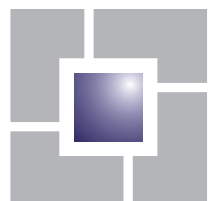


Land off Bedford Road, Wootton

Site Access Appraisal



david tucker associates
transport planning consultants

1.0 INTRODUCTION

- 1.1 This Technical Note has been prepared on behalf of The Crown Estate by David Tucker Associates (DTA) to review access proposals and traffic generation associated with the potential development of Land off Bedford Road in Wotton. The expectation is that the development will comprise circa 50 residential dwellings, with the potential of approximately 30 additional houses also being served off the access.
- 1.2 To inform this analysis, an Automated Traffic Count (ATC) survey was undertaken between 27th March and Tuesday 2nd April 2019 on Bedford Road. The survey data is attached as **Appendix A** and is reviewed below.

2.0 VEHICLE ACCESS

- 2.1 The vehicle access proposals are shown on **Drawing 21132-02** attached as **Appendix B**. In order to accommodate the access, it is proposed that an existing driveway will be realigned within the adopted highway to provide a greater degree of separation. A lighting column and some street furniture will also need to be relocated as indicated on the drawing.
- 2.2 In order to understand the visibility splay requirements, an ATC survey was undertaken on Bedford Road to the immediate north of the proposed site access. This recorded both the volume of traffic using Bedford Road as well as vehicle speeds. The ATC results are attached as **Appendix A** and they are summarised below in **Table 1**.

Table 1 – ATC Survey Summary

	Bedford Road		
	Daily Vehicles (5 Day Average)	Average Speed (mph)	85 th Percentile Speed (mph)
Northbound	3,040	28.1	32.0
Southbound	2,880	27.1	30.6
Two-way	5,920	-	-

- 2.3 Based on the guidance provided in Manual for Streets (MfS) 2, visibility splays of 40m to the south and 37m to the north would be required. As shown on **Drawing 21132-02**, splays of 43m are achievable to the north and south of the proposed site access, and these can be achieved within the adopted highway. The highway boundary information is attached as **Appendix C**.

3.0 VEHICLE TRIP GENERATION

- 3.1 TRICS data has been used to estimate the future vehicle trip generation of the site. For this, vehicle trip rates were extracted for 'Land Use: 03 – Residential, Category: A – Houses Privately Owned'. The TRICS outputs are attached as **Appendix D** and summarised in **Table 2**, along with the forecast vehicle trip generation for the site.

Table 2 – Vehicle Trip Rates and Trip Generation

	Morning Peak (08:00 – 09:00)			Evening Peak (17:00 – 18:00)			12 Hours (07:00 – 19:00)		
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL
Trip Rates (Per Dwelling)	0.120	0.396	0.516	0.375	0.136	0.511	2.358	2.330	4.688
Trip Generation (50 Dwellings)	6	20	26	19	7	26	118	117	235
Trip Generation (80 Dwellings)	10	32	42	30	11	41	189	186	375

4.0 SITE ACCESS CAPACITY

- 4.1 An assessment of the operation of the site access has been undertaken using the PICADY module within Junctions 9. This assessment is based on the higher quantum of development (80 dwellings) and therefore provides a robust assessment.
- 4.2 The 2019 surveyed traffic flows were factored using TEMPRO software to provide a five-year forecast scenario (2024 assessment). Development traffic was then added onto these flows, assuming that 100% of vehicles turn right in and out of the access which provides a worst-case analysis. The results of the assessment are summarised in **Table 3** and the full outputs are attached as **Appendix E**.

Table 3 – Site Access Assessment

	AM Peak		PM Peak	
	RFC	MMQ	RFC	MMQ
Site Access to Bedford Road	0.094	0	0.035	0
Bedford Road (S) to Site Access	0.025	0	0.081	0

- 4.3 An RFC of 0.85 is usually considered to show a link or junction is operating at, or close to, capacity. The results in **Table 3** demonstrate that the proposed site access would operate well within capacity in the future with the proposed development.
- 4.4 Any wider highways impact would be limited, as development traffic disperses from the site access to the north and south.

5.0 CONCLUSIONS

- 5.1 This technical note has been prepared to review access proposals and traffic generation associated with the potential development of Land off Bedford Road in Wootton. This demonstrates that a geometrically viable vehicle access with appropriate visibility splays could be achieved off Bedford Road to serve future residential development. This would require some alterations to an existing driveway within the adopted highway, as well as the relocation of existing street furniture.
- 5.2 A review of the potential vehicle trip generation of 80 dwellings has been undertaken. An assessment of the operation of the site access demonstrates that it would work well within capacity in the future with the proposed development. Any wider off-site impact would be limited, as development traffic disperses.

