



Land East of Knowle Lane
Cranleigh
Surrey

Planning Application Ref: WA/2023/00294

HIGHWAY & TRANSPORTATION CONSIDERATIONS

On behalf of
Knowle Lane Neighbourhood Group

ITR/5881/HTC.1
March 2023



Document Control Sheet

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1 INTRODUCTION

- 1.1** Bellamy Roberts, Highways and Infrastructure Consultants has been commissioned by Genesis Town Planning on behalf of Knowle Lane Neighbourhood Group to advise and comment on the outline planning application (WA/2023/00294) submitted recently on a site for up to 162 dwellings to the east of Knowle Lane, Cranleigh.
- 1.2** The site and surrounding area have been visited and application documents reviewed in order to prepare this report. This report considers the highway and transportation matters arising from the proposal.
- 1.3** Within the submitted documents a Transport Assessment and Travel Plan were provided, prepared by Motion (Highway Consultants) on behalf of the applicant.
- 1.4** This report will make various references within the Motion Transport Assessment and deals with the technical matters therein.
- 1.5** This report has been prepared having regard to advice within the National Planning Policy Framework (NPPF) the Department of Transport's Manual for Streets Volume 1 and 2 (MfS), and survey data identified within the Motion report and referenced where required within this report.
- 1.6** The following section investigates the findings within the Motion Transport Assessment and highlights the various concerns that warrant the proposal to be refused planning permission on highway grounds.

2 CONSIDERATION OF PROPOSAL & SUBMITTED TRANSPORT ASSESSMENT

2.1 As stated previously a Transport Assessment in support of the scheme has been prepared by Motion. This section refers to various errors and technical issues which would require the Local Planning Authority to recommend to refuse the proposal as submitted.

2.2 There are a number of fundamental issues arising that result in the proposal being unacceptable in highway terms and contrary to the NPPF.

2.3 The issues identified and that render the proposal unacceptable are:-

- Highway Safety; and
- Resultant impact on the local highway network

Safety

2.4 As recognised within the NPPF (paragraph 110) in assessing sites for development plans or specific application (as in this instance) it should be ensured that:-

- *Safe and suitable access to the site can be achieved for all users.*

2.5 Paragraph 111 of the NPPF also states:-

- *Development should only be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety, or the residual cumulative impacts on the road network would be severe.*

2.6 The proposal seeks a new vehicular access off Knowle Lane, its location together with visibility splays are illustrated within the Motion TA at Appendix F (2010010-04 Rev D and 2010010-09).

2.7 These plans depict the access layout and visibility (y-dimensions) at the access together with the Forward Stopping Sight Distance along Knowle Lane for a vehicle waiting to turn right into the proposed site.

Visibility Splay (y-dimension)

- 2.8** The y-dimension is calculated from the 85thile speed of traffic travelling in each direction.
- 2.9** The Motion report at paragraph 4.4 states that the 85thile speeds were:-
- 37.9mph northbound
 - 41.4mph southbound
- and suggests that the y-dimension at the proposed access should be 2.4 x 60m to the south and 2.4 x 69m to the north.
- 2.10** This raises two fundamental issues:-
- The ATC speed survey data does not correlate to the 85thile speeds used by Motion in determining the y-dimensions; and
 - As the recorded speeds were in excess of 60kph (37mph) the y-dimensions calculated and used by Motion are incorrect
- 2.11** When considering the ATC data at Appendix B within the Motion report, the correct 85thile speeds are shown below:-
- 40.64mph northbound; and
 - 43.2mph southbound
- 2.12** The correct average 85thile speeds are presented at [Appendix 1](#) of this report. The correct speeds will therefore impact the required visibility splays. These being the y-dimensions and the Forward Stopping Sight Distance.
- 2.13** When considering the lowest values for vehicle speeds i.e. MfS speeds below 37mph (60kph) the commensurate y-dimensions required would be:-
- 64.6m to the south and 71.2m to the north
- The SSD would be:-
- 67m and 73.6m respectively (with the required 2.4m bonnet length added)
- 2.14** However, MfS Volume 2 at Table 10.1 provides the summary of the recommended SSD criteria which advises that for traffic speeds above 60kph (37mph) reaction times and deceleration rates are different from those used in the calculation for traffic speeds less than 60kph (37mph).

- 2.15** As the measured speeds of traffic are greater than 60kph (37mph) in both directions (even when using the speeds Motion has adopted) the correct y-dimension and SSD should be increased.
- 2.16** The corresponding desirable y-distances should be:-
- 103.6m to the south; and
 - 114.6m to the north
- 2.17** It is evident therefore that the y-dimension and Forward Stopping Sight Distance drawings prepared by Motion are incorrect. The SSD drawing prepared by Motion is also incorrect as the SSD should be measured at a point half the lane width from the edge of carriageway. Such required measurements have not been undertaken by Motion.
- 2.18** Notwithstanding this error even when using the Motion speed measurements, the northbound Stopping Sight Distance cannot be achieved as the bank on the western side of Knowle Lane obstructs forward visibility.
- 2.19** A Plan together with a photograph taken at 60.3m from the proposed access illustrates this critical point, attached at [Appendix 2](#). The plan showing the correct visibility splays are attached at [Appendix 3](#) which illustrates that neither the y-dimension nor SSD can be achieved due to the bank on either side of Knowle Lane obstructing visibility.
- 2.20** It is clear therefore even when using the incorrect MfS visibility figures, provided by Motion, the junction would not provide the correct visibility for the approaching traffic and would therefore be unsafe. Such failure would result in an unsafe access contrary to paragraph 110(b) of the NPPF.
- 2.21** When adopting the corrected visibility splays the junction fails on both counts being the y-dimension and approach visibility.
- 2.22** As such and in accordance with paragraph 111 of the Framework, on this issue alone, the scheme should be refused on highway safety grounds.

Impact on the Local Highway Network

- 2.23** Motion has undertaken a capacity assessment of the Knowle Lane/High Street Junction, using the industry standard PICADY 9 software.
- 2.24** The analysis, presented at Appendix L of the Motion TA, considered the following scenarios:
- 2028 Baseline;
 - 2028 with Development; and
 - 2028 with Development (sensitivity).
- 2.25** The 2028 baseline scenario was based on 2022 recorded traffic data which was growthed using TEMPro growth rates.
- 2.26** Traffic generation for the scheme was calculated and applied to the model in two ways. The “2028 with Development” scenario was calculated pro-rata from the 55 unit Berkeley Homes scheme (accessed from Knowle Lane) and the “2028 with Development (sensitivity)” scenario was based on TRICS data.
- 2.27** In Summary the Motion analysis of the Knowle Lane/High Street Junction demonstrates that this junction would operate with spare capacity when traffic from the development is added. (See Section 6 of the Motion TA.) However, this analysis is flawed.
- 2.28** No model validation has been undertaken by Motion, therefore it cannot be determined from the data presented that the analysis represents an accurate baseline position from which to assess the impact of the proposed development in the 2028 design year.
- 2.29** To rectify this, Bellamy Roberts has undertaken an analysis of this junction, using the same geometry as presented in the Motion analysis. To verify the analysis, a queue length survey was undertaken during the morning peak hour period (0800-0900) on 2nd March 2023 which recorded instances where between 5 and 6 vehicles were queueing on Knowle Lane at its junction with the High Street.
- 2.30** As such, the 2022 baseline assessment has been validated to reflect the recorded queue lengths by applying a direct stream adjustment to the Knowle Lane arm.

