

ashleyhelme

Land off Henthorn
Road, Clitheroe

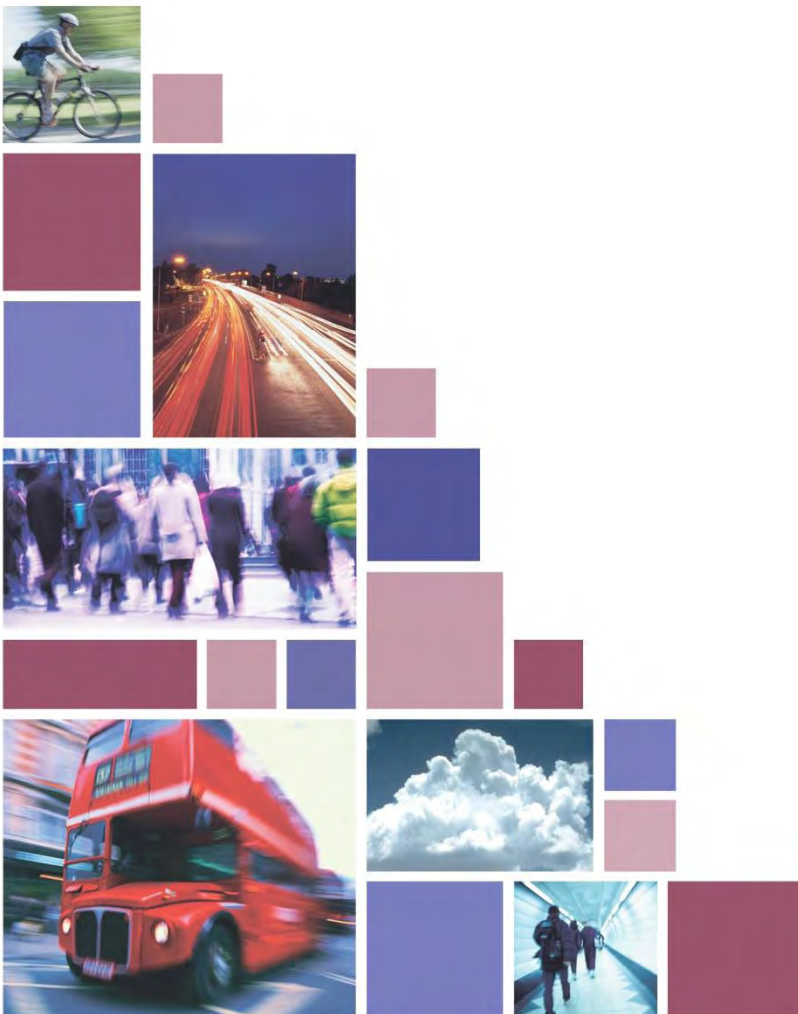
APPEAL REF:

APP/T2350/W/19/3221189

Figures, Tables, Appendices &
Drawings to the
Accessibility Evidence
of Simon Helme,
Ashley Helme Associates Ltd

April 2019

Report Reference 1616/4/B



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Figures, Tables, Appendices & Drawings to the
**Accessibility Evidence of Simon Helme,
Land off Henthorn Road, Clitheroe**

Report Ref: 1616/4/B

Status: Final

Date: April 2019

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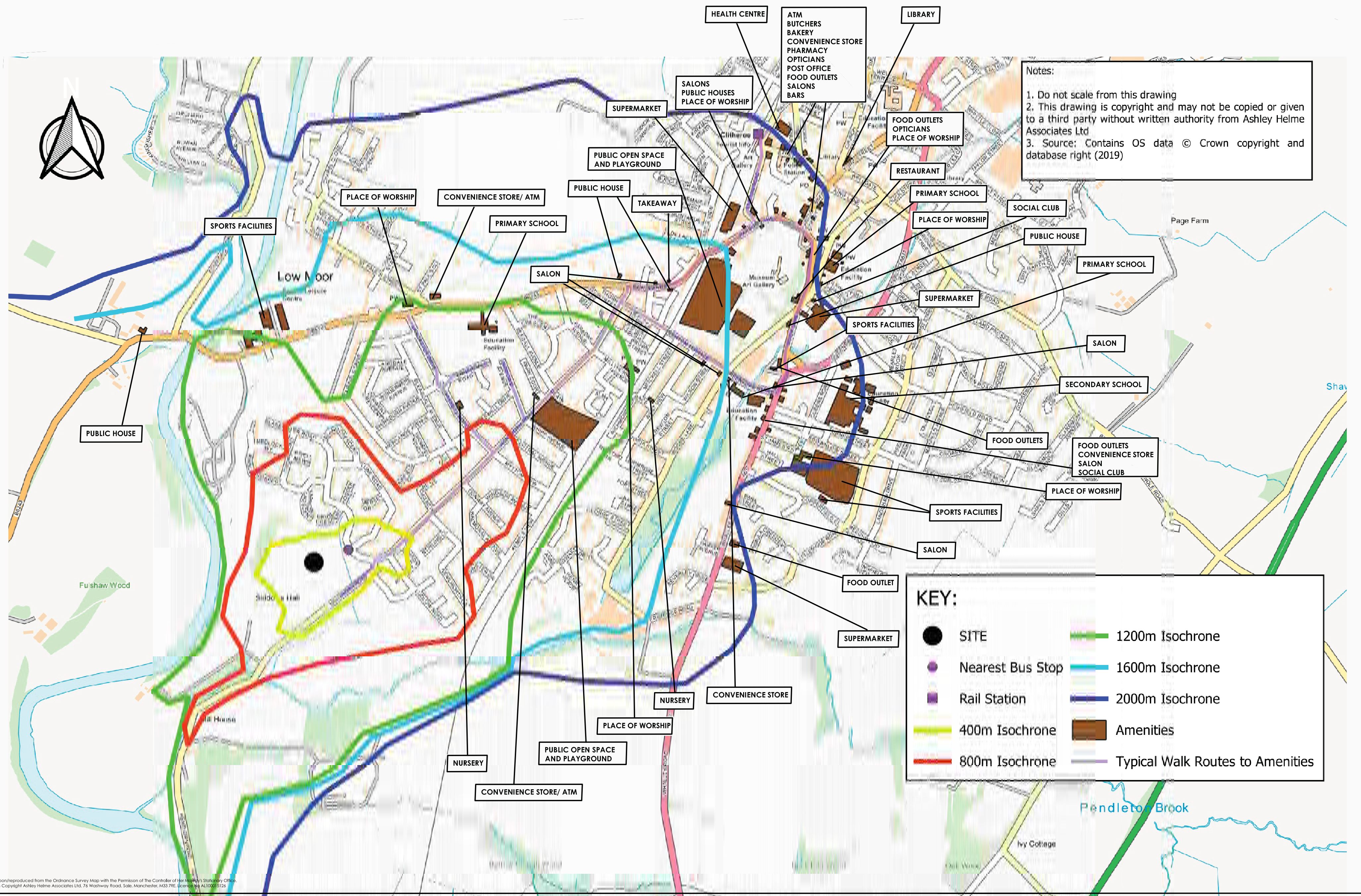
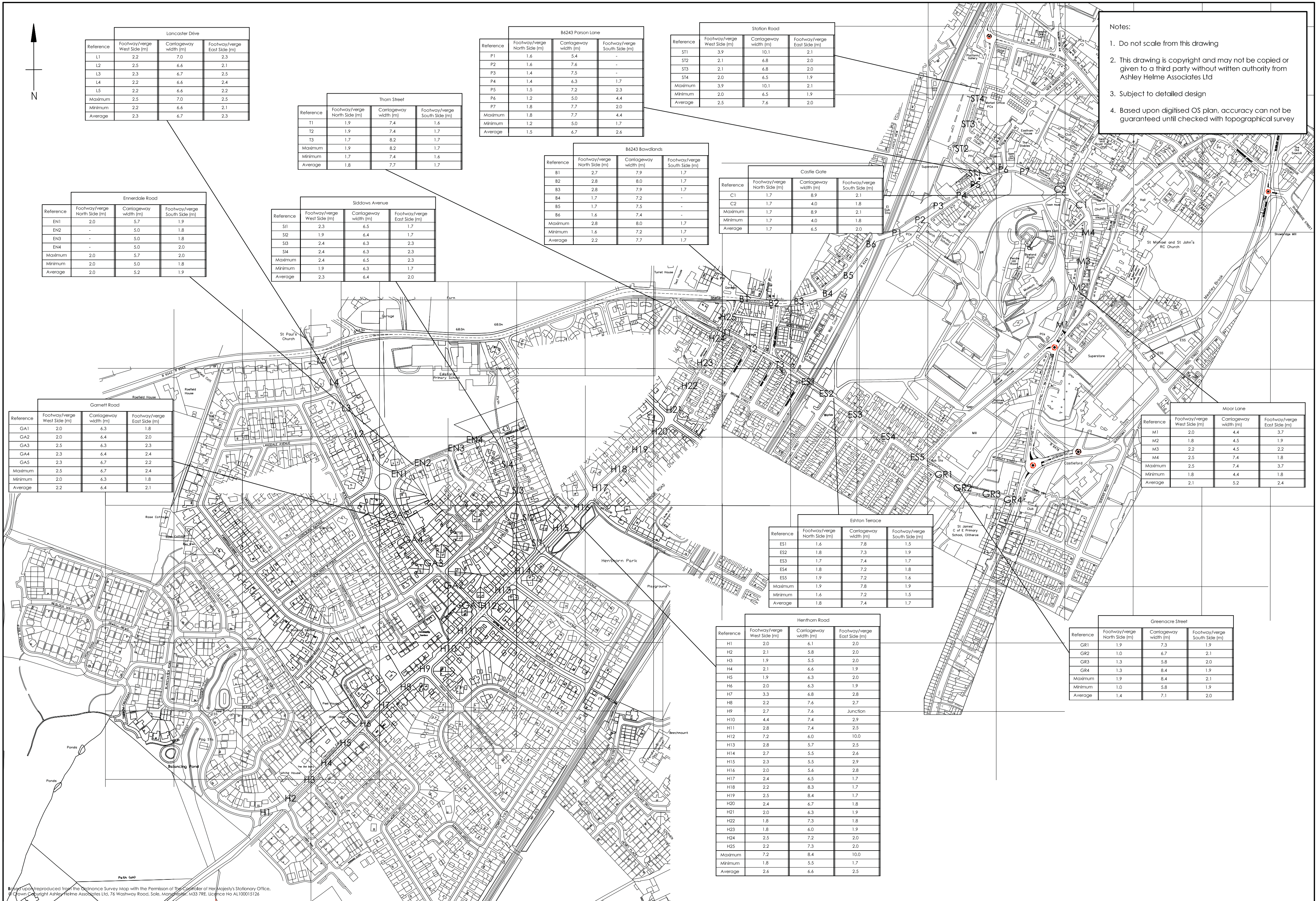


FIGURE 1

WALK ISOCHONES AND AMENITIES

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Lancaster Drive			
Reference	Footway/verge West Side (m)	Carriageway width (m)	Footway/verge East Side (m)
L1	2.2	7.0	2.3
L2	2.5	6.6	2.1
L3	2.3	6.7	2.5
L4	2.2	6.6	2.4
L5	2.2	6.6	2.2
Maximum	2.5	7.0	2.5
Minimum	2.2	6.6	2.1
Average	2.3	6.7	2.3

Thorn Street			
Reference	Footway/verge North Side (m)	Carriageway width (m)	Footway/verge South Side (m)
T1	1.9	7.4	1.6
T2	1.9	7.4	1.7
T3	1.7	8.2	1.7
Maximum	1.9	8.2	1.7
Minimum	1.7	7.4	1.6
Average	1.8	7.7	1.7

B6243 Parson Lane			
Reference	Footway/verge North Side (m)	Carriageway width (m)	Footway/verge South Side (m)
P1	1.6	5.4	-
P2	1.6	7.6	-
P3	1.4	7.5	-
P4	1.4	6.3	1.7
P5	1.5	7.2	2.3
P6	1.2	5.0	4.4
P7	1.8	7.7	2.0
Maximum	1.8	7.7	4.4
Minimum	1.2	5.0	1.7
Average	1.5	6.7	2.6

Station Road			
Reference	Footway/verge West Side (m)	Carriageway width (m)	Footway/verge East Side (m)
ST1	3.9	10.1	2.1
ST2	2.1	6.8	2.0
ST3	2.1	6.8	2.0
ST4	2.0	6.5	1.9
Maximum	3.9	10.1	2.1
Minimum	2.0	6.5	1.9
Average	2.5	7.6	2.0

B6243 Bawdlands			
Reference	Footway/verge North Side (m)	Carriageway width (m)	Footway/verge South Side (m)
B1	2.7	7.9	1.7
B2	2.8	8.0	1.7
B3	2.8	7.9	1.7
B4	1.7	7.2	-
B5	1.7	7.5	-
B6	1.6	7.4	-
Maximum	2.8	8.0	1.7
Minimum	1.6	7.2	1.7
Average	2.2	7.7	1.7

Castle Gate			
Reference	Footway/verge North Side (m)	Carriageway width (m)	Footway/verge South Side (m)
C1	1.7	8.9	2.1
C2	1.7	4.0	1.8
Maximum	1.7	8.9	2.1
Minimum	1.7	4.0	1.8
Average	1.7	6.5	2.0

Ennerdale Road			
Reference	Footway/verge North Side (m)	Carriageway width (m)	Footway/verge South Side (m)
EN1	2.0	5.7	1.9
EN2	-	5.0	1.8
EN3	-	5.0	1.8
EN4	-	5.0	2.0
Maximum	2.0	5.7	2.0
Minimum	2.0	5.0	1.8
Average	2.0	5.2	1.9

Siddows Avenue			
Reference	Footway/verge North Side (m)	Carriageway width (m)	Footway/verge South Side (m)
SI1	2.3	6.5	1.7
SI2	1.9	6.4	1.7
SI3	2.4	6.3	2.3
SI4	2.4	6.3	2.3
Maximum	2.4	6.5	2.3
Minimum	1.9	6.3	1.7
Average	2.3	6.4	2.0

Gamett Road			
Reference	Footway/verge West Side (m)	Carriageway width (m)	Footway/verge East Side (m)
GA1	2.0	6.3	1.8
GA2	2.0	6.4	2.0
GA3	2.5	6.3	2.3
GA4	2.3	6.4	2.4
GA5	2.3	6.7	2.2
Maximum	2.5	6.7	2.4
Minimum	2.0	6.3	1.8
Average	2.2	6.4	2.1

Moor Lane			
Reference	Footway/verge West Side (m)	Carriageway width (m)	Footway/verge East Side (m)
M1	2.0	4.4	3.7
M2	1.8	4.5	1.9
M3	2.2	4.5	2.2
M4	2.5	7.4	1.8
Maximum	2.5	7.4	3.7
Minimum	1.8	4.4	1.8
Average	2.1	5.2	2.4

Eshton Terrace			
Reference	Footway/verge North Side (m)	Carriageway width (m)	Footway/verge South Side (m)
ES1	1.6	7.8	1.5
ES2	1.8	7.3	1.9
ES3	1.7	7.4	1.7
ES4	1.8	7.2	1.8
ES5	1.9	7.2	1.6
Maximum	1.9	7.8	1.9
Minimum	1.6	7.2	1.5
Average	1.8	7.4	1.7

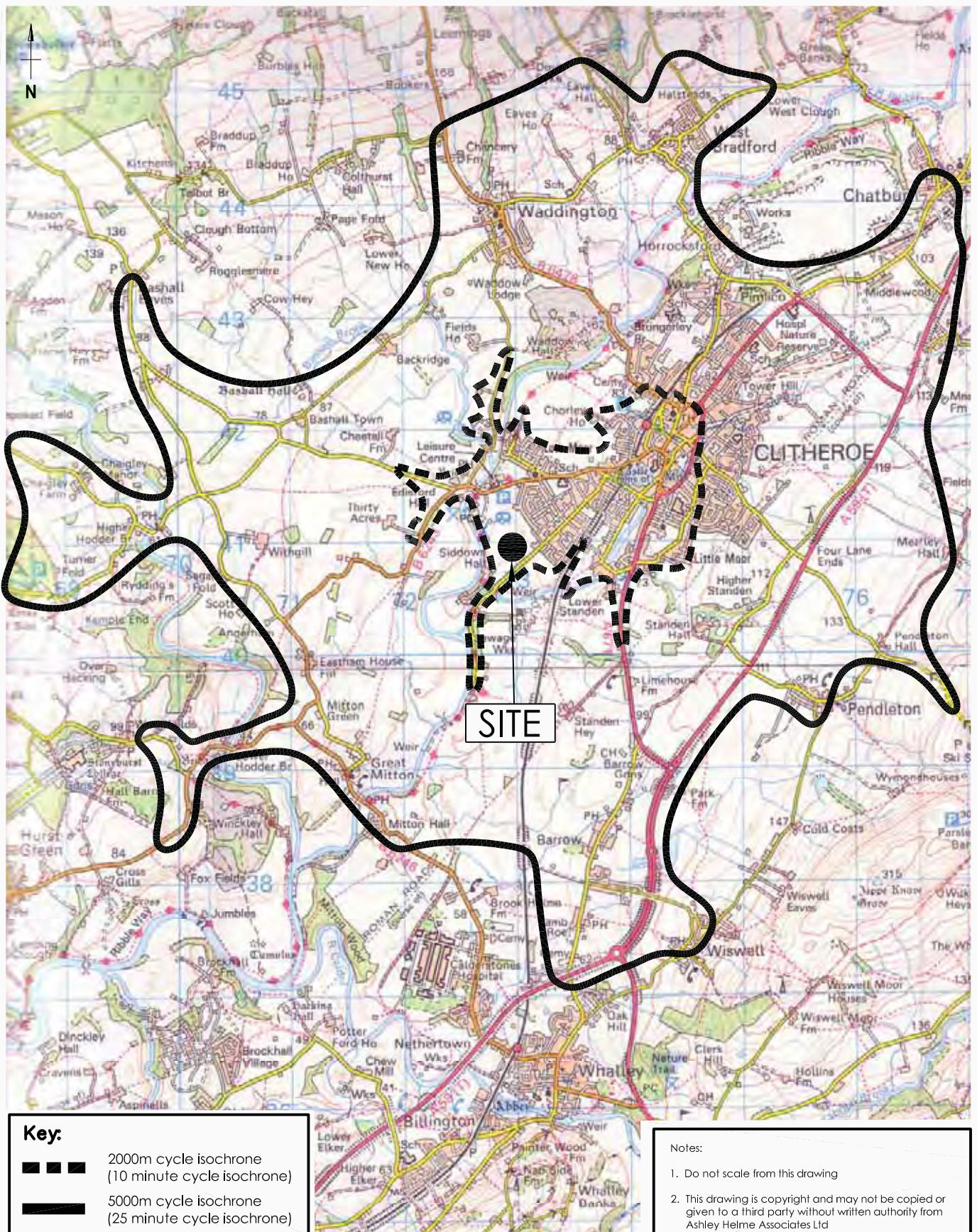
Henthorn Road			
Reference	Footway/verge West Side (m)	Carriageway width (m)	Footway/verge East Side (m)
H1	2.0	6.1	2.0
H2	2.1	5.8	2.0
H3	1.9	5.5	2.0
H4	2.1	6.6	1.9
H5	1.9	6.3	2.0
H6	2.0	6.3	1.9
H7	3.3	6.8	2.8
H8	2.2	7.6	2.7
H9	2.7	7.6	Junction
H10	4.4	7.4	2.9
H11	2.8	7.4	2.5
H12	7.2	6.0	10.0
H13	2.8	5.7	2.5
H14	2.7	5.5	2.6
H15	2.3	5.5	2.9
H16	2.0	5.6	2.8
H17	2.4	6.5	1.7
H18	2.2	8.3	1.7
H19	2.5	8.4	1.7
H20	2.4	6.7	1.8
H21	2.0	6.3	1.9
H22	1.8	7.3	1.8
H23	1.8	6.0	1.9
H24	2.5	7.2	2.0
H25	2.2	7.3	2.0
Maximum	7.2	8.4	10.0
Minimum	1.8	5.5	1.7
Average	2.6	6.6	2.5

Greenacre Street			
Reference	Footway/verge North Side (m)	Carriageway width (m)	Footway/verge South Side (m)
GR1	1.9	7.3	1.9
GR2	1.0	6.7	2.1
GR3	1.3	5.8	2.0
GR4	1.3	8.4	1.9
Maximum	1.9	8.4	2.1
Minimum	1.0	5.8	1.9
Average	1.4	7.1	2.0

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CYCLE ISOCHRONES

FIGURE 4

ashleyhelme
associates

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e: aha@ashleyhelme.co.uk t: 0161 972 0552 f: 0161 972 0553

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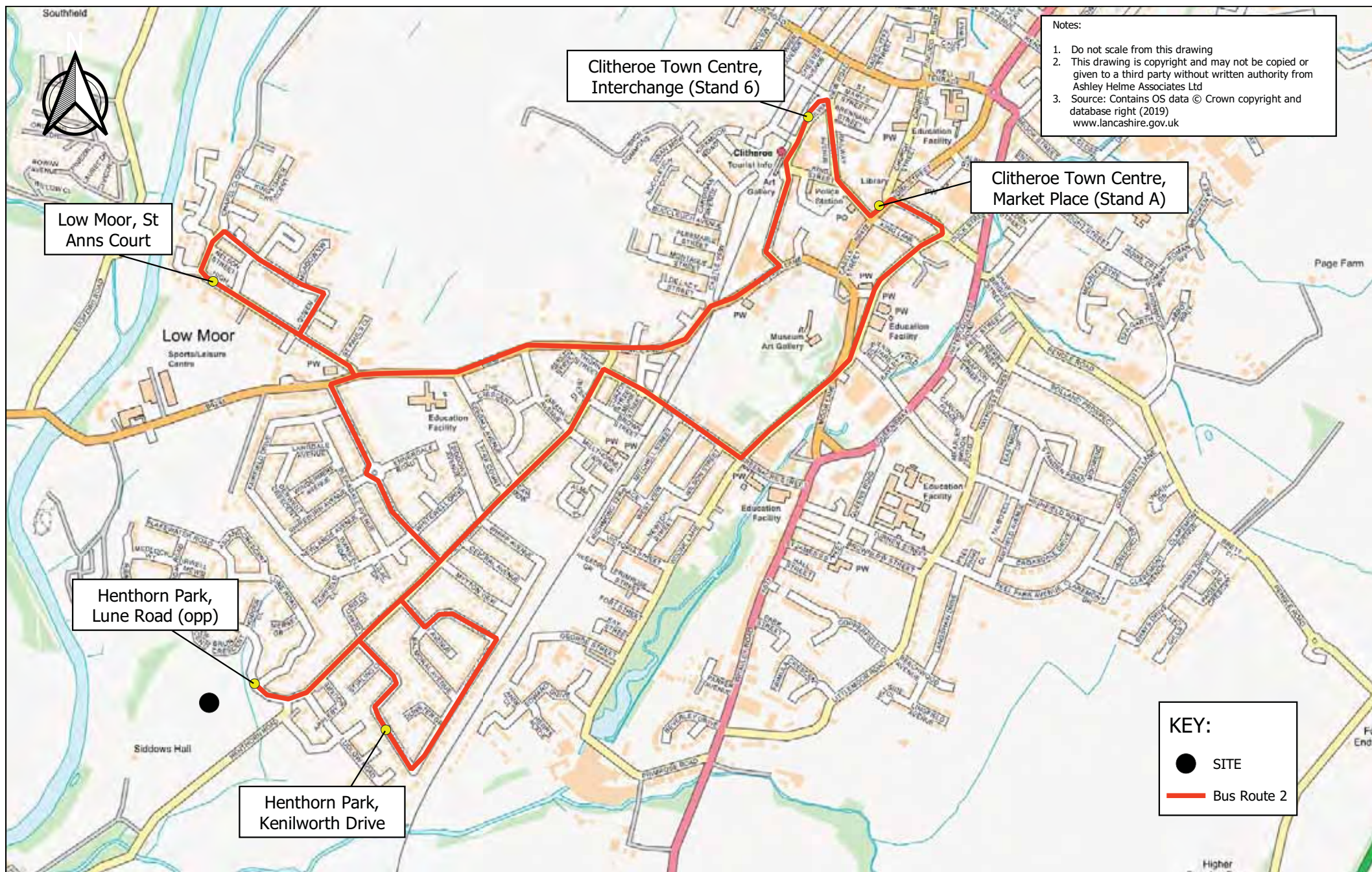


FIGURE 5 BUS ROUTE PLAN: SERVICE NO.2

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Tables

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DISTRICT	MSOA	TOTAL		WORK AT HOME		TRAM etc.		TRAIN		BUS		MOTOR CYCLE		CAR DRIVER	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Ribble Valley		28713	100	2282	7.9	26	0.1	328	1.1	603	2.1	167	0.6	20320	70.8
Ribble Valley	Ribble Valley 003	3490	100	140	4.0	5	0.1	47	1.3	80	2.3	29	0.8	2216	63.5

(cont)

DISTRICT	MSOA	TOTAL		CAR PASSENGER		TAXI		CYCLE		WALK		OTHER	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Ribble Valley		28713	100	1338	4.7	51	0.2	389	1.4	3053	10.6	156	0.5
Ribble Valley	Ribble Valley 003	3490	100	191	5.5	16	0.5	79	2.3	675	19.3	12	0.3

Notes:

1. Source: 2011 Census

TABLE 1

**TRAVEL TO WORK (RESIDENT POPULATION)
EMPLOYED PERSONS AGE 16-74**

AMENITY/ FACILITY	LOCATION	APPROX. DISTANCE M (TO NEAREST 5M)
Nearest Bus Stop No sign No timetable No seat No shelter	Blakewater Road	325
Alternative Bus Stop	Garnett Road	755
Public Open Space	Henthorn Road	845
Nursery/pre-school	Bambinos Boutique Day-Care, Garnett Road	860
Convenience Store/ATM	McColls, Henthorn Road	895
Playground	Whipp Avenue	995
Primary School	Edisford Primary School, Edisford Road	1015 (to entrance on Siddows Avenue)
Place of Worship	St Pauls Church, Edisford Road	1170
Place of Worship	Clitheroe Community Church, Millthorne Avenue	1200
Public Open Space/Playground and Football pitches/Leisure Centre	Roefield Leisure, Edisford Road	1250
Convenience Store/ATM	Spar, Edisford Road	1250
Nursery/pre-school	Bright Futures, Richmond Terrace	1300
Public House	Kings Arms, Bawdlands	1335
Salon	Bawdlands	1365
Restaurant/Takeaway	Bawdlands	1410
Public House	Horseshoe, Bawdlands	1410
Primary School	St James, Greenacre Street	1645
Main Town Centre Boundary (edge)	Parsons Lane	1680
Supermarket	Booths, Station Road	1760
Main Town Centre	Boots, Castle Street	1850
Opticians	Bayfields, Castle Street	1860
Village Hall/Social Club	Pendle Club, Lowergate	1905
Supermarket	Sainsburys, Lowergate	1910

AMENITY/ FACILITY	LOCATION	APPROX. DISTANCE M (TO NEAREST 5M)
Dentist	Castle Dental Studio, Moor Lane	1930
Pharmacy	Lloyds, King Street	1940
Secondary School	Ribblesdale School, Queens Road	1960
Railway Station	Railway View Road	1985
Clitheroe Post Office	King Street	2000
Clitheroe Library	Church Street	2065
Clitheroe Health Centre	Railway View Avenue	2075
Council Office	Church Walk	2090
Sports Ground/Sports Club	Clitheroe Rugby Club, Copperfield Close	2200

TABLE 2 WALK DISTANCES TO LOCAL FACILITIES

BUS No	Route	FREQUENCY			OPERATOR
		Mon- Sat		Sun	
		Day	Eve		
Services calling within 400m of Site (a 5 minute walk)					
2	Clitheroe Town Circular via Low Moor	30mins	-	-	PB
School services calling within 800m of Site (a 10 minute walk)					
686	Clitheroe-Bowland County High School	2 trips ⁽¹⁾	-	-	HC
School services calling within 1200m of Site (a 15 minute walk)					
510	Dunsop Bridge-Clitheroe Royal Grammar School-Bowland County High School	2 trips ⁽¹⁾	-	-	PC
645	Chipping-Ribblesdale High School	2 trips ⁽²⁾	-	-	BGT
Services calling within 1600m of Site (a 20 minute walk)					
4	Clitheroe-Peel Park Circular	60mins	-	-	BT

Source: www.lancashire.gov.uk,

Key:

PB Preston Bus
 HC Hodsons Coaches Ltd
 BT Boomerang Travel Ltd
 PC Pendle Coaches
 BGT Bretherton Gold Line Tours

Notes:

1. 1 trip to school in AM and 1 return trip in PM, schooldays and is for school children only
2. 1 trip to school in AM and 1 return trip in PM, schooldays and is for school children only. An additional service runs on Wednesdays and Fridays in direction to Chipping.
3. There are several school bus services operating within walking distance of the Site.

