

HIGHWAYS STATEMENT
FOR PROPOSED
COMMERCIAL DEVELOPMENT ACCESS
AT
BEECHES FARM
TRING
HERTFORDSHIRE

10th July 2023
First Issue

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Revisions

Rev.	Date	Description
-	10/7/23	First Issue.

1.0 Introduction

1.1 This Highways Statement has been produced in support of a planning application for a new access at Beeches Farm, Tring in Hertfordshire.

2.0 Development Location & Description

2.1 The site is located approximately 1.3km to the west of Tring's High Street and 350m to the east of the A41/B4009/B488 junction. Access to the existing development is from the B488 Icknield Way, which forms the site's southern boundary.

2.2 The existing development comprises of an existing dwelling, offices and commercial buildings. Planning permission (Ref. 22/02399/APP) was recently granted for the demolition of the existing commercial buildings and replacement with office/business buildings.

2.3 It is now proposed that the existing access will be retained for sole usage by the existing dwelling and a new access formed approximately 80m to the east of the existing access for use by the commercial development.

3.0 Existing Highway Conditions

3.1 The site is located adjacent to and is accessed from Icknield Way (B488). The site access lies adjacent to a point where the highway speed limit changes between 50mph (to the east) and national speed limits (to the west). The 50mph speed limit has recently been extended to the application site's access as part of the works associated with the Roman Park residential development opposite, reflecting its built-up nature.

3.2 The road width is approximately 7m with grass verges on both sides. Access to the site is located on the inside of a slow bend on Icknield Way close to the crest of a hog curve in the road. Forward visibility is good for the speed limit applied to the road. The road is otherwise rural in character and there is no street lighting in the vicinity of the site.

3.3 The existing access is located on the northern side of Icknield Way in the form of a concrete bellmouth. The width of the access is approximately 4.5m. Visibility is approximately 2.4m x 110m to the west and approximately 2.4m x 130m to the east.

3.4 A speed survey on Icknield Way was carried out between 19th and 25th February 2018 with ATCs placed at the locations shown on the drawing presented in Appendix 1. This was prior to the extension of the 50mph speed limit and at the time national speed limits applied on both approaches to the site access. 85th percentile speeds of 44.8mph (eastbound) and 47.6mph (westbound) were recorded. The speed survey results are presented in Appendix 2.

4.0 Development Proposals

4.1 It is proposed that the existing access will be retained for sole usage by the existing dwelling and a new access formed approximately 80m to the east of the existing access for use by the commercial development. Photographs of the proposed development location are presented below.



Looking eastwards with location of new access on the left



Looking westwards with location of new access on the right

4.2 Calculations presented in Appendix 3 show that, in accordance with the recorded 85th percentile speeds, a visibility splay of 2.4m x 125.1m is required to the east of the access and 2.4m x 104.3m to the west. These have been plotted on the proposed access drawing in Appendix 1 which shows that the splays can be accommodated within the existing highway boundary.

4.3 A swept path analysis is shown on the proposed access drawing which demonstrates that the access can accommodate a refuse vehicle which is the largest vehicle currently entering the site.

4.4 An analysis of the trip generation from the site is presented in Appendix 4 in the form of extracts from the approved Transport Statement for planning permission 22/02399/APP. This shows that the existing permitted use comprising of commercial warehouse and office use generates 39 to 40 peak hour vehicle movements.

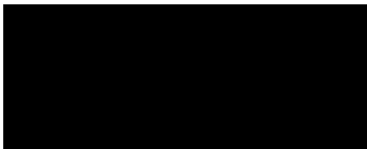
4.5 Should planning permission 22/02399/APP be implemented and the site converted to office development, the site would generate 53 to 54 peak hour vehicle movements.

5.0 Conclusions

5.1 The proposed access will have adequate geometry to accommodate HGV movement.

5.2 The traffic using the proposed access will range between 39 and 54 peak hour vehicle movements depending upon which permitted development will be used.

5.3 The existing access will be for the sole use of the existing dwelling.



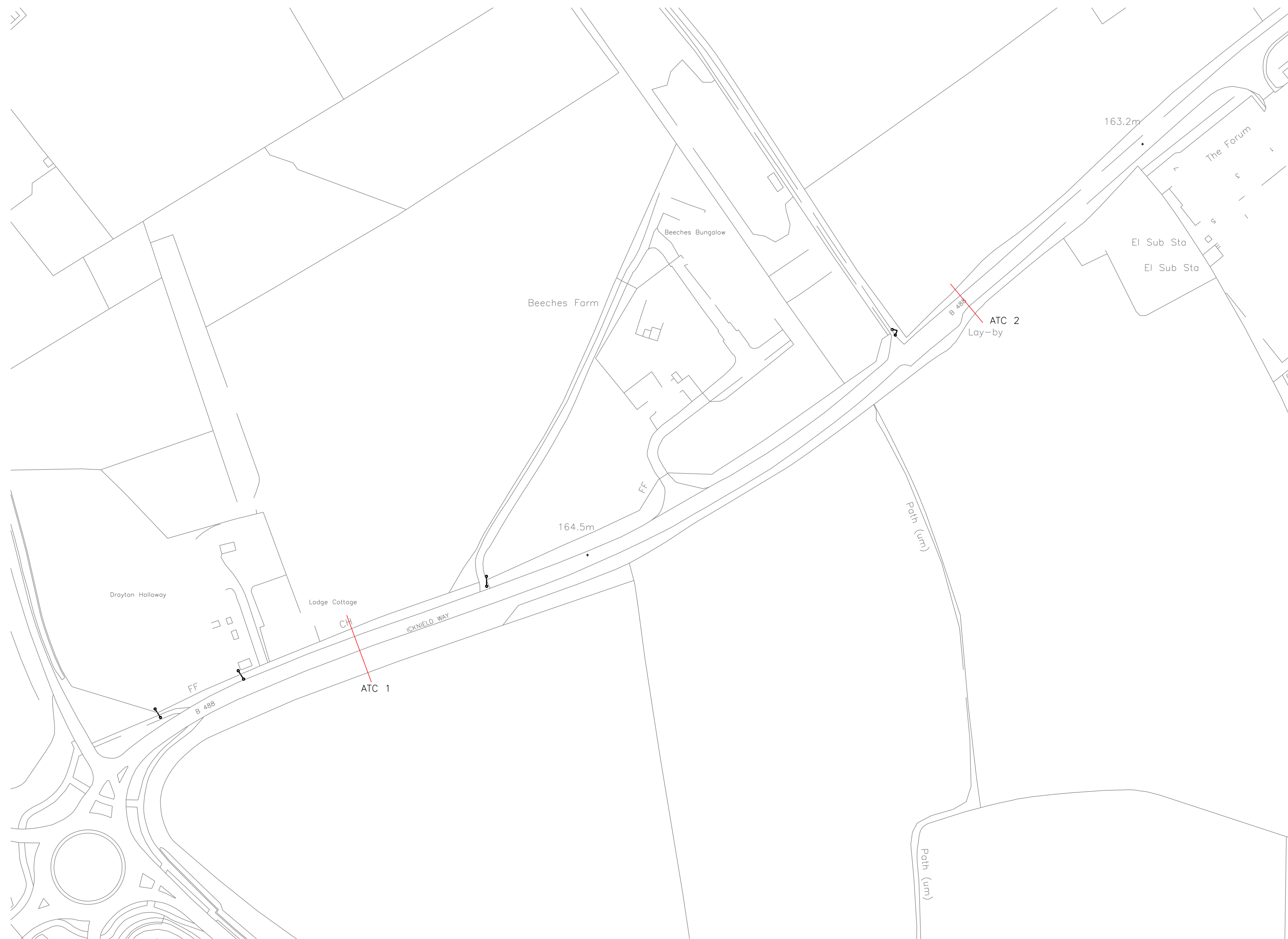
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10th July 2023

