGV2	PSV		MC
00:00	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0
01:30	1	0	0	0	0	0	1
01:45	0	1	0	0	0	0	1
1 Hr	1	1	0	0	0	0	2
02:00	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0
02:45	0	1	0	0	0	0	1
1 Hr	0	1	0	0	0	0	1
03:00	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0
05:00	1	0	0	0	0	0	1
05:15	1	0	0	0	0	0	1
05:30	1	0	0	0	0	0	1
05:45	1	0	0	0	0	0	1
1 Hr	4	0	0	0	0	0	4
06:00	1	0	0	0	0	0	1
06:15	1	1	0	0	0	0	2
06:30	3	0	0	0	0	0	3
06:45	0	0	0	0	0	0	0
1 Hr	5	1	0	0	0	0	6
07:00	0	1	0	0	0	0	1
07:15	3	0	0	0	0	0	3
07:30	3	2	0	0	0	0	5
07:45	2	1	0	0	0	0	3
1 Hr	8	4	0	0	0	0	12
08:00	3	0	0	0	0	0	3
08:15	0	1	0	0	0	0	1
08:30	4	0	0	0	0	1	5

**Destination :** Arm C Belmayne(W)

	Destination : Arm C Belmayne(W)					Total	Arm Totals
	Car	LGV	OGV1	OGV2	PSV		
00:00	0	1	0	0	0	0	1
00:15	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0
1 Hr	0	1	0	0	0	0	1
01:00	1	1	0	0	0	0	2
01:15	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0
1 Hr	1	1	0	0	0	0	2
02:00	1	0	0	0	0	0	1
02:15	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0
1 Hr	1	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0
03:30	1	0	0	0	0	0	1
03:45	0	0	0	0	0	0	0
1 Hr	1	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0
04:15	1	0	0	0	0	0	1
04:30	2	0	0	0	0	0	2
04:45	0	0	0	0	0	0	0
1 Hr	3	0	0	0	0	0	3
05:00	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0
05:30	3	0	0	0	0	0	3
05:45	2	0	0	0	0	0	2
1 Hr	5	0	0	0	0	0	5
06:00	4	0	0	0	0	0	4
06:15	5	4	0	0	0	0	9
06:30	5	1	0	0	0	0	6
06:45	6	0	0	0	0	1	7
1 Hr	20	5	0	0	0	1	26
07:00	11	0	0	0	0	0	11
07:15	6	2	0	1	0	0	9
07:30	23	0	1	0	0	0	24
07:45	15	0	0	0	0	2	17
1 Hr	55	2	1	1	0	2	61
08:00	21	2	0	2	0	0	26
08:15	34	3	0	1	0	1	39
08:30	33	5	0	0	0	0	38





















17:00	20	4	0	0	0	0	0	0	1	25
17:15	13	0	0	0	0	0	0	0	0	13
17:30	18	1	0	0	0	0	0	0	19	19
17:45	17	4	0	0	0	0	0	0	21	21
1 Hr	68	9	0	0	0	0	0	1	78	78
18:00	13	2	0	0	0	0	0	0	15	15
18:15	19	2	0	0	0	0	0	21	21	21
18:30	20	1	0	0	0	0	0	21	21	21
18:45	16	3	0	0	0	0	0	2	21	21
1 Hr	68	8	0	0	0	0	0	2	78	78
19:00	19	0	0	0	0	0	0	0	19	19
19:15	13	1	0	0	0	0	0	14	14	14
19:30	7	2	0	0	0	0	0	1	10	10
19:45	22	0	0	0	0	0	0	22	22	22
1 Hr	61	3	0	0	0	0	0	1	65	65
20:00	7	0	0	0	0	0	0	7	7	7
20:15	8	1	0	0	0	0	0	9	9	9
20:30	7	0	0	0	0	0	0	7	7	7
20:45	11	2	0	0	0	0	0	13	13	13
1 Hr	33	3	0	0	0	0	0	36	36	36
21:00	5	1	0	0	0	0	0	6	6	6
21:15	6	0	0	0	0	0	0	6	6	6
21:30	9	0	0	0	0	0	0	9	9	9
21:45	4	0	0	0	0	0	0	4	4	4
1 Hr	24	1	0	0	0	0	0	25	25	25
22:00	2	1	0	0	0	0	0	3	3	3
22:15	5	0	0	0	0	0	0	5	5	5
22:30	0	0	0	0	0	0	0	0	0	0
22:45	2	0	0	0	0	0	0	2	2	2
1 Hr	9	1	0	0	0	0	0	10	10	10
23:00	1	0	0	0	0	0	0	1	1	1
23:15	3	0	0	0	0	0	0	3	3	3
23:30	2	0	0	0	0	0	0	2	2	2
23:45	1	0	0	0	0	0	0	1	1	1
1 Hr	7	0	0	0	0	0	0	7	7	7
<b>Total</b>	<b>856</b>	<b>114</b>	<b>18</b>	<b>23</b>	<b>1</b>	<b>5</b>	<b>13</b>	<b>1030</b>		

DESTINATION SUMMARY

	Destination : Arm A Belmayne(E)						Total
	Car	LGV	OGV1	OGV2	PSV	MC	
00:00	2	0	0	0	0	0	2
00:15	1	1	0	0	0	0	2
00:30	1	0	0	0	0	0	1
00:45	0	0	0	0	0	0	0
1 Hr	4	1	0	0	0	0	5

90	5	1	0	0	0	0	0	1	97
77	8	0	1	0	0	0	0	1	87
62	7	1	0	0	2	0	0	72	72
98	6	0	1	0	2	0	0	107	107
327	26	2	2	0	4	2	363	363	
79	7	0	0	0	0	0	86	86	
105	7	0	0	0	3	115	115		
70	3	0	0	0	0	73	73		
56	6	1	0	0	1	64	64		
310	23	1	0	0	1	338	338		
77	1	0	0	0	0	78	78		
52	4	0	0	0	0	56	56		
43	5	0	0	0	0	48	48		
64	2	0	0	0	0	66	66		
236	12	0	0	0	0	248	248		
42	3	0	0	0	0	47	47		
43	2	1	0	0	0	47	47		
39	1	0	0	0	0	41	41		
24	1	0	0	0	0	25	25		
148	7	1	0	0	0	160	160		
28	1	0	0	0	0	31	31		
26	0	0	0	0	0	26	26		
30	0	0	0	0	0	30	30		
21	3	0	0	0	0	24	24		
105	4	1	0	0	0	111	111		
25	0	0	0	0	0	25	25		
15	1	0	0	0	0	16	16		
13	1	0	0	0	0	14	14		
5	0	0	0	0	0	5	5		
58	2	0	0	0	0	60	60		
10	1	0	0	0	0	11	11		
10	0	0	0	0	0	10	10		
10	0	1	0	0	0	12	12		
10	0	0	0	0	0	10	10		
40	1	1	0	0	0	43	43		
<b>Total</b>	<b>3310</b>	<b>300</b>	<b>48</b>	<b>7</b>	<b>8</b>	<b>16</b>	<b>31</b>	<b>3720</b>	

	Destination : Arm B Hole in The Wall Road						Total
	Car	LGV	OGV1	OGV2	PSV	MC	
4	0	0	0	0	0	0	4
3	0	0	0	0	0	0	3
3	0	0	0	0	0	0	3
3	0	0	0	0	0	0	3
13	0	0	0	0	0	0	13

76	10	0	0	0	0	0	1	87	
88	7	1	0	0	1	0	97	97	
83	3	1	0	0	2	1	90	90	
87	6	0	0	0	3	2	98	98	
334	26	2	0	0	6	4	372	372	
97	7	0	0	0	0	1	105	105	
98	3	0	0	0	1	2	104	104	
74	5	1	0	0	1	0	81	81	
84	8	0	0	0	1	0	93	93	
353	23	1	0	0	1	2	383	383	
45	4	0	0	0	0	0	49	49	
60	3	0	1	0	0	0	64	64	
50	4	0	0	0	0	3	57	57	
49	4	0	0	0	0	3	56	56	
204	15	0	1	0	0	6	226	226	
49	3	0	0	0	0	0	52	52	
44	4	0	0	0	0	1	49	49	
39	5	0	0	0	0	1	45	45	
43	5	0	0	0	0	0	48	48	
175	17	0	0	0	0	2	194	194	
46	2	0	0	0	0	1	49	49	
44	1	0	0	0	0	2	47	47	
25	3	0	0	0	0	0	28	28	
23	3	0	0	0	0	1	27	27	
138	9	0	0	0	0	4	151	151	
21	2	0	0	0	0	1	24	24	
36	4	0	0	0	0	1	41	41	
19	1	0	0	0	0	0	20	20	
16	2	0	0	0	0	0	18	18	
92	9	0	0	0	0	2	103	103	
11	2	0	0	0	0	0	13	13	
14	0	0	0	0	0	0	14	14	
9	0	0	0	0	0	0	9	9	
6	0	0	0	0	0	0	6	6	
40	2	0	0	0	0	0	42	42	
<b>Total</b>	<b>3858</b>	<b>415</b>	<b>32</b>	<b>25</b>	<b>11</b>	<b>11</b>	<b>47</b>	<b>4389</b>	

	Destination : Arm C Belmayne(W)						Total	
	Car	LGV	OGV1	OGV2	PSV	MC		PC
6	1	0	0	0	0	1	8	
5	0	0	0	0	0	1	6	
3	0	0	0	0	0	0	3	
2	0	0	0	0	0	0	2	
16	1	0	0	0	0	2	19	
<b>Total</b>	<b>9149</b>							

	Dest Totals					
	Car	LGV	OGV1	OGV2	PSV	MC
14						
11						
7						
5						
37						





1 Hr	51	3	0	0	0	0	2	56
20:00	9	1	0	0	0	0	0	10
20:15	9	0	0	0	0	0	0	9
20:30	9	2	0	0	0	0	0	11
20:45	9	2	0	0	0	0	0	11
1 Hr	36	5	0	0	0	0	0	41
21:00	9	0	0	0	0	1	10	10
21:15	13	0	0	0	0	2	15	15
21:30	6	1	0	0	0	0	7	7
21:45	8	0	0	0	0	0	8	8
1 Hr	36	1	0	0	0	3	40	40
22:00	8	0	0	0	0	0	8	8
22:15	13	2	0	0	0	0	15	15
22:30	5	0	0	0	0	0	5	5
22:45	3	1	0	0	0	0	4	4
1 Hr	29	3	0	0	0	0	32	32
23:00	3	1	0	0	0	0	4	4
23:15	4	0	0	0	0	0	4	4
23:30	5	0	0	0	0	0	5	5
23:45	6	0	0	0	0	0	6	6
1 Hr	18	1	0	0	0	0	19	19
Total	848	120	14	23	1	3	17	1026

177	13	0	1	0	0	4	195
41	2	0	0	0	0	0	43
37	4	0	0	0	0	1	42
32	3	0	0	0	0	1	36
35	4	0	0	0	0	0	39
145	13	0	0	0	0	2	160
43	2	0	0	0	0	0	45
36	1	0	0	0	0	0	37
23	2	0	0	0	0	0	25
19	3	0	0	0	0	1	23
121	8	0	0	0	0	1	130
16	2	0	0	0	0	1	19
25	2	0	0	0	0	1	28
14	1	0	0	0	0	0	15
12	1	0	0	0	0	0	13
67	6	0	0	0	0	2	75
10	1	0	0	0	0	0	11
12	0	0	0	0	0	0	12
7	0	0	0	0	0	0	7
2	0	0	0	0	0	0	2
31	1	0	0	0	0	0	32
3288	324	24	5	10	10	30	3691

273	14	0	0	0	1	288
48	3	0	0	0	2	53
49	3	1	0	0	1	54
44	1	0	0	0	1	46
34	2	0	0	0	0	36
175	9	1	0	0	4	189
27	2	1	0	0	1	31
27	0	0	0	0	0	27
35	0	0	0	0	0	35
21	3	0	0	0	0	24
110	5	1	0	0	1	117
24	1	0	0	0	0	25
18	1	0	0	0	0	19
13	1	0	0	0	0	14
8	0	0	0	0	0	8
63	3	0	0	0	0	66
9	1	0	0	0	0	10
11	0	0	0	0	0	11
9	0	1	0	0	1	11
9	0	0	0	0	0	9
38	1	1	0	0	1	41
3888	385	60	27	9	19	4432

539
106
105
93
86
390
86
79
67
55
287
52
62
34
25
173
25
27
23
17
92

9149
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SITE 4



**Origin** Arm A Marrsfield Avenue(ESE)

	Destination : Arm A Marrsfield Avenue(ESE)				Total			
	Car	LGV	OGV1	OGV2		PSV	MC	PC
00:00	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0	0
05:30	0	0	0	0	0	0	0	0
05:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0	0
06:30	0	0	0	0	0	0	0	0
06:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
07:00	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0
07:30	0	0	0	0	0	0	0	0
07:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
08:00	0	0	0	0	0	0	0	0
08:15	0	0	0	0	0	0	0	0
08:30	0	0	0	0	0	0	0	0

**Destination :** Arm B Park Avenue

	Destination : Arm B Park Avenue				Total			
	Car	LGV	OGV1	OGV2		PSV	MC	PC
00:00	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0
01:15	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0
05:15	0	0	0	0	0	0	0	0
05:30	0	0	0	0	0	0	0	0
05:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
06:00	0	0	0	0	0	0	0	0
06:15	0	0	0	0	0	0	0	0
06:30	0	0	0	0	0	0	0	0
06:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
07:00	0	0	0	0	0	0	0	0
07:15	0	0	0	0	0	0	0	0
07:30	1	0	0	0	0	0	0	1
07:45	0	0	0	0	0	0	0	0
1 Hr	1	0	0	0	0	0	0	1
08:00	1	0	0	0	0	0	0	1
08:15	1	0	0	0	0	0	0	1
08:30	1	0	0	0	0	0	0	1

**Destination :** Arm C Marrsfield Avenue(WNW)

	Destination : Arm C Marrsfield Avenue(WNW)				Total			
	Car	LGV	OGV1	OGV2		PSV	MC	PC
00:00	0	0	0	0	0	0	0	0
00:15	0	0	0	0	0	0	0	0
00:30	0	0	0	0	0	0	0	0
00:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
01:00	1	0	0	0	0	0	0	1
01:15	0	0	0	0	0	0	0	0
01:30	0	0	0	0	0	0	0	0
01:45	0	0	0	0	0	0	0	0
1 Hr	1	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0	0
02:15	0	0	0	0	0	0	0	0
02:30	0	0	0	0	0	0	0	0
02:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0
03:15	0	0	0	0	0	0	0	0
03:30	0	0	0	0	0	0	0	0
03:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0
04:15	0	0	0	0	0	0	0	0
04:30	0	0	0	0	0	0	0	0
04:45	0	0	0	0	0	0	0	0
1 Hr	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0
05:15	1	0	0	0	0	0	0	1
05:30	1	0	0	0	0	0	0	1
05:45	3	0	0	0	0	0	0	3
1 Hr	5	0	0	0	0	0	0	5
06:00	8	0	0	0	0	0	0	8
06:15	4	2	0	0	0	0	1	7
06:30	4	0	0	0	0	0	0	4
06:45	3	1	0	0	0	0	2	6
1 Hr	19	3	0	0	0	0	3	25
07:00	9	0	0	0	0	0	0	9
07:15	11	2	0	1	0	0	0	14
07:30	11	1	0	0	0	0	0	12
07:45	12	1	0	1	0	0	0	14
1 Hr	43	4	0	2	0	0	0	49
08:00	12	3	0	0	0	0	3	18
08:15	7	0	1	0	0	0	0	8
08:30	10	1	0	1	0	0	0	12

Arm Totals



















07:45	12	1	0	1	0	0	0	14
1 Hr	44	4	0	2	0	0	0	50
08:00	13	3	0	0	0	0	3	19
08:15	8	0	1	0	0	0	0	9
08:30	11	1	0	1	0	0	0	13
08:45	10	0	0	2	0	1	0	13
1 Hr	42	4	1	3	0	1	3	54
09:00	6	0	1	0	0	0	0	7
09:15	5	0	0	1	0	0	0	6
09:30	5	1	1	1	0	0	0	8
09:45	10	1	0	1	0	0	1	13
1 Hr	26	2	2	3	0	0	1	34
10:00	3	4	0	0	0	0	0	7
10:15	4	0	1	0	0	0	0	5
10:30	2	1	0	1	0	0	0	4
10:45	3	2	2	0	0	0	0	7
1 Hr	12	7	3	1	0	0	0	23
11:00	3	0	0	2	0	0	0	5
11:15	6	1	1	0	0	0	0	8
11:30	5	2	2	0	0	0	0	9
11:45	5	3	1	1	0	0	0	10
1 Hr	19	6	4	3	0	0	0	32
12:00	8	0	0	0	0	0	0	8
12:15	7	1	1	0	0	1	1	11
12:30	9	0	1	0	0	0	0	10
12:45	3	1	0	0	0	0	0	4
1 Hr	27	2	2	1	0	0	1	33
13:00	7	1	0	0	0	0	0	8
13:15	5	1	0	0	0	0	0	6
13:30	5	1	0	0	0	0	0	6
13:45	12	1	0	0	0	0	2	15
1 Hr	29	4	0	0	0	0	2	35
14:00	2	0	0	1	0	0	0	3
14:15	8	0	1	0	0	0	0	9
14:30	8	3	0	1	0	0	0	12
14:45	3	1	1	1	0	0	0	6
1 Hr	21	4	2	3	0	0	0	30
15:00	5	2	2	0	0	0	0	9
15:15	7	1	1	0	0	0	0	9
15:30	8	1	0	0	0	0	0	9
15:45	16	1	0	1	0	0	0	18
1 Hr	36	5	3	1	0	0	0	45
16:00	16	4	0	0	0	0	0	20
16:15	6	7	0	1	0	0	1	15
16:30	12	7	0	0	0	0	0	19
16:45	8	3	0	0	0	0	0	11
1 Hr	42	21	0	1	0	0	1	65

5	2	0	0	0	0	0	0	7
24	4	0	0	0	0	0	0	28
11	1	0	0	0	1	1	14	
19	0	0	0	0	0	0	19	
30	0	0	0	0	0	0	30	
12	0	0	0	0	0	0	12	
72	1	0	0	0	1	1	75	
5	1	0	0	0	0	0	6	
13	0	0	0	0	0	0	13	
5	0	0	0	0	0	0	5	
1	0	0	0	0	0	0	1	
24	1	0	0	0	0	0	25	
4	2	0	0	0	0	0	6	
2	0	0	0	0	0	1	3	
5	0	0	0	0	0	0	5	
7	0	0	0	0	0	0	7	
18	2	0	0	0	0	1	21	
4	1	0	0	0	0	0	5	
4	3	0	0	0	0	0	7	
4	0	1	0	0	0	0	5	
4	0	0	0	0	0	0	4	
16	4	1	0	0	0	0	21	
8	2	0	0	0	0	0	10	
1	0	0	0	0	0	0	1	
4	1	0	0	0	0	0	5	
10	1	0	0	0	0	0	11	
23	4	0	0	0	0	0	27	
3	0	0	0	0	0	0	3	
7	0	0	0	0	0	0	7	
2	1	0	0	0	0	0	3	
4	1	1	0	0	0	0	6	
16	2	1	0	0	0	0	19	
11	2	0	0	0	0	0	13	
17	0	1	0	0	0	0	18	
5	0	0	0	0	0	0	5	
5	0	0	0	0	0	0	5	
38	2	1	0	0	0	0	41	
6	1	0	0	0	0	0	7	
11	0	1	0	0	0	0	12	
3	0	0	0	0	0	1	4	
7	2	0	0	0	0	3	12	
27	3	1	0	0	0	4	35	
9	0	0	0	0	0	0	9	
4	1	1	0	0	0	0	6	
2	0	0	0	0	0	0	2	
6	1	0	0	0	0	0	7	
21	2	1	0	0	0	0	24	

10	2	2	0	0	0	0	14
42	13	2	2	0	0	1	60
14	3	0	1	0	0	0	18
12	1	0	1	0	0	2	16
12	1	0	1	0	0	0	14
16	0	1	0	0	0	0	17
54	5	1	3	0	0	2	65
15	1	1	1	0	0	0	18
7	1	0	1	0	0	0	9
5	1	0	1	0	0	0	7
7	3	0	0	0	0	0	10
34	6	1	3	0	0	0	44
3	1	1	1	0	0	0	6
7	3	1	0	0	0	0	11
2	2	0	1	0	0	0	5
7	0	1	1	0	0	0	9
19	6	3	3	0	0	0	31
6	4	0	1	0	0	1	12
8	3	2	0	0	0	0	13
7	0	1	1	0	0	0	9
5	3	0	0	0	0	1	9
26	10	3	2	0	0	2	43
10	0	0	1	0	0	0	11
8	4	1	0	0	0	0	13
3	2	0	0	0	1	0	6
7	3	0	0	0	0	0	10
28	9	1	1	0	0	0	40
7	1	1	0	0	0	0	9
13	3	0	0	0	0	0	16
12	0	0	1	0	0	1	14
10	2	0	0	0	0	0	12
42	6	1	1	0	0	1	51
10	0	0	1	0	0	0	11
6	4	1	1	0	0	0	12
32	4	0	0	0	0	0	36
12	0	1	1	0	0	0	14
60	8	2	3	0	0	0	73
9	0	1	1	0	0	0	11
10	1	0	0	0	0	0	12
12	1	0	0	0	0	0	14
13	2	0	0	0	0	0	15
44	4	1	2	0	0	1	52
25	0	2	0	0	0	0	27
13	1	0	0	0	0	0	14
13	2	0	0	0	0	0	15
16	5	0	0	0	0	0	21
67	8	2	0	0	0	0	77

35
138
51
44
57
42
194
31
28
20
24
103
19
19
14
23
75
22
28
23
23
96
29
25
21
25
100
20
29
23
33
105
27
39
53
25
144
27
33
27
45
132
56
35
36
39
166

17:00	15	1	0	0	0	0	0	0	0	16
17:15	9	0	0	0	0	0	0	0	0	9
17:30	10	1	0	0	0	0	0	0	11	11
17:45	13	2	0	0	0	0	0	0	15	15
1 Hr	47	4	0	0	0	0	0	0	51	51
18:00	7	2	0	0	0	0	0	0	2	11
18:15	4	2	0	0	0	0	0	0	1	7
18:30	7	1	0	0	0	0	0	0	8	8
18:45	10	0	0	0	0	0	0	0	10	10
1 Hr	28	5	0	0	0	0	0	0	36	36
19:00	9	1	0	0	0	0	0	0	10	10
19:15	10	0	0	0	0	0	0	0	11	11
19:30	9	1	0	0	0	0	0	0	10	10
19:45	12	0	0	0	0	0	0	0	12	12
1 Hr	40	2	0	0	0	0	0	0	43	43
20:00	5	0	0	0	0	0	0	0	5	5
20:15	6	0	0	0	0	0	0	0	6	6
20:30	4	0	0	0	0	0	0	0	4	4
20:45	5	0	0	0	0	0	0	0	5	5
1 Hr	20	0	0	0	0	0	0	0	20	20
21:00	5	0	0	0	0	0	0	0	5	5
21:15	2	0	0	0	0	0	0	0	2	2
21:30	6	1	0	0	0	0	0	0	7	7
21:45	2	0	0	0	0	0	0	0	3	3
1 Hr	15	1	0	0	0	0	0	0	17	17
22:00	2	0	0	0	0	0	0	0	2	2
22:15	6	1	0	0	0	0	0	0	7	7
22:30	3	0	0	0	0	0	0	0	3	3
22:45	0	0	0	0	0	0	0	0	0	0
1 Hr	11	1	0	0	0	0	0	0	12	12
23:00	0	0	0	0	0	0	0	0	0	0
23:15	1	0	0	0	0	0	0	0	1	1
23:30	4	0	0	0	0	0	0	0	4	4
23:45	1	0	0	0	0	0	0	0	1	1
1 Hr	6	0	0	0	0	0	0	0	6	6
<b>Total</b>	<b>490</b>	<b>75</b>	<b>17</b>	<b>18</b>	<b>0</b>	<b>1</b>	<b>17</b>	<b>618</b>		

DESTINATION SUMMARY

	Destination : Arm A Marrsfield Avenue(ESE)						Total	
	Car	LGV	OGV1	OGV2	PSV	MC		PC
00:00	1	0	0	0	0	0	1	2
00:15	0	0	0	0	0	0	0	0
00:30	1	0	0	0	0	0	1	1
00:45	0	0	0	0	0	0	0	1
1 Hr	2	0	0	0	0	0	2	4

6	1	0	0	0	0	0	0	0	1	8
3	1	0	0	0	0	0	0	0	0	4
10	1	0	0	0	0	0	0	0	11	11
17	3	0	0	0	0	0	0	0	21	21
36	6	0	0	0	0	0	0	0	44	44
11	0	0	0	0	0	0	0	0	11	11
13	0	0	0	0	0	0	0	0	13	13
4	0	0	0	0	0	0	0	0	4	4
14	0	0	0	0	0	0	0	0	15	15
42	0	0	0	0	0	0	0	0	43	43
7	0	0	0	0	0	0	0	0	8	8
8	0	0	0	0	0	0	0	0	8	8
5	0	0	0	0	0	0	0	0	5	5
8	0	0	0	0	0	0	0	0	8	8
28	0	0	0	0	0	0	0	0	29	29
9	0	0	0	0	0	0	0	0	9	9
7	0	0	0	0	0	0	0	0	7	7
2	0	0	0	0	0	0	0	0	2	2
4	1	0	0	0	0	0	0	0	5	5
22	1	0	0	0	0	0	0	0	23	23
9	0	0	0	0	0	0	0	0	10	10
3	0	0	0	0	0	0	0	0	3	3
3	0	0	0	0	0	0	0	0	3	3
0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	16	16
3	1	0	0	0	0	0	0	0	5	5
2	0	0	0	0	0	0	0	0	2	2
0	0	0	0	0	0	0	0	0	0	0
5	1	0	0	0	0	0	0	0	7	7
0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	4	4
3	0	0	0	0	0	0	0	0	3	3
7	0	0	0	0	0	0	0	0	7	7
446	34	5	0	0	0	2	11	498		

	Destination : Arm B Park Avenue						Total	
	Car	LGV	OGV1	OGV2	PSV	MC		PC
1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	1

10	2	0	0	0	0	0	0	0	12	12
21	2	1	0	0	0	0	0	0	1	25
18	2	0	0	0	0	0	0	0	20	20
24	2	0	0	0	0	0	0	0	3	29
73	8	1	0	0	0	0	0	0	86	86
19	2	0	0	0	0	0	0	0	23	23
28	1	0	0	0	0	0	0	0	29	29
10	3	0	0	0	0	0	0	0	13	13
16	1	0	0	0	0	0	0	0	17	17
8	0	0	0	0	0	0	0	0	8	8
73	7	0	0	0	0	0	0	0	82	82
11	3	0	0	0	0	0	0	0	14	14
20	0	0	0	0	0	0	0	0	20	20
16	1	0	0	0	0	0	0	0	17	17
8	0	0	0	0	0	0	0	0	8	8
55	4	0	0	0	0	0	0	0	59	59
14	1	0	0	0	0	0	0	0	15	15
16	1	0	0	0	0	0	0	0	18	18
10	0	0	0	0	0	0	0	0	12	12
12	0	0	0	0	0	0	0	0	13	13
52	2	0	0	0	0	0	0	0	58	58
9	2	0	0	0	0	0	0	0	12	12
10	2	0	0	0	0	0	0	0	12	12
15	0	0	0	0	0	0	0	0	15	15
13	0	0	0	0	0	0	0	0	13	13
47	4	0	0	0	0	0	0	0	52	52
9	0	0	0	0	0	0	0	0	9	9
5	1	0	0	0	0	0	0	0	6	6
5	0	0	0	0	0	0	0	0	5	5
6	0	0	0	0	0	0	0	0	6	6
23	1	0	0	0	0	0	0	0	26	26
1	0	0	0	0	0	0	0	0	1	1
8	1	0	0	0	0	0	0	0	9	9
4	0	0	0	0	0	0	0	0	4	4
5	0	0	0	0	0	0	0	0	5	5
18	1	0	0	0	0	0	0	0	19	19
782	111	18	20	0	1	23	955			

Dest Totals	Destination : Arm C Marrsfield Avenue(WNW)						Total	
	Car	LGV	OGV1	OGV2	PSV	MC		PC
4	1	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1
6	1	0	0	0	0	0	0	6





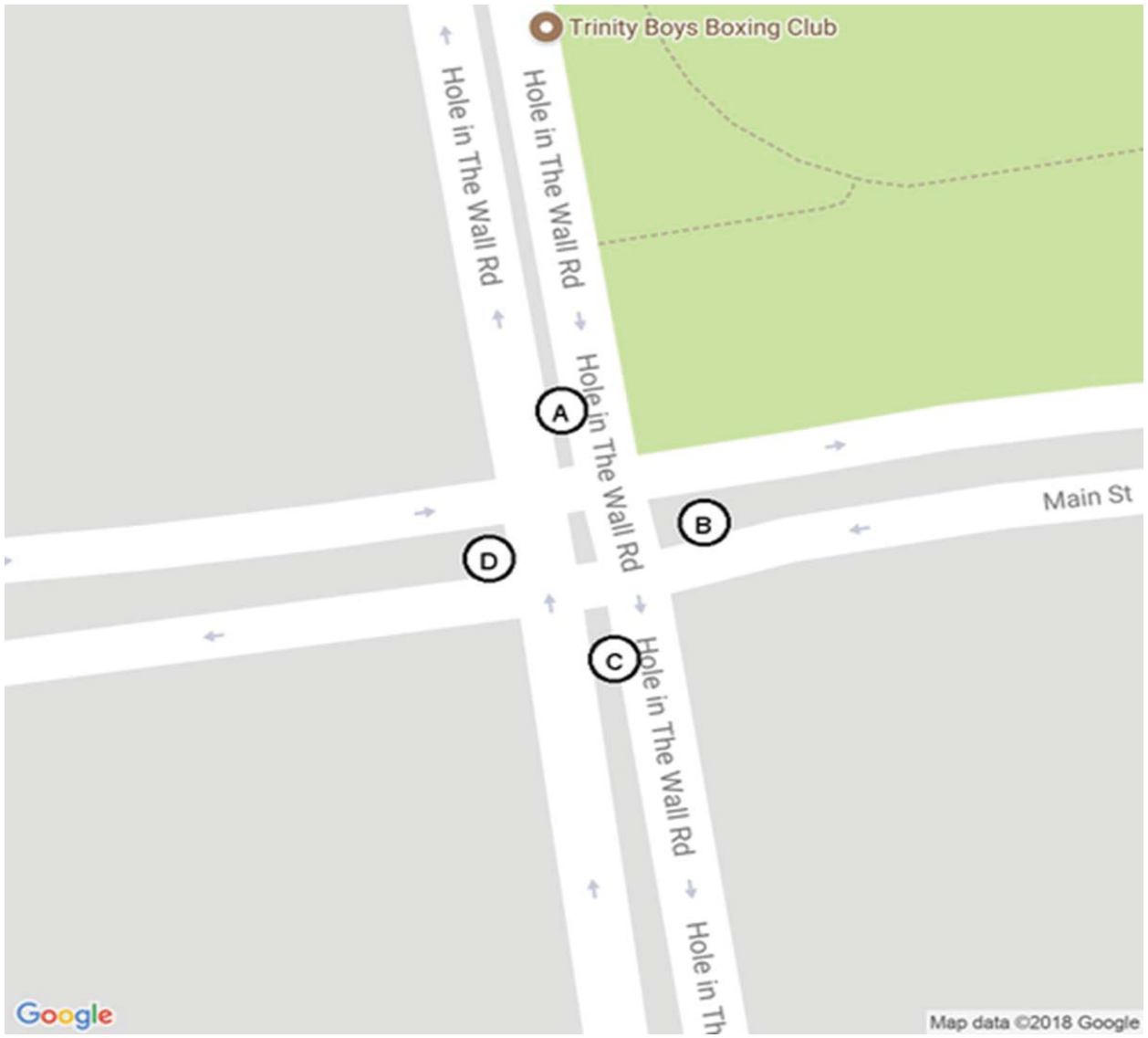
1 Hr	41	0	0	0	0	0	1	42
20:00	9	1	0	0	0	0	0	10
20:15	12	0	0	0	0	1	13	
20:30	9	0	0	0	0	2	11	
20:45	4	0	0	0	0	1	5	
1 Hr	34	1	0	0	0	4	39	
21:00	8	0	0	0	0	0	8	
21:15	7	1	0	0	0	0	8	
21:30	11	0	0	0	0	0	11	
21:45	11	0	0	0	0	0	11	
1 Hr	37	1	0	0	0	0	38	
22:00	10	1	0	0	1	0	12	
22:15	4	1	0	0	0	0	5	
22:30	3	0	0	0	0	2	5	
22:45	4	0	0	0	0	0	4	
1 Hr	21	2	0	0	1	2	26	
23:00	1	0	0	0	0	0	1	
23:15	10	1	0	0	0	0	11	
23:30	4	0	0	0	0	0	4	
23:45	4	0	0	0	0	0	4	
1 Hr	19	1	0	0	0	0	20	
Total	517	79	14	20	0	1	20	651

37	4	0	0	0	0	0	1	42
8	0	0	0	0	0	0	0	8
8	1	0	0	0	0	0	0	9
4	0	0	0	0	0	0	0	4
9	0	0	0	0	0	0	0	9
29	1	0	0	0	0	0	30	
6	2	0	0	0	0	1	9	
4	1	0	0	0	0	0	5	
7	0	0	0	0	0	0	7	
2	0	0	0	0	0	1	3	
19	3	0	0	0	0	2	24	
2	0	0	0	0	0	0	2	
3	0	0	0	0	0	0	3	
1	0	0	0	0	0	0	1	
1	0	0	0	0	0	0	1	
7	0	0	0	0	0	0	7	
0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	3	
1	0	0	0	0	0	0	1	
1	0	0	0	0	0	0	1	
5	0	0	0	0	0	0	5	
425	47	4	0	0	0	1	16	493

45	2	0	0	0	0	0	0	47
11	0	0	0	0	0	0	0	11
9	0	0	0	0	0	0	0	9
3	0	0	0	0	0	0	0	3
8	1	0	0	0	0	0	0	9
31	1	0	0	0	0	0	32	
9	0	0	0	0	0	1	10	
4	0	0	0	0	0	0	4	
6	1	0	0	0	0	0	7	
2	0	0	0	0	0	0	2	
21	1	0	0	0	0	1	23	
2	0	0	0	0	0	0	2	
6	1	0	0	0	0	0	7	
2	0	0	0	0	0	0	2	
1	0	0	0	0	0	0	1	
11	1	0	0	0	0	0	12	
0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	6	
1	0	0	0	0	0	0	1	
7	0	0	0	0	0	0	7	
776	94	22	18	0	2	15	927	2071

131
29
31
18
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101
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85
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14
11
6
32

**SITE 5**

























Site 5 - Hole in The Wall Road(NNW) / Main Street(E) / Hole in The Wall Road(S) / Main Street(W)

1 Hr	196	21	8	0	0	0	0	0	0	0	0	0	0	0	225
13:00	44	6	1	0	0	0	0	0	0	0	0	0	0	0	51
13:15	62	5	0	2	1	1	0	0	0	0	0	0	0	0	71
13:30	74	8	0	0	0	0	0	0	0	0	0	0	0	0	82
13:45	57	6	2	0	0	0	0	0	0	0	0	0	0	0	65
1 Hr	237	25	3	2	1	1	0	0	0	0	0	0	0	0	289
14:00	45	4	0	0	0	0	0	0	0	0	0	0	0	0	49
14:15	47	4	1	0	0	2	0	0	0	0	0	0	0	0	54
14:30	74	6	0	0	0	2	0	0	0	0	0	0	0	0	80
14:45	79	6	0	0	0	0	0	0	0	0	0	0	0	0	85
1 Hr	245	20	1	0	2	0	0	0	0	0	0	0	0	0	268
15:00	65	6	1	0	0	0	0	0	0	0	0	0	0	0	74
15:15	54	7	0	0	0	0	0	0	0	0	0	0	0	0	61
15:30	74	9	2	0	0	0	0	0	0	0	0	0	0	0	86
15:45	58	9	1	0	0	0	0	0	0	0	0	0	0	0	69
1 Hr	251	31	4	0	0	0	0	0	0	0	0	0	0	0	290
16:00	45	5	3	0	0	0	0	0	0	0	0	0	0	0	53
16:15	78	6	3	0	0	0	0	0	0	0	0	0	0	0	88
16:30	61	11	2	0	0	0	0	0	0	0	0	0	0	0	77
16:45	76	4	1	0	0	0	0	0	0	0	0	0	0	0	82
1 Hr	260	26	9	0	0	0	0	0	0	0	0	0	0	0	300
17:00	75	8	0	1	0	0	0	0	0	0	0	0	0	0	84
17:15	66	6	1	0	0	1	0	0	0	0	0	0	0	0	75
17:30	69	3	1	0	0	2	0	0	0	0	0	0	0	0	75
17:45	74	0	1	0	0	2	1	1	1	1	1	1	1	1	79
1 Hr	284	17	3	1	2	4	2	3	1	3	1	3	1	3	313
18:00	77	9	0	0	0	0	0	0	0	0	0	0	0	0	88
18:15	80	6	0	0	1	0	0	0	0	0	0	0	0	0	88
18:30	63	4	1	0	0	1	0	0	0	0	0	0	0	0	71
18:45	75	6	0	0	0	1	0	0	0	0	0	0	0	0	83
1 Hr	295	25	1	0	2	1	6	3	3	0	6	3	3	0	330
19:00	55	3	0	0	0	0	0	0	0	0	0	0	0	0	58
19:15	59	4	0	0	0	0	0	0	0	0	0	0	0	0	63
19:30	42	2	0	1	0	0	0	0	0	0	0	0	0	0	47
19:45	49	3	0	0	0	0	0	0	0	0	0	0	0	0	52
1 Hr	205	12	0	1	0	0	0	0	0	0	0	0	0	0	220
20:00	54	3	0	0	0	0	0	0	0	0	0	0	0	0	58
20:15	36	4	1	0	0	0	0	0	0	0	0	0	0	0	41
20:30	38	2	0	0	0	0	0	0	0	0	0	0	0	0	41
20:45	40	4	0	0	0	0	0	0	0	0	0	0	0	0	44
1 Hr	168	13	1	0	0	0	0	0	0	0	0	0	0	0	184
21:00	44	2	0	0	0	0	0	0	0	0	0	0	0	0	46
21:15	34	1	0	0	0	0	0	0	0	0	0	0	0	0	35
21:30	26	2	0	0	0	0	0	0	0	0	0	0	0	0	28
21:45	25	1	0	0	0	0	0	0	0	0	0	0	0	0	27
1 Hr	129	6	0	0	0	0	0	0	0	0	0	0	0	0	136
22:00	16	2	0	0	0	0	0	0	0	0	0	0	0	0	19
22:15	26	0	0	0	0	0	0	0	0	0	0	0	0	0	27
22:30	16	0	0	0	0	0	0	0	0	0	0	0	0	0	16
22:45	17	0	0	0	0	0	0	0	0	0	0	0	0	0	17
1 Hr	75	2	0	0	0	0	0	0	0	0	0	0	0	0	79
23:00	11	0	1	0	0	0	0	0	0	0	0	0	0	0	12
23:15	10	0	0	0	0	0	0	0	0	0	0	0	0	0	10
23:30	8	0	0	0	0	0	0	0	0	0	0	0	0	0	8
23:45	3	0	0	0	0	0	0	0	0	0	0	0	0	0	3
1 Hr	32	0	1	0	0	0	0	0	0	0	0	0	0	0	33
Total	3462	309	52	5	12	9	32	38	11	40	32	38	11	40	3881