TABLE 3 BUS SERVICES AND FREQUENCIES

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From: Bloomer, David <David.Bloomer@lancashire.gov.uk>
Sent: 26 July 2018 12:19
To: aha@ashleyhelme.co.uk
Subject: Pre-app Henthorn Road Clitheroe

Follow Up Flag: Follow up
Flag Status: Flagged

Morning Kelly,

The proposed development comprises circa 110 dwellings as stated within the scoping study.

1 The study junctions proposed as part of the TA submission are identified within Par 2.2 of the scoping study and are the same as those adopted for a similar application on Henthorn Road (3/2012/1092) and as such these would be acceptable. The analysis should include queue length observations to validate the junction modelling. However in the highway comments to the 2012 application it was highlighted that there was no analysis of the impact of the at grade level crossing on the Henthorn Road, Eshton Terrace/Thorn Street junction. This impact should be specifically monitored.

2 The study identifies the 3 sustainable mode – walking, cycling and public transport but measures are only mentioned to promote the cycling element , with no other info provided or commitment to consider improvements to the walking environment or public transport services should the TA identify deficiencies in these areas.

3 Committed developments, there has been an additional application for a small housing development off Henthorn Road as part of an infill to an area of land off an existing estate. This comprised of 24 dwellings (app3/2017/0433) in the highway comments reference was made to the cumulative impacts of development along Henthorn Road and that the stage had been reached whereby any additional development may be cause for concern.

4 Trip Rates -The trip rates proposed are acceptable

5 Trip distributions - the trip distribution is acceptable although if drivers are faced with queues at het Thorn Street junction they my divert to either Faraday or Seedall. However the presented scenario would provide for a robust review of junctions JS 5 and 6

6 It is assumed that new traffic surveys will be undertaken at the junctions identified for further analysis

Dave Bloomer
Development Control
Lancashire County Council

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B AHA ATC Data Henthorn Road

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Clitheroe ATC 02, (North) Henthorn Road

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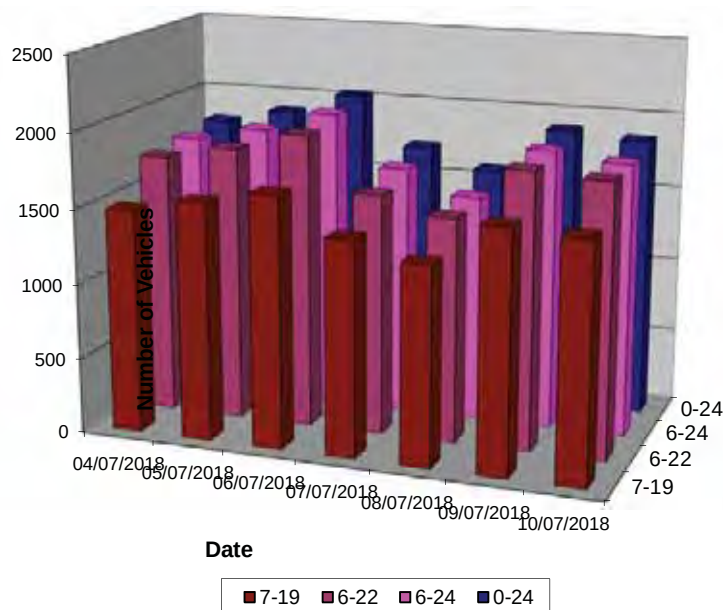
Channel 1 - Northbound

Vehicle Flow

Week 1

Hr Ending	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday	5 Day Ave	7 Day Ave
1	0	0	4	12	19	0	0	1	5
2	0	1	1	6	19	0	2	1	4
3	2	0	1	4	10	1	1	1	3
4	1	0	1	2	9	1	5	2	3
5	5	6	6	9	10	6	5	6	7
6	25	26	26	15	10	30	37	29	24
7	93	83	90	18	9	79	83	86	65
8	186	199	171	58	27	173	174	181	141
9	213	221	246	125	41	218	219	223	183
10	141	132	145	170	103	115	123	131	133
11	112	123	91	154	143	117	104	109	121
12	99	129	124	176	158	96	109	111	127
13	108	94	116	148	148	131	110	112	122
14	99	95	110	148	155	128	124	111	123
15	105	117	139	124	135	117	113	118	121
16	111	112	148	48	123	140	144	131	118
17	128	113	118	62	125	129	120	122	114
18	81	140	139	112	86	126	116	120	114
19	104	104	124	103	71	102	112	109	103
20	81	78	78	65	89	94	81	82	81
21	49	56	63	50	53	44	36	50	50
22	26	30	48	37	23	24	39	33	32
23	23	30	28	46	14	15	0	19	22
24	6	4	19	19	6	8	0	7	9
7-19	1487	1579	1671	1428	1315	1592	1568	1579	1520
6-22	1736	1826	1950	1598	1489	1833	1807	1830	1748
6-24	1765	1860	1997	1663	1509	1856	1807	1857	1780
0-24	1798	1893	2036	1711	1586	1894	1857	1896	1825

Vehicle Flow (Channel 1)



Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Average Speed

Week 1

Hr Ending	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday
1	-	-	26.8	25.5	25.9	-	-
2	-	18.0	33.0	26.3	29.6	-	28.0
3	25.5	-	28.0	28.0	29.0	28.0	23.0
4	38.0	-	33.0	33.0	31.9	33.0	32.0
5	31.0	29.7	25.5	27.4	30.0	26.3	26.0
6	25.6	25.1	28.0	26.7	22.5	25.1	26.2
7	28.2	29.0	28.9	25.8	27.4	27.7	28.3
8	27.1	27.4	26.2	26.1	26.9	27.0	26.5
9	25.5	25.8	25.5	26.7	24.8	26.0	25.1
10	24.1	25.5	23.4	24.6	24.5	24.6	24.2
11	24.4	24.0	24.4	25.5	24.8	24.7	23.8
12	23.6	25.0	24.9	25.0	24.9	24.4	23.9
13	24.1	24.4	25.5	26.2	25.2	24.1	24.5
14	24.9	23.7	25.0	25.0	25.4	23.6	22.8
15	24.2	24.5	25.7	26.2	24.1	24.0	22.6
16	24.6	24.7	25.4	28.3	26.4	23.9	24.6
17	25.6	25.1	25.1	26.5	25.4	25.4	23.4
18	25.5	24.5	25.0	26.1	26.1	25.3	25.6
19	25.2	26.6	25.7	24.7	26.6	25.2	25.5
20	26.5	25.8	24.6	26.4	26.0	25.4	24.1
21	25.2	24.9	25.5	25.5	24.8	25.6	24.8
22	27.4	24.3	25.9	27.2	26.7	26.3	23.6
23	26.3	25.3	24.1	25.0	22.6	23.0	-
24	23.8	23.0	26.2	26.9	24.7	27.4	-

10-12	24.0	24.5	24.7	25.2	24.9	24.5	23.8
14-16	24.4	24.6	25.5	26.8	25.2	24.0	23.7
0-24	25.3	25.4	25.4	25.7	25.4	25.1	24.7

7 Day Ave 25.3

85th Percentile

Hr Ending	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday
1	-	-	33.0	33.6	28.5	-	-
2	-	18.3	33.3	33.6	38.3	-	28.7
3	33.7	-	28.4	33.4	38.6	28.2	23.3
4	38.5	-	33.3	33.1	38.5	33.7	38.1
5	38.6	33.6	33.9	38.6	33.2	33.5	38.0
6	33.3	33.6	39.0	33.7	28.9	33.4	33.3
7	33.3	33.3	38.4	28.9	33.7	33.1	33.8
8	33.8	33.3	33.3	33.8	33.5	33.7	33.3
9	28.0	33.8	33.2	33.0	28.4	33.9	28.2
10	28.8	28.8	28.2	28.5	28.1	28.5	28.5
11	28.8	28.6	28.6	28.9	28.8	28.1	28.3
12	28.7	29.0	28.4	28.4	28.5	28.8	28.3
13	28.0	28.9	33.4	33.7	28.8	28.4	28.0
14	28.4	28.2	28.7	28.5	28.6	28.5	28.5
15	28.9	28.7	33.3	33.5	28.8	28.5	28.2
16	28.8	29.0	28.6	33.5	33.0	28.2	28.9
17	28.4	28.2	28.2	33.4	28.2	28.3	28.6
18	34.0	33.5	28.2	33.4	28.1	28.1	28.8
19	28.9	33.1	33.6	28.3	33.1	33.6	28.9
20	33.1	34.0	28.1	33.1	33.3	33.2	28.3
21	28.9	28.7	28.5	28.2	33.1	33.9	28.5
22	33.4	28.0	33.9	34.0	33.0	33.1	28.1
23	33.5	33.6	28.3	28.1	33.5	33.4	-
24	33.8	28.1	33.8	38.4	28.7	33.3	-

10-12	28.1	28.1	28.4	28.4	28.5	28.9	28.6
14-16	28.6	28.8	33.3	33.5	28.8	28.8	28.4
0-24	33.5	33.3	33.9	33.2	28.1	33.3	29.0

7 Day Ave 32.0

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



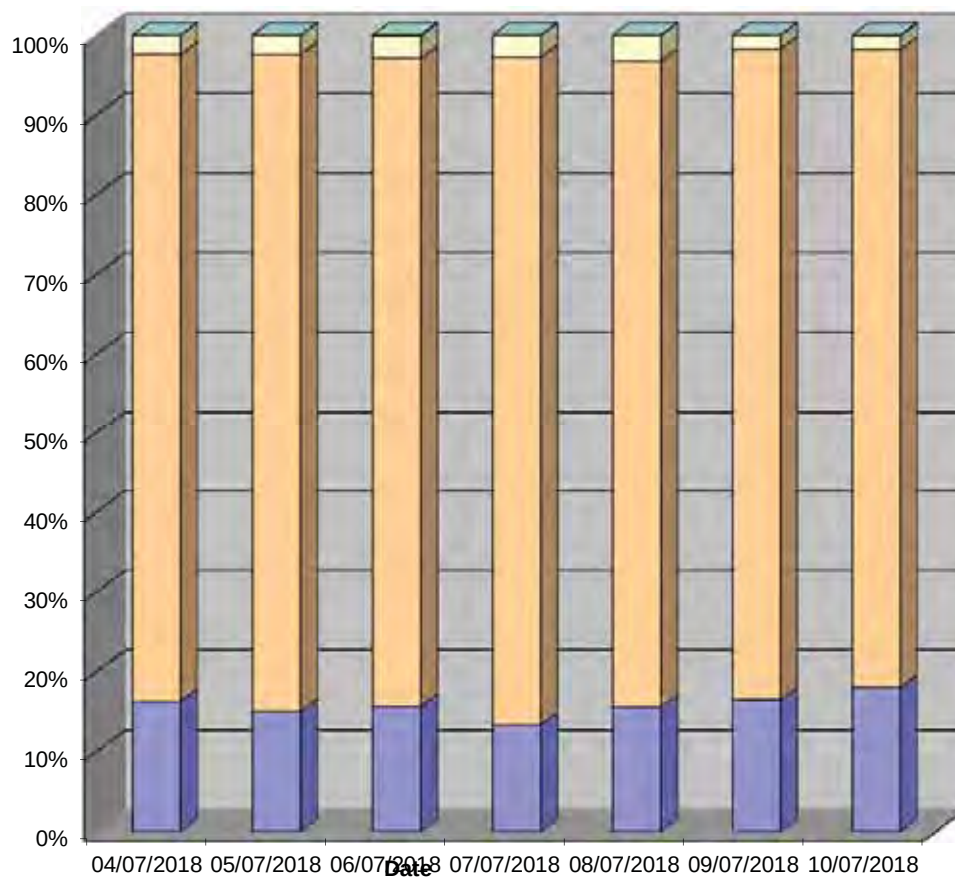
Channel 1 - Northbound

Speed Summary

Week 1

Speed (MPH)	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday
0-20	293	284	319	229	247	312	335
21-35	1462	1563	1658	1435	1288	1550	1489
36-50	43	46	57	47	51	32	32
51-100	0	0	2	0	0	0	1
TOTAL	1798	1893	2036	1711	1586	1894	1857

Speed Summary (MPH)



0-20 21-35 36-50 51-100

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



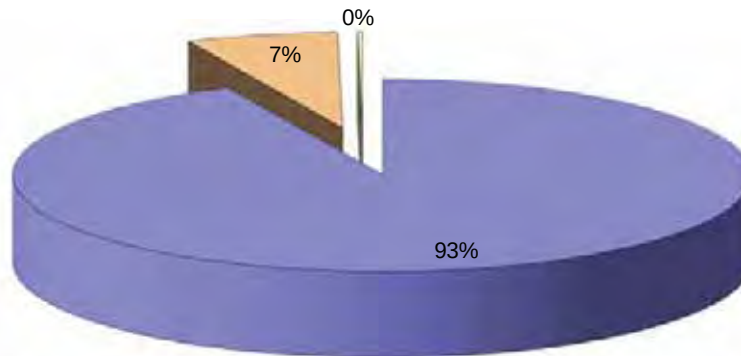
Channel 1 - Northbound

Vehicle Class

Week 1

Classes Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
04/07/2018				
7-19	1362	120	5	1487
6-22	1594	136	6	1736
6-24	1622	137	6	1765
0-24	1653	139	6	1798
05/07/2018				
7-19	1449	130	0	1579
6-22	1685	140	1	1826
6-24	1717	142	1	1860
0-24	1747	145	1	1893
06/07/2018				
7-19	1551	115	5	1671
6-22	1816	129	5	1950
6-24	1862	130	5	1997
0-24	1900	131	5	2036
07/07/2018				
7-19	1357	70	1	1428
6-22	1518	79	1	1598
6-24	1583	79	1	1663
0-24	1629	81	1	1711
08/07/2018				
7-19	1276	36	3	1315
6-22	1448	38	3	1489
6-24	1465	41	3	1509
0-24	1539	44	3	1586
09/07/2018				
7-19	1456	131	5	1592
6-22	1688	139	6	1833
6-24	1709	141	6	1856
0-24	1743	145	6	1894
10/07/2018				
7-19	1416	147	5	1568
6-22	1641	160	6	1807
6-24	1641	160	6	1807
0-24	1687	164	6	1857
Average				
7-19	1410	107	3	1520
6-22	1627	117	4	1748
6-24	1657	119	4	1780
0-24	1700	121	4	1825

Total Vehicle Class Distribution



Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



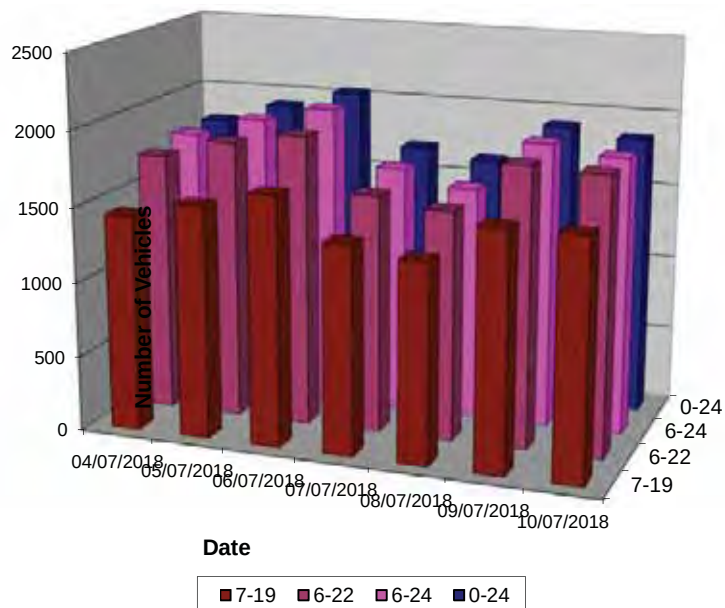
Channel 2 - Southbound

Vehicle Flow

Week 1

Hr Ending	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday	5 Day Ave	7 Day Ave
1	0	2	7	13	23	5	2	3	7
2	1	2	5	12	23	1	5	3	7
3	3	0	1	5	13	2	1	1	4
4	0	0	1	3	12	0	4	1	3
5	1	2	2	3	11	4	3	2	4
6	4	1	6	7	3	3	4	4	4
7	23	17	18	4	5	17	20	19	15
8	57	56	58	25	10	69	60	60	48
9	88	97	100	66	42	78	91	91	80
10	117	116	104	115	51	126	98	112	104
11	97	118	110	150	108	97	124	109	115
12	95	109	132	154	142	121	109	113	123
13	105	95	136	171	165	124	112	114	130
14	90	101	112	164	145	103	101	101	117
15	104	115	137	181	154	114	116	117	132
16	141	149	187	76	134	174	165	163	147
17	169	186	197	58	175	188	171	182	163
18	205	220	227	115	105	223	224	220	188
19	172	185	156	110	92	158	204	175	154
20	130	121	109	76	82	125	105	118	107
21	88	102	90	67	68	89	73	88	82
22	51	68	58	49	43	48	61	57	54
23	33	40	50	44	24	28	0	30	31
24	15	17	36	28	10	9	0	15	16
7-19	1440	1547	1656	1385	1323	1575	1575	1559	1500
6-22	1732	1855	1931	1581	1521	1854	1834	1841	1758
6-24	1780	1912	2017	1653	1555	1891	1834	1887	1806
0-24	1789	1919	2039	1696	1640	1906	1853	1901	1835

Vehicle Flow (Channel 2)



Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 2 - Southbound

Average Speed

Week 1

Hr Ending	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday
1	-	28.0	26.6	27.2	28.0	25.0	33.0
2	23.0	20.5	31.0	28.8	30.0	38.0	28.0
3	23.0	-	28.0	29.0	31.1	28.0	23.0
4	-	-	23.0	38.0	30.5	-	29.2
5	28.0	30.5	20.5	26.3	28.9	31.8	29.7
6	24.2	23.0	27.2	30.1	33.0	28.0	29.2
7	28.0	30.9	29.9	24.2	27.0	30.4	29.2
8	25.6	28.8	28.0	26.6	28.5	26.8	24.7
9	24.0	26.0	24.2	26.5	26.5	25.5	25.4
10	23.0	25.6	24.7	24.8	25.7	24.3	24.2
11	24.8	24.9	24.2	25.4	24.5	26.8	24.0
12	24.4	23.9	24.4	25.9	24.6	23.8	24.4
13	24.1	24.3	25.6	25.7	25.4	24.7	24.9
14	25.8	24.5	25.0	25.1	25.5	23.0	23.9
15	25.5	23.9	25.0	25.7	24.2	24.6	22.7
16	24.3	23.3	23.7	26.5	25.8	23.6	22.0
17	25.5	25.2	24.9	29.1	25.7	24.4	22.9
18	25.5	24.3	24.9	27.1	26.2	24.1	24.7
19	25.2	26.3	25.1	25.3	26.5	24.8	24.9
20	26.5	25.8	25.4	27.1	26.3	25.6	24.8
21	25.9	24.9	26.6	26.8	26.7	25.3	26.4
22	26.9	26.1	25.5	28.2	26.1	25.5	24.7
23	27.5	29.0	25.9	24.9	24.5	26.4	-
24	25.0	27.1	27.4	28.0	31.0	27.4	-
10-12	24.6	24.4	24.3	25.7	24.5	25.2	24.2
14-16	24.8	23.6	24.3	25.9	25.0	24.0	22.3
0-24	25.2	25.2	25.1	26.1	25.8	24.8	24.3

7 Day Ave 25.2

85th Percentile

Hr Ending	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday
1	-	28.4	33.8	33.0	33.3	33.9	33.6
2	23.1	23.5	43.2	38.4	38.5	38.4	33.4
3	33.9	-	28.8	33.4	38.1	33.1	23.4
4	-	-	23.2	43.3	33.5	-	33.9
5	28.6	33.8	24.0	29.0	39.0	44.0	38.6
6	28.3	23.5	33.1	38.8	48.6	38.8	43.9
7	33.1	33.4	38.1	28.7	33.9	33.7	33.5
8	33.5	33.5	33.8	33.4	38.7	33.4	28.3
9	28.2	33.2	28.4	33.7	33.4	33.0	28.9
10	29.0	28.6	28.5	33.3	28.7	28.2	28.3
11	28.1	28.5	28.1	28.4	28.1	28.2	28.3
12	28.0	28.7	28.1	28.4	28.8	28.5	28.2
13	28.3	28.9	33.2	33.9	28.7	28.4	28.3
14	33.5	28.4	28.0	28.1	28.5	28.1	28.0
15	28.9	28.3	33.7	33.6	28.2	28.3	28.7
16	28.5	28.3	28.5	33.3	28.2	28.6	28.8
17	28.4	28.2	28.6	33.1	28.3	28.8	28.3
18	28.8	28.5	28.2	33.2	33.8	28.5	28.7
19	28.8	33.2	28.5	33.1	33.1	28.2	28.4
20	33.7	33.6	28.7	33.4	33.5	28.9	33.8
21	33.7	28.4	33.8	34.0	33.8	33.4	33.7
22	34.0	33.9	33.4	33.5	33.8	33.3	28.4
23	33.3	33.5	33.9	28.5	33.3	33.8	-
24	33.5	33.2	33.7	34.0	44.0	33.2	-
10-12	28.4	28.7	28.1	28.2	28.8	28.4	28.1
14-16	28.7	28.7	28.6	33.4	28.7	28.2	28.4
0-24	28.2	28.6	28.7	33.4	28.9	28.9	28.3

7 Day Ave 29.3

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



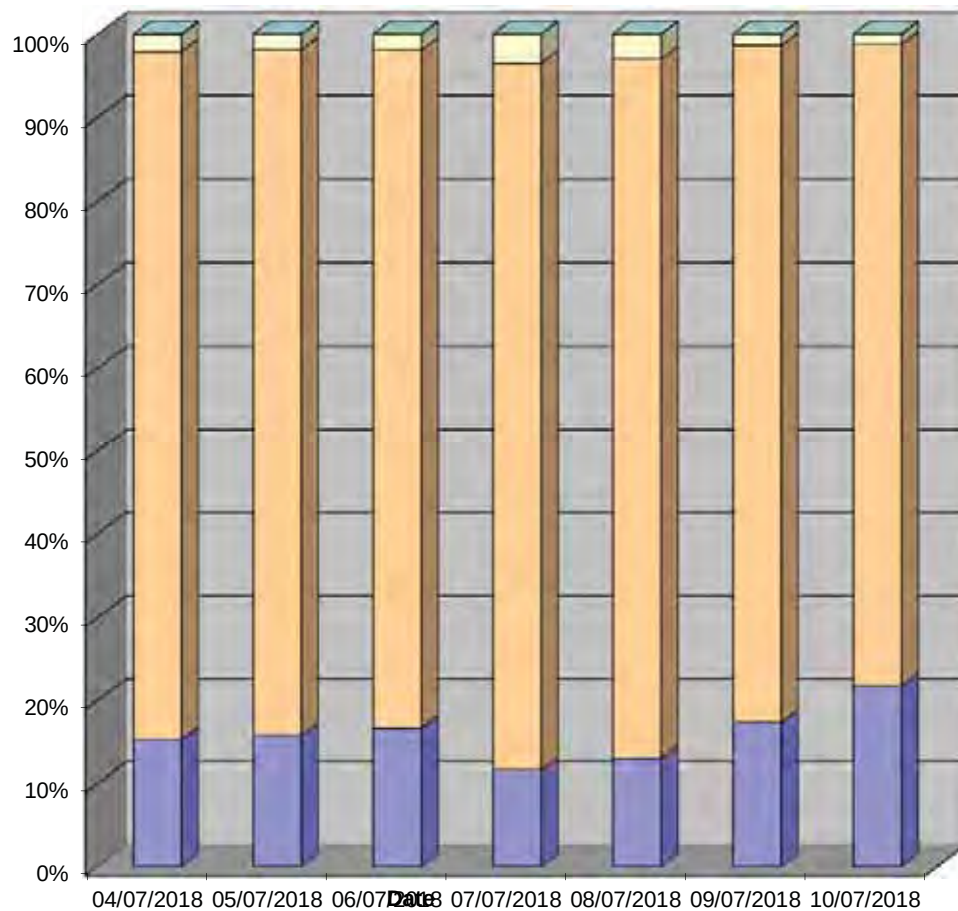
Channel 2 - Southbound

Speed Summary

Week 1

Speed (MPH)	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday
0-20	273	302	339	197	213	330	403
21-35	1478	1581	1660	1440	1378	1550	1428
36-50	37	36	40	59	49	26	22
51-100	1	0	0	0	0	0	0
TOTAL	1789	1919	2039	1696	1640	1906	1853

Speed Summary (MPH)



0-20 21-35 36-50 51-100

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



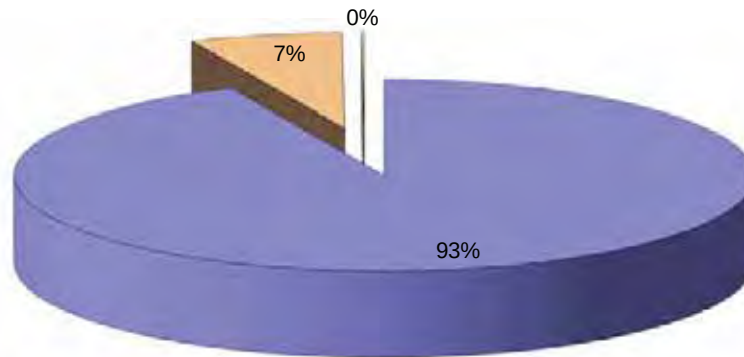
Channel 2 - Southbound

Vehicle Class

Week 1

Classes Day / Time	Car / LGV / Caravan - 1	OGV1 / Bus - 2,3,5,6,7,12	OGV2 - 4,8,9,10,11,13	TOTAL - 1-13
04/07/2018				
7-19	1321	118	1	1440
6-22	1594	137	1	1732
6-24	1641	138	1	1780
0-24	1648	140	1	1789
05/07/2018				
7-19	1428	119	0	1547
6-22	1727	128	0	1855
6-24	1782	130	0	1912
0-24	1789	130	0	1919
06/07/2018				
7-19	1531	120	5	1656
6-22	1792	134	5	1931
6-24	1876	136	5	2017
0-24	1897	137	5	2039
07/07/2018				
7-19	1326	59	0	1385
6-22	1512	69	0	1581
6-24	1583	70	0	1653
0-24	1626	70	0	1696
08/07/2018				
7-19	1274	46	3	1323
6-22	1466	52	3	1521
6-24	1497	55	3	1555
0-24	1579	58	3	1640
09/07/2018				
7-19	1444	129	2	1575
6-22	1702	149	3	1854
6-24	1738	150	3	1891
0-24	1751	152	3	1906
10/07/2018				
7-19	1413	159	3	1575
6-22	1661	169	4	1834
6-24	1661	169	4	1834
0-24	1680	169	4	1853
Average				
7-19	1391	107	2	1500
6-22	1636	120	2	1758
6-24	1683	121	2	1806
0-24	1710	122	2	1835