Ian Brazier BEng (Hons) CEng MICE

On behalf of Abington Consulting Engineers

APPENDIX 1 – Drawings

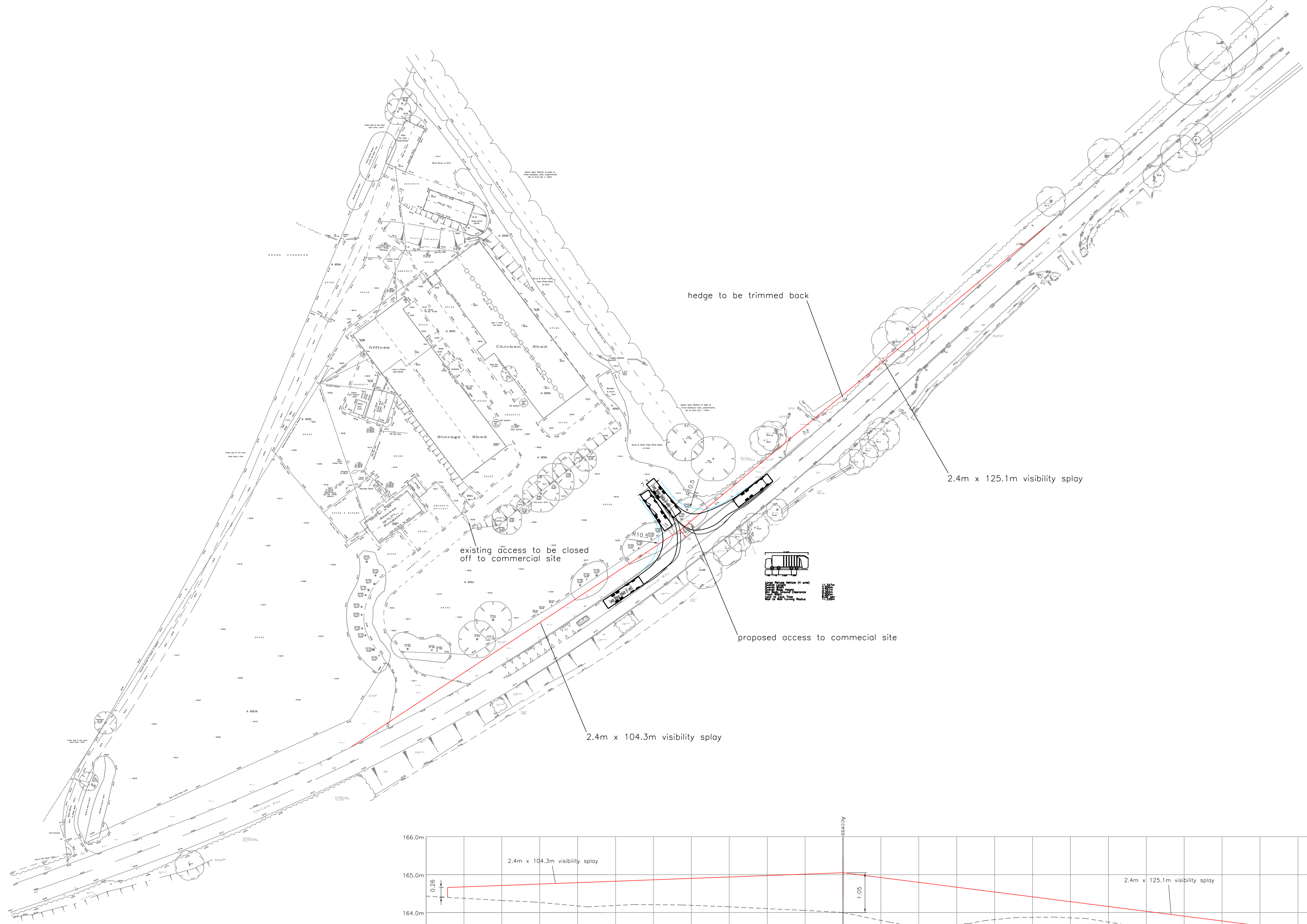


REV.	BY	REVISION DETAILS	DATE

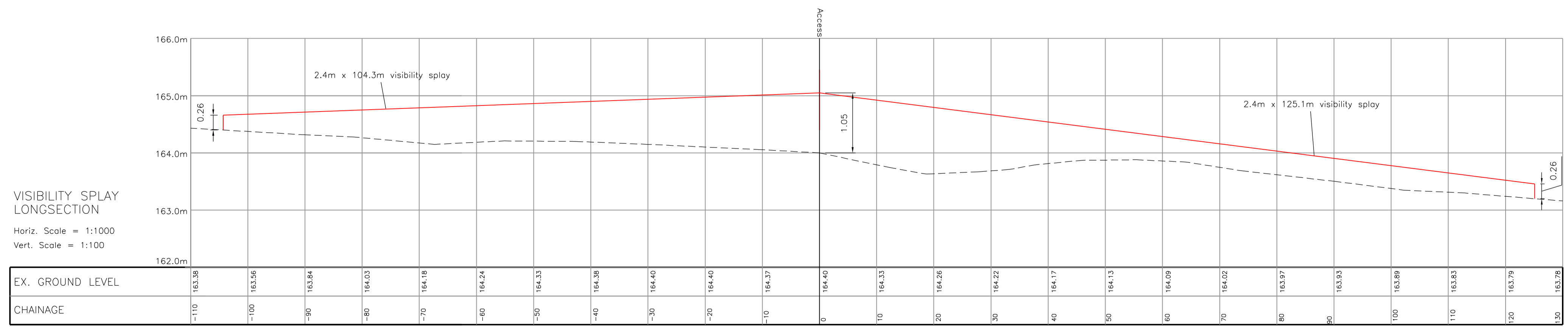
ABINGTON
 CONSULTING ENGINEERS
 CHARTERED CIVIL ENGINEERS

4 Colchester Lane, Haverhill, Northampton, MA 01034 Tel: 01804 702461
 118@abingtoncivil.co.uk www.abingtoncivil.co.uk

PROJECT	Beeches Farm, Tring		
TITLE	Speed Survey Location Plan		
DRAWING NO.	18010/101	REVISION	-
SCALE	1:1000	© A1	
DRAWN	EJB	CHECKED	IB
		DATE	9/2/18



VISIBILITY SPLAY LONGSECTION
 Horiz. Scale = 1:1000
 Vert. Scale = 1:100



REV. BY REVISION DETAILS DATE

ABINGTON
 CONSULTING ENGINEERS
 CHARTERED CIVIL ENGINEERS

4 Colindale Ave, Hendon, London, NW9 6EQ Tel: 01844 702461
 246@abington.co.uk www.abington.co.uk

PROJECT: Beeches Farm, Tring

TITLE: Development Access Proposals

DRAWING NO. 23031/101 REVISION -

SCALE 1:500 @ A1
 DRAWN EJB CHECKED IB DATE 10/7/23

APPENDIX 2 – Speed Survey

Tring ATC 1, Icknield Way (Western Site)

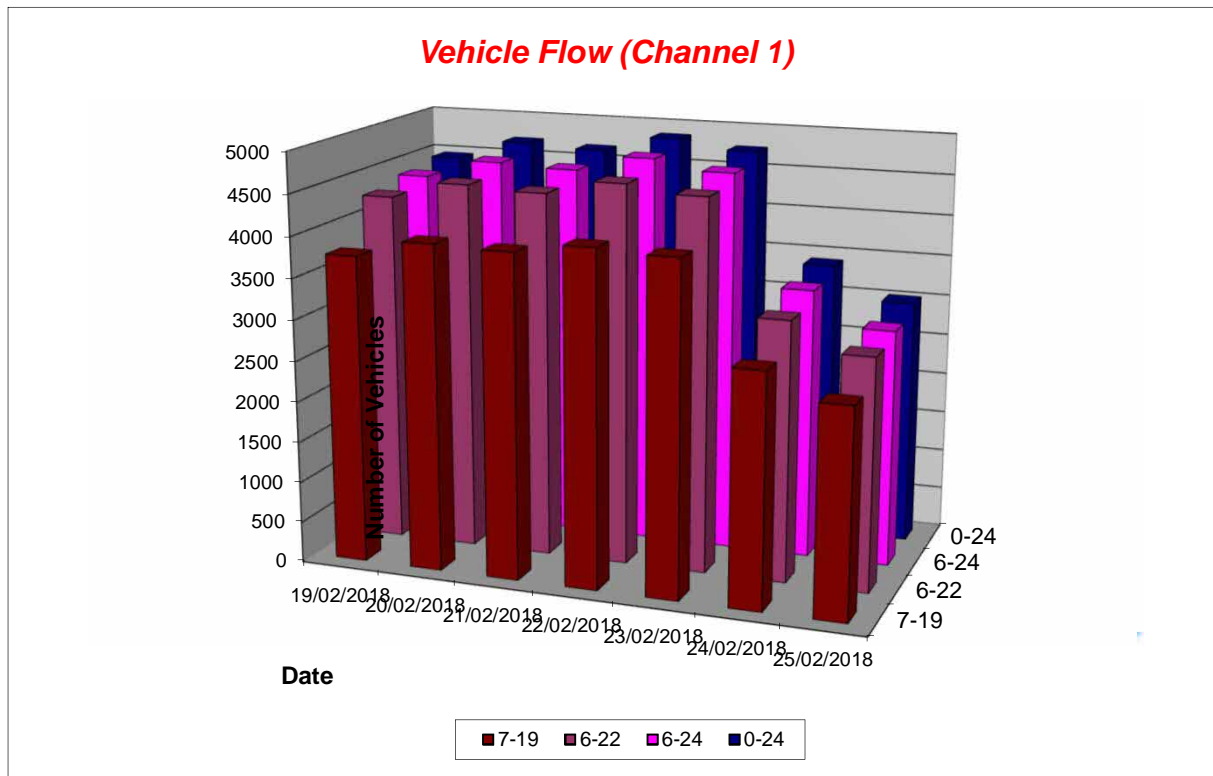
Produced by PCC Traffic Information Consultancy Ltd.

Channel 1 - Eastbound

Vehicle Flow

Week 1

Hr Ending	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday	5 Day Ave	7 Day Ave
1	12	15	16	12	19	17	41	15	19
2	5	3	11	6	12	18	24	7	11
3	7	7	2	2	7	11	15	5	7
4	7	10	7	10	11	16	12	9	10
5	16	15	18	17	15	9	10	16	14
6	34	49	38	45	39	22	12	41	34
7	117	112	103	113	94	33	21	108	85
8	295	296	313	302	274	73	33	296	227
9	349	327	369	370	345	134	67	352	280
10	272	256	274	267	287	173	150	271	240
11	224	210	214	229	230	238	213	221	223
12	218	234	195	237	238	281	254	224	237
13	244	278	222	250	275	327	308	254	272
14	281	303	262	311	315	360	312	294	306
15	274	278	286	289	324	311	288	290	293
16	323	367	358	386	428	263	265	372	341
17	414	461	515	512	475	247	244	475	410
18	503	538	524	522	477	239	236	513	434
19	362	426	416	397	364	191	165	393	332
20	186	214	193	189	190	140	125	194	177
21	122	113	122	158	133	91	98	130	120
22	104	84	89	97	90	76	56	93	85
23	61	75	78	89	69	75	43	74	70
24	32	37	41	51	43	59	24	41	41
7-19	3759	3974	3948	4072	4032	2837	2535	3957	3594
6-22	4288	4497	4455	4629	4539	3177	2835	4482	4060
6-24	4381	4609	4574	4769	4651	3311	2902	4597	4171
0-24	4462	4708	4666	4861	4754	3404	3016	4690	4267



Tring ATC 1, Icknield Way (Western Site)

Produced by PCC Traffic Information Consultancy Ltd.

Channel 1 - Eastbound

Average Speed

Week 1

Hr Ending	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday
1	40.9	44.5	38.9	40.5	38.9	40.4	41.0
2	36.0	41.3	36.2	36.3	39.2	38.8	38.6
3	40.1	38.7	40.5	45.5	37.3	37.5	40.5
4	39.4	38.0	39.4	37.5	40.3	41.4	42.2
5	37.4	42.0	36.9	38.6	37.0	39.1	41.0
6	42.7	40.8	41.6	42.1	41.9	40.5	40.1
7	38.8	39.6	38.3	38.6	39.8	40.3	41.6
8	38.6	38.6	39.7	39.6	39.1	39.0	42.1
9	37.7	38.3	38.9	39.2	39.3	40.9	42.9
10	37.0	38.6	38.8	37.9	39.6	39.1	40.6
11	38.0	38.1	37.7	37.8	38.4	39.2	39.8
12	38.1	37.9	38.1	37.0	38.5	39.1	40.1
13	37.9	38.6	37.7	37.9	39.0	40.5	39.6
14	38.2	39.0	38.7	39.1	39.5	39.5	39.6
15	38.8	38.9	37.8	39.6	38.6	40.4	39.6
16	38.2	39.0	37.9	39.1	39.5	40.5	39.7
17	38.2	38.9	39.9	37.6	38.9	41.1	40.2
18	38.3	39.5	39.2	39.5	40.1	39.5	39.5
19	39.0	39.3	39.4	40.2	39.1	40.1	41.7
20	39.6	40.2	39.8	41.2	40.9	40.4	40.2
21	40.3	40.5	42.3	40.2	40.5	40.3	40.7
22	40.1	39.2	40.4	40.7	39.2	40.2	42.4
23	41.2	40.8	41.1	41.4	41.6	38.9	40.7
24	40.4	41.9	40.2	39.2	42.0	37.4	41.5

10-12	38.1	38.0	37.9	37.4	38.4	39.1	39.9
14-16	38.5	39.0	37.9	39.3	39.1	40.5	39.6
0-24	38.5	39.1	39.0	39.1	39.4	39.9	40.2

Average	39.3
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Channel 1 - Eastbound