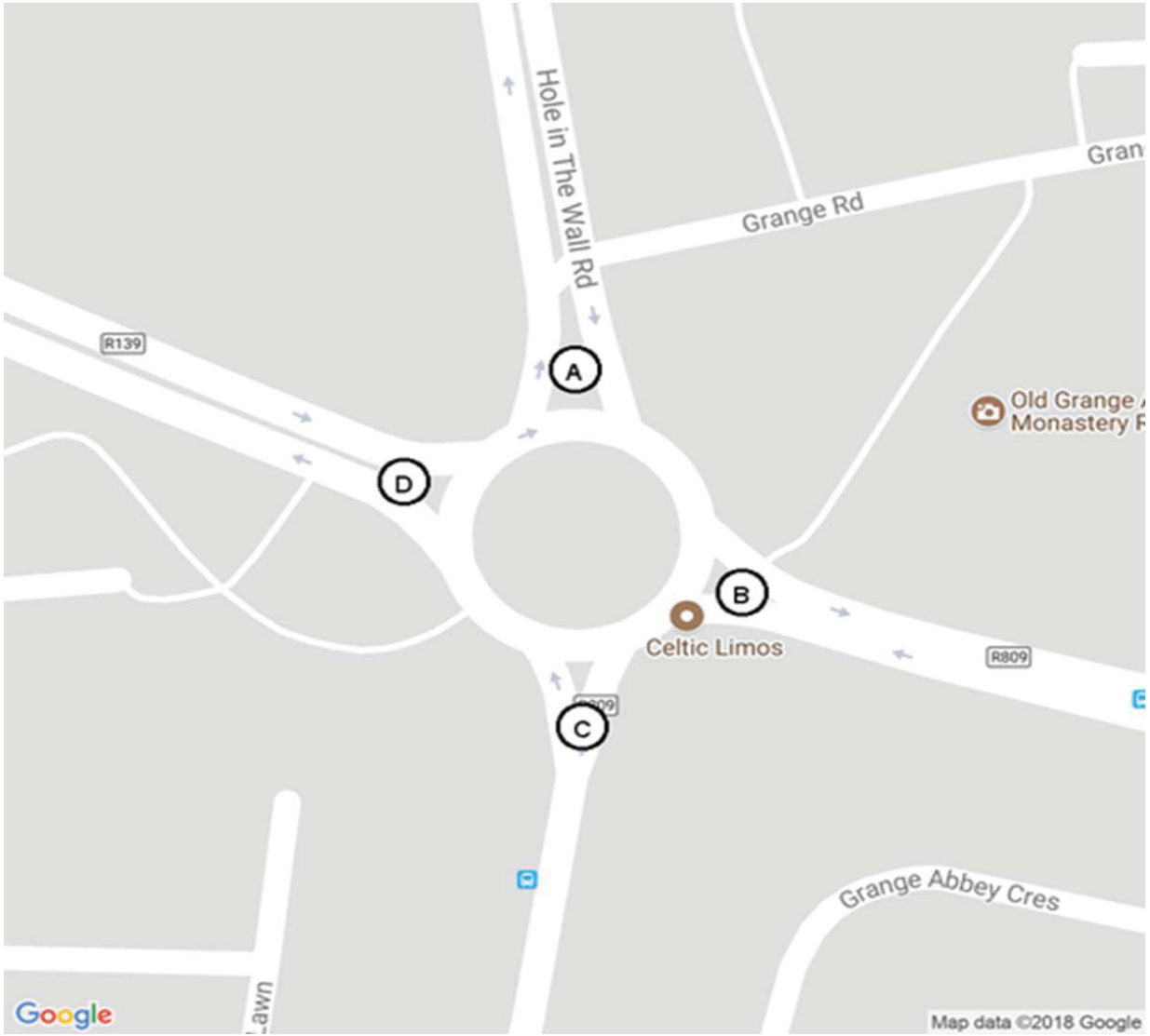
  

1 Hr	147	20	0	0	0	0	0	0	0	0	0	0	0	0	174
50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
44	8	1	0	0	2	0	0	0	0	0	0	0	0	0	55
83	4	0	0	0	2	0	0	0	0	0	0	0	0	0	43
95	3	4	0	0	1	0	0	0	0	0	0	0	0	0	45
1 Hr	173	14	1	0	7	0	0	0	0	0	0	0	0	0	195
45	5	0	0	0	0	0	0	0	0	0	0	0	0	0	50
59	4	2	1	1	0	0	0	0	0	0	0	0	0	0	67
31	8	0	0	0	2	0	0	0	0	0	0	0	0	0	41
42	3	0	0	0	0	0	0	0	0	0	0	0	0	0	40
1 Hr	202	2	1	5	0	0	0	0	0	0	0	0	0	0	205
42	3	1	0	1	1	0	0	0	0	0	0	0	0	0	48
31	2	0	1	1	0	0	0	0	0	0	0	0	0	0	35
42	3	1	0	2	0	0	0	0	0	0	0	0	0	0	48
54	5	0	0	0	1	0	0	0	0	0	0	0	0	0	60
1 Hr	169	13	2	1	5	1	0	0	0	0	0	0	0	0	191
83	6	0	0	1	1	0	0	0	0	0	0	0	0	0	91
62	4	0	0	2	0	0	0	0	0	0	0	0	0	0	68
65	5	0	0	2	0	0	0	0	0	0	0	0	0	0	72
71	3	0	0	1	1	0	0	0	0	0	0	0	0	0	76
1 Hr	281	18	0	0	6	2	0	0	0	0	0	0	0	0	307
80	5	0	0	0	2	0	0	0	0	0	0	0	0	0	87
66	7	0	0	1	0	0	0	0	0	0	0	0	0	0	75
62	2	1	0	2	0	0	0	0	0	0	0	0	0	0	67
114	9	0	0	0	1	1	1	1	1	1	1	1	1	1	125
1 Hr	322	23	1	1	6	1	0	0	0	0	0	0	0	0	354
83	5	0	0	3	0	0	0	0	0	0	0	0	0	0	92
111	7	0	0	1	2	1	0	0	0	0	0	0	0	0	122
70	1	0	0	2	0	0	0	0	0	0	0	0	0	0	73
68	1	0	0	0	2	0	0	0	0	0	0	0	0	0	71
1 Hr	332	14	0	0	8	2	2	3	5	8	2	2	3	5	358
96	3	0	0	0	2	0	0	0	0	0	0	0	0	0	101
72	1	0	0	2	0	0	0	0	0	0	0	0	0	0	75
53	4	1	0	0	0	0	0	0	0	0	0	0	0	0	58
82	3	0	0	0	1	0	0	0	0	0	0	0	0	0	86
1 Hr	303	11	1	0	5	0	0	0	0	0	0	0	0	0	320
75	5	0	2	0	0	0	0	0	0	0	0	0	0	0	82
53	3	1	1	0	0	0	0	0	0	0	0	0	0	0	60
59	1	0	1	1	0	0	0	0	0	0	0	0	0	0	62
34	3	0	2	0	0	0	0	0	0	0	0	0	0	0	39
1 Hr	221	12	1	6	1	0	0	0	0	0	0	0	0	0	243
48	4	1	0	1	0	0	0	0	0	0	0	0	0	0	54
50	2	0	0	1	0	0	0	0	0	0	0	0	0	0	53
21	1	0	0	0	1	0	0	0	0	0	0	0	0	0	23
32	2	0	0	0	0	0	0	0	0	0	0	0	0	0	34
1 Hr	151	9	1	0	3	0	0	0	0	0	0	0	0	0	164
28	0	0	0	1	0	0	0	0	0	0	0	0	0	0	29
24	1	0	0	2	0	0	0	0	0	0	0	0	0	0	27
20	0	0	0	1	0	0	0	0	0	0	0	0	0	0	21
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10
1 Hr	82	1	0	0	4	0	0	0	0	0	0	0	0	0	87
14	0	0	0	2	0	0	0	0	0	0	0	0	0	0	16
15	0	0	0	2	0	0	0	0	0	0	0	0	0	0	17
15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	16
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
1 Hr	56	1	0	0	4	0	0	0	0	0	0	0	0	0	61
Total	3650	281	19	13	99	15	10	40	87	10	40	87	10	40	





SITE 6













Time	08:00				08:15				08:30				08:45				09:00				09:15				09:30				09:45				10:00				10:15				10:30				10:45				11:00				11:15				11:30				11:45				12:00				12:15																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
	Car	LGV	OGV1	OGV2	PSV	MC	PC	Totals	Car	LGV	OGV1	OGV2	PSV	MC	PC	Totals	Car	LGV	OGV1	OGV2	PSV	MC	PC	Totals	Car	LGV	OGV1	OGV2	PSV	MC	PC	Totals	Car	LGV	OGV1	OGV2	PSV	MC	PC	Totals	Car	LGV	OGV1	OGV2	PSV	MC	PC	Totals	Car	LGV	OGV1	OGV2	PSV	MC	PC	Totals	Car	LGV	OGV1	OGV2	PSV	MC	PC	Totals																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
00:00	7	0	0	0	0	0	7	8	0	0	0	0	0	0	8	9	0	0	0	0	0	0	9	10	1	1	0	0	0	12	13	2	2	0	0	0	17	18	3	3	0	0	0	24	25	4	4	0	0	0	33	34	7	7	0	0	0	41	42	14	14	0	0	0	56	57	21	21	0	0	0	72	73	30	30	0	0	0	100	101	44	44	0	0	0	144	145	53	53	0	0	0	196	197	74	74	0	0	0	270	271	104	104	0	0	0	374	375	148	148	0	0	0	522	523	202	202	0	0	0	724	725	286	286	0	0	0	1110	1111	430	430	0	0	0	1540	1541	590	590	0	0	0	2080	2081	800	800	0	0	0	2960	2961	1120	1120	0	0	0	3920	3921	1480	1480	0	0	0	4960	4961	1960	1960	0	0	0	5920	5921	2320	2320	0	0	0	6960	6961	2680	2680	0	0	0	7920	7921	3120	3120	0	0	0	8960	8961	3520	3520	0	0	0	9920	9921	4320	4320	0	0	0	10960	10961	5120	5120	0	0	0	11920	11921	5920	5920	0	0	0	12960	12961	6720	6720	0	0	0	13920	13921	7520	7520	0	0	0	14960	14961	8320	8320	0	0	0	15920	15921	9120	9120	0	0	0	16960	16961	9920	9920	0	0	0	17920	17921	10720	10720	0	0	0	18960	18961	11520	11520	0	0	0	19920	19921	12320	12320	0	0	0	20880	20881	13120	13120	0	0	0	21840	21841	13920	13920	0	0	0	22800	22801	14720	14720	0	0	0	23760	23761	15520	15520	0	0	0	24720	24721	16320	16320	0	0	0	25680	25681	17120	17120	0	0	0	26640	26641	17920	17920	0	0	0	27600	27601	18720	18720	0	0	0	28560	28561	19520	19520	0	0	0	29520	29521	20320	20320	0	0	0	30480	30481	21120	21120	0	0	0	31440	31441	21920	21920	0	0	0	32400	32401	22720	22720	0	0	0	33360	33361	23520	23520	0	0	0	34320	34321	24320	24320	0	0	0	35280	35281	25120	25120	0	0	0	36240	36241	25920	25920	0	0	0	37200	37201	26720	26720	0	0	0	38160	38161	27520	27520	0	0	0	39120	39121	28320	28320	0	0	0	40080	40081	29120	29120	0	0	0	41040	41041	29920	29920	0	0	0	42000	42001	30720	30720	0	0	0	42960	42961	31520	31520	0	0	0	43920	43921	32320	32320	0	0	0	44880	44881	33120	33120	0	0	0	45840	45841	33920	33920	0	0	0	46800	46801	34720	34720	0	0	0	47760	47761	35520	35520	0	0	0	48720	48721	36320	36320	0	0	0	49680	49681	37120	37120	0	0	0	50640	50641	37920	37920	0	0	0	51600	51601	38720	38720	0	0	0	52560	52561	39520	39520	0	0	0	53520	53521	40320	40320	0	0	0	54480	54481	41120	41120	0	0	0	55440	55441	41920	41920	0	0	0	56400	56401	42720	42720	0	0	0	57360	57361	43520	43520	0	0	0	58320	58321	44320	44320	0	0	0	59280	59281	45120	45120	0	0	0	60240	60241	45920	45920	0	0	0	61200	61201	46720	46720	0	0	0	62160	62161	47520	47520	0	0	0	63120	63121	48320	48320	0	0	0	64080	64081	49120	49120	0	0	0	65040	65041	49920	49920	0	0	0	66000	66001	50720	50720	0	0	0	66960	66961	51520	51520	0	0	0	67920	67921	52320	52320	0	0	0	68880	68881	53120	53120	0	0	0	69840	69841	53920	53920	0	0	0	70800	70801	54720	54720	0	0	0	71760	71761	55520	55520	0	0	0	72720	72721	56320	56320	0	0	0	73680	73681	57120	57120	0	0	0	74640	74641	57920	57920	0	0	0	75600	75601	58720	58720	0	0	0	76560	76561	59520	59520	0	0	0	77520	77521	60320	60320	0	0	0	78480	78481	61120	61120	0	0	0	79440	79441	61920	61920	0	0	0	80400	80401	62720	62720	0	0	0	81360	81361	63520	63520	0	0	0	82320	82321	64320	64320	0	0	0	83280	83281	65120	65120	0	0	0	84240	84241	65920	65920	0	0	0	85200	85201	66720	66720	0	0	0	86160	86161	67520	67520	0	0	0	87120	87121	68320	68320	0	0	0	88080	88081	69120	69120	0	0	0	89040	89041	69920	69920	0	0	0	90000	90001	70720	70720	0	0	0	90960	90961	71520	71520	0	0	0	91920	91921	72320	72320	0	0	0	92880	92881	73120	73120	0	0	0	93840	93841	73920	73920	0	0	0	94800	94801	74720	74720	0	0	0	95760	95761	75520	75520	0	0	0	96720	96721	76320	76320	0	0	0	97680	97681	77120	77120	0	0	0	98640	98641	77920	77920	0	0	0	99600	99601	78720	78720	0	0	0	100560	100561	79520	79520	0	0	0	101520	101521	80320	80320	0	0	0	102480	102481	81120	81120	0	0	0	103440	103441	81920	81920	0	0	0	104400	104401	82720	82720	0	0	0	105360	105361	83520	83520	0	0	0	106320	106321	84320	84320	0	0	0	107280	107281	85120	85120	0	0	0	108240	108241	85920	85920	0	0	0	109200	109201	86720	86720	0	0	0	110160	110161	87520	87520	0	0	0	111120	111121	88320	88320	0	0	0	112080	112081	89120	89120	0	0	0	113040	113041	89920	89920	0	0	0	114000	114001	90720	90720	0	0	0	114960	114961	91520	91520	0	0	0	115920	115921	92320	92320	0	0	0	116880	116881	93120	93120	0	0	0	117840	117841	93920	93920	0	0	0	118800	118801	94720	94720	0	0	0	119760	119761	95520	95520	0	0	0	120720	120721	96320	96320	0	0	0	121680	121681	97120	97120	0	0	0	122640	122641	97920	97920	0	0	0	123600	123601	98720	98720	0	0	0	124560	124561	99520	99520	0	0	0	125520	125521	100320	100320	0	0	0	126480	126481	101120	101120	0	0	0	127440	127441	101920	101920	0	0	0	128400	128401	102720	102720	0	0	0	129360	129361	103520	103520	0	0	0	130320	130321	104320	104320	0	0	0	131280	131281	105120	105120	0	0	0	132240	132241	105920	105920	0	0	0	133200	133201	106720	106720	0	0	0	134160	134161	107520	107520	0	0	0	135120	135121	108320	108320	0	0	0	136080	136081	109120	109120	0	0	0	137040	137041	110120	110120	0	0	0	138000	138001	111120	111120	0	0	0	138960	138961	112120	112120	0	0	0	139920	139921	113120	113120	0	0	0	140880	140881	114120	114120	0	0	0	141840	141841	115120	115120	0	0	0	142800	142801	116120	116120	0	0	0	143760	143761	117120	117120	0	0	0	144720	144721	118120	118120	0	0	0	145680	145681	119120	119120	0	0	0	146640	146641	120120	120120	0	0	0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00:00	18	2	0	0	1	0	0	0	0	21	34	2	1	0	0	3	1	0	41	130
00:15	11	0	0	0	0	0	0	0	0	11	28	3	0	0	1	0	1	0	33	91
00:30	16	1	0	0	0	0	0	0	0	17	21	2	1	0	0	0	0	0	24	77
00:45	8	0	0	0	0	0	0	0	0	8	29	0	1	0	0	0	0	0	30	62
1 Hr	53	3	0	0	1	0	0	0	0	57	112	7	3	0	4	1	1	128	360	
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01:15	7	2	0	0	0	0	0	0	0	9	19	1	0	0	0	0	0	20	50	
01:30	6	0	0	0	0	0	0	0	0	6	10	0	0	0	0	0	0	10	28	
01:45	6	1	0	0	0	0	0	0	0	7	11	1	0	0	0	0	0	12	30	
1 Hr	27	4	0	0	0	0	0	0	0	31	55	3	1	0	0	0	0	59	161	
02:00	3	0	1	0	0	0	0	0	0	4	14	0	0	0	0	0	0	14	25	
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02:30	3	0	0	0	0	0	0	0	0	3	3	1	1	0	0	0	0	5	19	
02:45	4	1	0	0	0	0	0	0	0	5	5	1	0	0	0	0	0	6	18	
1 Hr	12	1	1	0	0	0	0	0	0	14	29	2	1	0	0	0	0	32	77	
03:00	0	0	0	0	0	0	0	0	0	0	4	1	0	0	0	0	0	5	15	
03:15	2	1	0	0	0	0	0	0	0	3	4	1	0	0	0	0	0	5	17	
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03:45	5	0	0	0	0	0	0	0	0	5	7	0	1	0	0	0	0	8	21	
1 Hr	13	1	0	0	0	0	0	0	0	14	19	2	2	0	0	0	0	23	73	
04:00	2	0	0	0	0	0	0	0	0	2	8	1	1	0	0	0	0	10	35	
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04:45	10	2	0	0	0	0	0	0	0	12	10	2	0	0	0	0	0	12	54	
1 Hr	31	3	0	0	0	0	0	0	0	34	46	5	3	0	0	0	0	54	191	
05:00	7	3	0	0	0	0	0	0	0	11	13	2	0	1	0	0	0	17	46	
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1 Hr	69	7	0	0	0	0	0	0	0	78	92	11	7	5	2	0	0	119	383	
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06:45	61	13	0	0	1	0	2	7	7	77	145	15	1	1	1	0	0	163	467	
1 Hr	188	37	0	0	6	1	7	29	9	239	382	37	8	4	12	5	6	454	1294	
07:00	88	7	2	0	2	3	3	10	6	106	83	34	3	1	5	0	0	126	468	
07:15	129	17	2	0	2	0	4	154	1	154	142	40	3	2	6	0	0	195	605	
07:30	110	16	1	0	5	0	3	135	1	142	191	42	6	2	3	3	2	249	681	
07:45	172	17	3	0	4	0	3	199	1	172	201	41	5	1	5	2	0	255	756	
1 Hr	499	58	8	0	13	3	13	594	1	594	617	157	17	6	19	5	4	825	2530	
08:00	156	8	4	0	3	2	1	174	1	174	260	34	4	2	4	2	2	308	832	
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08:30	132	6	0	0	1	2	1	142	1	142	276	23	9	1	1	0	1	311	793	
08:45	144	12	1	0	2	1	2	162	1	162	198	26	4	2	2	1	1	234	798	
1 Hr	580	39	5	0	9	5	7	645	1	645	979	106	25	6	12	5	6	1139	3253	
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1 Hr	417	51	2	2	6	3	7	488	1	488	576	131	31	14	11	2	1	766	2722	
10:00	100	11	4	0	1	0	1	117	1	117	113	32	3	2	5	1	0	156	567	
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1 Hr	349	42	9	0	5	1	1	407	1	407	487	135	27	9	13	2	1	684	2296	
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11:45	95	13	1	0	1	0	0	110	1	110	140	33	10	2	4	0	1	190	647	
1 Hr	339	41	6	1	5	0	4	396	1	396	533	135	38	14	10	0	2	732	2465	
12:00	92	8	2	0	1	0	0	103	1	103	112	26	9	5	0	0	0	152	636	
12:15	100	9	1	0	1	0	0	111	1	111	170	29	12	3	3	1	3	221	673	
12:30	84	16	1	0	3	0	1	107	1	107	170	22	9	1	3	0	0	205	661	
12:45	114	13	4	0	1	2	0	134	1	134	172	34	6	2	3	0	2	219	684	

1.Hr	390	48	8	0	6	2	1	465
13:00	104	6	1	0	2	0	1	114
13:15	117	12	1	1	2	1	0	134
13:30	103	14	0	1	1	0	0	119
13:45	99	6	1	0	2	1	1	109
1.Hr	423	38	3	2	7	1	2	476
14:00	100	8	1	0	2	0	0	111
14:15	121	11	3	0	2	0	1	139
14:30	100	15	1	0	2	0	0	118
14:45	121	11	0	0	2	0	0	134
1.Hr	442	45	5	0	9	0	1	502
15:00	127	6	3	0	1	0	1	137
15:15	94	10	1	1	2	0	1	109
15:30	174	14	2	0	3	0	1	194
15:45	125	12	1	0	2	1	0	141
1.Hr	520	42	7	1	7	2	2	581
16:00	120	15	3	0	1	1	1	141
16:15	131	10	4	0	2	1	0	148
16:30	129	17	2	0	2	0	1	151
16:45	131	6	1	0	1	2	0	141
1.Hr	511	48	10	0	6	4	2	581
17:00	133	9	0	1	2	0	2	147
17:15	113	13	1	0	1	0	0	128
17:30	121	8	0	0	2	2	0	133
17:45	160	9	1	0	1	2	1	174
1.Hr	527	39	2	1	6	4	3	582
18:00	137	10	0	0	3	2	1	151
18:15	148	8	0	0	2	2	1	161
18:30	122	4	0	0	2	1	0	129
18:45	137	9	1	0	3	0	0	150
1.Hr	544	31	1	0	10	3	2	591
19:00	145	9	0	0	2	0	0	156
19:15	138	6	0	1	2	0	2	148
19:30	108	9	1	1	0	0	2	121
19:45	148	6	0	0	1	0	0	155
1.Hr	539	30	1	1	5	0	4	580
20:00	123	7	0	0	2	0	1	133
20:15	97	9	2	0	1	0	2	111
20:30	94	2	0	0	1	1	2	100
20:45	80	2	0	0	2	0	0	84
1.Hr	394	20	2	0	6	1	5	428
21:00	97	5	1	0	1	0	0	104
21:15	75	4	0	0	1	0	0	80
21:30	62	2	0	0	1	0	2	67
21:45	62	2	0	0	0	1	0	65
1.Hr	296	13	1	0	3	1	2	316
22:00	39	3	0	0	1	0	0	43
22:15	51	2	0	0	2	0	1	56
22:30	29	0	0	0	1	0	0	30
22:45	32	0	0	0	0	0	0	32
1.Hr	151	5	0	0	4	0	1	161
23:00	25	1	1	0	2	0	0	29
23:15	35	1	0	0	2	0	0	38
23:30	19	2	0	0	0	0	1	21
23:45	26	1	0	0	0	0	1	28
1.Hr	105	5	1	0	4	0	1	116

Total	7419	651	72	8	118	31	67	8366
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DESTINATION SUMMARY

Destination : Arm A - Hole in The Wall Road								Total
Car	LGV	OGV1	OGV2	PSV	MC	PC		
20	0	0	0	0	0	0	0	20

1.Hr	515	88	22	6	3	4	4	642
20:00	157	35	1	5	1	1	0	200
20:15	175	20	2	1	1	0	2	185
20:30	172	18	4	1	1	0	0	196
20:45	165	16	3	2	1	0	1	193
1.Hr	653	89	13	10	5	2	2	774
21:00	147	19	3	2	1	0	0	183
21:15	158	21	6	2	0	2	0	178
21:30	148	24	5	1	1	0	0	179
21:45	155	21	8	2	3	1	0	190
1.Hr	608	85	22	7	5	3	0	703
22:00	160	38	2	1	1	2	0	204
22:15	143	28	7	2	2	2	0	184
22:30	136	23	7	2	2	1	0	171
22:45	170	27	1	2	3	1	0	204
1.Hr	609	116	17	7	8	6	0	763
23:00	157	30	6	0	1	0	1	195
23:15	164	27	0	2	1	0	0	194
23:30	154	33	2	2	0	5	2	198
23:45	157	33	3	0	1	1	1	196
1.Hr	632	123	11	4	3	6	4	783
00:00	199	27	5	0	2	3	0	236
00:15	153	20	2	0	0	0	1	176
00:30	141	20	3	0	1	1	1	177
00:45	145	16	0	0	2	2	2	167
1.Hr	648	83	10	0	5	6	4	756
01:00	146	19	2	0	1	0	1	169
01:15	140	24	0	0	0	0	2	166
01:30	132	17	0	0	1	1	0	151
01:45	148	15	0	0	1	1	1	166
1.Hr	566	75	2	0	3	2	4	652
02:00	145	15	0	1	3	0	0	164
02:15	108	11	0	0	1	1	1	122
02:30	107	13	0	0	0	0	0	120
02:45	128	12	0	0	1	0	0	141
1.Hr	468	51	0	1	5	1	1	547
03:00	123	13	0	0	1	0	0	137
03:15	108	7	1	0	1	0	0	115
03:30	86	6	0	0	1	1	1	95
03:45	94	4	0	0	1	4	5	108
1.Hr	411	30	1	0	4	5	6	457
04:00	87	9	0	0	1	0	0	97
04:15	105	7	0	0	1	2	0	115
04:30	75	3	0	0	1	1	0	80
04:45	100	9	1	0	2	2	0	114
1.Hr	367	28	1	0	5	5	0	406
05:00	94	1	1	0	0	0	0	96
05:15	90	6	0	0	1	0	0	97
05:30	68	4	0	0	0	0	0	72
05:45	46	4	0	0	1	0	0	51
1.Hr	298	15	1	0	2	0	0	316
06:00	50	1	0	0	0	0	0	51
06:15	29	1	0	0	1	0	0	31
06:30	36	1	0	0	0	0	0	37
06:45	24	2	0	0	0	0	0	26
1.Hr	139	5	0	0	1	0	0	145

Total	8835	1264	200	80	93	68	43	10683
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Destination : Arm B - R809(ESE)								Total
Car	LGV	OGV1	OGV2	PSV	MC	PC		
15	0	1	0	2	1	0	1	19

1.Hr	661	76	13	1	3	3	3	760
20:00	200	18	3	0	1	0	1	223
20:15	175	15	3	0	1	2	1	197
20:30	199	21	3	0	1	0	1	225
20:45	212	28	5	1	3	1	0	250
1.Hr	786	82	14	2	7	2	2	895
21:00	170	22	1	0	1	0	0	194
21:15	196	18	5	0	2	0	1	222
21:30	190	16	3	1	3	1	0	214
21:45	195	14	5	2	2	1	1	220
1.Hr	751	70	14	3	8	2	2	850
22:00	191	17	3	1	6	0	1	218
22:15	204	17	2	1	3	0	1	228
22:30	193	15	1	0	2	1	2	214
22:45	193	11	3	0	4	1	0	202
1.Hr	771	60	9	2	15	2	3	862
23:00	176	20	3	1	0	0	0	200
23:15	191	18	3	1	1	0	0	214
23:30	207	23	3	0	1	1	2	237
23:45	199	21	1	1	1	2	6	231
1.Hr	811	75	5	1	6	6	7	981
00:00	196	21	1	1	1	1	3	229
00:15	211	18	4	0	3	2	1	239
00:30	232	16	0	0	1	2	2	253
00:45	242	20	0	0	1	1	1	265
1.Hr	881	72	5	1	6	6	7	981
01:00	281	25	1	0	2	0	3	311
01:15	246	17	0	0	0	1	2	266
01:30	248	15	0	0	2	5	4	274
01:45	225	16	1	0	2	3	0	247
1.Hr	930	70	2	0	6	9	9	1026
02:00	229	13	0	0	3	0	4	249
02:15	189	15	1	0	2	0	3	210
02:30	222	7	0	0	2	3	0	196
02:45	201	6	0	1	1	1	2	212
1.Hr	798	47	1	1	9	2	9	867
03:00	178	9	0	0	1	0	1	189
03:15	151	14	1	0	1	0	1	168
03:30	146	5	0	0	1	4	1	157
03:45	121	9	0	0	1	0	1	132
1.Hr	596	37	1	0	4	4	4	646
04:00	153	4	1	1	0	3	1	163
04:15	99	11	0	0	2	0	0	112
04:30	109	6	0	0	3	1	1	120
04:45	90	8	0	0	0	1	0	99
1.Hr	451	29	1	1	5	5	2	494
05:00	109	2	0	1	1	0	1	114
05:15	85	6	0	0	1	1	2	95
05:30	58	4	0	0	0	0	0	62
05:45	56	2	0	1	1	0	1	61
1.Hr	308	14	0	2	3	1	4	332
06:00	55	3	0	0	0	0	0	58
06:15	33	5	0	0	1	0	0	39
06:30	37	2	0	1	1	1	1	43
06:45	32	0	1	0	1	0	0	34
1.Hr	157	10	1	1	3	1	1	174









**Údarás Náisiúnta Iompair**  
National Transport Authority

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July 2018

# National Heavy Rail Census Report 2017

July 2018





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# Introduction

Iarnród Éireann were commissioned to carry out the annual National Census of Rail patronage on behalf of the National Transport Authority. Boardings and alightings of passengers at every train station in the country are recorded on one day of the year. The 2017 Census is the sixth national Census. Prior to 2012, the census was carried out in the Greater Dublin Area (GDA) comprising the counties of Dublin, Meath, Kildare and Wicklow only.

## Operating Conditions on the Day of the Census

The annual National Rail Census captures the number of individuals boarding and alighting at each station in the country on one day of the year. It provides a snapshot of usage and patronage across the country at all stations and on all services on this one date. It is not intended to represent an accurate picture of overall demand for rail services, which instead is recorded in Iarnród Éireann's passenger journeys data. While over time the census can help to illustrate trends, each individual year the census data is subject to variation based on factors such as operating conditions, weather, travel delays etc.

The 2017 census took place on 16th November 2017. Operating conditions on the day were normal with no severe cancellations, delays or disruptions on the network.

Overall, on census day, there were 167,867 passenger journeys across the network an increase of 14% on 2016. Daily total passenger journey numbers are now up almost 35% in the period 2012 - 2017. Meanwhile Iarnród Éireann reported 45.5m total passenger journeys in the year 2017 up 6% on 2016 and 24% over the longer period 2012 - 2017. The annual passenger numbers in 2017 represents a return to 2007 peak passenger volumes.

This report provides an overview of the 2017 National Rail Census and discusses the annual change in rail journeys throughout the country. It also sets out the changes in rail usage in the GDA over the period 2016 to 2017.

The report structure is as follows:

- Section 1 provides a background and also sets out the methodology of the Rail Census. An overview of the rail network in Ireland is also provided;
- Section 2 analyses the trends in rail journeys in the GDA from 2003 to 2017 and also assesses how the findings of the Rail Census compare with other measurements of rail usage;
- Section 3 discusses in detail the findings from the 2017 Rail Census;
- Section 4 presents an analysis of journeys on individual lines; and
- Section 5 discusses patterns of passenger movement in and out of Dublin on a radial corridor basis.

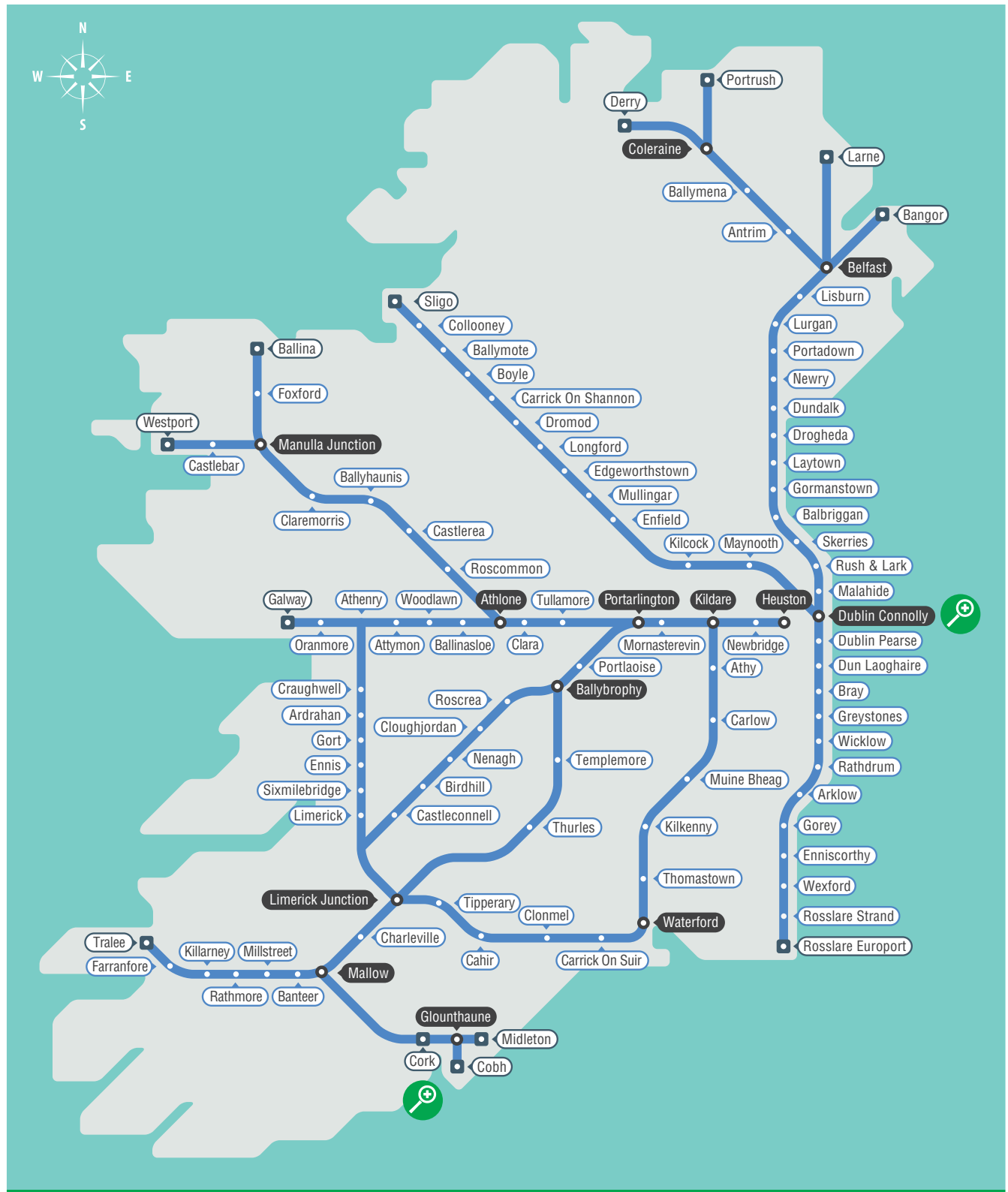
## Overview of the Rail Network

The rail network in Ireland consists of approximately 2,400km of railway track and includes 147 open stations. Three distinct categories of service operate on the national rail network; Inter City, Commuter and DART. These service categories share lines at various locations along the network. Table 1 provides a description of the routes within each of the categories as defined by Iarnród Éireann and Figures 1 to 3 show maps of the network.

Table 1: Routes and Services in the Iarnród Éireann Network

Route	Services on Each Route
Inter City	Dublin - Belfast
	Dublin - Sligo
	Dublin - Westport / Ballina
	Dublin - Galway
	Dublin - Limerick
	Dublin - Cork / Limerick Junction / Tralee
	Dublin - Waterford
	Dublin - Kilkenny
	Dublin - Rosslare
	Limerick - Galway
	Limerick - Waterford
Commuter Routes	Dublin - Dundalk
	Dublin - Portlaoise
	Dublin - Longford
	Dublin - Dunboyne / M3 Parkway
	Dublin - Gorey
	Cork - Cobh - Middleton
DART	Malahide / Howth - Dublin - Bray / Greystones

Figure 1: Inter City Network



# Intercity Train Services

Intercity Connection Terminus

Figure 2: Dublin Network

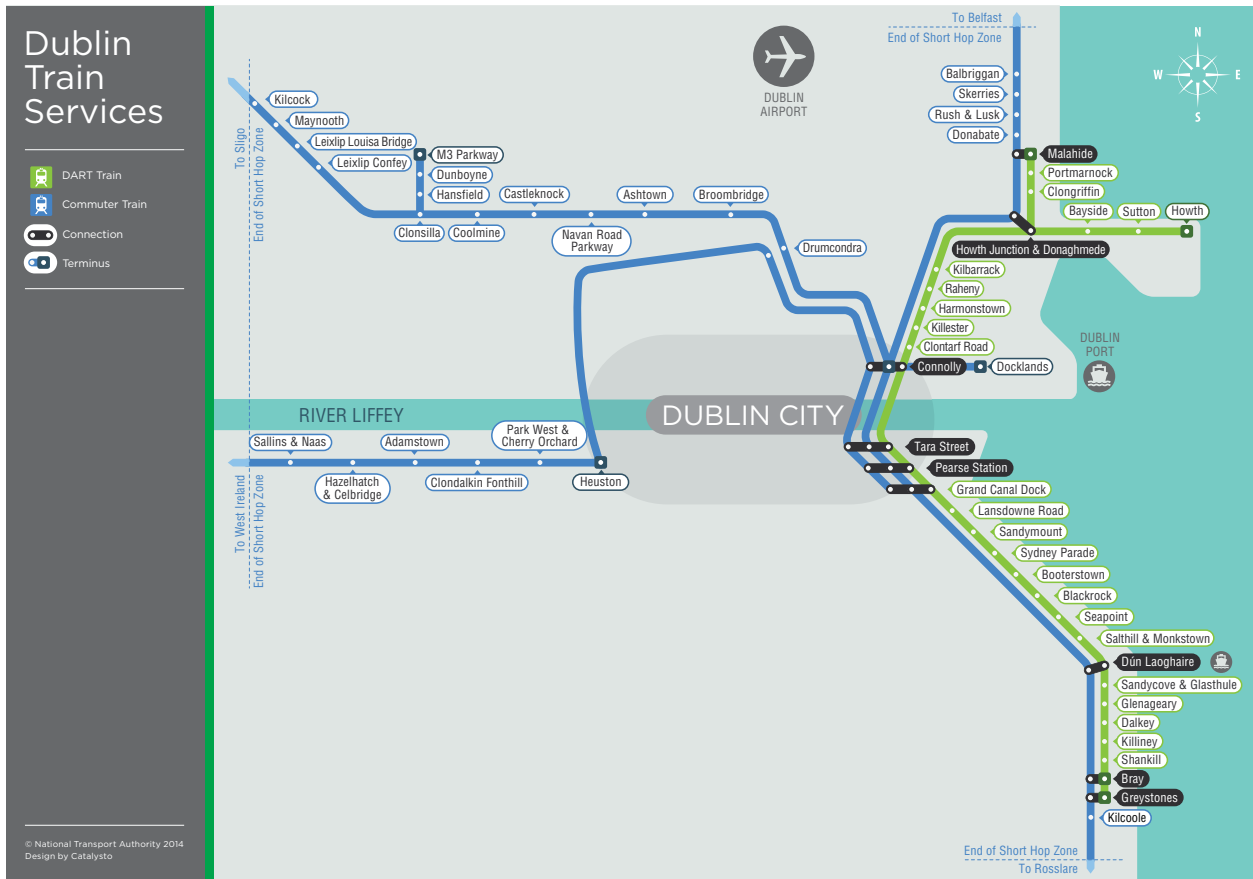


Figure 3: Cork Network





Tables 2 to 4 detail the service provision for a sample weekday for Inter City services and key Commuter and DART services. This includes the fastest journey time and the number of services available per weekday in 2017.

Table 2: Inter City Journey Times and Service Frequency 2017

Route	Fastest journey time 2017	Number of services per weekday <sup>1</sup>
Dublin - Cork	2:25	31
Dublin - Belfast	2:05	16
Dublin - Galway	2:18	19
Dublin - Westport	3:10	9
Dublin - Sligo	2:58	14
Dublin - Tralee	3:42	2
Dublin - Limerick	2:04	7
Dublin - Waterford	1:51	14
Dublin - Rosslare	2:46	8

Table 3: Key Commuter Journey Times and Service Frequency 2017

Route	Fastest journey time 2017	Number of services per weekday <sup>1</sup>
Dublin - Portlaoise	0:42	61
Dublin - Hazelhatch & Celbridge (Grand Canal Dock via Phoenix Park Tunnel) <sup>2</sup>	0:13 (0:39)	66 (24)
Dublin - Maynooth	0:27	80
Dublin - Drogheda	0:32	65
Dublin - Dundalk	0:55	31
Cork - Mallow	0:21	48
Cork - Midleton	0:23	44
Cork - Cobh	0:24	46

Table 4: DART Journey Times and Service Frequency 2017

Direction	Route	Fastest journey time 2017	Number of services per weekday
Southbound	Malahide/Howth - Bray/Greystones	1:20	80
Northbound	Greystones/Bray - Howth/Malahide	1:16	77

## Changes to Rail Services in 2017

In 2016, the Authority approved the introduction of new rail services between stations on the Kildare corridor and Grand Canal Dock via the refurbished Phoenix Park Tunnel and calling at Connolly, Tara Street and Pearse Street stations. On 20 November 2016, the new morning and evening peak services were introduced; therefore the changes in rail patronage brought about by the new services were not counted in the 2016 rail census but are reflected here. This should be noted in relation to the comparison analysis between passenger numbers on the Kildare line as a whole in 2016 v 2017.

Iarnród Eireann carried out an additional census of services on the Phoenix Park Tunnel corridor in January 2017. To give a sense of the effect of this new service on patronage, a comparison of January 2017 to November 2017 census data is presented in this report.

As well as the reintroduction of passenger services through the Phoenix Park Tunnel, on December 1st 2017 the Authority extended the 'short hop zone' to include Sallins and Naas station. This had the effect of cutting many single and return fares in half from Sallins and Naas to Heuston. On June 1st 2017, Kilcock station was brought into the 'short hop zone' on the Maynooth/Sligo line.

<sup>1</sup>Total number of daily services in both directions (to/from Dublin & Cork)

<sup>2</sup>9 Daily services between Newbridge and Grand Canal Dock via Hazelhatch & Celbridge

# Trends in Daily Rail Patronage, 2003 - 2017

## Key Events since 2003

Rail usage is a derived demand, dependent, amongst other factors, on levels of economic activity. Since 2003 trends in rail patronage have closely followed economic performance. At the start of the period, the demand for rail usage increased steadily. This increase in demand necessitated investment in the rail network and fleet and major rehabilitation works, in addition to service improvements. Between 2000 and 2010, for example, service levels on the Inter City, Commuter and DART networks were approximately doubled. Following an upgrade in 2006, capacity on the DART increased. Station improvements were carried out and platforms were lengthened in order to accommodate longer, higher capacity trains.

Investments over the past decade include the following:

- The re-opening of the Phoenix Park Tunnel to scheduled passenger services in November 2016. This consists of 7 morning peak services from Newbridge or Hazelhatch to Grand Canal Dock and 8 evening peak services from Grand Canal Dock to Newbridge/Hazelhatch whilst maintaining the previous commuter service levels to and from Heuston.
- The Kildare Route Project - this involved the development of a four-track rail line between Cherry Orchard and Hazelhatch on the Heuston line. This allowed for the separation of Inter City and Commuter services. The speed and capacity of all services on the line was improved as well as facilitating the running of more frequent services on Inter City and Commuter routes.
- The Dunboyne Rail Line - This involved the development of 7.5km of railway, branching off the Maynooth line at Clonsilla and terminating at the M3 interchange at Pace. Three new stations on the route were also developed: Hansfield, Dunboyne and Pace. The station at Pace (M3 Parkway) has a 1,200 space car park facility. A new station at Docklands was also built to accommodate some of the services on this line.
- Cork Commuter Rail - this involved the reopening of the Cork - Middleton line in 2009.
- Limerick to Galway Services - This included the reinstatement of the line from Ennis to Athenry and the construction of five new stations: Sixmilebridge, Gort, Ardahan, Craughwell and Oranmore.



## Historic Trends in the Greater Dublin Area (GDA)

Prior to 2012 the rail census was undertaken for the GDA only. As such, historical trends can be examined across the following sections of the network:

- DART Line;
- Longford – Dublin – Bray (Gorey) line;
- Dundalk – Bray and
- Dublin – Kildare line.

Table 5 shows daily rail journeys in the GDA since 2003, defined as the number of boardings. The number of rail journeys in the GDA increased year on year up to its peak of approximately 144,000 in 2007. This was followed by a period of decline in patronage from 2008 to 2010. Between 2011 and 2013 the number of daily journeys within the GDA remained relatively static. There has been a 3.6% increase in patronage in the GDA in the period 2015-2016. In the 2 year period 2014 to 2016 there was a 19% increase in patronage within the GDA. Although this trend continued in 2017, the rate of change has increased. There was a 14% growth in patronage within the GDA between 2016 and 2017. Overall GDA patronage is now at 98% of its peak level in 2007.

The increase in GDA patronage in the last year represents the fifth consecutive year of passenger growth. In the past year there have been increases in patronage on all service types in the GDA. There has been a 12% and 13% increase in patronage on the Longford – Dublin – Bray and the East Coast lines between 2016 and 2017 respectively.

There was an 11% increase in patronage on the DART line (7,542 extra boardings) between 2016 and 2017, however patronage on the line is still 89% that of the peak levels of 2007. Patronage on the DART has grown by a third since 2014, with an additional 19,662 boardings.

Patronage on the Kildare line has almost doubled since the Census began in 2003, and in the last year there has been a 31% increase in patronage on Kildare line services between Kildare and Dublin. This represents an increase of some 3,785 daily passenger boardings. It should be noted that this growth must be considered in the context of the significant change to services on the Kildare line with the commencement of services to Grand Canal Dock since the last rail census of 2016.