Total Vehicle Class Distribution



Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Wednesday 04/07/2018	Vehicle Classes														
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3	2	0	0	0	0	0	0	0	0	0	0	0	0	2	
4	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
5	5	0	0	0	0	0	0	0	0	0	0	0	0	5	
6	23	2	0	0	0	0	0	0	0	0	0	0	0	25	
7	84	7	1	0	0	0	0	0	0	0	1	0	0	93	
8	177	8	0	0	0	0	0	0	0	0	0	1	0	186	
9	199	10	2	0	0	0	0	0	0	0	0	2	0	213	
10	130	6	0	0	0	0	1	0	0	0	0	4	0	141	
11	100	10	0	0	0	0	0	0	0	0	0	2	0	112	
12	91	6	0	0	0	0	0	0	0	0	0	2	0	99	
13	95	11	0	0	0	0	0	0	0	0	0	2	0	108	
14	85	7	0	1	0	0	1	1	1	0	0	3	0	99	
15	92	10	0	1	0	0	0	0	0	0	0	2	0	105	
16	100	9	0	0	0	0	0	0	0	0	0	2	0	111	
17	115	10	0	0	1	0	0	0	0	0	0	2	0	128	
18	78	1	0	0	0	0	0	1	0	0	0	1	0	81	
19	100	3	0	0	0	0	0	0	0	0	0	1	0	104	
20	75	6	0	0	0	0	0	0	0	0	0	0	0	81	
21	48	1	0	0	0	0	0	0	0	0	0	0	0	49	
22	25	1	0	0	0	0	0	0	0	0	0	0	0	26	
23	22	1	0	0	0	0	0	0	0	0	0	0	0	23	
24	6	0	0	0	0	0	0	0	0	0	0	0	0	6	
7-19	1362	91	2	2	1	0	2	2	1	0	0	24	0	1487	
6-22	1594	106	3	2	1	0	2	2	1	0	1	24	0	1736	
6-24	1622	107	3	2	1	0	2	2	1	0	1	24	0	1765	
0-24	1653	109	3	2	1	0	2	2	1	0	1	24	0	1798	

Channel 2 - Southbound

Wednesday 04/07/2018	Vehicle Classes														
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
3	3	0	0	0	0	0	0	0	0	0	0	0	0	3	
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
6	2	2	0	0	0	0	0	0	0	0	0	0	0	4	
7	19	3	0	0	1	0	0	0	0	0	0	0	0	23	
8	42	14	1	0	0	0	0	0	0	0	0	0	0	57	
9	74	12	0	0	1	0	0	0	0	0	0	1	0	88	
10	106	9	1	0	1	0	0	0	0	0	0	0	0	117	
11	89	8	0	0	0	0	0	0	0	0	0	0	0	97	
12	87	8	0	0	0	0	0	0	0	0	0	0	0	95	
13	97	6	0	0	0	0	0	0	1	0	0	1	0	105	
14	77	12	0	0	0	0	1	0	0	0	0	0	0	90	
15	94	10	0	0	0	0	0	0	0	0	0	0	0	104	
16	134	7	0	0	0	0	0	0	0	0	0	0	0	141	
17	156	13	0	0	0	0	0	0	0	0	0	0	0	169	
18	200	5	0	0	0	0	0	0	0	0	0	0	0	205	
19	165	7	0	0	0	0	0	0	0	0	0	0	0	172	
20	122	8	0	0	0	0	0	0	0	0	0	0	0	130	
21	84	4	0	0	0	0	0	0	0	0	0	0	0	88	
22	48	3	0	0	0	0	0	0	0	0	0	0	0	51	
23	32	1	0	0	0	0	0	0	0	0	0	0	0	33	
24	15	0	0	0	0	0	0	0	0	0	0	0	0	15	
7-19	1321	111	2	0	2	0	1	0	1	0	0	2	0	1440	
6-22	1594	129	2	0	3	0	1	0	1	0	0	2	0	1732	
6-24	1641	130	2	0	3	0	1	0	1	0	0	2	0	1780	
0-24	1648	132	2	0	3	0	1	0	1	0	0	2	0	1789	

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Thursday 05/07/2018	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	6	0	0	0	0	0	0	0	0	0	0	0	0	6
6	23	3	0	0	0	0	0	0	0	0	0	0	0	26
7	77	5	0	0	0	0	0	0	0	0	1	0	0	83
8	188	10	0	0	0	0	0	0	0	0	0	1	0	199
9	209	9	1	0	0	0	0	0	0	0	0	2	0	221
10	117	13	0	0	0	0	0	0	0	0	0	2	0	132
11	108	12	0	0	1	0	0	0	0	0	0	2	0	123
12	115	11	0	0	1	0	0	0	0	0	0	2	0	129
13	80	11	1	0	0	0	0	0	0	0	0	2	0	94
14	88	5	0	0	0	0	0	0	0	0	0	2	0	95
15	109	5	0	0	0	0	0	0	0	0	0	3	0	117
16	101	8	1	0	0	0	0	0	0	0	0	2	0	112
17	103	7	0	0	1	0	0	0	0	0	0	2	0	113
18	131	7	0	0	0	0	1	0	0	0	0	1	0	140
19	100	3	0	0	0	0	0	0	0	0	0	1	0	104
20	75	3	0	0	0	0	0	0	0	0	0	0	0	78
21	55	1	0	0	0	0	0	0	0	0	0	0	0	56
22	29	1	0	0	0	0	0	0	0	0	0	0	0	30
23	29	1	0	0	0	0	0	0	0	0	0	0	0	30
24	3	1	0	0	0	0	0	0	0	0	0	0	0	4
7-19	1449	101	3	0	3	0	1	0	0	0	0	22	0	1579
6-22	1685	111	3	0	3	0	1	0	0	0	1	22	0	1826
6-24	1717	113	3	0	3	0	1	0	0	0	1	22	0	1860
0-24	1747	116	3	0	3	0	1	0	0	0	1	22	0	1893

Channel 2 - Southbound

Thursday 05/07/2018	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	2	0	0	0	0	0	0	0	0	0	0	0	0	2
6	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7	16	0	0	0	1	0	0	0	0	0	0	0	0	17
8	49	6	0	0	1	0	0	0	0	0	0	0	0	56
9	80	16	1	0	0	0	0	0	0	0	0	0	0	97
10	100	14	0	0	2	0	0	0	0	0	0	0	0	116
11	108	10	0	0	0	0	0	0	0	0	0	0	0	118
12	96	11	1	0	1	0	0	0	0	0	0	0	0	109
13	84	10	0	0	0	0	0	0	0	0	0	1	0	95
14	91	8	0	0	1	0	0	0	0	0	0	1	0	101
15	110	5	0	0	0	0	0	0	0	0	0	0	0	115
16	142	7	0	0	0	0	0	0	0	0	0	0	0	149
17	179	7	0	0	0	0	0	0	0	0	0	0	0	186
18	210	9	0	0	1	0	0	0	0	0	0	0	0	220
19	179	6	0	0	0	0	0	0	0	0	0	0	0	185
20	116	4	0	0	0	0	1	0	0	0	0	0	0	121
21	100	2	0	0	0	0	0	0	0	0	0	0	0	102
22	67	0	0	0	0	0	1	0	0	0	0	0	0	68
23	40	0	0	0	0	0	0	0	0	0	0	0	0	40
24	15	2	0	0	0	0	0	0	0	0	0	0	0	17
7-19	1428	109	2	0	6	0	0	0	0	0	0	2	0	1547
6-22	1727	115	2	0	7	0	2	0	0	0	0	2	0	1855
6-24	1782	117	2	0	7	0	2	0	0	0	0	2	0	1912
0-24	1789	117	2	0	7	0	2	0	0	0	0	2	0	1919

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Friday 06/07/2018	Vehicle Classes														
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	
1	4	0	0	0	0	0	0	0	0	0	0	0	0	4	
2	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
3	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
4	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
5	6	0	0	0	0	0	0	0	0	0	0	0	0	6	
6	25	1	0	0	0	0	0	0	0	0	0	0	0	26	
7	84	6	0	0	0	0	0	0	0	0	0	0	0	90	
8	159	9	0	0	0	0	1	1	0	0	0	1	0	171	
9	237	7	0	0	0	0	0	0	0	0	1	1	0	246	
10	131	9	0	1	1	0	0	1	0	0	0	2	0	145	
11	86	3	0	0	0	0	0	0	0	0	0	2	0	91	
12	112	7	0	1	0	0	0	0	0	0	0	4	0	124	
13	102	13	0	0	0	0	0	0	0	0	0	1	0	116	
14	100	8	0	0	0	0	0	0	0	0	0	2	0	110	
15	122	13	0	0	0	0	1	0	0	0	0	3	0	139	
16	140	6	0	0	0	0	0	0	0	0	0	2	0	148	
17	106	10	0	0	0	0	0	0	0	0	0	2	0	118	
18	134	4	0	0	0	0	0	0	0	0	0	1	0	139	
19	122	1	0	0	0	0	1	0	0	0	0	0	0	124	
20	76	2	0	0	0	0	0	0	0	0	0	0	0	78	
21	59	4	0	0	0	0	0	0	0	0	0	0	0	63	
22	46	2	0	0	0	0	0	0	0	0	0	0	0	48	
23	28	0	0	0	0	0	0	0	0	0	0	0	0	28	
24	18	1	0	0	0	0	0	0	0	0	0	0	0	19	
7-19	1551	90	0	2	1	0	3	2	0	0	1	21	0	1671	
6-22	1816	104	0	2	1	0	3	2	0	0	1	21	0	1950	
6-24	1862	105	0	2	1	0	3	2	0	0	1	21	0	1997	
0-24	1900	106	0	2	1	0	3	2	0	0	1	21	0	2036	

Channel 2 - Southbound

Friday 06/07/2018	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	7	0	0	0	0	0	0	0	0	0	0	0	0	7
2	5	0	0	0	0	0	0	0	0	0	0	0	0	5
3	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5	2	0	0	0	0	0	0	0	0	0	0	0	0	2
6	5	1	0	0	0	0	0	0	0	0	0	0	0	6
7	14	3	0	0	1	0	0	0	0	0	0	0	0	18
8	48	7	0	1	1	0	0	1	0	0	0	0	0	58
9	92	8	0	0	0	0	0	0	0	0	0	0	0	100
10	92	10	1	1	0	0	0	0	0	0	0	0	0	104
11	104	4	0	0	0	0	0	0	0	0	0	2	0	110
12	120	12	0	0	0	0	0	0	0	0	0	0	0	132
13	123	12	0	1	0	0	0	0	0	0	0	0	0	136
14	100	11	0	0	0	0	0	0	0	0	0	1	0	112
15	122	12	0	0	2	0	0	0	0	0	0	1	0	137
16	178	9	0	0	0	0	0	0	0	0	0	0	0	187
17	187	8	0	1	1	0	0	0	0	0	0	0	0	197
18	216	11	0	0	0	0	0	0	0	0	0	0	0	227
19	149	7	0	0	0	0	0	0	0	0	0	0	0	156
20	107	2	0	0	0	0	0	0	0	0	0	0	0	109
21	85	5	0	0	0	0	0	0	0	0	0	0	0	90
22	55	3	0	0	0	0	0	0	0	0	0	0	0	58
23	50	0	0	0	0	0	0	0	0	0	0	0	0	50
24	34	2	0	0	0	0	0	0	0	0	0	0	0	36
7-19	1531	111	1	4	4	0	0	1	0	0	0	4	0	1656
6-22	1792	124	1	4	5	0	0	1	0	0	0	4	0	1931
6-24	1876	126	1	4	5	0	0	1	0	0	0	4	0	2017
0-24	1897	127	1	4	5	0	0	1	0	0	0	4	0	2039

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Saturday														
07/07/2018	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	12	0	0	0	0	0	0	0	0	0	0	0	0	12
2	6	0	0	0	0	0	0	0	0	0	0	0	0	6
3	4	0	0	0	0	0	0	0	0	0	0	0	0	4
4	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5	8	1	0	0	0	0	0	0	0	0	0	0	0	9
6	14	0	0	0	1	0	0	0	0	0	0	0	0	15
7	17	0	0	0	1	0	0	0	0	0	0	0	0	18
8	53	5	0	0	0	0	0	0	0	0	0	0	0	58
9	120	3	0	0	0	0	0	0	0	0	0	2	0	125
10	164	5	0	0	0	0	0	0	0	0	0	1	0	170
11	145	7	0	0	0	0	0	0	0	0	0	2	0	154
12	170	4	0	0	0	0	0	0	0	0	0	2	0	176
13	138	7	0	0	1	0	0	0	0	0	0	2	0	148
14	142	4	0	0	0	0	0	0	0	0	0	2	0	148
15	117	5	0	0	0	0	0	0	0	0	0	2	0	124
16	43	3	0	0	0	0	0	0	0	0	0	2	0	48
17	58	1	0	0	0	0	0	1	0	0	0	2	0	62
18	107	3	0	0	0	0	0	0	0	0	0	2	0	112
19	100	2	0	0	0	0	0	0	0	0	0	1	0	103
20	61	4	0	0	0	0	0	0	0	0	0	0	0	65
21	47	3	0	0	0	0	0	0	0	0	0	0	0	50
22	36	1	0	0	0	0	0	0	0	0	0	0	0	37
23	46	0	0	0	0	0	0	0	0	0	0	0	0	46
24	19	0	0	0	0	0	0	0	0	0	0	0	0	19

7-19	1357	49	0	0	1	0	0	1	0	0	0	20	0	1428
6-22	1518	57	0	0	2	0	0	1	0	0	0	20	0	1598
6-24	1583	57	0	0	2	0	0	1	0	0	0	20	0	1663
0-24	1629	58	0	0	3	0	0	1	0	0	0	20	0	1711

Channel 2 - Southbound

[illegible]

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Sunday 08/07/2018	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	19	0	0	0	0	0	0	0	0	0	0	0	0	19
2	18	1	0	0	0	0	0	0	0	0	0	0	0	19
3	9	1	0	0	0	0	0	0	0	0	0	0	0	10
4	9	0	0	0	0	0	0	0	0	0	0	0	0	9
5	10	0	0	0	0	0	0	0	0	0	0	0	0	10
6	9	1	0	0	0	0	0	0	0	0	0	0	0	10
7	8	1	0	0	0	0	0	0	0	0	0	0	0	9
8	26	1	0	0	0	0	0	0	0	0	0	0	0	27
9	39	2	0	0	0	0	0	0	0	0	0	0	0	41
10	100	2	0	0	0	0	1	0	0	0	0	0	0	103
11	134	7	0	2	0	0	0	0	0	0	0	0	0	143
12	154	4	0	0	0	0	0	0	0	0	0	0	0	158
13	144	4	0	0	0	0	0	0	0	0	0	0	0	148
14	151	4	0	0	0	0	0	0	0	0	0	0	0	155
15	128	7	0	0	0	0	0	0	0	0	0	0	0	135
16	122	1	0	0	0	0	0	0	0	0	0	0	0	123
17	125	0	0	0	0	0	0	0	0	0	0	0	0	125
18	84	2	0	0	0	0	0	0	0	0	0	0	0	86
19	69	1	0	0	0	0	0	1	0	0	0	0	0	71
20	88	1	0	0	0	0	0	0	0	0	0	0	0	89
21	53	0	0	0	0	0	0	0	0	0	0	0	0	53
22	23	0	0	0	0	0	0	0	0	0	0	0	0	23
23	12	2	0	0	0	0	0	0	0	0	0	0	0	14
24	5	1	0	0	0	0	0	0	0	0	0	0	0	6
7-19	1276	35	0	2	0	0	1	1	0	0	0	0	0	1315
6-22	1448	37	0	2	0	0	1	1	0	0	0	0	0	1489
6-24	1465	40	0	2	0	0	1	1	0	0	0	0	0	1509
0-24	1539	43	0	2	0	0	1	1	0	0	0	0	0	1586

Channel 2 - Southbound

Sunday 08/07/2018	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	22	1	0	0	0	0	0	0	0	0	0	0	0	23
2	22	1	0	0	0	0	0	0	0	0	0	0	0	23
3	12	1	0	0	0	0	0	0	0	0	0	0	0	13
4	12	0	0	0	0	0	0	0	0	0	0	0	0	12
5	11	0	0	0	0	0	0	0	0	0	0	0	0	11
6	3	0	0	0	0	0	0	0	0	0	0	0	0	3
7	4	1	0	0	0	0	0	0	0	0	0	0	0	5
8	8	1	0	0	1	0	0	0	0	0	0	0	0	10
9	38	4	0	0	0	0	0	0	0	0	0	0	0	42
10	49	2	0	0	0	0	0	0	0	0	0	0	0	51
11	101	4	0	1	0	0	2	0	0	0	0	0	0	108
12	136	6	0	0	0	0	0	0	0	0	0	0	0	142
13	159	5	0	0	0	0	1	0	0	0	0	0	0	165
14	140	4	0	1	0	0	0	0	0	0	0	0	0	145
15	148	6	0	0	0	0	0	0	0	0	0	0	0	154
16	131	3	0	0	0	0	0	0	0	0	0	0	0	134
17	173	2	0	0	0	0	0	0	0	0	0	0	0	175
18	102	2	0	1	0	0	0	0	0	0	0	0	0	105
19	89	3	0	0	0	0	0	0	0	0	0	0	0	92
20	81	1	0	0	0	0	0	0	0	0	0	0	0	82
21	67	1	0	0	0	0	0	0	0	0	0	0	0	68
22	40	2	1	0	0	0	0	0	0	0	0	0	0	43
23	22	2	0	0	0	0	0	0	0	0	0	0	0	24
24	9	1	0	0	0	0	0	0	0	0	0	0	0	10
7-19	1274	42	0	3	1	0	3	0	0	0	0	0	0	1323
6-22	1466	47	1	3	1	0	3	0	0	0	0	0	0	1521
6-24	1497	50	1	3	1	0	3	0	0	0	0	0	0	1555
0-24	1579	53	1	3	1	0	3	0	0	0	0	0	0	1640

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Monday 09/07/2018	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5	6	0	0	0	0	0	0	0	0	0	0	0	0	6
6	26	4	0	0	0	0	0	0	0	0	0	0	0	30
7	75	3	0	0	0	0	0	0	0	0	1	0	0	79
8	165	6	0	0	1	0	0	0	0	0	0	1	0	173
9	206	10	0	0	0	0	0	0	0	0	1	1	0	218
10	103	9	0	0	0	0	0	0	0	0	1	2	0	115
11	103	11	0	1	0	0	0	0	0	0	0	2	0	117
12	88	7	0	0	0	0	0	0	0	0	0	1	0	96
13	114	14	1	0	0	0	0	1	0	0	0	1	0	131
14	110	13	1	0	0	0	0	0	0	0	1	3	0	128
15	110	4	0	0	0	0	0	0	0	0	0	3	0	117
16	128	9	0	0	1	0	0	0	0	0	0	2	0	140
17	112	16	0	0	0	0	0	0	0	0	0	1	0	129
18	119	6	0	0	0	0	0	0	0	0	0	1	0	126
19	98	3	0	0	0	0	0	0	0	0	0	1	0	102
20	92	2	0	0	0	0	0	0	0	0	0	0	0	94
21	42	2	0	0	0	0	0	0	0	0	0	0	0	44
22	23	1	0	0	0	0	0	0	0	0	0	0	0	24
23	14	1	0	0	0	0	0	0	0	0	0	0	0	15
24	7	1	0	0	0	0	0	0	0	0	0	0	0	8
7-19	1456	108	2	1	2	0	0	1	0	0	3	19	0	1592
6-22	1688	116	2	1	2	0	0	1	0	0	4	19	0	1833
6-24	1709	118	2	1	2	0	0	1	0	0	4	19	0	1856
0-24	1743	122	2	1	2	0	0	1	0	0	4	19	0	1894

Channel 2 - Southbound

Monday 09/07/2018	Vehicle Classes													TOTAL
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	
1	4	1	0	0	0	0	0	0	0	0	0	0	0	5
2	1	0	0	0	0	0	0	0	0	0	0	0	0	1
3	2	0	0	0	0	0	0	0	0	0	0	0	0	2
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	4	0	0	0	0	0	0	0	0	0	0	0	0	4
6	2	1	0	0	0	0	0	0	0	0	0	0	0	3
7	13	3	0	0	1	0	0	0	0	0	0	0	0	17
8	53	14	0	0	2	0	0	0	0	0	0	0	0	69
9	67	11	0	0	0	0	0	0	0	0	0	0	0	78
10	108	14	1	1	1	0	0	0	0	0	0	1	0	126
11	87	9	0	0	1	0	0	0	0	0	0	0	0	97
12	112	8	0	0	0	0	0	1	0	0	0	0	0	121
13	109	15	0	0	0	0	0	0	0	0	0	0	0	124
14	92	11	0	0	0	0	0	0	0	0	0	0	0	103
15	109	4	0	0	0	0	0	0	0	0	0	1	0	114
16	164	10	0	0	0	0	0	0	0	0	0	0	0	174
17	177	11	0	0	0	0	0	0	0	0	0	0	0	188
18	210	13	0	0	0	0	0	0	0	0	0	0	0	223
19	156	2	0	0	0	0	0	0	0	0	0	0	0	158
20	117	6	0	1	1	0	0	0	0	0	0	0	0	125
21	83	6	0	0	0	0	0	0	0	0	0	0	0	89
22	45	3	0	0	0	0	0	0	0	0	0	0	0	48
23	28	0	0	0	0	0	0	0	0	0	0	0	0	28
24	8	1	0	0	0	0	0	0	0	0	0	0	0	9
7-19	1444	122	1	1	4	0	0	1	0	0	0	2	0	1575
6-22	1702	140	1	2	6	0	0	1	0	0	0	2	0	1854
6-24	1738	141	1	2	6	0	0	1	0	0	0	2	0	1891
0-24	1751	143	1	2	6	0	0	1	0	0	0	2	0	1906

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Tuesday															
10/07/2018	Vehicle Classes														
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL	
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2	2	0	0	0	0	0	0	0	0	0	0	0	0	2	
3	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
4	5	0	0	0	0	0	0	0	0	0	0	0	0	5	
5	5	0	0	0	0	0	0	0	0	0	0	0	0	5	
6	33	4	0	0	0	0	0	0	0	0	0	0	0	37	
7	76	5	0	0	1	0	0	0	0	0	1	0	0	83	
8	165	7	0	0	0	0	0	0	0	0	1	1	0	174	
9	212	4	0	0	0	0	0	0	0	0	1	2	0	219	
10	112	9	0	0	0	0	0	0	0	0	0	2	0	123	
11	92	9	0	0	0	0	0	1	0	0	0	2	0	104	
12	96	11	0	0	0	0	0	0	0	0	0	2	0	109	
13	96	11	0	1	0	0	0	0	0	0	0	2	0	110	
14	107	15	0	0	1	0	0	0	0	0	0	1	0	124	
15	96	12	2	0	0	0	0	0	0	0	0	3	0	113	
16	122	17	0	0	2	0	0	0	0	0	0	3	0	144	
17	105	10	0	0	1	0	0	0	1	0	0	3	0	120	
18	106	8	0	0	0	0	0	0	0	0	0	2	0	116	
19	107	4	0	0	0	0	0	0	0	0	0	1	0	112	
20	76	5	0	0	0	0	0	0	0	0	0	0	0	81	
21	36	0	0	0	0	0	0	0	0	0	0	0	0	36	
22	37	2	0	0	0	0	0	0	0	0	0	0	0	39	
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7-19	1416	117	2	1	4	0	0	1	1	0	2	24	0	1568	
6-22	1641	129	2	1	5	0	0	1	1	0	3	24	0	1807	
6-24	1641	129	2	1	5	0	0	1	1	0	3	24	0	1807	
0-24	1687	133	2	1	5	0	0	1	1	0	3	24	0	1857	

Channel 2 - Southbound

Tuesday 10/07/2018	Vehicle Classes													
Hr Ending	1	2	3	4	5	6	7	8	9	10	11	12	13	TOTAL
1	2	0	0	0	0	0	0	0	0	0	0	0	0	2
2	5	0	0	0	0	0	0	0	0	0	0	0	0	5
3	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4	4	0	0	0	0	0	0	0	0	0	0	0	0	4
5	3	0	0	0	0	0	0	0	0	0	0	0	0	3
6	4	0	0	0	0	0	0	0	0	0	0	0	0	4
7	17	1	0	0	1	0	0	0	0	0	1	0	0	20
8	50	6	1	0	3	0	0	0	0	0	0	0	0	60
9	74	16	0	0	0	0	0	1	0	0	0	0	0	91
10	84	13	0	0	1	0	0	0	0	0	0	0	0	98
11	114	10	0	0	0	0	0	0	0	0	0	0	0	124
12	98	10	0	0	1	0	0	0	0	0	0	0	0	109
13	102	9	0	0	1	0	0	0	0	0	0	0	0	112
14	80	18	2	0	0	0	0	0	0	0	0	1	0	101
15	104	11	0	0	0	0	0	0	0	0	1	0	0	116
16	153	11	0	0	0	0	0	0	0	0	0	1	0	165
17	149	19	0	0	1	0	0	1	0	0	0	1	0	171
18	216	6	2	0	0	0	0	0	0	0	0	0	0	224
19	189	15	0	0	0	0	0	0	0	0	0	0	0	204
20	104	1	0	0	0	0	0	0	0	0	0	0	0	105
21	70	3	0	0	0	0	0	0	0	0	0	0	0	73
22	57	4	0	0	0	0	0	0	0	0	0	0	0	61
23	0	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	1413	144	5	0	7	0	0	2	0	0	1	3	0	1575
6-22	1661	153	5	0	8	0	0	2	0	0	2	3	0	1834
6-24	1661	153	5	0	8	0	0	2	0	0	2	3	0	1834
0-24	1680	153	5	0	8	0	0	2	0	0	2	3	0	1853

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Wednesday 04/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	1	0	0	1	0	0	0	0	0	0	2
4	0	0	0	0	0	0	1	0	0	0	0	0	1
5	0	0	0	0	3	1	1	0	0	0	0	0	5
6	0	1	7	5	6	3	2	1	0	0	0	0	25
7	0	0	7	19	37	24	5	1	0	0	0	0	93
8	0	1	15	54	72	38	4	1	1	0	0	0	186
9	0	5	20	83	77	25	3	0	0	0	0	0	213
10	0	4	33	51	37	14	2	0	0	0	0	0	141
11	2	3	13	43	44	7	0	0	0	0	0	0	112
12	0	1	22	45	27	4	0	0	0	0	0	0	99
13	0	2	20	52	23	9	2	0	0	0	0	0	108
14	0	2	18	29	42	7	1	0	0	0	0	0	99
15	2	3	22	31	35	10	2	0	0	0	0	0	105
16	0	2	13	49	42	4	1	0	0	0	0	0	111
17	0	5	17	31	59	13	3	0	0	0	0	0	128
18	0	0	14	30	22	13	2	0	0	0	0	0	81
19	0	1	14	43	33	10	3	0	0	0	0	0	104
20	0	1	9	22	35	10	4	0	0	0	0	0	81
21	0	1	5	17	23	3	0	0	0	0	0	0	49
22	0	0	2	8	9	5	2	0	0	0	0	0	26
23	0	0	2	10	6	4	1	0	0	0	0	0	23
24	0	1	2	0	1	2	0	0	0	0	0	0	6
7-19	4	29	221	541	513	154	23	1	1	0	0	0	1487
6-22	4	31	244	607	617	196	34	2	1	0	0	0	1736
6-24	4	32	248	617	624	202	35	2	1	0	0	0	1765
0-24	4	33	256	622	633	207	39	3	1	0	0	0	1798