The result of revisiting the PICADY assessment now reflects what occurs on the ground.

2.31 The development traffic has then been added to the validated base model to allow a more appropriate and realistic assessment to be undertaken. It should be noted that the pro-rata'd development traffic in the "2028 with Development" scenario has been added in 15 minute intervals, as recorded from the survey, whereas the Motion analysis split this traffic evenly across the assessment period which is unrealistic.

2.32 The results of the more accurate analysis, for the morning peak period is provided in Table 1. The full PICADY analysis is at [Appendix 4](#).

Table 1: Summary of Knowle Lane/High Street Analysis

AM			
Street/Lane	Queue (vehs)	Delay (sec)	RFC
2022 Recorded Base Flows			
Knowle Lane	5.2	105.65	0.90
High Street (West)	0.4	11.32	0.27
2028 Growthed Base Flows			
Knowle Lane	7.0	151.74	0.96
High Street (West)	0.4	11.63	0.28
2028 + Development (Berkeley Homes Survey)			
Knowle Lane	18.4	366.56	1.14
High Street (West)	0.5	12.60	0.34
2028 + Development (TRICS)			
Knowle Lane	23.7	447.15	1.20
High Street (West)	0.4	12.14	0.28

2.33 The data presented in Table 1 shows that when the base model is validated against the recorded queue lengths, the RFC of the existing flows (2022) is 0.90 a junction. A junction is considered to be approaching its capacity when the RFC reaches 0.85.

2.34 It is evident therefore that currently the junction of Knowle Lane and the High Street has reached its capacity and any material increase in traffic flows would result in the junction being overloaded and increasing delay and queuing would occur.

- 2.35** For example, Knowle Lane would experience a maximum queue in 2028 (without development) of 7 vehicles in the morning peak hour. However, in the same design year with development traffic the queue would extend to 24 vehicles. When the flows are growthed to 2028 with development, the RFC increases to 1.20.
- 2.36** For both design scenarios when development traffic is added, the RFC is over 1.00 indicating that the junction is operating over its capacity. This is acknowledged by Motion (reference paragraph 6.7 of Motion TA).
- 2.37** The RFC analysis reaches 1.20, giving queue length increase to 24 vehicles and the delay increases four-fold, such increases in RFC and delay and queuing is considered severe and the proposal should not be permitted on this basis.

3 SUMMARY & CONCLUSIONS

- 3.1** The Transport Assessment undertaken by Motion on behalf of the applicant is flawed.
- 3.2** The 85th percentile speeds used within the TA are not correct and when analysing the ATC speed data are higher than that used by Motion.
- 3.3** Even when adopting the figures within the Motion assessment, the approach visibility for northbound traffic cannot be achieved due to the bend and the steep bank in Knowle Lane obscuring visibility. On this basis, the scheme fails the requirement of paragraph 110(b) of the Framework as such and in accordance with paragraph 111 should be refused planning permission.
- 3.4** Notwithstanding these findings, the capacity analysis undertaken at the Knowle Lane/High Street junction was not validated and as such the results of the analysis within the Motion report cannot be considered accurate.
- 3.5** The survey at the junction currently shows vehicles queuing on Knowle Lane during the morning peak periods and when validating such queuing within the PICADY programme it identifies that the junction with development would render the junction over capacity resulting in vehicle queues extending from 7 vehicles to 24 vehicles with considerable delays experienced. Such effect would have a severe impact on the network causing extensive delay and frustration to queueing traffic.
- 3.6** Such findings would require the proposal to be refused planning permission as recommended in paragraph 111 of the NPPF.

APPENDICES

APPENDIX 1

85th%ile Speeds Table



Project ID and Name: IW0085 Cranleigh
Site No: 1
Location Name Knowle Lane
Direction: BA (Southbound)

85%

2330	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35.1	-	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	
2345	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.4	-	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	
07-19	961	876	2	52	0	3	0	1	1	2	1	0	0	7	16	35.6	40.6	0	0	0	0	6	22	97	312	345	139	34	5	0	0	1	0	179
06-22	1022	930	2	58	0	3	0	1	1	2	1	0	0	8	16	35.7	40.7	0	0	0	0	6	23	106	323	369	150	38	6	0	0	1	0	195
06-00	1042	949	2	59	0	3	0	1	1	2	1	0	0	8	16	35.7	40.8	0	0	0	0	6	23	106	331	374	152	42	7	0	0	1	0	202
00-00	1047	954	2	59	0	3	0	1	1	2	1	0	0	8	16	35.7	40.8	0	0	0	0	6	23	106	334	376	152	42	7	0	0	1	0	202

2330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2345	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07-19	712	644	2	34	0	3	0	0	0	0	0	0	0	4	25	35.3	40.4	0	0	0	2	4	31	69	227	258	92	21	8	0	0	0	0	121
06-22	757	686	2	36	0	3	0	0	0	0	0	0	0	5	25	35.4	40.4	0	0	0	2	4	31	72	241	275	101	23	8	0	0	0	0	132
06-00	761	690	2	36	0	3	0	0	0	0	0	0	0	5	25	35.4	40.4	0	0	0	2	4	31	72	243	277	101	23	8	0	0	0	0	132
00-00	773	700	2	36	0	3	0	0	0	0	0	0	0	5	27	35.4	40.5	0	0	0	2	4	33	74	243	279	104	25	8	1	0	0	0	138

2330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2345	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36.2	39.7	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
07-19	1105	997	8	91	1	1	1	1	0	0	0	0	0	4	1	35	39.7	40	0	1	0	6	16	134	372	429	119	23	4	1	0	0	0	147
06-22	1193	1078	8	98	1	1	1	1	0	0	0	0	0	4	1	35.3	40	0	1	0	7	17	137	391	458	142	33	5	2	0	0	0	182	
06-00	1198	1083	8	98	1	1	1	1	0	0	0	0	0	4	1	35.3	40	0	1	0	7	17	137	393	461	142	33	5	2	0	0	0	182	
00-00	1204	1089	8	98	1	1	1	1	0	0	0	0	0	4	1	35.3	40	0	1	0	7	18	138	394	464	142	33	5	2	0	0	0	182	

2330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2345	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.1	40.2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0
07-19	1151	1035	2	101	0	2	1	2	0	0	0	0	0	2	6	35.5	40.2	0	0	1	8	17	121	339	481	154	27	2	0	1	0	0	184
06-22	1253	1128	2	110	0	2	1	2	0	0	0	0	0	2	6	35.7	40.4	0	0	1	8	18	126	367	518	180	30	3	1	1	0	0	215
06-00	1268	1142	2	110	0	2	1	2	0	0	0	0	0	2	7	35.7	40.4	0	0	1	9	18	126	371	523	183	32	3	1	1	0	0	220
00-00	1280	1152	2	112	0	2	1	2	0	0	0	0	0	2	7	35.7	40.4	0	0	1	9	18	126	372	530	185	34	3	1	1	0	0	224