Table 5: Daily Passenger Journeys by Network Section 2003 – 2017

Year	DART	Dundalk - Gorey	Longford – Dublin – Bray	Dublin – Kildare	Total
2003	68,152	19,446	11,642	8,246	107,486
2004	64,435	20,419	13,614	9,219	107,687
2006*	81,560	23,305	21,966	11,349	138,180
2007	83,618	24,624	23,836	11,722	143,800
2008	75,753	22,191	22,678	11,145	131,767
2009	63,559	18,037	19,992	9,760	111,348
2010	55,929	17,446	18,770	9,042	101,187
2011	55,629	17,611	18,531	9,455	101,226
2012	56,835	17,895	17,915	8,490	101,135
2013	55,921	17,801	17,100	9,283	102,101
2014	55,003	18,780	19,097	11,371	104,251
2015	64,905	20,430	22,000	12,003	119,338
2016	67,123	21,782	22,432	12,278 <sup>3</sup>	123,615
2017	74,665	24,424	25,434	16,063 <sup>4</sup>	140,586

\*2005 No Census Carried Out

<sup>3</sup> Does not include Phoenix Park Tunnel Services

<sup>4</sup> Includes 1,410 daily boardings at Drumcondra, Connolly, Tara, Pearse, Grand Canal Dock

Charts 1 and 2 show the proportional contribution each section of the rail network makes to daily rail patronage within the GDA. There has been a change in the contribution of each line since 2003. DART journeys, despite growth since 2017, have declined by 10% from 63% in 2003 to 54% in 2016, with a further decline in the past year. However this represents an increase of almost 10% in patronage or just over 6,500 daily journeys over the same period. The Kildare line has increased in proportional terms significantly going from 8% in 2003 to 11% in 2017, in part due to year on year growth in patronage from 2012. The proportional contribution of the East Coast line has remained relatively stable over the full period. However the proportional contribution of the Maynooth line has increased from 11% to 18% over the longer term whilst remaining stable for the last 10 years.

Chart 1: Composition of Daily GDA Rail Patronage, 2003 - 2017

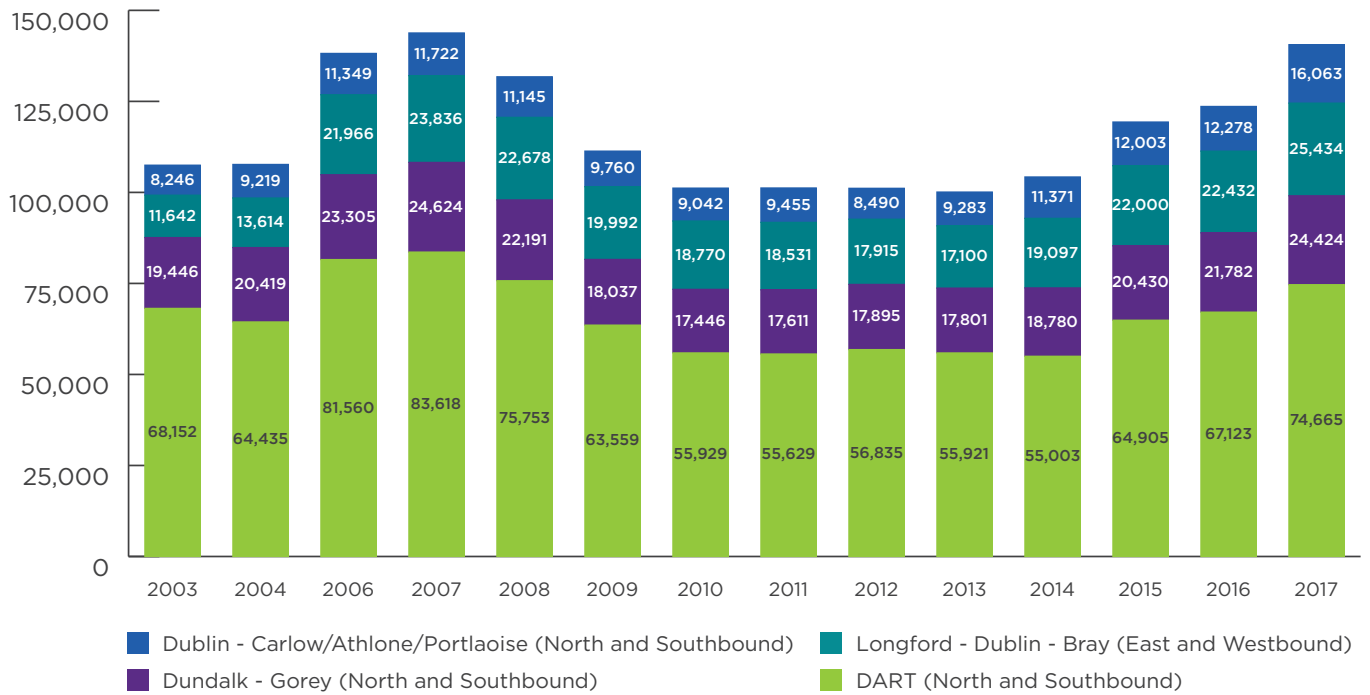
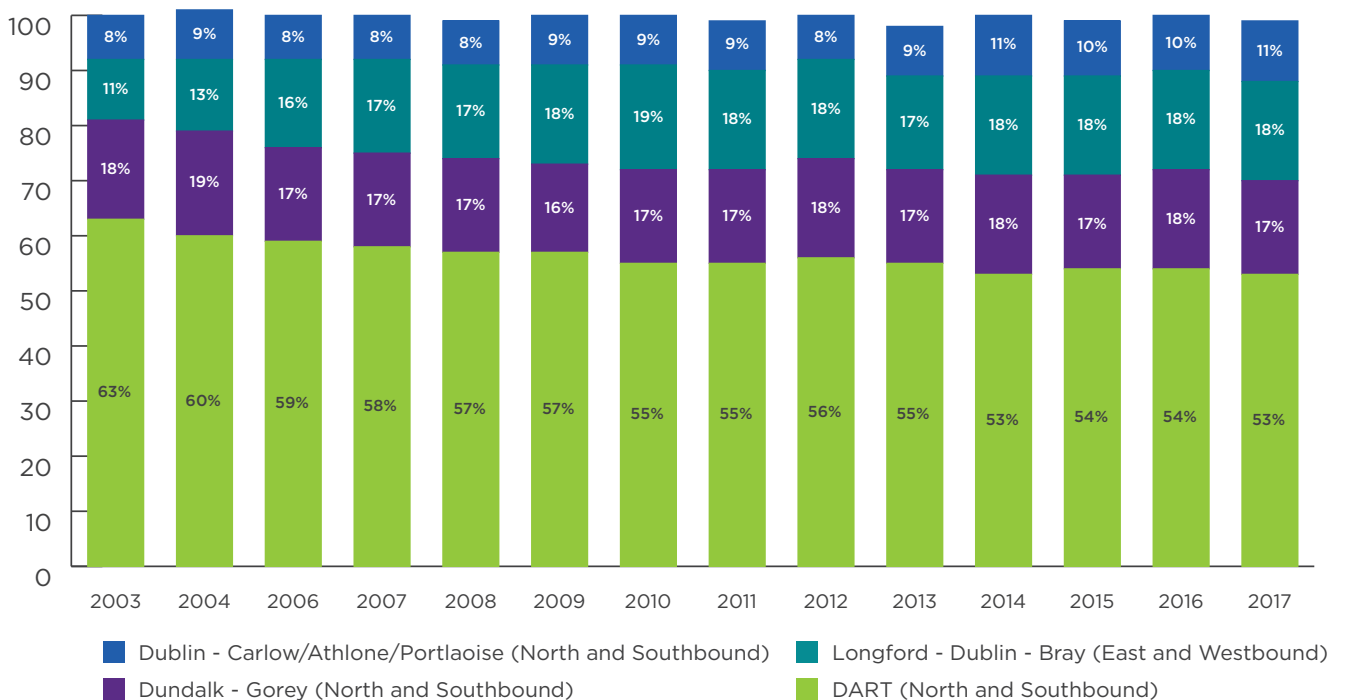


Chart 2: Percentage Composition of daily GDA rail patronage, 2003 - 2017

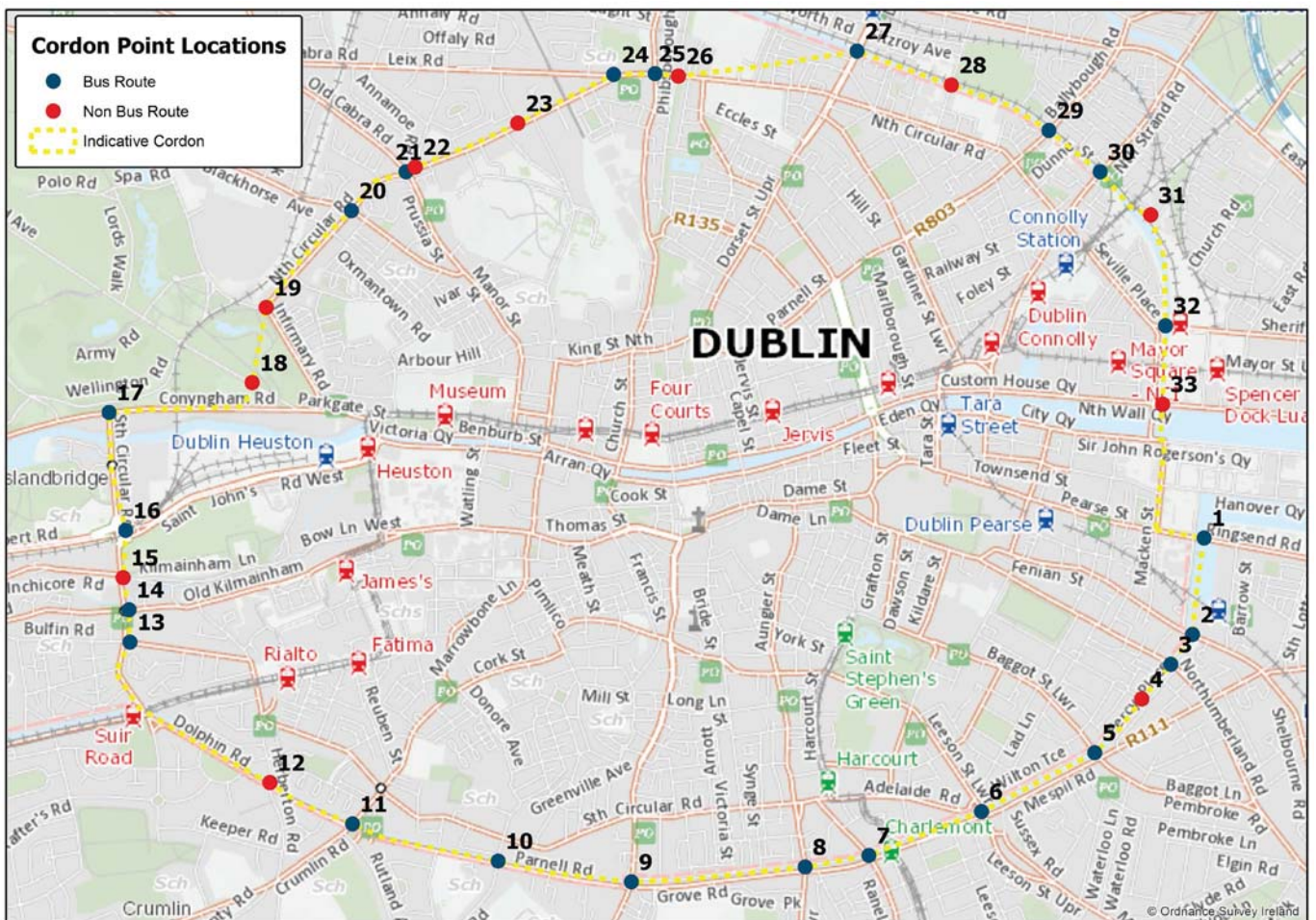


# Analysis of Mode Share from the Canal Cordon Count

The 'Canal Cordon Count' is an annual count of people crossing the Canal Cordon (i.e. a perimeter around Dublin City Centre formed by the Royal and Grand Canals) in the morning peak between 7:00 and 10:00 averaged over two days in November each year. Figure 4 shows the location of the Canal Cordon and the 33 points on the Cordon where information on the movement of people is collated.

This count provides data on numbers of people entering Dublin city centre<sup>5</sup> by all modes of transport including rail, bus, taxi, cycling, walking, and car or goods vehicle and allows for an analysis of mode share and shift from 2006 to 2017. Table 6 details the number of people crossing the canal cordon by mode in 2016 and 2017, and Chart 3 shows the mode share of journeys into the city centre from 2006 to 2017.

Figure 4: Canal Cordon and 33 Count Locations

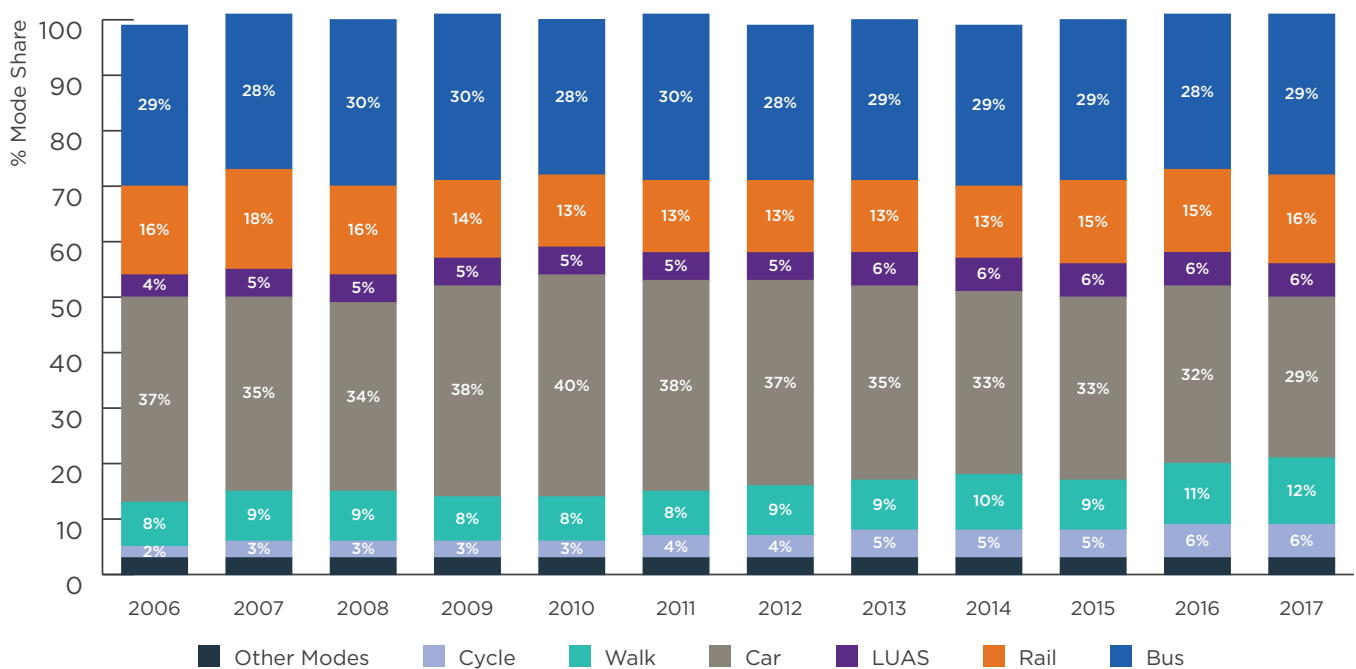


<sup>5</sup> The counts refer to movements of people in one direction only (i.e. inbound into the city centre) across the various cordon points.

Table 6: Number of People Crossing the Canal Cordon by Mode in 2016 and 2017

Mode	2016	2017	Annual % Change
Bus	56,572	60,798	7%
Rail	31,309	34,409	10%
LUAS	12,254	11,953	-2%
Car	64,885	61,694	-5%
Taxi	2,724	2,623	-4%
Walk	21,473	24,936	16%
Cycle	12,089	12,447	3%
Commercial Vehicle	1,093	1,024	-6%
Motor Bike	1,464	1,532	5%
<b>Total</b>	<b>203,863</b>	<b>211,416</b>	<b>4%</b>

Chart 3: Mode Share of Journeys into the City Centre, 2006 – 2017



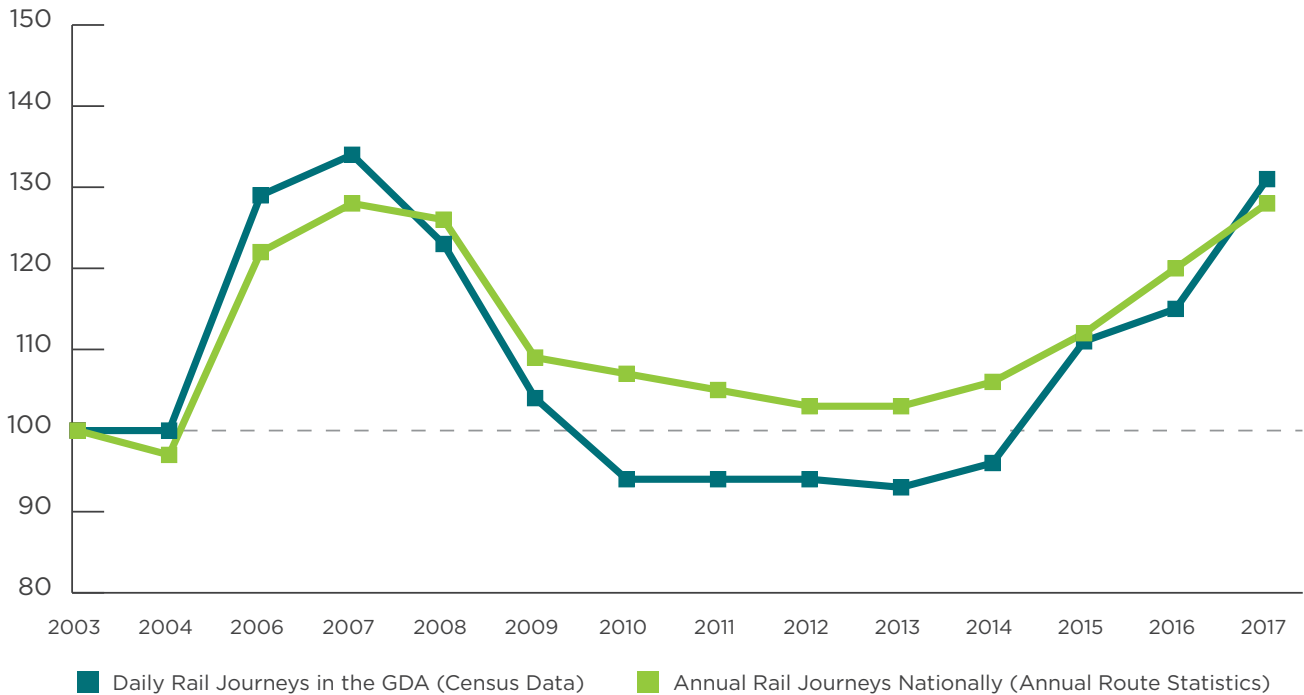
This shows a number of changes in mode share since 2006:

- The share of rail journeys into the city centre in the morning peak has fallen from a peak of over 18% in 2007 to just over 16% in 2017.
- From 2010 to 2014, the rail mode share stabilised at around 13%. 2015 saw the first significant increase in rail mode share since the period of decline and subsequent stability, this trend continued to 2016. However 2017 saw an increase of 1% in rail mode share, this is only the second increase since 2010.
- There has been an increase in the proportion of journeys travelling into the city centre by bicycle from 2% to 6%.
- The mode share for bus increased by 1 percentage point in the past year. Bus is still the dominant public transport mode making up 57% of total public transport mode share.
- The private car mode share continues to decline and is down over 10% from a peak of 40% in 2010.
- In 2017 more than half of all person trips to the City Centre were made on public transport. At 51%, the mode share for public transport is now almost 22% greater than that for private car. In 2010 the public transport mode share was only 6% greater than that for private car. In the same period 2010-2017 mode share for rail has increased by over 3%.
- The walk mode share increased slightly between 2016 and 2017, at just under 12% it is at its highest point for the period 2006-2017.
- The remaining modes - commercial vehicle, motor bike and taxi - remain largely unchanged since 2006.

## Comparison of Census Data and Annual Rail Statistics

Iarnród Éireann produces statistics on the number of journeys taken nationally on the rail network on an annual basis. Chart 4 compares the daily rail journeys taken in the GDA (from the Rail Census) with the number of annual journeys nationally, using 2003 as a baseline.

Chart 4: Daily Rail Journeys in the GDA compared to Annual Rail Journeys 2003 - 2017 (Index: 2003 = 100)



The trends in both annual and daily rail journeys have followed similar trajectories over the past 13 years. This suggests that the Rail Census could be considered representative of annual rail patronage and therefore could be considered a reasonable proxy for annual trends.

The sharper decline in GDA patronage since 2008 can be explained by differences in rail coverage in the GDA region relative to the rest of Ireland. Daily rail journeys in the GDA were also heavily influenced by the decline in DART patronage. The reverse of these effects can be seen in the period 2014 - 2017 where the increase in patronage within the GDA is noticeably sharper than nationally.

Between 2010 and 2013 patronage trends both in the GDA region and nationally remained relatively flat. In the period 2013-2014, both national and GDA patronage showed moderate growth. However the period 2014-2017 has shown significant growth both at national and at the GDA level, with 2.68 million additional rail journeys made in 2017 relative to 2016. National annual rail patronage in 2017 has returned to 2007 levels (the previous peak) with patronage in GDA fast approaching 2007 levels.

## Rail Usage in the GDA and Economic Trends

Given that rail usage is a derived demand, it is useful to understand the relationship between rail patronage and other indicators of economic activity. In doing so, it may assist in anticipating future trends in rail demand, and aid service planning. Chart 5 compares the evolution of rail patronage in the GDA and nationally with key national economic indicators and the numbers in employment. A relationship is clearly evident, as increases and decreases in economic activity are reflected in rail passenger numbers.

Chart 5: Rail Journeys in the GDA and Key Economic Indicators Indexed to 2006







# Rail Patronage

## National and Greater Dublin Area

The total patronage on the rail network on Census day was almost 168,000. Total patronage has increased by 14% since 2016 and almost 35% since 2012 (the first national rail census). Table 7 shows the total rail patronage both within and outside the GDA, along with the relative change since 2016. The GDA comprises the counties of Dublin, Kildare, Meath and Wicklow.

As in 2016, of the total number of rail journeys undertaken in 2017, 84% were within the GDA. In each of the years 2012, 2013 and 2014, 83% of journeys were made within the GDA. This shift is explained by increases on the Heuston commuter and Inter City services and modest increases on regional rail services. There is a similar level of growth in patronage inside the GDA. However, this growth is spread more universally with significant percentage increases on both DART and commuter. Although there have been increases in patronage on all lines in the last year, the Cork commuter lines showed the lowest levels of growth at 5%.

Table 7: Rail Patronage – GDA and National

	GDA	% Change on Previous Year	Outside GDA	% Change on Previous Year
Patronage	140,586	13%	27,281	18%

## Rail Usage According to Service Categories

Table 8 shows the total number of journeys taken on the National Irish Rail network on the day of the Census, according to service category.

Table 8: Journeys Taken by Service Category

	GDA	% Change on Previous Year
DART	74,665	11%
Commuter	67,850	17%
Inter City	17,718	19%
Waterford & Regional services	7,634	12%
<b>Total</b>	<b>167,867</b>	<b>14%</b>

## Rail Usage on Individual Lines

Table 9 shows the number of journeys on each of the lines on Census day 2017.

Table 9: Journeys by direction and by line, 2017

Line	Route	Journeys	Annual % Change
DART Northbound	Greystones/Bray - Howth/Malahide	36,691	9%
DART Southbound	Malahide/Howth - Greystones/Bray	37,974	13%
Connolly Northbound	Rosslare - Dundalk	13,056	14%
Connolly Southbound	Dundalk - Rosslare	13,049	11%
Connolly Eastbound	Sligo - Longford - Bray	13,890	14%
Connolly Westbound	Bray - Longford - Sligo	12,493	11%
Heuston North & Eastbound <sup>6</sup>	Kildare/Newbridge/Athlone/Carlow/Portlaoise/Cork/Limerick/Galway/Westport/Waterford/Tralee - Heuston	16,476	28%
Heuston South & Westbound <sup>7</sup>	Heuston - Kildare/Newbridge/Athlone/Carlow/Portlaoise/Cork/Limerick/Galway/Westport/Waterford/Tralee	15,514	28%
Cork Commuter Inbound	Cobh/Midleton - Cork /Mallow - Cork	2,974	6%
Cork Commuter Outbound	Cork - Cobh/Midleton / Cork - Mallow	2,920	5%
Regional Northbound	Limerick - Galway/Ballybrophy/Limerick Junction & Waterford - Limerick Junction	1,368	15%
Regional Southbound	Galway/Ballybrophy/Limerick Junction - Limerick & Limerick Junction to Waterford	1,462	13%

<sup>6</sup> Includes Ballina to Manulla Junction and Galway to Athlone services

<sup>7</sup> Includes Manulla Junction to Ballina and Athlone to Westport/Galway services

## Busiest Stations

Table 10 below illustrates the Top 10 busiest stations in 2017 in terms of all day boardings and alightings. A comparison with the station ranking in 2016 is also provided.

Stations in Dublin dominate the list of busiest stations for boardings and alightings throughout the rail network. This is reflected in overall trends of rail usage. Outside of Dublin, Kent station in Cork City, Bray in Wicklow and Maynooth in Kildare also feature in the top ten busiest stations in terms of passenger traffic. As in 2016, there has been no change in the ranking of the top 4 stations in terms of all day boardings and alightings in the past year.

In 2017 the top ten stations for boarding represent 45% of total boardings in the country on census day, down 1 percentage point since 2016. The share of total alightings accounted for by the top ten stations in 2017 was 47%, also down 1% on 2016. As in previous years, significantly more people (25%) alight services in Grand Canal Dock than board services.

Daily throughput at Sallins & Naas, Hazelhatch & Celbridge, Adamstown, Clondalkin Fonthill and Parkwest & Cherry Orchard increased by 47%, 77%, 119%, 179% and 75% respectively since before the introduction of rail services through the Phoenix Park Tunnel in November 2016.

As in previous years on census day a third of station footfall over the entire network was recorded at Dublin Connolly, Pearse, Tara Street and Heuston Stations combined.

Table 10: Top 10 stations by number of boardings and alightings, 2017 (and rank in 2016)

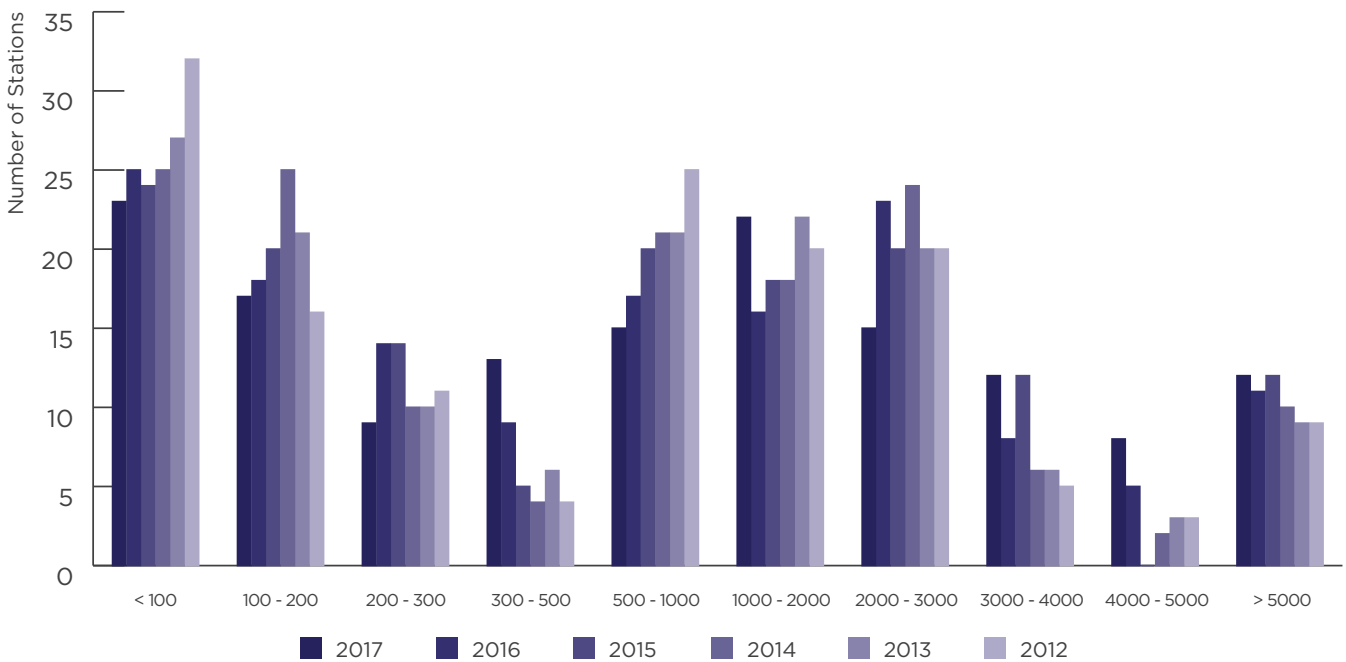
Rank	Boardings	Alightings
1	Connolly (-) 18,062	Connolly (-) 18,927
2	Pearse (-) 15,465	Pearse (-) 15,636
3	Heuston (-) 10,700	Heuston (-) 11,596
4	Tara Street (-) 9,442	Tara Street (-) 9,801
5	Dún Laoghaire (6) 4,129	Grand Canal Dock (-) 4,637
6	Cork (5) 4,071	Dún Laoghaire (8) 4,096
7	Bray (8) 3,946	Cork (-) 4,022
8	Grand Canal Dock (10) 3,693	Bray (9) 3,758
9	Lansdowne Road (7) 3,429	Lansdowne Road (6) 3,657
10	Malahide (12) 3,329	Maynooth (11) 3,092

## Variation in Station Usage

Chart 6 shows the number of daily journeys to and from each station from 2012 to 2017. The number of daily journeys has been derived by adding the number of boardings and alightings at each station.

The number of stations in the country experiencing less than 100 journeys per day has decreased slightly in 2017 relative to 2016 and is now down 39% on 2012. There has been a decrease in the number of stations with a daily throughput of 300 or less in the last year of 8, or 16%. Meanwhile the number of stations experiencing between 1,000 and 2,000 journeys per day has increased by 38% in the past year. At the opposite end of the scale 12 stations generated in excess of 5,000 journeys on a typical day. Although there has been some variation in the bands in 2017, 69 stations on the network experience more than 1,000 journeys per day compared to 63 in 2016. The number of stations generating in excess of 3,000 journeys increased by 33% since 2016 and there was a 66% increase in stations with a daily throughput between 4,000 - 5,000 passengers in the same period.

Chart 6: Variations in Station Usage





# Patronage by Line

## DART

### Services Included:

Malahide / Howth - Bray / Greystones

The number of total daily journeys on the DART line in 2017 was just under 75,000 up over 7,500 journeys or 11% on 2016 levels. This growth in patronage accounts for 44% of the overall increase in patronage for the entire GDA between 2016 and 2017. Patronage on the DART has been growing steadily since 2014, 2017 patronage levels are now 89% of the peak patronage level of 2007. In 2017, 43% of all rail journeys nationally were on DART services and 53% of all boardings in the GDA were on DART services.

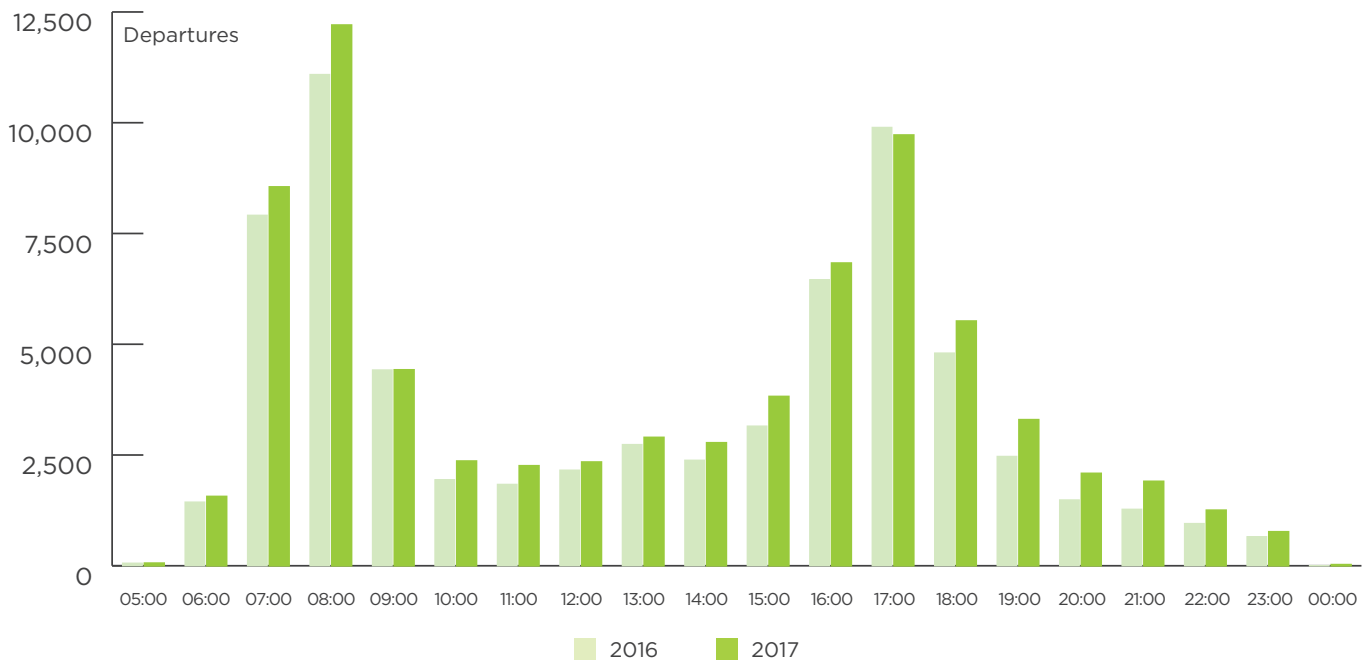
Table 11: Total daily patronage on DART lines, 2017

Line	2016	2017	Annual % Change
DART Northbound	33,595	36,691	9%
DART Southbound	33,528	37,974	13%
<b>Total</b>	<b>67,123</b>	<b>74,665</b>	<b>11%</b>

## Hourly Profile of Demand

Chart 7 shows variations in demand throughout the day on the DART line in 2016 and 2017. This is based on passenger numbers boarding services.

Chart 7: Hourly profile of demand on DART 2016 and 2017



## Profile of Demand by Station

Chart 8 shows the daily build-up of passengers along the route of the DART Northbound line from Greystones to Howth Junction, where the train then splits into the Howth and Malahide branches. The change in the cumulative number of passengers on board at each station is the net impact of the number of passengers alighting and boarding trains. Chart 9 shows the profile of demand in the southbound direction which, as would be expected, mirrored the northbound profile.

Chart 8: Profile of Demand by Station, DART Northbound, 2016 and 2017

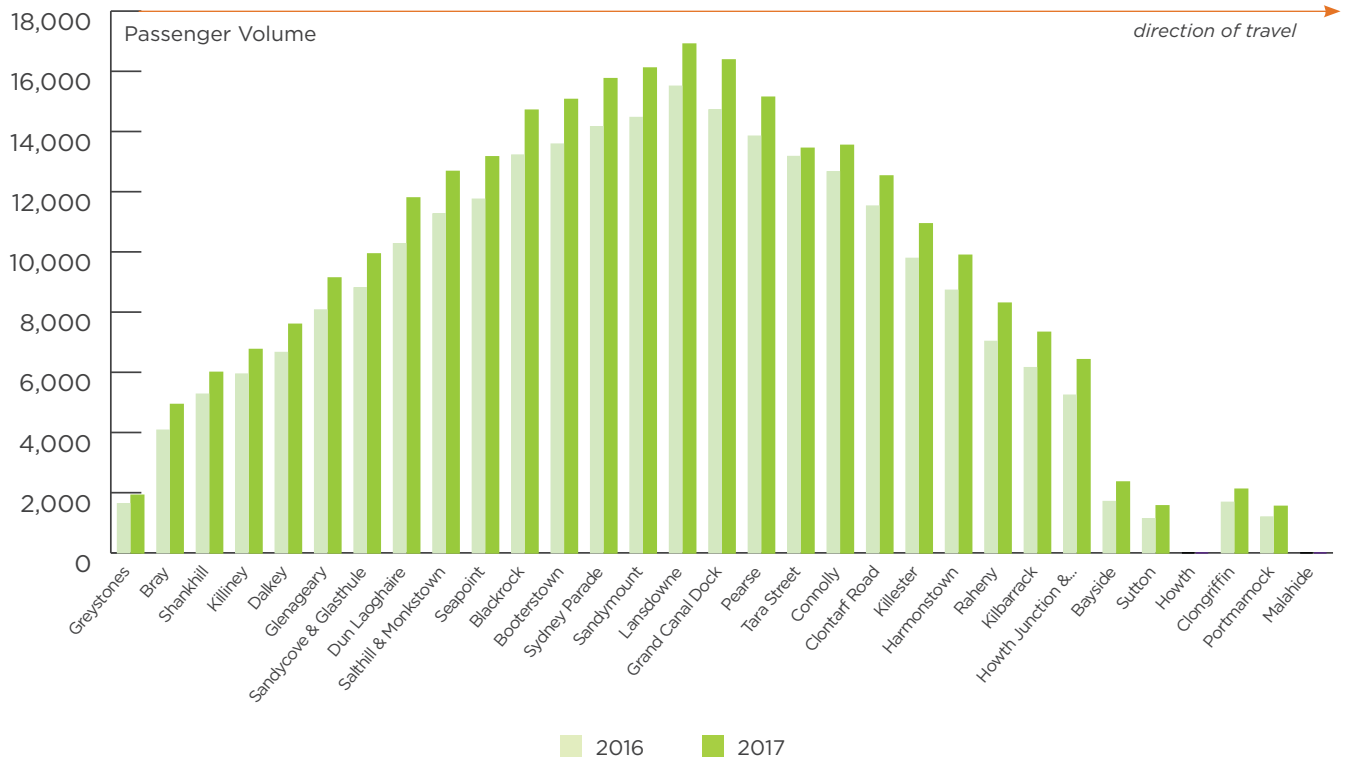
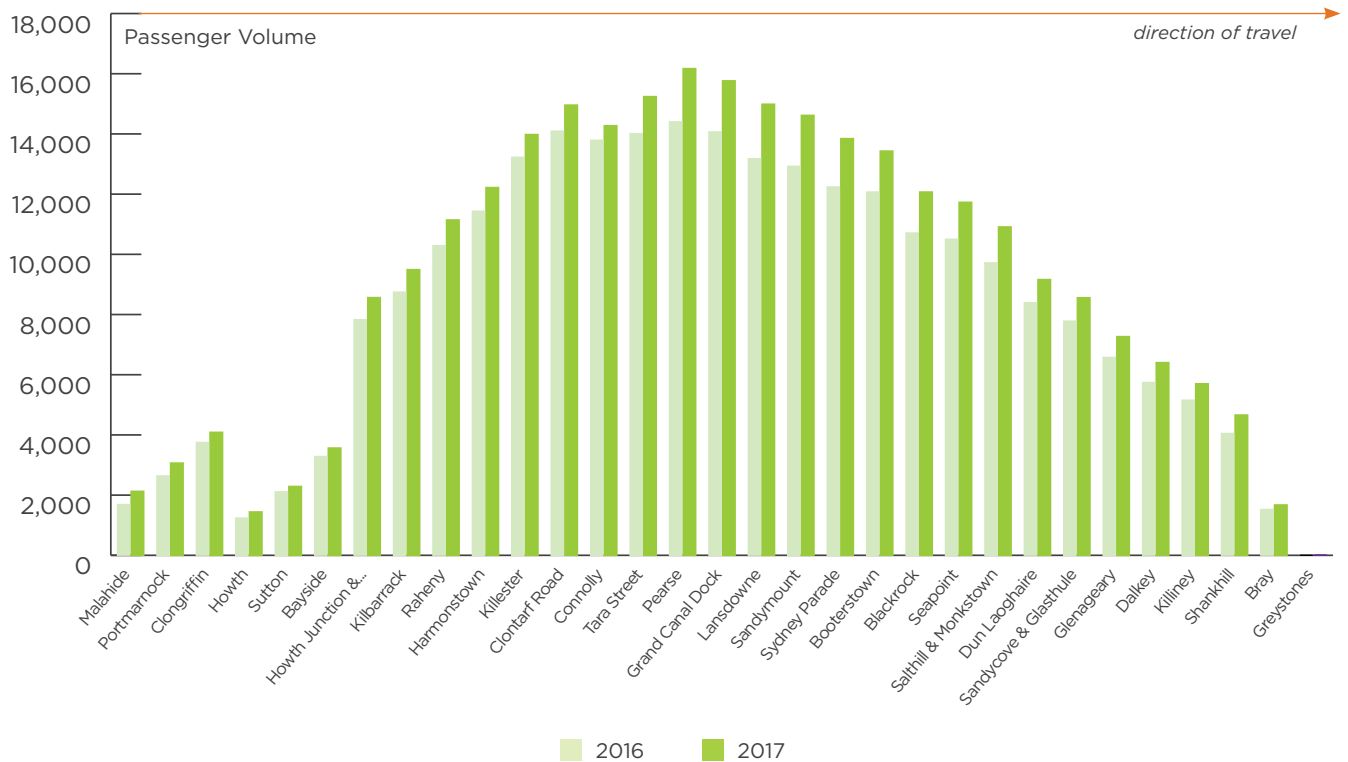


Chart 9: Profile of Demand by Station, DART Southbound, 2016 and 2017





## Dundalk – Rosslare

### Services Included:

Intercity: Dublin – Rosslare / Wexford Commuter: Dublin – Gorey

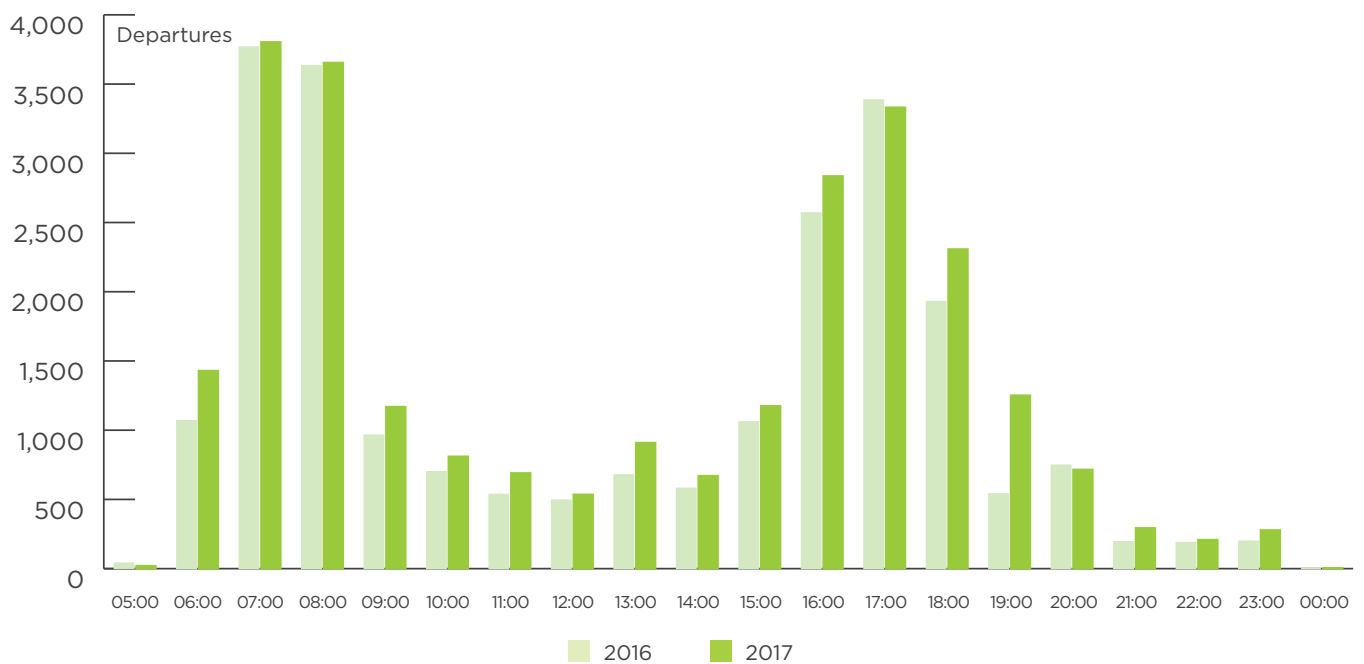
Commuter: Dublin – Dundalk / Drogheda Intercity: Dublin – Belfast

Table 12: Total daily patronage on Dundalk - Rosslare lines, 2017

Line	2016	2017	Annual % Change
Northbound	11,480	13,056	14%
Southbound	11,808	13,049	11%
<b>Total</b>	<b>23,288</b>	<b>26,105</b>	<b>12%</b>

### Hourly Profile of Demand

Chart 10: Hourly profile of demand, Dundalk – Rosslare, 2016 and 2017



## Profile of Demand by Station

Charts 11 and 12 show the demand profile of patronage on the Dundalk – Rosslare section of the network.