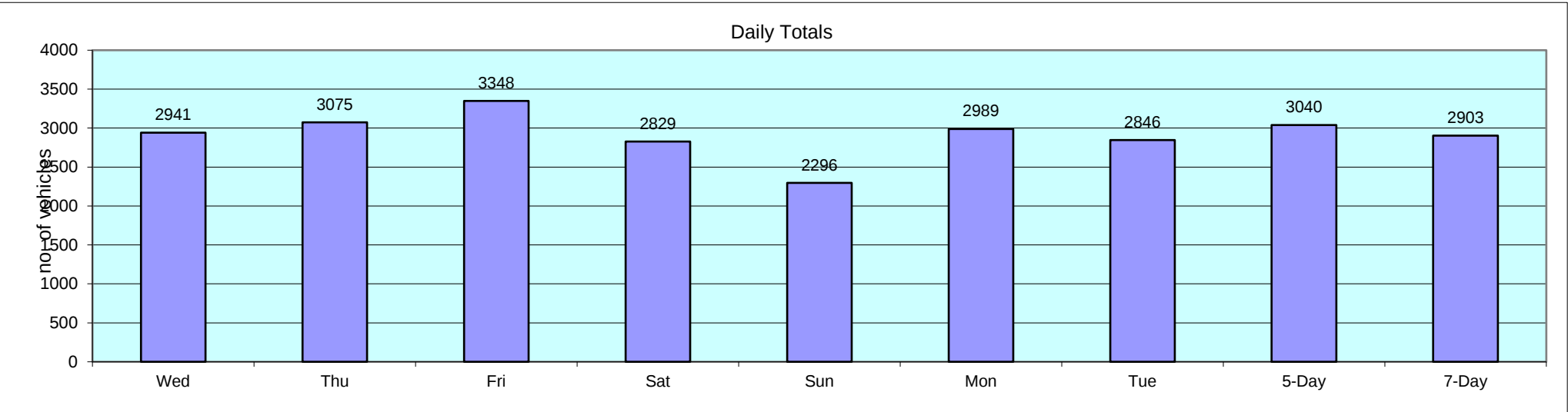
APPENDIX A

24093 WOOTTON									
MARCH 2019									
Site	Location	Direction	Start Date	End Date	Posted Speed Limit (PSL)	Total Vehicles	5 Day Ave.	7 Day Ave.	Average 85%ile Speed
Site No: 24093001	Bedford Road, Wootton (TG Pole 459) TL 01049 45942	Channel: Northbound	Wed 27-Mar-19	Tue 02-Apr-19	30	20324	3040	2903	32.0
		Channel: Southbound	Wed 27-Mar-19	Tue 02-Apr-19		19353	2880	2765	30.6

24093		WOOTTON				
		MARCH 2019				
Site	Location	Direction	Start Date	End Date	Posted Speed Limit (PSL)	Average Mean Speed
Site No: 24093001	Bedford Road, Wootton (TG Pole 459) TL 01049 45942	Channel: Northbound	Wed 27-Mar-19	Tue 02-Apr-19	30	28.1
		Channel: Southbound	Wed 27-Mar-19	Tue 02-Apr-19		27.4

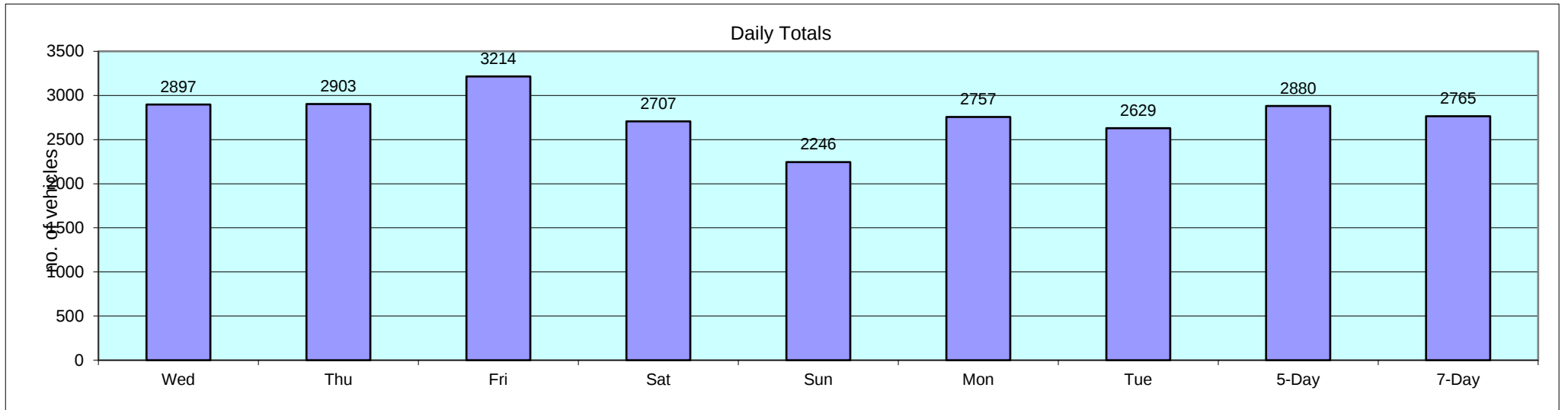
24093	WOOTTON			Site No: 24093001		Location		Bedford Road, Wootton (TG Pole 459)		
	Channel: Northbound									
	Wed	Thu	Fri	Sat	Sun	Mon	Tue	5-Day	7-Day	
TIME PERIOD	27/03/19	28/03/19	29/03/19	30/03/19	31/03/19	01/04/19	02/04/19	Av	Av	
Week Begin: 27-Mar-19										
00:00	3	3	9	16	21	11	3	6	9	
01:00	4	7	3	17	14	0	1	3	7	
02:00	1	1	1	10	14	1	0	1	4	
03:00	3	1	3	9	9	2	2	2	4	
04:00	8	9	8	8	7	5	9	8	8	
05:00	28	24	23	14	16	26	26	25	22	
06:00	90	70	79	23	16	87	83	82	64	
07:00	204	197	189	103	31	221	207	204	165	
08:00	238	283	241	188	54	258	227	249	213	
09:00	210	223	265	256	169	216	213	225	222	
10:00	143	161	231	223	227	155	191	176	190	
11:00	182	181	208	235	267	158	160	178	199	
12:00	155	135	177	246	223	157	171	159	181	
13:00	159	185	199	199	204	155	140	168	177	
14:00	189	181	200	188	162	167	147	177	176	
15:00	211	221	265	146	160	201	200	220	201	
16:00	219	254	287	208	148	270	266	259	236	
17:00	295	351	320	193	113	387	308	332	281	
18:00	235	238	226	177	141	200	209	222	204	
19:00	124	167	169	150	119	150	116	145	142	
20:00	91	71	95	76	81	79	68	81	80	
21:00	88	58	72	43	54	34	57	62	58	
22:00	37	37	51	54	34	37	24	37	39	
23:00	24	17	27	47	12	12	18	20	22	
12H,7-19	2440	2610	2808	2362	1899	2545	2439	2568	2443	
16H,6-22	2833	2976	3223	2654	2169	2895	2763	2938	2788	
18H,6-24	2894	3030	3301	2755	2215	2944	2805	2995	2849	
24H,0-24	2941	3075	3348	2829	2296	2989	2846	3040	2903	
Am	08:00	08:00	09:00	09:00	11:00	08:00	08:00	-	-	
Peak	238	283	265	256	267	258	227	254	256	
Pm	17:00	17:00	17:00	12:00	12:00	17:00	17:00	-	-	
Peak	295	351	320	246	223	387	308	332	304	