Channel 2 - Southbound

Wednesday 04/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	1	0	0	0	0	0	0	0	0	1
3	0	0	2	0	0	1	0	0	0	0	0	0	3
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	1	0	0	0	0	0	0	0	1
6	0	0	0	3	1	0	0	0	0	0	0	0	4
7	0	2	0	6	5	9	0	1	0	0	0	0	23
8	0	2	10	20	13	9	2	0	0	1	0	0	57
9	1	0	15	41	25	6	0	0	0	0	0	0	88
10	0	8	26	48	28	7	0	0	0	0	0	0	117
11	0	1	15	39	34	7	1	0	0	0	0	0	97
12	0	1	16	42	29	6	1	0	0	0	0	0	95
13	0	0	23	47	24	10	1	0	0	0	0	0	105
14	0	1	9	35	30	13	2	0	0	0	0	0	90
15	0	0	11	44	38	9	1	1	0	0	0	0	104
16	1	2	21	61	47	8	1	0	0	0	0	0	141
17	0	3	21	60	63	18	3	1	0	0	0	0	169
18	0	1	15	96	72	16	5	0	0	0	0	0	205
19	0	4	24	57	68	18	1	0	0	0	0	0	172
20	0	2	14	35	56	17	5	1	0	0	0	0	130
21	0	1	11	30	31	12	3	0	0	0	0	0	88
22	0	1	3	20	13	11	2	1	0	0	0	0	51
23	0	1	2	8	14	5	2	1	0	0	0	0	33
24	0	0	3	7	2	2	1	0	0	0	0	0	15
7-19	2	23	206	590	471	127	18	2	0	1	0	0	1440
6-22	2	29	234	681	576	176	28	5	0	1	0	0	1732
6-24	2	30	239	696	592	183	31	6	0	1	0	0	1780
0-24	2	30	241	700	594	184	31	6	0	1	0	0	1789

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Thursday 05/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	1	0	0	0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	1	2	3	0	0	0	0	0	0	6
6	0	1	4	9	7	5	0	0	0	0	0	0	26
7	0	2	4	17	27	23	7	2	1	0	0	0	83
8	0	1	19	47	75	51	5	1	0	0	0	0	199
9	0	6	16	82	86	27	4	0	0	0	0	0	221
10	0	2	16	46	52	13	3	0	0	0	0	0	132
11	0	2	22	56	36	6	1	0	0	0	0	0	123
12	1	2	19	45	48	11	3	0	0	0	0	0	129
13	1	4	11	38	33	6	1	0	0	0	0	0	94
14	0	2	19	47	20	5	1	1	0	0	0	0	95
15	1	1	23	44	36	9	2	1	0	0	0	0	117
16	0	5	12	45	41	8	1	0	0	0	0	0	112
17	0	4	17	35	44	11	2	0	0	0	0	0	113
18	1	4	21	61	34	17	2	0	0	0	0	0	140
19	0	1	6	34	46	15	2	0	0	0	0	0	104
20	0	0	11	28	27	10	1	1	0	0	0	0	78
21	0	2	7	22	19	5	1	0	0	0	0	0	56
22	0	0	7	12	9	0	2	0	0	0	0	0	30
23	0	1	4	12	8	4	0	1	0	0	0	0	30
24	0	1	0	1	2	0	0	0	0	0	0	0	4
7-19	4	34	201	580	551	179	27	3	0	0	0	0	1579
6-22	4	38	230	659	633	217	38	6	1	0	0	0	1826
6-24	4	40	234	672	643	221	38	7	1	0	0	0	1860
0-24	4	41	239	682	652	229	38	7	1	0	0	0	1893

Channel 2 - Southbound

Thursday 05/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	0	2	0	0	0	0	0	0	0	2
2	0	0	1	1	0	0	0	0	0	0	0	0	2
3	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	1	1	0	0	0	0	0	0	2
6	0	0	0	1	0	0	0	0	0	0	0	0	1
7	0	0	0	2	7	6	1	0	1	0	0	0	17
8	0	0	1	15	20	15	4	1	0	0	0	0	56
9	0	0	11	36	35	12	2	1	0	0	0	0	97
10	0	0	14	42	48	11	0	1	0	0	0	0	116
11	0	2	17	45	44	8	2	0	0	0	0	0	118
12	0	3	29	34	33	8	2	0	0	0	0	0	109
13	1	2	16	37	30	9	0	0	0	0	0	0	95
14	0	1	20	37	34	9	0	0	0	0	0	0	101
15	2	2	22	44	36	8	1	0	0	0	0	0	115
16	0	4	26	83	29	7	0	0	0	0	0	0	149
17	0	2	22	75	69	16	2	0	0	0	0	0	186
18	1	0	40	96	68	13	2	0	0	0	0	0	220
19	0	0	14	72	67	28	4	0	0	0	0	0	185
20	0	1	19	38	41	18	4	0	0	0	0	0	121
21	1	2	14	35	42	7	0	0	1	0	0	0	102
22	0	0	7	27	20	13	1	0	0	0	0	0	68
23	0	0	3	9	14	10	1	1	2	0	0	0	40
24	0	0	2	5	6	2	2	0	0	0	0	0	17
7-19	4	16	232	616	513	144	19	3	0	0	0	0	1547
6-22	5	19	272	718	623	188	25	3	2	0	0	0	1855
6-24	5	19	277	732	643	200	28	4	4	0	0	0	1912
0-24	5	19	278	734	646	201	28	4	4	0	0	0	1919

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Friday 06/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	1	1	0	2	0	0	0	0	0	0	4
2	0	0	0	0	0	1	0	0	0	0	0	0	1
3	0	0	0	0	1	0	0	0	0	0	0	0	1
4	0	0	0	0	0	1	0	0	0	0	0	0	1
5	0	0	1	2	2	1	0	0	0	0	0	0	6
6	0	0	4	6	7	5	3	1	0	0	0	0	26
7	0	1	10	18	23	23	11	3	1	0	0	0	90
8	0	2	21	48	71	22	7	0	0	0	0	0	171
9	1	2	31	91	88	28	4	1	0	0	0	0	246
10	1	6	31	61	35	11	0	0	0	0	0	0	145
11	0	3	14	39	25	9	1	0	0	0	0	0	91
12	1	2	12	50	52	7	0	0	0	0	0	0	124
13	0	2	18	41	34	17	4	0	0	0	0	0	116
14	0	2	16	44	35	11	2	0	0	0	0	0	110
15	0	5	12	52	48	18	4	0	0	0	0	0	139
16	0	3	17	57	52	16	2	1	0	0	0	0	148
17	0	0	23	39	40	16	0	0	0	0	0	0	118
18	0	0	18	62	47	9	3	0	0	0	0	0	139
19	0	1	18	47	41	12	3	0	0	2	0	0	124
20	0	1	12	34	24	6	1	0	0	0	0	0	78
21	0	1	6	26	23	5	2	0	0	0	0	0	63
22	0	2	7	12	17	8	2	0	0	0	0	0	48
23	0	1	7	8	10	1	1	0	0	0	0	0	28
24	0	1	2	4	8	4	0	0	0	0	0	0	19
7-19	3	28	231	631	568	176	30	2	0	2	0	0	1671
6-22	3	33	266	721	655	218	46	5	1	2	0	0	1950
6-24	3	35	275	733	673	223	47	5	1	2	0	0	1997
0-24	3	35	281	742	683	233	50	6	1	2	0	0	2036

Channel 2 - Southbound

Friday 06/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	3	3	1	0	0	0	0	0	0	7
2	0	0	0	1	2	1	0	1	0	0	0	0	5
3	0	0	0	0	1	0	0	0	0	0	0	0	1
4	0	0	0	1	0	0	0	0	0	0	0	0	1
5	0	0	1	1	0	0	0	0	0	0	0	0	2
6	0	0	1	1	2	2	0	0	0	0	0	0	6
7	0	0	2	2	4	7	3	0	0	0	0	0	18
8	0	0	3	10	32	10	3	0	0	0	0	0	58
9	0	2	22	35	31	10	0	0	0	0	0	0	100
10	1	4	14	38	36	9	2	0	0	0	0	0	104
11	2	4	16	43	32	13	0	0	0	0	0	0	110
12	0	2	26	47	48	9	0	0	0	0	0	0	132
13	0	6	14	47	46	17	6	0	0	0	0	0	136
14	0	0	16	42	49	3	2	0	0	0	0	0	112
15	0	1	25	54	35	19	3	0	0	0	0	0	137
16	1	5	35	86	44	16	0	0	0	0	0	0	187
17	0	2	26	85	65	18	1	0	0	0	0	0	197
18	1	3	30	94	77	19	3	0	0	0	0	0	227
19	0	2	27	55	51	19	2	0	0	0	0	0	156
20	0	2	11	41	44	10	1	0	0	0	0	0	109
21	0	1	8	28	36	14	2	1	0	0	0	0	90
22	0	0	8	26	13	9	2	0	0	0	0	0	58
23	0	0	11	16	11	7	5	0	0	0	0	0	50
24	0	0	4	6	19	4	3	0	0	0	0	0	36
7-19	5	31	254	636	546	162	22	0	0	0	0	0	1656
6-22	5	34	283	733	643	202	30	1	0	0	0	0	1931
6-24	5	34	298	755	673	213	38	1	0	0	0	0	2017
0-24	5	34	300	762	681	217	38	2	0	0	0	0	2039

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Saturday 07/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	2	4	4	2	0	0	0	0	0	0	12
2	0	0	1	1	3	1	0	0	0	0	0	0	6
3	0	0	0	1	2	1	0	0	0	0	0	0	4
4	0	0	0	0	0	2	0	0	0	0	0	0	2
5	0	1	1	2	1	2	2	0	0	0	0	0	9
6	0	1	0	4	7	3	0	0	0	0	0	0	15
7	0	0	1	8	8	0	1	0	0	0	0	0	18
8	1	3	11	9	18	10	6	0	0	0	0	0	58
9	0	1	13	45	33	25	7	1	0	0	0	0	125
10	1	2	21	76	58	12	0	0	0	0	0	0	170
11	0	1	22	53	58	19	0	1	0	0	0	0	154
12	0	1	23	76	58	18	0	0	0	0	0	0	176
13	1	0	15	53	46	31	2	0	0	0	0	0	148
14	0	3	23	49	61	10	2	0	0	0	0	0	148
15	0	1	11	45	45	19	2	1	0	0	0	0	124
16	0	0	2	17	11	12	6	0	0	0	0	0	48
17	0	3	6	18	20	11	3	1	0	0	0	0	62
18	0	0	14	37	42	16	2	1	0	0	0	0	112
19	1	3	14	36	40	8	1	0	0	0	0	0	103
20	0	1	8	14	33	7	1	1	0	0	0	0	65
21	0	1	4	22	16	6	1	0	0	0	0	0	50
22	0	0	0	14	15	8	0	0	0	0	0	0	37
23	0	1	6	18	17	3	1	0	0	0	0	0	46
24	0	0	4	6	3	2	4	0	0	0	0	0	19
7-19	4	18	175	514	490	191	31	5	0	0	0	0	1428
6-22	4	20	188	572	562	212	34	6	0	0	0	0	1598
6-24	4	21	198	596	582	217	39	6	0	0	0	0	1663
0-24	4	23	202	608	599	228	41	6	0	0	0	0	1711

Channel 2 - Southbound

Saturday 07/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	1	4	4	4	0	0	0	0	0	0	13
2	0	0	2	1	4	3	2	0	0	0	0	0	12
3	0	0	0	1	2	2	0	0	0	0	0	0	5
4	0	0	0	0	0	1	1	1	0	0	0	0	3
5	0	0	0	1	2	0	0	0	0	0	0	0	3
6	0	0	0	1	3	2	1	0	0	0	0	0	7
7	0	0	1	1	2	0	0	0	0	0	0	0	4
8	0	1	1	7	11	5	0	0	0	0	0	0	25
9	0	0	6	21	27	11	1	0	0	0	0	0	66
10	1	3	14	51	28	18	0	0	0	0	0	0	115
11	0	0	22	51	61	14	2	0	0	0	0	0	150
12	0	0	5	75	56	15	3	0	0	0	0	0	154
13	0	4	17	63	64	15	8	0	0	0	0	0	171
14	0	2	22	64	60	13	3	0	0	0	0	0	164
15	0	6	18	66	63	21	7	0	0	0	0	0	181
16	0	0	11	23	24	14	4	0	0	0	0	0	76
17	0	0	4	11	19	19	3	1	1	0	0	0	58
18	0	0	10	35	41	25	3	1	0	0	0	0	115
19	2	1	16	33	43	13	1	1	0	0	0	0	110
20	0	2	4	18	39	10	2	0	1	0	0	0	76
21	0	2	6	21	18	17	3	0	0	0	0	0	67
22	0	0	4	13	16	10	5	1	0	0	0	0	49
23	0	1	6	19	12	5	1	0	0	0	0	0	44
24	0	0	2	6	12	6	2	0	0	0	0	0	28
7-19	3	17	146	500	497	183	35	3	1	0	0	0	1385
6-22	3	21	161	553	572	220	45	4	2	0	0	0	1581
6-24	3	22	169	578	596	231	48	4	2	0	0	0	1653
0-24	3	22	172	586	611	243	52	5	2	0	0	0	1696

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Sunday 08/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	3	5	9	1	1	0	0	0	0	0	19
2	0	0	3	2	7	3	2	1	1	0	0	0	19
3	0	0	0	3	4	1	2	0	0	0	0	0	10
4	0	0	0	0	4	3	2	0	0	0	0	0	9
5	0	1	0	1	2	5	0	1	0	0	0	0	10
6	0	1	3	2	4	0	0	0	0	0	0	0	10
7	0	0	1	2	3	3	0	0	0	0	0	0	9
8	0	0	3	8	10	5	0	1	0	0	0	0	27
9	0	1	8	12	15	5	0	0	0	0	0	0	41
10	0	2	24	30	38	6	3	0	0	0	0	0	103
11	0	1	23	62	41	14	1	1	0	0	0	0	143
12	1	4	18	63	57	12	3	0	0	0	0	0	158
13	0	1	18	61	53	14	0	1	0	0	0	0	148
14	0	2	21	56	56	16	4	0	0	0	0	0	155
15	0	6	19	61	40	7	1	1	0	0	0	0	135
16	0	0	12	39	51	18	3	0	0	0	0	0	123
17	0	5	13	45	46	11	5	0	0	0	0	0	125
18	0	1	9	28	39	4	2	3	0	0	0	0	86
19	0	0	5	28	25	9	3	1	0	0	0	0	71
20	0	2	11	24	38	12	1	1	0	0	0	0	89
21	0	2	12	17	14	4	3	1	0	0	0	0	53
22	0	0	4	6	8	3	1	1	0	0	0	0	23
23	0	1	6	2	3	2	0	0	0	0	0	0	14
24	0	0	0	4	2	0	0	0	0	0	0	0	6
7-19	1	23	173	493	471	121	25	8	0	0	0	0	1315
6-22	1	27	201	542	534	143	30	11	0	0	0	0	1489
6-24	1	28	207	548	539	145	30	11	0	0	0	0	1509
0-24	1	30	216	561	569	158	37	13	1	0	0	0	1586

Channel 2 - Southbound

Sunday 08/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	1	7	7	7	1	0	0	0	0	0	23
2	0	0	3	2	7	7	2	2	0	0	0	0	23
3	0	0	2	1	1	5	4	0	0	0	0	0	13
4	0	0	0	1	5	5	1	0	0	0	0	0	12
5	0	1	0	2	3	3	2	0	0	0	0	0	11
6	0	0	1	0	0	1	0	0	1	0	0	0	3
7	0	0	1	1	1	2	0	0	0	0	0	0	5
8	0	0	1	2	4	1	2	0	0	0	0	0	10
9	0	2	4	12	15	7	0	2	0	0	0	0	42
10	0	1	4	18	23	4	1	0	0	0	0	0	51
11	0	3	12	49	38	6	0	0	0	0	0	0	108
12	1	3	21	55	52	7	3	0	0	0	0	0	142
13	0	2	19	63	63	16	1	0	1	0	0	0	165
14	0	1	16	56	58	9	5	0	0	0	0	0	145
15	0	2	29	65	46	11	1	0	0	0	0	0	154
16	0	0	10	53	58	12	1	0	0	0	0	0	134
17	0	1	23	59	69	20	3	0	0	0	0	0	175
18	0	1	10	41	32	17	3	1	0	0	0	0	105
19	0	0	9	30	32	21	0	0	0	0	0	0	92
20	0	0	10	23	35	13	1	0	0	0	0	0	82
21	0	0	3	26	29	6	4	0	0	0	0	0	68
22	0	3	6	11	11	8	4	0	0	0	0	0	43
23	0	1	5	8	6	4	0	0	0	0	0	0	24
24	0	0	1	1	4	1	1	2	0	0	0	0	10
7-19	1	16	158	503	490	131	20	3	1	0	0	0	1323
6-22	1	19	178	564	566	160	29	3	1	0	0	0	1521
6-24	1	20	184	573	576	165	30	5	1	0	0	0	1555
0-24	1	21	191	586	599	193	40	7	2	0	0	0	1640

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Monday 09/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	1	0	0	0	0	0	0	0	1
4	0	0	0	0	0	1	0	0	0	0	0	0	1
5	0	0	1	1	3	1	0	0	0	0	0	0	6
6	2	0	6	5	11	4	1	1	0	0	0	0	30
7	0	2	8	15	27	22	4	1	0	0	0	0	79
8	0	1	13	52	67	34	6	0	0	0	0	0	173
9	0	2	25	73	80	34	4	0	0	0	0	0	218
10	0	3	14	51	38	9	0	0	0	0	0	0	115
11	0	1	19	49	39	7	1	1	0	0	0	0	117
12	0	4	10	46	29	6	1	0	0	0	0	0	96
13	0	2	28	51	39	11	0	0	0	0	0	0	131
14	0	4	26	61	26	9	2	0	0	0	0	0	128
15	0	2	22	55	28	9	0	1	0	0	0	0	117
16	0	3	27	60	43	6	1	0	0	0	0	0	140
17	0	1	13	49	54	12	0	0	0	0	0	0	129
18	0	2	17	45	47	14	1	0	0	0	0	0	126
19	0	2	15	38	33	12	2	0	0	0	0	0	102
20	0	3	14	33	27	13	4	0	0	0	0	0	94
21	0	0	7	15	14	8	0	0	0	0	0	0	44
22	0	0	5	5	8	5	1	0	0	0	0	0	24
23	0	1	5	5	1	3	0	0	0	0	0	0	15
24	0	0	2	1	1	4	0	0	0	0	0	0	8
7-19	0	27	229	630	523	163	18	2	0	0	0	0	1592
6-22	0	32	263	698	599	211	27	3	0	0	0	0	1833
6-24	0	33	270	704	601	218	27	3	0	0	0	0	1856
0-24	2	33	277	710	616	224	28	4	0	0	0	0	1894

Channel 2 - Southbound

Monday 09/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	1	2	1	1	0	0	0	0	0	0	5
2	0	0	0	0	0	0	1	0	0	0	0	0	1
3	0	0	0	1	0	1	0	0	0	0	0	0	2
4	0	0	0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	1	1	1	0	1	0	0	0	0	4
6	0	0	1	0	1	0	1	0	0	0	0	0	3
7	0	0	0	4	5	6	1	0	1	0	0	0	17
8	0	2	5	17	31	12	2	0	0	0	0	0	69
9	0	0	14	23	30	10	1	0	0	0	0	0	78
10	1	0	18	60	40	7	0	0	0	0	0	0	126
11	0	0	5	33	45	9	4	1	0	0	0	0	97
12	0	3	25	51	35	5	2	0	0	0	0	0	121
13	0	0	18	60	33	12	1	0	0	0	0	0	124
14	1	8	27	27	34	5	1	0	0	0	0	0	103
15	0	0	23	38	47	5	1	0	0	0	0	0	114
16	0	1	34	88	46	4	1	0	0	0	0	0	174
17	0	4	29	77	67	10	1	0	0	0	0	0	188
18	0	7	35	97	69	15	0	0	0	0	0	0	223
19	0	4	21	64	54	14	1	0	0	0	0	0	158
20	0	0	13	49	50	11	2	0	0	0	0	0	125
21	0	1	17	28	27	15	1	0	0	0	0	0	89
22	0	1	7	19	13	6	0	2	0	0	0	0	48
23	0	0	4	6	13	5	0	0	0	0	0	0	28
24	0	0	0	4	2	3	0	0	0	0	0	0	9
7-19	2	29	254	635	531	108	15	1	0	0	0	0	1575
6-22	2	31	291	735	626	146	19	3	1	0	0	0	1854
6-24	2	31	295	745	641	154	19	3	1	0	0	0	1891
0-24	2	31	297	749	644	157	21	4	1	0	0	0	1906

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

Tuesday 10/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	2	0	0	0	0	0	0	0	2
3	0	0	0	1	0	0	0	0	0	0	0	0	1
4	0	0	0	0	2	2	1	0	0	0	0	0	5
5	0	0	1	2	1	0	1	0	0	0	0	0	5
6	0	0	7	6	18	5	1	0	0	0	0	0	37
7	0	0	8	19	26	22	6	2	0	0	0	0	83
8	0	2	20	47	69	30	6	0	0	0	0	0	174
9	0	7	24	84	83	19	0	2	0	0	0	0	219
10	0	2	24	50	37	10	0	0	0	0	0	0	123
11	0	0	17	57	27	3	0	0	0	0	0	0	104
12	0	4	18	45	38	4	0	0	0	0	0	0	109
13	1	1	20	42	35	9	2	0	0	0	0	0	110
14	0	5	25	70	20	3	1	0	0	0	0	0	124
15	0	5	32	48	25	2	1	0	0	0	0	0	113
16	1	2	14	69	50	7	1	0	0	0	0	0	144
17	0	4	20	65	25	5	1	0	0	0	0	0	120
18	0	0	9	48	49	10	0	0	0	0	0	0	116
19	0	4	18	30	46	9	4	0	0	1	0	0	112
20	0	4	17	28	23	7	2	0	0	0	0	0	81
21	0	1	7	8	19	0	1	0	0	0	0	0	36
22	0	3	8	14	9	5	0	0	0	0	0	0	39
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	2	36	241	655	504	111	16	2	0	1	0	0	1568
6-22	2	44	281	724	581	145	25	4	0	1	0	0	1807
6-24	2	44	281	724	581	145	25	4	0	1	0	0	1807
0-24	2	44	289	733	604	152	28	4	0	1	0	0	1857

Channel 2 - Southbound

Tuesday 10/07/2018	Vehicle Speeds (MPH)												
Hr Ending	0-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-60	61-70	71-100	TOTAL
1	0	0	0	0	0	2	0	0	0	0	0	0	2
2	0	0	1	1	0	3	0	0	0	0	0	0	5
3	0	0	0	1	0	0	0	0	0	0	0	0	1
4	0	0	0	1	1	2	0	0	0	0	0	0	4
5	0	0	0	1	1	0	1	0	0	0	0	0	3
6	0	0	0	2	1	0	0	1	0	0	0	0	4
7	0	0	0	2	12	5	1	0	0	0	0	0	20
8	1	0	10	24	17	7	1	0	0	0	0	0	60
9	0	1	14	32	31	10	3	0	0	0	0	0	91
10	1	2	14	44	30	6	1	0	0	0	0	0	98
11	0	2	25	52	36	9	0	0	0	0	0	0	124
12	0	2	21	41	37	7	0	1	0	0	0	0	109
13	0	1	18	47	32	12	1	1	0	0	0	0	112
14	0	5	15	48	24	8	1	0	0	0	0	0	101
15	0	7	31	48	24	5	1	0	0	0	0	0	116
16	0	14	47	69	27	8	0	0	0	0	0	0	165
17	0	4	51	70	35	11	0	0	0	0	0	0	171
18	1	5	32	88	77	20	1	0	0	0	0	0	224
19	1	4	27	83	65	22	2	0	0	0	0	0	204
20	3	7	11	31	36	14	3	0	0	0	0	0	105
21	0	2	10	16	29	13	3	0	0	0	0	0	73
22	0	0	13	20	22	6	0	0	0	0	0	0	61
23	0	0	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0	0	0
7-19	4	47	305	646	435	125	11	2	0	0	0	0	1575
6-22	7	56	339	715	534	163	18	2	0	0	0	0	1834
6-24	7	56	339	715	534	163	18	2	0	0	0	0	1834
0-24	7	56	340	721	537	170	19	3	0	0	0	0	1853

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday	5-DAY MEAN	7-DAY MEAN
0000-2400 Vehicle Flow	1798	1893	2036	1711	1586	1894	1857	1886	1825
Mean Speed	25.3	25.4	25.4	25.7	25.4	25.1	24.7	25.2	25.3
85thile Speed	33.5	33.3	33.9	33.2	28.1	33.3	29.0	32.6	32.0
No. Vehicles > 30 MPH Limit	250	275	292	275	209	256	185	252	249
% Vehicles > 30 MPH Limit	13.9	14.5	14.3	16.1	13.2	13.5	10.0	13.3	13.6
No. Vehicles > 45 MPH	1	1	3	0	1	0	1	1	1
% Vehicles > 45 MPH	0.1	0.1	0.1	0.0	0.1	0.0	0.1	0.1	0.1

Channel 2 - Southbound

	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday	5-DAY MEAN	7-DAY MEAN
0000-2400 Vehicle Flow	1789	1619	2059	1695	1540	1906	1853	1903	1835
Mean Speed	25.2	25.2	25.1	25.1	25.9	24.8	24.3	24.9	25.2
85thile Speed	28.2	28.6	28.7	33.4	28.9	28.9	28.3	28.5	29.3
No. Vehicles > 30 MPH Limit	222	237	257	302	242	183	192	218	234
% Vehicles > 30 MPH Limit	12.4	12.8	12.6	17.8	14.8	9.6	10.4	11.5	12.8
No. Vehicles > 45 MPH	1	4	0	2	2	1	0	1	1
% Vehicles > 45 MPH	0.1	0.2	0.0	0.1	0.1	0.1	0.0	0.1	0.1

Channels 1+2 - Northbound & Southbound

	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday	5-DAY MEAN	7-DAY MEAN
0000-2400 Vehicle Flow	3587	3512	4095	3407	3226	3800	3710	3797	3669
Mean Speed	25.3	25.3	25.3	25.9	25.6	25.0	24.5	25.1	25.3
85thile Speed	30.9	30.9	31.3	33.3	28.5	31.1	28.6	30.6	30.7
No. Vehicles > 30 MPH Limit	472	512	549	577	451	439	377	476	492
% Vehicles > 30 MPH Limit	13.2	13.4	13.5	16.9	14.0	11.6	10.2	12.4	13.2
No. Vehicles > 45 MPH	2	5	3	2	3	1	1	2	2
% Vehicles > 45 MPH	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.1	0.1