Chart 11: Profile of Demand by Station, Rosslare - Dundalk (Northbound), 2016 and 2017

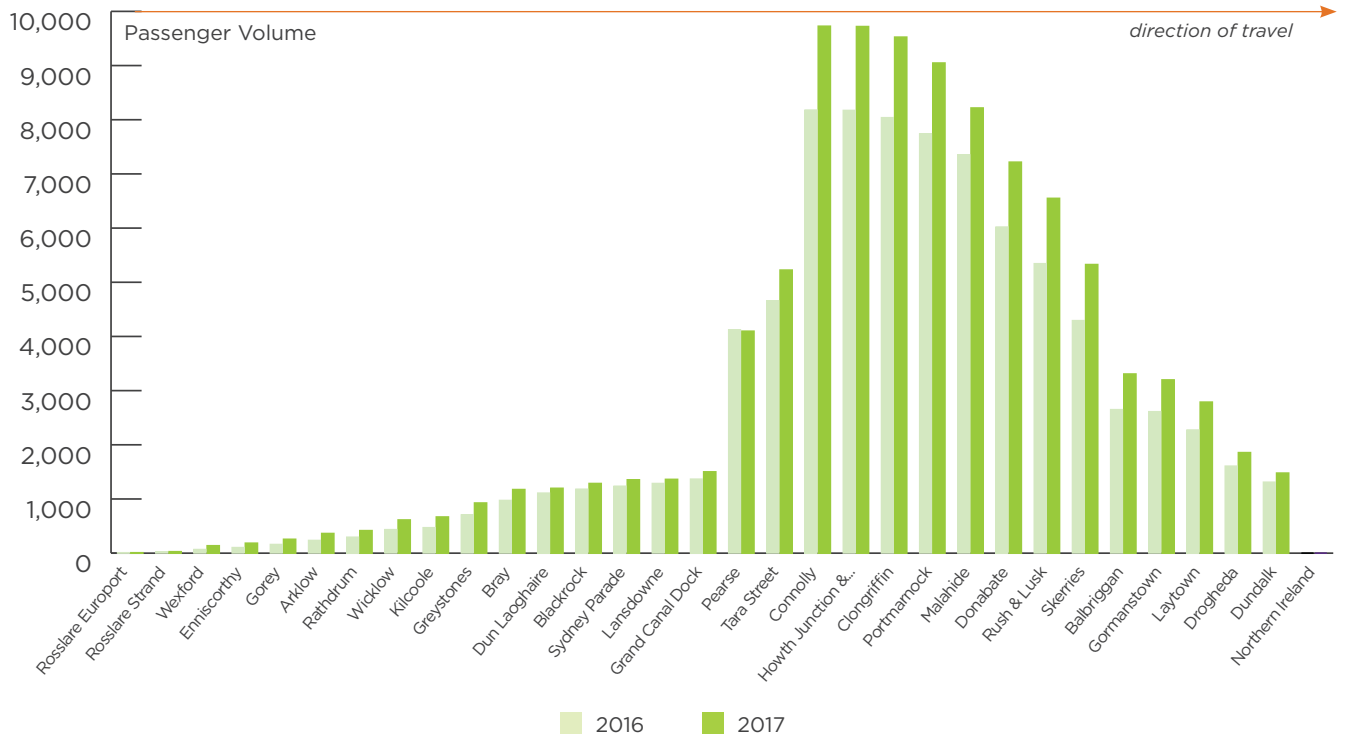
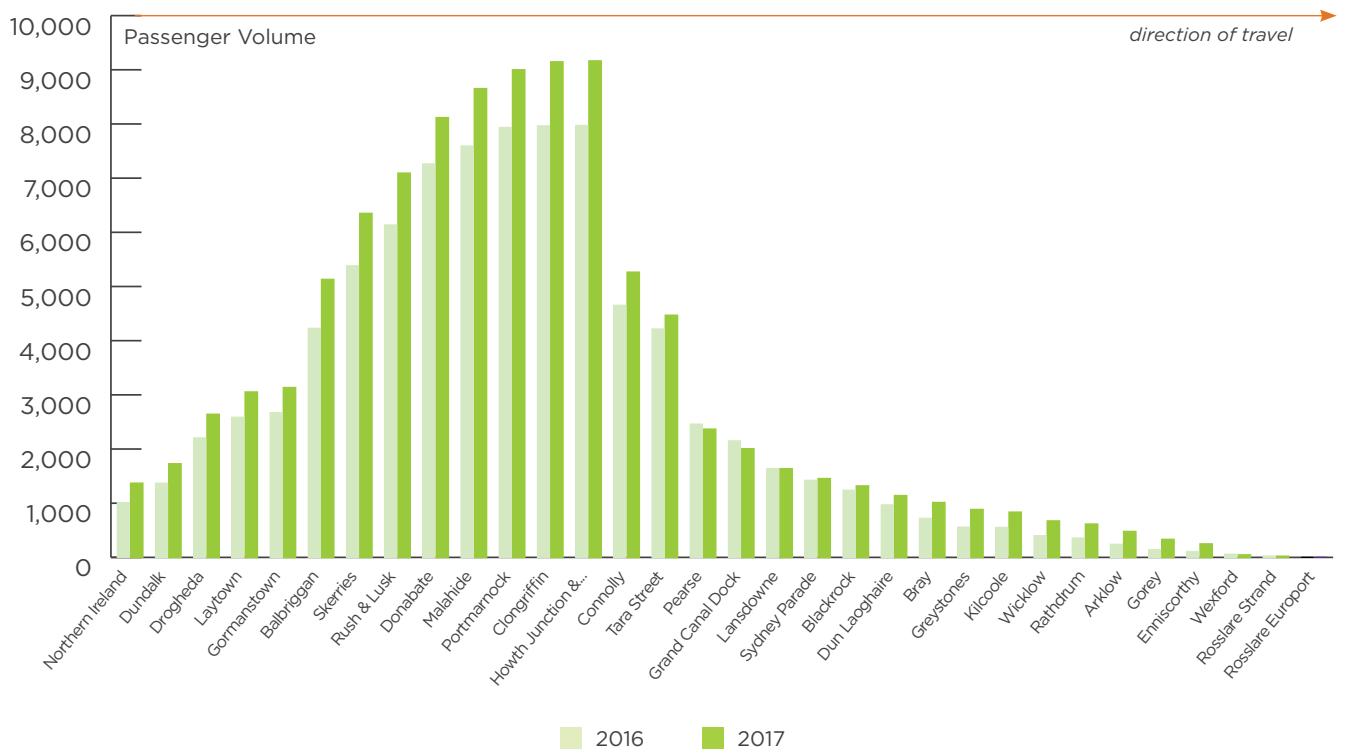


Chart 12: Profile of Demand by Station, Dundalk - Rosslare line (Southbound), 2016 and 2017



## Dublin – Belfast (Enterprise)

### Services Included:

Intercity: Dublin - Belfast

The Rail Census also captures the total number of passengers on 'Enterprise' services operating between Northern Ireland and the Republic of Ireland. There was an increase in Enterprise service patronage between 2016 and 2017 of approximately 18%, an increase of 566 daily journeys. There was an 11% increase in northbound patronage and a 27% increase in southbound patronage. Table 13 shows the total boardings on Enterprise services on Census day in 2016 and 2017.

Although the Enterprise service operates between Dublin and Belfast, on census day 2017 85% of Enterprise trips crossed the border into Northern Ireland (73% in 2016)<sup>8</sup>. The bulk of this increase has been in southbound trips from Northern Ireland which is up 35% in the year (341 additional daily journeys). Although more cross border trips were northbound in 2017, the rate of growth is smaller at 12% (164 additional daily journeys). Overall there was a 22% increase in cross border trips between 2016 and 2017. Table 14 shows the total cross border trips on Census day 2016 and 2017.

Table 13: Total Patronage on the Enterprise Service

Line	2016	2017	Annual % Change
Northbound	1,790	1,993	11%
Southbound	1,365	1,728	27%
<b>Total</b>	<b>3,155</b>	<b>3,721</b>	<b>18%</b>

Table 14: Total Cross Boarder Patronage on the Enterprise Service

Line	2016	2017	Annual % Change
Northbound	1,313	1,477	12%
Southbound	981	1,322	35%
<b>Total</b>	<b>2,294</b>	<b>2,799</b>	<b>22%</b>

<sup>8</sup> Cross boarder trips are defined as: Northbound – total alightings at Belfast; Southbound – total boardings at Belfast

## Sligo – Longford – Bray

### Services Included:

Intercity: Dublin – Sligo

Commuter: Dublin – Maynooth/Longford

Commuter: Dublin – M3 Parkway

Commuter: Bray – Dublin (excluding DART)

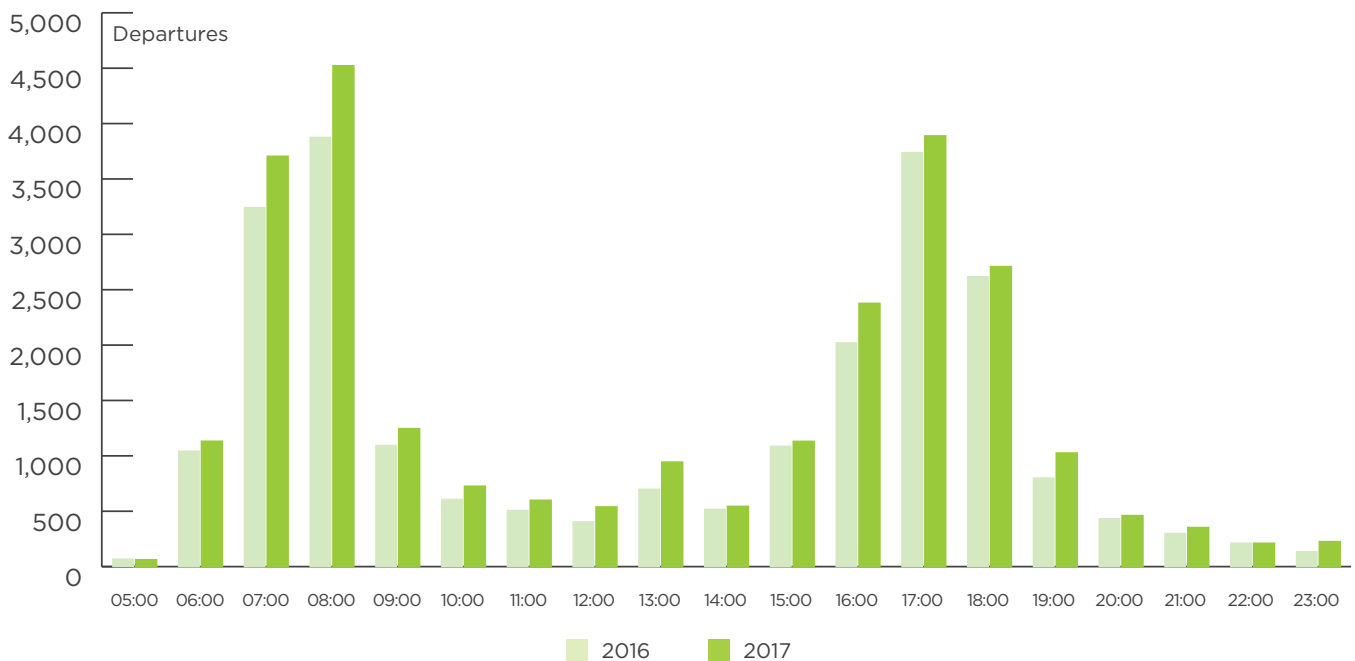
Commuter: Bray – Maynooth

Table 15: Total daily patronage on Sligo - Bray lines, 2017

Line	2016	2017	Annual % Change
Eastbound	12,177	13,890	14%
Westbound	11,228	12,493	11%
<b>Total</b>	<b>23,405</b>	<b>26,383</b>	<b>13%</b>

## Hourly Profile of Demand

Chart 13: Hourly Profile of Demand, Sligo – Longford – Bray, 2016 and 2017



## Profile of Demand by Station

Charts 14 and 15 show the daily patronage build-up on the Bray to Sligo line in 2016 and 2017.

Chart 14 Profile of Demand by Station, Sligo - Dublin - Bray (eastbound), 2016 and 2017<sup>9</sup>

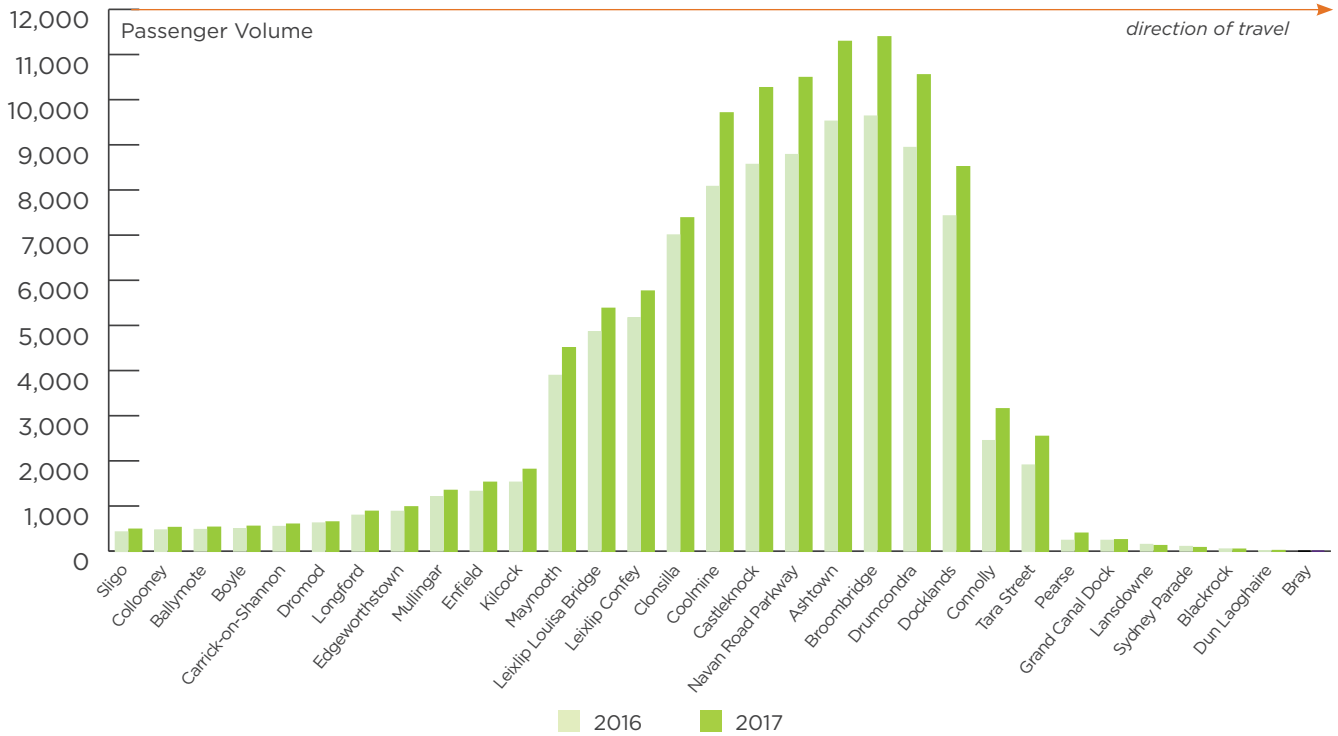
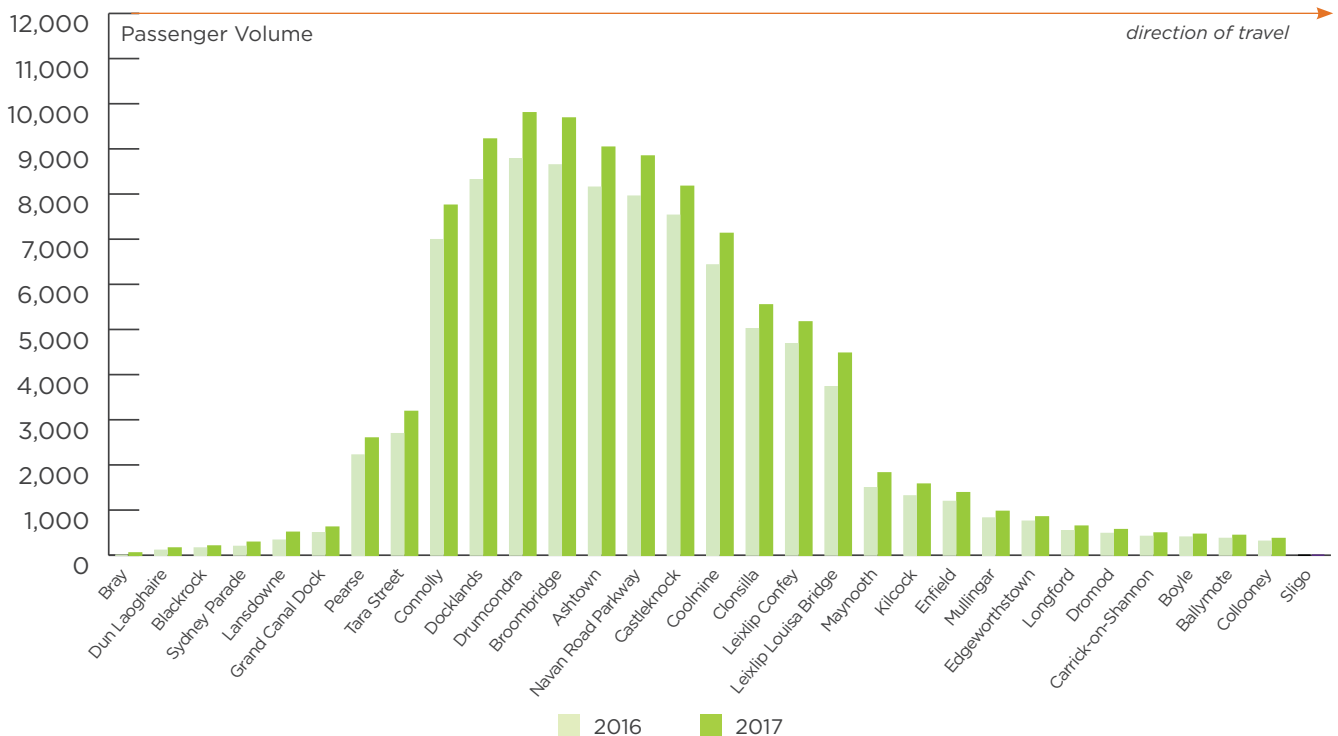


Chart 15 Profile of Demand by Station, Bray - Dublin - Sligo (westbound), 2016 and 2017



<sup>9</sup> 'Dunboyne spur' Patronage (M3 Parkway - Dunboyne - Hansfield) represented at Clonsilla

## Heuston Commuter Services

### Services Included:

Commuter: Dublin Grand Canal Dock/Heuston – Hazelhatch & Celbridge, Kildare, Newbridge, Portlaoise & Portarlington<sup>10</sup>

Table 16: Total daily patronage on Commuter Services to & from Heuston/Grand Canal Dock, 2016 and 2017

Line	2016 (ex. Grand Canal Dock)	2017 (incl. Grand Canal Dock)	Annual % Change
From Heuston/Grand Canal Dock	2,898	4,430	53%
To Heuston/Grand Canal Dock	3,130	5,038	61%
<b>Total</b>	<b>6,028</b>	<b>9,468</b>	<b>57%</b>

In January 2017<sup>11</sup> Iarnród Éireann carried out a census of patronage on services operating via the newly refurbished Phoenix Park Tunnel. Table 16a below presents a comparison of patronage on these services in January 2017 and census day 2017.

Appendix D provides a list of services introduced in November 2016 operating on the Kildare line to and from Grand Canal Dock via Phoenix Park Tunnel.

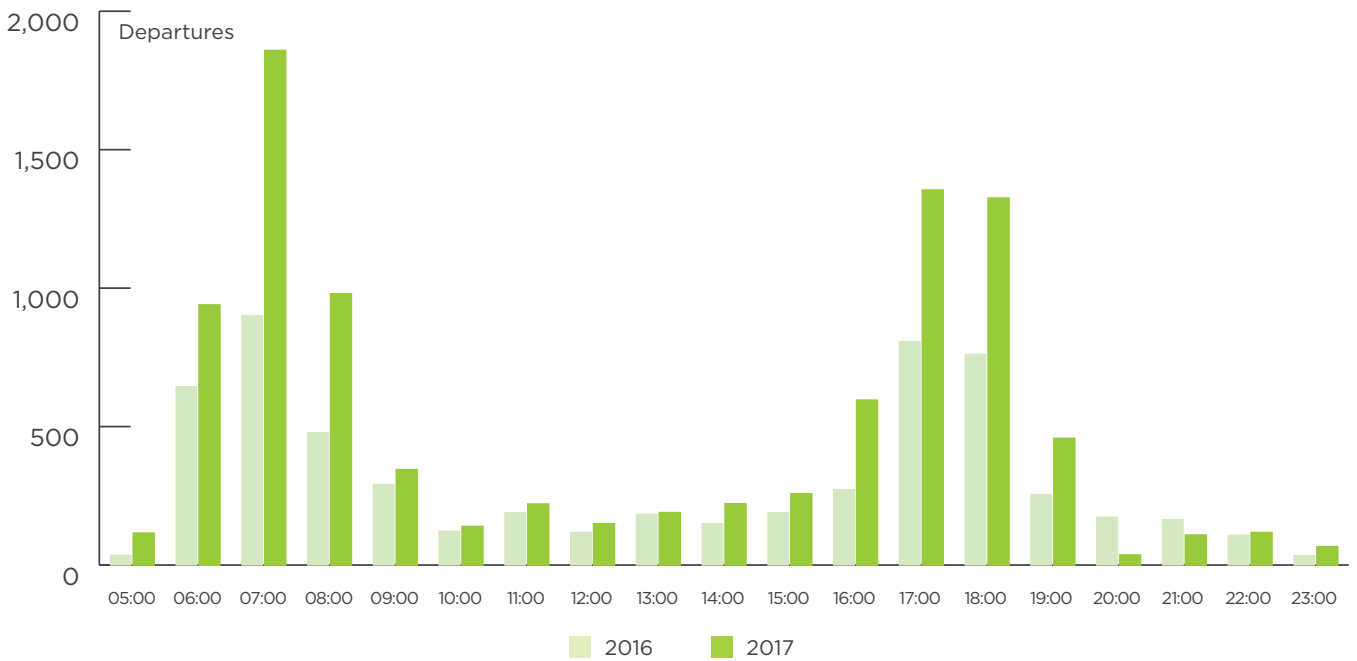
Table 16a: Total daily patronage on Commuter Services to & from Grand Canal Dock via Phoenix Park Tunnel in 2017

Line	Jan 2017	Nov 2017	Annual % Change
From Grand Canal Dock	1,010	1,540	52%
To Grand Canal Dock	1,147	1,621	41%
<b>Total</b>	<b>2,157</b>	<b>3,161</b>	<b>47%</b>

<sup>10</sup> Services from Newbridge/Hazelhatch & Celbridge – Grand Canal Dock (via Phoenix Park Tunnel) were not in operation at the time of the 2016 national rail census

<sup>11</sup> Passenger counts were carried out on 12th and 26th of January 2017. An average patronage is presented

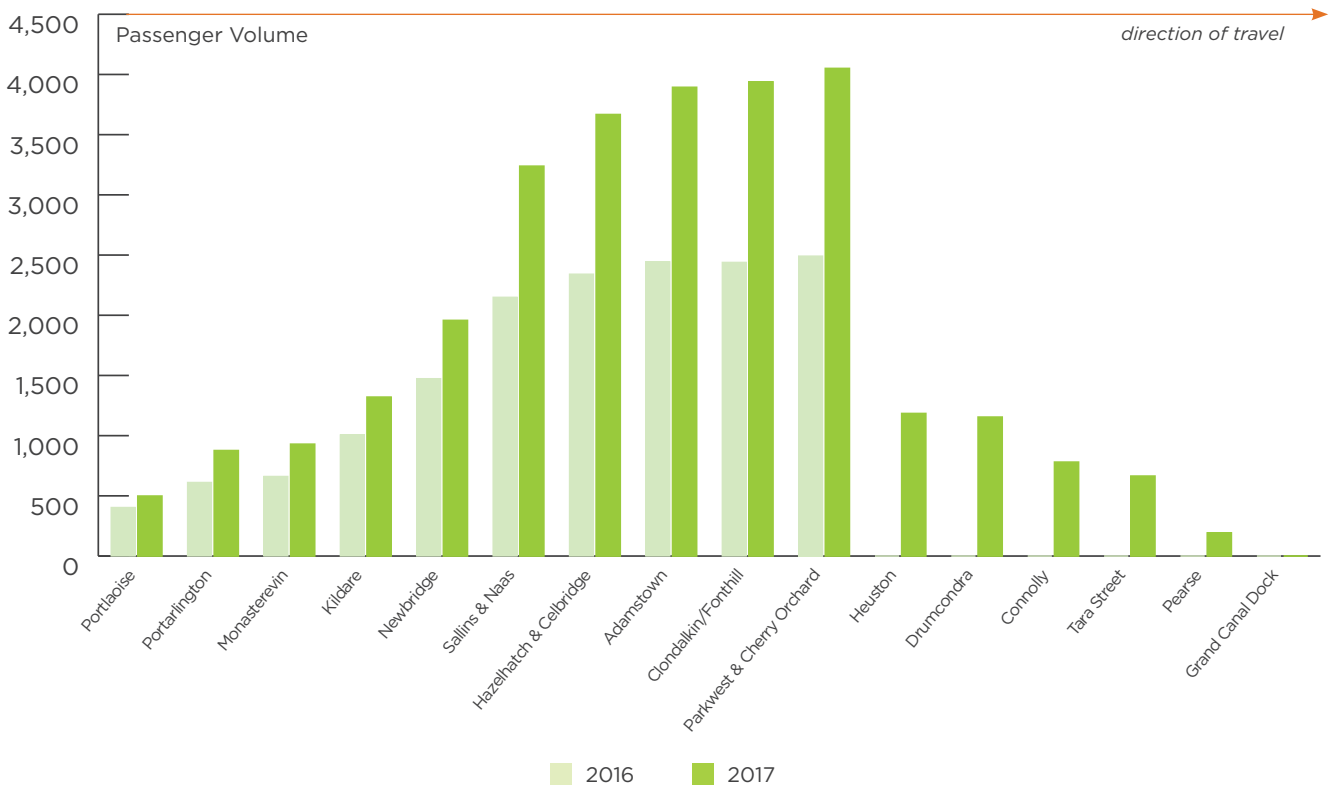
Chart 16: Hourly Profile of Demand, Heuston Commuter, 2016<sup>12</sup> and 2017



## Profile of Demand by Station

Charts 17 and 18 show the daily patronage build-up on the Heuston commuter line in 2016 and 2017.

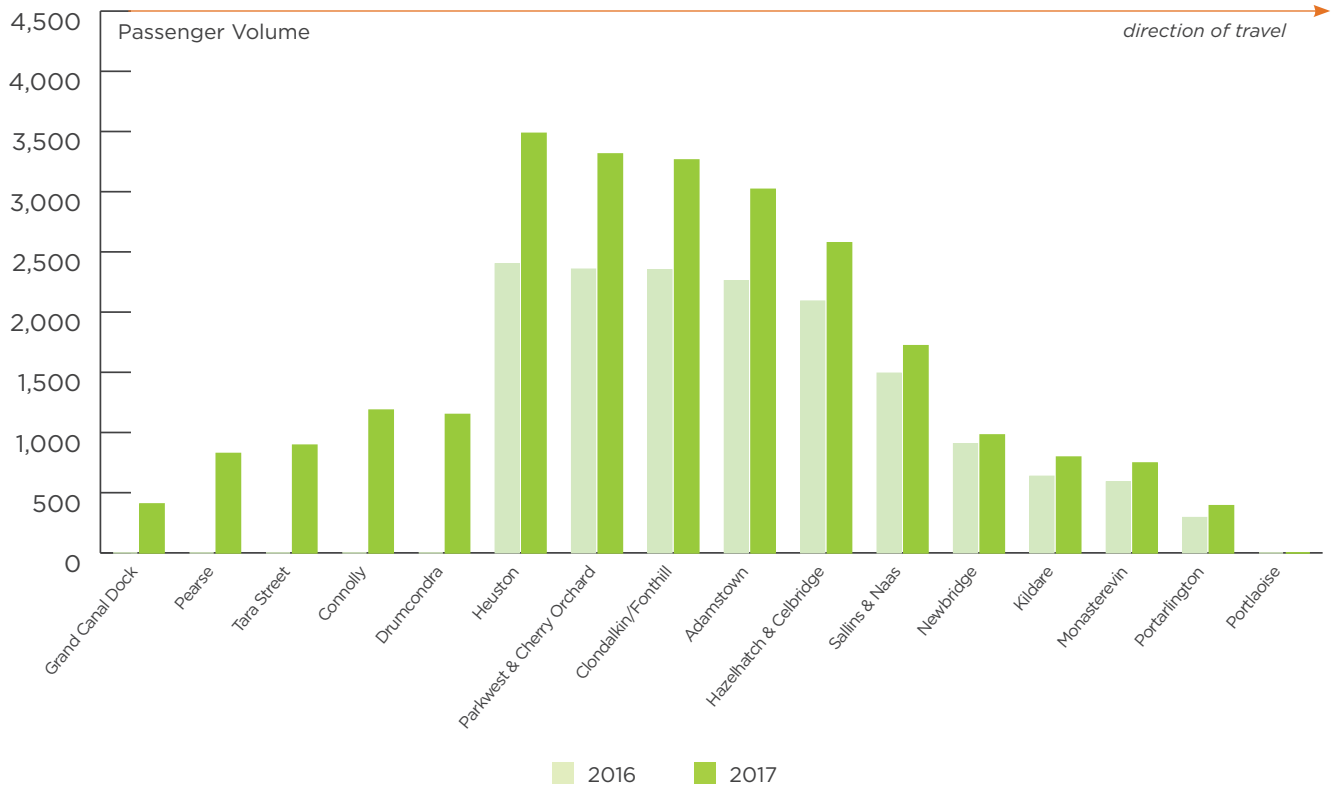
Chart 17: Profile of Demand by Station, Kildare Line (eastbound), 2016 and 2017<sup>13</sup>



<sup>12</sup> 2016 data is before the commencement of services to and from Grand Canal Dock

<sup>13</sup> Patronage at Athlone, Clara and Tullamore represented at Portarlinton, from Athy and Carlow at Kildare

Chart 18: Profile of Demand by Station, Kildare Line (westbound), 2016 and 2017





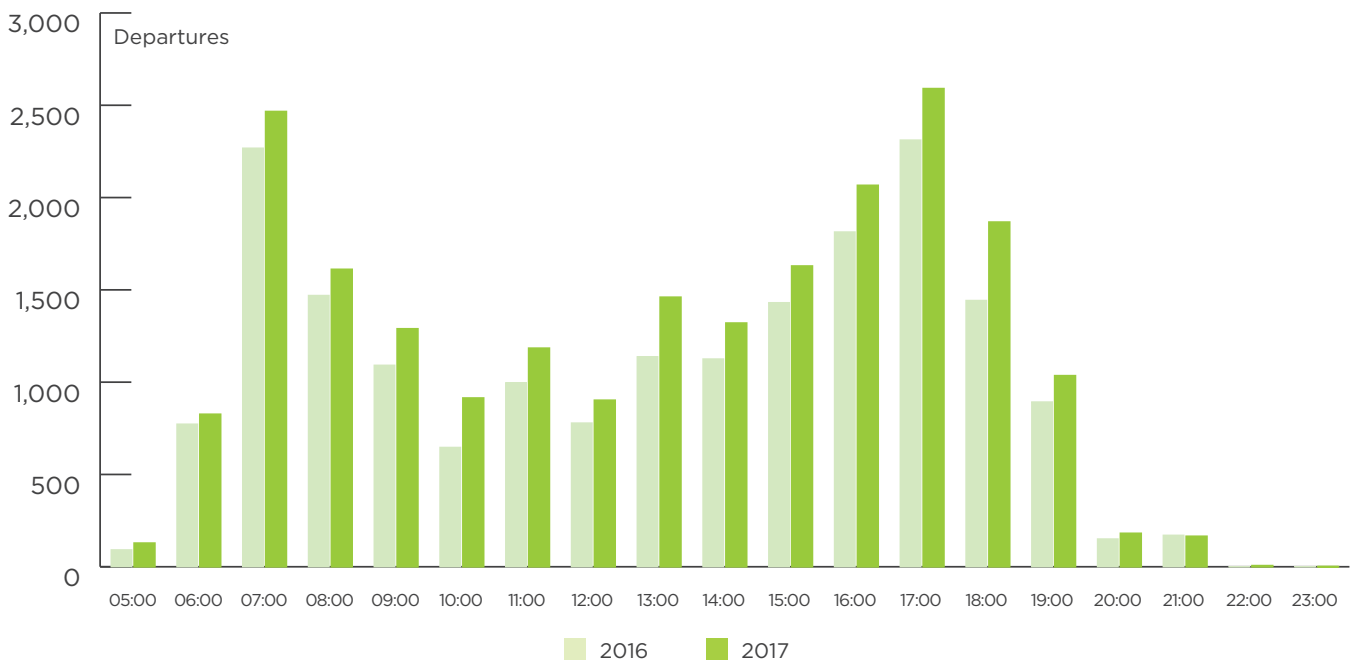
## Heuston Inter City Services

A number of rail lines operate out of Heuston. This network of lines serves the majority of the country, with services to and from Kildare, Waterford, Newbridge, Athlone, Carlow, Portlaoise, Cork, Tralee, Limerick, Galway and Westport. Chart 19 shows the build-up of demand on all Inter City Heuston services over the course of the census day. The build-up captures the total boardings per hour based on time of arrival or departure from Heuston station.

Table 17: Total daily patronage on Inter City Services to & from Heuston, 2017

Line	2016	2017	Annual % Change
From Heuston	9,031	10,458	16%
To Heuston	9,568	11,158	17%
<b>Total</b>	<b>18,599</b>	<b>21,616</b>	<b>16%</b>

Chart 19: Profile of Demand by Station, Heuston Inter City services, 2016 and 2017



## Cork Commuter and Regional Services Included:

Midleton/Cobh - Cork - Mallow - Tralee

Table 18: Total daily patronage on Cork Commuter Lines, 2017

Line	2016	2017	Annual % Change
To Cork (inbound)	2,840	2,974	5%
From Cork (outbound)	2,751	2,920	6%
<b>Total</b>	<b>5,591</b>	<b>5,894</b>	<b>5%</b>

## Hourly Profile of Demand

Chart 20: Hourly Profile of Demand, Cork Commuter and Regional Lines, 2016 and 2017

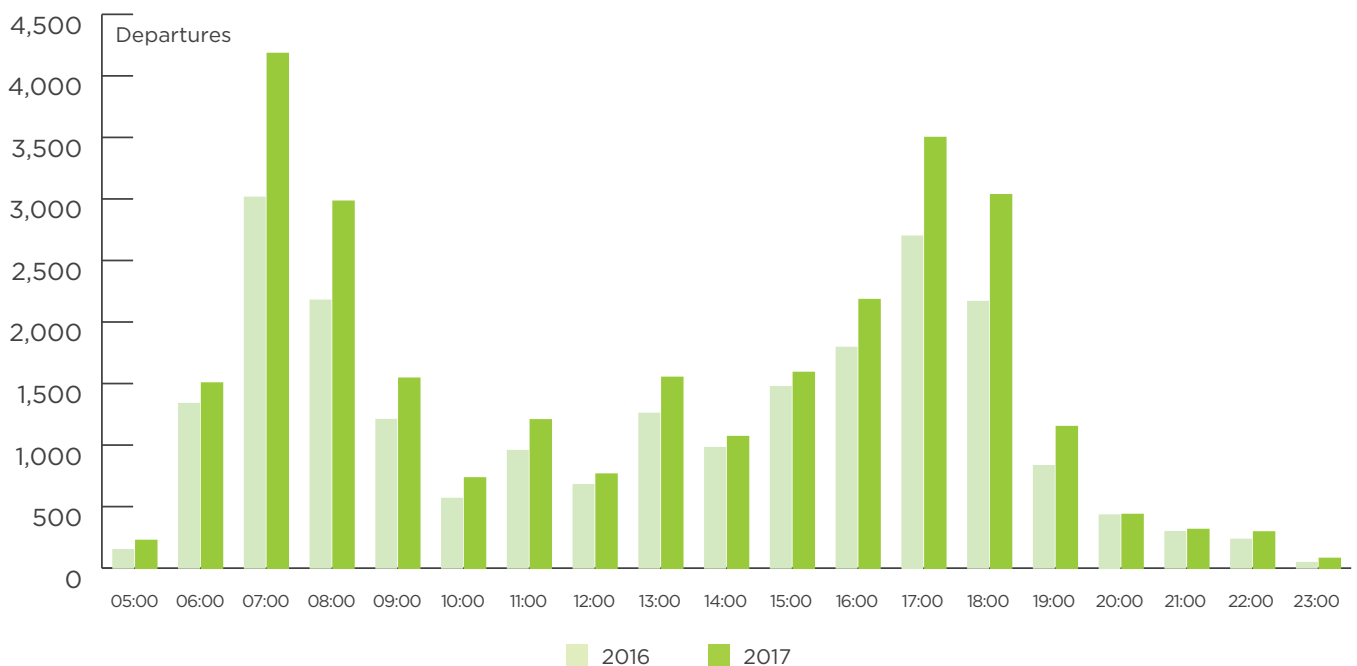


Chart 21a: Profile of Demand by Station, Commuter Services from Cork 2016 and 2017<sup>14</sup>

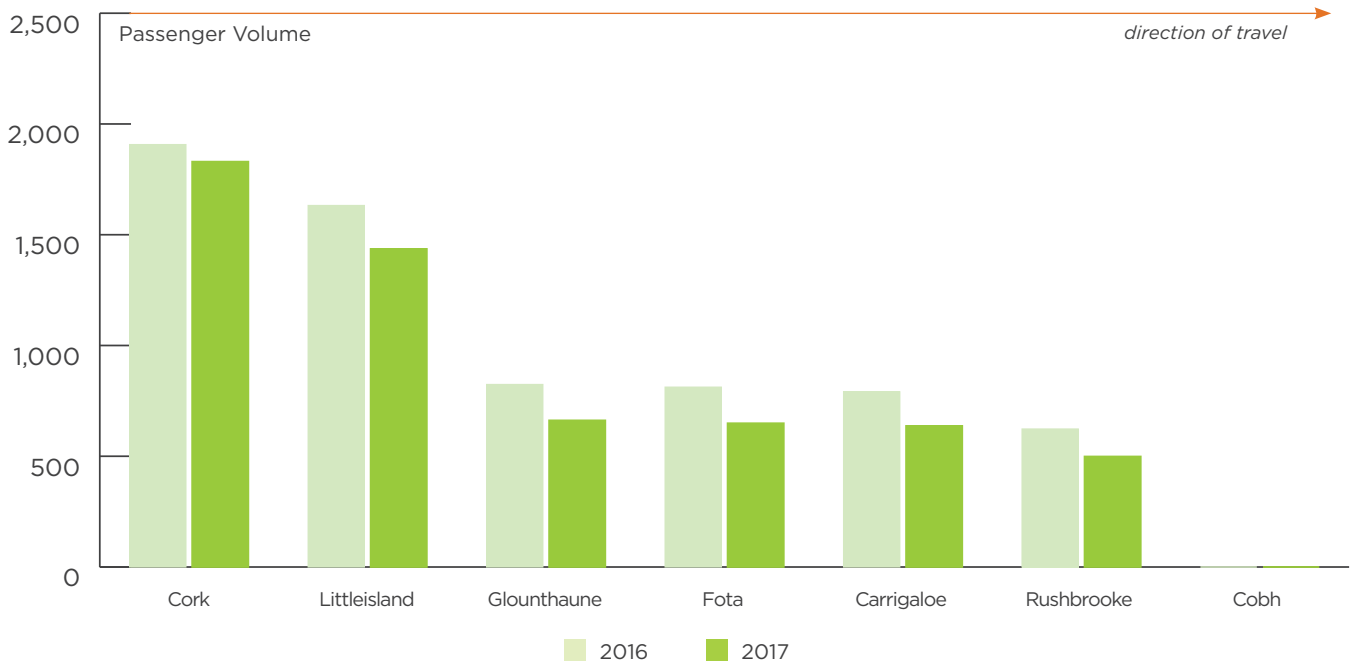


Chart 21b: Profile of Demand by Station, Services from Cork to Tralee 2016 and 2017



<sup>14</sup> Passengers to Midleton and Carrigtwohill counted at Glounthaune

Chart 22a: Profile of Demand by Station, Commuter Services to Cork 2016 and 2017<sup>15</sup>