85th Percentile

Hr Ending	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday
1	48.7	58.6	54.0	48.7	43.9	48.7	48.2
2	43.5	48.3	43.4	43.9	43.7	48.9	48.5
3	48.6	43.3	43.3	48.8	43.5	43.5	48.3
4	53.3	43.8	53.2	43.0	53.4	48.1	48.3
5	43.3	43.8	38.2	43.5	43.1	43.8	48.0
6	48.8	48.6	48.6	48.9	48.8	48.4	48.5
7	43.0	44.0	48.4	43.4	48.5	48.5	48.2
8	43.8	43.9	43.4	48.7	43.8	43.5	48.9
9	43.8	43.2	43.7	43.5	43.6	48.2	48.6
10	43.7	43.7	43.3	43.5	43.8	43.3	48.8
11	43.0	44.0	43.6	43.5	43.0	43.1	43.9
12	43.4	43.2	43.2	43.4	43.2	43.6	48.3
13	43.9	43.5	43.2	43.4	48.1	48.2	48.5
14	43.8	43.1	43.6	43.3	48.1	43.9	43.1
15	43.4	44.0	43.1	43.1	43.3	43.1	43.6
16	44.0	43.7	43.5	43.2	43.1	48.4	43.4
17	43.9	43.0	43.9	44.0	43.0	48.3	49.0
18	43.1	43.6	43.3	48.1	48.5	48.9	43.1
19	48.9	43.1	43.8	48.4	48.7	48.8	48.9
20	43.4	48.1	48.4	48.4	48.5	48.3	43.6
21	48.5	48.8	53.3	48.5	43.8	48.7	48.3
22	48.8	43.3	48.9	48.2	48.1	48.3	53.1
23	48.1	48.0	53.6	48.5	48.2	43.1	43.5
24	48.6	48.3	48.6	43.3	48.7	43.0	48.2

10-12	43.5	43.4	43.4	43.6	43.5	48.3	49.0
14-16	43.3	43.3	43.1	43.5	43.4	48.8	43.1
0-24	43.6	43.9	43.6	43.2	43.1	48.3	48.0

85th %ile	44.8
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Tring ATC 1, Icknield Way (Western Site)

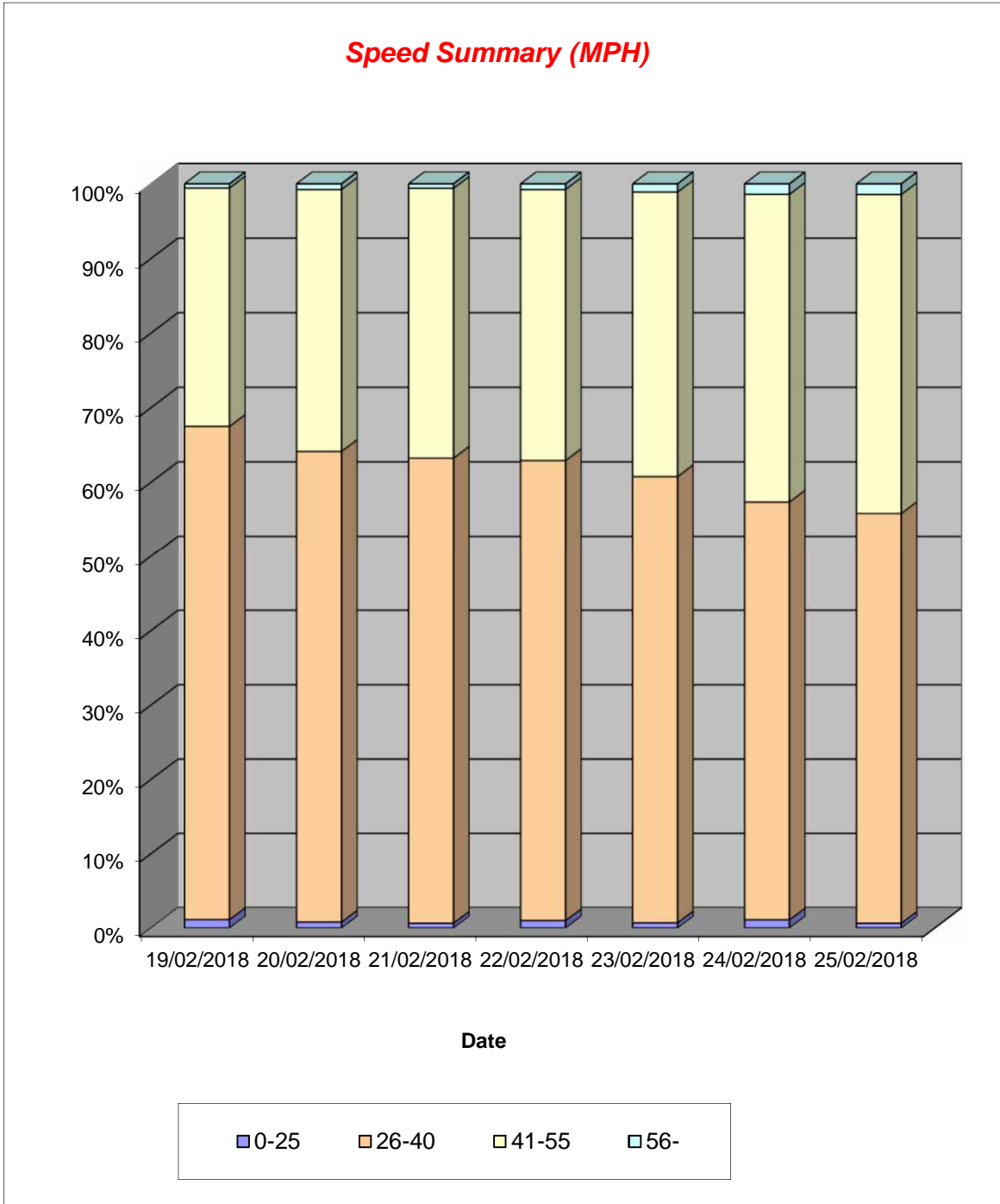
Produced by PCC Traffic Information Consultancy Ltd.

Channel 1 - Eastbound

Speed Summary

Week 1

Speed (MPH)	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday
0-25	50	37	30	48	33	37	19
26-40	2961	2982	2920	3010	2855	1915	1664
41-55	1426	1653	1688	1766	1814	1404	1290
56-	25	36	28	37	52	48	43
TOTAL	4462	4708	4666	4861	4754	3404	3016





Tring ATC 1, Icknield Way (Western Site)

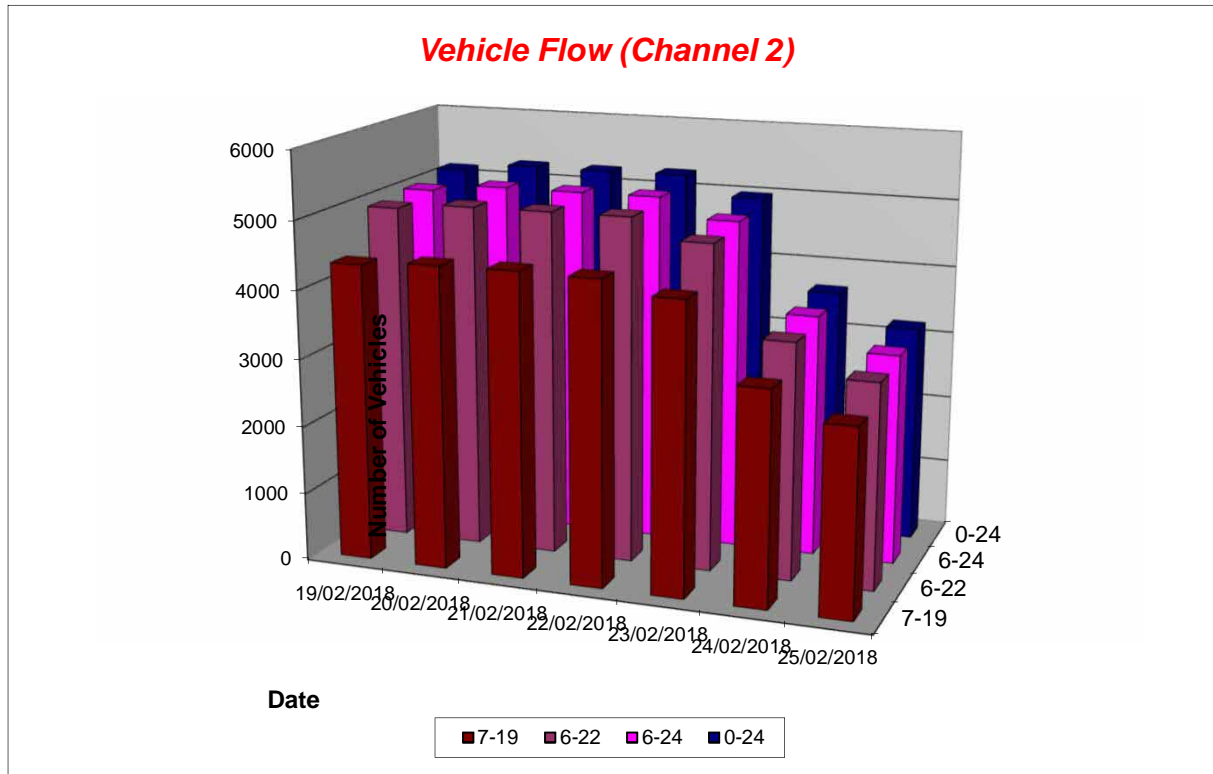
Produced by PCC Traffic Information Consultancy Ltd.

Channel 2 - Westbound

Vehicle Flow

Week 1

Hr Ending	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday	5 Day Ave	7 Day Ave
1	12	13	5	13	17	17	29	12	15
2	6	2	9	7	6	8	20	6	8
3	7	10	10	6	5	8	15	8	9
4	3	9	3	7	9	11	10	6	7
5	28	21	30	30	29	14	14	28	24
6	67	69	60	63	57	20	11	63	50
7	260	266	274	299	230	61	40	266	204
8	651	646	648	615	554	155	56	623	475
9	564	647	599	542	525	207	94	575	454
10	396	423	436	402	371	285	186	406	357
11	262	266	299	247	304	312	278	276	281
12	249	246	275	252	296	316	265	264	271
13	259	295	278	286	282	242	323	280	281
14	251	300	250	277	295	259	297	275	276
15	303	261	283	293	319	280	296	292	291
16	306	278	285	342	294	310	255	301	296
17	332	336	329	391	334	321	268	344	330
18	489	463	480	457	391	248	241	456	396
19	299	272	287	329	284	196	174	294	263
20	179	178	198	167	152	139	97	175	159
21	101	97	68	95	82	83	81	89	87
22	53	69	64	67	58	64	69	62	63
23	40	54	63	51	46	49	55	51	51
24	23	31	14	26	41	40	25	27	29
7-19	4361	4433	4449	4433	4249	3131	2733	4385	3970
6-22	4954	5043	5053	5061	4771	3478	3020	4976	4483
6-24	5017	5128	5130	5138	4858	3567	3100	5054	4563
0-24	5140	5252	5247	5264	4981	3645	3199	5177	4675



Tring ATC 1, Icknield Way (Western Site)

Produced by PCC Traffic Information Consultancy Ltd.