	Wed	Thu	Fri	Sat	Sun	Mon	Tue	5-Day	7-Day
TIME PERIOD	27/03/19	28/03/19	29/03/19	30/03/19	31/03/19	01/04/19	02/04/19	Av	Av



24093	WOOTTON		Site No: 24093001		Location		Bedford Road, Wootton (TG Pole 459)		
	Channel: Southbound								
	Wed	Thu	Fri	Sat	Sun	Mon	Tue	5-Day	7-Day
TIME PERIOD	27/03/19	28/03/19	29/03/19	30/03/19	31/03/19	01/04/19	02/04/19	Av	Av
Week Begin: 27-Mar-19									
00:00	6	12	10	29	26	7	8	9	14
01:00	3	5	3	18	20	4	1	3	8
02:00	2	2	1	10	20	1	0	1	5
03:00	1	3	2	10	17	2	2	2	5
04:00	4	5	4	7	3	3	3	4	4
05:00	9	11	9	5	9	9	8	9	9
06:00	66	58	45	15	7	49	44	52	41
07:00	192	169	189	55	13	174	174	180	138
08:00	211	218	285	99	31	214	219	229	182
09:00	148	149	160	173	74	142	127	145	139
10:00	157	164	167	194	137	133	147	154	157
11:00	170	149	191	222	235	146	162	164	182
12:00	160	177	235	204	260	148	170	178	193
13:00	145	175	189	222	210	186	164	172	184
14:00	177	197	234	228	211	173	173	191	199
15:00	224	252	247	186	198	238	188	230	219
16:00	236	222	244	183	170	231	237	234	218
17:00	258	258	254	202	130	287	222	256	230
18:00	228	197	233	204	132	204	160	204	194
19:00	195	188	182	165	112	153	160	176	165
20:00	124	106	110	94	119	132	113	117	114
21:00	102	101	96	58	64	61	80	88	80
22:00	53	57	77	67	35	43	42	54	53
23:00	26	28	47	57	13	17	25	29	30
12H,7-19	2306	2327	2628	2172	1801	2276	2143	2336	2236
16H,6-22	2793	2780	3061	2504	2103	2671	2540	2769	2636
18H,6-24	2872	2865	3185	2628	2151	2731	2607	2852	2720
24H,0-24	2897	2903	3214	2707	2246	2757	2629	2880	2765
Am	08:00	08:00	08:00	11:00	11:00	08:00	08:00	-	-
Peak	211	218	285	222	235	214	219	229	229
Pm	17:00	17:00	17:00	14:00	12:00	17:00	16:00	-	-
Peak	258	258	254	228	260	287	237	259	255

	Wed	Thu	Fri	Sat	Sun	Mon	Tue	5-Day	7-Day
TIME PERIOD	27/03/19	28/03/19	29/03/19	30/03/19	31/03/19	01/04/19	02/04/19	Av	Av



APPENDIX B



Based upon the ORDNANCE SURVEY MAPS with the permission of THE CONTROLLER OF HER MAJESTY'S STATIONERY OFFICE © Crown Copyright AL 100030412 © David Tucker Associates	REV	DESCRIPTION	DRAWN	INITIALS	DATE	DRAWING STATUS	CHECKED BY	DATE	 david tucker associates transport planning consultants Forester House, Doctors Lane, Henley in Arden, Warwickshire B95 5AW Tel: +44(0)1564 793598 Fax: +44(0)1564 793983 www.dtatransportation.co.uk	JOB TITLE		Land off Bedford Road		CLIENT		Crown Estates	
										DRAWING TITLE							
										Proposed Site Access Arrangements							
										with Visibility Splays							
										SCALE	DRAWN BY	DATE	DRAWING No		REVISION		
										1:500@A3	DN	Apr 19	21132-02		A		

APPENDIX C



BEDFORD BOROUGH COUNCIL

Borough Charter granted in 1166



INVESTOR IN PEOPLE

Chief Executive: P. J. Simpkins

DTA Transportation Ltd
The Station
Wilmcote
Stratford-Upon-Avon
CV37 9UP

Please ask
for:
Direct line:
E-mail:
Your ref:
Our ref:
Date:

Karen Jaikens

01234 276386
Karen.jaikens@bedford.gov.uk
21132
KJJ/WOOT/PB1220
22/03/2019

Dear Sirs

Re: Bedford Road, Wootton, Bedford

In reply to your enquiry, please find enclosed two new plans on which the publicly maintained highway is shown hatched black. The areas shown yellow are not highway maintained at the public expense.