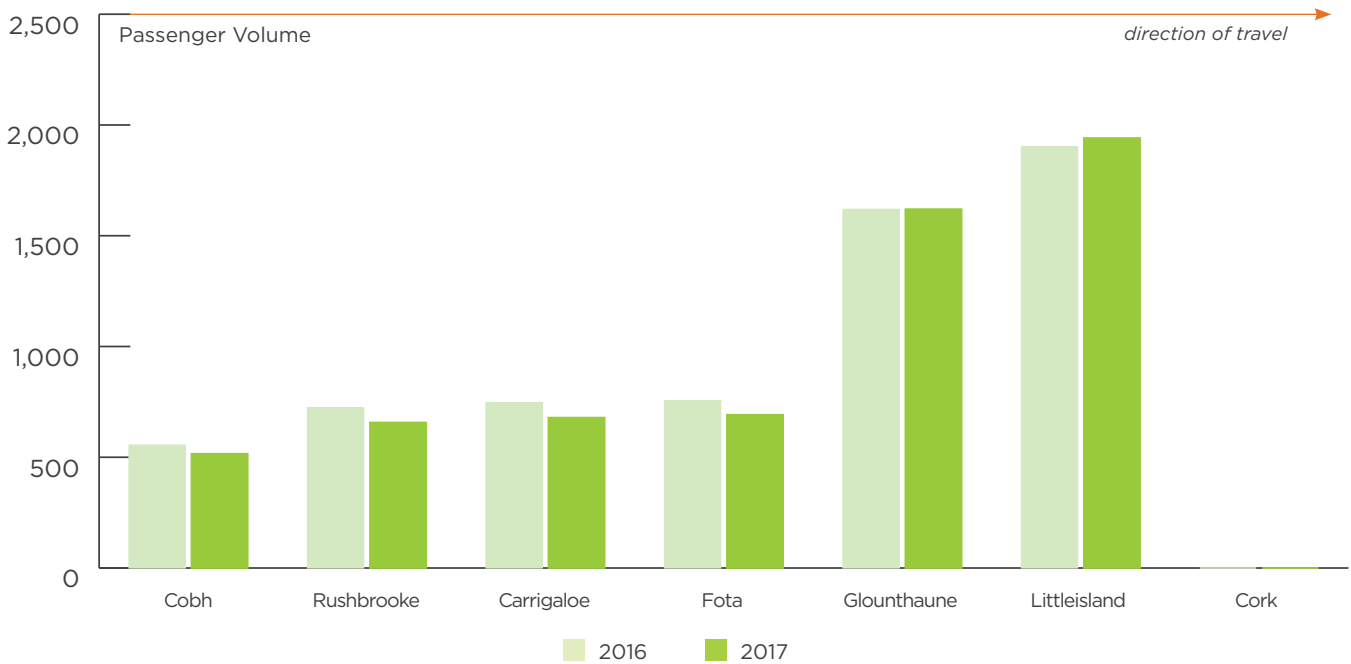
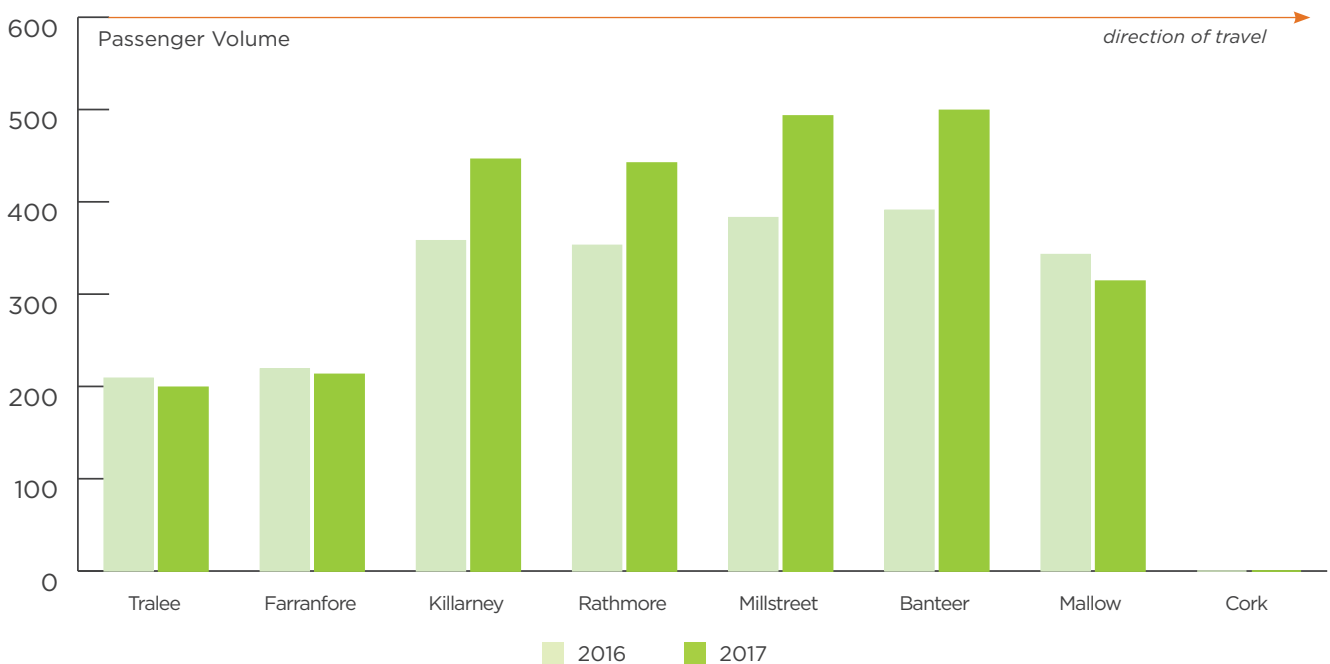


Chart 22b: Profile of Demand by Station, Services from Tralee to Cork 2016 and 2017



<sup>15</sup> Passengers from Midleton and Carrigtwohill counted at Glounthaune

## Other Lines

Table 19: Daily Patronage on remaining Lines outside Cork and the GDA

Line	2016	2017	Annual % Change
Galway - Athenry/Athlone/Westport	716	906	27%
Galway - Ennis/Limerick/Limerick Junction	2,083	2,329	12%
Limerick - Nenagh/Thurles/Ballybrophy	163	209	28%
Waterford - Limerick Junction	109	119	9%
<b>Total</b>	<b>3,071</b>	<b>3,563</b>	<b>16%</b>



# Radial Rail Usage in Dublin

Daily boardings by radial corridor

Table 20: Daily Boardings from Stations Inbound to the City Centre

Radial Corridor	Section	Service	Boardings					
			2012	2013	2014	2015	2016	2017
Northern Line	Malahide/Howth -	DART	12,403	11,949	12,160	14,432	16,017	17,158
	Clontarf Road	Commuter	7,064	7,380	7,329	8,103	8,160	9,101
	Dundalk - Howth	InterCity	1,536	1,410	1,167	1,202	1,365	1,728
<b>Total</b>			<b>21,003</b>	<b>20,739</b>	<b>20,656</b>	<b>23,737</b>	<b>25,541</b>	<b>27,987</b>
South Eastern Line	Greystones - Grand Canal Dock	DART	19,667	19,468	18,630	22,081	22,465	24,401
	Bray - Grand Canal Dock	Commuter	817	495	558	521	538	811
	Rosslare - Grand Canal Dock	InterCity	1,180	876	1,521	1,482	1,644	1,885
<b>Total</b>			<b>21,664</b>	<b>20,839</b>	<b>20,709</b>	<b>24,084</b>	<b>24,647</b>	<b>27,097</b>
Heuston Lines	Portlaoise - Heuston/Grand Canal Dock	Commuter	1,737	2,275	2,741	2,887	2,973	5,038
	National - Heuston	InterCity	8,251	8,927	8,576	9,526	9,918	11,182
<b>Total</b>			<b>9,988</b>	<b>11,202</b>	<b>11,317</b>	<b>12,413</b>	<b>12,891</b>	<b>16,220</b>
Sligo Lines	Longford - Drumcondra	Commuter	7,594	7,500	8,151	9,396	9,793	11,513
	Sligo - Drumcondra	InterCity	1,871	1,611	1,635	2,011	1,912	2,218
<b>Total</b>			<b>9,465</b>	<b>9,111</b>	<b>9,786</b>	<b>11,407</b>	<b>11,705</b>	<b>13,731</b>

## Peak Hour Flows by Radial Corridor

Tables 21 & 22: Maximum Flows per Line in the Morning & Evening Peak Hours (8:00-9:00 & 17:00-18:00)

Radial Corridor	Service	Max. Hourly Passenger Flow	Location of Maximum Flow
Northern Lines	DART	5,034	Clontarf Road - Connolly
	Commuter	2,051	Howth Junction - Connolly
	InterCity	363	Drogheda - Connolly
<b>Total</b>		<b>7,448</b>	
South-Eastern Lines	DART	3,993	Boooterstown - Sydney Parade
	Commuter	-	No Commuter services 08:00-09:00
	InterCity	434	Blackrock - Lansdowne Rd.
<b>Total</b>		<b>4,427</b>	
Heuston Lines	Commuter	863	Parkwest and Cherry Orchard - Heuston
	InterCity	1,557	Kildare - Heuston
<b>Total</b>		<b>2,420</b>	
Sligo Lines	Commuter	4,102	Ashtown - Broombridge
	InterCity	512	Maynooth - Leixlip Louisa Bridge
<b>Total</b>		<b>4,614</b>	

Line	Service	Max. Hourly Passenger Flow	Location of Maximum Flow
Northern Lines	DART	3,396	Connolly - Clontarf Road
	Commuter	1,862	Connolly - Howth Junction & Donaghmede
	InterCity	395	Connolly <sup>16</sup> - Dundalk
<b>Total</b>		<b>5,653</b>	
South-Eastern Lines	DART	2,634	Sydney Parade - Sandymount
	Commuter	389	Bray - Greystones
	InterCity	-	No Inter City services 08:00-09:00
<b>Total</b>		<b>3,023</b>	
Heuston Lines	Commuter	955	Parkwest & Cherry Orchard - Clondalkin/Fonthill
	InterCity	2,073	Heuston - Kildare
<b>Total</b>		<b>3,028</b>	
Sligo Lines	Commuter	2,153	Navan Road Parkway - Castleknock
	InterCity	539	Connolly - Leixlip Louisa Bridge
<b>Total</b>		<b>2,692</b>	

<sup>16</sup> 1650 Connolly - Belfast, Enterprise



## Train Loadings by Radial Corridor

Table 23 & 24: Most Heavily Loaded Trains in the Morning Peak

Line	Service	Maximum Load Per	Service	Location
Northern Lines	DART	1,077	08:02 Howth - Greystones	Clontarf Road - Connolly
	Commuter	935	07:12 Drogheda - Bray	Howth Junction & Donaghmede - Connolly
	InterCity	441	06:45 Belfast - Connolly	Drogheda - Connolly
South-Eastern Lines	DART	1,046	08.00 Greystones- Malahide	Boooterstown - Sydney Parade
	Commuter	434	05:35 Rosslare Europort - Dundalk	Blackrock - Lansdowne Road
	InterCity	-	No Inter City Services	
Heuston Lines	Commuter	367	07:20 Newbridge - Grand Canal Dock	Drumcondra - Connolly
	InterCity	424	06:05 Waterford - Heuston	Newbridge - Heuston
Sligo Lines	Commuter	1,027	07.55 Maynooth - Bray	Drumcondra - Connolly
	InterCity	512	05.45 Sligo - Connolly	Maynooth - Broombridge

Table 25: Most Heavily Loaded Trains in the Evening Peak

Line	Service	Maximum Load Per	Train	Location of Busiest Service
Northern Lines	DART	938	16.30 Greystones - Malahide	Connolly - Clontarf Road
	Commuter	746	16.50 Bray - Drogheda	Connolly - Clongriffin
	InterCity	395	16:50 Connolly - Belfast	Connolly - Dundalk
South-Eastern Lines	DART	939	17:00 Malahide - Greystones	Lansdowne Road - Sandymount
	Commuter	388	17:36 Connolly - Wexford	Pearse - Dun Laoghaire
	InterCity	-	No Inter City Services	
Heuston Lines	Commuter	340	17.10 Heuston - Athlone	Heuston - Newbridge
	InterCity	491	17:30 Heuston - Galway	Heuston - Sallins & Naas
Sligo Lines	Commuter	758	17.05 Bray - Maynooth	Drumcondra - Broombridge
	InterCity	539	17.05 Connolly - Sligo	Connolly - Drumcondra

# Appendix A: Daily Boardings at each Station, by Service Type

Route	DART North Bound	DART South Bound	Rosslare to Dundalk	Dundalk to Rosslare	Bray to Sligo	Sligo to Bray	Total 2017	Total 2016	Total 2015	Total 2014	Total 2013	Total 2012
Rosslare Euro Port			7	0			7	11	21	13	20	20
Rosslare Strand			19	0			19	16	24	14	21	25
Wexford			124	23			147	76	115	78	68	81
Enniscorthy			50	15			65	54	57	38	43	61
Gorey			72	4			76	73	86	78	86	105
Arklow			109	12			121	85	88	91	109	119
Rathdrum			64	5			69	68	111	75	98	94
Wicklow			226	43			269	168	155	152	166	180
Kilcoole			83	16			99	39	24	33	31	23
Greystones	1909	340	274	45			2568	1927	1951	1561	1783	1858
Bray	3155	260	336	147	48	0	3946	3144	2974	2573	2909	3029
Shankill	1214	128					1342	1367	1456	1085	1149	1301
Killiney	879	110					989	853	792	731	882	859
Dalkey	1303	445					1748	1621	1634	1301	1531	1544
Glenageary	1689	150					1839	1666	1661	1388	1568	1494
Sandycove & Glasthule	1068	221					1289	1208	1157	1004	1022	995
Dun Laoghaire	2729	919	188	176	115	2	4129	3574	3315	2610	3168	3359
Salthill & Monkstown	1096	227					1323	1387	1379	1065	1168	1041
Seapoint	620	188					808	836	869	682	785	699
Blackrock	2324	610	146	19	54	2	3155	2974	2862	2699	2091	2399
Boooterstown	1009	603					1612	1644	1320	1274	1334	1164
Sydney Prde	1404	622	68	12	83	4	2193	1883	1847	1552	1327	1308
Sandymount	727	353					1080	1044	1243	828	889	975

Route	DART North Bound	DART South Bound	Rosslare to Dundalk	Dundalk to Rosslare	Bray to Sligo	Sligo to Bray	Total 2017	Total 2016	Total 2015	Total 2014	Total 2013	Total 2012
Lansdowne	1833	1227	119	23	224	3	3429	3500	3459	2868	2529	2490
Grand Canal Dock	1442	1517	141	32	120	0	3252	2896	2671	2712	2579	2825
Pearse	3772	5566	3114	480	2057	21	15010	14827	13292	13560	12168	11312
Tara Street	2652	4034	1436	430	660	90	9302	7952	7730	6746	6344	6556
Connolly	3374	3296	5031	1099	4692	48	17540	14857	14679	12029	12512	13477
Clontarf Rd	484	1568					2052	1946	1694	1272	1377	1431
Killester	210	1987					2197	2225	1786	1595	1575	1592
Harmonstwn	118	1196					1314	1396	1071	998	1011	994
Raheny	197	1953					2150	2024	1883	1758	1641	1672
Kilbarrack	281	1235					1516	1373	1368	1106	1043	1138
Howth Junc Donaghmede	402	1271	282	208			2163	1818	1715	1613	1667	1730
Bayside	107	1395					1502	1400	1403	1222	1156	1024
Sutton	51	923					974	963	741	669	689	657
Howth	0	1439					1439	1240	1259	875	1073	1285
Clongriffin	62	1068	8	158			1296	1256	1013	830	767	674
Portmarnock	570	999	30	382			1981	1450	1191	1182	1186	1236
Malahide	10	2124	363	827			3324	2626	2604	2086	2177	2318
Donabate			187	1184			1371	1392	1386	1105	1149	1213
Rush & Lusk			110	837			947	972	905	808	920	800
Skerries			159	1426			1585	1424	1446	1314	1365	1279
Balbriggan			134	2104			2238	1782	1872	1757	1753	1778
Gormanston			3	81			84	101	72	87	113	92
Laytown			8	424			432	397	392	305	371	375
Drogheda			95	1024			1119	1086	1264	957	962	1094
Dundalk			70	446			516	579	465	394	492	567
Belfast			0	1322			1322	1011	853	1094	1047	1040
Docklands					1466	0	1466	1326	1064	874	850	811
Drumcondra					857	255	1112	1183	1258	1291	1065	1150

Route	DART North Bound	DART South Bound	Rosslare to Dundalk	Dundalk to Rosslare	Bray to Sligo	Sligo to Bray	Total 2017	Total 2016	Total 2015	Total 2014	Total 2013	Total 2012
Broombridge					203	301	504	418	370	221	249	229
Ashtown					149	961	1110	995	928	930	743	743
Navan Road Parkway					36	249	285	323	270	245	232	197
Castleknock					172	716	888	792	781	716	841	840
Coolmine					270	2646	2916	1502	1544	1332	1554	1550
Clonsilla					455	1144	1599	1767	1698	1480	1161	1262
Hansfield					4	207	211	210	143	87	58	-
Dunboyne					5	289	294	279	184	220	171	177
M3 Parkway					0	422	422	400	298	174	206	226
Leixlip Conf.					132	484	616	529	520	416	497	511
Leixlip Louisa Bridge					116	943	1059	1112	1067	1054	834	969
Maynooth					250	2886	3136	2695	2831	2006	2232	2202
Kilcock					32	310	342	237	258	225	233	247
Enfield					14	199	213	137	127	100	110	131
Mullingar					65	468	533	473	509	492	370	451
Edge'stown					12	121	133	116	130	104	122	167
Longford					62	310	372	254	322	266	181	221
Dromod					16	74	90	112	79	124	88	81
Carrick-on-Shannon					48	94	142	105	141	103	95	114
Boyle					28	61	89	67	77	58	54	76
Ballymote					36	51	87	91	131	74	93	69
Collooney					12	47	59	56	56	50	46	41
Sligo					0	482	482	426	401	307	379	436

Route	Heuston North Bound	Heuston South Bound	Cork West Bound	Cork East Bound	Region North Bound	Region South Bound	Total 2017	Total 2016	Total 2015	Total 2014	Total 2013	Total 2012
Grand Canal Dock	35	406					441					
Pearse	23	432					455					
Tara Street	49	91					140					
Connolly	96	426					522					
Drumcondra	170	123					293					
Heuston	0	10700					10700	9537	9997	9394	8497	8650
Parkwest & C'y Orchard	292	118					410	255	202	184	155	126
Clondalkin / Fonthill	106	58					164	54	40	54	56	37
Adamstown	249	21					270	134	108	87	71	85
Hazelhatch & Celbridge	464	33					497	299	271	270	260	323
Sallins Naas	1634	149					1783	1026	964	1123	814	916
Newbridge	1151	132					1283	1224	1067	1081	1058	989
Kildare	612	276					888	775	683	612	806	754
Athy	358	106					464	464	442	314	360	446
Carlow	575	193					768	745	593	575	657	565
M'asterevin	97	13					110	101	87	91	72	37
P'tarlinton	544	184					728	565	705	806	677	504
Portlaoise	879	157					1036	825	804	727	721	488
Ballybrophy	115	3			35	0	153	161	121	99	146	84
Templemore	75	21					96	77	106	70	62	67
Thurles	379	206			16		601	563	557	559	483	504
Limerick Junc	925	185			690	36	1836	1501	1562	1409	1109	1334
Limerick	281	0			264	742	1287	1112	1157	1073	963	1221
Charleville	91	11					102	73	84	65	119	78
Mallow	506	157	302	465			1430	1454	1451	1368	1569	1246

Route	Heuston North Bound	Heuston South Bound	Cork West Bound	Cork East Bound	Region North Bound	Region South Bound	Total 2017	Total 2016	Total 2015	Total 2014	Total 2013	Total 2012
Cork	1885	0	0	2186			4071	3752	3462	2896	3188	3112
Muine Bheag	131	9					140	145	127	146	129	108
Kilkenny	399	74					473	400	355	350	362	328
T'mastown	51	2					53	52	39	39	53	36
Tullamore	522	132					654	470	618	475	452	371
Clara	96	36					132	137	109	83	61	55
Athlone	434	396					830	713	705	560	560	468
Ballinasloe	107	121					228	195	204	68	121	109
Woodlawn	19	49					68	35	38	22	24	10
Attymon	1	13					14	8	7	3	1	1
Athenry	136	160			145	25	466	376	393	266	141	363
Galway	1424	0			0	303	1727	1260	1402	1218	1053	1011
Roscommon	94	27					121	88	75	72	80	63
Castlerea	87	9					96	70	58	60	49	53
Ballyhaunis	90	16					106	80	67	64	45	45
Claremorris	76	12					88	113	86	87	66	54
Castlebar	156	7					163	145	120	114	82	93
Westport	106	0					106	153	135	104	85	90
Manulla Junc	112	111					223	146	119	78	101	138
Foxford	16	3					19	19	5	-	15	12
Ballina	96	0					96	62	50	-	51	65
Banteer	10	0	17	8			35	32	39	19	38	37
Millstreet	20	0	65	13			98	55	91	111	380	43
Rathmore	8	0	10	26			44	30	59	18	42	41
Killarney	57	8	263	28			356	213	224	228	357	240
Farranfore	8	0	16	1			25	21	21	14	32	29
Tralee	27	0	199	0			226	240	236	208	411	281

Route	Heuston North Bound	Heuston South Bound	Cork West Bound	Cork East Bound	Region North Bound	Region South Bound	Total 2017	Total 2016	Total 2015	Total 2014	Total 2013	Total 2012
Littleisland			418	77			495	432	347	218	316	250
Gl'thaune			232	55			287	229	186	139	203	162
C'twohill			134	23			157	148	95	98	91	83
Midleton			608	0			608	638	461	458	495	422
Fota			19	7			26	14	10	9	82	23
Carrigaloe			28	8			36	40	37	19	31	36
Cobh			516	1			517	555	481	369	517	504
Sixmilebrdg					17	36	53	57	53	55	46	60
Ennis					35	155	190	153	261	173	236	276
Gort					15	1	16	31	19	20	13	18
Ardrahan					2	1	3	5	3	7	8	14
Craughwell					27	6	33	18	13	13	10	27
Oranmore	18	128			96	20	262	70	63	19	23	
Roscrea					27	3	30	6	7	4	19	15
Cl'jordan					2	4	6	9	6	8	15	5
Nenagh					7	17	24	13	17	9	14	18
Birdhill					7	0	7	6	11	6	10	8
C'leconnell					11	2	13	12	15	10	15	9
Carrick-on-Suir					2	2	4	3	1	-	6	15
Clonmel					21	8	29	27	23	20	29	29
Cahir					4	5	9	10	9	5	11	9
Tipperary					1	2	3	13	11	7	9	31

# Appendix B: Daily Alightings at each Station by Service Type

Route	DART North Bound	DART South Bound	Rosslare to Dundalk	Dundalk to Rosslare	Bray to Sligo	Sligo to Bray	Total 2017	Total 2016	Total 2015	Total 2014	Total 2013	Total 2012
Rosslare Euro Port			0	19			19	25	27	16	21	18
Rosslare Strand			0	25			25	35	42	24	25	30
Wexford			14	226			240	82	137	82	31	64
Enniscorthy			3	98			101	51	53	65	49	55
Gorey			0	150			150	116	85	77	89	107
Arklow			2	149			151	126	93	95	122	117
Rathdrum			11	63			74	52	106	93	88	92
Wicklow			29	205			234	181	187	162	160	145
Kilcoole			28	65			93	9	96	25	26	34
Greystones	0	2011	16	174			2201	1743	1711	1460	1551	1571
Bray	139	3247	88	274	0	10	3758	3220	2870	2997	2818	2867
Shankill	147	1168					1315	1278	1147	1049	1012	1088
Killiney	119	813					932	772	741	734	750	774
Dalkey	466	1310					1776	1742	1650	1258	1594	1586
Glenageary	150	1440					1590	1454	1468	1324	1311	1299
Sandycove & Glasthule	269	823					1092	1084	1067	968	957	999
Dun Laoghaire	869	2669	165	355	6	32	4096	3492	3430	2633	3178	3278
Salthill & Monkstown	215	1045					1260	1182	1084	949	981	990
Seapoint	134	529					663	554	629	514	551	550
Blackrock	776	1971	57	155	10	37	3006	2985	2866	2764	2265	2353
Boooterstown	652	1017					1669	1445	1429	1098	1144	1131
Sydney Prde	713	1411	0	193	0	48	2365	2175	1898	1716	1542	1525
Sandymount	388	719					1107	981	1355	846	836	972



Route	DART North Bound	DART South Bound	Rosslare to Dundalk	Dundalk to Rosslare	Bray to Sligo	Sligo to Bray	Total 2017	Total 2016	Total 2015	Total 2014	Total 2013	Total 2012
Lansdowne	1026	1992	111	392	3	133	3657	3888	4089	2722	3328	2906
Grand Canal Dock	1966	1897	2	394	6	145	4410	3958	3759	3355	3051	2833
Pearse	5011	4768	518	2582	83	2166	15128	14221	14127	12021	11238	11271
Tara Street	4349	2960	308	1225	71	701	9614	8461	9645	7513	7473	7971
Connolly	3276	3982	530	4999	125	5410	18322	16109	15220	12931	13311	14128
Clontarf Rd	1501	590					2091	2206	1713	1405	1337	1346
Killester												
Harmonstwn	1163	121					1284	1312	990	897	823	916
Raheny	1788	301					2089	2161	1789	1698	1493	1489
Kilbarrack	1245	307					1552	1331	955	1112	1072	994
Howth Junc Donaghmede	1316	374	288	191			2169	2044	2179	1708	1836	1764
Bayside	1163	118					1281	1250	1113	1091	1048	958
Sutton	842	77					919	662	536	640	616	646
Howth	1560	0					1560	1138	1286	898	1255	1178
Clongriffin	959	46	203	11			1219	985	875	726	567	640
Portmarnock	1137	44	514	34			1729	974	899	940	978	1057
Malahide	1552	0	1187	291			3030	2158	2508	1992	2178	2302
Donabate			1187	160			1347	1598	1161	1057	1051	1029
Rush & Lusk			778	94			872	894	775	795	828	876
Skerries			1381	207			1588	1320	1466	1227	1308	1460
Balbriggan			2154	108			2262	1868	1422	1564	1711	1543
Gormanston			112	0			112	55	82	71	99	85
Laytown			418	12			430	354	367	349	345	367
Drogheda			1027	111			1138	917	1121	1041	979	1040
Dundalk			448	87			535	516	475	453	532	515
Belfast			1477	0			1477	1313	936	1126	1100	1074
Docklands					0	2035	2035	1515	1244	1141	966	1048
Drumcondra					275	1097	1372	1413	1249	1154	1135	1176

Route	DART North Bound	DART South Bound	Rosslare to Dundalk	Dundalk to Rosslare	Bray to Sligo	Sligo to Bray	Total 2017	Total 2016	Total 2015	Total 2014	Total 2013	Total 2012
Broombridge					319	199	518	440	318	257	215	207
Ashtown					795	161	956	750	787	773	665	660
Navan Road Parkway					232	24	256	303	253	222	202	204
Castleknock					843	158	1001	727	784	694	817	793
Coolmine					1313	321	1634	1527	1682	1406	1317	1392
Clonsilla					1088	431	1519	1477	1470	1126	1202	1173
Hansfield					207	8	215	184	148	101	82	
Dunboyne					325	1	326	228	202	211	138	185
M3 Parkway					427	0	427	344	283	215	231	231
Leixlip Conf.					509	102	611	556	473	436	428	480
Leixlip Louisa Bridge					809	71	880	1097	933	1039	870	932
Maynooth					2901	191	3092	2567	2906	2276	2148	2242
Kilcock					281	24	305	213	258	236	232	225
Enfield					204	19	223	141	144	142	148	145
Mullingar					479	104	583	516	558	564	407	507
Edge'stown					134	22	156	101	149	122	145	169
Longford					267	74	341	292	374	269	212	194
Dromod					93	25	118	96	138	120	86	94
Carrick-on-Shannon					123	47	170	118	140	94	135	122
Boyle					57	40	97	68	70	57	69	100
Ballymote					60	45	105	110	126	64	108	90
Collooney					81	9	90	75	92	74	84	58
Sligo					367	0	367	311	443	304	292	467

Route	Heuston North Bound	Heuston South Bound	Cork West Bound	Cork East Bound	Region North Bound	Region South Bound	Total 2017	Total 2016	Total 2015	Total 2014	Total 2013	Total 2012
Grand Canal Dock	227	0					227					
Pearse	495	13					508					
Tara Street	165	22					187					
Connolly	470	135					605					
Drumcondra	200	159					359					
Heuston	11596	0					11596	10007	9753	9273	8686	8515
Parkwest & C'y Orchard	180	291					471	247	265	171	114	140
Clondalkin / Fonthill	62	103					165	64	48	51	48	46
Adamstown	23	268					291	122	114	97	98	107
Hazelhatch & Celbridge	35	512					547	290	276	260	258	325
Sallins Naas	99	1295					1394	1128	1018	1006	908	943
Newbridge	185	1193					1378	1169	1105	1034	999	973
Kildare	286	588					874	739	662	731	733	616
Athy	119	358					477	466	510	408	371	461
Carlow	150	538					688	735	637	582	617	524
M'asterevin	4	80					84	70	71	82	64	56
P'tarlinton	103	583					686	615	705	754	587	528
Portlaoise	126	780					906	793	745	737	583	418
Ballybrophy	6	133			0	24	163	131	139	108	129	129
Templemore	26	61					87	84	80	90	89	81
Thurles	222	389			0		611	574	456	578	463	458
Limerick Junc	201	752			43	796	1792	1488	1552	1435	1263	1571
Limerick	0	259			661	172	1092	1203	1167	1000	849	1192
Charleville	17	66					83	67	82	91	185	79
Mallow	312	407	487	338			1544	1270	1251	1276	1460	1404

Route	Heuston North Bound	Heuston South Bound	Cork West Bound	Cork East Bound	Region North Bound	Region South Bound	Total 2017	Total 2016	Total 2015	Total 2014	Total 2013	Total 2012
Cork	0	1795	2227	0			4022	3811	3354	2764	3322	3239
Muine Bheag	21	134					155	166	162	153	174	121
Kilkenny	98	401					499	348	285	404	346	263
T'mastown	1	60					61	65	48	41	55	36
Waterford	0	435			0	25	460	373	421	472	414	437
Tullamore	127	419					546	446	678	447	327	412
Clara	32	93					125	119	117	82	75	41
Athlone	305	454					759	589	637	604	575	427
Ballinasloe	119	81					200	151	182	148	69	119
Woodlawn	39	21					60	38	43	25	18	26
Attymon	20	0					20	9	7	8	45	11
Athenry	171	177			35	140	523	368	422	297	133	241
Galway	0	1416			404	0	1820	1199	1162	778	1125	884
Roscommon	24	109					133	75	74	83	84	69
Castlerea	6	63					69	67	63	66	57	61
Ballyhaunis	13	55					68	59	70	48	45	52
Claremorris	7	87					94	95	89	63	128	82
Castlebar	5	173					178	150	79	103	110	128
Westport	0	137					137	101	133	123	124	118
Manulla Junc	115	99					214	151	123	69	15	90
Foxford	5	16					21	23	7	-	21	18
Ballina	0	93					93	62	59	-	72	80
Banteer	0	10	11	24			45	30	22	17	34	26
Millstreet	2	19	14	35			70	38	60	52	34	48
Rathmore	1	8	14	22			45	40	45	33	53	34
Killarney	4	58	30	257			349	308	238	254	328	266
Farranfore	0	12	2	22			36	29	36	24	33	25
Tralee	0	59	0	199			258	223	268	288	405	216

Route	Heuston North Bound	Heuston South Bound	Cork West Bound	Cork East Bound	Region North Bound	Region South Bound	Total 2017	Total 2016	Total 2015	Total 2014	Total 2013	Total 2012
Littleisland			97	471			568	423	378	215	315	288
Gl'thaune			44	215			259	239	246	136	207	196
C'twohill			30	101			131	137	92	93	100	81
Midleton			0	536			536	583	465	488	495	456
Fota			6	20			26	18	9	11	81	30
Carrigaloe			6	20			26	37	13	24	32	41
Rushbrooke			6	160			166	194	180	124	146	204
Cobh			0	500			500	623	455	396	517	492
Sixmilebrdg					26	20	46	55	30	54	28	41
Ennis					184	56	240	211	151	273	199	229
Gort					4	13	17	25	12	17	9	11
Ardrahan					6	2	8	2	8	12	6	3
Craughwell					9	21	30	17	14	28	10	15
Oranmore	52	45			16	47	160	89	73	54	22	-
Roscrea					5	5	10	5	3	5	7	1
Cl'jordan					3	2	5	9	9	5	5	4
Nenagh					40	5	45	15	17	11	5	2
Birdhill					1	7	8	4	10	8	2	2
C'leconnell					2	5	7	5	5	3	2	6
Carrick-on-Suir					5	3	8	6	-	13	4	7
Clonmel					10	18	28	18	17	29	25	46
Cahir					3	5	8	11	2	11	11	10
Tipperary					5	2	7	11	10	17	7	13

# Appendix C:

## Train Capacity by Type

Train Type		Capacity	
4-DART	(4 Car DART Set)	700	Seats + Standing Accommodation
6-DART	(6 Car DART Set)	1050	Seats + Standing Accommodation
8-DART	(8 Car DART Set)	1400	Seats + Standing Accommodation
2 x 2600	(2 Car Commuter Rail Car)	206	Seats + Standing Accommodation
2 x 2800	(2 Car Commuter Rail Car)	221	Seats + Standing Accommodation
4 x 29000	(4 Car Commuter Rail Car)	640	Seats + Standing Accommodation
8 x 29000	(8 Car Commuter Rail Car)	1280	Seats + Standing Accommodation
1 x 3ICR	(3 Car InterCity Rail Car)	190	Seats
1 x 6ICR	(6 Car Premier Class InterCity Rail Car)	376	Seats
1 x 6HCR	(6 Car High Capacity InterCity Rail Car)	406	Seats
7 x MkIV	(7 Car Mk IV Set)	348	Seats
7 x DD	(7 Car De Dietrich Set)	358	Seats

# Appendix D:

## Phoenix Park Tunnel Services

Service
06:14 Newbridge - Grand Canal Dock
06:50 Hazelhatch - Grand Canal Dock
07:00 Newbridge - Grand Canal Dock
07:20 Newbridge - Grand Canal Dock
07:25 Grand Canal Dock - Hazelhatch
07:49 Grand Canal Dock - Hazelhatch
08:10 Grand Canal Dock - Newbridge
08:10 Hazelhatch - Grand Canal Dock
08:35 Hazelhatch - Grand Canal Dock
09:12 Newbridge - Grand Canal Dock
15:10 Newbridge - Grand Canal Dock
15:55 Hazelhatch - Grand Canal Dock
16:20 Grand Canal Dock - Hazelhatch
16:40 Grand Canal Dock - Newbridge
17:00 Grand Canal Dock - Hazelhatch
17:00 Hazelhatch - Grand Canal Dock
17:25 Hazelhatch - Grand Canal Dock
17:28 Grand Canal Dock - Newbridge
17:55 Hazelhatch - Grand Canal Dock
17:57 Newbridge - Grand Canal Dock
17:58 Grand Canal Dock - Hazelhatch
18:16 Grand Canal Dock - Newbridge
18:40 Grand Canal Dock - Hazelhatch
19:13 Grand Canal Dock - Hazelhatch







## For Further Information:

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<b>Junctions 9</b>
<b>PICADY 9 - Priority Intersection Module</b>
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**Filename:** Junction 3 - 2018 - Existing Road with Existing Traffic -AM-PM.j9  
**Path:** M:\Projects\18\18-059 - Clongriffin Planning Application\Design\Civil\Traffic Modelling\MODELLING - JULY 2019\Junction 3  
**Report generation date:** 13/08/2019 09:22:12

- »JUNCTION 3 - 2018, AM
- »JUNCTION 3 - 2018, PM

**Summary of junction performance**

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
<b>JUNCTION 3 - 2018</b>								
Stream B-C	1.1	12.59	0.52	B	1.1	12.76	0.53	B
Stream B-A	0.0	9.51	0.01	A	0.0	9.69	0.04	A
Stream C-AB	0.9	12.75	0.48	B	1.1	13.48	0.53	B

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.*

**File summary**

**File Description**

<b>Title</b>	(untitled)
<b>Location</b>	
<b>Site number</b>	
<b>Date</b>	12/11/2018
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	DOMAINf.silva
<b>Description</b>	

**Units**

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

**Analysis Options**

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D1	2018	AM	FLAT	08:00	09:00	60	✓
D2	2018	PM	FLAT	18:00	19:00	60	✓

### Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	JUNCTION 3	100.000

# JUNCTION 3 - 2018, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		9.22	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description	Arm type
A	untitled		Major
B	untitled		Minor
C	untitled		Major

### Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C	9.60			90.0	✓	5.00

Geometries for Arm C are measured opposite Arm B. Geometries for Arm A (if relevant) are measured opposite Arm D.

### Minor Arm Geometry

Arm	Minor arm type	Lane Width (Left) (m)	Lane Width (Right) (m)	Visibility to left (m)	Visibility to right (m)
B	Two lanes	3.00	3.00	90	90

## Slope / Intercept / Capacity

### Priority Intersection Slopes and Intercepts

Junction	Stream	Intercept (Veh/hr)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
1	B-A	552	0.085	0.214	0.135	0.306
1	B-C	681	0.088	0.222	-	-
1	C-B	626	0.205	0.205	-	-

The slopes and intercepts shown above do NOT include any corrections or adjustments.

Streams may be combined, in which case capacity will be adjusted.

Values are shown for the first time segment only; they may differ for subsequent time segments.