Channel 2 - Westbound

Average Speed

Week 1

Hr Ending	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday
1	40.5	38.0	43.0	37.2	37.7	38.3	37.7
2	36.3	33.0	38.6	38.7	38.0	34.2	40.1
3	38.7	37.5	42.0	43.8	46.0	43.0	40.7
4	44.7	39.7	39.7	39.4	41.3	44.4	42.8
5	38.4	39.2	39.6	41.0	40.1	42.6	40.1
6	38.4	41.0	40.2	42.0	39.5	43.2	42.1
7	37.0	36.9	38.7	37.7	38.4	40.7	42.1
8	33.8	33.5	36.0	35.2	36.2	40.9	41.7
9	30.9	28.7	34.8	35.9	36.9	41.0	41.3
10	35.9	36.9	37.5	37.0	39.0	39.1	41.0
11	38.1	37.8	36.6	37.7	37.4	39.2	40.6
12	37.4	38.0	37.0	37.4	38.4	39.6	39.6
13	37.4	38.0	38.2	38.4	38.4	39.6	39.7
14	36.6	38.1	37.3	38.1	38.6	39.6	39.5
15	37.6	37.7	37.4	38.8	37.6	39.3	39.1
16	37.1	38.7	38.4	37.3	37.9	39.3	38.8
17	37.6	38.4	37.5	36.0	38.4	38.8	38.2
18	36.1	36.2	36.4	36.1	38.7	38.7	37.9
19	35.9	36.2	36.9	36.8	37.0	37.6	37.8
20	36.3	37.0	37.5	37.8	38.7	37.1	38.3
21	37.8	38.2	39.7	39.5	39.0	39.9	38.9
22	41.5	36.8	38.5	38.5	38.4	37.3	39.1
23	37.2	37.3	37.4	39.4	38.8	36.0	38.8
24	37.3	38.5	37.3	38.8	39.5	37.8	38.0

10-12	37.8	37.9	36.8	37.5	37.9	39.4	40.1
14-16	37.3	38.2	37.9	38.0	37.7	39.3	39.0
0-24	35.9	35.9	37.0	37.1	37.9	39.2	39.4

Average	37.5
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Channel 2 - Westbound

85th Percentile

Hr Ending	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday
1	48.3	48.3	43.7	43.6	43.2	48.6	43.8
2	43.5	38.3	43.5	53.3	48.2	38.8	48.3
3	48.9	43.2	53.6	58.1	58.3	48.5	43.7
4	48.5	53.5	48.2	48.2	53.8	53.2	48.4
5	48.4	43.2	48.5	48.1	48.1	53.9	43.8
6	43.8	48.6	48.7	48.4	43.5	43.4	48.7
7	43.8	43.4	43.8	44.0	43.8	48.3	48.4
8	43.7	43.9	43.4	43.5	43.8	48.8	48.1
9	38.7	38.5	43.9	43.5	43.3	48.2	48.4
10	44.0	43.2	43.7	44.0	44.0	43.4	48.3
11	43.3	43.7	43.1	43.2	43.8	43.2	43.7
12	43.5	43.7	43.6	43.4	43.7	43.9	43.3
13	43.4	43.6	43.7	43.4	43.9	43.6	43.8
14	43.7	43.8	43.0	43.3	43.9	43.4	43.2
15	43.2	43.2	43.4	43.5	43.4	43.4	43.6
16	43.4	43.8	43.4	43.1	43.1	43.9	44.0
17	43.5	43.2	43.3	43.5	44.0	43.6	43.2
18	38.8	44.0	44.0	44.0	43.8	43.9	43.9
19	43.5	43.1	43.8	43.6	43.7	43.5	43.1
20	43.4	43.1	43.7	43.9	43.4	43.3	44.0
21	43.5	43.8	43.4	43.7	43.0	48.9	43.6
22	48.2	43.4	48.7	43.4	43.2	43.3	48.6
23	43.6	43.5	48.3	43.7	43.2	43.3	43.9
24	43.5	48.1	38.4	43.1	43.5	43.2	43.6

10-12	43.7	43.1	43.4	43.8	43.4	43.3	43.2
14-16	43.9	43.2	43.9	43.7	43.1	43.0	43.9
0-24	43.4	43.0	43.1	43.5	43.3	43.7	43.1

85th %ile	43.3
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Tring ATC 1, Icknield Way (Western Site)

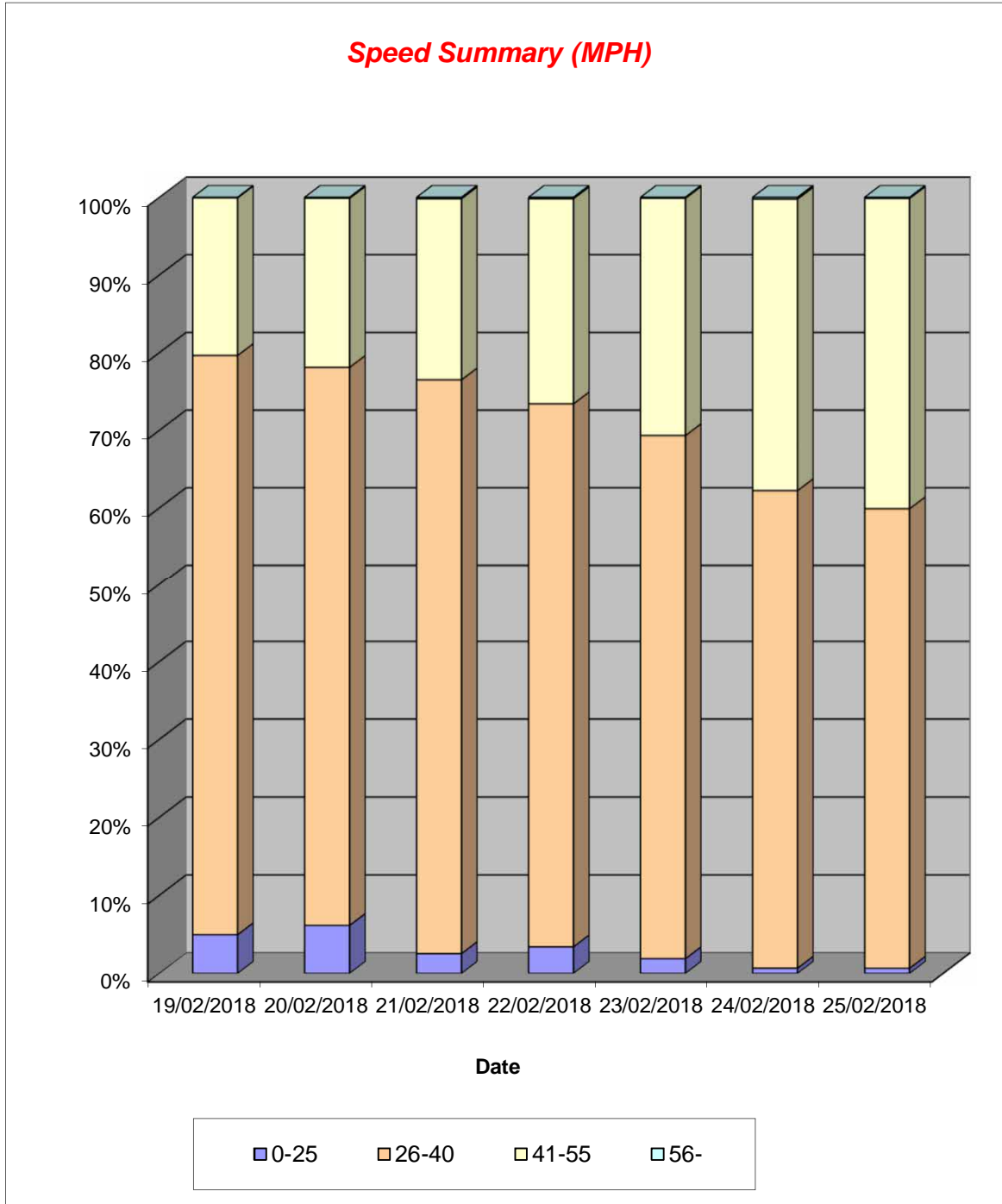
Produced by PCC Traffic Information Consultancy Ltd.

Channel 2 - Westbound

Speed Summary

Week 1

Speed (MPH)	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday
0-25	255	323	133	179	94	24	21
26-40	3839	3780	3882	3686	3360	2245	1896
41-55	1043	1143	1223	1390	1521	1368	1278
56-	3	6	9	9	6	8	4
TOTAL	5140	5252	5247	5264	4981	3645	3199



Tring ATC 1, Icknield Way (Western Site)

Produced by PCC Traffic Information Consultancy Ltd.



Tring ATC 2, Icknield Way (Eastern Site)

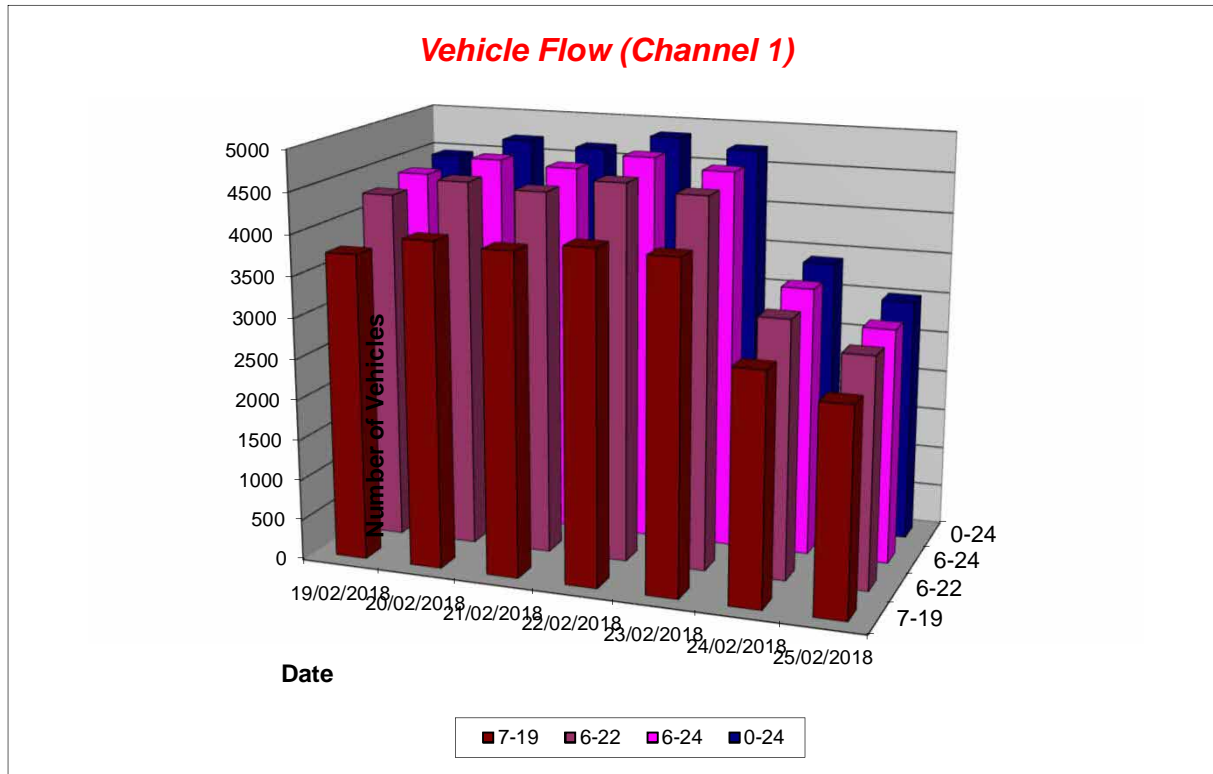
Produced by PCC Traffic Information Consultancy Ltd.