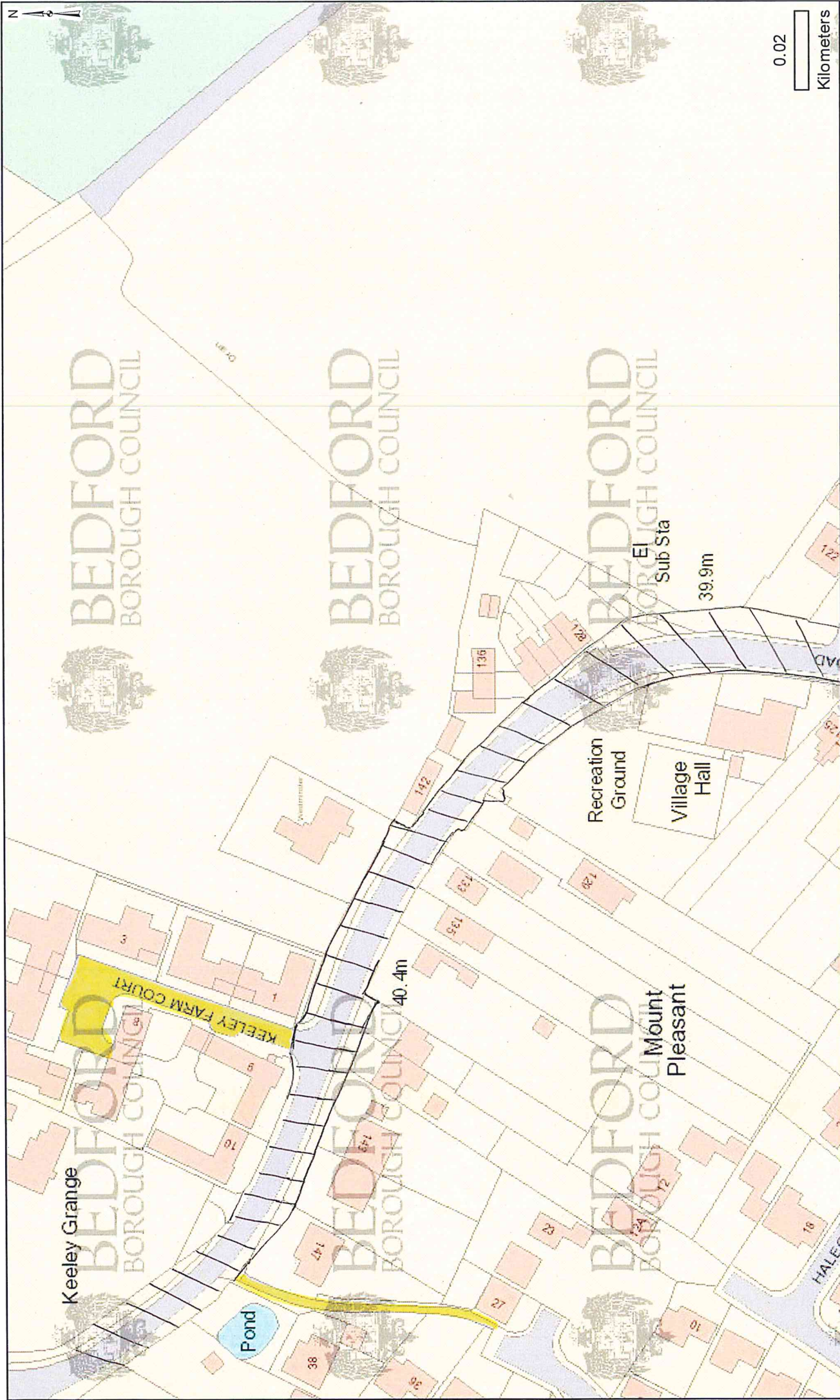
It is not the councils function to express an opinion as to whether or not any existing or proposed highway directly abuts the boundary of the property

This reply is furnished after appropriate enquiries and with the information at present available to the officers of the Borough Council.

An invoice for £41.00 + VAT will follow this reply. Please wait for the invoice before sending payment.