2330	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	37.1	-	0	0	0	0	0	0	1	0	0	0	0	0	0	0	
2345	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07-19	1122	1010	3	101	0	1	1	2	0	0	0	0	0	4	35.3	40.5	0	0	2	7	2	23	95	385	430	150	24	3	1	0	0	0	178
06-22	1208	1090	3	107	0	1	1	2	0	0	0	0	0	4	35.5	40.7	0	0	2	7	2	24	97	406	459	170	36	4	1	0	0	0	211
06-00	1232	1113	3	108	0	1	1	2	0	0	0	0	0	4	35.6	40.7	0	0	2	7	2	24	97	409	472	174	40	4	1	0	0	0	219
00-00	1247	1125	3	111	0	1	1	2	0	0	0	0	0	4	35.7	40.8	0	0	2	7	2	24	97	410	478	179	43	4	1	0	0	0	227

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2345	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1185	1059	3	115	1	1	2	0	0	0	0	0	0	1	3	35.9	40.7	0	0	0	2	15	103	394	459	168	41	1	2	0	0	0	0	212
06-22	1298	1163	3	122	1	1	2	0	0	0	0	0	0	2	4	35.8	40.8	0	0	0	3	15	116	442	489	184	44	3	2	0	0	0	0	233
06-00	1316	1180	3	122	1	1	2	0	0	0	0	0	0	3	4	35.9	40.8	0	0	0	3	15	117	447	494	189	46	3	2	0	0	0	0	240
00-00	1329	1191	3	124	1	1	2	0	0	0	0	0	0	3	4	35.9	40.8	0	0	0	3	15	117	452	502	189	46	3	2	0	0	0	0	240

2330	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.4	-	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
2345	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1128	1003	0	100	0	1	2	1	0	1	0	0	0	5	15	35.6	40.8	0	1	1	9	24	103	355	420	179	32	3	0	1	0	0	0	215
06-22	1209	1078	0	105	0	1	2	1	0	1	0	0	0	5	16	35.8	41	0	1	1	9	25	109	372	446	194	44	5	1	2	0	0	0	246
06-00	1224	1092	0	105	0	1	2	1	0	1	0	0	0	6	16	35.8	41	0	1	1	9	25	109	379	450	197	45	5	1	2	0	0	0	250
00-00	1237	1102	0	108	0	1	2	1	0	1	0	0	0	6	16	35.9	41.2	0	1	1	9	25	109	383	455	198	47	5	2	2	0	0	0	254

2330	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31.3	-	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
2345	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32.9	-	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
07-19	776	720	4	40	0	0	0	1	0	0	0	0	0	5	6	37.6	43.7	0	0	7	4	4	57	184	274	156	62	23	5	0	0	0	0	246
06-22	861	798	4	46	0	0	0	1	0	0	0	0	0	6	6	37.6	43.7	0	0	7	4	4	62	210	304	169	68	28	5	0	0	0	0	270
06-00	882	819	4	46	0	0	0	1	0	0	0	0	0	6	6	37.6	43.8	0	0	7	4	4	63	217	309	175	69	29	5	0	0	0	0	278
00-00	896	829	4	49	0	0	0	1	0	0	0	0	0	6	7	37.6	43.8	0	0	8	4	4	65	217	312	181	71	29	5	0	0	0	0	286

2330	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40.4	-	0	0	0	0	0	0	0	1	0	0	0	0	0	1	
2345	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0		
07-19	687	631	1	39	2	0	0	2	0	1	0	0	0	6	5	37.1	42.7	0	0	2	8	2	4	48	158	259	153	45	5	1	1	0	206
06-22	723	666	1	40	2	0	0	2	0	1	0	0	0	6	5	37.2	42.9	0	0	2	8	2	4	52	165	271	159	51	5	2	1	0	219
06-00	725	668	1	40	2	0	0	2	0	1	0	0	0	6	5	37.2	42.9	0	0	2	8	2	4	52	165	271	161	51	5	2	1	0	221
00-00	739	682	1	40	2	0	0	2	0	1	0	0	0	6	5	37.2	42.9	0	0	2	8	2	4	54	169	276	162	53	5	2	1	0	224



Project ID and Name: IW0085 Cranleigh
Site No: 1
Location Name Knowle Lane
Direction: BA (Southbound)

85%																																			
2330	0																-	-																	
2345	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	39.7	-	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
07-19	1016	906	2	88	2	0	2	2	0	0	0	0	0	8	6	37.2	42.8	0	1	8	2	12	62	242	397	210	59	18	4	1	0	0	0	292	
06-22	1143	1026	2	95	2	0	2	2	0	0	0	0	8	6	37.4	43.1	0	1	8	2	12	66	261	448	245	70	24	4	2	0	0	0	345		
06-00	1163	1044	2	97	2	0	2	2	0	0	0	0	8	6	37.4	43.1	0	1	8	2	12	67	265	457	246	73	26	4	2	0	0	0	351		
00-00	1169	1048	2	99	2	0	2	2	0	0	0	0	8	6	37.4	43.1	0	1	8	2	12	68	265	461	247	73	26	4	2	0	0	0	352		

2330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2345	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07-19	1072	966	2	92	1	0	2	0	0	0	0	0	4	5	37.1	42.8	0	0	7	4	7	76	274	406	207	69	14	5	2	1	0	0	298
06-22	1206	1092	2	100	1	0	2	0	0	0	0	0	4	5	37.2	42.9	0	0	7	4	8	84	310	454	230	83	17	5	3	1	0	0	339
06-00	1233	1118	2	101	1	0	2	0	0	0	0	0	4	5	37.2	42.9	0	0	7	4	8	85	318	466	233	85	18	5	3	1	0	0	345
00-00	1243	1124	2	105	1	0	2	0	0	0	0	0	4	5	37.2	42.9	0	0	7	4	8	86	320	469	236	85	19	5	3	1	0	0	349