CHAS No	Vehicle Description	CHAS No	Vehicle Description
1	Clear Light Pole	6	Signal 2 Area 100V + 2 Area 100V + 2 Area 100V
2	Signal 1 Area 100V	7	Signal 3 Area 100V + 3 Area 100V + 3 Area 100V
3	Signal 2 Area 100V + 2 Area 100V + 2 Area 100V	8	Signal 4 Area 100V + 4 Area 100V + 4 Area 100V
4	Signal 3 Area 100V + 3 Area 100V + 3 Area 100V	9	Signal 5 Area 100V + 5 Area 100V + 5 Area 100V
5	Signal 4 Area 100V + 4 Area 100V + 4 Area 100V	10	Signal 6 Area 100V + 6 Area 100V + 6 Area 100V
6	Signal 5 Area 100V + 5 Area 100V + 5 Area 100V	11	Signal 7 Area 100V + 7 Area 100V + 7 Area 100V
7	Signal 6 Area 100V + 6 Area 100V + 6 Area 100V	12	Signal 8 Area 100V + 8 Area 100V + 8 Area 100V
8	Signal 7 Area 100V + 7 Area 100V + 7 Area 100V	13	Signal 9 Area 100V + 9 Area 100V + 9 Area 100V
9	Signal 8 Area 100V + 8 Area 100V + 8 Area 100V	14	Signal 10 Area 100V + 10 Area 100V + 10 Area 100V
10	Signal 9 Area 100V + 9 Area 100V + 9 Area 100V	15	Signal 11 Area 100V + 11 Area 100V + 11 Area 100V
11	Signal 10 Area 100V + 10 Area 100V + 10 Area 100V	16	Signal 12 Area 100V + 12 Area 100V + 12 Area 100V
12	Signal 11 Area 100V + 11 Area 100V + 11 Area 100V	17	Signal 13 Area 100V + 13 Area 100V + 13 Area 100V
13	Signal 12 Area 100V + 12 Area 100V + 12 Area 100V	18	Signal 14 Area 100V + 14 Area 100V + 14 Area 100V
14	Signal 13 Area 100V + 13 Area 100V + 13 Area 100V	19	Signal 15 Area 100V + 15 Area 100V + 15 Area 100V
15	Signal 14 Area 100V + 14 Area 100V + 14 Area 100V	20	Signal 16 Area 100V + 16 Area 100V + 16 Area 100V
16	Signal 15 Area 100V + 15 Area 100V + 15 Area 100V	21	Signal 17 Area 100V + 17 Area 100V + 17 Area 100V
17	Signal 16 Area 100V + 16 Area 100V + 16 Area 100V	22	Signal 18 Area 100V + 18 Area 100V + 18 Area 100V
18	Signal 17 Area 100V + 17 Area 100V + 17 Area 100V	23	Signal 19 Area 100V + 19 Area 100V + 19 Area 100V
19	Signal 18 Area 100V + 18 Area 100V + 18 Area 100V	24	Signal 20 Area 100V + 20 Area 100V + 20 Area 100V
20	Signal 19 Area 100V + 19 Area 100V + 19 Area 100V	25	Signal 21 Area 100V + 21 Area 100V + 21 Area 100V
21	Signal 20 Area 100V + 20 Area 100V + 20 Area 100V	26	Signal 22 Area 100V + 22 Area 100V + 22 Area 100V
22	Signal 21 Area 100V + 21 Area 100V + 21 Area 100V	27	Signal 23 Area 100V + 23 Area 100V + 23 Area 100V
23	Signal 22 Area 100V + 22 Area 100V + 22 Area 100V	28	Signal 24 Area 100V + 24 Area 100V + 24 Area 100V
24	Signal 23 Area 100V + 23 Area 100V + 23 Area 100V	29	Signal 25 Area 100V + 25 Area 100V + 25 Area 100V
25	Signal 24 Area 100V + 24 Area 100V + 24 Area 100V	30	Signal 26 Area 100V + 26 Area 100V + 26 Area 100V
26	Signal 25 Area 100V + 25 Area 100V + 25 Area 100V	31	Signal 27 Area 100V + 27 Area 100V + 27 Area 100V
27	Signal 26 Area 100V + 26 Area 100V + 26 Area 100V	32	Signal 28 Area 100V + 28 Area 100V + 28 Area 100V
28	Signal 27 Area 100V + 27 Area 100V + 27 Area 100V	33	Signal 29 Area 100V + 29 Area 100V + 29 Area 100V
29	Signal 28 Area 100V + 28 Area 100V + 28 Area 100V	34	Signal 30 Area 100V + 30 Area 100V + 30 Area 100V
30	Signal 29 Area 100V + 29 Area 100V + 29 Area 100V	35	Signal 31 Area 100V + 31 Area 100V + 31 Area 100V
31	Signal 30 Area 100V + 30 Area 100V + 30 Area 100V	36	Signal 32 Area 100V + 32 Area 100V + 32 Area 100V
32	Signal 31 Area 100V + 31 Area 100V + 31 Area 100V	37	Signal 33 Area 100V + 33 Area 100V + 33 Area 100V
33	Signal 32 Area 100V + 32 Area 100V + 32 Area 100V	38	Signal 34 Area 100V + 34 Area 100V + 34 Area 100V
34	Signal 33 Area 100V + 33 Area 100V + 33 Area 100V	39	Signal 35 Area 100V + 35 Area 100V + 35 Area 100V
35	Signal 34 Area 100V + 34 Area 100V + 34 Area 100V	40	Signal 36 Area 100V + 36 Area 100V + 36 Area 100V
36	Signal 35 Area 100V + 35 Area 100V + 35 Area 100V	41	Signal 37 Area 100V + 37 Area 100V + 37 Area 100V
37	Signal 36 Area 100V + 36 Area 100V + 36 Area 100V	42	Signal 38 Area 100V + 38 Area 100V + 38 Area 100V
38	Signal 37 Area 100V + 37 Area 100V + 37 Area 100V	43	Signal 39 Area 100V + 39 Area 100V + 39 Area 100V
39	Signal 38 Area 100V + 38 Area 100V + 38 Area 100V	44	Signal 40 Area 100V + 40 Area 100V + 40 Area 100V
40	Signal 39 Area 100V + 39 Area 100V + 39 Area 100V	45	Signal 41 Area 100V + 41 Area 100V + 41 Area 100V
41	Signal 40 Area 100V + 40 Area 100V + 40 Area 100V	46	Signal 42 Area 100V + 42 Area 100V + 42 Area 100V
42	Signal 41 Area 100V + 41 Area 100V + 41 Area 100V	47	Signal 43 Area 100V + 43 Area 100V + 43 Area 100V
43	Signal 42 Area 100V + 42 Area 100V + 42 Area 100V	48	Signal 44 Area 100V + 44 Area 100V + 44 Area 100V
44	Signal 43 Area 100V + 43 Area 100V + 43 Area 100V	49	Signal 45 Area 100V + 45 Area 100V + 45 Area 100V
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48	Signal 47 Area 100V + 47 Area 100V + 47 Area 100V	53	Signal 49 Area 100V + 49 Area 100V + 49 Area 100V
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56	Signal 55 Area 100V + 55 Area 100V + 55 Area 100V	61	Signal 57 Area 100V + 57 Area 100V + 57 Area 100V
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64	Signal 63 Area 100V + 63 Area 100V + 63 Area 100V	69	Signal 65 Area 100V + 65 Area 100V + 65 Area 100V
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66	Signal 65 Area 100V + 65 Area 100V + 65 Area 100V	71	Signal 67 Area 100V + 67 Area 100V + 67 Area 100V
67	Signal 66 Area 100V + 66 Area 100V + 66 Area 100V	72	Signal 68 Area 100V + 68 Area 100V + 68 Area 100V
68	Signal 67 Area 100V + 67 Area 100V + 67 Area 100V	73	Signal 69 Area 100V + 69 Area 100V + 69 Area 100V
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70	Signal 69 Area 100V + 69 Area 100V + 69 Area 100V	75	Signal 71 Area 100V + 71 Area 100V + 71 Area 100V
71	Signal 70 Area 100V + 70 Area 100V + 70 Area 100V	76	Signal 72 Area 100V + 72 Area 100V + 72 Area 100V
72	Signal 71 Area 100V + 71 Area 100V + 71 Area 100V	77	Signal 73 Area 100V + 73 Area 100V + 73 Area 100V
73	Signal 72 Area 100V + 72 Area 100V + 72 Area 100V	78	Signal 74 Area 100V + 74 Area 100V + 74 Area 100V
74	Signal 73 Area 100V + 73 Area 100V + 73 Area 100V	79	Signal 75 Area 100V + 75 Area 100V + 75 Area 100V
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80	Signal 79 Area 100V + 79 Area 100V + 79 Area 100V	85	Signal 81 Area 100V + 81 Area 100V + 81 Area 100V
81	Signal 80 Area 100V + 80 Area 100V + 80 Area 100V	86	Signal 82 Area 100V + 82 Area 100V + 82 Area 100V
82	Signal 81 Area 100V + 81 Area 100V + 81 Area 100V	87	Signal 83 Area 100V + 83 Area 100V + 83 Area 100V
83	Signal 82 Area 100V + 82 Area 100V + 82 Area 100V	88	Signal 84 Area 100V + 84 Area 100V + 84 Area 100V
84	Signal 83 Area 100V + 83 Area 100V + 83 Area 100V	89	Signal 85 Area 100V + 85 Area 100V + 85 Area 100V
85	Signal 84 Area 100V + 84 Area 100V + 84 Area 100V	90	Signal 86 Area 100V + 86 Area 100V + 86 Area 100V
86	Signal 85 Area 100V + 85 Area 100V + 85 Area 100V	91	Signal 87 Area 100V + 87 Area 100V + 87 Area 100V
87	Signal 86 Area 100V + 86 Area 100V + 86 Area 100V	92	Signal 88 Area 100V + 88 Area 100V + 88 Area 100V
88	Signal 87 Area 100V + 87 Area 100V + 87 Area 100V	93	Signal 89 Area 100V + 89 Area 100V + 89 Area 100V
89	Signal 88 Area 100V + 88 Area 100V + 88 Area 100V	94	Signal 90 Area 100V + 90 Area 100V + 90 Area 100V
90	Signal 89 Area 100V + 89 Area 100V + 89 Area 100V	95	Signal 91 Area 100V + 91 Area 100V + 91 Area 100V
91	Signal 90 Area 100V + 90 Area 100V + 90 Area 100V	96	Signal 92 Area 100V + 92 Area 100V + 92 Area 100V
92	Signal 91 Area 100V + 91 Area 100V + 91 Area 100V	97	Signal 93 Area 100V + 93 Area 100V + 93 Area 100V
93	Signal 92 Area 100V + 92 Area 100V + 92 Area 100V	98	Signal 94 Area 100V + 94 Area 100V + 94 Area 100V
94	Signal 93 Area 100V + 93 Area 100V + 93 Area 100V	99	Signal 95 Area 100V + 95 Area 100V + 95 Area 100V
95	Signal 94 Area 100V + 94 Area 100V + 94 Area 100V	100	Signal 96 Area 100V + 96 Area 100V + 96 Area 100V
96	Signal 95 Area 100V + 95 Area 100V + 95 Area 100V	101	Signal 97 Area 100V + 97 Area 100V + 97 Area 100V
97	Signal 96 Area 100V + 96 Area 100V + 96 Area 100V	102	Signal 98 Area 100V + 98 Area 100V + 98 Area 100V
98	Signal 97 Area 100V + 97 Area 100V + 97 Area 100V	103	Signal 99 Area 100V + 99 Area 100V + 99 Area 100V
99	Signal 98 Area 100V + 98 Area 100V + 98 Area 100V	104	Signal 100 Area 100V + 100 Area 100V + 100 Area 100V
100	Signal 99 Area 100V + 99 Area 100V + 99 Area 100V	105	Signal 101 Area 100V + 101 Area 100V + 101 Area 100V
101	Signal 100 Area 100V + 100 Area 100V + 100 Area 100V	106	Signal 102 Area 100V + 102 Area 100V + 102 Area 100V
102	Signal 101 Area 100V + 101 Area 100V + 101 Area 100V	107	Signal 103 Area 100V + 103 Area 100V + 103 Area 100V
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105	Signal 104 Area 100V + 104 Area 100V + 104 Area 100V	110	Signal 106 Area 100V + 106 Area 100V + 106 Area 100V
106	Signal 105 Area 100V + 105 Area 100V + 105 Area 100V	111	Signal 107 Area 100V + 107 Area 100V + 107 Area 100V

Clitheroe ATC 02, (North) Henthorn Road

Produced by Streetwise Services Ltd.



Channel 1 - Northbound

	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday	5-DAY MEAN	7-DAY MEAN
Vehicle Flow	1190	1220	1362	1354	1307	1248	1228	1250	1273
Mean Speed	26.3	24.9	26.5	26.5	26.2	25.7	25.2	25.7	25.9
85%ile Speed	31.6	29.7	31.7	32.0	31.9	31.2	29.9	30.8	31.2
No. Vehicles > 30 MPH Limit	147	155	202	192	173	151	112	153	162
% Vehicles > 30 MPH Limit	12.4	12.7	14.8	14.2	13.2	12.1	9.1	12.2	12.6
No. Vehicles > 45 MPH	0	1	3	0	1	0	1	1	1
% Vehicles > 45 MPH	0.0	0.1	0.2	0.0	0.1	0.0	0.1	0.1	0.1

Channel 2 - Southbound

	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday	5-DAY MEAN	7-DAY MEAN
Vehicle Flow	1270	1360	1457	1432	1308	1348	1307	1348	1355
Mean Speed	25.3	25.7	25.7	27.2	27.3	26.7	26.0	25.9	26.3
85%ile Speed	30.5	29.9	31.2	33.0	33.8	32.2	31.3	31.0	31.7
No. Vehicles > 30 MPH Limit	161	169	193	232	186	132	139	159	173
% Vehicles > 30 MPH Limit	12.7	12.4	13.2	16.2	14.2	9.8	10.6	11.8	12.7
No. Vehicles > 45 MPH	0	4	0	1	2	1	0	1	1
% Vehicles > 45 MPH	0.0	0.3	0.0	0.1	0.2	0.1	0.0	0.1	0.1

Channels 1+2 - Northbound & Southbound

	04/07/2018 Wednesday	05/07/2018 Thursday	06/07/2018 Friday	07/07/2018 Saturday	08/07/2018 Sunday	09/07/2018 Monday	10/07/2018 Tuesday	5-DAY MEAN	7-DAY MEAN
Vehicle Flow	2460	2580	2819	2786	2615	2596	2535	2598	2627
Mean Speed	25.8	25.3	26.1	26.8	26.7	26.2	25.6	25.8	26.1
85%ile Speed	31.0	29.8	31.5	32.5	32.9	31.7	30.6	30.9	31.4
No. Vehicles > 30 MPH Limit	308	324	395	424	359	283	251	312	335
% Vehicles > 30 MPH Limit	12.5	12.6	14.0	15.2	13.7	10.9	9.9	12.0	12.7
No. Vehicles > 45 MPH	0	5	3	1	3	1	1	2	2
% Vehicles > 45 MPH	0.0	0.2	0.1	0.0	0.1	0.0	0.0	0.1	0.1

Note All figures are based on data from the hours 0000-0700 0900-1600 1800-2400.

C Extracts from TA 79/99 'Traffic Capacity of Urban Roads'

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Feature	ROAD TYPE				
	Urban Motorway	Urban All-purpose			
	UM	UAP1	UAP2	UAP3	UAP4
General Description	Through route with grade separated junctions, hardshoulders or hardstrips, and motorway restrictions.	High standard single/dual carriageway road carrying predominantly through traffic with limited access.	Good standard single/dual carriageway road with frontage access and more than two side roads per km.	Variable standard road carrying mixed traffic with frontage access, side roads, bus stops and at-grade pedestrian crossings.	Busy high street carrying predominantly local traffic with frontage activity including loading and unloading.
Speed Limit	60mph or less	40 to 60 mph for dual, & generally 40mph for single carriageway	Generally 40 mph	30 mph to 40 mph	30mph
Side Roads	None	0 to 2 per km	more than 2 per km	more than 2 per km	more than 2 per km
Access to roadside development	None. Grade separated for major only.	limited access	access to residential properties	frontage access	unlimited access to houses, shops & businesses
Parking and loading	none	restricted	restricted	unrestricted	unrestricted
Pedestrian crossings	grade separated	mostly grade separated	some at-grade	some at-grade	frequent at-grade
Bus stops	none	in lay-bys	at kerbside	at kerbside	at kerbside

Table 1 Types of Urban roads and the features that distinguish them

		Two-way Single Carriageway- Busiest direction flow (Assumes a 60/40 directional split)									Dual Carriageway			
		Total number of Lanes									Number of Lanes in each direction			
		2				2-3	3	3-4	4	4+	2		3	4
Carriageway width		6.1m	6.75m	7.3m	9.0m	10.0m	12.3m	13.5m	14.6m	18.0m	6.75m	7.3m	11.0m	14.6m
Road type	UM	Not applicable										4000	5600	7200
	UAP1	1020	1320	1590	1860	2010	2550	2800	3050	3300	3350	3600	5200	*
	UAP2	1020	1260	1470	1550	1650	1700	1900	2100	2700	2950	3200	4800	*
	UAP3	900	1110	1300	1530	1620	*	*	*	*	2300	2600	3300	*
	UAP4	750	900	1140	1320	1410	*	*	*	*	*	*	*	*

Table 2 Capacities of Urban Roads
One-way hourly flows in each direction

Notes

1. Capacities are in vehicles per hour.
2. HGV $\leq$ 15%
3. (*) Capacities are excluded where the road width is not appropriate for the road type and where there are too few examples to give reliable figures.

D LCC Accident Data

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How people travel - walking



255

walking trips per person per year on average in 2017



206

miles travelled walking per person per year on average in 2017



17

minutes per walking trip on average in 2017



26%
of trips



3%
of distance

Purpose of walking [NTS0409]

Top 5 purposes, as % of walking trips: 2017

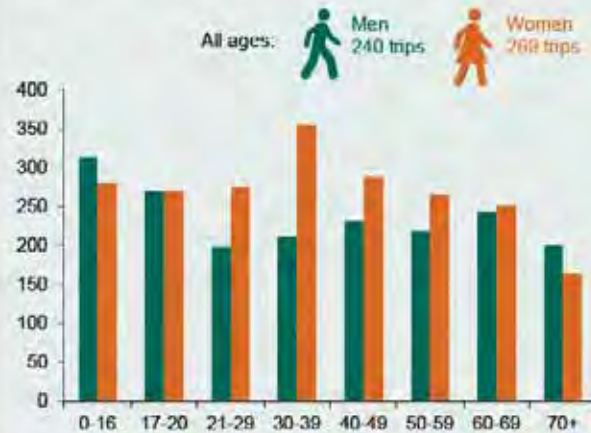


Frequency of walks of 20 minutes or more [NTS0312]



Walking trips, by age and gender [NTS0601]

Trips per person per year, by age and gender: 2017



How people travel - cycling



17

cycling trips per person per year on average in 2017



60

miles travelled cycling per person per year on average in 2017



23

minutes per cycling trip on average in 2017



2%
of trips



1%
of distance

Purpose of cycling trips [NTS0409]

Top 5 purposes, as % of cycling trips: 2017



Frequency of cycling [NTS0313]



Cycling trips, by age and gender [NTS0601]

Trips per person per year, by age and gender: 2017



**594**

trips made by car per person per year on average in 2017

**5,104**

miles travelled by car per person per year on average in 2017

**22**

minutes per car driver trip on average in 2017

**61%**
of trips**78%**
of distance**Purpose of car trips [NTS0409]**

Top 5 purposes, as % of car trips: 2017

**Frequency of private car use [NTS0313]**

At least once a week
At least once a month
At least once a year
Less than once a year or never

**Travel and personal car access [NTS0702]**

Persons in households without a car

740 trips

per person per year

2,940 miles

per person per year



Persons in households with a car

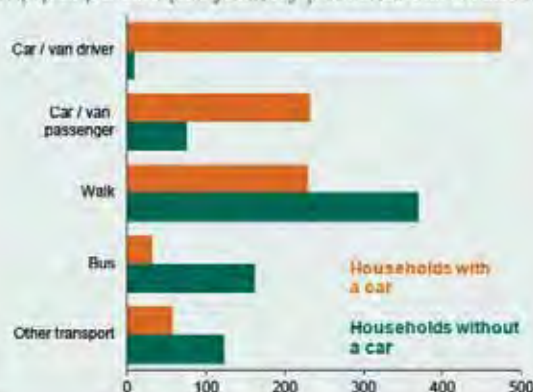
1,027 trips

per person per year

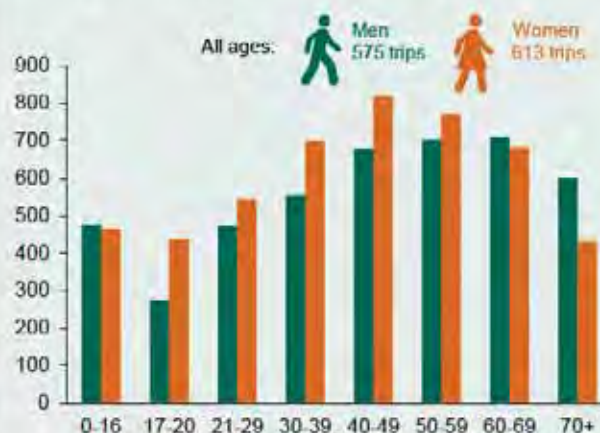
7,390 miles

per person per year

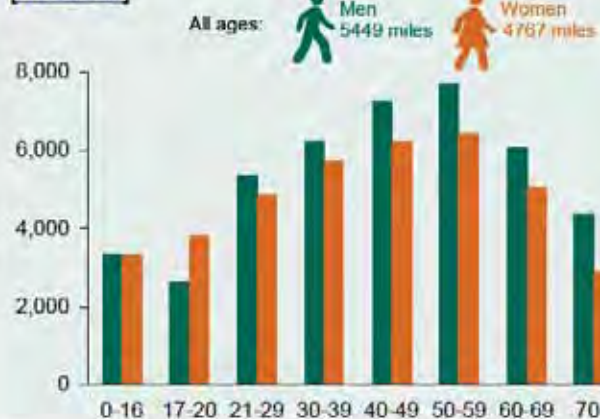
Trip per person per year, by personal car access: 2017

**Car trips, by age and gender [NTS0601]**

Trips per person per year, by age and gender: 2017

**Distance travelled in miles, by age and gender [NTS0605]**

Distance travelled in miles, by age and gender: 2017

**Household car access [NTS0703]**

Household car availability, by household income: 2017





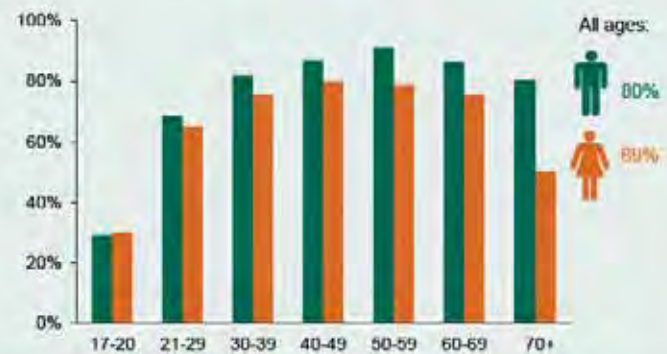
Driving licence holding in 2017 [NTS0201]



32.4 million estimated
licence holders

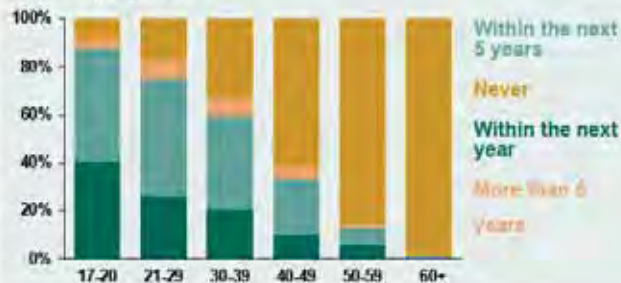
73% of English residents aged
17+

Full car driving licence holders, by age and gender: 2017

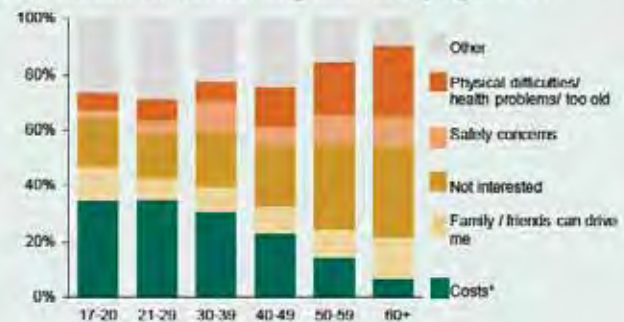


Learning to drive [NTS0203, NTS0204]

How soon non-licence holders think they will learn to drive, by age: 2017



Main reason for not learning to drive, by age: 2017



* Includes learning to drive, insurance, buying a car and other general motoring costs

How people travel - bus



56

bus trips per person per year on
average in 2017

315

miles travelled by bus per person
per year on average in 2017

38

minutes per bus trip on average
in 2017



6%
of trips



5%
of distance

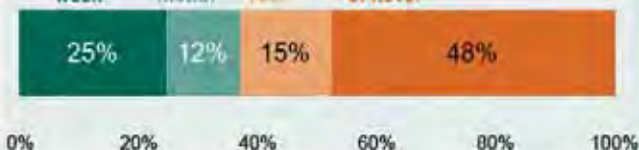
Purpose of bus trips [NTS0409]

Top 5 purposes, as % of bus trips: 2017



Frequency of local bus use [NTS0313]

At least once a week
At least once a month
At least once a year
Less than once a year or never



Bus use by age and gender [NTS0601]

Trips per person per year, by age and gender: 2017



How people travel - Surface rail



21

surface rail trips per person per year on average in 2017



558

miles travelled per person per year on average in 2017



79

minutes per surface rail trip on average in 2017



Purpose of surface rail trips [\[NTS0409\]](#)

Top 5 purposes, as % of surface rail trips: 2017



Frequency of surface rail use [\[NTS0313\]](#)

At least once a week
At least once a month
At least once a year
Less than once a year or never



Surface rail trips, by age and gender [\[NTS0601\]](#)

Trips per person per year, by age and gender: 2017



How people travel - air



Frequency of domestic flights [\[NTS0313\]](#)

Frequency of use of domestic air: 2017



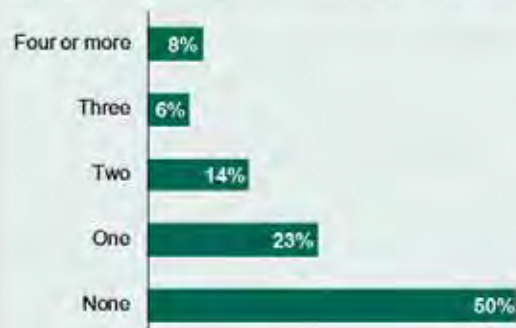
Domestic air as share of long trips [\[NTS0317\]](#)

Legend: Car / van (green), Bus (blue), Train (grey), Air (orange), Other (yellow)



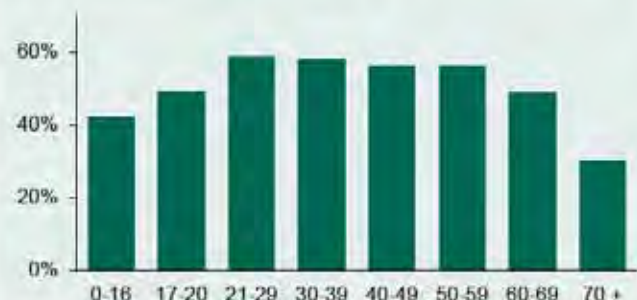
Frequency of international flights [\[NTS0316\]](#)

Number of flights abroad in the last 12 months: 2017



International flights by age [\[NTS0316\]](#)

Percentage of people who made at least one flight abroad in the last 12 months, by age: 2017





189 shopping trips per person on average in 2017



738 shopping miles per person on average in 2017



17 minutes per shopping trip on average in 2017

Main shopping modes in 2017 [NTS0409]



63% of shopping trips were made by **car/van**



27% of shopping trips were made by **walking**



7% of shopping trips were made by **local bus**, including London buses

Age and gender [NTS0611, NTS0612]

Trips per person per year, by age and gender: 2017



172

shopping trips per year on average (18% of all trips by men in 2017)

206

shopping trips per year on average (21% of all trips by women in 2017)

651

shopping miles per year on average (9% of total distance by men in 2017)

823

shopping miles per year on average (13% of total distance by women in 2017)

Why people travel - commuting



144 commuting trips per person on average in 2017



1,309 average commuting miles per person per year in 2017



31 average length of a commuting trip in minutes in 2017

Main commuting modes in 2017 [NTS0409]



63% of commuting trips were made by **car/van**



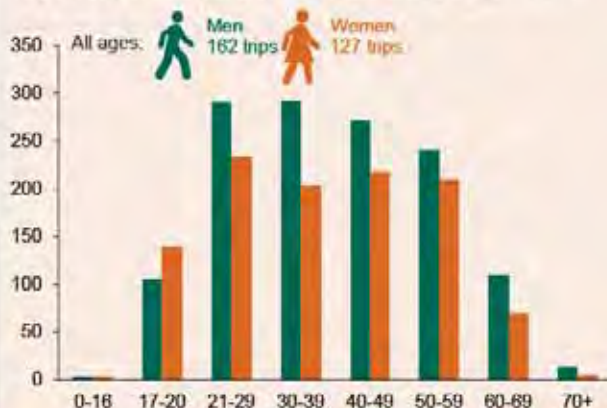
11% of commuting trips were made by **walking**



8% of commuting trips were made by **local bus**, including London buses

Age and gender [NTS0611, NTS0612]

Trips per person per year, by age and gender: 2017



162

commuting trips per year on average (17% of all trips by men in 2017)

127

commuting trips per year on average (13% of all trips by women in 2017)

1,713

commuting miles per year on average (24% of total distance by men in 2017)

915

commuting miles per year on average (15% of total distance by women in 2017)



27

business trips per person on average in 2017



510

average business miles per person per year in 2017



40

average length of a business trip in minutes in 2017

Main business modes in 2017 [NTS0409]



71%

of business trips were made by car/van



10%

of business trips were made by walking



7%

of business trips were made by surface rail

Age and gender [NTS0611, NTS0612]

Trips per person per year, by age and gender: 2017



30

business trips per year on average (3% of all trips by men in 2017)

24

business trips per year on average (2% of all trips by women in 2017)

697

business miles per year on average (10% of total distance by men in 2017)

328

business miles per year on average (5% of total distance by women in 2017)

Why people travel - leisure



252

trips for leisure purposes per person on average in 2017



2,681

average miles per person per year for leisure purposes in 2017



28

average trip length in minutes for leisure purposes in 2017

Main modes used for leisure trips in 2017 [NTS0409]



71%

of leisure trips were made by car/van



16%

of leisure trips were made by walking



4%

of leisure trips were made by local bus, including London buses

Age and gender [NTS0611, NTS0612]

Trips per person per year, by age and gender: 2017



248

trips for leisure per year on average (26% of all trips by men in 2017)

255

trips for leisure per year on average (28% of all trips by women in 2017)

2,651

miles for leisure per year on average (38% of total distance by men in 2017)

2,710

miles for leisure per year on average (44% of total distance by women in 2017)


122

trips for education (including escort)
per person on average in 2016

347

average miles per person per year
for education/escort education in
2017

18

average trip time in minutes for
education/escort education in 2017

Travel to school in 2016 [\[NTS0613\]](#)


3.3 miles

average length of an
education trip - shortest of
any main purpose

97% of 5-10 year olds are usually
accompanied to school by an adult.