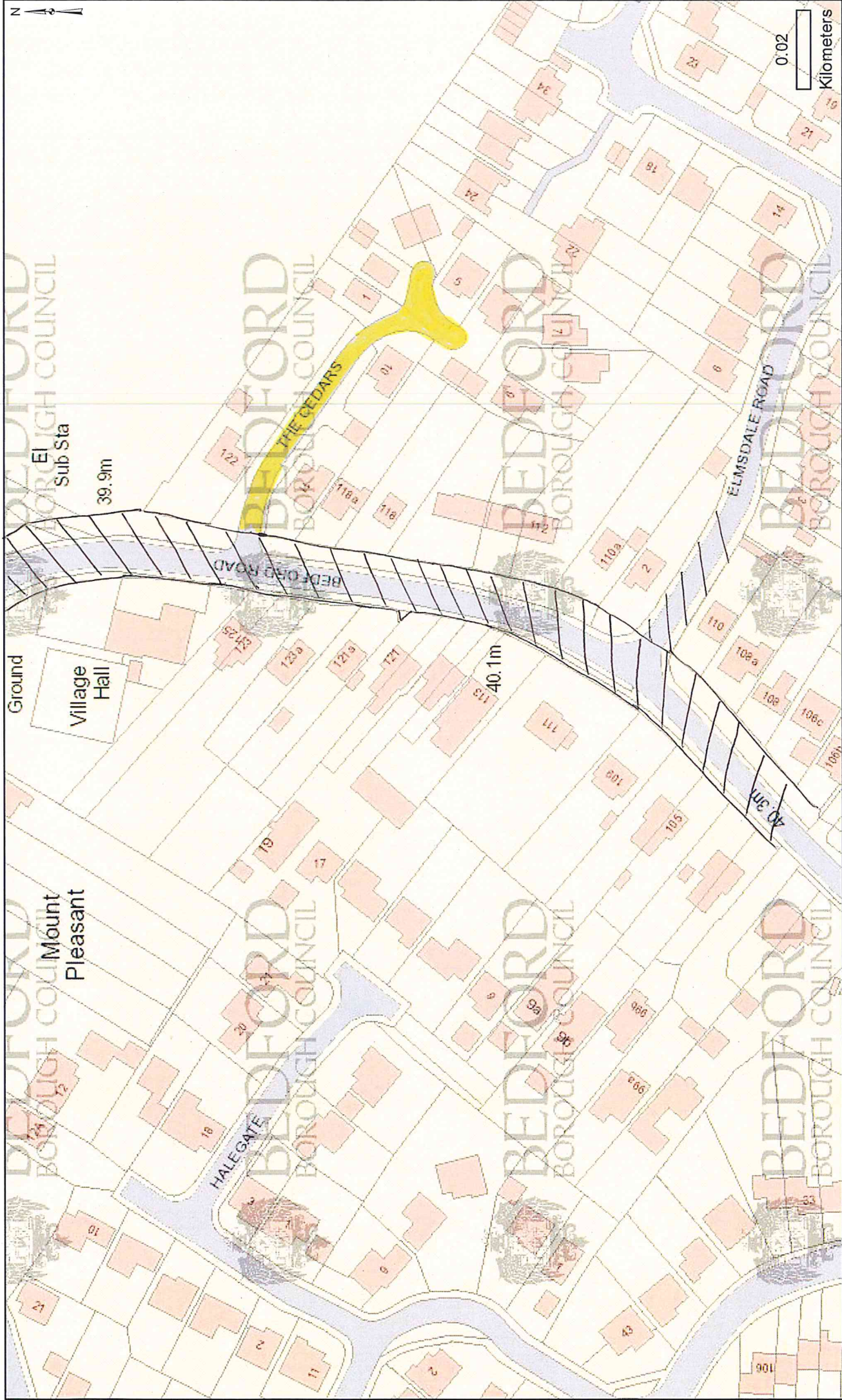
Yours faithfully

Karen Jaikens
Land Charges Officer
Highways Development Control
Highways & Direct Works Group