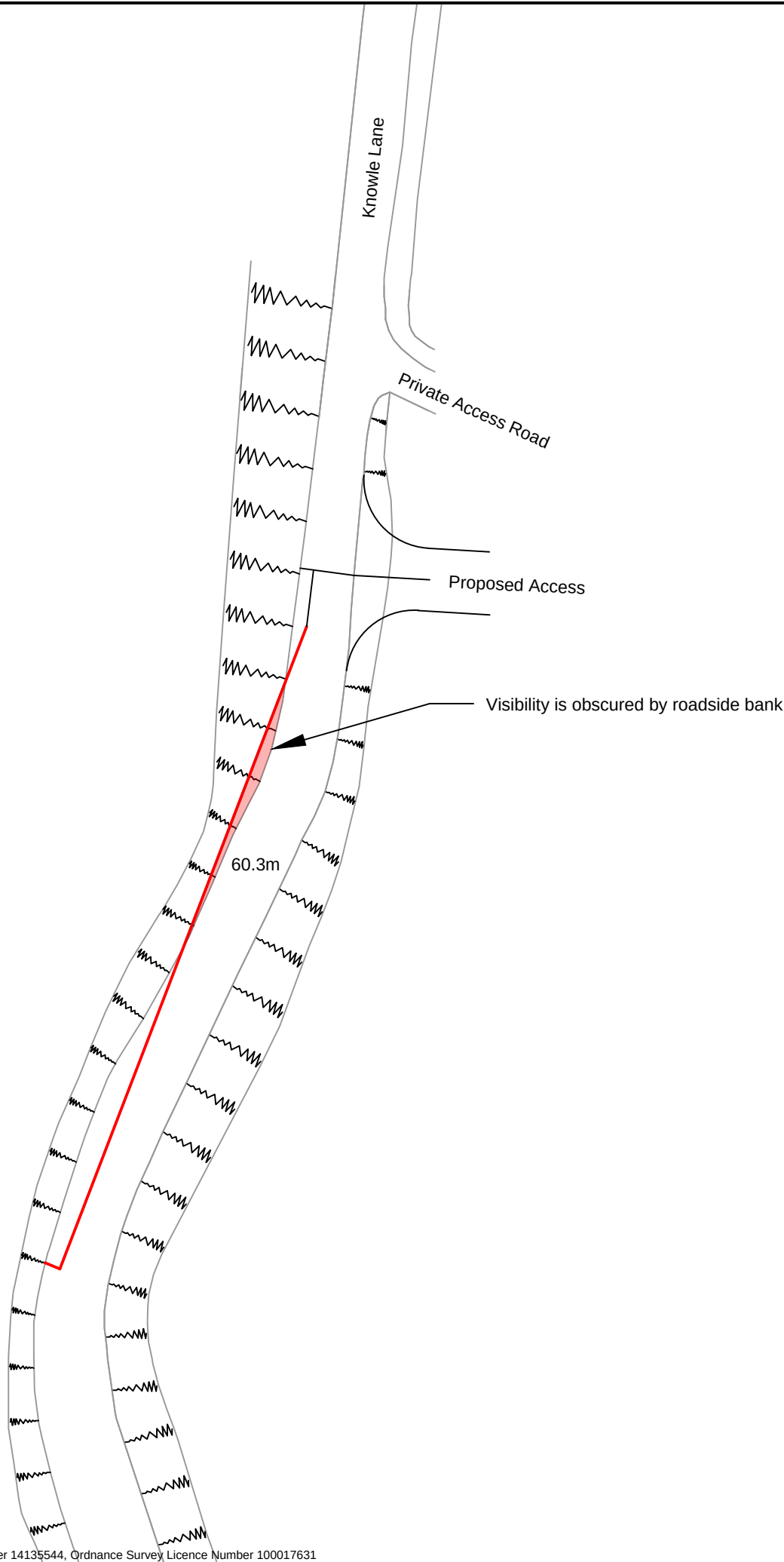
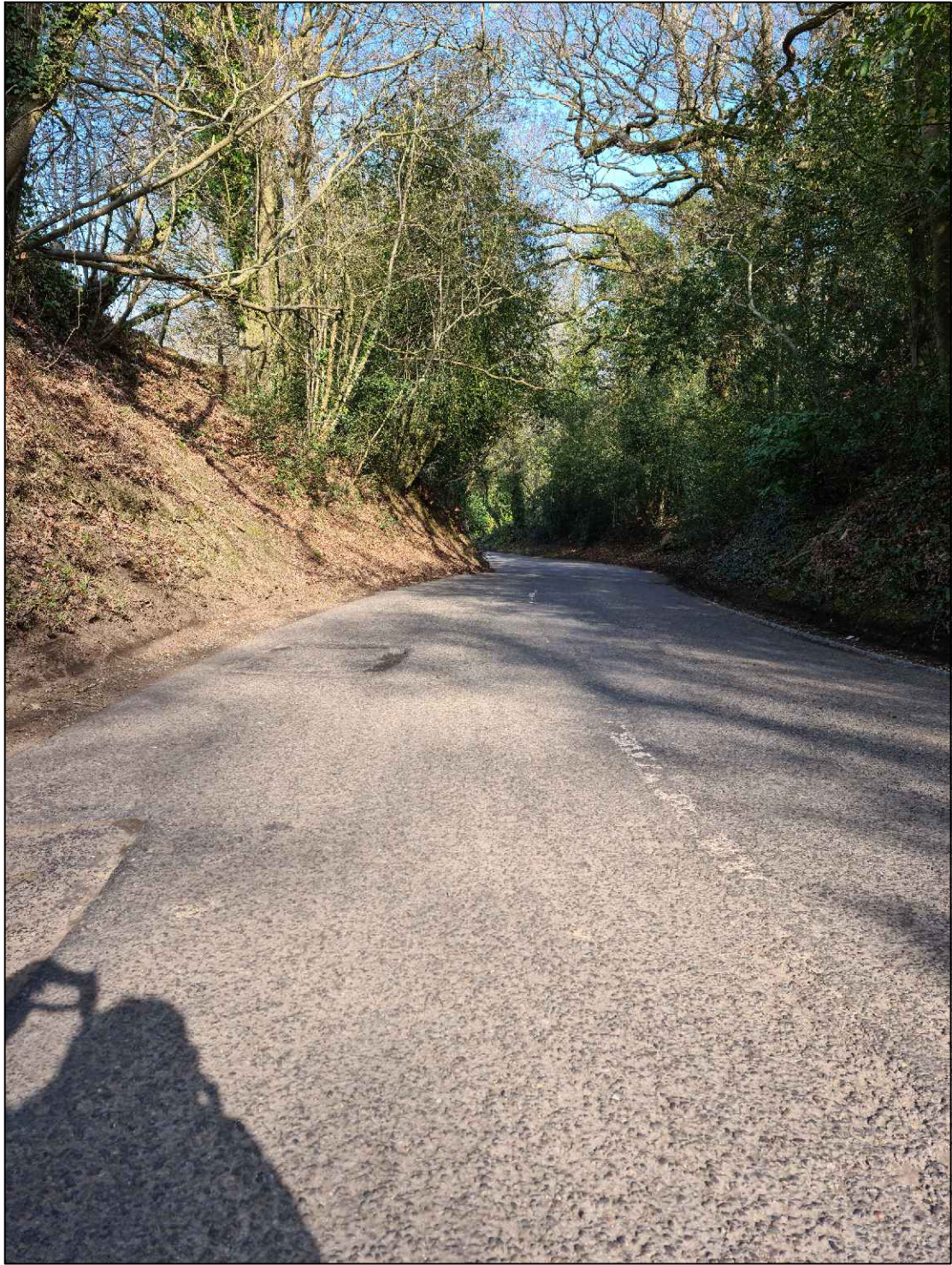
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Average Northbound 85th%ile Speed - 40.6mph