Channel 1 - Eastbound

Vehicle Flow

Week 1

Hr Ending	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday	5 Day Ave	7 Day Ave
1	11	14	17	13	18	18	41	15	19
2	5	3	11	7	12	19	21	8	11
3	7	7	2	2	7	11	15	5	7
4	7	10	6	10	11	16	12	9	10
5	14	13	20	16	15	9	10	16	14
6	34	46	36	46	38	22	12	40	33
7	117	110	100	109	92	33	21	106	83
8	276	308	301	294	268	71	33	289	222
9	357	353	378	372	348	134	67	362	287
10	266	236	292	273	281	168	147	270	238
11	215	207	218	214	229	241	218	217	220
12	229	228	191	230	238	284	249	223	236
13	234	273	219	249	283	321	308	252	270
14	279	293	262	321	314	353	308	294	304
15	273	277	280	288	319	307	282	287	289
16	327	367	361	379	419	261	264	371	340
17	414	461	500	526	463	250	244	473	408
18	508	553	527	510	485	240	242	517	438
19	377	429	410	390	367	192	163	395	333
20	188	216	198	199	194	145	127	199	181
21	126	110	121	163	134	90	98	131	120
22	103	85	90	97	93	78	57	94	86
23	62	73	78	91	70	77	43	75	71
24	32	37	42	52	44	60	25	41	42
7-19	3755	3985	3939	4046	4014	2822	2525	3948	3584
6-22	4289	4506	4448	4614	4527	3168	2828	4477	4054
6-24	4383	4616	4568	4757	4641	3305	2896	4593	4167
0-24	4461	4709	4660	4851	4742	3400	3007	4685	4261



Tring ATC 2, Icknield Way (Eastern Site)

Produced by PCC Traffic Information Consultancy Ltd.

Channel 1 - Eastbound

Average Speed

Week 1

Hr Ending	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday
1	47.3	43.7	42.9	46.1	44.2	46.2	44.4
2	38.0	48.8	38.9	43.0	43.2	44.7	44.7
3	42.3	41.6	53.0	48.0	40.1	44.8	44.0
4	46.9	41.5	44.7	44.2	44.6	47.2	46.8
5	42.6	42.6	43.2	44.6	41.7	43.0	42.5
6	45.9	44.1	47.1	47.7	45.3	44.9	45.9
7	42.8	42.9	42.9	42.9	44.2	44.4	45.6
8	40.7	41.3	42.1	42.2	41.5	43.1	44.7
9	40.5	40.7	41.3	41.1	41.4	44.6	44.8
10	40.0	40.4	41.2	40.9	41.5	42.4	44.1
11	41.0	40.0	39.8	40.9	40.8	42.7	42.9
12	40.8	40.6	40.8	40.0	41.2	41.8	43.2
13	40.5	41.5	40.4	39.9	41.5	43.5	42.1
14	39.4	41.0	40.7	41.0	40.9	42.4	42.7
15	41.6	39.7	39.8	41.3	41.0	42.8	41.9
16	40.6	40.5	40.8	41.7	41.3	42.3	42.9
17	40.1	40.8	41.7	39.8	40.4	42.7	42.8
18	40.0	40.3	41.5	41.7	41.7	42.1	42.4
19	40.6	41.3	41.9	42.4	41.6	42.9	44.5
20	41.5	42.4	42.6	43.2	44.1	44.5	43.8
21	43.2	42.6	45.9	43.8	44.2	44.6	44.4
22	43.3	42.2	44.6	43.7	42.1	42.3	47.0
23	43.8	43.3	45.3	43.8	45.4	42.6	44.7
24	43.8	45.2	44.7	42.9	45.4	41.2	45.8

10-12	40.9	40.3	40.3	40.5	41.0	42.2	43.1
14-16	41.1	40.2	40.3	41.5	41.2	42.6	42.4
0-24	40.8	41.0	41.6	41.5	41.7	42.9	43.2

Average	41.8
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Channel 1 - Eastbound

85th Percentile

Hr Ending	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday
1	53.7	53.6	54.0	58.7	53.9	53.7	53.2
2	48.5	65.8	48.4	48.9	53.7	66.4	53.5
3	53.6	43.3	53.3	53.8	43.5	53.5	53.3
4	65.8	43.8	48.2	53.0	53.4	53.1	58.3
5	53.3	48.8	43.3	53.5	43.1	48.8	53.0
6	53.8	53.6	53.6	53.9	53.8	53.4	53.5
7	48.0	49.0	48.4	48.4	48.5	53.5	58.2
8	48.8	48.9	48.4	48.7	48.8	53.5	53.9
9	43.8	48.2	48.7	48.5	48.6	53.2	53.6
10	43.7	48.7	48.3	48.5	48.8	48.3	48.8
11	48.0	44.0	48.6	48.5	48.0	48.1	48.9
12	48.4	43.2	48.2	48.4	48.2	48.6	48.3
13	48.9	48.5	48.2	43.4	48.1	48.2	48.5
14	48.8	48.1	48.6	48.3	48.1	48.9	48.1
15	48.4	49.0	48.1	48.1	48.3	48.1	48.6
16	49.0	48.7	48.5	48.2	48.1	48.4	48.4
17	48.9	48.0	48.9	49.0	48.0	48.3	49.0
18	48.1	43.6	48.3	48.1	48.5	48.9	48.1
19	48.9	48.1	48.8	48.4	48.7	48.8	53.9
20	48.4	48.1	48.4	48.4	48.5	53.3	48.6
21	48.5	48.8	53.3	48.5	48.8	53.7	53.3
22	48.8	48.3	53.9	53.2	48.1	48.3	58.1
23	53.1	53.0	53.6	53.5	53.2	48.1	53.5
24	48.6	53.3	53.6	48.3	53.7	48.0	53.2

10-12	48.5	43.4	48.4	48.6	48.5	48.3	49.0
14-16	48.3	48.3	48.1	48.5	48.4	48.8	48.1
0-24	48.6	48.9	48.6	48.2	48.1	48.3	48.0

85th %ile	48.4
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Tring ATC 2, Icknield Way (Eastern Site)

Produced by PCC Traffic Information Consultancy Ltd.

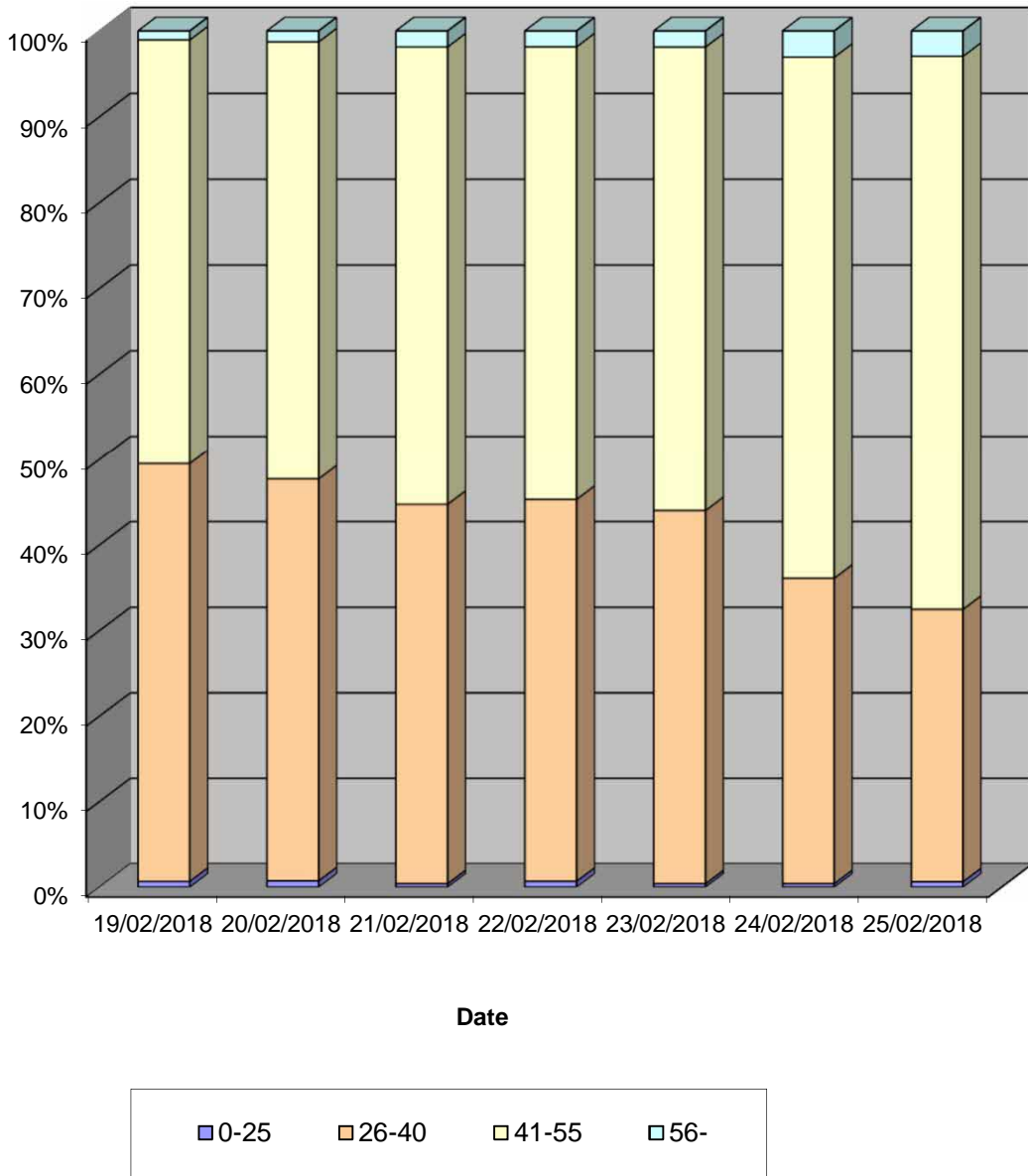
Channel 1 - Eastbound

Speed Summary

Week 1

Speed (MPH)	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday
0-25	30	35	19	33	19	14	19
26-40	2179	2212	2066	2165	2068	1214	958
41-55	2205	2402	2488	2563	2566	2068	1941
56-	47	60	87	90	89	104	89
TOTAL	4461	4709	4660	4851	4742	3400	3007