Bedford Road Wootton

1:1,250



1:1,250

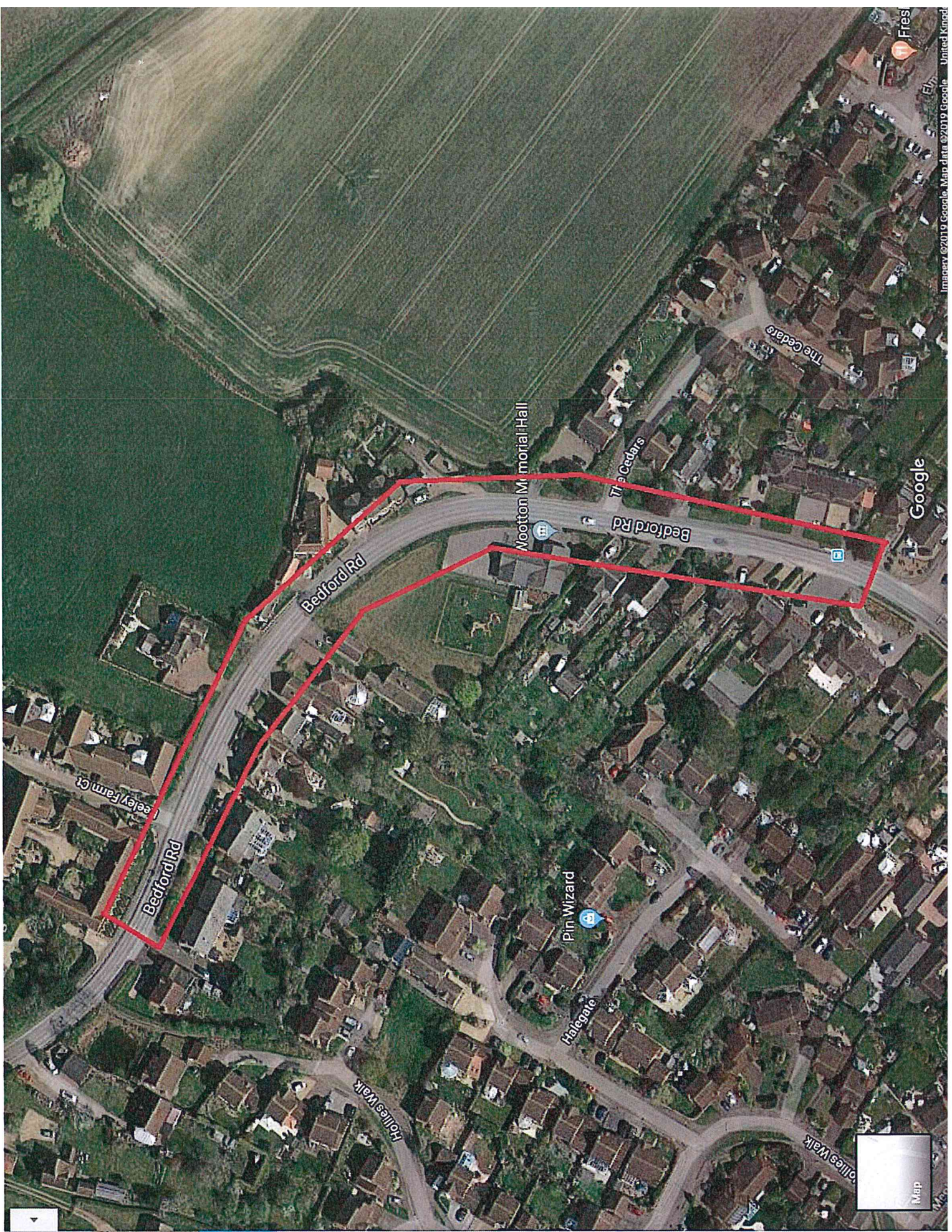
Bedford Road Wootton

Directions

OUR
SHARE



located to the south-
ire, England. The
nd, Keeley Green and



APPENDIX D

Calculation Reference: AUDIT-623801-190411-0430

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	ES EAST SUSSEX	1 days
	HC HAMPSHIRE	2 days
	SC SURREY	1 days
	WS WEST SUSSEX	1 days
03	SOUTH WEST	
	SM SOMERSET	1 days
06	WEST MIDLANDS	
	SH SHROPSHIRE	1 days
	ST STAFFORDSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	3 days
08	NORTH WEST	
	CH CHESHIRE	1 days
	GM GREATER MANCHESTER	1 days
	LC LANCASHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Secondary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
 Actual Range: 23 to 79 (units:)
 Range Selected by User: 20 to 100 (units:)

Parking Spaces Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/11 to 20/11/18

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	3 days
Wednesday	5 days
Thursday	3 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	14 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town	14
--------------	----

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	12
No Sub Category	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3 14 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 1 mile:

1,001 to 5,000	3 days
5,001 to 10,000	2 days
10,001 to 15,000	3 days
15,001 to 20,000	4 days
20,001 to 25,000	2 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	1 days
50,001 to 75,000	1 days
75,001 to 100,000	5 days
100,001 to 125,000	1 days
125,001 to 250,000	3 days
500,001 or More	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	13 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	4 days
No	10 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	14 days
-----------------	---------

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	CH-03-A-09 GREYSTOKE ROAD MACCLESFIELD HURDSFIELD Edge of Town Residential Zone Total Number of dwellings: Survey date: MONDAY	TERRACED HOUSES 24 24/11/14	CESHIRE Survey Type: MANUAL
2	ES-03-A-02 SOUTH COAST ROAD PEACEHAVEN Edge of Town Residential Zone Total Number of dwellings: Survey date: FRIDAY	PRIVATE HOUSING 37 18/11/11	EAST SUSSEX Survey Type: MANUAL
3	GM-03-A-10 BUTT HILL DRIVE MANCHESTER PRESTWICH Edge of Town Residential Zone Total Number of dwellings: Survey date: WEDNESDAY	DETACHED / SEMI 29 12/10/11	GREATER MANCHESTER Survey Type: MANUAL
4	HC-03-A-21 PRIESTLEY ROAD BASINGSTOKE HOUNDMILLS Edge of Town Residential Zone Total Number of dwellings: Survey date: TUESDAY	TERRACED & SEMI-DETACHED 39 13/11/18	HAMPSHIRE Survey Type: MANUAL
5	HC-03-A-22 BOW LAKE GARDENS NEAR EASTLEIGH BISHOPSTOKE Edge of Town Residential Zone Total Number of dwellings: Survey date: WEDNESDAY	MIXED HOUSES 40 31/10/18	HAMPSHIRE Survey Type: MANUAL
6	LC-03-A-31 GREENSIDE PRESTON COTTAM Edge of Town Residential Zone Total Number of dwellings: Survey date: FRIDAY	DETACHED HOUSES 32 17/11/17	LANCASHIRE Survey Type: MANUAL
7	NY-03-A-07 CRAVEN WAY BOROUGHBRIDGE Edge of Town No Sub Category Total Number of dwellings: Survey date: TUESDAY	DETACHED & SEMI DET. 23 18/10/11	NORTH YORKSHIRE Survey Type: MANUAL
8	NY-03-A-10 BOROUGHBRIDGE ROAD RIPON Edge of Town No Sub Category Total Number of dwellings: Survey date: TUESDAY	HOUSES AND FLATS 71 17/09/13	NORTH YORKSHIRE Survey Type: MANUAL
9	NY-03-A-11 HORSEFAIR BOROUGHBRIDGE Edge of Town Residential Zone Total Number of dwellings: Survey date: WEDNESDAY	PRIVATE HOUSING 23 18/09/13	NORTH YORKSHIRE Survey Type: MANUAL

LIST OF SITES relevant to selection parameters (Cont.)