Average Southbound 85th%ile Speed - 43.2mph

APPENDIX 2

Plan & Photograph



Notes

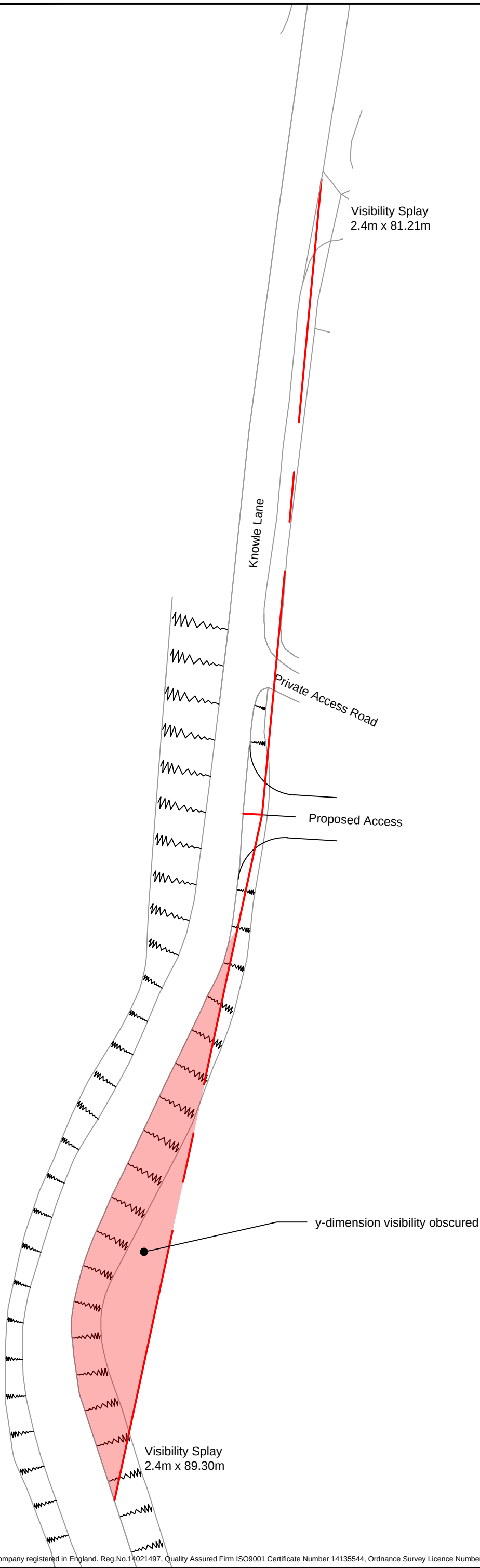


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CLIENT Knowle Lane Neighbourhood Group		
PROJECT Gleeson Development, Cranleigh		
TITLE Forward Visibility (SSD) (Adopting Motion dimensions)		
DRAWN BY MB	DESIGN BY -	CHK BY IR
DATE 02/03/23	DRAWING No. 5881 / 001	
SCALE 1:500 @ A3	REV No.	

APPENDIX 3

Visibility Splays



Notes



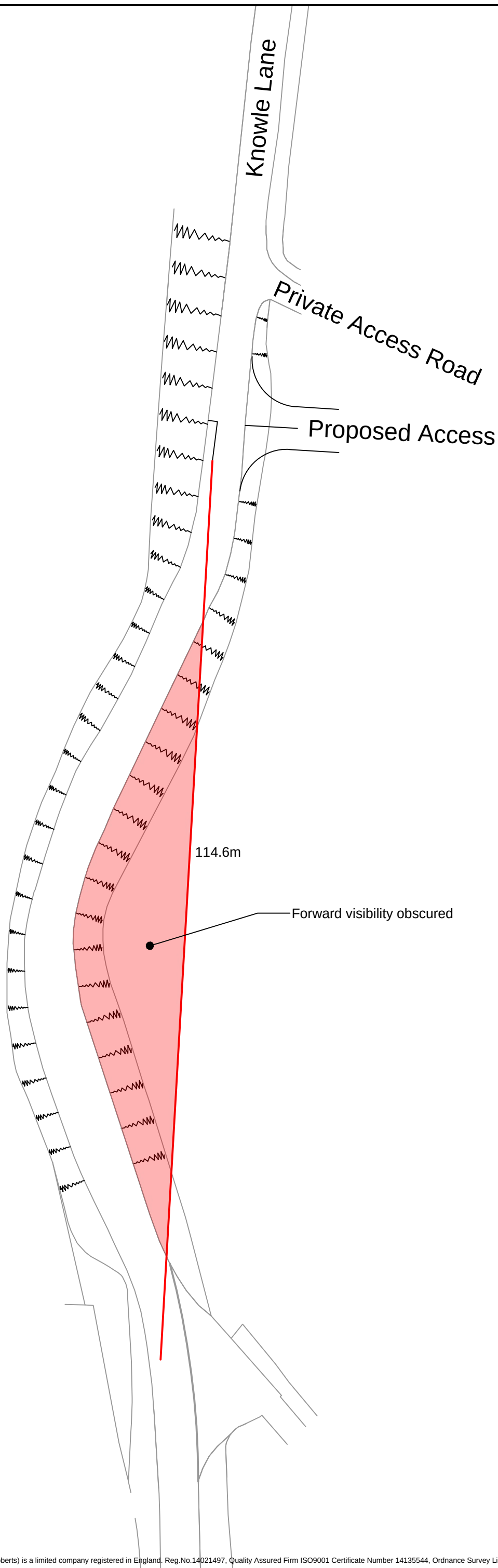
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TITLE
Visibility Splay desirable y-dimension

DRAWN BY MB	DESIGN BY -	CHK BY IR
DATE 06/03/23	DRAWING No. 5881 / 006	REV No.
SCALE 1:500 @ A3		



Notes



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CLIENT			Knowle Lane Neighbourhood Group		
PROJECT			Gleeson Development, Cranleigh		
TITLE			SSD Desirable		
DRAWN BY			DESIGN BY		CHK BY
MB			-		IR
DATE			DRAWING No.		REV No.
06/03/23			5881 / 007		
SCALE					
1:500 @ A3					

APPENDIX 4

PICADY ANALYSIS

Junctions 9
PICADY 9 - Priority Intersection Module
Version: 9.5.1.7462 © Copyright TRL Limited, 2019
For sales and distribution information, program advice and maintenance, contact TRL: +44 (0)1344 379777 software@trl.co.uk www.trlsoftware.co.uk
The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Filename: Knowle Lane - High Street (Validated Motion Model).j9
Path: S:\Admin-Projects\5851-5900\5881\Junction Modelling
Report generation date: 23/03/2023 15:55:13

»2022 Recorded Base Flows, AM
»2028 Growthed Base Flows, AM
»2028 + Dev. (Berkeley Homes Survey), AM
»2028 + Dev. (TRICS), AM

Summary of junction performance

	AM		
	Queue (Veh)	Delay (s)	RFC
	2022 Recorded Base Flows		
Stream B-AC	5.2	105.65	0.90
Stream C-AB	0.4	11.32	0.27
	2028 Growthed Base Flows		
Stream B-AC	7.0	151.74	0.96
Stream C-AB	0.4	11.63	0.28
	2028 + Dev. (Berkeley Homes Survey)		
Stream B-AC	18.4	366.56	1.14
Stream C-AB	0.5	12.60	0.34
	2028 + Dev. (TRICS)		
Stream B-AC	23.7	447.15	1.20
Stream C-AB	0.4	12.14	0.28

There are warnings associated with one or more model runs - see the 'Data Errors and Warnings' tables for each Analysis or Demand Set.