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D1	2018	AM	FLAT	08:00	09:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	142	100.000
B		✓	308	100.000
C		✓	332	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From	To		
	A	B	C
A	0	12	130
B	5	0	303
C	71	261	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To		
	A	B	C
A	10	10	10
B	10	10	10
C	10	10	10

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.52	12.59	1.1	B
B-A	0.01	9.51	0.0	A
C-AB	0.48	12.75	0.9	B
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 08:00 - 09:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	303	587	0.516	302	1.1	12.590	B
B-A	5	384	0.013	5	0.0	9.508	A
C-AB	262	543	0.483	261	0.9	12.752	B
C-A	70			70			
A-B	12			12			
A-C	130			130			

# JUNCTION 3 - 2018, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way		10.34	B

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D2	2018	PM	FLAT	18:00	19:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
A		✓	76	100.000
B		✓	333	100.000
C		✓	380	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To		
		A	B	C
From	A	0	14	62
	B	15	0	318
	C	89	291	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To		
		A	B	C
From	A	0	10	10
	B	10	0	10
	C	10	10	0

## Results

### Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
B-C	0.53	12.76	1.1	B
B-A	0.04	9.69	0.0	A
C-AB	0.53	13.48	1.1	B
C-A				
A-B				
A-C				

### Main Results for each time segment

#### 18:00 - 19:00

Stream	Total Demand (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-C	318	598	0.532	317	1.1	12.763	B
B-A	15	386	0.039	15	0.0	9.691	A
C-AB	294	558	0.526	292	1.1	13.481	B
C-A	86			86			
A-B	14			14			
A-C	62			62			

<b>TRANSYT 15</b>
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**Filename:** Junction 3 - 2025 AM.t15

**Path:** M:\Projects\18\18-059 - Clongriffin Planning Application\Design\Civil\Traffic Modelling\MODELLING - JULY 2019\Junction 3

**Report generation date:** 13/08/2019 09:28:08

»Network Diagrams

«A1 - 2025 - Proposed Road Improvements + Generated Trips : D1 - AM\* :

- »Summary
- »Network Options
- »Traffic Nodes
- »Arms and Traffic Streams
- »Local OD Matrix - Local Matrix: 1
- »Signal Timings
- »TRANSYT 12 Tables
- »Results - Link
- »Results - Traffic Stream
- »Data Entry - Stage Start and End
- »Data Entry - Phase
- »Data Entry - Traffic Stream
- »Data entry - Link
- »Results - Pedestrian
- »Traffic Stream Results
- »Network Results
- »Point to Point Journey Time
- »Final Prediction Table

**File summary**

**File description**

<b>File title</b>	(untitled)
<b>Location</b>	
<b>Site number</b>	
<b>UTCRegion</b>	
<b>Driving side</b>	Left
<b>Date</b>	06/12/2011
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	DOMAINf.silva
<b>Description</b>	



**Model and Results**

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber
			✓		✓	✓	✓	✓	✓	✓	✓		

**Units**

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	Veh	Veh	perHour	s	-Hour	perHour

**Sorting**

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

**Network Diagrams**

# A1 - 2025 - Proposed Road Improvements + Generated Trips

## D1 - AM\*

### Summary

#### Data Errors and Warnings

No errors or warnings

#### Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	13/08/2019 09:27:44	13/08/2019 09:27:45	08:00	120	265.15	17.56	71.37	A/1	0	0	A/1	Dx/1	A/

#### Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2025 - Proposed Road Improvements + Generated Trips		D1	✓	

#### Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
AM				08:00	

### Network Options

#### Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

#### Signals options

Start displacement (s)	End displacement (s)
2	3

#### Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

#### Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

#### Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

### Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

### Normal Traffic Types

Name	PCU Factor
Normal	1.00

### Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms <sup>^-2</sup> )	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

### Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms <sup>^-2</sup> )	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

### Pedestrian parameters

Dispersion type
Default

### Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	✓

### Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

### Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

## Traffic Nodes

### Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

## Arms and Traffic Streams

### Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		

### Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			255.00	✓	Directly entered	1800	✓		Normal	
Ax	1	(untitled)			255.00						Normal	
B	1	(untitled)			220.00	✓	Directly entered	3600	✓		Normal	
Bx	1	(untitled)			220.00						Normal	
C	1	(untitled)			74.00	✓	Directly entered	1800	✓		Normal	
Cx	1	(untitled)			74.00						Normal	
D	1	(untitled)			285.00	✓	Directly entered	1800	✓		Normal	
Dx	1	(untitled)			285.00						Normal	

### Lanes

Arm	Traffic Stream	Lane	Name	Description
(ALL)	1	(ALL)	(untitled)	

### Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	1	NetworkDefault	100	100	100		0.00		

### Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

### Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

### Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

### Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	364	364
Ax	1	268	268
B	1	445	445
Bx	1	421	421
C	1	436	436
Cx	1	576	576
D	1	110	110
Dx	1	90	90

### Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C	1	1	C	
D	1	1	D	

### Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A	1	30.60	30.00
B	1	26.40	30.00
C	1	8.88	30.00
D	1	34.20	30.00

### Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	30.60	30.00	✓	Straight	Straight Movement
Bx	1	1	C/1	Bx/1	26.40	30.00	✓	Offside	85.68
Cx	1	1	A/1	Cx/1	8.88	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	34.20	30.00	✓	Nearside	37.50
Ax	1	2	B/1	Ax/1	30.60	30.00	✓	Offside	78.75
Bx	1	2	A/1	Bx/1	26.40	30.00	✓	Nearside	39.32
Cx	1	2	B/1	Cx/1	8.88	30.00	✓	Nearside	46.25
Dx	1	2	A/1	Dx/1	34.20	30.00	✓	Offside	87.50
Ax	1	3	D/1	Ax/1	30.60	30.00	✓	Nearside	37.50
Bx	1	3	D/1	Bx/1	26.40	30.00	✓	Straight	Straight Movement
Cx	1	3	D/1	Cx/1	8.88	30.00	✓	Offside	87.50
Dx	1	3	B/1	Dx/1	34.20	30.00	✓	Straight	Straight Movement

## Local OD Matrix - Local Matrix: 1

### Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

### Normal Input Flows (Veh/hr)

		To			
		1	2	3	4
From	1	0	0	120	316
	2	0	0	33	77
	3	257	79	0	28
	4	319	11	115	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

### Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1	Cx/1	#0000FF
	2	(untitled)	D/1	Dx/1	#FF0000
	3	(untitled)	A/1	Ax/1	#00FF00
	4	(untitled)	B/1	Bx/1	#FFFF00

## Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	1		1	2	C/1, Dx/1	Normal	0
	2		1	3	C/1, Ax/1	Normal	120
	3		1	4	C/1, Bx/1	Normal	316
	4		2	3	D/1, Ax/1	Normal	33
	5		2	4	D/1, Bx/1	Normal	77
	6		2	1	D/1, Cx/1	Normal	0
	8		3	4	A/1, Bx/1	Normal	28
	10		4	2	B/1, Dx/1	Normal	11
	11		4	3	B/1, Ax/1	Normal	115
	12		4	1	B/1, Cx/1	Normal	319
	13		3	2	A/1, Dx/1	Normal	79
	14		3	1	A/1, Cx/1	Normal	257

## Signal Timings

Network Default: 120s cycle time; 120 steps

### Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

### Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

### Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

### Phases

Controller Stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

### Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D	1

### Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 3, 2, 4	20, 64, 90, 104
	2	(untitled)	Single	1, 2, 3, 4	0, 25, 50, 75
	3	(untitled)	Single	1, 3, 4, 2	0, 25, 50, 75
	4	(untitled)	Single	1, 2, 4, 3	0, 25, 50, 75
	5	(untitled)	Single	1, 4, 2, 3	0, 25, 50, 75
	6	(untitled)	Single	1, 4, 3, 2	0, 25, 50, 75

### Intergreen Matrix for Controller Stream 1

		To			
		A	B	C	D
From	A		3	3	3
	B	3		3	3
	C	3	3		3
	D	3	3	3	

### Banned Stage transitions for Controller Stream 1

		To			
		1	2	3	4
From	1				
	2				
	3				
	4				

### Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	3	3	3
	2	3	0	3	3
	3	3	3	0	3
	4	3	3	3	0

### Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	107	20	33	1	7
	2	✓	3	C	23	64	41	1	7
	3	✓	2	B	67	90	23	1	7
	4	✓	4	D	93	104	11	1	7

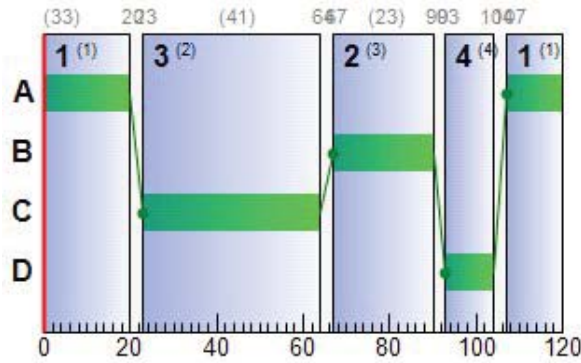
### Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	107	20	33
	B	1	✓	67	90	23
	C	1	✓	23	64	41
	D	1	✓	93	104	11

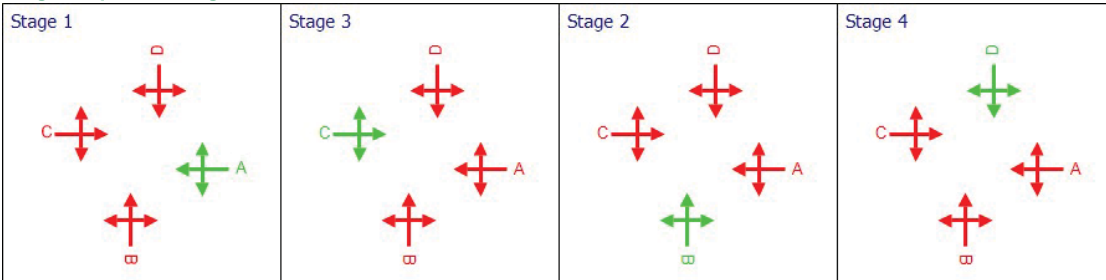
**Traffic Stream Green Times**

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	107	20	33
B	1	1	1	B	67	90	23
C	1	1	1	C	23	64	41
D	1	1	1	D	93	104	11

**Phase Timings Diagram for Controller Stream 1**



**Stage Sequence Diagram for Controller Stream 1**



**Resultant penalties**

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	0.00	0.00	0.00

**TRANSYT 12 Tables**

**Resultant Stages**

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	TRANSYT Stage start (s)	TRANSYT Preceding interstage (s)	TRANSYT Stage minimum (s)
1	1	✓	1	A	104	3	10
	2	✓	3	C	20	3	10
	3	✓	2	B	64	3	10
	4	✓	4	D	90	3	10

**Resultant Phase Green Periods**

Controller Stream	Phase	Green period	TRANSYT Starting stage	TRANSYT Ending stage	TRANSYT Start lag (s)	TRANSYT End lag (s)
1	A	1	1	2	3	0
	B	1	3	4	3	0
	C	1	2	3	3	0
	D	1	4	1	3	0



## Stage Timings (TRANSYT 12 timings)

Network Default: 120s cycle time; 120 steps

Controller Stream	Number of Stages	Stage 1	Stage 2	Stage 3	Stage 4
1	4	104	20	64	90

## Results - Link

## Results - Traffic Stream

### Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Calculated capacity (Veh/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	JourneyTime (s)
08:00-09:00	A	1	(untitled)	A	364	1800	33	510	71	26	47.24	11.69	26.36	77.84
	Ax	1	(untitled)		268	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	30.60
	B	1	(untitled)	B	445	3600	23	720	62	46	47.84	13.97	18.26	74.24
	Bx	1	(untitled)		421	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	26.40
	C	1	(untitled)	C	436	1800	41	630	69	30	39.78	13.12	101.94	48.66
	Cx	1	(untitled)		576	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	8.88
	D	1	(untitled)	D	110	1800	11	180	61	47	67.01	3.98	8.03	101.21
	Dx	1	(untitled)		90	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	34.20

## Data Entry - Stage Start and End

### Resultant Stage

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	107	20	33	1	7
	2	✓	3	C	23	64	41	1	7
	3	✓	2	B	67	90	23	1	7
	4	✓	4	D	93	104	11	1	7

## Data Entry - Phase

### Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	7	300	0	0	Unknown
	B	B	7	300	0	0	Unknown
	C	C	7	300	0	0	Unknown
	D	D	7	300	0	0	Unknown

## Data Entry - Traffic Stream

### Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1		255.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	1800	100	100
Ax	1		255.00	NetworkDefault	0.00	Normal						100	100
B	1		220.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Bx	1		220.00	NetworkDefault	0.00	Normal						100	100
C	1		74.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	1800	100	100
Cx	1		74.00	NetworkDefault	0.00	Normal						100	100
D	1		285.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	1800	100	100
Dx	1		285.00	NetworkDefault	0.00	Normal						100	100

## Data entry - Link

## Results - Pedestrian

## Traffic Stream Results

### Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	71	26	364	1800	33	47.24	11.69	26.36	67.83	4.34	72.17
	Ax	1	0	Unrestricted	268	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	62	46	445	3600	23	47.84	13.97	18.26	83.97	5.19	89.16
	Bx	1	0	Unrestricted	421	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	69	30	436	1800	41	39.78	13.12	101.94	68.41	4.87	73.28
	Cx	1	0	Unrestricted	576	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	61	47	110	1800	11	67.01	3.98	8.03	29.08	1.47	30.54
	Dx	1	0	Unrestricted	90	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

### Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s per cycle)	Effective green (per cycle)
08:00-09:00	A	1	364	364	0		1800	510	71		26	0.00	33	34
	Ax	1	268	268	0		Unrestricted	Unrestricted	0		Unrestricted	0.60	120	12
	B	1	445	445	0		3600	720	62		46	0.00	23	24
	Bx	1	421	421	0		Unrestricted	Unrestricted	0		Unrestricted	0.76	120	12
	C	1	436	436	0		1800	630	69		30	0.00	41	42
	Cx	1	576	576	0		Unrestricted	Unrestricted	0		Unrestricted	1.07	120	12
	D	1	110	110	0		1800	180	61		47	0.00	11	12
	Dx	1	90	90	0		Unrestricted	Unrestricted	0		Unrestricted	0.96	120	12

**Traffic Stream Results: Stops and delays**

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	A	1	30.60	47.24	3.91	0.87	67.83	67.83	95.07	320.39	25.66	4.34	4.34
	Ax	1	30.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	26.40	47.84	5.42	0.50	83.97	83.97	93.06	399.34	14.76	5.19	5.19
	Bx	1	26.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	8.88	39.78	4.05	0.77	68.41	68.41	89.02	365.45	22.68	4.87	4.87
	Cx	1	8.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	34.20	67.01	1.58	0.47	29.08	29.08	106.53	103.64	13.54	1.47	1.47
	Dx	1	34.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Traffic Stream Results: Queues and blocking**

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Max end of green queue (Veh)	Max end of red queue (Veh)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)	Estimated blocking
08:00-09:00	A	1	0.00	11.69	44.35	26.36	0.00	0.00	0.00	0.87	9.57	0.00	0.00	0.00	
	Ax	1	0.00	0.00	44.35	0.00	0.00	0.00	0.00			27.00	0.00	27.00	
	B	1	0.00	13.97	76.52	18.26	0.00	0.00	0.00	0.50	12.36	0.00	0.00	0.00	
	Bx	1	0.00	0.00	76.52	0.00	0.00	0.00	0.00			17.00	0.00	17.00	
	C	1	0.00	13.12	12.87	101.94	0.00	0.00	0.00	0.77	10.21	0.00	0.00	0.00	
	Cx	1	0.00	0.00	12.87	0.00	0.00	0.00	0.00			53.00	0.00	53.00	
	D	1	0.00	3.98	49.57	8.03	0.00	0.00	0.00	0.47	3.77	0.00	0.00	0.00	
	Dx	1	0.00	0.00	49.57	0.00	0.00	0.00	0.00			75.00	0.00	75.00	

**Traffic Stream Results: Journey times**

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	A	1	92.82	7.87	11.79	77.84
	Ax	1	68.34	2.28	30.00	30.60
	B	1	97.90	9.18	10.67	74.24
	Bx	1	92.62	3.09	30.00	26.40
	C	1	32.26	5.89	5.47	48.66
	Cx	1	42.62	1.42	30.00	8.88
	D	1	31.35	3.09	10.14	101.21
	Dx	1	25.65	0.86	30.00	34.20

**Traffic Stream Results: Advanced**

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (Veh)	Max End of Green Queue EoTS (Veh)	Max End of Red Queue EoTS (Veh)	PCU Factor	Cost of traffic penalties (£ per hr)	Unweighted performance index (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	0.00	0.00	✓	11.70	0.88	9.58	1.00	0.00	72.17	72.17
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	B	1	0.00	0.00	✓	13.97	0.50	12.36	1.00	0.00	89.16	89.16
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	C	1	0.00	0.00	✓	13.13	0.77	10.22	1.00	0.00	73.28	73.28
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	D	1	0.00	0.00	✓	3.99	0.47	3.77	1.00	0.00	30.54	30.54
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00

## Network Results

### Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	13/08/2019 09:27:44	13/08/2019 09:27:45	08:00	120	265.15	17.56	71.37	A/1	0	0	A/1	Dx/1	A/

### Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	71	26	2710	588	23.32	249.29	15.87	265.15

### Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	2710	2710	0		71		26	588	592

### Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	21.41	23.32	14.96	2.60	249.29	249.29	46.70	1188.82	76.65	15.87	15.87

### Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
08:00-09:00	101.94	0.00	172.00	0.00	172.00

### Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
08:00-09:00	483.57	33.67	14.36

### Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Unweighted performance index (£ per hr)	Performance Index (£ per hr)
08:00-09:00	0.00	0.00	✓	1.00	0.00	0.00	265.15	265.15

## Point to Point Journey Time

### Average Journey Time (s) for Local Matrix: 1

	To				
	1	2	3	4	
From	1	0.0	0.0	79.3	75.1
	2	0.0	0.0	131.8	127.6
	3	86.7	112.0	0.0	104.2
	4	83.1	108.4	104.8	0.0

### Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (Veh/hr)	Normal journey time (s)	Calculated Total Flow (Veh/hr)	Avg journey time (s)
1	1	2	0	0.00	0	0.00
2	1	3	120	79.26	120	79.26
3	1	4	316	75.06	316	75.06
4	2	3	33	131.81	33	131.81
5	2	4	77	127.61	77	127.61
6	2	1	0	0.00	0	0.00
8	3	4	28	104.24	28	104.24
10	4	2	11	108.44	11	108.44
11	4	3	115	104.84	115	104.84
12	4	1	319	83.12	319	83.12
13	3	2	79	112.04	79	112.04
14	3	1	257	86.72	257	86.72

## Final Prediction Table

### Traffic Stream Results

Arm	Traffic Stream	Name	Traffic node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
				Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (Veh)	Me of qu (V)
A	1	(untitled)	1	1	A	364	1800	33	0.00	71	26	77.84	47.24	95.07	11.69	9.
Ax	1	(untitled)				268	Unrestricted	120	27.00	0	Unrestricted	30.60	0.00	0.00	0.00	
B	1	(untitled)	1	1	B	445	3600	23	0.00	62	46	74.24	47.84	93.06	13.97	12
Bx	1	(untitled)				421	Unrestricted	120	17.00	0	Unrestricted	26.40	0.00	0.00	0.00	
C	1	(untitled)	1	1	C	436 <	1800	41	0.00	69	30	48.66	39.78	89.02	13.12 +	10
Cx	1	(untitled)				576	Unrestricted	120	53.00	0	Unrestricted	8.88	0.00	0.00	0.00	
D	1	(untitled)	1	1	D	110	1800	11	0.00	61	47	101.21	67.01	106.53	3.98	3.
Dx	1	(untitled)				90	Unrestricted	120	75.00	0	Unrestricted	34.20	0.00	0.00	0.00	

### Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	483.57	33.67	14.36	14.96	2.60	249.29	15.87	0.00	265.15
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians									
<b>TOTAL</b>	483.57	33.67	14.36	14.96	2.60	249.29	15.87	0.00	265.15

- < = adjusted flow warning (upstream links/traffic streams are over-saturated)
- \* = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%
- ^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%
- + = average link/traffic stream excess queue is greater than 0
- P.I. = PERFORMANCE INDEX



<h1>TRANSYT 15</h1>
Version: 15.5.2.7994 © Copyright TRL Limited, 2018
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**Filename:** Junction 3 - 2025 PM.t15

**Path:** M:\Projects\18\18-059 - Clongriffin Planning Application\Design\Civil\Traffic Modelling\MODELLING - JULY 2019\Junction 3

**Report generation date:** 13/08/2019 09:29:34

»Network Diagrams

«A1 - 2025 - Proposed Road Improvements + Generated Trips : D1 - PM\* :

- »Summary
- »Network Options
- »Traffic Nodes
- »Arms and Traffic Streams
- »Local OD Matrix - Local Matrix: 1
- »Signal Timings
- »TRANSYT 12 Tables
- »Results - Link
- »Results - Traffic Stream
- »Data Entry - Stage Start and End
- »Data Entry - Phase
- »Data Entry - Traffic Stream
- »Data entry - Link
- »Results - Pedestrian
- »Traffic Stream Results
- »Network Results
- »Point to Point Journey Time
- »Final Prediction Table

**File summary**

**File description**

<b>File title</b>	(untitled)
<b>Location</b>	
<b>Site number</b>	
<b>UTCRegion</b>	
<b>Driving side</b>	Left
<b>Date</b>	06/12/2011
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	DOMAINf.silva
<b>Description</b>	

### Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber
			✓		✓	✓	✓	✓	✓	✓	✓		

### Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	Veh	Veh	perHour	s	-Hour	perHour

### Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

## Network Diagrams

# A1 - 2025 - Proposed Road Improvements + Generated Trips

## D1 - PM\*

### Summary

#### Data Errors and Warnings

No errors or warnings

#### Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	13/08/2019 09:29:09	13/08/2019 09:29:09	18:00	120	299.93	19.87	76.86	A/1	0	0	A/1	Dx/1	A/

#### Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2025 - Proposed Road Improvements + Generated Trips		D1	✓	

#### Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
PM				18:00	

### Network Options

#### Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

#### Signals options

Start displacement (s)	End displacement (s)
2	3

#### Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

#### Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

#### Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓



### Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

### Normal Traffic Types

Name	PCU Factor
Normal	1.00

### Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms <sup>^-2</sup> )	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

### Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms <sup>^-2</sup> )	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

### Pedestrian parameters

Dispersion type
Default

### Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	✓

### Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

### Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

## Traffic Nodes

### Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

## Arms and Traffic Streams

### Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		

### Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			255.00	✓	Directly entered	1800	✓		Normal	
Ax	1	(untitled)			255.00						Normal	
B	1	(untitled)			220.00	✓	Directly entered	3600	✓		Normal	
Bx	1	(untitled)			220.00						Normal	
C	1	(untitled)			74.00	✓	Directly entered	1800	✓		Normal	
Cx	1	(untitled)			74.00						Normal	
D	1	(untitled)			285.00	✓	Directly entered	1800	✓		Normal	
Dx	1	(untitled)			285.00						Normal	

### Lanes

Arm	Traffic Stream	Lane	Name	Description
(ALL)	1	(ALL)	(untitled)	

### Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	1	NetworkDefault	100	100	100		0.00		

### Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

### Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

### Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

### Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	392	392
Ax	1	325	325
B	1	483	483
Bx	1	481	481
C	1	518	518
Cx	1	487	487
D	1	84	84
Dx	1	184	184

### Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C	1	1	C	
D	1	1	D	

### Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A	1	30.60	30.00
B	1	26.40	30.00
C	1	8.88	30.00
D	1	34.20	30.00

### Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	30.60	30.00	✓	Straight	Straight Movement
Bx	1	1	C/1	Bx/1	26.40	30.00	✓	Offside	85.68
Cx	1	1	A/1	Cx/1	8.88	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	34.20	30.00	✓	Nearside	37.50
Ax	1	2	B/1	Ax/1	30.60	30.00	✓	Offside	78.75
Bx	1	2	A/1	Bx/1	26.40	30.00	✓	Nearside	39.32
Cx	1	2	B/1	Cx/1	8.88	30.00	✓	Nearside	46.25
Dx	1	2	A/1	Dx/1	34.20	30.00	✓	Offside	87.50
Ax	1	3	D/1	Ax/1	30.60	30.00	✓	Nearside	37.50
Bx	1	3	D/1	Bx/1	26.40	30.00	✓	Straight	Straight Movement
Cx	1	3	D/1	Cx/1	8.88	30.00	✓	Offside	87.50
Dx	1	3	B/1	Dx/1	34.20	30.00	✓	Straight	Straight Movement

## Local OD Matrix - Local Matrix: 1

### Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

### Normal Input Flows (Veh/hr)

		To			
		1	2	3	4
From	1	0	0	161	357
	2	0	0	24	60
	3	161	167	0	64
	4	326	17	140	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

### Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1	Cx/1	#0000FF
	2	(untitled)	D/1	Dx/1	#FF0000
	3	(untitled)	A/1	Ax/1	#00FF00
	4	(untitled)	B/1	Bx/1	#FFFF00

### Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	1		1	2	C/1, Dx/1	Normal	0
	2		1	3	C/1, Ax/1	Normal	161
	3		1	4	C/1, Bx/1	Normal	357
	4		2	3	D/1, Ax/1	Normal	24
	5		2	4	D/1, Bx/1	Normal	60
	6		2	1	D/1, Cx/1	Normal	0
	8		3	4	A/1, Bx/1	Normal	64
	10		4	2	B/1, Dx/1	Normal	17
	11		4	3	B/1, Ax/1	Normal	140
	12		4	1	B/1, Cx/1	Normal	326
	13		3	2	A/1, Dx/1	Normal	167
	14		3	1	A/1, Cx/1	Normal	161

## Signal Timings

Network Default: 120s cycle time; 120 steps

### Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

### Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

### Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

### Phases

Controller Stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	7	300	0	0	Unknown

### Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D	1

### Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 3, 2, 4	17, 65, 90, 101
	2	(untitled)	Single	1, 2, 3, 4	0, 25, 50, 75
	3	(untitled)	Single	1, 3, 4, 2	0, 25, 50, 75
	4	(untitled)	Single	1, 2, 4, 3	0, 25, 50, 75
	5	(untitled)	Single	1, 4, 2, 3	0, 25, 50, 75
	6	(untitled)	Single	1, 4, 3, 2	0, 25, 50, 75

### Intergreen Matrix for Controller Stream 1

		To			
		A	B	C	D
From	A		3	3	3
	B	3		3	3
	C	3	3		3
	D	3	3	3	

### Banned Stage transitions for Controller Stream 1

		To			
		1	2	3	4
From	1				
	2				
	3				
	4				

### Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	3	3	3
	2	3	0	3	3
	3	3	3	0	3
	4	3	3	3	0

### Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	104	17	33	1	7
	2	✓	3	C	20	65	45	1	7
	3	✓	2	B	68	90	22	1	7
	4	✓	4	D	93	101	8	1	7

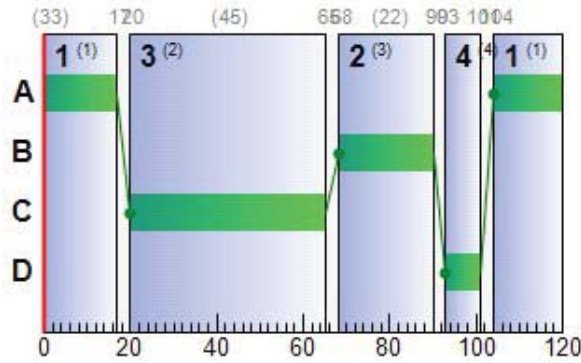
### Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	104	17	33
	B	1	✓	68	90	22
	C	1	✓	20	65	45
	D	1	✓	93	101	8

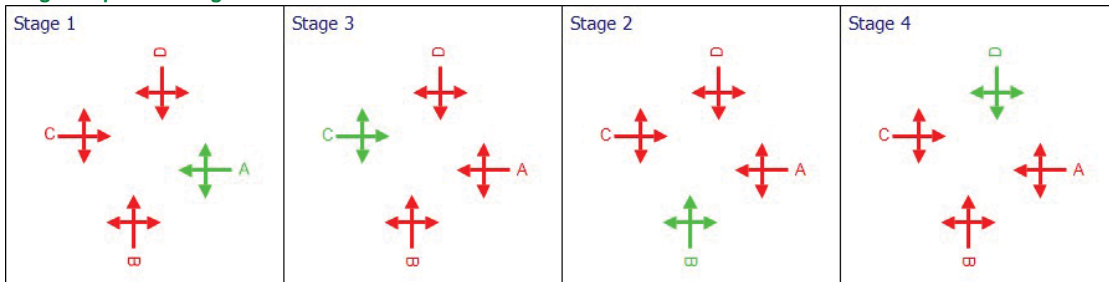
**Traffic Stream Green Times**

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	104	17	33
B	1	1	1	B	68	90	22
C	1	1	1	C	20	65	45
D	1	1	1	D	93	101	8

**Phase Timings Diagram for Controller Stream 1**



**Stage Sequence Diagram for Controller Stream 1**



**Resultant penalties**

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
18:00-19:00	1	0.00	0.00	0.00	0.00

**TRANSYT 12 Tables**

**Resultant Stages**

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	TRANSYT Stage start (s)	TRANSYT Preceding interstage (s)	TRANSYT Stage minimum (s)
1	1	✓	1	A	101	3	10
	2	✓	3	C	17	3	10
	3	✓	2	B	65	3	10
	4	✓	4	D	90	3	10

**Resultant Phase Green Periods**

Controller Stream	Phase	Green period	TRANSYT Starting stage	TRANSYT Ending stage	TRANSYT Start lag (s)	TRANSYT End lag (s)
1	A	1	1	2	3	0
	B	1	3	4	3	0
	C	1	2	3	3	0
	D	1	4	1	3	0

### Stage Timings (TRANSYT 12 timings)

Network Default: 120s cycle time; 120 steps

Controller Stream	Number of Stages	Stage 1	Stage 2	Stage 3	Stage 4
1	4	101	17	65	90

## Results - Link

## Results - Traffic Stream

### Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Calculated capacity (Veh/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	JourneyTime (s)
18:00-19:00	A	1	(untitled)	A	392	1800	33	510	77	17	50.74	13.10	29.55	81.34
	Ax	1	(untitled)		325	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	30.60
	B	1	(untitled)	B	483	3600	22	690	70	29	51.28	15.83	20.69	77.68
	Bx	1	(untitled)		481	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	26.40
	C	1	(untitled)	C	518	1800	45	690	75	20	39.73	15.93	123.76	48.61
	Cx	1	(untitled)		487	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	8.88
	D	1	(untitled)	D	84	1800	8	135	62	45	74.92	3.20	6.45	109.12
	Dx	1	(untitled)		184	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	34.20

## Data Entry - Stage Start and End

### Resultant Stage

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	104	17	33	1	7
	2	✓	3	C	20	65	45	1	7
	3	✓	2	B	68	90	22	1	7
	4	✓	4	D	93	101	8	1	7

## Data Entry - Phase

### Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	7	300	0	0	Unknown
	B	B	7	300	0	0	Unknown
	C	C	7	300	0	0	Unknown
	D	D	7	300	0	0	Unknown

## Data Entry - Traffic Stream

### Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1		255.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	1800	100	100
Ax	1		255.00	NetworkDefault	0.00	Normal						100	100
B	1		220.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Bx	1		220.00	NetworkDefault	0.00	Normal						100	100
C	1		74.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	1800	100	100
Cx	1		74.00	NetworkDefault	0.00	Normal						100	100
D	1		285.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	1800	100	100
Dx	1		285.00	NetworkDefault	0.00	Normal						100	100

## Data entry - Link

## Results - Pedestrian

## Traffic Stream Results

### Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
18:00-19:00	A	1	77	17	392	1800	33	50.74	13.10	29.55	78.45	4.86	83.31
	Ax	1	0	Unrestricted	325	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	70	29	483	3600	22	51.28	15.83	20.69	97.70	5.85	103.54
	Bx	1	0	Unrestricted	481	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	75	20	518	1800	45	39.73	15.93	123.76	81.17	5.90	87.07
	Cx	1	0	Unrestricted	487	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	62	45	84	1800	8	74.92	3.20	6.45	24.82	1.18	26.01
	Dx	1	0	Unrestricted	184	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

### Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s per cycle)	Effective green (per cycle)
18:00-19:00	A	1	392	392	0		1800	510	77		17	0.00	33	34
	Ax	1	325	325	0		Unrestricted	Unrestricted	0		Unrestricted	0.60	120	12
	B	1	483	483	0		3600	690	70		29	0.00	22	23
	Bx	1	481	481	0		Unrestricted	Unrestricted	0		Unrestricted	0.65	120	12
	C	1	518	518	0		1800	690	75		20	0.00	45	46
	Cx	1	487	487	0		Unrestricted	Unrestricted	0		Unrestricted	1.08	120	12
	D	1	84	84	0		1800	135	62		45	0.00	8	9
	Dx	1	184	184	0		Unrestricted	Unrestricted	0		Unrestricted	1.00	120	12



**Traffic Stream Results: Stops and delays**

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
18:00-19:00	A	1	30.60	50.74	4.29	1.23	78.45	78.45	98.93	351.62	36.18	4.86	4.86
	Ax	1	30.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	26.40	51.28	6.08	0.80	97.70	97.70	96.52	442.35	23.85	5.85	5.85
	Bx	1	26.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	8.88	39.73	4.61	1.11	81.17	81.17	90.85	437.93	32.67	5.90	5.90
	Cx	1	8.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	34.20	74.92	1.26	0.49	24.82	24.82	112.47	80.37	14.10	1.18	1.18
	Dx	1	34.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Traffic Stream Results: Queues and blocking**

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Max end of green queue (Veh)	Max end of red queue (Veh)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)	Estimated blocking
18:00-19:00	A	1	0.00	13.10	44.35	29.55	0.00	0.00	0.00	1.23	10.60	0.00	0.00	0.00	
	Ax	1	0.00	0.00	44.35	0.00	0.00	0.00	0.00			24.00	0.00	24.00	
	B	1	0.00	15.83	76.52	20.69	0.00	0.00	0.00	0.80	13.82	0.00	0.00	0.00	
	Bx	1	0.00	0.00	76.52	0.00	0.00	0.00	0.00			11.00	0.00	11.00	
	C	1	0.00	15.93	12.87	123.76	0.28	0.00	0.00	1.11	11.75	0.00	0.00	0.00	
	Cx	1	0.00	0.00	12.87	0.00	0.00	0.00	0.00			54.00	0.00	54.00	
	D	1	0.00	3.20	49.57	6.45	0.00	0.00	0.00	0.49	3.08	0.00	0.00	0.00	
	Dx	1	0.00	0.00	49.57	0.00	0.00	0.00	0.00			53.00	0.00	53.00	

**Traffic Stream Results: Journey times**

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
18:00-19:00	A	1	99.96	8.86	11.29	81.34
	Ax	1	82.88	2.76	30.00	30.60
	B	1	106.26	10.42	10.20	77.68
	Bx	1	105.82	3.53	30.00	26.40
	C	1	38.33	6.99	5.48	48.61
	Cx	1	36.04	1.20	30.00	8.88
	D	1	23.94	2.55	9.40	109.12
	Dx	1	52.44	1.75	30.00	34.20

**Traffic Stream Results: Advanced**

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (Veh)	Max End of Green Queue EoTS (Veh)	Max End of Red Queue EoTS (Veh)	PCU Factor	Cost of traffic penalties (£ per hr)	Unweighted performance index (£ per hr)	Performance Index (£ per hr)
18:00-19:00	A	1	0.00	0.00	✓	13.12	1.26	10.62	1.00	0.00	83.31	83.31
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	B	1	0.00	0.00	✓	15.84	0.81	13.82	1.00	0.00	103.54	103.54
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	C	1	0.00	0.00	✓	15.94	1.12	11.77	1.00	0.00	87.07	87.07
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	D	1	0.00	0.00	✓	3.21	0.50	3.09	1.00	0.00	26.01	26.01
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00

## Network Results

### Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	13/08/2019 09:29:09	13/08/2019 09:29:09	18:00	120	299.93	19.87	76.86	A/1	0	0	A/1	Dx/1	A/

### Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
18:00-19:00	77	17	2954	588	24.21	282.14	17.79	299.93

### Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
18:00-19:00	2954	2954	0		77		17	588	592

### Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
18:00-19:00	22.17	24.21	16.23	3.64	282.14	282.14	48.04	1312.26	106.81	17.79	17.79

### Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
18:00-19:00	123.76	0.00	142.00	0.00	142.00

### Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
18:00-19:00	545.67	38.06	14.34

### Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Unweighted performance index (£ per hr)	Performance Index (£ per hr)
18:00-19:00	0.00	0.00	✓	1.00	0.00	0.00	299.93	299.93

## Point to Point Journey Time

### Average Journey Time (s) for Local Matrix: 1

	To				
	1	2	3	4	
From	1	0.0	0.0	79.2	75.0
	2	0.0	0.0	139.7	135.5
	3	90.2	115.5	0.0	107.7
	4	86.6	111.9	108.3	0.0

### Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (Veh/hr)	Normal journey time (s)	Calculated Total Flow (Veh/hr)	Avg journey time (s)
1	1	2	0	0.00	0	0.00
2	1	3	161	79.21	161	79.21
3	1	4	357	75.01	357	75.01
4	2	3	24	139.72	24	139.72
5	2	4	60	135.52	60	135.52
6	2	1	0	0.00	0	0.00
8	3	4	64	107.74	64	107.74
10	4	2	17	111.88	17	111.88
11	4	3	140	108.28	140	108.28
12	4	1	326	86.56	326	86.56
13	3	2	167	115.54	167	115.54
14	3	1	161	90.22	161	90.22

## Final Prediction Table

### Traffic Stream Results

Arm	Traffic Stream	Name	Traffic node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
				Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s (per cycle))	Wasted time total (s (per cycle))	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (Veh)	Me of qu (V)
A	1	(untitled)	1	1	A	392	1800	33	0.00	77	17	81.34	50.74	98.93	13.10	10
Ax	1	(untitled)				325	Unrestricted	120	24.00	0	Unrestricted	30.60	0.00	0.00	0.00	
B	1	(untitled)	1	1	B	483	3600	22	0.00	70	29	77.68	51.28	96.52	15.83	13
Bx	1	(untitled)				481	Unrestricted	120	11.00	0	Unrestricted	26.40	0.00	0.00	0.00	
C	1	(untitled)	1	1	C	518 <	1800	45	0.00	75	20	48.61	39.73	90.85	15.93 +	11
Cx	1	(untitled)				487	Unrestricted	120	54.00	0	Unrestricted	8.88	0.00	0.00	0.00	
D	1	(untitled)	1	1	D	84	1800	8	0.00	62	45	109.12	74.92	112.47	3.20	3.
Dx	1	(untitled)				184	Unrestricted	120	53.00	0	Unrestricted	34.20	0.00	0.00	0.00	

### Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	545.67	38.06	14.34	16.23	3.64	282.14	17.79	0.00	299.93
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians									
<b>TOTAL</b>	545.67	38.06	14.34	16.23	3.64	282.14	17.79	0.00	299.93

- < = adjusted flow warning (upstream links/traffic streams are over-saturated)
- \* = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%
- ^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%
- + = average link/traffic stream excess queue is greater than 0
- P.I. = PERFORMANCE INDEX



<h1>TRANSYT 15</h1>
Version: 15.5.2.7994 © Copyright TRL Limited, 2018
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**Filename:** Junction 5 - 2018 (Existing Road Network with Existing Traffic)-AM.t15

**Path:** M:\Projects\18\18-059 - Clongriffin Planning Application\Design\Civil\Traffic Modelling\MODELLING - JULY 2019\Junction 5

**Report generation date:** 13/08/2019 09:32:32

»Network Diagrams

«A1 - JUNCTION 5 : D1 - 2018 - AM\* :

- »Summary
- »Network Options
- »Traffic Nodes
- »Arms and Traffic Streams
- »Local OD Matrix - Local Matrix: 1
- »Signal Timings
- »TRANSYT 12 Tables
- »Results - Link
- »Results - Traffic Stream
- »Data Entry - Stage Start and End
- »Data Entry - Phase
- »Data Entry - Traffic Stream
- »Data entry - Link
- »Results - Pedestrian
- »Traffic Stream Results
- »Network Results
- »Point to Point Journey Time
- »Final Prediction Table

**File summary**

**File description**

<b>File title</b>	(untitled)
<b>Location</b>	
<b>Site number</b>	
<b>UTCRegion</b>	
<b>Driving side</b>	Left
<b>Date</b>	06/12/2011
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	DOMAINf.silva
<b>Description</b>	

### Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber
			✓		✓	✓	✓	✓	✓	✓	✓		

### Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	Veh	Veh	perHour	s	-Hour	perHour

### Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

## Network Diagrams

# A1 - JUNCTION 5

## D1 - 2018 - AM\*

### Summary

#### Data Errors and Warnings

No errors or warnings

#### Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	13/08/2019 09:32:26	13/08/2019 09:32:26	08:00	120	132.76	8.72	34.32	D/1	0	0	D/1	Dx/1	D/

#### Analysis Set Details

Name	Description	Demand set	Include in report	Locked
JUNCTION 5		D1	✓	

#### Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2018 - AM				08:00	

### Network Options

#### Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

#### Signals options

Start displacement (s)	End displacement (s)
2	3

#### Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

#### Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

#### Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

### Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

### Normal Traffic Types

Name	PCU Factor
Normal	1.00

### Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms <sup>^-2</sup> )	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

### Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms <sup>^-2</sup> )	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

### Pedestrian parameters

Dispersion type
Default

### Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	✓

### Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

### Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

## Traffic Nodes

### Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

## Arms and Traffic Streams

### Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		

### Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			267.00	✓	Directly entered	3600	✓		Normal	
Ax	1	(untitled)			267.00						Normal	
B	1	(untitled)			384.00	✓	Directly entered	3600	✓		Normal	
Bx	1	(untitled)			384.00						Normal	
C	1	(untitled)			190.00	✓	Directly entered	3600	✓		Normal	
Cx	1	(untitled)			190.00						Normal	
D	1	(untitled)			286.00	✓	Directly entered	3600	✓		Normal	
Dx	1	(untitled)			286.00						Normal	

### Lanes

Arm	Traffic Stream	Lane	Name	Description
(ALL)	1	(ALL)	(untitled)	

### Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	1	NetworkDefault	100	100	100		0.00		

### Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

### Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

### Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

### Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	318	318
Ax	1	198	198
B	1	330	330
Bx	1	424	424
C	1	10	10
Cx	1	3	3
D	1	278	278
Dx	1	311	311

### Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C	1	1	C	
D	1	1	D	



### Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A	1	32.04	30.00
B	1	46.08	30.00
C	1	22.80	30.00
D	1	34.32	30.00

### Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	32.04	30.00	✓	Straight	Straight Movement
Bx	1	1	C/1	Bx/1	46.08	30.00	✓	Offside	85.04
Cx	1	1	A/1	Cx/1	22.80	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	34.32	30.00	✓	Nearside	46.25
Ax	1	2	B/1	Ax/1	32.04	30.00	✓	Offside	78.75
Bx	1	2	A/1	Bx/1	46.08	30.00	✓	Nearside	40.75
Cx	1	2	B/1	Cx/1	22.80	30.00	✓	Nearside	47.82
Dx	1	2	A/1	Dx/1	34.32	30.00	✓	Offside	78.75
Ax	1	3	D/1	Ax/1	32.04	30.00	✓	Nearside	40.75
Bx	1	3	D/1	Bx/1	46.08	30.00	✓	Straight	Straight Movement
Cx	1	3	D/1	Cx/1	22.80	30.00	✓	Offside	81.89
Dx	1	3	B/1	Dx/1	34.32	30.00	✓	Straight	Straight Movement

## Local OD Matrix - Local Matrix: 1

### Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

### Normal Input Flows (Veh/hr)

		To			
		1	2	3	4
From	1	0	1	2	7
	2	0	0	86	192
	3	2	91	0	225
	4	1	219	110	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

### Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1	Cx/1	#0000FF
	2	(untitled)	D/1	Dx/1	#FF0000
	3	(untitled)	A/1	Ax/1	#00FF00
	4	(untitled)	B/1	Bx/1	#FFFF00

### Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	1		1	2	C/1, Dx/1	Normal	1
	2		1	3	C/1, Ax/1	Normal	2
	3		1	4	C/1, Bx/1	Normal	7
	4		2	3	D/1, Ax/1	Normal	86
	5		2	4	D/1, Bx/1	Normal	192
	6		2	1	D/1, Cx/1	Normal	0
	7		3	2	A/1, Dx/1	Normal	91
	8		3	4	A/1, Bx/1	Normal	225
	9		3	1	A/1, Cx/1	Normal	2
	10		4	2	B/1, Dx/1	Normal	219
	11		4	3	B/1, Ax/1	Normal	110
	12		4	1	B/1, Cx/1	Normal	1

## Signal Timings

Network Default: 120s cycle time; 120 steps

### Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

### Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

### Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

### Phases

Controller Stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	5	50	0	0	Traffic

### Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D	1

### Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 3, 2, 4	50, 58, 97, 6
	2	(untitled)	Single	1, 2, 3, 4	0, 25, 50, 75
	3	(untitled)	Single	1, 3, 4, 2	0, 25, 50, 75
	4	(untitled)	Single	1, 2, 4, 3	0, 25, 50, 75
	5	(untitled)	Single	1, 4, 2, 3	0, 25, 50, 75
	6	(untitled)	Single	1, 4, 3, 2	0, 25, 50, 75

### Intergreen Matrix for Controller Stream 1

		To			
		A	B	C	D
From	A		3	3	3
	B	3		3	3
	C	3	3		3
	D	3	3	3	

### Banned Stage transitions for Controller Stream 1

		To			
		1	2	3	4
From	1				
	2				
	3				
	4				

### Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	3	3	3
	2	3	0	3	3
	3	3	3	0	3
	4	3	3	3	0

### Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	9	50	41	1	5
	2	✓	3	C	53	58	5	1	5
	3	✓	2	B	61	97	36	1	5
	4	✓	4	D	100	6	26	1	5

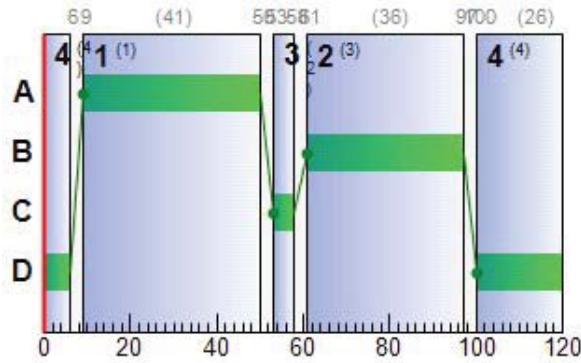
### Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	9	50	41
	B	1	✓	61	97	36
	C	1	✓	53	58	5
	D	1	✓	100	6	26

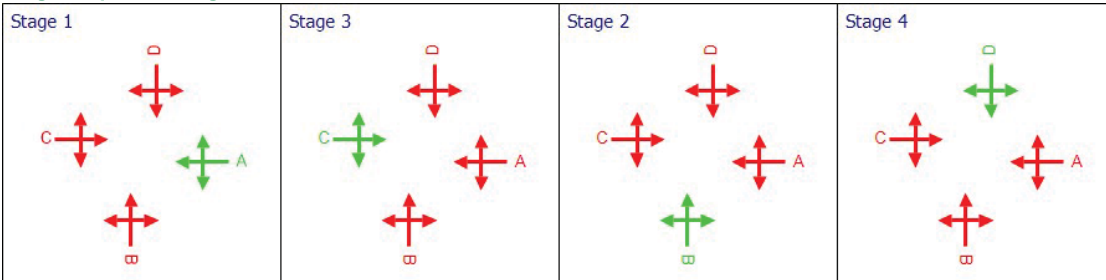
**Traffic Stream Green Times**

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	9	50	41
B	1	1	1	B	61	97	36
C	1	1	1	C	53	58	5
D	1	1	1	D	100	6	26

**Phase Timings Diagram for Controller Stream 1**



**Stage Sequence Diagram for Controller Stream 1**



**Resultant penalties**

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	0.00	0.00	0.00

**TRANSYT 12 Tables**

**Resultant Stages**

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	TRANSYT Stage start (s)	TRANSYT Preceding interstage (s)	TRANSYT Stage minimum (s)
1	1	✓	1	A	6	3	8
	2	✓	3	C	50	3	8
	3	✓	2	B	58	3	8
	4	✓	4	D	97	3	8

**Resultant Phase Green Periods**

Controller Stream	Phase	Green period	TRANSYT Starting stage	TRANSYT Ending stage	TRANSYT Start lag (s)	TRANSYT End lag (s)
1	A	1	1	2	3	0
	B	1	3	4	3	0
	C	1	2	3	3	0
	D	1	4	1	3	0

## Stage Timings (TRANSYT 12 timings)

Network Default: 120s cycle time; 120 steps

Controller Stream	Number of Stages	Stage 1	Stage 2	Stage 3	Stage 4
1	4	6	50	58	97

## Results - Link

## Results - Traffic Stream

### Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Calculated capacity (Veh/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	JourneyTime (s)
08:00-09:00	A	1	(untitled)	A	318	3600	41	1260	25	257	28.30	7.55	8.13	60.34
	Ax	1	(untitled)		198	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	32.04
	B	1	(untitled)	B	330	3600	36	1110	30	203	32.30	8.40	6.29	78.38
	Bx	1	(untitled)		424	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	46.08
	C	1	(untitled)	C	10	3600	5	180	6	1520	55.21	0.32	0.48	78.01
	Cx	1	(untitled)		3	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	22.80
	D	1	(untitled)	D	278	3600	26	810	34	162	40.22	7.81	7.85	74.54
	Dx	1	(untitled)		311	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	34.32