63% of 11-16 year olds are usually
accompanied to school by an adult.


Age and gender [\[NTS0611, NTS0612\]](#)

Trips per person per year, by age and gender: 2017


106 education/escort trips per year on average
(11% of all trips by men in 2017)

137 education/escort trips per year on average
(14% of all trips by women in 2017)

324 miles per year for education/escort on average
(5% of total distance by men in 2017)

368 miles per year for education/escort on
average (6% of total distance by women in
2017)

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F Table 3.2 of CIHT 'Providing for Journeys on Foot'

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Table 3.2: Suggested Acceptable Walking Distance.

	Town centres (m)	Commuting/School Sight-seeing (m)	Elsewhere (m)
Desirable	200	500	400
Acceptable	400	1000	800
Preferred maximum	800	2000	1200

3.33. Planning Policy Guidance Note 6 states that the acceptable distance from a supermarket car park to the town centre is about 200–300m (DOE, 1996). Further sources of information on acceptable walking distances are provide by IHT (1997 and 1999) and DETR (1998).

3.34. For shopping, Carley and Donaldsons (1996) advise that that "acceptable" walking distances depend on the quality of the shops, the size of the shopping centre and the length of stay of the shopper. Specifically, they state that parking time governs the distance walked from parking. See Table 3.3) Higher quality and larger centres generate longer acceptable walking distances with up to 1250m of walking journey to 100,000m² of floor space.

Table 3.3: Acceptable walking distances for car-borne shoppers.

Parking time (hours)	Acceptable walking distance (metres)
30 mins	100
1	200
2	400
4	800
8	1000

Source: Carley and Donaldsons (1997).

Individual Sites/Redevelopment

3.35. For smaller areas and individual new developments or redevelopment, usually within an existing urban area, origin /destination surveys and network planning may not be appropriate. It will be important to identify the anticipated desire lines, crossing locations, volume and type of pedestrian activity. The practicality and attractiveness of walking depend not only on the general location but also on the access details. The most important considerations are likely to be:

- the ease of pedestrian access to the site
- the orientation and location of buildings within the site
- the access arrangements within the site
- the architectural style of the development (car or pedestrian oriented).

3.36. Additional walking distances or gradients, can be crucial in determining whether a development is pedestrian friendly. Layouts that require pedestrians to walk through car parks or to follow indirect footpaths should be avoided as far as possible. These are issues that should be addressed jointly by planners and engineers involved in development control.

3.37. If the development is sufficiently large to warrant a Transport Impact Assessment, the local authority should ensure that this thoroughly addresses the issues of pedestrian access, both to the site and within it. Some guidance is provided in IHT *Guidelines for Providing for Public Transport in Developments* (IHT, 1999). Further Guidelines on Transport Assessments are expected from DETR.

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Tim Pharoah, Llewelyn Davies Yeang

Figure 4.6 Perimeter blocks enclosing a pleasant communal open space.



Phil Jones, Phil Jones Associates

Figure 4.7 A highways-dominated layout with buildings that have a poor relationship to the road.

4.4 The walkable neighbourhood

4.4.1 Walkable neighbourhoods are typically characterised by having a range of facilities within 10 minutes' (up to about 800 m) walking distance of residential areas which residents may access comfortably on foot. However, this is not an upper limit and PPS13⁴ states that walking offers the greatest potential to replace short car trips, particularly those under 2 km. MfS encourages a reduction in the need to travel by car through the creation of mixed-use neighbourhoods with interconnected street patterns, where daily needs are within walking distance of most residents.

4.4.2 By creating linkages between new housing and local facilities and community infrastructure, the public transport network and established walking and cycling routes are fundamental to achieving more sustainable patterns of movement and to reducing people's reliance on the car. A masterplan (or scheme layout for smaller-scale developments) can help ensure that proposals are well integrated with existing facilities and places.

4.4.3 Density is also an important consideration in reducing people's reliance on the private car. PPS3⁵ encourages a flexible approach to density, reflecting the desirability of using land efficiently, linked to the impacts of climate change. It sets a national minimum indicative density of 30 dwellings per hectare. Residential densities should be planned to take advantage of a proximity to activities, or to good public transport linking those activities. *Better Places to Live: By Design*⁶ advises that a certain

critical mass of development is needed to justify a regular bus service, at frequent intervals, which is sufficient to provide a real alternative to the car.

4.5 Layout considerations

4.5.1 Streets are the focus of movement in a neighbourhood. Pedestrians and cyclists should generally share streets with motor vehicles. There will be situations where it is appropriate to include routes for pedestrians and cyclists segregated from motor traffic, but they should be short, well overlooked and relatively wide to avoid any sense of confinement. It is difficult to design an underpass or alleyway which satisfies the requirement that pedestrians or cyclists will feel safe using them at all times.

4.5.2 The principle of integrated access and movement means that the perimeter block is usually an effective structure for residential neighbourhoods. A block structure works in terms of providing direct, convenient, populated and overlooked routes. In addition, it makes efficient use of land, offers opportunities for enclosed private or communal gardens, and is a tried and tested way of creating quality places (Figs 4.6 and 4.7).

4.5.3 Several disadvantages have become apparent with housing developments built in the last 40 years which departed from traditional arrangements. Many have layouts that make orientation difficult, create left-over or ill-defined spaces, and have too many blank walls or façades. They can also be inconvenient for pedestrians, cyclists and bus users.

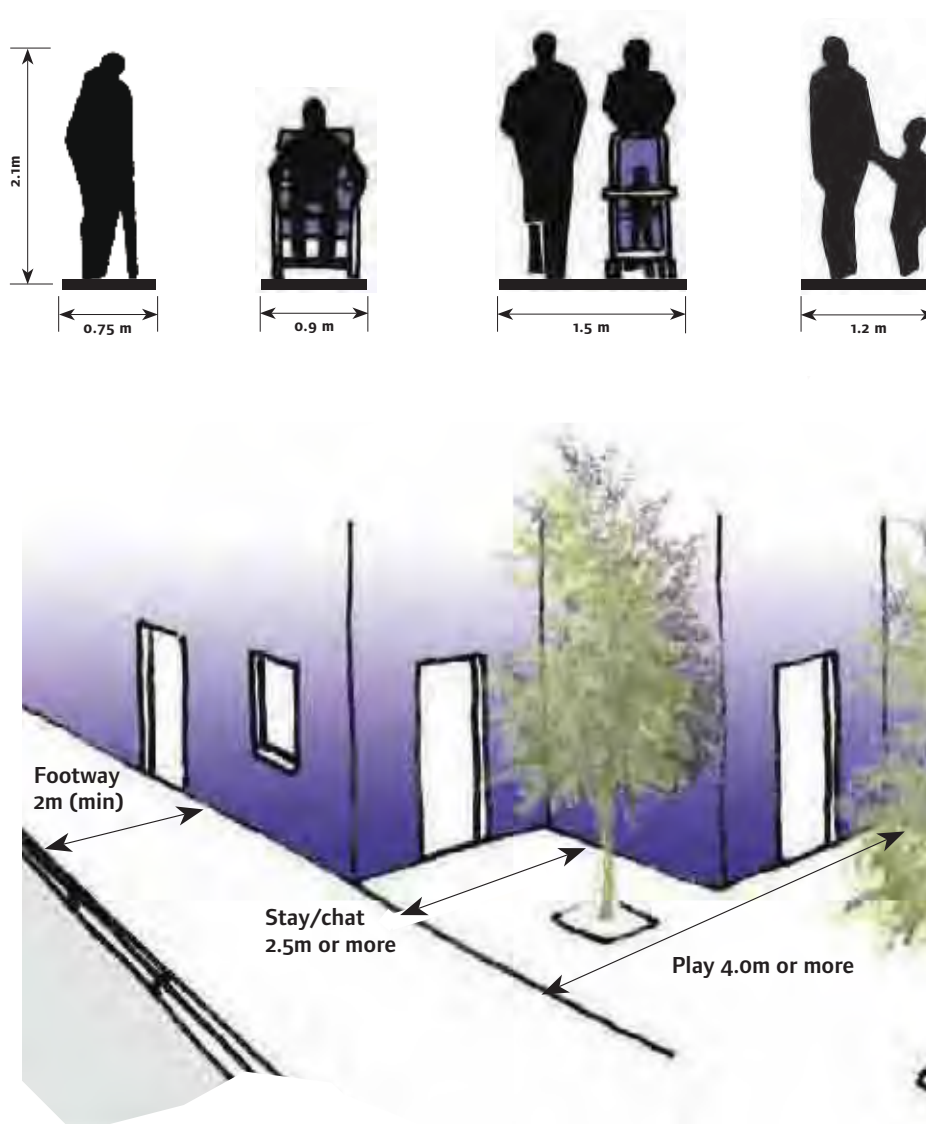
4 DETR (2001) *Policy Planning Guidance 13: Transport*. London: TSO.

5 DTLR and CABE (2001) *Better Places to Live: By Design. A Companion Guide to PPG3*. London: Thomas Telford Ltd.

6 Communities and Local Government (2006) *Planning Policy Statement 3: Housing*. London: TSO.

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Devon County Council

Figure 6.8 The footway and pedestrian areas provide for a range of functions which can include browsing, pausing, socialising and play.

6.3.20 *Inclusive Mobility* gives guidance on design measures for use where there are steep slopes or drops at the rear of footways.

6.3.21 Places for pedestrians may need to serve a variety of purposes, including movement in groups, children's play and other activities (Fig. 6.8).

6.3.22 There is no maximum width for footways. In lightly used streets (such as those with a purely residential function), the minimum unobstructed width for pedestrians should generally be 2 m. Additional width should be considered between the footway and a heavily used carriageway, or adjacent to gathering places, such as schools and shops. Further guidance on minimum footway widths is given in *Inclusive Mobility*.

6.3.23 Footway widths can be varied between different streets to take account of pedestrian volumes and composition. Streets where people walk in groups or near schools or shops, for example, need wider footways. In areas of high pedestrian flow, the quality of the walking experience can deteriorate unless sufficient width is provided. The quality of service goes down as pedestrian flow density increases. Pedestrian congestion through insufficient capacity should be avoided. It is inconvenient and may encourage people to step into the carriageway (Fig. 6.9).

6.3.24 Porch roofs, awnings, garage doors, bay windows, balconies or other building elements should not oversail footways at a height of less than 2.6 m.

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Planning for Walking



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1. Introduction

After driving and being driven, walking is the most common form of travel in Britain. It accounted for 22% of all journeys in 2012 (National Travel Survey [NTS], Department for Transport (DfT, annual)). At approximately 200 journeys per person a year, walking is remarkably constant from cities to small towns. Only in rural districts do people walk significantly less than this.

People do, however, make fewer short journeys by all modes than they used to. This is partly because an increasing proportion of people live in suburbs where useful destinations are rarely close. It is also because rising car ownership has enabled people to go further and explore more choices to satisfy their wants and needs. As a result, walking has been declining, although the reduction in the number of walk journeys stopped in 2007.

Key points:

- **Patterns of land use and, in particular, residential densities and mixed uses are the primary determinants of how much people walk.** As towns and cities spread out, people make fewer short journeys. The current trend to higher density for new residential developments should encourage walking, if linked to provision of local destinations.
- **Most short journeys are still made wholly on foot.**
- **Walking is also part of longer journeys.** Very few trips by car or public transport are completed without some walking.
- **Pedestrian "footfall" determines the viability of shops.**

Other points are also worth stressing:

- **Walking contributes to physical and mental health.**
- **All streets in urban areas need to be designed to accommodate people who walk wherever they wish to go**
- **People travelling on foot want routes that are direct, as level as possible, enjoyable and have destinations in sight.** Safe road crossings are an essential element of routes.
- **"Walking" is best thought of as a nonvehicle movement including all forms of assistance, such as sticks, wheelchairs, baby buggies and pavement vehicles.** Good provision for users requiring such forms of assistance helps everybody.
- **Walking and cycling are often regarded as compatible.** In reality, they are very different modes that will often require separate provision. Both benefit from reduced traffic speeds and reduced motor vehicle traffic flow.

- **The issue of pedestrians and pedal cyclists sharing space is contentious.** There are perceived risks associated with cyclists sharing space with pedestrians, and it is not always realised that cyclists seriously injure several hundred pedestrians each year.
- **Planners and traffic managers should appreciate that to encourage walking, motor vehicle traffic rather than pedestrians should, as far as possible, be required to avoid conflicts by diverting from direct routes and by changing elevation.** Pedestrians wish to follow direct routes on a constant level.

The Welsh Government is promoting active travel and has passed the Active Travel (Wales) Act 2013. This act created new duties for local authorities in Wales and the Welsh ministers and also gave the Welsh ministers the power to issue guidance on the location, nature and condition of active travel routes and facilities to ensure they are suitable for use. This is supported by design guidance (Welsh Government, 2014).



York pedestrians

This Chartered Institution of Highways and Transportation (CIHT) guideline *Planning for walking*

- **describes the characteristics of pedestrian journeys,**
- **lists the benefits of walking,**
- **identifies factors that discourage walking and how they can be overcome,**
- **summarises the legal framework that applies to pedestrians and**
- **outlines the way that plans and strategies for pedestrian travel are developed.**

These guidelines are designed to address the limited amount of guidance available to professionals about planning for walking. Some of the research quoted is quite old but is still valid and does in itself indicate that more work is needed in this area (and is something that CIHT will be taking forwards). As it is a web-based publication that can be modified relatively easily, CIHT would welcome examples that build on the content of this guidance for inclusion in further guidance on the subject.

In terms of finding more up-to-date examples,

- **the authors and reviewers of this draft are not aware of more recent examples, and have included the best examples they are aware of.** CIHT would welcome further examples to include in future editions;
- **comments and examples should be forwarded to CIHT for use in future updates of the guidance,** after consideration by the Working Group on Walking that CIHT has set up to address the topic more proactively; and
- **CIHT plans to also take the published version of the guidance to a wider group of members who have identified themselves as being interested in sustainability issues.**

This guideline is complemented by another CIHT document, *Designing for walking* (CIHT, 2015), which covers the design and evaluation of facilities for pedestrians.



York pedestrians

2. Walking Characteristics, Behaviour and Trends

2.1 How much do people walk?

Across Britain about 80 per cent of journeys shorter than 1 mile are made wholly on foot – something that has changed little in thirty years. In 2012 walkers accounted for 79 per cent of all journeys shorter than 1 mile, but beyond that distance cars are the dominant mode (DfT, annual)*. In contrast, in 1972/73, 85 per cent of journeys shorter than 1 mile were made on foot.

For journeys that are 1 to 2 miles long, 26 per cent are made on foot (NTS 2012), more than by bus; beyond 2 miles, trips on foot are few and are outnumbered by bus trips.

The main reason for the decline in pedestrian journeys is the fall in the total number of journeys shorter than 1 mile (Figure 2). It is not that people are less likely to make short journeys on foot, but rather that fewer of the journeys they make can be accomplished on foot. Another way of putting this is that the destinations people want to reach are now further apart.

The number of trips per person per year shorter than one mile fell from 335 in 1985 to 187 in 2007, since when it has been steady at between 187 and 198 per year (Figure 2). Trips on foot of all lengths per person per year declined from 350 in 1985 to 216 in 2007, since when it has been between 210 and 228 per year.

Over the same period the average length of pedestrian journeys increased slightly from 0.7 miles to 0.85 miles, and the average duration increased even more marginally from 15 minutes to 17 minutes (speed has increased slightly to 3.0 mph).

In 2012 in all types of urban areas, people made between 196 and 252 pedestrian journeys a year. Size of settlement made little difference and even in rural districts – communities with fewer than 3,000 residents – people averaged 147 walk trips a year (Figure 3).

2.2 Why do people walk?

Historically the most common reason for walking was to go shopping, but the number of shopping trips has declined sharply over the past two decades, roughly halving in number. Now, approximately equal numbers of walk trips are made for shopping, leisure, education and education escort, and going for a walk/ or other. Roughly half this number of trips is made for commuting and business purposes (Figure 4).

For most journey purposes, the percentages made on foot have declined slightly since 1985. The exceptions are trips for 'commuting and business' and 'other' purposes. Aside from 'other' walk trips, the highest share by foot, about 35% to 40%, is for education, personal business and associated escort trips.

2.3 Variations by age and gender

The amount people walk varies with age and gender, as well as with social class and place of residence. Walking is also affected by peoples' disabilities which, likewise, vary with age and gender.

Figure 3: Journeys per year by non-car modes in different types of area, 2012 (National Travel Survey 2012; DfT, annual)

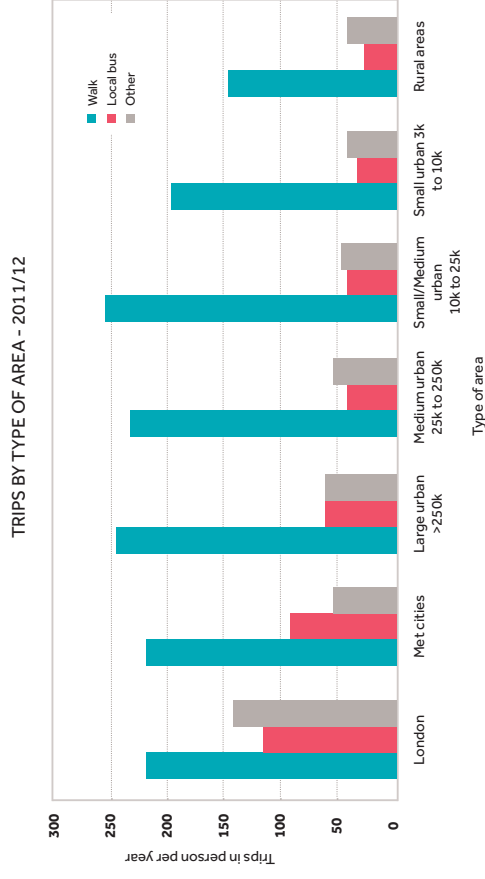


Figure 2: Trend in the number of journeys of different lengths, Great Britain (National Travel Survey; DfT, annual)

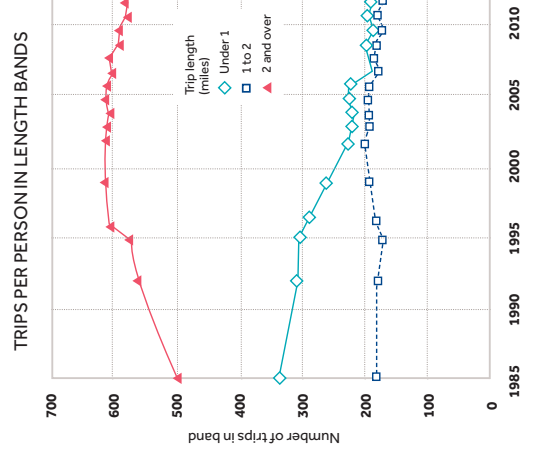


Figure 4: Walk trips by purpose (National Travel Survey; DfT, annual)

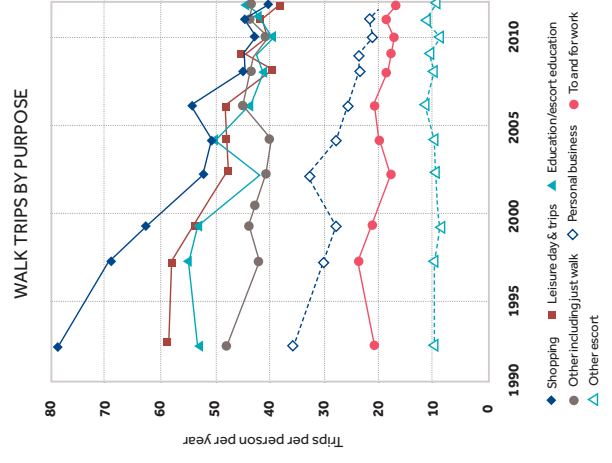
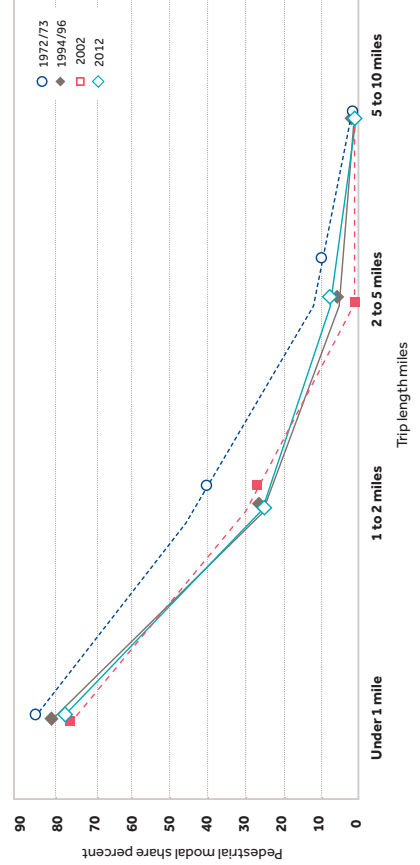


Figure 1: Percentage of journeys on foot 1972/73, 1994/96 and 2010 (National Travel Survey; DfT, annual)



*The 2013 National Travel Survey only covered England. To provide continuity in time series, data from it have not been used in this guideline.



Dropped kerb

As people age, they walk less. For men, average walk trip rates decline from mid-teens to mid-forties, when they stabilise; for women, trips also decline from mid-teens, but increase again in their thirties, but thereafter show a steady decline with age. As a consequence, while women make more walk trips than men at most ages, above 65 women make fewer such trips. Similar trends are apparent for average walk distances per year, although here there is a steady decline from age 20 (Figure 5).

2.4 Many find it difficult to walk

Over the whole population, approximately 15% of people, most of them elderly, have an impairment that affects their mobility. Figure 6 shows how the percentage of people with a mobility difficulty increases with age, reaching over 35% for people aged 70 and over. At all ages, more women report a mobility difficulty than men.

A more detailed breakdown by age of the percentage of people with disabilities is available in the Family Resources Survey 2012–2013 (DWP, 2014), but this shows all disabilities, not only those specifically related to mobility. It demonstrates how rapidly disabilities increase as people age past 75 or so. More detailed, though older, studies show that, of people with mobility difficulties, about 70 per cent have difficulties walking, climbing and balancing, (Martin et al, 1988). They show too that about half of people with mobility difficulties are able to get about on their own, provided all pavements and public transport vehicles are appropriately designed (General Household Survey 1998). Martin et al (1988) estimated that 6.2 million adults could not walk 400 yards without a rest, and 3.4 million could not walk 200 yards without stopping or severe discomfort.

Figure 5: Effect of age and gender on number of pedestrian journeys and the distance travelled on foot 2012 (National Travel Survey 2012; DfT, annual)

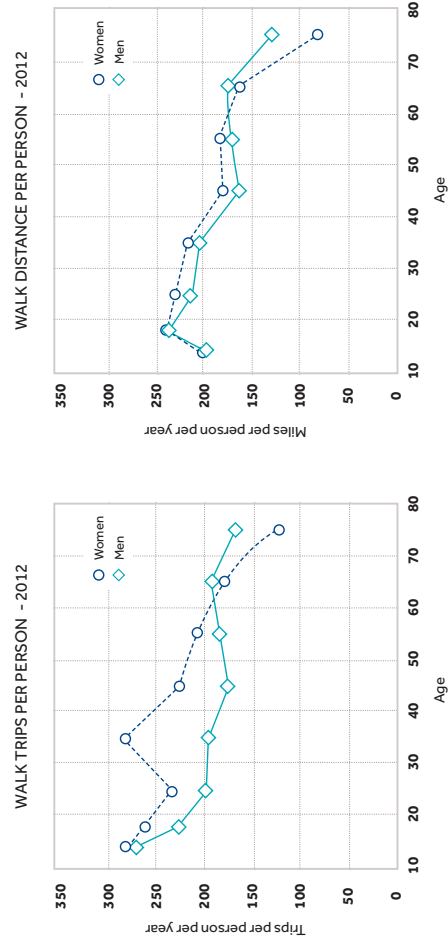
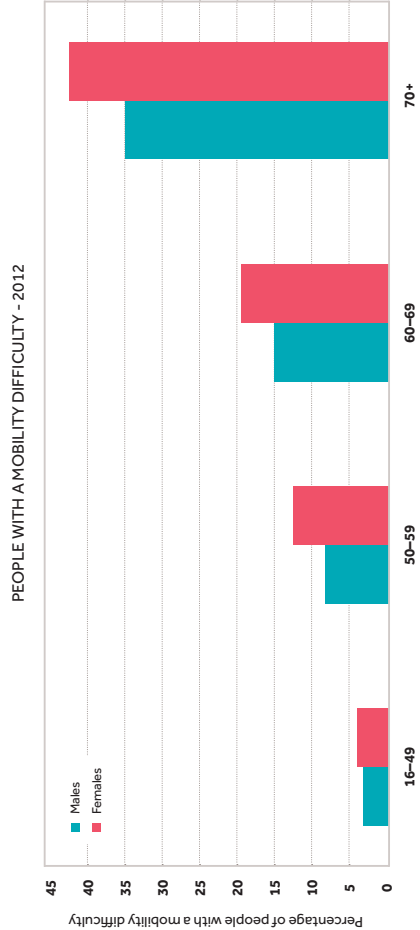


Figure 6: Percentages of people with mobility difficulties (National Travel Survey 2012)



This explains the need for frequent seats or resting places where people walk.