Speed Summary (MPH)





Tring ATC 2, Icknield Way (Eastern Site)

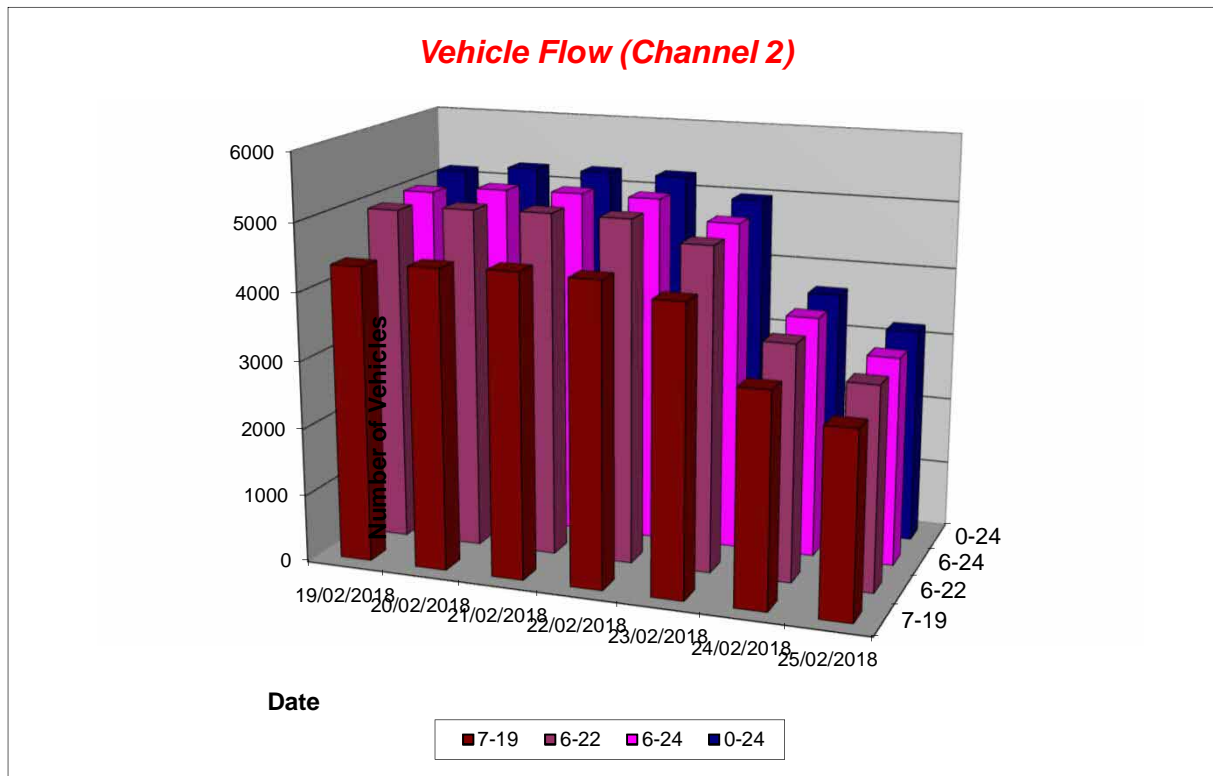
Produced by PCC Traffic Information Consultancy Ltd.

Channel 2 - Westbound

Vehicle Flow

Week 1

Hr Ending	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday	5 Day Ave	7 Day Ave
1	13	14	6	12	18	17	29	13	16
2	7	2	9	6	7	9	20	6	9
3	7	11	10	6	6	7	15	8	9
4	3	9	4	7	8	11	10	6	7
5	27	21	28	30	29	14	14	27	23
6	67	71	60	63	57	20	12	64	50
7	256	266	271	298	240	60	39	266	204
8	665	649	646	621	556	154	56	627	478
9	567	631	604	544	508	205	94	571	450
10	397	439	422	391	377	288	187	405	357
11	259	261	287	252	306	314	277	273	279
12	249	257	277	255	294	315	268	266	274
13	266	290	285	281	272	247	324	279	281
14	245	305	253	268	282	267	295	271	274
15	307	263	288	293	329	277	296	296	293
16	304	281	286	351	294	316	251	303	298
17	321	336	337	385	347	310	272	345	330
18	489	448	481	467	387	252	235	454	394
19	295	267	301	338	289	196	177	298	266
20	177	177	195	162	151	136	94	172	156
21	103	96	68	89	81	84	82	87	86
22	54	68	61	66	57	62	67	61	62
23	40	56	64	50	45	49	55	51	51
24	23	30	15	26	40	40	24	27	28
7-19	4364	4427	4467	4446	4241	3141	2732	4389	3974
6-22	4954	5034	5062	5061	4770	3483	3014	4976	4483
6-24	5017	5120	5141	5137	4855	3572	3093	5054	4562
0-24	5141	5248	5258	5261	4980	3650	3193	5178	4676



Tring ATC 2, Icknield Way (Eastern Site)

Produced by PCC Traffic Information Consultancy Ltd.

Channel 2 - Westbound

Average Speed

Week 1

Hr Ending	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday
1	46.7	42.8	47.2	41.8	42.7	45.2	41.1
2	43.0	33.0	42.4	47.6	43.7	41.3	44.2
3	47.6	40.3	48.2	45.5	48.0	43.7	44.3
4	49.7	47.2	45.5	43.0	45.2	48.9	48.2
5	43.4	43.4	46.7	46.4	46.6	48.5	43.4
6	43.5	45.2	44.1	46.5	44.7	49.4	45.5
7	41.9	41.8	43.9	42.3	43.5	44.5	44.9
8	39.8	40.0	40.7	40.5	40.4	44.2	44.4
9	39.9	39.4	40.5	41.3	40.3	44.0	44.2
10	38.9	39.5	41.0	39.7	40.9	41.7	43.4
11	40.8	40.6	39.0	39.9	39.0	41.2	43.2
12	39.9	40.3	40.0	39.6	40.5	41.8	42.2
13	39.7	41.1	39.9	39.9	40.0	42.8	42.1
14	39.2	40.4	38.6	40.1	40.4	42.4	41.9
15	39.5	39.4	40.2	41.1	40.3	42.3	41.2
16	39.8	40.6	40.9	39.8	39.7	41.6	41.6
17	40.1	40.6	40.1	39.4	39.7	41.5	41.6
18	38.2	39.0	38.5	39.0	40.6	42.5	41.7
19	38.9	39.3	40.4	40.4	40.8	42.5	42.2
20	39.4	39.9	41.4	41.1	42.4	41.5	42.7
21	41.2	41.7	44.1	43.3	42.7	44.2	43.9
22	45.0	40.5	42.8	43.3	43.0	40.9	44.3
23	40.6	41.5	41.5	41.4	42.9	39.9	43.8
24	39.8	42.1	44.7	43.2	43.1	42.8	43.3

10-12	40.4	40.5	39.5	39.8	39.8	41.5	42.7
14-16	39.6	40.0	40.5	40.4	40.0	41.9	41.4
0-24	39.9	40.2	40.5	40.5	40.7	42.3	42.4

Average	40.9
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Channel 2 - Westbound

85th Percentile

Hr Ending	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday
1	53.3	53.3	58.7	48.6	53.2	48.6	48.8
2	53.5	38.3	48.5	65.8	53.2	53.8	48.3
3	66.4	58.2	53.6	58.1	58.3	53.5	53.7
4	53.5	58.5	53.2	53.2	58.8	53.2	58.4
5	48.4	53.2	58.5	53.1	58.1	58.9	48.8
6	53.8	53.6	53.7	53.4	48.5	53.4	53.7
7	48.8	48.4	48.8	49.0	48.8	53.3	53.4
8	43.7	43.9	43.4	48.5	43.8	48.8	53.1
9	43.7	43.5	48.9	48.5	48.3	53.2	48.4
10	44.0	43.2	48.7	44.0	49.0	48.4	48.3
11	48.3	48.7	43.1	48.2	43.8	48.2	48.7
12	43.5	43.7	48.6	43.4	48.7	48.9	48.3
13	43.4	48.6	43.7	48.4	48.9	48.6	48.8
14	48.7	48.8	43.0	48.3	48.9	48.4	48.2
15	48.2	43.2	48.4	48.5	48.4	48.4	48.6
16	43.4	48.8	48.4	48.1	43.1	48.9	49.0
17	43.5	43.2	48.3	43.5	49.0	48.6	48.2
18	43.8	44.0	44.0	49.0	43.8	48.9	48.9
19	43.5	43.1	48.8	43.6	48.7	48.5	48.1
20	48.4	48.1	48.7	48.9	48.4	48.3	49.0
21	48.5	48.8	53.4	48.7	48.0	53.9	48.6
22	48.2	48.4	53.7	53.4	48.2	48.3	53.6
23	43.6	48.5	48.3	48.7	53.2	48.3	53.9
24	48.5	53.1	48.4	48.1	48.5	48.2	53.6

10-12	43.7	43.1	43.4	48.8	43.4	48.3	48.2
14-16	43.9	43.2	48.9	48.7	48.1	48.0	48.9
0-24	43.4	48.0	48.1	48.5	48.3	48.7	48.1

85th %ile	47.6
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Tring ATC 2, Icknield Way (Eastern Site)