10	SC-03-A-04 HIGH ROAD BYFLEET	DETACHED & TERRACED	SURREY
	Edge of Town Residential Zone Total Number of dwellings:	71	
	Survey date: THURSDAY	23/01/14	Survey Type: MANUAL
11	SH-03-A-05 SANDCROFT TELFORD SUTTON HILL	SEMI-DETACHED / TERRACED	SHROPSHIRE
	Edge of Town Residential Zone Total Number of dwellings:	54	
	Survey date: THURSDAY	24/10/13	Survey Type: MANUAL
12	SM-03-A-01 WEMBDON ROAD BRIDGWATER NORTHFIELD	DETACHED & SEMI	SOMERSET
	Edge of Town Residential Zone Total Number of dwellings:	33	
	Survey date: THURSDAY	24/09/15	Survey Type: MANUAL
13	ST-03-A-08 SILKMORE CRESCENT STAFFORD MEADOWCROFT PARK	DETACHED HOUSES	STAFFORDSHIRE
	Edge of Town Residential Zone Total Number of dwellings:	26	
	Survey date: WEDNESDAY	22/11/17	Survey Type: MANUAL
14	WS-03-A-10 TODDINGTON LANE LITTLEHAMPTON WICK	MIXED HOUSES	WEST SUSSEX
	Edge of Town Residential Zone Total Number of dwellings:	79	
	Survey date: WEDNESDAY	07/11/18	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
DC-03-A-08	Unrepresentative
EX-03-A-02	Unrepresentative

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	14	42	0.086	14	42	0.346	14	42	0.432
08:00 - 09:00	14	42	0.120	14	42	0.396	14	42	0.516
09:00 - 10:00	14	42	0.151	14	42	0.182	14	42	0.333
10:00 - 11:00	14	42	0.122	14	42	0.153	14	42	0.275
11:00 - 12:00	14	42	0.153	14	42	0.167	14	42	0.320
12:00 - 13:00	14	42	0.150	14	42	0.141	14	42	0.291
13:00 - 14:00	14	42	0.158	14	42	0.164	14	42	0.322
14:00 - 15:00	14	42	0.151	14	42	0.177	14	42	0.328
15:00 - 16:00	14	42	0.281	14	42	0.188	14	42	0.469
16:00 - 17:00	14	42	0.330	14	42	0.151	14	42	0.481
17:00 - 18:00	14	42	0.375	14	42	0.136	14	42	0.511
18:00 - 19:00	14	42	0.281	14	42	0.129	14	42	0.410
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			2.358			2.330			4.688

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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The Company accepts no responsibility for loss which may arise from reliance on data contained in the TRICS Database. [No warranty of any kind, express or implied, is made as to the data contained in the TRICS Database.]

Parameter summary

Trip rate parameter range selected:	23 - 79 (units:)
Survey date date range:	01/01/11 - 20/11/18
Number of weekdays (Monday-Friday):	14
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	2

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

APPENDIX E

Junctions 9							
PICADY 9 - Priority Intersection Module							
Version: 9.0.2.5947							
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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: Site Access.j9

Path: P:\21000's\21132

Report generation date: 12/04/2019 08:39:33

»2024 + DEV, AM

»2024 + DEV, PM

Summary of junction performance

	AM				PM			
	Q (Veh)	Delay (s)	RFC	Res Cap	Q (Veh)	Delay (s)	RFC	Res Cap
2024 + DEV								
Stream B-AC	0.1	10.55	0.09	170 %	0.0	10.68	0.03	161 %
Stream C-AB	0.0	5.24	0.02	[Stream B-AC]	0.2	5.11	0.08	[Stream B-AC]

Values shown are the highest values encountered over all time segments. Delay is the maximum value of Av. delay per arriving vehicle. Res Cap indicates the amount by which network flow could be increased before a user-definable threshold (see Analysis Options) is met.

File summary

File Description

Title	Site Access
Location	Bedford Road, Wootton
Site number	
Date	12/04/2019
Version	
Status	Preliminary
Identifier	
Client	
Jobnumber	21132
Enumerator	DTA\Arcady
Description	

Units

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

Analysis Options

Vehicle length (m)	Calculate Q Percentiles	Calculate detailed queueing delay	Calculate residual capacity	Residual capacity criteria type	RFC Threshold	Av. Delay threshold (s)	Q threshold (PCU)
5.75			✓	Delay	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)	Run automatically
D1	2024 + DEV	AM	ONE HOUR	07:45	09:15	15	✓
D2	2024 + DEV	PM	ONE HOUR	16:45	18:15	15	✓

Analysis Set Details

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

2024 + DEV, AM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.73	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	170	Stream B-AC

Arms

Arms

Arm	Name	Description	Arm type
A	Bedford Road (N)		Major
B	Site Access		Minor
C	Bedford Road (S)		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	6.50			50.0	✓	0.00

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	One lane	2.75	25	20

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	483	0.086	0.218	0.137	0.311
1	B-C	621	0.093	0.235	-	-
1	C-B	603	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 segment length (min)	Run automatically
D1	2024 + DEV	AM	ONE HOUR	07:45	09:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	249	100.000
B		ONE HOUR	✓	32	100.000
C		ONE HOUR	✓	281	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
		A	B	C
	A	0	0	249
	B	32	0	0
	C	271	10	0