Although this, and many of the other references cited in this guideline, date from some time ago, the information or advice quoted is still valid and has not been superseded by anything more recent.

People with mobility difficulties use a variety of aids to walking. By far the most common are sticks, which account for about 69 per cent of all aids. The number of mobility scooters is increasing rapidly, with an estimated 300,000 in use in 2011. They are mainly used for journeys of up to 3 miles in good weather, and in many cases provide mobility for older people after they stop driving. Such scooters need to be considered in transport planning and in the design of pedestrian areas.

Table 1: Type of mobility aid as a percentage of all mobility aids

Type of mobility aid	Percentage of all mobility aids
Walking stick	69
Crutches	8
Walking frame/tripod/zimmer	8
Trolley	2
Manual wheelchair	9
Electric wheelchair	2
Mobility scooter	2

General Household Survey 2001, Table 10.9



Mobility scooter

3. Benefits Of Walking

3.1 Health

Walking more offers benefits such as improved health and a reduced risk of obesity. The World Health Organisation (WHO) has published 'Health economic assessment tools (HEAT) for walking and for cycling' (WHO, 2014). An extract states:

The nature of the relationship between physical activity and health

Epidemiological studies report relationships between different categories or levels of exposure and health outcomes. For example, a comparison of sedentary people with people who are active beyond a specific threshold (such as 150 minutes of activity per week) may show that active people are healthier. However, there is a strong consensus that physical activity has a continuous dose-response relationship with most health outcomes, i.e. each increase in physical activity is associated with additional health benefits. This has also been shown by studies looking specifically at walking or cycling.



Sheffield, Heart of the City

Background

In the early 1990s, Sheffield faced a number of challenges, not least the decline in steel and engineering industries and the opening of Meadowhall, a regional shopping centre on the outskirts of the city. The Council had to rethink what the city offered in order to bring investment, employment and visitors back into the centre.

Intervention

The Heart of the City project was the first in a succession of regenerations (that now make up the Gold Route) designed to welcome visitors to the city. Phase One was completed in 1999 with the delivery of three key improvements to the public realm: the reconstruction of the Peace Gardens; the realignment and narrowing of Pinstone Street to create a new event and gathering space outside the Town Hall (the new Town Hall Square) and the narrowing of the carriageway in Surrey Street to give pedestrians more space.

Outcome

An evaluation of the improvements to Peace



Sheffield Peace Gardens

Photograph: Dennis Lound

The Grassmarket, Edinburgh

Background

The Grassmarket is located south of Edinburgh Castle in the historic centre of the city. By the mid-2000s, negative perceptions of the area associated with nighttime drinking and antisocial behaviour, dominance of vehicles and the gradual decline in the public realm all needed to be addressed. Engagement between Edinburgh City Council, businesses, residents and traders identified opportunities to provide a quality setting for the Grassmarket's historic buildings, enhance its retail vitality and introduce daytime activities attractive to a wide range of people.

Intervention

Over £5 million was set aside to redesign the streetscape, improve linkages to other districts and establish a pilot events programme for the year. Space was redistributed from vehicles to pedestrians to allow flexible use for events, such as markets, films, dance events and concerts. Work was completed in 2009. Public realm improvements of £3.87 million included the relaying of 40,000 m² sets, together with 5,000 m² new Caithness Flagstones, new street lighting (and CCTV) and underground recycling units. This was complemented by, for example, the planting

of semimature trees and the refurbishment of listed buildings and monuments.

Outcome

One of the lessons learned was the importance of engaging with the community. Since completion, the Grassmarket has seen a wider range of business uses. It has also seen an improvement in its road safety record. However, the public realm is underused. In its business plan (2013–2018), the new Greater Grassmarket Business Improvement District (BID) proposes to use the space for events and markets. This underlines the importance of active management as part of regeneration.

A short summary of the public realm

improvements can be found at: www.scotland.gov.uk/Resource/Doc/212607/0114309.pdf.

The scheme cost is given at www.rjmcleod.co.uk/archived_projects/streetscaping/grassmarket-edinburgh/.

The Greater Grassmarket BID business plan is at www.grassmarket.net/files/Greater%20Grassmarket%20.



The pedestrian pound

Photograph: Living Streets (2013)

Waterloo Hotspot Congestion Relief pilot

Many visitors to London, and indeed, Londoners, don't realise how close many parts of the city are to one another. For instance, someone arriving at Waterloo station takes about 15 minutes to walk to Westminster or Covent Garden and around 25 minutes to reach the heart of the city.

To help people understand how many places are walkable from Waterloo, and to reduce the number of short trips made by bus and tube, TfL undertook a walking promotion experiment.

This project ran between September 12 and 23, 2011, and was supported by Network Rail and South West Trains.

The aim was to encourage people to walk from Waterloo to their destination instead of using the bus or tube.

Staff, based at the station every weekday from 7:00 a.m. to 10:00 a.m., handed out bespoke Legible London walking maps, showing destinations that could be reached within 20 minutes.

Posters and messages were also displayed at station exits to draw attention to the idea of walking and encourage people to consider making trips on foot.



Staff handing out Waterloo walking maps

During the fortnight pilot, 54,325 maps were given directly to the public. Additional maps were supplied to South West Trains and Network Rail for them to give out.

Summarised from Transport for London, Walking Good Practice, version 4, April 2012, page 35

Monitoring travel to and from Waterloo after pilot showed that walk trips had increased by 6%.

However, walk trips not involving Waterloo by the participants when interviewed at Waterloo had also increased, so there did not appear to be a selective increase in walk trips with a Waterloo trip end. Also, there did not appear to be a relationship between recognition of the publicity campaign and increased walking levels.

physical activity (TAG UNIT A5.1 Active Mode Appraisal, January 2014, section 3.2 Physical Activity Impacts. (DfT, 2014a). (This supercedes Guidance on the Appraisal of Walking and Cycling Schemes TAG Unit 3.14.1, January 2010, Para. 1.10.1.)

3.2 Economic benefits

The economic benefits of a good-quality pedestrian environment include increased property prices and greater pedestrian footfall, leading to increased retail turnover. Examples are as follows:

- **The sale price of flats in London was significantly greater in areas with higher quality pedestrian environments (all other factors being considered) (MVA, 2008).**
- **Exeter has revitalised its city centre with improvements to the public realm. The pedestrian environment has been improved by the removal of**

vehicle traffic, traffic management and an increase in pedestrian and shared spaces (Living Streets 2011a). As a result, there has been:

- An increase in footfall of around 30% between 2002 and 2010
- A small increase in the retail rents between 2006 and 2008 compared with declining rents in other towns in the region; however, this may reflect a national trend for shoppers to migrate from smaller towns to regional centres that offer greater choices.

Another report, "The pedestrian pound: The business case for better streets and places" (Living Streets, 2013), focuses on town centres and high streets and presents evidence for a commercial return on public realm investments. A typical example is the Sheffield Heart of the City Project (see box on the previous page).

Modelling the effects of improvements to Manchester's city centre found small, but significant, positive effects for businesses and workers. The results suggested that the favourable effect of environmental improvements might be comparable to those expected from improved public transport. Case studies from other English cities also illustrate or predict benefits. In Coventry, for instance, new pedestrian areas, a new civic square, clearer signage and better placement of street furniture in the centre were credited with a 25 per cent rise in footfall on Saturdays.

In Bristol, where the Broadmead Business Improvement District was set up in 2005 to create a better shopping environment and a seamless transition between the new and existing retail areas, the benefits of the proposed scheme were forecast for 10 years. This analysis predicted that the improvements would generate benefits worth £1.4 million to shoppers and passersby.

In London, Wanstead High Street achieved an average increase of 98 per cent in pedestrian numbers after enhancing the walking routes between its two stations, the bus terminus, school, library and high street (Living Streets, 2013).

Evidence also suggests that pedestrians and cyclists spend more than people arriving by motorised transport. In a 2009 study of Bloor Street, Toronto, people who cycled and walked reported that they spent more per month than those who arrived by car. In 2011, a similar study in London found that while car drivers spent more on a single trip, walkers and bus users spent more over a month; £147 more for walkers than for those travelling by car (Living Streets, 2013). A study of the effect of improvements for pedestrians in Takapuna in Auckland, New Zealand, found that afterwards although shoppers spent similar amounts per trip, the increase in spending

by those on foot was approximately \$80 per month, six times more than the increase for those in cars.

Other evidence indicates that improving conditions for pedestrians in town centres can encourage urban regeneration by stimulating and supporting new markets and enterprise (see box below). Whilst it is not conclusive, there is evidence that redevelopment, such as the creation of 'cultural quarters' or 'waterfront developments', also coincides with large increases in new business.

3.3 Relieving public transport

Encouraging walking can be an effective way to help relieve congestion on public transport. Transport for London (TfL) estimate that around 180,000 bus trips in central and inner districts and 130,000 in outer ones could be made on foot (TfL 2012).

Surveys of passenger leaving rail termini in London in 2010 showed that 125,000 of them made onward journeys by bus, underground and light railway that were shorter than 2 km. These people accounted for 19 per cent of all onward passengers. An example of a TfL project at Waterloo station to raise awareness and to encourage people to abandon short distance car and public transport trips in favour of walking is shown in the box on the left hand page.

During the 2012 Olympic Games, TfL ran a campaign encouraging people to walk and free up public transport for those attending the Games. The campaign had some success, particularly with commuters arriving at main line stations, in persuading them to walk.

Transport for monitored the change in travel behaviour by London residents, workers and regular visitors that facilitated the reduction in background demand witnessed during the Games. Background demand, in other words, normal travel not related to the Games, reduced by five per cent on an average day during the Olympics and three per cent during the Paralympics. Across the two weeks of the Olympics, more than three quarters of the London travelling population made some sort of change to their travel patterns as a result of the Games and just 23 per cent continued to travel as normal. In total:

- **63 per cent reduced their travel;**
- **28 per cent changed the time of their journeys;**
- **21 per cent changed route; and**
- **19 per cent changed mode.**

While the goal of the Travel Demand Management (TDM) Programme was to change travel during the Games, it was anticipated that the Games may result in some sustained changes in travel patterns. 15 per cent

4. Current Conditions and Challenges

Problems faced by pedestrians

A Poor-quality Pedestrian Environment

- inadequate footway maintenance/ reinstatement and lack of snow clearance and deicing
- litter and a general appearance of neglect
- dog fouling
- splashing by drivers
- buildings that turn their backs on the street and present pedestrians with blank walls, ugly street scenes and an absence of reassuring surveillance
- cul-de-sac housing layouts that turn suburban estates into mazes and increase walking distances to shops and other local services
- lack of benches and public lavatories
- the absence of road signs for visitors on foot
- steep gradients and/or steps

Inadequate Pedestrian Safety

- fear of road accidents
- aggressively designed vehicles and, at night, high-powered headlights
- obstructions on footways: roadworks, rubbish bins and sacks, poorly sited traffic sign poles, bus shelters, locked bicycles and parked cars

- inadequate or broken street lighting in residential streets and at pedestrian crossings on main roads
- lack of or inadequate footways, particularly in and between villages and the narrower streets of old towns and cities
- illegal cycling on pavements and the sharing of some off road paths with cyclists
- inadequate green time at signal-controlled crossings

Inadequate Personal Security

- graffiti, fear of assault and the withdrawal of police from local streets
- highly publicised child killings and abductions that have made some parents fearful of letting children walk unaccompanied
- dangerous dogs
- the presence of beggars (some of them aggressive) and intimidating drunks

Source: MORI (1986) and National Consumer Council (1987). Cited in IHT 2000 (edited)

of regular travellers who made a change to their travel during the Games have continued with that change, equivalent to around one in ten (11 per cent) of all regular London travellers.

A series of stations were identified as 'hotspots' during the Games, stations that would be exceptionally busy during the Games. In general, the travel behaviour and choices of commuters through the hotspot stations was similar to all commuters. The vast majority had expected their station to be busier than normal and as a result nearly all had thought about how they would travel during the Games, although many decided to wait and see what happened before committing to a change.

Transport for London concluded that the change would not have taken place to the same extent without TDM – those who were aware of the "Get Ahead of the Games" campaign and tools were more likely to change. Businesses used the information provided by TfL to get senior level buy-in and allocate resources. The awareness of and engagement with the campaign undoubtedly contributed to the preparedness of London travellers for the Games, and the level of change in travel behaviour seen throughout the Games.

The TDM approach used for the Games can be usefully applied to situations where travellers face a major change to network supply or demand, such as a line or station upgrade or a major event.

3.4 Walking improves air quality

As road traffic is responsible for about 70% of the three most dangerous pollutants (nitrogen dioxide, particulates and ozone), such emissions and noise pollution are cut if the use of cars can be reduced.

Short car trips contribute relatively more pollution, due to cold starts, and so encouraging a switch from car to walk is particularly beneficial.

Table 2: Problems encountered by pedestrians (2012)

Problem	Percentage
Litter or dog fouling	76
Broken or cracked pavements	66
People parking on the pavement	62
Potholes in pavements	58
Pavements that have been badly patched up after street works	54
People cycling on the pavement	53
Fly tipping, graffiti or abandoned cars	41
Street clutter and/or obstructions on the pavement	39
Badly managed street works	32
Street lighting not working/not enough street lighting or street lighting being turned off or removed	23

Source: Welsh Government, (2014) Design Guidance p.24

The NCC report 'What's wrong with walking?' (NCC, 1987) ranked a range of pedestrian concerns, most of which result from poor street management. Dog and animal fouling, badly maintained paving and domestic litter were all major concerns, as was parking cars and bicycles, and riding bicycles, on footways. Little appears to have changed between 1985 and 2012.

The CIHT guidelines *Providing for Journeys on foot* (IHT, 2000a) reports on many real or perceived deterrents to walking. Some of the less obvious problems are listed in the box overleaf.

4.2 Road safety and fear of traffic

The risk for pedestrians of being involved in road accidents can be measured in three ways: the number of pedestrian casualties, the casualty rate per passing vehicle and the casualty rate per distance walked. By all three measures, pedestrian safety has improved greatly in the past 20 to 40 years (Figures 7, 8 and 9, derived from Reported Road Casualties Great Britain, DfT, annual). Pedestrian deaths declined from approximately 3,000 in 1970 to approximately 400 in 2013.

Another risk to pedestrians is from tripping or falling on pedestrian pavements. These incidents are not recorded as transport accidents, and no central statistics of them are kept. The NCC report cited above (NCC, 1987) quotes from mortality records for England and Wales that in 1984, 189 people died in "street and highway accidental falls." It also includes two surveys, by MORI and by Consumers' Association, which asked about pavement accidents in the preceding 12 months. Approximately one in five respondents in the MORI survey had experienced a pedestrian accident; 7% had tripped or fallen, 11% had tripped or slipped on wet leaves, snow, ice or rubbish and 3% had walked into overhanging obstructions. NCC estimated that 2.3 to 3.4 million people were injured annually by pavement



Poor quality pavement

Photograph: Living Streets

trips or falls, and that approximately 2½ times as many people required inpatient medical treatment for trips and falls as did for pedestrian accidents involving a motor vehicle (Table 3).

Table 3: Treatment needed by accident victims (CA survey)

Cause of injury	Inpatient	Outpatient	GP
Trip/slip	30	247	178
Motor vehicle	13	16	12

Source: What's wrong with walking, table 3.4 (NCC, 1987)

Risk of injury from collisions increases with age
data on the age and gender of victims, the locations of collisions (by class of road and nearness to a crossing) and the type of vehicle involved. Figures 10a and 10b show the fatal and all severity casualty rates for pedestrians by age group. Older people have a much higher death rate than younger people but a more typical rate for casualties of all severities. Over 40% of pedestrian deaths are from the 23% of the population aged 60 and over. The high fatality rate is because people become more fragile as they age. If in an accident, they are more likely to suffer injury; if injured, they are more likely to die. For pedestrians in their 30s, approximately 2% of casualties die; in their 70s, approximately 6%; and by the later 80s, approximately 10%.

For all age groups, casualty rates have declined over the past 30 years, particularly rapidly for those aged 60 and over. More men than women die while walking, and this gender imbalance also applies, to a lesser extent, to all severities of injuries (Figure 11).

The large majority of pedestrian casualties occur in built-up areas, because that is where most walking happens. In 2013, half of the urban collisions with pedestrians that were fatal occurred on A roads (124 of 250), 37% of serious injury collisions were on A roads (1,633 of 4,412) and 34% of slight injury collisions were on A roads (7,236 of 21,198) (RRCGB Table 10011).

Vehicle types involved in collisions with pedestrians

Cars are involved in about three out of four collisions with pedestrians, Table 4 (overleaf). Cyclists were involved in six fatal accidents with pedestrians in 2013, about double the average for the past few years. Although pedal cycles were reported as involved in about 100 serious injuries to pedestrians, a DfT study of under-reporting (DfT, 2006) suggests that such injuries are being under-reported by a factor of four, and that between 1996/97 and 2002/03 cyclists were involved in about 200 serious injury collisions with pedestrians annually. Between 2005 and 2012, about 58% of pedestrian deaths and 45% of injuries involving cyclists occurred in the carriageway, not on a crossing. Nine serious injuries in 2013 involved a mobility scooter.

Figure 7: Pedestrian casualties, Great Britain (Reported Road Casualties Great Britain, DfT annual)

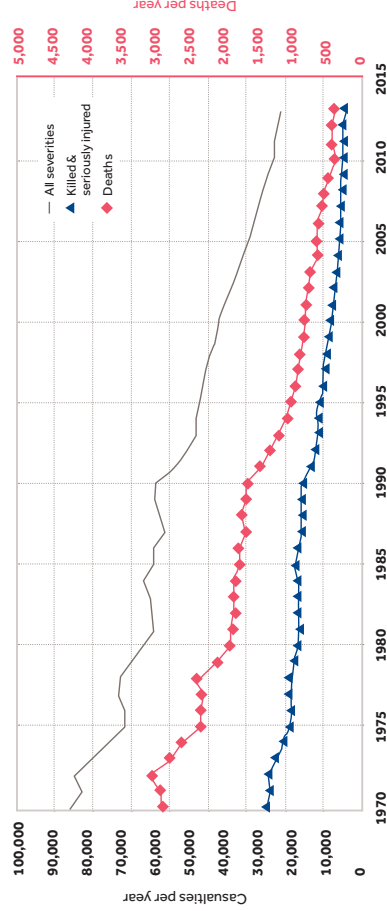
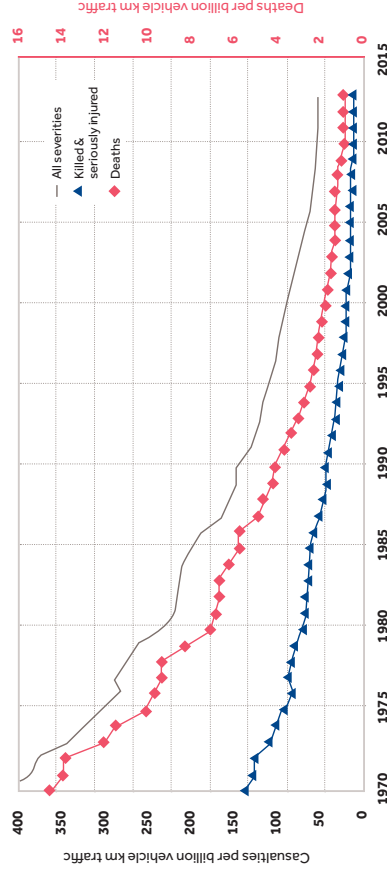


Figure 8: Pedestrian casualty rate per unit vehicle traffic, Great Britain (Reported Road Casualties Great Britain, DfT annual)



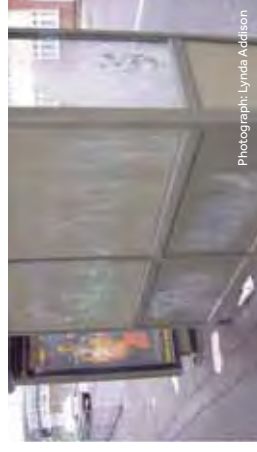
Some less obvious problems for pedestrians

- In the Bypass Demonstration Project Towns, the presence or absence of seating, as well as seating design, were key factors in determining the distance which elderly people were able to walk. If they could rest for a while en route, especially on a comfortable seat, they could walk much further.
- In the Gloucester Safer City Project, people identified where they wanted crossings and these sites often differed from those chosen by highway engineers.
- When attitude studies in Wolverhampton showed that fears about assault in subways stopped residents in outer estates from visiting the town centre, the most dangerous sites were redesigned as at-level crossings.
- In Ipswich town centre, deterrents to walking were found to include dog dirt, lack of toilets and begging, nothing to do with road safety.
- A five-town study of routes shared by pedestrians and cyclists found that, although many people tolerated the mixing on altruistic grounds, some with disabilities (especially those with hearing and visual impairments) felt unable to use them.

Source: Social Research Associates (1999, unpublished). Cited in IHT 2000.



Photograph: Lynda Addison



Photograph: Lynda Addison

Graffiti and unpleasant environments for walking

Figure 9: Pedestrian casualty rate per distance walked, Great Britain (Reported Road Casualties Great Britain, DfT annual)

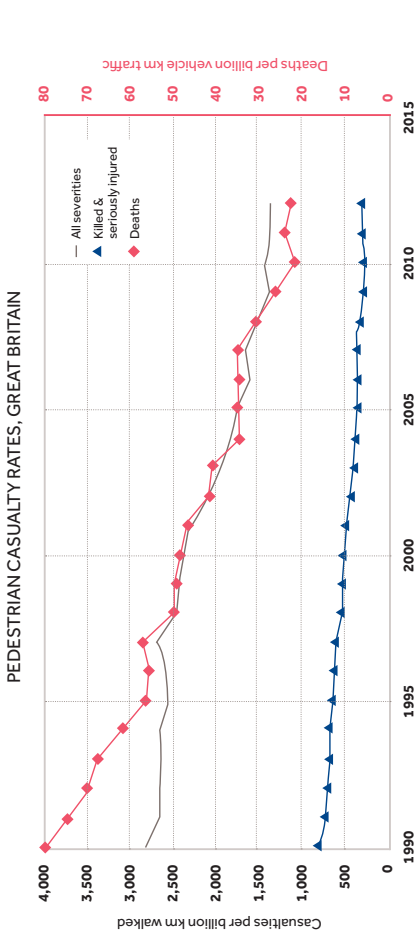


Figure 10a: Pedestrian death rate per head of population by age, Great Britain (Reported Road Casualties Great Britain, DfT annual)

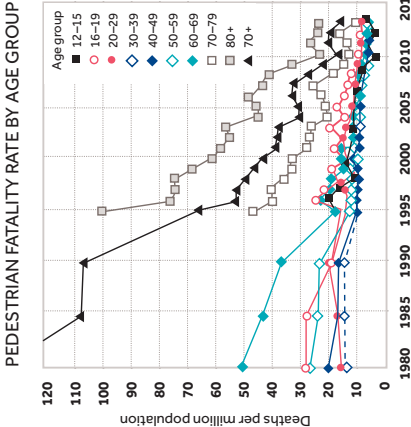


Figure 10b: Pedestrian all severity casualty rate per head of population by age, Great Britain (Reported Road Casualties Great Britain, DfT annual)

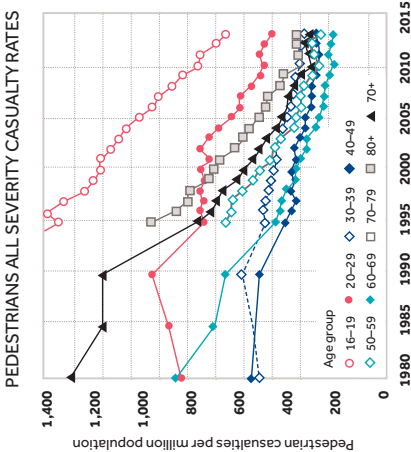
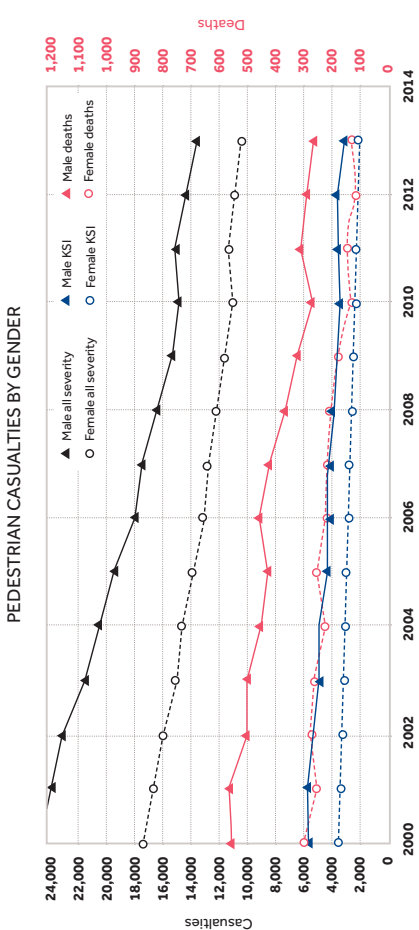


Table 4: Vehicles involved in injuries to pedestrians, 2013

Vehicle involved	Collision severity			
	Fatal	Serious	Slight	All severities
Pedal cycle	6	106	322	434
Motorcycle or moped	14	175	600	789
Car	197	3,434	12,864	16,495
Other vehicle	113	884	3,111	4,109
Accidents involving pedestrian and more than one vehicle	67	355	982	1,404

(Reported Road Casualties Great Britain, 2013, Table 10012, DfT annual)

Figure 11: Pedestrian casualties by gender and severity (Reported Road Casualties Great Britain, DfT annual)



The risk to pedestrians from trips and falls, which are not recorded as transport accidents, has been discussed above.

Risk factors for pedestrians

An OECD study "Ageing and Transport" (OECD, 2001) provides the following list of risk factors for pedestrians. It relates specifically to older people but is, in practice, relevant to all:

- Crossing busy two-way streets;
- Crossing major roads, particularly ones with fast traffic;
- Junctions with heavy traffic, particularly where there is no centre refuge
- Complex situations, where vehicles can come from several directions

Activities of other road users that endanger older pedestrians include:

- Exceeding speed limits;
- Infringing red lights;
- Parking on and blocking footways;
- Reversing;
- Turning at junctions

Importance of traffic speed

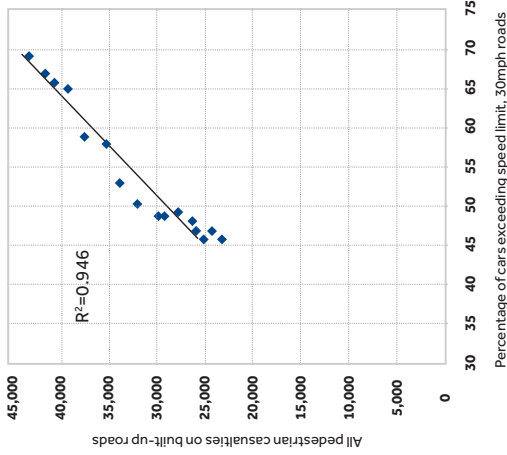
Many studies have shown that reducing vehicle speeds reduces danger for pedestrians. Road traffic collisions and casualties in the North West of England (Deacon et al. 2011) estimates that reducing speed limits on residential roads to 20 mph would reduce the number of children killed or seriously injured by 140 per year, or 26%. The authors expect a similar 26% reduction



Photograph: Living Streets

Complicated crossing, busy roads

Figure 12: The number of pedestrian casualties nationally in urban areas and the percentage of cars exceeding the speed limit on 30 mph roads for 1998 to 2013
(Mitchell, Speed and Safety - Evidence from published data, 2012, updated)



in pedestrian casualties of all ages. Many studies have found even greater casualty reductions in town centre streets following traffic calming or other forms of pedestrian priority.