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

Title	
Location	
Site number	
Date	22/03/2023
Version	
Status	(new file)

Identifier	
Client	
Jobnumber	
Enumerator	BR\matttwinberrow
Description	

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	perTimeSegment	s	-Min	perMin

Analysis Options

Vehicle length (m)	Calculate Queue Percentiles	Calculate detailed queueing delay	Calculate residual capacity	RFC Threshold	Average Delay threshold (s)	Queue threshold (PCU)
5.75				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 period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D 1	2022 Recorded Base Flows	AM	DIRECT	07:45	09:15	90	15	✓		
D 2	2028 Growthed Base Flows	AM	DIRECT	07:45	09:15	90	15	✓	Simple	D1*1.0313
D 3	Development Traffic (Berkeley Homes Survey)	AM	DIRECT	07:45	09:15	90	15			
D 4	Development Traffic (TRICS)	AM	DIRECT	07:45	09:15	90	15			
D 5	2028 + Dev. (Berkeley Homes Survey)	AM	DIRECT	07:45	09:15	90	15	✓	Simple	D2+D3
D 6	2028 + Dev. (TRICS)	AM	DIRECT	07:45	09:15	90	15	✓	Simple	D2+D4

Growth Factors

ID	Description	Use TEMPRO	NTM Dataset	Base year	Future year	Time period	Region	NTM Dataset	County	Authority	Zone	Area type	Road type	Growth Factor
G 1	2022 - 2028 AM Peak	✓	NTM AF15 Dataset	2022	2028	Weekday AM Peak Period	SE	7.2	Surrey	Waverley	Waverley 013 (5047)	Urban	Minor	1.0405
G 2	2022 - 2028 PM Peak	✓	NTM AF15 Dataset	2022	2028	Weekday PM Peak Period	SE	7.2	Surrey	Waverley	Waverley 013 (5047)	Urban	Minor	1.0406

Growth factors are only active if the Demand Set references them in a Relationship.

Analysis Set Details

ID	Include in report	Network flow scaling factor (%)	Network capacity scaling factor (%)
A1	✓	100.000	100.000

2022 Recorded Base Flows, AM

Data Errors and Warnings

Severity	Area	Item	Description
----------	------	------	-------------

Warning	Growth Factors	Growth Factor 1	One or more Growth Factors use TEMPRO data. TRL is not responsible for TEMPRO datasets and cannot guarantee their correctness. If in doubt, please use the TEMPRO software directly.
Warning	Demand Set Relationship	D5 - 2028 + Dev. (Berkeley Homes Survey), AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Knowle Lane/High Street	T-Junction	Two-way		14.02	B

Junction Network Options

Driving side	Lighting
Left	Normal/unknown

Arms

Arms

Arm	Name	Description	Arm type
A	High Street (east)		Major
B	Knowle Lane		Minor
C	High Street (west)		Major

Major Arm Geometry

Arm	Width of carriageway (m)	Has kerbed central reserve	Has right turn bay	Width for right turn (m)	Visibility for right turn (m)	Blocks?	Blocking queue (PCU)
C - High Street (west)	6.10		✓	2.20	35.0	✓	4.00

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 (m)	Visibility to left (m)	Visibility to right (m)
B - Knowle Lane	One lane	3.00	21	23

Slope / Intercept / Capacity

Stream Intercept Adjustments

Stream intercept adjustment	Use adjustment	Reason	Direct intercept adjustment (PCU/TS)
B-AC	✓	Junction Validation	-27.00

Priority Intersection Slopes and Intercepts

Stream	Intercept (Veh/TS)	Slope for A-B	Slope for A-C	Slope for C-A	Slope for C-B
B-A	123.928	0.090	0.227	0.143	0.325
B-C	159.604	0.097	0.246	-	-
C-B	148.558	0.229	0.229	-	-

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 period length (min)	Time segment length (min)	Run automatically
D1	2022 Recorded Base Flows	AM	DIRECT	07:45	09:15	90	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - High Street (east)		DIRECT	✓	100.000
B - Knowle Lane		DIRECT	✓	100.000
C - High Street (west)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00		To			
	From		A - High Street (east)	B - Knowle Lane	C - High Street (west)
		A - High Street (east)	0.00	15.00	172.00
		B - Knowle Lane	10.00	0.00	30.00
		C - High Street (west)	86.00	26.00	0.00

Demand (Veh/TS)

08:00 - 08:15		To			
	From		A - High Street (east)	B - Knowle Lane	C - High Street (west)
		A - High Street (east)	0.00	23.00	148.00
		B - Knowle Lane	18.00	0.00	18.00
		C - High Street (west)	74.00	16.00	0.00

Demand (Veh/TS)

08:15 - 08:30		To			
	From		A - High Street (east)	B - Knowle Lane	C - High Street (west)
		A - High Street (east)	0.00	19.00	144.00
		B - Knowle Lane	27.00	0.00	24.00
		C - High Street (west)	107.00	23.00	0.00

Demand (Veh/TS)

08:30 - 08:45		To			
	From		A - High Street (east)	B - Knowle Lane	C - High Street (west)
		A - High Street (east)	0.00	19.00	121.00
		B - Knowle Lane	30.00	0.00	23.00
		C - High Street (west)	98.00	26.00	0.00

Demand (Veh/TS)

08:45 -
09:00

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From	A - High Street (east)	0.00	33.00	158.00
	B - Knowle Lane	21.00	0.00	19.00
	C - High Street (west)	121.00	24.00	0.00

Demand (Veh/TS)

09:00 -
09:15

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From	A - High Street (east)	0.00	32.00	129.00
	B - Knowle Lane	16.00	0.00	19.00
	C - High Street (west)	93.00	30.00	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From	A - High Street (east)	0	9	2
	B - Knowle Lane	0	0	0
	C - High Street (west)	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-AC	0.90	105.65	5.2	F	42.50	255.00
C-AB	0.27	11.32	0.4	B	24.23	145.41
C-A					96.43	578.59
A-B					23.50	141.00
A-C					145.33	872.00

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	40.00	40.00	67.35	0.594	38.65	0.0	1.3	30.136	D
C-AB	26.08	26.08	104.92	0.249	25.76	0.0	0.3	11.323	B
C-A	85.92	85.92			85.92				
A-B	15.00	15.00			15.00				
A-C	172.00	172.00			172.00				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	36.00	36.00	62.76	0.574	36.00	1.3	1.3	33.632	D
C-AB	16.01	16.01	108.25	0.148	16.16	0.3	0.2	9.788	A
C-A	73.99	73.99			73.99				
A-B	23.00	23.00			23.00				
A-C	148.00	148.00			148.00				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	51.00	51.00	56.59	0.901	47.66	1.3	4.7	81.125	F
C-AB	23.04	23.04	110.34	0.209	22.96	0.2	0.3	10.287	B
C-A	106.96	106.96			106.96				
A-B	19.00	19.00			19.00				
A-C	144.00	144.00			144.00				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	53.00	53.00	61.04	0.868	52.53	4.7	5.2	94.628	F
C-AB	26.06	26.06	115.77	0.225	26.03	0.3	0.3	10.025	B
C-A	97.94	97.94			97.94				
A-B	19.00	19.00			19.00				
A-C	121.00	121.00			121.00				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	40.00	40.00	49.26	0.812	40.21	5.2	4.9	105.650	F
C-AB	24.08	24.08	103.72	0.232	24.07	0.3	0.3	11.298	B
C-A	120.92	120.92			120.92				
A-B	33.00	33.00			33.00				
A-C	158.00	158.00			158.00				

09:00 - 09:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	35.00	35.00	62.07	0.564	38.54	4.9	1.4	42.700	E
C-AB	30.14	30.14	110.90	0.272	30.07	0.3	0.4	11.122	B
C-A	92.86	92.86			92.86				
A-B	32.00	32.00			32.00				
A-C	129.00	129.00			129.00				

2028 Growthed Base Flows, AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Growth Factors	Growth Factor 1	One or more Growth Factors use TEMPRO data. TRL is not responsible for TEMPRO datasets and cannot guarantee their correctness. If in doubt, please use the TEMPRO software directly.