Vehicle Mix

HV %s

	To			
		A	B	C
	A	0	0	3
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.09	10.55	0.1	B	29	44
C-AB	0.02	5.24	0.0	A	14	21
C-A					244	365
A-B					0	0
A-C					228	343

Main Results for each time segment

07:45 - 08:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	24	6	410	0.059	24	0.0	0.1	9.310	A
C-AB	11	3	698	0.015	11	0.0	0.0	5.235	A
C-A	201	50			201				
A-B	0	0			0				
A-C	187	47			187				

08:00 - 08:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	29	7	396	0.073	29	0.1	0.1	9.797	A
C-AB	14	3	718	0.019	14	0.0	0.0	5.109	A
C-A	239	60			239				
A-B	0	0			0				
A-C	224	56			224				

08:15 - 08:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	35	9	377	0.094	35	0.1	0.1	10.539	B
C-AB	18	5	746	0.025	18	0.0	0.0	4.946	A
C-A	291	73			291				
A-B	0	0			0				
A-C	274	69			274				

08:30 - 08:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	35	9	377	0.094	35	0.1	0.1	10.546	B
C-AB	18	5	746	0.025	18	0.0	0.0	4.949	A
C-A	291	73			291				
A-B	0	0			0				
A-C	274	69			274				

08:45 - 09:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	29	7	396	0.073	29	0.1	0.1	9.806	A
C-AB	14	3	718	0.019	14	0.0	0.0	5.115	A
C-A	239	60			239				
A-B	0	0			0				
A-C	224	56			224				

09:00 - 09:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	24	6	410	0.059	24	0.1	0.1	9.326	A
C-AB	11	3	698	0.015	11	0.0	0.0	5.240	A
C-A	201	50			201				
A-B	0	0			0				
A-C	187	47			187				

2024 + DEV, PM

Data Errors and Warnings

No errors or warnings

Junction Network

Junctions

Junction	Name	Junction Type	Major road direction	Junction Delay (s)	Junction LOS
1	untitled	T-Junction	Two-way	0.57	A

Junction Network Options

Driving side	Lighting	Res Cap (%)	First arm reaching threshold
Left	Normal/unknown	161	Stream B-AC

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)	Run automatically
D2	2024 + DEV	PM	ONE HOUR	16:45	18:15	15	✓

Vehicle mix varies over turn	Vehicle mix varies over entry	Vehicle mix source	PCU Factor for a HV (PCU)
✓	✓	HV Percentages	2.00

Demand overview (Traffic)

Arm	Linked arm	Profile type	Use O-D data	Av. Demand (Veh/hr)	Scaling Factor (%)
A		ONE HOUR	✓	278	100.000
B		ONE HOUR	✓	11	100.000
C		ONE HOUR	✓	391	100.000

Origin-Destination Data

Demand (Veh/hr)

	To			
	A	B	C	
From	A	0	0	278
	B	11	0	0
	C	361	30	0

Vehicle Mix

HV %s

	To			
	A	B	C	
From	A	0	0	2
	B	0	0	0
	C	2	0	0

Results

Results Summary for whole modelled period

Stream	Max RFC	Max delay (s)	Max Q (Veh)	Max LOS	Av. Demand (Veh/hr)	Total Junction Arrivals (Veh)
B-AC	0.03	10.68	0.0	B	10	15
C-AB	0.08	5.11	0.2	A	49	74
C-A					310	464
A-B					0	0
A-C					255	383

Main Results for each time segment

16:45 - 17:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	8	2	392	0.021	8	0.0	0.0	9.384	A
C-AB	36	9	741	0.048	35	0.0	0.1	5.104	A
C-A	259	65			259				
A-B	0	0			0				
A-C	209	52			209				

17:00 - 17:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	10	2	374	0.026	10	0.0	0.0	9.889	A
C-AB	47	12	769	0.061	47	0.1	0.1	4.981	A
C-A	305	76			305				
A-B	0	0			0				
A-C	250	62			250				

17:15 - 17:30

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	12	3	349	0.035	12	0.0	0.0	10.672	B
C-AB	65	16	809	0.080	65	0.1	0.1	4.835	A
C-A	365	91			365				
A-B	0	0			0				
A-C	306	77			306				

17:30 - 17:45

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	12	3	349	0.035	12	0.0	0.0	10.675	B
C-AB	65	16	809	0.081	65	0.1	0.1	4.839	A
C-A	365	91			365				
A-B	0	0			0				
A-C	306	77			306				

17:45 - 18:00

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	10	2	374	0.026	10	0.0	0.0	9.892	A
C-AB	47	12	769	0.061	47	0.1	0.1	4.992	A
C-A	305	76			305				
A-B	0	0			0				
A-C	250	62			250				

18:00 - 18:15

Stream	Total Demand (Veh/hr)	Junction Arrivals (Veh)	Capacity (Veh/hr)	RFC	Throughput (Veh/hr)	Start queue (Veh)	End queue (Veh)	Delay (s)	LOS
B-AC	8	2	392	0.021	8	0.0	0.0	9.393	A
C-AB	36	9	741	0.048	36	0.1	0.1	5.115	A
C-A	259	65			259				
A-B	0	0			0				
A-C	209	52			209				



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