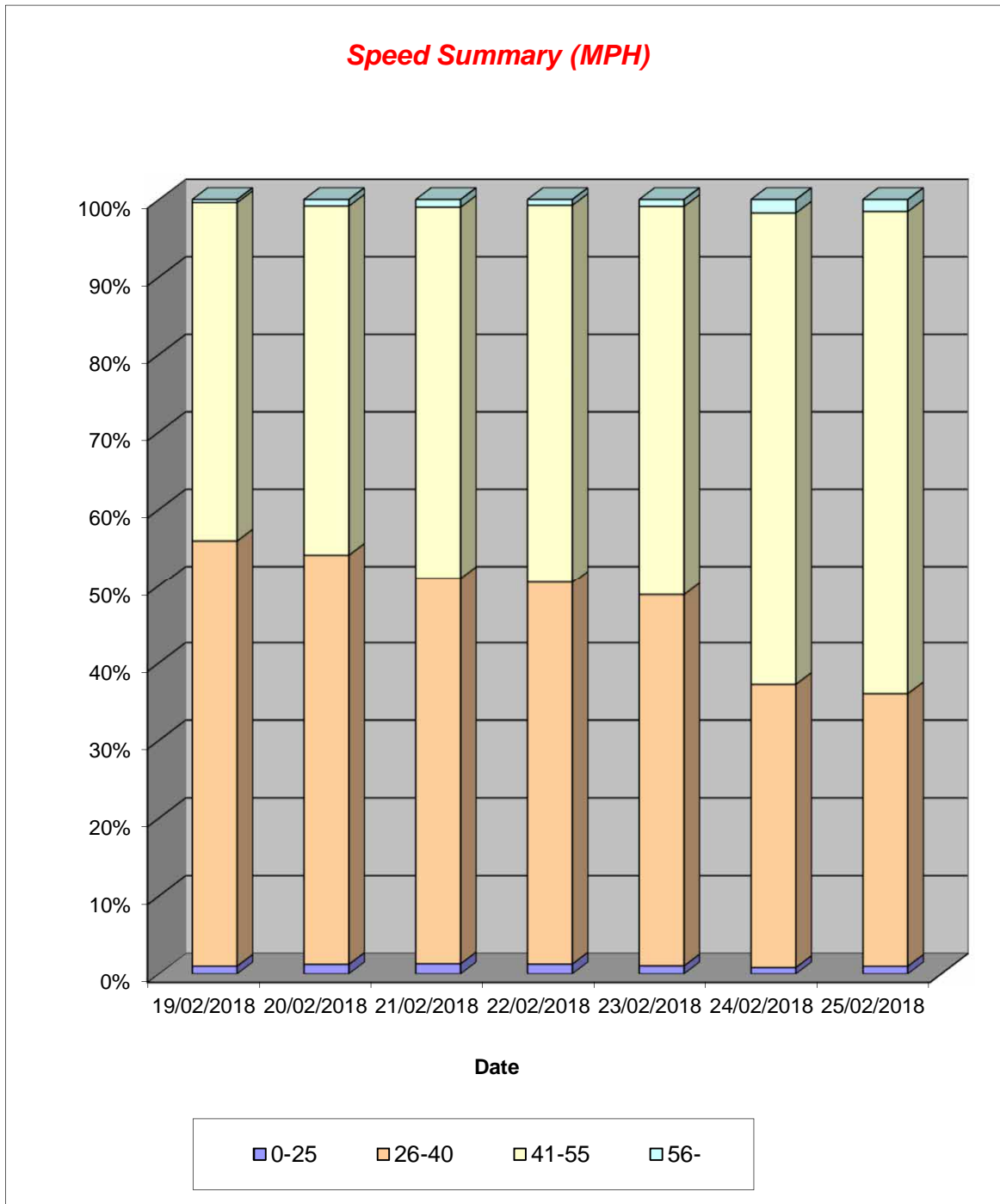
Produced by PCC Traffic Information Consultancy Ltd.

Channel 2 - Westbound

Speed Summary

Week 1

Speed (MPH)	19/02/2018 Monday	20/02/2018 Tuesday	21/02/2018 Wednesday	22/02/2018 Thursday	23/02/2018 Friday	24/02/2018 Saturday	25/02/2018 Sunday
0-25	51	64	68	66	51	30	31
26-40	2825	2775	2617	2589	2381	1329	1119
41-55	2245	2365	2521	2567	2504	2228	1994
56-	20	44	52	39	44	63	49
TOTAL	5141	5248	5258	5261	4980	3650	3193



Tring ATC 2, Icknield Way (Eastern Site)

Produced by PCC Traffic Information Consultancy Ltd.



APPENDIX 3 - Calculations

ICKNEILD WAY, TRING – VISIBILITY SPLAY CALCULATIONS

Speed Survey Results

85th percentile speeds:

Eastbound 44.8 mph

Westbound 47.6 mph

85th Percentile Wet Weather Speeds

Eastbound = $[(44.8 - 2.49) \times 1.6093 \times 1000] / (60 \times 60) = 18.91 \text{ m/s}$

Westbound = $[(47.6 - 2.49) \times 1.6093 \times 1000] / (60 \times 60) = 20.17 \text{ m/s}$

Gradients

Eastbound = $100 \times (162.70 - 161.88) / 24.0 = 3.4\%$

Westbound = $100 \times (163.81 - 163.75) / 29.5 = 0.2\%$

Stopping Sight Distances

Eastbound = $18.91 \times 2 + [18.91^2 / 2(2.45 + 0.1 \times 3.4)] = 101.9\text{m}$

Westbound = $20.17 \times 2 + [20.17^2 / 2(2.45 + 0.1 \times 0.2)] = 122.7\text{m}$

Visibility Splay Y Distances

Eastbound = $101.9 + 2.4 = 104.3\text{m}$

Westbound = $122.7 + 2.4 = 125.1\text{m}$

APPENDIX 4 – Trip Generation

@ ; < 16 / #) .. 1 + - 6 :) < 176

*52 B @ - 3 = . ? A - 3 + ; 6 A 3 - ? @ A ? . 4 2 D . @ 2 4 B 9 ? 6 @ V F . # D B 9 2 C 2 9 < = : 2 ; A
2 ? A 6 1 0 A 2 6 ;) 2 = A 2 : / 2 ? # ; 6 @ @ 6 ; 4 A 5 2 # . D B 9 2 C 2 < = 2 ; A 2 A 6 6 0 . A 2
A 5 2 ' 9 . ; ; 6 ; 4 B A 5 < 7 A F 0 2 = A 2 1 A 5 A A 5 ? 2 . 6 ; 1 2 ? < 3 + 6 A D @ < 3 3 6 2 E @ : - 5 9 @
; < A 6 = 9 2 2 ; A 2 1 A 5 2 B @ < 3 : < 3 + 6 A D @ = = ? < C 2 1 B 1 2 ? 9 . @ @ 3 ? 3 2 E 6 / 9 2
0 < : : 2 7 0 6 9 2 & +

* 5 2 A ? 6 - 4 2 ? . A 6 ; 4 = A 2 ; A 6 . 9 < 3 5 2 E 6 @ 6 ; 4 = 2 ? 6 A 2 1 B @ < 3 5 2 @ A 2 5 . @ 5 2 2 3 < 7 2 2 ;
2 @ 6 . A 2 1 < A 5 7 . @ @ < 3 < 3 0 : : 2 ? 0 6 9 @ A ? . 4 2 @ . @ . ; 1 : < 3 3 6 2 @ . 0 2 * 5 2
2 @ 6 . A 2 2 9 @ ; 2 0 6 1 2 ; 0 2 = ? < 6 1 2 1 B A 5 6 A 2 * () A ? 6 = ? . A 2 1 A / . @ . 1 . A / . @ < 3 < 2 ?
A ? ; @ - 2 A @ 3 ? C 7 @ 3 C ? 6 < B 0 F = 2 @ 1 2 C @ = : 2 A

*52 3 < 9 9 D 6 4 3 @ A 2 6 4 7 A 2 7 5 C 2 2 2 . = \$ 2 1 A < ? ? @ . A @ : - 2 3 1 A / . @ @ B C F @ < :
0 < : = . ? / 2 @ 2 @

- o # . ; 1 + @ : = 9 F : 2 ; A < : : 2 7 6 9 - . ? 5 - B @ 4 . ; 1 : = 9 F : 2 A & 3 6 0 2
- o) B ? 2 F @ < 0 A 2 1 6 ; : 6 ; 9 . ; 1 7 A . 6 2 0 B 6 4 ? 2 . A 2 7 # < ; 1 <
- o - 2 2 8 1 . F @ 7 C F @
- o * < D ; 0 2 A ? 2 ; 1 2 1 4 < 3 A < D @ A ? 2 @ A 2 @ E 0 B 2 1

*52 * () < B A = B A @ ? < 6 2 1 6 ; 1 2 A 6 9 6 = = 2 ; 1 6 E 1 ; 1 @ B : . . 7 @ 1 2 9 - D
) \$ % + " \$ \$ ' %

) \$ %

*52 * () 1 . A @ 3 4 2 @ 5 . A A 5 - 2 : 6 A 2 1 B @ < 3 A 2 6 A 2 D 6 9 4 2 ? . A 2 @ : 2 A 2 8
5 < B ? 2 5 6 @ 2 < C 2 : 2 ; A @

	# : 1 8 !) < - 8 : 5	# 1 8 -	6 - :) < 1 7 6 7 . 5		
# 1 5 - !) 6 / -	: : 1 > 4 ; - 8) : < = : - ; # 7 <)	4 : : 1 >)	4 ; - 9 : < = :	- ; # 7 < 4	

) * 4 % 0 1 + 4 # 1 8 - 6 :) < 1 7 6 ; < 1 5 < B 7 5 - : + 1 4 &) : - 0 7 = ; -

	# : 1 8 !) < - 8 : 5	# 1 8 -	6 - :) < 1 7 6 7 . 5		
# 1 5 - !) 6 / -	: : 1 > 4 ; - 8) : < = : - ; # 7 <)	4 : : 1 >)	4 ; - 9 : < = :	- ; # 7 < 4	

) * 4 % 0 1 + 4 # : 1 8 6 :) < 1 7 6 ; < 1 5 < - B . 1 + -

# 1 5 - !) 6 / - : :	1 > 4 - 9 :	< = : - ; # 7 < 4	

= ? 2 ; A ? 6 5 : 2 6 0 2 ? ? @ B @ 1 F ? < B ; 1 6 ; 4 -
) * 4 % 0 1 + 4 # : 1 8 6 :) < 1 7 6 ; < 1 5 < - B # 7) 4

' 212@A6 ; 002@@

'21 2 @A?6.; 002@@A-A52@A6 @5.A52B/963<A= A5A A? <@@ @5@A *52?<BA2<3A52
=B/ 903<A= A5D9 92B?2 1C2? @<; A< 00< :<1. A2 A 52=?=<@1/ B916; 4 @) .30<@@4
=<6 A@B 92=? <612D52 2 A52? <A20<@@ @52 @A2N@; A?. 9<1.; 1092?@4;. 42<3A52
3<A. A5N@BA2D9 92?<G121 A6 @; @221A5.AA52>B96A3A52=B/903<A A5)?<@4
A52 @AD9 92B =?C 21. @ ?2@BA<A52 129= 2;A

* 76=2 2?. A6<

+@ ; 4A52<3602A6=? A@12 A63616; A522G-B05.=A2?A6 @A6: .A215A52122 9<: 2A
D@2; 2?.A2@< 2A <25602 <2: 2;A@B 6; 4A 52:<?; 6;4 ; 12C;6 ; 4=2 85<B?@
?2 @20A@2F