Warning	Demand Set Relationship	D5 - 2028 + Dev. (Berkeley Homes Survey), AM	Demand Set relationships are chained. This may slow down the file.
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Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Knowle Lane/High Street	T-Junction	Two-way		19.80	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 period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D2	2028 Growthed Base Flows	AM	DIRECT	07:45	09:15	90	15	✓	Simple	D1*1.0313

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - High Street (east)		DIRECT	✓	100.000
B - Knowle Lane		DIRECT	✓	100.000
C - High Street (west)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00	From	To		
			A - High Street (east)	B - Knowle Lane
				C - High Street (west)
		A - High Street (east)	0.00	15.47
		B - Knowle Lane	10.31	0.00
		C - High Street (west)	88.69	26.81
				0.00

Demand (Veh/TS)

08:00 - 08:15	From	To		
			A - High Street (east)	B - Knowle Lane
				C - High Street (west)
		A - High Street (east)	0.00	23.72
		B - Knowle Lane	18.56	0.00
		C - High Street (west)	76.32	16.50
				0.00

Demand (Veh/TS)

08:15 -
08:30

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From	A - High Street (east)	0.00	19.59	148.51
	B - Knowle Lane	27.85	0.00	24.75
	C - High Street (west)	110.35	23.72	0.00

Demand (Veh/TS)

08:30 -
08:45

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From	A - High Street (east)	0.00	19.59	124.79
	B - Knowle Lane	30.94	0.00	23.72
	C - High Street (west)	101.07	26.81	0.00

Demand (Veh/TS)

08:45 -
09:00

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From	A - High Street (east)	0.00	34.03	162.95
	B - Knowle Lane	21.66	0.00	19.59
	C - High Street (west)	124.79	24.75	0.00

Demand (Veh/TS)

09:00 -
09:15

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From	A - High Street (east)	0.00	33.00	133.04
	B - Knowle Lane	16.50	0.00	19.59
	C - High Street (west)	95.91	30.94	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From	A - High Street (east)	0	9	2
	B - Knowle Lane	0	0	0
	C - High Street (west)	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-AC	0.96	151.74	7.0	F	43.83	262.98
C-AB	0.28	11.63	0.4	B	25.01	150.06
C-A					99.43	596.61
A-B					24.24	145.41

A-C					149.88	899.29
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Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	41.25	41.25	65.48	0.630	39.71	0.0	1.5	33.245	D
C-AB	26.92	26.92	103.62	0.260	26.57	0.0	0.3	11.632	B
C-A	88.59	88.59			88.59				
A-B	15.47	15.47			15.47				
A-C	177.38	177.38			177.38				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	37.13	37.13	61.16	0.607	37.13	1.5	1.5	37.439	E
C-AB	16.51	16.51	106.99	0.154	16.67	0.3	0.2	9.983	A
C-A	76.31	76.31			76.31				
A-B	23.72	23.72			23.72				
A-C	152.63	152.63			152.63				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	52.60	52.60	54.74	0.961	48.08	1.5	6.1	98.417	F
C-AB	23.77	23.77	109.18	0.218	23.68	0.2	0.3	10.516	B
C-A	110.30	110.30			110.30				
A-B	19.59	19.59			19.59				
A-C	148.51	148.51			148.51				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	54.66	54.66	59.43	0.920	53.70	6.1	7.0	127.204	F
C-AB	26.89	26.89	114.79	0.234	26.86	0.3	0.3	10.232	B
C-A	101.00	101.00			101.00				
A-B	19.59	19.59			19.59				
A-C	124.79	124.79			124.79				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	41.25	41.25	47.05	0.877	41.25	7.0	7.0	151.736	F
C-AB	24.86	24.86	102.39	0.243	24.84	0.3	0.3	11.603	B
C-A	124.68	124.68			124.68				
A-B	34.03	34.03			34.03				
A-C	162.95	162.95			162.95				

09:00 - 09:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	36.10	36.10	60.16	0.600	41.45	7.0	1.7	57.358	F
C-AB	31.11	31.11	109.82	0.283	31.04	0.3	0.4	11.413	B
C-A	95.74	95.74			95.74				
A-B	33.00	33.00			33.00				
A-C	133.04	133.04			133.04				

2028 + Dev. (Berkeley Homes Survey), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Growth Factors	Growth Factor 1	One or more Growth Factors use TEMPRO data. TRL is not responsible for TEMPRO datasets and cannot guarantee their correctness. If in doubt, please use the TEMPRO software directly.
Warning	Demand Set Relationship	D5 - 2028 + Dev. (Berkeley Homes Survey), AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Knowle Lane/High Street	T-Junction	Two-way		53.16	F

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 period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D5	2028 + Dev. (Berkeley Homes Survey)	AM	DIRECT	07:45	09:15	90	15	✓	Simple	D2+D3

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - High Street (east)		DIRECT	✓	100.000
B - Knowle Lane		DIRECT	✓	100.000
C - High Street (west)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 -
08:00

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From				
	A - High Street (east)	0.00	16.47	177.38
	B - Knowle Lane	11.31	0.00	32.94
	C - High Street (west)	88.69	30.81	0.00

Demand (Veh/TS)

08:00 -
08:15

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From				
	A - High Street (east)	0.00	26.72	152.63
	B - Knowle Lane	21.56	0.00	26.56
	C - High Street (west)	76.32	24.50	0.00

Demand (Veh/TS)

08:15 -
08:30

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From				
	A - High Street (east)	0.00	20.59	148.51
	B - Knowle Lane	30.85	0.00	32.75
	C - High Street (west)	110.35	27.72	0.00

Demand (Veh/TS)

08:30 -
08:45

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From				
	A - High Street (east)	0.00	22.59	124.79
	B - Knowle Lane	32.94	0.00	29.72
	C - High Street (west)	101.07	34.81	0.00

Demand (Veh/TS)

08:45 -
09:00

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From				
	A - High Street (east)	0.00	36.03	162.95
	B - Knowle Lane	22.66	0.00	21.59
	C - High Street (west)	124.79	30.75	0.00

Demand (Veh/TS)

09:00 -
09:15

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From				
	A - High Street (east)	0.00	35.00	133.04
	B - Knowle Lane	20.50	0.00	29.59
	C - High Street (west)	95.91	36.94	0.00

Vehicle Mix

Heavy Vehicle Percentages

From	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
	A - High Street (east)	0	9	2
	B - Knowle Lane	0	0	0
	C - High Street (west)	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-AC	1.14	366.56	18.4	F	52.16	312.98
C-AB	0.34	12.60	0.5	B	31.16	186.94
C-A					99.29	595.72
A-B					26.24	157.41
A-C					149.88	899.29