## Data Entry - Stage Start and End

### Resultant Stage

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	9	50	41	1	5
	2	✓	3	C	53	58	5	1	5
	3	✓	2	B	61	97	36	1	5
	4	✓	4	D	100	6	26	1	5

## Data Entry - Phase

### Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	50	0	0	Traffic
	B	B	5	50	0	0	Traffic
	C	C	5	50	0	0	Traffic
	D	D	5	50	0	0	Traffic

## Data Entry - Traffic Stream

### Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1		267.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Ax	1		267.00	NetworkDefault	0.00	Normal						100	100
B	1		384.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Bx	1		384.00	NetworkDefault	0.00	Normal						100	100
C	1		190.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Cx	1		190.00	NetworkDefault	0.00	Normal						100	100
D	1		286.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Dx	1		286.00	NetworkDefault	0.00	Normal						100	100

## Data entry - Link

## Results - Pedestrian

## Traffic Stream Results

### Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	25	257	318	3600	41	28.30	7.55	8.13	35.50	2.80	38.30
	Ax	1	0	Unrestricted	198	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	30	203	330	3600	36	32.30	8.40	6.29	42.04	3.12	45.15
	Bx	1	0	Unrestricted	424	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	6	1520	10	3600	5	55.21	0.32	0.48	2.18	0.12	2.30
	Cx	1	0	Unrestricted	3	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	34	162	278	3600	26	40.22	7.81	7.85	44.10	2.90	47.01
	Dx	1	0	Unrestricted	311	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

### Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s per cycle)	Effective green (per cycle)
08:00-09:00	A	1	318	318	0		3600	1260	25		257	0.00	41	42
	Ax	1	198	198	0		Unrestricted	Unrestricted	0		Unrestricted	0.82	120	12
	B	1	330	330	0		3600	1110	30		203	0.00	36	37
	Bx	1	424	424	0		Unrestricted	Unrestricted	0		Unrestricted	0.68	120	12
	C	1	10	10	0		3600	180	6		1520	0.00	5	6
	Cx	1	3	3	0		Unrestricted	Unrestricted	0		Unrestricted	0.81	120	12
	D	1	278	278	0		3600	810	34		162	0.00	26	27
	Dx	1	311	311	0		Unrestricted	Unrestricted	0		Unrestricted	0.74	120	12

**Traffic Stream Results: Stops and delays**

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	A	1	32.04	28.30	2.46	0.04	35.50	35.50	70.21	221.99	1.28	2.80	2.80
	Ax	1	32.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	46.08	32.30	2.90	0.06	42.04	42.04	75.30	246.62	1.88	3.12	3.12
	Bx	1	46.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	22.80	55.21	0.15	0.00	2.18	2.18	94.50	9.40	0.05	0.12	0.12
	Cx	1	22.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	34.32	40.22	3.02	0.09	44.10	44.10	83.31	228.93	2.68	2.90	2.90
	Dx	1	34.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Traffic Stream Results: Queues and blocking**

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Max end of green queue (Veh)	Max end of red queue (Veh)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)	Estimated blocking
08:00-09:00	A	1	0.00	7.55	92.87	8.13	0.00	0.00	0.00	0.04	6.93	0.00	0.00	0.00	
	Ax	1	0.00	0.00	92.87	0.00	0.00	0.00	0.00			45.00	0.00	45.00	
	B	1	0.00	8.40	133.57	6.29	0.00	0.00	0.00	0.06	7.67	0.00	0.00	0.00	
	Bx	1	0.00	0.00	133.57	0.00	0.00	0.00	0.00			25.00	0.00	25.00	
	C	1	0.00	0.32	66.09	0.48	0.00	0.00	0.00	0.00	0.32	5.00	0.00	5.00	
	Cx	1	0.00	0.00	66.09	0.00	0.00	0.00	0.00			120.00	0.00	120.00	
	D	1	0.00	7.81	99.48	7.85	0.00	0.00	0.00	0.09	7.27	0.00	0.00	0.00	
	Dx	1	0.00	0.00	99.48	0.00	0.00	0.00	0.00			19.00	0.00	19.00	

**Traffic Stream Results: Journey times**

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	A	1	84.91	5.33	15.93	60.34
	Ax	1	52.87	1.76	30.00	32.04
	B	1	126.72	7.18	17.64	78.38
	Bx	1	162.82	5.43	30.00	46.08
	C	1	1.90	0.22	8.77	78.01
	Cx	1	0.57	0.02	30.00	22.80
	D	1	79.51	5.76	13.81	74.54
	Dx	1	88.95	2.96	30.00	34.32

**Traffic Stream Results: Advanced**

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (Veh)	Max End of Green Queue EoTS (Veh)	Max End of Red Queue EoTS (Veh)	PCU Factor	Cost of traffic penalties (£ per hr)	Unweighted performance index (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	0.00	0.00	✓	7.55	0.04	6.93	1.00	0.00	38.30	38.30
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	B	1	0.00	0.00	✓	8.40	0.06	7.67	1.00	0.00	45.15	45.15
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	C	1	0.00	0.00	✓	0.32	0.00	0.32	1.00	0.00	2.30	2.30
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	D	1	0.00	0.00	✓	7.81	0.09	7.27	1.00	0.00	47.01	47.01
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00

## Network Results

### Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	13/08/2019 09:32:26	13/08/2019 09:32:26	08:00	120	132.76	8.72	34.32	D/1	0	0	D/1	Dx/1	D/

### Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	34	162	1872	588	16.77	123.82	8.94	132.76

### Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	1872	1872	0		34		162	588	592

### Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	38.35	16.77	8.52	0.20	123.82	123.82	38.08	706.94	5.89	8.94	8.94

### Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
08:00-09:00	8.13	0.00	214.00	0.00	214.00

### Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
08:00-09:00	598.23	28.66	20.87

### Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Unweighted performance index (£ per hr)	Performance Index (£ per hr)
08:00-09:00	0.00	0.00	✓	1.00	0.00	0.00	132.76	132.76

## Point to Point Journey Time

### Average Journey Time (s) for Local Matrix: 1

		To			
		1	2	3	4
From	1	0.0	112.3	110.1	124.1
	2	0.0	0.0	106.6	120.6
	3	83.1	94.7	0.0	106.4
	4	101.2	112.7	110.4	0.0



### Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (Veh/hr)	Normal journey time (s)	Calculated Total Flow (Veh/hr)	Avg journey time (s)
1	1	2	1	112.33	1	112.33
2	1	3	2	110.05	2	110.05
3	1	4	7	124.09	7	124.09
4	2	3	86	106.58	86	106.58
5	2	4	192	120.62	192	120.62
6	2	1	0	0.00	0	0.00
7	3	2	91	94.66	91	94.66
8	3	4	225	106.42	225	106.42
9	3	1	2	83.14	2	83.14
10	4	2	219	112.70	219	112.70
11	4	3	110	110.42	110	110.42
12	4	1	1	101.18	1	101.18

## Final Prediction Table

### Traffic Stream Results

Arm	Traffic Stream	Name	Traffic node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUES	
				Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Wasted time total (s per cycle)	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (Veh)	Mean of r que (Veh)
A	1	(untitled)	1	1	A	318	3600	41	0.00	25	257	60.34	28.30	70.21	7.55	6.
Ax	1	(untitled)				198	Unrestricted	120	45.00	0	Unrestricted	32.04	0.00	0.00	0.00	
B	1	(untitled)	1	1	B	330	3600	36	0.00	30	203	78.38	32.30	75.30	8.40	7.
Bx	1	(untitled)				424	Unrestricted	120	25.00	0	Unrestricted	46.08	0.00	0.00	0.00	
C	1	(untitled)	1	1	C	10	3600	5	5.00	6	1520	78.01	55.21	94.50	0.32	0.
Cx	1	(untitled)				3	Unrestricted	120	120.00	0	Unrestricted	22.80	0.00	0.00	0.00	
D	1	(untitled)	1	1	D	278	3600	26	0.00	34	162	74.54	40.22	83.31	7.81	7.
Dx	1	(untitled)				311	Unrestricted	120	19.00	0	Unrestricted	34.32	0.00	0.00	0.00	

### Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	598.23	28.66	20.87	8.52	0.20	123.82	8.94	0.00	132.76
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians									
TOTAL	598.23	28.66	20.87	8.52	0.20	123.82	8.94	0.00	132.76

- < = adjusted flow warning (upstream links/traffic streams are over-saturated)
- \* = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%
- ^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%
- + = average link/traffic stream excess queue is greater than 0
- P.I. = PERFORMANCE INDEX



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**Filename:** Junction 5 - 2018 (Existing Road Network with Existing Traffic)-PM.t15

**Path:** M:\Projects\18\18-059 - Clongriffin Planning Application\Design\Civil\Traffic Modelling\MODELLING - JULY 2019\Junction 5

**Report generation date:** 13/08/2019 09:35:55

»Network Diagrams

«A1 - JUNCTION 5 : D1 - 2018 PM\* :

- »Summary
- »Network Options
- »Traffic Nodes
- »Arms and Traffic Streams
- »Local OD Matrix - Local Matrix: 1
- »Signal Timings
- »TRANSYT 12 Tables
- »Results - Link
- »Results - Traffic Stream
- »Data Entry - Stage Start and End
- »Data Entry - Phase
- »Data Entry - Traffic Stream
- »Data entry - Link
- »Results - Pedestrian
- »Traffic Stream Results
- »Network Results
- »Point to Point Journey Time
- »Final Prediction Table

**File summary**

**File description**

<b>File title</b>	(untitled)
<b>Location</b>	
<b>Site number</b>	
<b>UTCRegion</b>	
<b>Driving side</b>	Left
<b>Date</b>	06/12/2011
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	DOMAINf.silva
<b>Description</b>	

### Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber
			✓		✓	✓	✓	✓	✓	✓	✓		

### Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	Veh	Veh	perHour	s	-Hour	perHour

### Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

## Network Diagrams

# A1 - JUNCTION 5

## D1 - 2018 PM\*

### Summary

#### Data Errors and Warnings

No errors or warnings

#### Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	13/08/2019 09:35:50	13/08/2019 09:35:50	18:00	120	184.73	12.13	54.00	D/1	0	0	D/1	Dx/1	D/

#### Analysis Set Details

Name	Description	Demand set	Include in report	Locked
JUNCTION 5		D1	✓	

#### Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
2018 PM				18:00	

### Network Options

#### Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

#### Signals options

Start displacement (s)	End displacement (s)
2	3

#### Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

#### Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

#### Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

### Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

### Normal Traffic Types

Name	PCU Factor
Normal	1.00

### Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms <sup>^-2</sup> )	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

### Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms <sup>^-2</sup> )	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

### Pedestrian parameters

Dispersion type
Default

### Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	✓

### Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

### Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

## Traffic Nodes

### Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

## Arms and Traffic Streams

### Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		

### Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			267.00	✓	Directly entered	3600	✓		Normal	
Ax	1	(untitled)			267.00						Normal	
B	1	(untitled)			384.00	✓	Directly entered	3600	✓		Normal	
Bx	1	(untitled)			384.00						Normal	
C	1	(untitled)			190.00	✓	Directly entered	3600	✓		Normal	
Cx	1	(untitled)			190.00						Normal	
D	1	(untitled)			286.00	✓	Directly entered	3600	✓		Normal	
Dx	1	(untitled)			286.00						Normal	

### Lanes

Arm	Traffic Stream	Lane	Name	Description
(ALL)	1	(ALL)	(untitled)	

### Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	1	NetworkDefault	100	100	100		0.00		

### Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

### Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

### Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

### Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	356	356
Ax	1	416	416
B	1	592	592
Bx	1	504	504
C	1	10	10
Cx	1	13	13
D	1	324	324
Dx	1	349	349

### Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C	1	1	C	
D	1	1	D	

### Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A	1	32.04	30.00
B	1	46.08	30.00
C	1	22.80	30.00
D	1	34.32	30.00

### Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	32.04	30.00	✓	Straight	Straight Movement
Bx	1	1	C/1	Bx/1	46.08	30.00	✓	Offside	82.71
Cx	1	1	A/1	Cx/1	22.80	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	34.32	30.00	✓	Nearside	43.61
Ax	1	2	B/1	Ax/1	32.04	30.00	✓	Offside	78.75
Bx	1	2	A/1	Bx/1	46.08	30.00	✓	Nearside	42.95
Cx	1	2	B/1	Cx/1	22.80	30.00	✓	Nearside	46.25
Dx	1	2	A/1	Dx/1	34.32	30.00	✓	Offside	78.75
Ax	1	3	D/1	Ax/1	32.04	30.00	✓	Nearside	42.95
Bx	1	3	D/1	Bx/1	46.08	30.00	✓	Straight	Straight Movement
Cx	1	3	D/1	Cx/1	22.80	30.00	✓	Offside	78.75
Dx	1	3	B/1	Dx/1	34.32	30.00	✓	Straight	Straight Movement

## Local OD Matrix - Local Matrix: 1

### Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

### Normal Input Flows (Veh/hr)

		To			
		1	2	3	4
From	1	0	1	3	6
	2	3	0	80	241
	3	2	97	0	257
	4	8	251	333	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

### Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1	Cx/1	#0000FF
	2	(untitled)	D/1	Dx/1	#FF0000
	3	(untitled)	A/1	Ax/1	#00FF00
	4	(untitled)	B/1	Bx/1	#FFFF00

## Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	1		1	2	C/1, Dx/1	Normal	1
	2		1	3	C/1, Ax/1	Normal	3
	3		1	4	C/1, Bx/1	Normal	6
	4		2	3	D/1, Ax/1	Normal	80
	5		2	4	D/1, Bx/1	Normal	241
	6		2	1	D/1, Cx/1	Normal	3
	7		3	2	A/1, Dx/1	Normal	97
	8		3	4	A/1, Bx/1	Normal	257
	9		3	1	A/1, Cx/1	Normal	2
	10		4	2	B/1, Dx/1	Normal	251
	11		4	3	B/1, Ax/1	Normal	333
	12		4	1	B/1, Cx/1	Normal	8

## Signal Timings

Network Default: 120s cycle time; 120 steps

### Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

### Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

### Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

### Phases

Controller Stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	5	50	0	0	Traffic

### Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D	1

### Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 3, 2, 4	51, 59, 109, 11
	2	(untitled)	Single	1, 2, 3, 4	0, 25, 50, 75
	3	(untitled)	Single	1, 3, 4, 2	0, 25, 50, 75
	4	(untitled)	Single	1, 2, 4, 3	0, 25, 50, 75
	5	(untitled)	Single	1, 4, 2, 3	0, 25, 50, 75
	6	(untitled)	Single	1, 4, 3, 2	0, 25, 50, 75



### Intergreen Matrix for Controller Stream 1

		To			
		A	B	C	D
From	A		3	3	3
	B	3		3	3
	C	3	3		3
	D	3	3	3	

### Banned Stage transitions for Controller Stream 1

		To			
		1	2	3	4
From	1				
	2				
	3				
	4				

### Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	3	3	3
	2	3	0	3	3
	3	3	3	0	3
	4	3	3	3	0

### Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	14	51	37	1	5
	2	✓	3	C	54	59	5	1	5
	3	✓	2	B	62	109	47	1	5
	4	✓	4	D	112	11	19	1	5

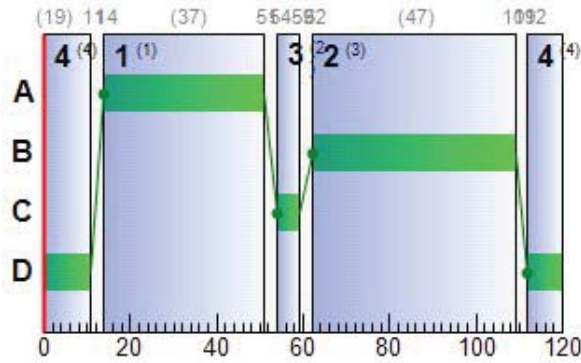
### Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	14	51	37
	B	1	✓	62	109	47
	C	1	✓	54	59	5
	D	1	✓	112	11	19

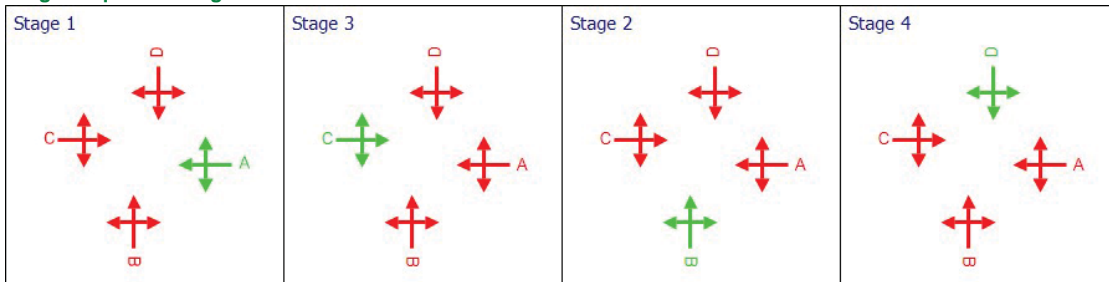
**Traffic Stream Green Times**

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	14	51	37
B	1	1	1	B	62	109	47
C	1	1	1	C	54	59	5
D	1	1	1	D	112	11	19

**Phase Timings Diagram for Controller Stream 1**



**Stage Sequence Diagram for Controller Stream 1**



**Resultant penalties**

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
18:00-19:00	1	0.00	0.00	0.00	0.00

**TRANSYT 12 Tables**

**Resultant Stages**

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	TRANSYT Stage start (s)	TRANSYT Preceding interstage (s)	TRANSYT Stage minimum (s)
1	1	✓	1	A	11	3	8
	2	✓	3	C	51	3	8
	3	✓	2	B	59	3	8
	4	✓	4	D	109	3	8

**Resultant Phase Green Periods**

Controller Stream	Phase	Green period	TRANSYT Starting stage	TRANSYT Ending stage	TRANSYT Start lag (s)	TRANSYT End lag (s)
1	A	1	1	2	3	0
	B	1	3	4	3	0
	C	1	2	3	3	0
	D	1	4	1	3	0

## Stage Timings (TRANSYT 12 timings)

Network Default: 120s cycle time; 120 steps

Controller Stream	Number of Stages	Stage 1	Stage 2	Stage 3	Stage 4
1	4	11	51	59	109

## Results - Link

## Results - Traffic Stream

### Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Calculated capacity (Veh/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	JourneyTime (s)
18:00-19:00	A	1	(untitled)	A	356	3600	37	1140	31	188	31.81	8.97	9.66	63.85
	Ax	1	(untitled)		416	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	32.04
	B	1	(untitled)	B	592	3600	47	1440	41	119	26.73	14.29	10.70	72.81
	Bx	1	(untitled)		504	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	46.08
	C	1	(untitled)	C	10	3600	5	180	6	1520	55.21	0.32	0.48	78.01
	Cx	1	(untitled)		13	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	22.80
	D	1	(untitled)	D	324	3600	19	600	54	67	49.29	10.13	10.18	83.61
	Dx	1	(untitled)		349	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	34.32

## Data Entry - Stage Start and End

### Resultant Stage

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	14	51	37	1	5
	2	✓	3	C	54	59	5	1	5
	3	✓	2	B	62	109	47	1	5
	4	✓	4	D	112	11	19	1	5

## Data Entry - Phase

### Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	50	0	0	Traffic
	B	B	5	50	0	0	Traffic
	C	C	5	50	0	0	Traffic
	D	D	5	50	0	0	Traffic

## Data Entry - Traffic Stream

### Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1		267.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Ax	1		267.00	NetworkDefault	0.00	Normal						100	100
B	1		384.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Bx	1		384.00	NetworkDefault	0.00	Normal						100	100
C	1		190.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Cx	1		190.00	NetworkDefault	0.00	Normal						100	100
D	1		286.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Dx	1		286.00	NetworkDefault	0.00	Normal						100	100

## Data entry - Link

## Results - Pedestrian

## Traffic Stream Results

### Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
18:00-19:00	A	1	31	188	356	3600	37	31.81	8.97	9.66	44.66	3.33	48.00
	Ax	1	0	Unrestricted	416	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	41	119	592	3600	47	26.73	14.29	10.70	62.41	5.27	67.67
	Bx	1	0	Unrestricted	504	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	6	1520	10	3600	5	55.21	0.32	0.48	2.18	0.12	2.30
	Cx	1	0	Unrestricted	13	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	54	67	324	3600	19	49.29	10.13	10.18	62.99	3.77	66.76
	Dx	1	0	Unrestricted	349	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

### Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s per cycle)	Effective green (per cycle)
18:00-19:00	A	1	356	356	0		3600	1140	31		188	0.00	37	38
	Ax	1	416	416	0		Unrestricted	Unrestricted	0		Unrestricted	0.77	120	12
	B	1	592	592	0		3600	1440	41		119	0.00	47	48
	Bx	1	504	504	0		Unrestricted	Unrestricted	0		Unrestricted	0.83	120	12
	C	1	10	10	0		3600	180	6		1520	0.00	5	6
	Cx	1	13	13	0		Unrestricted	Unrestricted	0		Unrestricted	0.61	120	12
	D	1	324	324	0		3600	600	54		67	0.00	19	20
	Dx	1	349	349	0		Unrestricted	Unrestricted	0		Unrestricted	0.63	120	12

**Traffic Stream Results: Stops and delays**

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
18:00-19:00	A	1	32.04	31.81	3.07	0.07	44.66	44.66	74.61	263.49	2.12	3.33	3.33
	Ax	1	32.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	46.08	26.73	4.25	0.14	62.41	62.41	70.93	415.63	4.29	5.27	5.27
	Bx	1	46.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	22.80	55.21	0.15	0.00	2.18	2.18	94.50	9.40	0.05	0.12	0.12
	Cx	1	22.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	34.32	49.29	4.12	0.32	62.99	62.99	92.74	291.11	9.38	3.77	3.77
	Dx	1	34.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Traffic Stream Results: Queues and blocking**

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Max end of green queue (Veh)	Max end of red queue (Veh)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)	Estimated blocking
18:00-19:00	A	1	0.00	8.97	92.87	9.66	0.00	0.00	0.00	0.07	8.18	0.00	0.00	0.00	
	Ax	1	0.00	0.00	92.87	0.00	0.00	0.00	0.00			36.00	0.00	36.00	
	B	1	0.00	14.29	133.57	10.70	0.00	0.00	0.00	0.14	11.98	0.00	0.00	0.00	
	Bx	1	0.00	0.00	133.57	0.00	0.00	0.00	0.00			33.00	0.00	33.00	
	C	1	0.00	0.32	66.09	0.48	0.00	0.00	0.00	0.00	0.32	5.00	0.00	5.00	
	Cx	1	0.00	0.00	66.09	0.00	0.00	0.00	0.00			120.00	0.00	120.00	
	D	1	0.00	10.13	99.48	10.18	0.00	0.00	0.00	0.32	9.32	0.00	0.00	0.00	
	Dx	1	0.00	0.00	99.48	0.00	0.00	0.00	0.00			11.00	0.00	11.00	

**Traffic Stream Results: Journey times**

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
18:00-19:00	A	1	95.05	6.31	15.05	63.85
	Ax	1	111.07	3.70	30.00	32.04
	B	1	227.33	11.97	18.99	72.81
	Bx	1	193.54	6.45	30.00	46.08
	C	1	1.90	0.22	8.77	78.01
	Cx	1	2.47	0.08	30.00	22.80
	D	1	92.66	7.53	12.31	83.61
	Dx	1	99.81	3.33	30.00	34.32

**Traffic Stream Results: Advanced**

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (Veh)	Max End of Green Queue EoTS (Veh)	Max End of Red Queue EoTS (Veh)	PCU Factor	Cost of traffic penalties (£ per hr)	Unweighted performance index (£ per hr)	Performance Index (£ per hr)
18:00-19:00	A	1	0.00	0.00	✓	8.97	0.07	8.18	1.00	0.00	48.00	48.00
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	B	1	0.00	0.00	✓	14.29	0.14	11.98	1.00	0.00	67.67	67.67
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	C	1	0.00	0.00	✓	0.32	0.00	0.32	1.00	0.00	2.30	2.30
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	D	1	0.00	0.00	✓	10.13	0.32	9.32	1.00	0.00	66.76	66.76
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00

## Network Results

### Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	13/08/2019 09:35:50	13/08/2019 09:35:50	18:00	120	184.73	12.13	54.00	D/1	0	0	D/1	Dx/1	D/

### Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
18:00-19:00	54	67	2564	588	17.03	172.24	12.48	184.73

### Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
18:00-19:00	2564	2564	0		54		67	588	592

### Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
18:00-19:00	38.56	17.03	11.60	0.53	172.24	172.24	38.83	979.63	15.84	12.48	12.48

### Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
18:00-19:00	10.70	0.00	205.00	0.00	205.00

### Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
18:00-19:00	823.84	39.59	20.81

### Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Unweighted performance index (£ per hr)	Performance Index (£ per hr)
18:00-19:00	0.00	0.00	✓	1.00	0.00	0.00	184.73	184.73

## Point to Point Journey Time

### Average Journey Time (s) for Local Matrix: 1

		To			
		1	2	3	4
From	1	0.0	112.3	110.1	124.1
	2	106.4	0.0	115.7	129.7
	3	86.6	98.2	0.0	109.9
	4	95.6	107.1	104.8	0.0

### Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (Veh/hr)	Normal journey time (s)	Calculated Total Flow (Veh/hr)	Avg journey time (s)
1	1	2	1	112.33	1	112.33
2	1	3	3	110.05	3	110.05
3	1	4	6	124.09	6	124.09
4	2	3	80	115.65	80	115.65
5	2	4	241	129.69	241	129.69
6	2	1	3	106.41	3	106.41
7	3	2	97	98.17	97	98.17
8	3	4	257	109.93	257	109.93
9	3	1	2	86.65	2	86.65
10	4	2	251	107.13	251	107.13
11	4	3	333	104.85	333	104.85
12	4	1	8	95.61	8	95.61

## Final Prediction Table

### Traffic Stream Results

Arm	Traffic Stream	Name	Traffic node	SIGNALS		FLOWS		PERFORMANCE			PER PCU			QUEUES		
				Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Wasted time total (s per cycle)	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (Veh)	Mean of r que (Veh)
A	1	(untitled)	1	1	A	356	3600	37	0.00	31	188	63.85	31.81	74.61	8.97	8.
Ax	1	(untitled)				416	Unrestricted	120	36.00	0	Unrestricted	32.04	0.00	0.00	0.00	
B	1	(untitled)	1	1	B	592	3600	47	0.00	41	119	72.81	26.73	70.93	14.29	11.
Bx	1	(untitled)				504	Unrestricted	120	33.00	0	Unrestricted	46.08	0.00	0.00	0.00	
C	1	(untitled)	1	1	C	10	3600	5	5.00	6	1520	78.01	55.21	94.50	0.32	0.
Cx	1	(untitled)				13	Unrestricted	120	120.00	0	Unrestricted	22.80	0.00	0.00	0.00	
D	1	(untitled)	1	1	D	324	3600	19	0.00	54	67	83.61	49.29	92.74	10.13	9.
Dx	1	(untitled)				349	Unrestricted	120	11.00	0	Unrestricted	34.32	0.00	0.00	0.00	

### Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	823.84	39.59	20.81	11.60	0.53	172.24	12.48	0.00	184.73
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians									
TOTAL	823.84	39.59	20.81	11.60	0.53	172.24	12.48	0.00	184.73

- < = adjusted flow warning (upstream links/traffic streams are over-saturated)
- \* = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%
- ^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%
- + = average link/traffic stream excess queue is greater than 0
- P.I. = PERFORMANCE INDEX



<h1>TRANSYT 15</h1>
Version: 15.5.2.7994 © Copyright TRL Limited, 2018
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**Filename:** Junction 5 - 2025 - AM.t15

**Path:** M:\Projects\18\18-059 - Clongriffin Planning Application\Design\Civil\Traffic Modelling\MODELLING - JULY 2019\Junction 5

**Report generation date:** 13/08/2019 09:38:33

»Network Diagrams

«A1 - 2025 + Generated Trips : D1 - AM\* :

- »Summary
- »Network Options
- »Traffic Nodes
- »Arms and Traffic Streams
- »Local OD Matrix - Local Matrix: 1
- »Signal Timings
- »TRANSYT 12 Tables
- »Results - Link
- »Results - Traffic Stream
- »Data Entry - Stage Start and End
- »Data Entry - Phase
- »Data Entry - Traffic Stream
- »Data entry - Link
- »Results - Pedestrian
- »Traffic Stream Results
- »Network Results
- »Point to Point Journey Time
- »Final Prediction Table

**File summary**

**File description**

<b>File title</b>	(untitled)
<b>Location</b>	
<b>Site number</b>	
<b>UTCRegion</b>	
<b>Driving side</b>	Left
<b>Date</b>	06/12/2011
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	DOMAINf.silva
<b>Description</b>	



### Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber
			✓		✓	✓	✓	✓	✓	✓	✓		

### Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	Veh	Veh	perHour	s	-Hour	perHour

### Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

## Network Diagrams

# A1 - 2025 + Generated Trips

## D1 - AM\*

### Summary

#### Data Errors and Warnings

No errors or warnings

#### Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	13/08/2019 09:38:18	13/08/2019 09:38:18	08:00	120	309.60	20.41	61.74	D/1	0	0	D/1	Dx/1	D/

#### Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2025 + Generated Trips		D1	✓	

#### Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
AM				08:00	

### Network Options

#### Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

#### Signals options

Start displacement (s)	End displacement (s)
2	3

#### Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

#### Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

#### Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	90	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓

### Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

### Normal Traffic Types

Name	PCU Factor
Normal	1.00

### Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms <sup>^-2</sup> )	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

### Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms <sup>^-2</sup> )	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

### Pedestrian parameters

Dispersion type
Default

### Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	✓

### Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

### Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

## Traffic Nodes

### Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

## Arms and Traffic Streams

### Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		

### Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			267.00	✓	Directly entered	3600	✓		Normal	
Ax	1	(untitled)			267.00						Normal	
B	1	(untitled)			384.00	✓	Directly entered	3600	✓		Normal	
Bx	1	(untitled)			384.00						Normal	
C	1	(untitled)			190.00	✓	Directly entered	3600	✓		Normal	
Cx	1	(untitled)			190.00						Normal	
D	1	(untitled)			286.00	✓	Directly entered	3600	✓		Normal	
Dx	1	(untitled)			286.00						Normal	

### Lanes

Arm	Traffic Stream	Lane	Name	Description
(ALL)	1	(ALL)	(untitled)	

### Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	1	NetworkDefault	100	100	100		0.00		

### Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

### Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

### Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

### Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	718	718
Ax	1	600	600
B	1	579	579
Bx	1	613	613
C	1	142	142
Cx	1	204	204
D	1	426	426
Dx	1	448	448

### Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C	1	1	C	
D	1	1	D	

### Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A	1	32.04	30.00
B	1	46.08	30.00
C	1	22.80	30.00
D	1	34.32	30.00

### Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	32.04	30.00	✓	Straight	Straight Movement
Bx	1	1	C/1	Bx/1	46.08	30.00	✓	Offside	85.04
Cx	1	1	A/1	Cx/1	22.80	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	34.32	30.00	✓	Nearside	46.25
Ax	1	2	B/1	Ax/1	32.04	30.00	✓	Offside	78.75
Bx	1	2	A/1	Bx/1	46.08	30.00	✓	Nearside	40.75
Cx	1	2	B/1	Cx/1	22.80	30.00	✓	Nearside	47.82
Dx	1	2	A/1	Dx/1	34.32	30.00	✓	Offside	78.75
Ax	1	3	D/1	Ax/1	32.04	30.00	✓	Nearside	40.75
Bx	1	3	D/1	Bx/1	46.08	30.00	✓	Straight	Straight Movement
Cx	1	3	D/1	Cx/1	22.80	30.00	✓	Offside	81.89
Dx	1	3	B/1	Dx/1	34.32	30.00	✓	Straight	Straight Movement

## Local OD Matrix - Local Matrix: 1

### Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

### Normal Input Flows (Veh/hr)

		To			
		1	2	3	4
From	1	0	29	106	7
	2	11	0	218	197
	3	192	117	0	409
	4	1	302	276	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

### Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1	Cx/1	#0000FF
	2	(untitled)	D/1	Dx/1	#FF0000
	3	(untitled)	A/1	Ax/1	#00FF00
	4	(untitled)	B/1	Bx/1	#FFFF00

### Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	1		1	2	C/1, Dx/1	Normal	29
	2		1	3	C/1, Ax/1	Normal	106
	3		1	4	C/1, Bx/1	Normal	7
	4		2	3	D/1, Ax/1	Normal	218
	5		2	4	D/1, Bx/1	Normal	197
	6		2	1	D/1, Cx/1	Normal	11
	7		3	2	A/1, Dx/1	Normal	117
	8		3	4	A/1, Bx/1	Normal	409
	9		3	1	A/1, Cx/1	Normal	192
	10		4	2	B/1, Dx/1	Normal	302
	11		4	3	B/1, Ax/1	Normal	276
	12		4	1	B/1, Cx/1	Normal	1

## Signal Timings

Network Default: 120s cycle time; 120 steps

### Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

### Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

### Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

### Phases

Controller Stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	5	50	0	0	Traffic

### Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D	1

### Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 3, 2, 4	45, 55, 90, 115
	2	(untitled)	Single	1, 2, 3, 4	0, 25, 50, 75
	3	(untitled)	Single	1, 3, 4, 2	0, 25, 50, 75
	4	(untitled)	Single	1, 2, 4, 3	0, 25, 50, 75
	5	(untitled)	Single	1, 4, 2, 3	0, 25, 50, 75
	6	(untitled)	Single	1, 4, 3, 2	0, 25, 50, 75

### Intergreen Matrix for Controller Stream 1

		To			
		A	B	C	D
From	A		3	3	3
	B	3		3	3
	C	3	3		3
	D	3	3	3	

### Banned Stage transitions for Controller Stream 1

		To			
		1	2	3	4
From	1				
	2				
	3				
	4				

### Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	3	3	3
	2	3	0	3	3
	3	3	3	0	3
	4	3	3	3	0

### Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	118	45	47	1	5
	2	✓	3	C	48	55	7	1	5
	3	✓	2	B	58	90	32	1	5
	4	✓	4	D	93	115	22	1	5

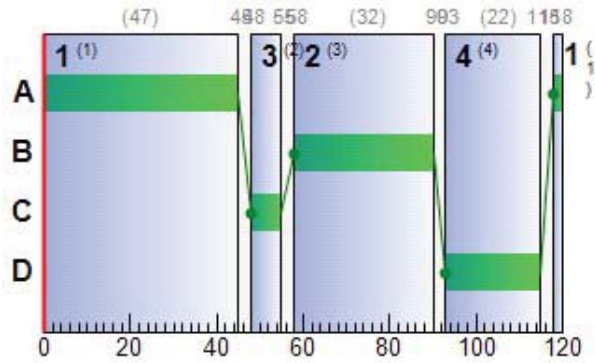
### Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	118	45	47
	B	1	✓	58	90	32
	C	1	✓	48	55	7
	D	1	✓	93	115	22

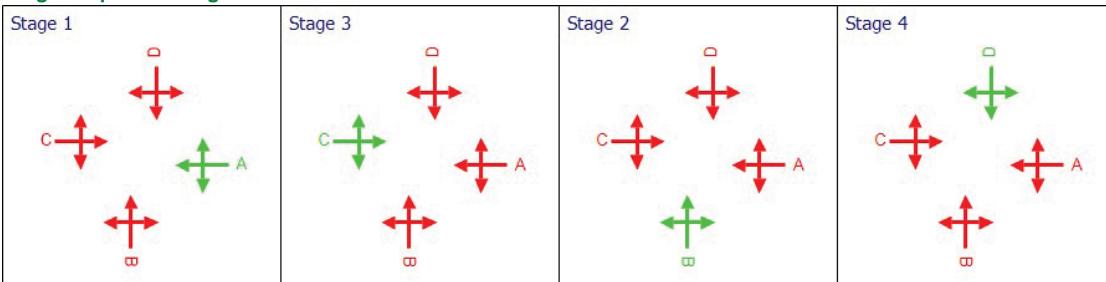
**Traffic Stream Green Times**

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	118	45	47
B	1	1	1	B	58	90	32
C	1	1	1	C	48	55	7
D	1	1	1	D	93	115	22

**Phase Timings Diagram for Controller Stream 1**



**Stage Sequence Diagram for Controller Stream 1**



**Resultant penalties**

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
08:00-09:00	1	0.00	0.00	0.00	0.00

**TRANSYT 12 Tables**

**Resultant Stages**

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	TRANSYT Stage start (s)	TRANSYT Preceding interstage (s)	TRANSYT Stage minimum (s)
1	1	✓	1	A	115	3	8
	2	✓	3	C	45	3	8
	3	✓	2	B	55	3	8
	4	✓	4	D	90	3	8

**Resultant Phase Green Periods**

Controller Stream	Phase	Green period	TRANSYT Starting stage	TRANSYT Ending stage	TRANSYT Start lag (s)	TRANSYT End lag (s)
1	A	1	1	2	3	0
	B	1	3	4	3	0
	C	1	2	3	3	0
	D	1	4	1	3	0



## Stage Timings (TRANSYT 12 timings)

Network Default: 120s cycle time; 120 steps

Controller Stream	Number of Stages	Stage 1	Stage 2	Stage 3	Stage 4
1	4	115	45	55	90

## Results - Link

## Results - Traffic Stream

### Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Calculated capacity (Veh/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	JourneyTime (s)
08:00-09:00	A	1	(untitled)	A	718	3600	47	1440	50	81	28.22	18.00	19.38	60.26
	Ax	1	(untitled)		600	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	32.04
	B	1	(untitled)	B	579	3600	32	990	58	54	40.14	16.98	12.71	86.22
	Bx	1	(untitled)		613	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	46.08
	C	1	(untitled)	C	142	3600	7	240	59	52	65.09	5.00	7.56	87.89
	Cx	1	(untitled)		204	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	22.80
	D	1	(untitled)	D	426	3600	22	690	62	46	48.64	13.51	13.58	82.96
	Dx	1	(untitled)		448	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	34.32

## Data Entry - Stage Start and End

### Resultant Stage

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	118	45	47	1	5
	2	✓	3	C	48	55	7	1	5
	3	✓	2	B	58	90	32	1	5
	4	✓	4	D	93	115	22	1	5

## Data Entry - Phase

### Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	50	0	0	Traffic
	B	B	5	50	0	0	Traffic
	C	C	5	50	0	0	Traffic
	D	D	5	50	0	0	Traffic

## Data Entry - Traffic Stream

### Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1		267.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Ax	1		267.00	NetworkDefault	0.00	Normal						100	100
B	1		384.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Bx	1		384.00	NetworkDefault	0.00	Normal						100	100
C	1		190.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Cx	1		190.00	NetworkDefault	0.00	Normal						100	100
D	1		286.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Dx	1		286.00	NetworkDefault	0.00	Normal						100	100

## Data entry - Link

## Results - Pedestrian

## Traffic Stream Results

### Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	50	81	718	3600	47	28.22	18.00	19.38	79.93	6.67	86.60
	Ax	1	0	Unrestricted	600	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	58	54	579	3600	32	40.14	16.98	12.71	91.66	6.30	97.97
	Bx	1	0	Unrestricted	613	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	59	52	142	3600	7	65.09	5.00	7.56	36.45	1.86	38.31
	Cx	1	0	Unrestricted	204	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	62	46	426	3600	22	48.64	13.51	13.58	81.73	4.99	86.72
	Dx	1	0	Unrestricted	448	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

### Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s per cycle)	Effective green (per cycle)
08:00-09:00	A	1	718	718	0		3600	1440	50		81	0.00	47	48
	Ax	1	600	600	0		Unrestricted	Unrestricted	0		Unrestricted	0.73	120	12
	B	1	579	579	0		3600	990	58		54	0.00	32	33
	Bx	1	613	613	0		Unrestricted	Unrestricted	0		Unrestricted	0.63	120	12
	C	1	142	142	0		3600	240	59		52	0.00	7	8
	Cx	1	204	204	0		Unrestricted	Unrestricted	0		Unrestricted	0.99	120	12
	D	1	426	426	0		3600	690	62		46	0.00	22	23
	Dx	1	448	448	0		Unrestricted	Unrestricted	0		Unrestricted	0.68	120	12

**Traffic Stream Results: Stops and delays**

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	A	1	32.04	28.22	5.38	0.25	79.93	79.93	74.09	524.58	7.40	6.67	6.67
	Ax	1	32.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	46.08	40.14	6.05	0.41	91.66	91.66	86.83	490.53	12.23	6.30	6.30
	Bx	1	46.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	22.80	65.09	2.15	0.42	36.45	36.45	104.36	135.87	12.32	1.86	1.86
	Cx	1	22.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	34.32	48.64	5.26	0.49	81.73	81.73	93.35	382.99	14.69	4.99	4.99
	Dx	1	34.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Traffic Stream Results: Queues and blocking**

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Max end of green queue (Veh)	Max end of red queue (Veh)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
08:00-09:00	A	1	0.00	18.00	92.87	19.38	0.00	0.00	0.00	0.25	14.61	0.00	0.00	0.00	
	Ax	1	0.00	0.00	92.87	0.00	0.00	0.00	0.00			30.00	0.00	30.00	
	B	1	0.00	16.98	133.57	12.71	0.00	0.00	0.00	0.41	14.40	0.00	0.00	0.00	
	Bx	1	0.00	0.00	133.57	0.00	0.00	0.00	0.00			16.00	0.00	16.00	
	C	1	0.00	5.00	66.09	7.56	0.00	0.00	0.00	0.42	4.84	0.00	0.00	0.00	
	Cx	1	0.00	0.00	66.09	0.00	0.00	0.00	0.00			56.00	0.00	56.00	
	D	1	0.00	13.51	99.48	13.58	0.00	0.00	0.00	0.49	11.97	0.00	0.00	0.00	
	Dx	1	0.00	0.00	99.48	0.00	0.00	0.00	0.00			5.00	0.00	5.00	

**Traffic Stream Results: Journey times**

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
08:00-09:00	A	1	191.71	12.02	15.95	60.26
	Ax	1	160.20	5.34	30.00	32.04
	B	1	222.34	13.87	16.03	86.22
	Bx	1	235.39	7.85	30.00	46.08
	C	1	26.98	3.47	7.78	87.89
	Cx	1	38.76	1.29	30.00	22.80
	D	1	121.84	9.82	12.41	82.96
	Dx	1	128.13	4.27	30.00	34.32

**Traffic Stream Results: Advanced**

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (Veh)	Max End of Green Queue EoTS (Veh)	Max End of Red Queue EoTS (Veh)	PCU Factor	Cost of traffic penalties (£ per hr)	Unweighted performance index (£ per hr)	Performance Index (£ per hr)
08:00-09:00	A	1	0.00	0.00	✓	18.00	0.25	14.61	1.00	0.00	86.60	86.60
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	B	1	0.00	0.00	✓	16.98	0.41	14.40	1.00	0.00	97.97	97.97
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	C	1	0.00	0.00	✓	5.00	0.42	4.84	1.00	0.00	38.31	38.31
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	D	1	0.00	0.00	✓	13.51	0.50	11.97	1.00	0.00	86.72	86.72
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00

## Network Results

### Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	13/08/2019 09:38:18	13/08/2019 09:38:18	08:00	120	309.60	20.41	61.74	D/1	0	0	D/1	Dx/1	D/

### Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
08:00-09:00	62	46	3730	588	19.70	289.78	19.82	309.60

### Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
08:00-09:00	3730	3730	0		62		46	588	592

### Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
08:00-09:00	36.20	19.70	18.84	1.57	289.78	289.78	42.38	1533.96	46.65	19.82	19.82

### Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
08:00-09:00	19.38	0.00	107.00	0.00	107.00

### Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
08:00-09:00	1125.34	57.92	19.43

### Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Unweighted performance index (£ per hr)	Performance Index (£ per hr)
08:00-09:00	0.00	0.00	✓	1.00	0.00	0.00	309.60	309.60

## Point to Point Journey Time

### Average Journey Time (s) for Local Matrix: 1

		To			
		1	2	3	4
From	1	0.0	122.2	119.9	134.0
	2	105.8	0.0	115.0	129.0
	3	83.1	94.6	0.0	106.3
	4	109.0	120.5	118.3	0.0

### Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (Veh/hr)	Normal journey time (s)	Calculated Total Flow (Veh/hr)	Avg journey time (s)
1	1	2	29	122.21	29	122.21
2	1	3	106	119.93	106	119.93
3	1	4	7	133.97	7	133.97
4	2	3	218	115.00	218	115.00
5	2	4	197	129.04	197	129.04
6	2	1	11	105.76	11	105.76
7	3	2	117	94.58	117	94.58
8	3	4	409	106.34	409	106.34
9	3	1	192	83.06	192	83.06
10	4	2	302	120.54	302	120.54
11	4	3	276	118.26	276	118.26
12	4	1	1	109.02	1	109.02

## Final Prediction Table

### Traffic Stream Results

Arm	Traffic Stream	Name	Traffic node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
				Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Wasted time total (s per cycle)	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (Veh)	Me of qu (V)
A	1	(untitled)	1	1	A	718	3600	47	0.00	50	81	60.26	28.22	74.09	18.00	14
Ax	1	(untitled)				600	Unrestricted	120	30.00	0	Unrestricted	32.04	0.00	0.00	0.00	
B	1	(untitled)	1	1	B	579	3600	32	0.00	58	54	86.22	40.14	86.83	16.98	14
Bx	1	(untitled)				613	Unrestricted	120	16.00	0	Unrestricted	46.08	0.00	0.00	0.00	
C	1	(untitled)	1	1	C	142	3600	7	0.00	59	52	87.89	65.09	104.36	5.00	4.
Cx	1	(untitled)				204	Unrestricted	120	56.00	0	Unrestricted	22.80	0.00	0.00	0.00	
D	1	(untitled)	1	1	D	426	3600	22	0.00	62	46	82.96	48.64	93.35	13.51	11
Dx	1	(untitled)				448	Unrestricted	120	5.00	0	Unrestricted	34.32	0.00	0.00	0.00	

### Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	1125.34	57.92	19.43	18.84	1.57	289.78	19.82	0.00	309.60
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians									
TOTAL	1125.34	57.92	19.43	18.84	1.57	289.78	19.82	0.00	309.60

- < = adjusted flow warning (upstream links/traffic streams are over-saturated)
- \* = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%
- ^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%
- + = average link/traffic stream excess queue is greater than 0
- P.I. = PERFORMANCE INDEX



<b>TRANSYT 15</b>
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**Filename:** Junction 5 - 2025 - PM.t15

**Path:** M:\Projects\18\18-059 - Clongriffin Planning Application\Design\Civil\Traffic Modelling\MODELLING - JULY 2019\Junction 5

**Report generation date:** 13/08/2019 09:39:45

»Network Diagrams

«A1 - 2025 + Generated Trips : D1 - PM\* :

- »Summary
- »Network Options
- »Traffic Nodes
- »Arms and Traffic Streams
- »Local OD Matrix - Local Matrix: 1
- »Signal Timings
- »TRANSYT 12 Tables
- »Results - Link
- »Results - Traffic Stream
- »Data Entry - Stage Start and End
- »Data Entry - Phase
- »Data Entry - Traffic Stream
- »Data entry - Link
- »Results - Pedestrian
- »Traffic Stream Results
- »Network Results
- »Point to Point Journey Time
- »Final Prediction Table

**File summary**

**File description**

<b>File title</b>	(untitled)
<b>Location</b>	
<b>Site number</b>	
<b>UTCRegion</b>	
<b>Driving side</b>	Left
<b>Date</b>	06/12/2011
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	DOMAINf.silva
<b>Description</b>	

### Model and Results

Enable controller offsets	Enable fuel consumption	Enable quick flares	Display journey time results	Display level of service results	Display blocking and starvation results	Display end of red and green queue results	Display excess queue results	Display separate uniform and random results	Display unweighted results	Display TRANSYT 12 style timings	Display effective greens in results	Display Red-With-Amber	Display End-Of-Green Amber
			✓		✓	✓	✓	✓	✓	✓	✓		

### Units

Cost units	Speed units	Distance units	Fuel economy units	Fuel rate units	Mass units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
£	kph	m	mpg	l/h	kg	Veh	Veh	perHour	s	-Hour	perHour

### Sorting

Show names instead of IDs	Sorting direction	Sorting type	Ignore prefixes when sorting	Analysis/demand set sorting	Link grouping	Source grouping	Colour Analysis/Demand Sets
	Ascending	Numerical		ID	Normal	Normal	✓

## Network Diagrams

# A1 - 2025 + Generated Trips

## D1 - PM\*

### Summary

#### Data Errors and Warnings

No errors or warnings

#### Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	13/08/2019 09:39:19	13/08/2019 09:39:20	18:00	120	462.33	30.54	77.03	B/1	0	0	B/1	Dx/1	B/

#### Analysis Set Details

Name	Description	Demand set	Include in report	Locked
2025 + Generated Trips		D1	✓	

#### Demand Set Details

Name	Description	Composite	Demand sets	Start time (HH:mm)	Locked
PM				18:00	

### Network Options

#### Network timings

Network cycle time (s)	Restrict to SCOOT cycle times	Time segment length (min)	Number of time segments	Modelled time period (min)
120		60	1	60

#### Signals options

Start displacement (s)	End displacement (s)
2	3

#### Advanced

Phase minimum broken penalty (£)	Phase maximum broken penalty (£)	Intergreen broken penalty (£)	Starting Red-with-Amber (s)
10000.00	10000.00	10000.00	2

#### Traffic options

Traffic model	Vehicle flow scaling factor (%)	Pedestrian flow scaling factor (%)	Cruise times or speeds
Platoon Dispersion (PDM)	100	100	Cruise Speeds

#### Advanced

Resolution	DOS Threshold (%)	Cruise scaling factor (%)	Use link stop weightings	Use link delay weightings	Exclude pedestrians from results calculation	Random delay mode	Type of Vehicle-in-Service	Type of random parameter	PCU Length (m)	Calculate results for Path Segments	Generate PDM Profile Data
1	100	100	✓	✓		Complex	Uniform (TRANSYT)	Uniform (TRANSYT)	5.75		✓



### Normal Traffic parameters

Dispersion type	Dispersion coefficient	Travel time coefficient
Default	35	80

### Normal Traffic Types

Name	PCU Factor
Normal	1.00

### Bus parameters

Name	PCU Factor	Dispersion type	Acceleration (ms <sup>^-2</sup> )	Stationary time coefficient	Cruise time coefficient
Bus	1.00	Default	0.94	30	85

### Tram parameters

Name	PCU Factor	Dispersion type	Acceleration (ms <sup>^-2</sup> )	Stationary time coefficient	Cruise time coefficient
Tram	1.00	Default	0.94	100	100

### Pedestrian parameters

Dispersion type
Default

### Optimisation options

Enable optimisation	Auto redistribute	Optimisation level	Enable OUT Profile accuracy
✓	✓	Offsets And Green Splits	✓

### Advanced

Optimisation type	Hill climb increments	OUTProfile accuracy	Use enhanced optimisation	Auto optimisation order	Optimisation order	Master controller	Offsets relative to master controller	Master controller offset after each run
Hill Climb (Fast)	15, 40, -1, 15, 40, 1, -1, 1	50, 50, 5, 5, 0.5, 0.5, 0.05, 0.05		✓	1			Do nothing

### Economics

Vehicle Monetary Value Of Delay (£ per PCU-hr)	Vehicle Monetary Value Of Stops (£ per 100 stops)	Pedestrian monetary value of delay (£ per Ped-hr)
14.20	2.60	14.20

## Traffic Nodes

### Traffic Nodes

Traffic node	Name	Description
1	(untitled)	

## Arms and Traffic Streams

### Arms

Arm	Name	Description	Traffic node
A	(untitled)		1
Ax	(untitled)		
B	(untitled)		1
Bx	(untitled)		
C	(untitled)		1
Cx	(untitled)		
D	(untitled)		1
Dx	(untitled)		

### Traffic Streams

Arm	Traffic Stream	Name	Description	Auto length	Length (m)	Has Saturation Flow	Saturation flow source	Saturation flow (PCU/hr)	Is signal controlled	Is give way	Traffic type	Allow Nearside Turn On Red
A	1	(untitled)			267.00	✓	Directly entered	3600	✓		Normal	
Ax	1	(untitled)			267.00						Normal	
B	1	(untitled)			384.00	✓	Directly entered	3600	✓		Normal	
Bx	1	(untitled)			384.00						Normal	
C	1	(untitled)			190.00	✓	Directly entered	3600	✓		Normal	
Cx	1	(untitled)			190.00						Normal	
D	1	(untitled)			286.00	✓	Directly entered	3600	✓		Normal	
Dx	1	(untitled)			286.00						Normal	

### Lanes

Arm	Traffic Stream	Lane	Name	Description
(ALL)	1	(ALL)	(untitled)	

### Modelling

Arm	Traffic Stream	Traffic model	Stop weighting multiplier (%)	Delay weighting multiplier (%)	Assignment Cost Weighting (%)	Exclude from results calculation	Max queue storage (PCU)	Has queue limit	Has degree of saturation limit
(ALL)	1	NetworkDefault	100	100	100		0.00		

### Modelling - Advanced

Arm	Traffic Stream	Initial queue (PCU)	Type of Vehicle-in-Service	Vehicle-in-Service	Type of random parameter	Random parameter	Auto cycle time	Cycle time
(ALL)	1	0.00	NetworkDefault	Not-Included	NetworkDefault	0.50	✓	120

### Normal traffic - Modelling

Arm	Traffic Stream	Stop weighting (%)	Delay weighting (%)
(ALL)	1	100	100

### Normal traffic - Advanced

Arm	Traffic Stream	Dispersion type for Normal Traffic
(ALL)	1	NetworkDefault

### Flows

Arm	Traffic Stream	Total Flow (Veh/hr)	Normal Flow (Veh/hr)
A	1	961	961
Ax	1	822	822
B	1	855	855
Bx	1	851	851
C	1	219	219
Cx	1	296	296
D	1	434	434
Dx	1	500	500

### Signals

Arm	Traffic Stream	Controller stream	Phase	Second phase enabled
A	1	1	A	
B	1	1	B	
C	1	1	C	
D	1	1	D	

### Entry Sources

Arm	Traffic Stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)
A	1	32.04	30.00
B	1	46.08	30.00
C	1	22.80	30.00
D	1	34.32	30.00

### Sources

Arm	Traffic Stream	Source	Source traffic stream	Destination traffic stream	Cruise time for Normal Traffic (s)	Cruise speed for Normal Traffic (kph)	Auto turning radius	Traffic turn style	Turning radius (m)
Ax	1	1	C/1	Ax/1	32.04	30.00	✓	Straight	Straight Movement
Bx	1	1	C/1	Bx/1	46.08	30.00	✓	Offside	82.71
Cx	1	1	A/1	Cx/1	22.80	30.00	✓	Straight	Straight Movement
Dx	1	1	C/1	Dx/1	34.32	30.00	✓	Nearside	43.61
Ax	1	2	B/1	Ax/1	32.04	30.00	✓	Offside	78.75
Bx	1	2	A/1	Bx/1	46.08	30.00	✓	Nearside	42.95
Cx	1	2	B/1	Cx/1	22.80	30.00	✓	Nearside	46.25
Dx	1	2	A/1	Dx/1	34.32	30.00	✓	Offside	78.75
Ax	1	3	D/1	Ax/1	32.04	30.00	✓	Nearside	42.95
Bx	1	3	D/1	Bx/1	46.08	30.00	✓	Straight	Straight Movement
Cx	1	3	D/1	Cx/1	22.80	30.00	✓	Offside	78.75
Dx	1	3	B/1	Dx/1	34.32	30.00	✓	Straight	Straight Movement

## Local OD Matrix - Local Matrix: 1

### Local Matrix Options

OD Matrix	Name	Use for point to point table	Auto calculate	Allocation mode	Allow paths past exit locations	Allow looped paths on arms	Allow looped paths on traffic nodes	Copy flows	Matrix to copy flows from	Limit paths by length	Path length limit multiplier	Limit paths by number	Path number limit
1	(untitled)	✓	✓	Path Equalisation			✓			✓	1.25		

### Normal Input Flows (Veh/hr)

		To			
		1	2	3	4
From	1	0	43	170	6
	2	45	0	140	249
	3	243	122	0	596
	4	8	335	512	0

Bus Input Flows not shown as they are blank.

Tram Input Flows not shown as they are blank.

Pedestrian Input Flows not shown as they are blank.

### Locations

OD Matrix	Location	Name	Entries	Exits	Colour
1	1	(untitled)	C/1	Cx/1	#0000FF
	2	(untitled)	D/1	Dx/1	#FF0000
	3	(untitled)	A/1	Ax/1	#00FF00
	4	(untitled)	B/1	Bx/1	#FFFF00

### Normal Paths and Flows

OD Matrix	Path	Description	From location	To location	Path items	Allocation type	Normal Calculated Flow (Veh/hr)
1	1		1	2	C/1, Dx/1	Normal	43
	2		1	3	C/1, Ax/1	Normal	170
	3		1	4	C/1, Bx/1	Normal	6
	4		2	3	D/1, Ax/1	Normal	140
	5		2	4	D/1, Bx/1	Normal	249
	6		2	1	D/1, Cx/1	Normal	45
	7		3	2	A/1, Dx/1	Normal	122
	8		3	4	A/1, Bx/1	Normal	596
	9		3	1	A/1, Cx/1	Normal	243
	10		4	2	B/1, Dx/1	Normal	335
	11		4	3	B/1, Ax/1	Normal	512
	12		4	1	B/1, Cx/1	Normal	8

## Signal Timings

Network Default: 120s cycle time; 120 steps

### Controller Stream 1

Controller Stream	Name	Description	Use sequence	Cycle time source	Cycle time (s)
1	(untitled)		1	NetworkDefault	120

### Controller Stream 1 - Properties

Controller Stream	Manufacturer name	Type	Model number	(Telephone) Line Number	Site number	Grid reference	Gaining delay type
1	Unspecified						Absolute

### Controller Stream 1 - Optimisation

Controller Stream	Allow offset optimisation	Allow green split optimisation	Optimisation level	Auto redistribute	Enable stage constraint
1	✓	✓	Offsets And Green Splits	✓	

### Phases

Controller Stream	Phase	Name	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	(ALL)	(untitled)	5	50	0	0	Traffic

### Library Stages

Controller Stream	Library Stage	Phases in stage	User stage minimum (s)
1	1	A	1
	2	B	1
	3	C	1
	4	D	1

### Stage Sequences

Controller Stream	Sequence	Name	Multiple cycling	Stage IDs	Stage ends
1	1	(untitled)	Single	1, 3, 2, 4	41, 53, 92, 113
	2	(untitled)	Single	1, 2, 3, 4	0, 25, 50, 75
	3	(untitled)	Single	1, 3, 4, 2	0, 25, 50, 75
	4	(untitled)	Single	1, 2, 4, 3	0, 25, 50, 75
	5	(untitled)	Single	1, 4, 2, 3	0, 25, 50, 75
	6	(untitled)	Single	1, 4, 3, 2	0, 25, 50, 75

### Intergreen Matrix for Controller Stream 1

		To			
		A	B	C	D
From	A		3	3	3
	B	3		3	3
	C	3	3		3
	D	3	3	3	

### Banned Stage transitions for Controller Stream 1

		To			
		1	2	3	4
From	1				
	2				
	3				
	4				

### Interstage Matrix for Controller Stream 1

		To			
		1	2	3	4
From	1	0	3	3	3
	2	3	0	3	3
	3	3	3	0	3
	4	3	3	3	0

### Resultant Stages

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	116	41	45	1	5
	2	✓	3	C	44	53	9	1	5
	3	✓	2	B	56	92	36	1	5
	4	✓	4	D	95	113	18	1	5

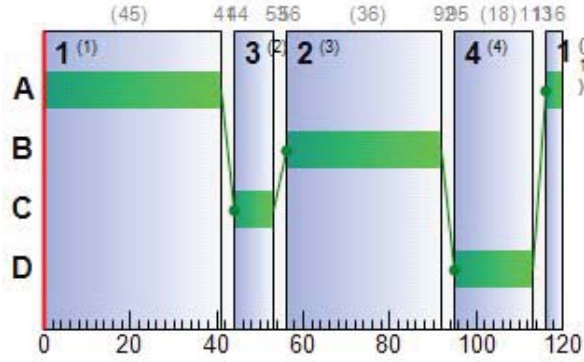
### Resultant Phase Green Periods

Controller Stream	Phase	Green period	Is base green period	Start time (s)	End time (s)	Duration (s)
1	A	1	✓	116	41	45
	B	1	✓	56	92	36
	C	1	✓	44	53	9
	D	1	✓	95	113	18

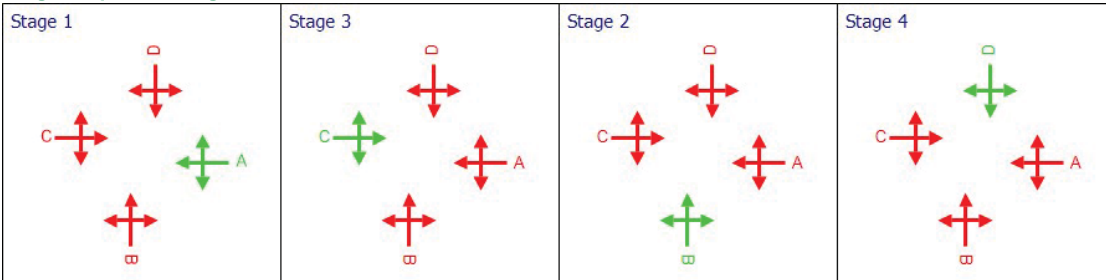
**Traffic Stream Green Times**

Arm	Traffic Stream	Traffic Node	Controller Stream	Phase	Green Period 1		
					Start	End	Duration
A	1	1	1	A	116	41	45
B	1	1	1	B	56	92	36
C	1	1	1	C	44	53	9
D	1	1	1	D	95	113	18

**Phase Timings Diagram for Controller Stream 1**



**Stage Sequence Diagram for Controller Stream 1**



**Resultant penalties**

Time Segment	Controller stream	Phase min max penalty (£ per hr)	Intergreen broken penalty (£ per hr)	Stage constraint broken penalty (£ per hr)	Cost of controller stream penalties (£ per hr)
18:00-19:00	1	0.00	0.00	0.00	0.00

**TRANSYT 12 Tables**

**Resultant Stages**

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	TRANSYT Stage start (s)	TRANSYT Preceding interstage (s)	TRANSYT Stage minimum (s)
1	1	✓	1	A	113	3	8
	2	✓	3	C	41	3	8
	3	✓	2	B	53	3	8
	4	✓	4	D	92	3	8

**Resultant Phase Green Periods**

Controller Stream	Phase	Green period	TRANSYT Starting stage	TRANSYT Ending stage	TRANSYT Start lag (s)	TRANSYT End lag (s)
1	A	1	1	2	3	0
	B	1	3	4	3	0
	C	1	2	3	3	0
	D	1	4	1	3	0

## Stage Timings (TRANSYT 12 timings)

Network Default: 120s cycle time; 120 steps

Controller Stream	Number of Stages	Stage 1	Stage 2	Stage 3	Stage 4
1	4	113	41	53	92

## Results - Link

## Results - Traffic Stream

### Results - Traffic Stream: Vehicle summary

Time Segment	Arm	Traffic Stream	Name	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Calculated capacity (Veh/hr)	Degree of saturation (%)	Practical reserve capacity (%)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	JourneyTime (s)
18:00-19:00	A	1	(untitled)	A	961	3600	45	1380	70	44	34.10	27.49	29.60	66.14
	Ax	1	(untitled)		822	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	32.04
	B	1	(untitled)	B	855	3600	36	1110	77	30	43.00	26.92	20.16	89.08
	Bx	1	(untitled)		851	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	46.08
	C	1	(untitled)	C	219	3600	9	300	73	37	69.27	8.07	12.20	92.07
	Cx	1	(untitled)		296	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	22.80
	D	1	(untitled)	D	434	3600	18	570	76	31	58.13	14.92	15.00	92.45
	Dx	1	(untitled)		500	Unrestricted	120	Unrestricted	0	Unrestricted	0.00	0.00	0.00	34.32

## Data Entry - Stage Start and End

### Resultant Stage

Controller Stream	Resultant Stage	Is base stage	Library Stage ID	Phases in this stage	Stage start (s)	Stage end (s)	Stage duration (s)	User stage minimum (s)	Stage minimum (s)
1	1	✓	1	A	116	41	45	1	5
	2	✓	3	C	44	53	9	1	5
	3	✓	2	B	56	92	36	1	5
	4	✓	4	D	95	113	18	1	5

## Data Entry - Phase

### Phase

Controller Stream	Phase	Phase	Minimum green (s)	Maximum green (s)	Relative start displacement (s)	Relative end displacement (s)	Type
1	A	A	5	50	0	0	Traffic
	B	B	5	50	0	0	Traffic
	C	C	5	50	0	0	Traffic
	D	D	5	50	0	0	Traffic

## Data Entry - Traffic Stream

### Traffic Stream

Arm	Traffic Stream	Auto length	Length (m)	Traffic model	Max queue storage (PCU)	Traffic type	Has Saturation Flow	Is signal controlled	Is give way	Saturation flow source	Saturation flow (PCU/hr)	Delay weighting multiplier (%)	Stop weighting multiplier (%)
A	1		267.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Ax	1		267.00	NetworkDefault	0.00	Normal						100	100
B	1		384.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Bx	1		384.00	NetworkDefault	0.00	Normal						100	100
C	1		190.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Cx	1		190.00	NetworkDefault	0.00	Normal						100	100
D	1		286.00	NetworkDefault	0.00	Normal	✓	✓		Directly entered	3600	100	100
Dx	1		286.00	NetworkDefault	0.00	Normal						100	100

## Data entry - Link

## Results - Pedestrian

## Traffic Stream Results

### Traffic Stream Results: Vehicle summary

Time Segment	Arm	Traffic Stream	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Mean max queue (Veh)	Utilised storage (%)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
18:00-19:00	A	1	70	44	961	3600	45	34.10	27.49	29.60	129.25	10.19	139.44
	Ax	1	0	Unrestricted	822	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	77	30	855	3600	36	43.00	26.92	20.16	145.01	9.99	155.00
	Bx	1	0	Unrestricted	851	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	73	37	219	3600	9	69.27	8.07	12.20	59.84	2.99	62.82
	Cx	1	0	Unrestricted	296	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	76	31	434	3600	18	58.13	14.92	15.00	99.52	5.55	105.07
	Dx	1	0	Unrestricted	500	Unrestricted	120	0.00	0.00	0.00	0.00	0.00	0.00

### Traffic Stream Results: Flows and signals

Time Segment	Arm	Traffic Stream	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Calculated sat flow (Veh/hr)	Calculated capacity (Veh/hr)	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Mean modulus of error	Actual green (s per cycle)	Effective green (per cycle)
18:00-19:00	A	1	961	961	0		3600	1380	70		44	0.00	45	46
	Ax	1	822	822	0		Unrestricted	Unrestricted	0		Unrestricted	0.73	120	12
	B	1	855	855	0		3600	1110	77		30	0.00	36	37
	Bx	1	851	851	0		Unrestricted	Unrestricted	0		Unrestricted	0.68	120	12
	C	1	219	219	0		3600	300	73		37	0.00	9	10
	Cx	1	296	296	0		Unrestricted	Unrestricted	0		Unrestricted	0.83	120	12
	D	1	434	434	0		3600	570	76		31	0.00	18	19
	Dx	1	500	500	0		Unrestricted	Unrestricted	0		Unrestricted	0.61	120	12



**Traffic Stream Results: Stops and delays**

Time Segment	Arm	Traffic Stream	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
18:00-19:00	A	1	32.04	34.10	8.31	0.79	129.25	129.25	84.56	789.01	23.64	10.19	10.19
	Ax	1	32.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	B	1	46.08	43.00	8.94	1.27	145.01	145.01	93.21	759.25	37.71	9.99	9.99
	Bx	1	46.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	C	1	22.80	69.27	3.27	0.95	59.84	59.84	108.83	210.82	27.53	2.99	2.99
	Cx	1	22.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	D	1	34.32	58.13	5.83	1.18	99.52	99.52	101.99	407.89	34.72	5.55	5.55
	Dx	1	34.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Traffic Stream Results: Queues and blocking**

Time Segment	Arm	Traffic Stream	Initial queue (Veh)	Mean max queue (Veh)	Max queue storage (Veh)	Utilised storage (%)	Average storage excess queue (Veh)	Average limit excess queue (Veh)	Excess queue penalty (£ per hr)	Max end of green queue (Veh)	Max end of red queue (Veh)	Wasted time starvation (s (per cycle))	Wasted time blocking back (s (per cycle))	Wasted time total (s (per cycle))	Estimated blocking
18:00-19:00	A	1	0.00	27.49	92.87	29.60	0.00	0.00	0.00	0.79	20.55	0.00	0.00	0.00	
	Ax	1	0.00	0.00	92.87	0.00	0.00	0.00	0.00			27.00	0.00	27.00	
	B	1	0.00	26.92	133.57	20.16	0.00	0.00	0.00	1.27	20.98	0.00	0.00	0.00	
	Bx	1	0.00	0.00	133.57	0.00	0.00	0.00	0.00			15.00	0.00	15.00	
	C	1	0.00	8.07	66.09	12.20	0.00	0.00	0.00	0.95	7.64	0.00	0.00	0.00	
	Cx	1	0.00	0.00	66.09	0.00	0.00	0.00	0.00			44.00	0.00	44.00	
	D	1	0.00	14.92	99.48	15.00	0.00	0.00	0.00	1.18	13.36	0.00	0.00	0.00	
	Dx	1	0.00	0.00	99.48	0.00	0.00	0.00	0.00			0.00	0.00	0.00	

**Traffic Stream Results: Journey times**

Time Segment	Arm	Traffic Stream	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	JourneyTime (s)
18:00-19:00	A	1	256.59	17.65	14.53	66.14
	Ax	1	219.47	7.32	30.00	32.04
	B	1	328.32	21.16	15.52	89.08
	Bx	1	326.78	10.89	30.00	46.08
	C	1	41.61	5.60	7.43	92.07
	Cx	1	56.24	1.87	30.00	22.80
	D	1	124.12	11.15	11.14	92.45
	Dx	1	143.00	4.77	30.00	34.32

**Traffic Stream Results: Advanced**

Time Segment	Arm	Traffic Stream	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	Mean Max Queue EoTS (Veh)	Max End of Green Queue EoTS (Veh)	Max End of Red Queue EoTS (Veh)	PCU Factor	Cost of traffic penalties (£ per hr)	Unweighted performance index (£ per hr)	Performance Index (£ per hr)
18:00-19:00	A	1	0.00	0.00	✓	27.49	0.80	20.55	1.00	0.00	139.44	139.44
	Ax	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	B	1	0.00	0.00	✓	26.93	1.28	20.99	1.00	0.00	155.00	155.00
	Bx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	C	1	0.00	0.00	✓	8.08	0.97	7.66	1.00	0.00	62.82	62.82
	Cx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00
	D	1	0.00	0.00	✓	14.94	1.20	13.37	1.00	0.00	105.07	105.07
	Dx	1	0.00	0.00	✓	0.00			1.00	0.00	0.00	0.00

## Network Results

### Run Summary

Analysis set used	Run start time	Run finish time	Modelling start time (HH:mm)	Network Cycle Time (s)	Performance Index (£ per hr)	Total network delay (Veh-hr/hr)	Highest DOS (%)	Item with highest DOS	Number of oversaturated items	Percentage of oversaturated items (%)	Item with worst signalised PRC	Item with worst unsignalised PRC	Item with worst over PR
1	13/08/2019 09:39:19	13/08/2019 09:39:20	18:00	120	462.33	30.54	77.03	B/1	0	0	B/1	Dx/1	B/

### Network Results: Vehicle summary

Time Segment	Degree of saturation (%)	Practical reserve capacity (%)	Calculated flow entering (Veh/hr)	Actual green (s per cycle)	Mean Delay per Veh (s)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Performance Index (£ per hr)
18:00-19:00	77	30	4938	588	22.26	433.61	28.72	462.33

### Network Results: Flows and signals

Time Segment	Calculated flow entering (Veh/hr)	Calculated flow out (Veh/hr)	Flow discrepancy (Veh/hr)	Adjusted flow warning	Degree of saturation (%)	DOS Threshold exceeded	Practical reserve capacity (%)	Actual green (s per cycle)	Effective green (s per cycle)
18:00-19:00	4938	4938	0		77		30	588	592

### Network Results: Stops and delays

Time Segment	Mean Cruise Time per Veh (s)	Mean Delay per Veh (s)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Unweighted cost of delay (£ per hr)	Weighted cost of delay (£ per hr)	Mean stops per Veh (%)	Uniform stops (Stops per hr)	Random stops (Stops per hr)	Unweighted cost of stops (£ per hr)	Weighted cost of stops (£ per hr)
18:00-19:00	36.36	22.26	26.34	4.19	433.61	433.61	46.39	2166.98	123.60	28.72	28.72

### Network Results: Queues and blocking

Time Segment	Utilised storage (%)	Excess queue penalty (£ per hr)	Wasted time starvation (s per cycle)	Wasted time blocking back (s per cycle)	Wasted time total (s per cycle)
18:00-19:00	29.60	0.00	86.00	0.00	86.00

### Network Results: Journey times

Time Segment	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)
18:00-19:00	1496.14	80.41	18.61

### Network Results: Advanced

Time Segment	Degree of saturation penalty (£ per hr)	Ped gap accepting penalty (£ per hr)	Warmed up	PCU Factor	Cost of traffic penalties (£ per hr)	Controller stream penalties (£ per hr)	Unweighted performance index (£ per hr)	Performance Index (£ per hr)
18:00-19:00	0.00	0.00	✓	1.00	0.00	0.00	462.33	462.33

## Point to Point Journey Time

### Average Journey Time (s) for Local Matrix: 1

		To			
		1	2	3	4
From	1	0.0	126.4	124.1	138.1
	2	115.3	0.0	124.5	138.5
	3	88.9	100.5	0.0	112.2
	4	111.9	123.4	121.1	0.0

### Path Journey Time

Path	From Location	To Location	Normal Calculated Flow (Veh/hr)	Normal journey time (s)	Calculated Total Flow (Veh/hr)	Avg journey time (s)
1	1	2	43	126.39	43	126.39
2	1	3	170	124.11	170	124.11
3	1	4	6	138.15	6	138.15
4	2	3	140	124.49	140	124.49
5	2	4	249	138.53	249	138.53
6	2	1	45	115.25	45	115.25
7	3	2	122	100.46	122	100.46
8	3	4	596	112.22	596	112.22
9	3	1	243	88.94	243	88.94
10	4	2	335	123.40	335	123.40
11	4	3	512	121.12	512	121.12
12	4	1	8	111.88	8	111.88

## Final Prediction Table

### Traffic Stream Results

Arm	Traffic Stream	Name	Traffic node	SIGNALS		FLOWS		PERFORMANCE				PER PCU			QUEUE	
				Controller stream	Phase	Calculated flow entering (Veh/hr)	Calculated sat flow (Veh/hr)	Actual green (s per cycle)	Wasted time total (s per cycle)	Degree of saturation (%)	Practical reserve capacity (%)	JourneyTime (s)	Mean Delay per Veh (s)	Mean stops per Veh (%)	Mean max queue (Veh)	Me of qu (V)
A	1	(untitled)	1	1	A	961	3600	45	0.00	70	44	66.14	34.10	84.56	27.49	20
Ax	1	(untitled)				822	Unrestricted	120	27.00	0	Unrestricted	32.04	0.00	0.00	0.00	
B	1	(untitled)	1	1	B	855	3600	36	0.00	77	30	89.08	43.00	93.21	26.92	20
Bx	1	(untitled)				851	Unrestricted	120	15.00	0	Unrestricted	46.08	0.00	0.00	0.00	
C	1	(untitled)	1	1	C	219	3600	9	0.00	73	37	92.07	69.27	108.83	8.07	7.
Cx	1	(untitled)				296	Unrestricted	120	44.00	0	Unrestricted	22.80	0.00	0.00	0.00	
D	1	(untitled)	1	1	D	434	3600	18	0.00	76	31	92.45	58.13	101.99	14.92	13
Dx	1	(untitled)				500	Unrestricted	120	0.00	0	Unrestricted	34.32	0.00	0.00	0.00	

### Network Results

	Distance travelled (PCU-km/hr)	Time spent (PCU-hr/hr)	Mean journey speed (kph)	Uniform delay (Veh-hr/hr)	Random plus oversat delay (Veh-hr/hr)	Weighted cost of delay (£ per hr)	Weighted cost of stops (£ per hr)	Excess queue penalty (£ per hr)	Performance Index (£ per hr)
Normal traffic	1496.14	80.41	18.61	26.34	4.19	433.61	28.72	0.00	462.33
Bus	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tram	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Pedestrians									
TOTAL	1496.14	80.41	18.61	26.34	4.19	433.61	28.72	0.00	462.33

- < = adjusted flow warning (upstream links/traffic streams are over-saturated)
- \* = Traffic Stream - Normal, Bus or Tram Stop or Delay weighting has been set to a value other than 100%
- ^ = Traffic Stream - Normal, Bus or Tram Stop or Delay Path weighting has been set to a value other than 100%
- + = average link/traffic stream excess queue is greater than 0
- P.I. = PERFORMANCE INDEX



Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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**Filename:** Junction 6 - 2018 - Existing Road Network with Existing Traffic-AM-PM.j9  
**Path:** M:\Projects\18\18-059 - Clongriffin Planning Application\Design\Civil\Traffic Modelling\MODELLING - JULY 2019\Junction 6  
**Report generation date:** 13/08/2019 09:41:46

»2018, AM  
 »2018, PM

**Summary of junction performance**

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
	2018							
Arm 1	1.0	5.65	0.51	A	0.9	5.03	0.48	A
Arm 2	1.6	6.99	0.61	A	3.5	12.43	0.78	B
Arm 3	1.8	5.80	0.65	A	2.2	7.18	0.69	A
Arm 4	1.0	5.73	0.50	A	0.8	4.66	0.43	A

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.*

**File summary**

**File Description**

<b>Title</b>	(untitled)
<b>Location</b>	
<b>Site number</b>	
<b>Date</b>	12/11/2018
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	DOMAINf.silva
<b>Description</b>	

**Units**

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

**Analysis Options**

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D1	2018	AM	FLAT	08:00	09:00	60	✓
D2	2018	PM	FLAT	17:00	18:00	60	✓

### Analysis Set Details

ID	Network flow scaling factor (%)
A1	100.000

# 2018, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	6.05	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
1	untitled	
2	untitled	
3	untitled	
4	untitled	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	6.00	7.00	3.0	21.5	58.3	0.0	
2	5.00	6.00	4.7	20.3	58.3	0.0	
3	7.00	7.00	0.0	16.0	58.3	0.0	
4	6.00	7.32	10.0	23.4	58.3	0.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.679	2176
2	0.625	1873
3	0.700	2316
4	0.708	2333

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D1	2018	AM	FLAT	08:00	09:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		✓	654	100.000
2		✓	806	100.000
3		✓	1133	100.000
4		✓	638	100.000

## Origin-Destination Data

### Demand (Veh/hr)

From	To			
	1	2	3	4
1	0	228	348	78
2	217	0	375	214
3	500	496	0	137
4	118	329	191	0

## Vehicle Mix

### Heavy Vehicle Percentages

From	To			
	1	2	3	4
1	10	10	10	10
2	10	10	10	10
3	10	10	10	10
4	10	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1	0.51	5.65	1.0	A
2	0.61	6.99	1.6	A
3	0.65	5.80	1.8	A
4	0.50	5.73	1.0	A

### Main Results for each time segment

#### 08:00 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	654	1014	1289	0.507	653	1.0	5.649	A
2	806	616	1318	0.612	804	1.6	6.991	A
3	1133	508	1750	0.647	1131	1.8	5.800	A
4	638	1211	1264	0.505	637	1.0	5.735	A

# 2018, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	7.92	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D2	2018	PM	FLAT	17:00	18:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		✓	648	100.000
2		✓	1017	100.000
3		✓	1083	100.000
4		✓	589	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	165	371	112
	2	263	0	376	378
	3	381	434	0	268
	4	114	312	163	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10



## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1	0.48	5.03	0.9	A
2	0.78	12.43	3.5	B
3	0.69	7.18	2.2	A
4	0.43	4.66	0.8	A

### Main Results for each time segment

#### 17:00 - 18:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	648	908	1362	0.476	647	0.9	5.031	A
2	1017	645	1300	0.783	1013	3.5	12.430	B
3	1083	751	1580	0.685	1081	2.2	7.179	A
4	589	1075	1360	0.433	588	0.8	4.662	A

Junctions 9
ARCADY 9 - Roundabout Module
Version: 9.5.0.6896 © Copyright TRL Limited, 2018
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**Filename:** Junction 6 - 2025 -AM-PM.j9

**Path:** M:\Projects\18\18-059 - Clongriffin Planning Application\Design\Civil\Traffic Modelling\MODELLING - JULY 2019\Junction 6

**Report generation date:** 13/08/2019 09:44:47

»2025 + Generated Trips - 2025, AM

»2025 + Generated Trips - 2025, PM

**Summary of junction performance**

	AM				PM			
	Queue (Veh)	Delay (s)	RFC	LOS	Queue (Veh)	Delay (s)	RFC	LOS
2025 + Generated Trips - 2025								
Arm 1	1.5	7.39	0.59	A	1.5	7.38	0.59	A
Arm 2	3.2	11.69	0.76	B	17.3	44.96	0.96	E
Arm 3	2.6	8.17	0.73	A	3.5	11.26	0.78	B
Arm 4	1.9	8.16	0.65	A	2.1	8.26	0.68	A

*Values shown are the highest values encountered over all time segments. Delay is the maximum value of average delay per arriving vehicle.*

**File summary**

**File Description**

<b>Title</b>	(untitled)
<b>Location</b>	
<b>Site number</b>	
<b>Date</b>	12/11/2018
<b>Version</b>	
<b>Status</b>	(new file)
<b>Identifier</b>	
<b>Client</b>	
<b>Jobnumber</b>	
<b>Enumerator</b>	DOMAINf.silva
<b>Description</b>	

**Units**

Distance units	Speed units	Traffic units input	Traffic units results	Flow units	Average delay units	Total delay units	Rate of delay units
m	kph	Veh	Veh	perHour	s	-Min	perMin

**Analysis Options**

Calculate Queue Percentiles	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
		0.85	36.00	20.00

### Demand Set Summary

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D1	2025	AM	FLAT	08:00	09:00	60	✓
D2	2025	PM	FLAT	18:00	19:00	60	✓

### Analysis Set Details

ID	Name	Network flow scaling factor (%)
A1	2025 + Generated Trips	100.000

# 2025 + Generated Trips - 2025, AM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	8.95	A

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Arms

### Arms

Arm	Name	Description
1	untitled	
2	untitled	
3	untitled	
4	untitled	

### Roundabout Geometry

Arm	V - Approach road half-width (m)	E - Entry width (m)	I' - Effective flare length (m)	R - Entry radius (m)	D - Inscribed circle diameter (m)	PHI - Conflict (entry) angle (deg)	Exit only
1	6.00	7.00	3.0	21.5	58.3	0.0	
2	5.00	6.00	4.7	20.3	58.3	0.0	
3	7.00	7.00	0.0	16.0	58.3	0.0	
4	6.00	7.32	10.0	23.4	58.3	0.0	

### Slope / Intercept / Capacity

#### Roundabout Slope and Intercept used in model

Arm	Final slope	Final intercept (PCU/hr)
1	0.679	2176
2	0.625	1873
3	0.700	2316
4	0.708	2333

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

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D1	2025	AM	FLAT	08:00	09:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		✓	709	100.000
2		✓	972	100.000
3		✓	1161	100.000
4		✓	827	100.000

## Origin-Destination Data

### Demand (Veh/hr)

	To				
	1	2	3	4	
From	1	0	228	348	133
	2	217	0	375	380
	3	500	496	0	165
	4	165	455	207	0

## Vehicle Mix

### Heavy Vehicle Percentages

	To				
	1	2	3	4	
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1	0.59	7.39	1.5	A
2	0.76	11.69	3.2	B
3	0.73	8.17	2.6	A
4	0.65	8.16	1.9	A

### Main Results for each time segment

#### 08:00 - 09:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	709	1155	1193	0.594	708	1.5	7.386	A
2	972	687	1274	0.763	969	3.2	11.687	B
3	1161	728	1596	0.727	1158	2.6	8.172	A
4	827	1210	1264	0.654	825	1.9	8.161	A

# 2025 + Generated Trips - 2025, PM

## Data Errors and Warnings

No errors or warnings

## Junction Network

### Junctions

Junction	Name	Junction type	Use circulating lanes	Arm order	Junction Delay (s)	Junction LOS
1	untitled	Standard Roundabout		1, 2, 3, 4	20.08	C

### Junction Network Options

Driving side	Lighting
Left	Normal/unknown

## Traffic Demand

### Demand Set Details

ID	Scenario name	Time Period name	Traffic profile type	Start time (HH:mm)	Finish time (HH:mm)	Time segment length (min)	Single time segment only
D2	2025	PM	FLAT	18:00	19:00	60	✓

Vehicle mix source	PCU Factor for a HV (PCU)
HV Percentages	2.00

### Demand overview (Traffic)

Arm	Linked arm	Use O-D data	Average Demand (Veh/hr)	Scaling Factor (%)
1		✓	708	100.000
2		✓	1196	100.000
3		✓	1107	100.000
4		✓	931	100.000

## Origin-Destination Data

### Demand (Veh/hr)

		To			
		1	2	3	4
From	1	0	165	371	172
	2	263	0	376	557
	3	381	434	0	292
	4	206	537	188	0

## Vehicle Mix

### Heavy Vehicle Percentages

		To			
		1	2	3	4
From	1	10	10	10	10
	2	10	10	10	10
	3	10	10	10	10
	4	10	10	10	10

## Results

### Results Summary for whole modelled period

Arm	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS
1	0.59	7.38	1.5	A
2	0.96	44.96	17.3	E
3	0.78	11.26	3.5	B
4	0.68	8.26	2.1	A

### Main Results for each time segment

#### 18:00 - 19:00

Arm	Total Demand (Veh/hr)	Circulating flow (Veh/hr)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	End queue (Veh)	Delay (s)	Unsignalised level of service
1	708	1156	1193	0.593	707	1.5	7.377	A
2	1196	729	1247	0.959	1179	17.3	44.962	E
3	1107	980	1420	0.780	1104	3.5	11.256	B
4	931	1072	1362	0.683	929	2.1	8.265	A