#5 -!) 6/ -	#: B!) <-8: 5		# 18-	6-:) <1 767. 5		
	: :1> 4;- 8	) : <=: -; ;#7<)	4: :1>	4;-9: <=:	- ;#7<4	

#) * 4 %01 +4-#:18 6:)< 176;<19 <-B. .1+ -

*52 =?<=<@112C29<=: 2;A3. 99 @A5 9. @3A52 *<D. ; ; 1<B A'F' 9. ; ; 6; 4+@
9. @2 @?2 ? . @:2; 1219A5<B 45A526A; A6<; 6 @5 A5 12C2=<2 A23<33602
B@2A23<4@B; 4@2@ ?2.9@<? 6A21B ;129. @@

. 6 @9F ??A. @ @2<34<1 @A5275. ; 5<A<4

/) .9233<1 ;1?6; 8<?0<; @ <A6<; <@9F <; A52=2 : 6@@

0 ' ?<@6<; 3

o0 66 .; 69 @?C6@2 @

o0 66 ?<3@ <.9 @20602@A527A5. ;52.9A5? 216. 9 @?@6@2@<?

o0 668A52=?<=?6 A2 @?@2@. 0<: 2?6 9 B@; 2 @2?@26029<0. 96AF

o1 ;1<?@<?A20?2A6; <?36A2 @<A6G<9C6;4 <A6 @ 12560 2 @?
352. ? . @?B@. @ @6 :6; 4 < 9<?@. A 46; 8

2 ' ?<@6<; 3:216.9 ?52 9A5@20602@B2-A52B@<3=?2:6@@AA 0521A-A5 2
?2 @12; 02<3A50<; @9A ;A?=? 06A6<;2

3 ? 2521 .F; B? @F<?1. F02;A2; A6; 09B164. ? @12 A6 9B@2

4 + @ @ 6050 ; /20.??621 <B6; . 2 @12; A6 9 ? D6A5<B1 2?6 2; AA6A@:2; 6F

o4 688362 @ <?F<A; F<?2? A6; . 9<. 1:6; 6@A? .A6C3B; 0A6; @

o4 66 2@75 . ; 112C29<=: 2 A<3?<1 B0A@?=? <02 @@@

o4 66 ; B@6 9=?<12@@@

A6 @; @12?21A5.AA5A?6<2; 22.A< 2 @A6 .A=?<C62 1./ <C2<C? @A52<33602AF=2B@ @
12 @7 21B 12?9 @@ ; 146 3?A52?. @@ @2; A3A2A76=42; 2?. A6<<3A2
=<@ @ 9.9A?; . A62B@ @<2? 6AA 21B A5 ;+@. @ @. @9 @/22 B; 12 A 8;

* 52 A=60 9=2 85<B A?642? A6<;? .A @3A5 @C. 6-B@ 9A?;. A6C29; 1B@Q Q 22;</ A. 6 21
3<; A2*() 1 A./ . @ ;. 90 @ @) @?CF @5 C2/ 22, 96: 6A21A<@A2 @A 12;
: ; 1 : 639<?. ? .==?<E6: .A2F H3A5=?<= <@12C29<; 2; A & 9F
@2 @0. A216; .: 6 9; ?6A.6; 10B16 4?2 A2#< 1<; .; 1BA@612-3A<D;02;A2 @?
2142<3A@D 02;A?2 @ C2/ 22; 0<; @612?21 - 52?21A . 6@C 69 / 9D22821=2 5<B?
? .A @ C2. 9@? 22 </ A.6; 21

*52 *() 1. A 3-?A52.9A2?. A6C29@ 26; 9B12D6A5 =2; 16E ;16 @B : . ?6 @16
A52399D6 ;4A./92

##!) \$!&+ &\$ &(%%%

4); ; \$;-	#! ') 6, \$;-	-) 37= : #: B!)<-8- : 5		
		) 5	85	& -- 3-6,
. (2A6 9	%<; 3<1 @B=2?@?2			
/). 9<3<?683<? 0<; @B: =A<; :<@A9F; A52 =2: @ @	(2 @A B? ; A			
04688 62	& 362	%< A. C	. @. / 9	2
1 ; 1<?) =<?A 20?2A<; <? 3A 2 @ @	6A2 @ @ B '? 6CA2	%	<.A. C.	69./ 92
2 \$ 10 . 9<2.9A52 ? @ @ @	') B? 42?62@	%< A.	C.69. /	92
3 ? ? 1. F; B? @ ? F<? 1.F 02; A2	%B? @ ? F	%< A.	. C 69.	/ 92
46662 @. 75; 1 12C29= : 2; A3<?1B0A@? =9 02 @ ; B@A?69 202 @ @	; 1B@A 9; 6A	%< A.	C.69. /	92

*() .A. < A6;216;=2; 1E
#) * 4 %01 +4-#:18)< 78): 1; 76 B4); ; \$; -;

90< 3A2 92; .A629 ; 1B @C23?0?2521. FB?@F<?1. 102; A25 C29-D2D2281. F
=2. 85<B?A6? A2@5 ; A52=?<< @1<33602B@*52*() 1A. 3<?. @ 691?2 N@B?@?F
@442 @ @ 5 A=2 85<B?A? .360. A. 0A<; 3-?A56@F<?B@<B91/256452?A5 ; 3<?A52
=?<=< @1<3362B@D6/5 AA.9<@ 225092 : <C2: 2 A@0B?? 6; 41 B?6 452: <?6; 4
=2. 8.; 11B?6;4A52C26; 4-2. 8

#15 -!) 6/ - . .	1 += ; -	: A

#) * 4 759 : 1 ; 767 . . 1+-= ; :-A#:1 8 6-:) <176

<D2C2 ?D569 @5 20562 : <C2: 2 A@2 ; ??. A21 F; ; 2D-3360212C29= : 2 AB9 16; A52
: . 6 .99/22DA<A5 2545D. F=. @ @ ; 4A52 @A A56@-B91 <A2/520 . @B<?. ; B? @?F
12C29= : 2; A56 912; . AA2; 16; 4; B? @ ? FD<B91A2 ; 1A/ 21 ?<=21<33 ; 1=60821B/F
=. ?; A@ @ . ? A<?A5 252E@ @ ; 4<: B?A2 . ; 1 . @B05. 5645=?<=<? A6< <3A52: <C2; A@
. A. 0A21/F. ; B? @ ? F. A5 @ 0. A6; D<B1 / 2. @ @ F <C2: 2; A@ <C2: 2; A@5.A 9?2. 1F
<00B?< A52. @ @ ; 4545D.F?. A52?5. ; ; 2D. 1. 116A6; . 9 <C22 A@

%; 3<<12A 69; 1?2 @ B?;. AAF=2B@ @B9142; 2?.A29-D2?D2281.F=2 85<B A?. 3360A5. ;
A52=?<< @1<3362B@ . @ @ ; A52?D2282; 12 . 85<B?A6=? . A2 @ @ @ @ . A215 A3A52
12C29= : 2; A@ @A/2.00< : <1. A 21/ FA52@B@ @A52@A20-B91422?. A2; 1
=2. 85<B?:<C2: 2; A@ @ @ A6C29F

* ? 360 := . 0A

* 52 A. / 92 29<D<:=. 2@A 52E6@5 ; 4 ; 1?<<@1A? 336042; 2.A6<3A52@A2; 1 @<D@
A. A52=?<=@112Q9<=:2; A 6@E20A21A<4; 2. A. ; . 116A6<; .9A<285<BC2602
: <C2: 2; A@*52/. @96; 22. 85<B?39<D<; 8; 6291. F* / 926@ . ; 1AD<
D. FQ256092 <C2: 2; A@A A2: ?; 6 4.; 12C2 6; 4=2. 82 @20A6Q9F * 52.116A<-3A<
C256092 <C2 2; A@?2?2@; A@; 6;0?2. @<392@A5 ; 6C2; A5 AA? 3 303 9D@<;
5645D. F98 @8 9F@. 9F30B A2 F@:2H@<: 1.FA<1 .F; 6 ;0?2. @<3D69 2
1630B9A16@5; 46 @8?<A52 ;? : .9C.? 6.A6<; @;A. 33603D *521229 <=2; AN@A?. 360 D699
A52?23<25 C2; < . A ?6 98 =@A <; 565D.F@; 1 6A6<; @

@	1; <6 : 7			87; -, 1.. -			: -6+		
# 5 -!) 6/ - ::	1 >4 - 9 :	<=: - ;#7 < 4:	: - 8#7<	) 4:-	8 #7<)	4			

= ?2; A ?65:260 2?<?@B@?F?<B; 16; 4B-

#) * 4 75B) : 1; 76. @; <6/)6 ; : 78; - ; # :) . . 1+ - 6 :) <76

* ? 360 := . 0A B A2 ; A6C29@A@2@

A5. @2; 12 <; @A. A 21A5A52<9F.92?;. A629. @B@/A A5 @5645 2A?6?. A5. ;
A52?<<@1<3605@5691?2;N@B? @F * . / 92 @<D@5. AB@1. @ ; B @2FA52 @A2
: @5AA@0A; 1C256092: <C2: 2 A@A A52: <?;6;4 ; 12C2 6; 4=2. 82 @20A6Q9F @
12 @78 21?206-B@F 5645=?<?A6<; <52 @<C2: 2; A@. ?29 6829FA< 2=@FA6=@A5 A
. ?2.92 1F=22 @; A<; A525645D F <D2C2. @ D<? @ @ @2 @2 A636A6@ @B : 21
A. A993A52A?6=@B91 2; DA @ 8; 6 21-.FA56@A9 1?22 @A. ; 6 02. @<3. :
=2. 8.; 1 =:=2.8C2 56092:<C2: 2 A@* 56@ 2=2@ A@; 16;0?2. @6 A. 360
0<: =. ?21A@B?2AA?3609C29@4.6; A5 6 @2.: 6 @6A56 ; A52AF @.9H@B@B A6<; 6
1. FA1.FA?.360@B 2.; 1 @D695. @ ;<A2?6.96:= . 0A<A5= 2?. A6<; <A52645D.F

A6 @2@. A215 . A63A2 @A22A< B@1 3<?; < 3<<1?2A. 6<??2 @A. B. ; A@2@A2 A2
D2282; 1=2. 8A? .3602; 2?. A6<; B@B9 1 / 2-3A52<?12?3. ; 1 : <C2:2; A@
? @<20A6Q9F @ @5; 4? .360@B 2< 08 621-. F B@ 4D2821=2 85<B? @<3A52<?12?
<3AD<DF: <C2: 2 A@@ 4; 66@ ; A9F2@A5; A2 A<<C2:2 A@5. A@B
1B?6 4D2 281. F=2 85<B? @ *52 116A6<; <52 ; <; 3<<1?2A. 6<??2 @A. B?; AA.33601B?6; 4
D2282; 1=2?64 @<B91A5223<?2 <A6; A2<B@ ; F0. = 06AF6 @B2@62; A5. AA25645D. F
0. ?2 @@4 6@ ; A95645?39@B?6 4D281 F=2. 8=2?6<1@