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	44.25	44.25	64.18	0.689	42.32	0.0	1.9	38.438	E
C-AB	31.03	31.03	103.68	0.299	30.61	0.0	0.4	12.249	B
C-A	88.48	88.48			88.48				
A-B	16.47	16.47			16.47				
A-C	177.38	177.38			177.38				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	48.13	48.13	61.20	0.786	47.10	1.9	3.0	59.082	F
C-AB	24.55	24.55	106.42	0.231	24.67	0.4	0.3	11.027	B
C-A	76.27	76.27			76.27				
A-B	26.72	26.72			26.72				
A-C	152.63	152.63			152.63				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	63.60	63.60	55.79	1.140	53.26	3.0	13.3	168.193	F
C-AB	27.84	27.84	109.15	0.255	27.81	0.3	0.3	11.058	B
C-A	110.23	110.23			110.23				
A-B	20.59	20.59			20.59				
A-C	148.51	148.51			148.51				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	62.66	62.66	59.04	1.061	57.77	13.3	18.2	284.605	F
C-AB	35.09	35.09	114.62	0.306	34.99	0.3	0.4	11.288	B
C-A	100.80	100.80			100.80				
A-B	22.59	22.59			22.59				
A-C	124.79	124.79			124.79				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	44.25	44.25	45.75	0.967	44.01	18.2	18.4	366.555	F
C-AB	31.07	31.07	102.50	0.303	31.07	0.4	0.4	12.600	B
C-A	124.47	124.47			124.47				
A-B	36.03	36.03			36.03				
A-C	162.95	162.95			162.95				

09:00 - 09:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	50.10	50.10	60.05	0.834	56.96	18.4	11.6	244.260	F
C-AB	37.37	37.37	109.98	0.340	37.30	0.4	0.5	12.369	B
C-A	95.48	95.48			95.48				
A-B	35.00	35.00			35.00				
A-C	133.04	133.04			133.04				

2028 + Dev. (TRICS), AM

Data Errors and Warnings

Severity	Area	Item	Description
Warning	Growth Factors	Growth Factor 1	One or more Growth Factors use TEMPRO data. TRL is not responsible for TEMPRO datasets and cannot guarantee their correctness. If in doubt, please use the TEMPRO software directly.
Warning	Demand Set Relationship	D5 - 2028 + Dev. (Berkeley Homes Survey), AM	Demand Set relationships are chained. This may slow down the file.

Junction Network

Junctions

Junction	Name	Junction type	Major road direction	Use circulating lanes	Junction Delay (s)	Junction LOS
1	Knowle Lane/High Street	T-Junction	Two-way		65.13	F

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 period length (min)	Time segment length (min)	Run automatically	Relationship type	Relationship
D6	2028 + Dev. (TRICS)	AM	DIRECT	07:45	09:15	90	15	✓	Simple	D2+D4

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)	O-D data varies over time
✓	✓	HV Percentages	2.00	✓

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Scaling Factor (%)
A - High Street (east)		DIRECT	✓	100.000
B - Knowle Lane		DIRECT	✓	100.000
C - High Street (west)		DIRECT	✓	100.000

Origin-Destination Data

Demand (Veh/TS)

07:45 - 08:00		To			
	From		A - High Street (east)	B - Knowle Lane	C - High Street (west)
		A - High Street (east)	0.00	15.47	177.38
		B - Knowle Lane	10.31	0.00	30.94
		C - High Street (west)	88.69	26.81	0.00

Demand (Veh/TS)

08:00 - 08:15		To			
	From		A - High Street (east)	B - Knowle Lane	C - High Street (west)
		A - High Street (east)	0.00	25.32	152.63
		B - Knowle Lane	22.96	0.00	30.46
		C - High Street (west)	76.32	21.20	0.00

Demand (Veh/TS)

08:15 - 08:30		To			
	From		A - High Street (east)	B - Knowle Lane	C - High Street (west)
		A - High Street (east)	0.00	20.39	148.51
		B - Knowle Lane	32.25	0.00	36.65
		C - High Street (west)	110.35	25.82	0.00

Demand (Veh/TS)

08:30 - 08:45		To			
	From		A - High Street (east)	B - Knowle Lane	C - High Street (west)
		A - High Street (east)	0.00	21.19	124.79
		B - Knowle Lane	34.14	0.00	32.42
		C - High Street (west)	101.07	31.51	0.00

Demand (Veh/TS)

08:45 -
09:00

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From	A - High Street (east)	0.00	35.23	162.95
	B - Knowle Lane	22.86	0.00	22.89
	C - High Street (west)	124.79	28.05	0.00

Demand (Veh/TS)

09:00 -
09:15

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From	A - High Street (east)	0.00	33.00	133.04
	B - Knowle Lane	16.50	0.00	19.59
	C - High Street (west)	95.91	30.94	0.00

Vehicle Mix

Heavy Vehicle Percentages

	To			
		A - High Street (east)	B - Knowle Lane	C - High Street (west)
From	A - High Street (east)	0	9	2
	B - Knowle Lane	0	0	0
	C - High Street (west)	3	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max Delay (s)	Max Queue (Veh)	Max LOS	Average Demand (Veh/TS)	Total Junction Arrivals (Veh)
B-AC	1.20	447.15	23.7	F	52.00	311.98
C-AB	0.28	12.14	0.4	B	27.51	165.09
C-A					99.40	596.37
A-B					25.10	150.61
A-C					149.88	899.29

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	41.25	41.25	65.48	0.630	39.71	0.0	1.5	33.245	D
C-AB	26.92	26.92	103.62	0.260	26.57	0.0	0.3	11.632	B
C-A	88.59	88.59			88.59				
A-B	15.47	15.47			15.47				
A-C	177.38	177.38			177.38				

08:00 - 08:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	53.43	53.43	62.99	0.848	51.14	1.5	3.8	65.761	F
C-AB	21.22	21.22	106.67	0.199	21.32	0.3	0.3	10.558	B
C-A	76.29	76.29			76.29				
A-B	25.32	25.32			25.32				
A-C	152.63	152.63			152.63				

08:15 - 08:30

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	68.90	68.90	57.28	1.203	55.55	3.8	17.2	199.771	F
C-AB	25.90	25.90	109.09	0.237	25.85	0.3	0.3	10.803	B
C-A	110.27	110.27			110.27				
A-B	20.39	20.39			20.39				
A-C	148.51	148.51			148.51				

08:30 - 08:45

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	66.56	66.56	60.90	1.093	60.10	17.2	23.6	350.886	F
C-AB	31.68	31.68	114.67	0.276	31.61	0.3	0.4	10.826	B
C-A	100.90	100.90			100.90				
A-B	21.19	21.19			21.19				
A-C	124.79	124.79			124.79				

08:45 - 09:00

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	45.75	45.75	47.28	0.968	45.68	23.6	23.7	447.151	F
C-AB	28.25	28.25	102.38	0.276	28.25	0.4	0.4	12.140	B
C-A	124.59	124.59			124.59				
A-B	35.23	35.23			35.23				
A-C	162.95	162.95			162.95				

09:00 - 09:15

Stream	Total Demand (Veh/TS)	Junction Arrivals (Veh)	Capacity (Veh/TS)	RFC	Throughput (Veh/TS)	Start queue (Veh)	End queue (Veh)	Delay (s)	Unsignalised level of service
B-AC	36.10	36.10	59.84	0.603	57.26	23.7	2.5	223.319	F
C-AB	31.11	31.11	109.83	0.283	31.10	0.4	0.4	11.431	B
C-A	95.74	95.74			95.74				
A-B	33.00	33.00			33.00				
A-C	133.04	133.04			133.04				



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