Mitchell (2012), looking at data from urban areas between 1998 and 2013, found a strong correlation between many national accident rates and the percentages of cars exceeding speed limits. For example, Figure 12 shows, for Great Britain as a whole, the number of pedestrian casualties in urban areas and the percentage of cars exceeding the 30mph speed limit. The correlation coefficient for this relationship is 0.946.

More recent reports "Breaking Down the Barriers" (Living Streets, 2011b) and "Putting Pupils First" (Living Streets, 2014) discuss the obstacles confronted by children who are walking to school. "Breaking Down the Barriers" highlights perceived road safety and particularly speeding vehicles and a lack of safe places to cross roads as the main deterrents. "Putting Pupils First" emphasises concerns including inconsiderate parking and congestion, which leads to danger around the school gate.

As long ago as 1973, Hillman et al showed that children, for whom pre-motor-age streets were

both playgrounds and worlds to be explored, were increasingly being kept at home. Parents were too afraid to let them roam. This work was later taken further (Hillman et al, 1990) and found a decline in the percentage of children allowed to cross roads on their own. Alongside traffic concerns, parents also seem to be increasingly worried about "stranger danger" when younger children walk on their own.

4.3 Street crime

Walking Good Practice (TfL 2012, section 3.2; soon to be updated) states that many people have concerns about their safety whilst on foot, especially at night and in winter. While such feelings can be due to perception of risk, rather than the actual probability of being a victim of crime, they nonetheless stop some people from choosing to walk. Concern about safety varies with social class and is strongly related to age and sex.

Dealing with such dangers not only changes how walking is perceived but can help to encourage people to walk more. This in turn increases natural surveillance and forms a positive circle as the more people are walking, the safer everyone feels, and more people choose to walk more often.

Actions that increase safety and security include improvements to:

- **unlit routes**
- **places of concealment**
- **alleyways**
- **blind corners**
- **routes under bridges**
- **subways and footbridges**
- **inactive frontages**

Before action is taken, walking audits should, where possible, be used to identify what worries residents. Once a programme of works has been chosen, inviting schools and community colleges to, for instance, decorate walls and create works of art can take renovation further by encouraging pride of place.

Safety measures can also reduce opportunities for anti-social behaviour. 'Corridor programmes' that involve replacing subways or footbridges with surface level crossings, plus the renovation of facades, removal of clutter and installation of better signs, can, for instance, create pride of place. This, with the collaboration of Community Support or Police officers, can be upheld and maintained – thereby reducing antisocial behaviour.

'Making the case for investment in the walking environment' (Living Streets, 2011a) states that:

"perceived safety, fear and mistrust have all been linked to the levels of maintenance or incivilities, for

example vandalism or graffiti, in a neighbourhood (Bellair, 1997; Ross and Jang, 2000; Foster et al, 2010). Residents who feel that maintenance and vandalism are a problem have been found to be more than twice as likely to be fearful of crime (Foster et al, 2010). As well as maintenance levels, perceived safety has also been linked to the liveliness of streets; the presence of other people reduces fearfulness (Tiesdell and Oc, 1998) and informal social interactions can buffer fear and mistrust in neighbourhoods (Bellair, 1997; Ross and Jang, 2000)."

4.4 Barriers to movement, including main roads, railways and canals

Many elements of towns and cities, such as rivers, major roads, railways and canals, are difficult or impossible for pedestrians to cross and sever adjacent districts. Where such barriers have existed for generations, adjoining districts often turn their backs on them. If a major attractor of walking trips, such as a college, supermarket or clinic, lies or is built close to a barrier, the case for overcoming it is strengthened.



The A127 severs this suburban area

Photograph: Mark Philpotts

5. Legal and Regulatory Context for Walking

5.1 Definitions

The following definitions may be useful:

Highway: A highway is a way over which the public have the right to pass and repass.

Carriageway: A carriageway is a highway or part of a highway over which the public have right-of-way for vehicles.

Footway: A footway is that part of a highway which also comprises a carriageway, over which the public have right-of-way on foot only.

Footpath: A footpath is a highway over which the public have right-of-way on foot only, not being a footway (i.e., not adjacent to a carriageway).

Bridleway: A bridleway is a highway over which the public have right-of-way on foot and on horseback.

Cycle Track: A cycle track is way that is part of a highway over which the public have right-of-way on pedal cycles, other than pedal cycles that are motor vehicles, with or without the right-of-way on foot.

Road: A road in England and Wales is any length of highway or any other road to which the public have access and include bridges over which a road passes.



A footway, part of a highway that includes a carriageway

The following sections quote legislation that affects pedestrians to help those who need to see the detailed wording rather than general statements of intent.

The extracts are believed to be accurate at the time of going to press, but it is the responsibility of the user to check for current wording. All the legislation quoted is available on the web; for example, the Highways Act 1980 is at http://www.legislation.gov.uk/ukpga/1980/66/pdfs/ukpga_19800066_en.pdf.

5.2 Rights of pedestrians

While vehicles are, by law, obliged to stay in the carriageway, and can be prosecuted for travelling along the footway, people on foot have a right to use all parts of a highway—subject only to an obligation to cause neither an obstruction nor a hazard (see Section 5.1 for definitions of highway, footway, etc.). There are exceptions to this, such as motorways and tunnels, from which pedestrians are specifically excluded because of safety. Broadly speaking, pedestrians are entitled to cross roads anywhere, and drivers and cyclists are obliged to avoid them.

5.3 Highways Act 1980

The Highways Act 1980 defines the following powers and duties for highway authorities with regard to pedestrians:

Paragraph 26 gives highway authorities powers to construct footpaths and bridleways and to use compulsory powers to acquire land to do so:

Where it appears to a local authority that there is need for a footpath or bridleway over land in their area and



A footpath, not adjacent to a carriageway

they are satisfied that, having regard to -

(a) the extent to which the path or way would add to the convenience or enjoyment of a substantial section of the public, or to the convenience of persons resident in the area. 26. -(1)

Under safety provisions:

It is the duty of a highway authority to provide in or by the side of a highway maintainable at the public expense by them which consists of or comprises a made-up carriageway, a proper and sufficient footway as part of the highway in any case where they consider the provision of a footway as necessary or desirable for the safety or accommodation of pedestrians; and they may light any footway provided by them under this subsection. 66. -(1)

A highway authority may provide and maintain in a highway maintainable at the public expense by them which consists of or comprises a carriageway, such raised paving, pillars, walls, rails or fences as they think necessary for the purpose of safeguarding persons using the highway. 66. -(2)

A highway authority may provide and maintain in a highway maintainable at the public expense by them which consists of a footpath, such barriers, railings or fences as they think necessary for the purpose of safeguarding persons using the highway. 66. -(3)

A highway authority may, in relation to a highway maintainable at the public expense by them which consists of or comprises a made-up carriageway, construct and maintain works in that carriageway for providing places of refuge for the protection of pedestrians crossing the carriageway. 68. -(1)

Paragraphs 69 and 70 give highway authorities powers to construct subways and bridges to assist pedestrians.

Under Part IX, Obstruction of highways and streets, the highway authority has powers to require landowners to trim trees, hedges and shrubs:

Where a hedge, tree or shrub overhangs a highway or any other road or footpath to which the public has access so as to endanger or obstruct the passage of vehicles or pedestrians, or obstructs or interferes with the view of drivers of vehicles or the light from a public lamp, a competent authority may, by notice either to the owner of the hedge, tree or shrub or to the occupier of the land on which it is growing, require him within 14 days from the date of service of the notice so to lop or cut it as to remove the cause of the danger, obstruction or interference. 154. -(1)

5.4 Disability discrimination

Highway and planning authorities must comply with the public sector equality duty under the Equality Act 2010, which has replaced the disability equality duty under the Disability Discrimination Act 2005. This is defined in Part II Chapter 1 of the act, available at http://www.legislation.gov.uk/ukpga/2010/15/pdfs/ukpga_20100015_en.pdf.

Public sector equality duty

(1) A public authority must, in the exercise of its functions, have due regard to the need to:

- eliminate discrimination, harassment, victimisation and any other conduct that is prohibited by or under this Act;
- advance equality of opportunity between persons who share a relevant protected characteristic* and persons who do not share it;
- foster good relations between persons who share a relevant protected characteristic and persons who do not share it. (*Disability.)

(2) A person who is not a public authority but who exercises public functions must, in the exercise of those functions, have due regard to the matters mentioned in subsection (1).

(3) Having due regard to the need to advance equality of opportunity between persons who share a relevant protected characteristic and persons who do not share it involves having due regard, in particular, to the need to:

- remove or minimise disadvantages suffered by persons who share a relevant protected characteristic that are connected to that characteristic;
- take steps to meet the needs of persons who share a relevant protected characteristic that are different from the needs of persons who do not share it;
- encourage persons who share a relevant protected characteristic to participate in public life or in any other activity in which participation by such persons is disproportionately low.

(4) The steps involved in meeting the needs of disabled persons that are different from the needs of persons who are not disabled include, in particular, steps to take account of disabled persons' disabilities.

- (5) Having due regard to the need to foster good relations between persons who share a relevant protected characteristic and persons who do not share it involves having due regard, in particular, to the need to:

- (a) tackle prejudice, and
- (b) promote understanding.

- (6) Compliance with the duties in this section may involve treating some persons more favourably than others; but that is not to be taken as permitting conduct that would otherwise be prohibited by or under this Act.

- (7) The relevant protected characteristics are:

- age
- disability
- gender reassignment
- pregnancy and maternity
- race
- religion or belief
- gender
- sexual orientation

Those who fail to observe these requirements will be at risk of a claim. Not only is there an expectation of action, but also the duty is retrospective, and local authorities will be expected to take reasonable action to rectify non-compliance in existing areas.

In practice, this means that the design of footways, footpaths and road crossings must, to the extent that is reasonably possible, provide for the requirements of people with locomotive and sensory disabilities. To date, there has been little research on how best to cater for people with cognitive disabilities, but as research indicates such measures, they will need to be considered.

5.5 Active Travel (Wales) Act 2013

The Active Travel (Wales) Act 2013 is intended to require local authorities in Wales to continuously improve facilities and routes for pedestrians and cyclists and to prepare maps identifying current and potential future routes for their use (Welsh Government 2013). It will also require new road schemes to consider the needs of pedestrians and cyclists at design stage. It has created new duties for local authorities in Wales and for the Welsh ministers, and also given the Welsh ministers the power to issue guidance on the location, nature and condition of active travel routes and facilities to ensure they are suitable for use. Design Guidance Active Travel (Wales) Act 2013 (Welsh Government 2014) describes the principal legislation as:

The Active Travel Act makes provision

- (a) for approved maps of existing active travel routes and related facilities in a local authority's area,
- (b) for approved integrated network maps of the new and improved active travel routes and related facilities needed to create integrated networks of active travel routes and related facilities in a local authority's area,
- (c) requiring local authorities to have regard to integrated network maps in preparing transport policies and to ensure that there are new and improved active travel routes and related facilities,
- (d) requiring the Welsh ministers to report on active travel in Wales,
- (e) requiring the Welsh ministers and local authorities, in the performance of certain functions under the Highways Act 1980, to take reasonable steps to enhance the provision made for walkers and cyclists and to have regard to the needs of walkers and cyclists in the exercise of certain other functions, and
- (f) requiring the Welsh ministers and local authorities to exercise their functions under the act so as to promote active travel and secure new and improved active travel routes and related facilities.

For further detail, see the Active Travel Act and Welsh Government (2014), in which Table 2.1 lists the powers the act adds to the Highways Act 1980.

6. Developing Strategy and Plans for Walking

As awareness of the benefits of walking increases, so does the desire to improve "walkability." Academics have studied walkability without coming up with any generally accepted measure of what improves it, but factors considered important include the closeness and directness of routes to local services, the quality of footways and street crossings, perceived personal security and the good appearance of routes. One study in Galway (Leyden, 2003) shows that in the older parts of Galway City, with higher densities and mixed land use, as compared with the recent suburbs, people felt more part of the community, knew their neighbours and could walk to work.

The Active Travel (Wales) Act 2013 requires local authorities to map both existing and new and improved walking and cycling ways (called "active travel routes") and related facilities. Local authorities are required to have regard for such maps when preparing transport policies.

In Britain, generally, it is considered to be good practice to include in local and neighbourhood plans both existing pedestrian networks and those to be developed over the lives of plans. The aim is to ensure that over, say, 10 years, all places, activities and services are linked by pedestrian networks. Equally important are:

- to gear Section 106 policies, infrastructure delivery programmes and Community Infrastructure Levy (CILG, 2014) to the same aim and
- to ensure that development management officers consider pedestrian networks and land uses prior to granting planning permissions.

Funding

Section 106 agreements with developers related to planning obligations can be used not only to pay for housing, education and other needs but also to improve walking conditions in the vicinity of developments. It is likely to be helpful that such works, through improving the settings of buildings, could add commercial value.

Community Infrastructure Levy is a new tariff-based planning charge that came into force in 2010 (DCLG, 2014). It allows local authorities in England and Wales to raise funds from developers undertaking new building projects in their area. The money can be used to fund a wide range of infrastructure that is needed as a result of development. This includes road schemes, flood defences, schools, hospitals, park improvements, green spaces and leisure centres.

Charging authorities wishing to charge the levy must produce a charging schedule, setting out the levy's rates in their area. This will form part of the documents making up the local authority's local development framework in England, which sits alongside the local development plan in Wales and the London plan in the case of the mayor's levy. In each case, charging schedules will not be part of the statutory development plan.

The levy is intended to provide infrastructure to support the development of an area rather than to make individual planning applications acceptable in planning terms. To ensure that planning obligations and the levy can operate in a complementary way, the regulations scale back the way planning obligations operate. Limitations are placed on the use of planning obligations in three respects:

- i. putting the government's policy tests on the use of planning obligations set out in Circular 5/05 Planning obligations on a statutory basis for developments that are capable of being charged the levy

- ii. ensuring the local use of the levy and planning obligations does not overlap
- iii. limiting pooled contributions from planning obligations towards infrastructure that may be funded by the levy.

Local authorities should include a walking network/strategy in their local plan that is spatially explicit so that both Section 106 Planning Agreements and Community Infrastructure Levy charges can be related to its delivery. The development of a walking strategy and the pedestrian network to support it are outlined below (DfT, 2000; DETR, 2000).

6.1 Delivering walking schemes

In October 2014, the Department for Transport published for consultation its draft Cycling Delivery Plan, which also included planning for walking (DfT, 2014b). This states the government's vision that walking and cycling become the natural choices for shorter journeys – or as part of a longer journey – regardless of age, gender, fitness level or income.

The government has clarified its commitment to supporting cycling and walking over the long term through the duty in the Infrastructure Act 2015, which requires it to put in place a cycling and walking investment strategy. This strategy must set out the financial resources that the government will make available towards meeting its cycling and walking objectives.

Leadership and vision are vital at a local, as well as national, level. The draft Cycling Delivery Plan outlines the government's intention to set up partnerships with local authorities, where – in exchange for signing up to a series of actions to deliver ambitious changes in cycling and walking – local authorities will receive access to supporting tools and incentives, including knowledge sharing, priority access to funding and sector expertise.

At the time of going to press, the department had not yet published a response to the Cycling Delivery Plan consultation.

The DfT Traffic Advisory Leaflet 2/00 "Framework for a local walking strategy" aimed to help local authorities prepare strategies for walking (DfT, 2000). It complemented the DETR publication Encouraging walking. Advice to local authorities (DETR, 2000) and described the minimum actions necessary to achieve real change. In due course these documents will be superseded by a new publication from the DfT, but at the time of going to press they still offer useful advice.

The “5Cs” of Good Walking Networks

- 1. Connected:** Walking routes should connect all areas with key “attractors” such as public transport stops, schools, work and leisure destinations. Routes should connect locally and at district level, forming a comprehensive network.
 - 2. Convivial:** Walking routes and public spaces should be pleasant to use and allow walkers and other road users to interact. They should be safe, inviting and enlivened by diverse activities. Ground floors of buildings should be continuously interesting.
 - 3. Conspicuous:** Routes should be clear and legible, if necessary, with the help of signposting and waymarking. Street names and property numbers should be comprehensively provided.
 - 4. Comfortable:** Comfortable walking requires high-quality pavements, attractive landscapes and buildings and as much freedom as possible from the noise, fumes and harassment of vehicles. Opportunities for rest and shelter should be provided.
 - 5. Convenient:** Routes should be direct and designed for the convenience of those on foot, not those in vehicles. This should apply to all users, including those whose mobility is impaired. Road crossings should be provided as of right and on desire lines.
- Transport for London: “Improving Walkability: Good practice guidance on improving pedestrian conditions as part of development opportunities,” September 2005. (Edited)

TfL defines the “5Cs” of good walking networks in Improving walkability (TfL 2005). These are shown in the box above.

Plans for walking will often refer to a user hierarchy. This provides that in the planning, designing and maintenance of most urban roads, the greatest priority is given to meeting the needs of pedestrians.

Numerous DfT documents define “road user hierarchies,” in which pedestrians and pedal cyclists are given the highest priority and private car users the lowest. *Manual for Streets* (DfT, 2007) defines a “hierarchy of consideration,” whereby designers should think about pedestrians’ needs first. It also recommends that increased consideration should be given to the “place” function of streets. This approach to addressing the classification of streets needs to be considered across built-up areas, including rural towns and villages, so that a better balance between different functions and street users is achieved.

The booklet *Street Design for All* (Davis, 2014) contains advice on how to make streets high-quality places, while permitting the necessary movement of vehicles. It contains many examples of good practice and emphasises the vital importance of quality design of all aspects of a street.

The CIHT guidelines *Providing for Journeys on foot* contains a section on the appraisal of pedestrian schemes (IHT, 2000a). This states:

Providing for walking is now a priority of transport policy. An increasing proportion of local transport funds is likely to be directed towards pedestrian-friendly schemes. This brings with it a greater need to ensure that the schemes (physical schemes and policy measures) are effective and properly prioritised.

Local walking plans may also need to include appraisal policies. Such assessments, undertaken prior to scheme implementation, are intended to ensure that pedestrians’ needs are met. The main reasons for carrying out appraisal are:

- to demonstrate that schemes have been selected rationally and in accordance with objectives
- to compare and prioritise different approaches to design schemes
- to compare pedestrian schemes with improvements to other forms of transport
- to demonstrate that schemes represent value for money
- to comply with the requirements of the funding regime, in particular the local transport plan guidance

Assessment criteria are often a combination of:

- severity of the problem
- degree of benefit predicted
- ease of implementation
- policy priority
- cost

Details of assessment schemes, and methods for assessing the effectiveness of a scheme after implementation, are given in *Designing for walking* (CIHT, 2015).

An example of a comprehensive set of walking policies is provided by those developed by Plymouth City Council, as shown in the box below.

6.2 Pedestrian networks

A town’s pedestrian network consists of its footways (pavements) provided, wherever possible, on both sides of carriageways; plus footpaths which do not follow highways. These routes should connect all parts of a town, including its centre, to one another and link with footpaths running into the countryside to adjacent settlements. Paths along river banks, canal towpaths, paths across open spaces, bridges of all kinds and diverse shortcuts complete such networks.

The Department of the Environment Northern Ireland guidelines *Creating Places* (DOENI, 2000) lists priorities for pedestrian routes in residential developments:

Main objectives

To help reduce the use of cars and encourage walking and cycling and provide links to public transport, the routes provided for pedestrians and cyclists should be laid out and designed to:

- be as direct as practicable in relation to local facilities, bus stops and railway halts
- provide attractive routes and accommodate conveniently and safely the numbers of pedestrians and cyclists likely to use the routes
- help minimise the hazards associated with vehicular traffic
- help enhance the appearance of developments by providing space for planting
- have the easiest practicable gradients (taking into account the special needs of people whose mobility is impaired)

Design Guidance Active Travel (Wales) Act 2013 (Welsh Government 2014) sets out a process for planning a pedestrian network, summarised in the box overleaf.

Plymouth City Council – Walking Policies

Achieving our aims

New planning policy will encourage higher population densities and the siting of new facilities within existing urban areas. In order to ensure that people walk more, pedestrian policies need to be improved too. Plymouth City Council will take action to increase the proportion of journeys made on foot.

Road user hierarchy

In order to promote sustainable transport, the following road user hierarchy will govern the design of all developments and be used to review existing provision:

- pedestrians and people with disabilities
- cyclists
- public transport users
- commercial and business vehicles and private motorists

Road space reallocation

The extent of footways will be reviewed in the light of the potential demand for walking and the needs of people with mobility and visual impairments.

The review will assess where a footway is required but does not exist and where the current width is inadequate. Road space will be reallocated to pedestrians at the expense of motorised traffic where a fairer distribution is attainable.

Pedestrian priority

Home Zones (residential streets in which the road space is shared between motor vehicles and other road users with the needs of pedestrians, including children, and cyclists coming first) will be introduced into Plymouth. In such areas maximum vehicle speeds will be restricted to 5 to 8 mph. Narrowed and built-up junctions and cul-de-sacs create barriers to traffic and indicate to drivers that they are entering a pedestrian priority zone. By building up the level of the road and getting rid of divisive kerbs, streets are made available to all types of users. When equipped with seats, shelters and good lighting, they provide a safe and secure pedestrian environment. The resulting improvements in quality of life for residents include reductions in car and street crime and road safety benefits.

<http://www.plymouth.gov.uk/psacheivingouraims>



Footpath linking culs-de-sac

Culs-de-sac need special attention, as the deterrent to walking they and gated communities pose should be recognised and, if possible, eliminated. Wherever possible, culs-de-sac should be linked by footpaths (ways for walkers not alongside roads) to provide through routes for walkers and cyclists despite being dead ends for motor vehicles. They should provide direct pedestrian paths to bus stops and neighbourhood centres. These through routes will not be used unless people are aware of them, so they should be made clearly visible and signed.

Pedestrian routes should be plotted on local maps to check permeability. Figure 14 shows an example from Manual for Streets (DfT, 2007).

An analysis of movement within an existing settlement will help identify any changes required for it to mesh with a new development. It could also influence movement patterns required within the new development. For new developments, an understanding of how an existing area functions in terms of movement and place enables the proposed points of connection and linkage to be identified, both within and from the site, so that important desire lines are achieved. This process will help ensure that a new development enhances the

existing movement framework of an area rather than disrupting or severing it. Mapping footpaths as well as streets displays the full range of routes and ensures that parts of an area are not isolated.

The importance of following desire lines

Networks of routes for pedestrians should be based on the understanding that pedestrians prefer the shortest, most direct paths between their origins and their destinations. Road crossings should be safe and both objectively and as perceived by pedestrians. They should not require pedestrians to divert from direct routes or cause excessive delays. Footways and footpaths should link main trip generators as directly as possible. Pedestrians prefer to see places to which they are heading, and although gentle curves will generally be followed, sharp changes in direction will not.

Walkers can only be deflected from shortcuts if these are blocked, which is undesirable and often requires guardrail or other street clutter.

Most walking trips begin at home, but most town-centre trips begin and end at public buildings or transport interchanges. Locating building entrances well is important for the convenience of pedestrians and public transport passengers. Front doors should be close to and face streets, bus stops and other walking routes. Car parks should generally be placed behind buildings and no nearer the front door than the local walking route or public transport stop ("Planning for Public Transport in Developments" IHT, 2000b).

Changes in level should be avoided where possible, but when one is inevitable, the needs of those with

disabilities must be considered. Bridges, high-level walkways and subways should be avoided, unless they relate naturally to the main entrances of nearby buildings. Subways and footbridges are usually unpopular as they generally require people to deviate from their desire line and can feel threatening and unsafe. There is a move in recent years to remove them and replace them with at-grade crossings.

6.3 Land use planning for pedestrians

Most people will only walk if their destination is less than a mile away. Land use patterns most conducive to walking are thus mixed in use and resemble patchworks of "walkable neighbourhoods," with a typical catchment of around 800 m or 10 minutes' walk (see 6.4 below).

The DETR publication Encouraging walking (DETR, 2000) says:

Land use planning is the most important long term solution to both our strategic and practical transport needs. Integrated planning reduces the need for travel and makes jobs and services more easily accessible to all. We cannot emphasise enough the importance of this aim for planners. We need to change the way we plan and put greater emphasis on enabling access by walking, as well as cycling and public transport.

Achieving this change will necessitate following all the points about attractive routes already made in these guidelines. When these routes are mapped, it will become clear whether they are comprehensive and penetrate to all parts of the settlement.

Network Planning

The role of pedestrian network planning for utility trips in built-up areas is generally not to provide new walking routes per se, but to improve the existing network in order to encourage people to make more short trips on foot.

The question of where to focus investment is critical, and so this guidance outlines processes for identifying which parts of the pedestrian network should be prioritised for improvement, based around three possible approaches.

- Walking trip attractors;
- Funnel routes associated with land-form barriers; and
- Footway maintenance classification.

A process map for the recommended methodology, including the three approaches, is shown in Figure 5.1.

Design Guidance Active Travel (Wales) Act 2013 (Welsh Government 2014) section 5.1

Figure 5.1: Recommended Process for Network Planning for Walking

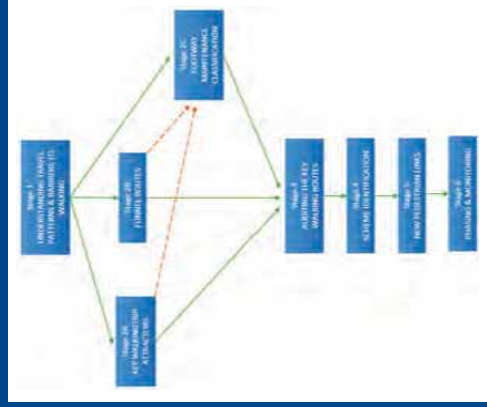


Figure 13: Proposed movement for the redevelopment of RAF Halkon (from Manual for Streets, DfT, 2007)





Photograph: Derek Palmer

Front entrances should face streets and bus stops

Planners need, above all, to see them from the viewpoint of pedestrians, understanding their requirements and limitations.

Additions to towns, be they renewal areas or new suburbs, will be isolated if adjoining roads, footways and bus routes are not extended into and across them. Traffic on these roads should not deter pedestrians. Major roads can be designed as boulevards fronted by shops and parking. Minor roads should be subjected, as appropriate, to traffic calming or 20-mph limits.

The roads for new suburbs must be complemented by networks of pedestrian routes, consisting of footways (pavements running alongside roads), footpaths (which do not follow roads) and crossings. Maps of such networks should made at an early stage of design to reveal the presence or absence of walkability. They should show bus stops, local shops and health centres to ensure that the network provides direct routes between them and as many houses as possible. Where there are breaks in the network due, for example, to culs-de-sac, additional footpath links should be inserted.

The National Planning Policy Framework states (Para. 35, Page 10) (DCLG, 2012)

Plans should protect and exploit opportunities for the use of sustainable transport modes for the movement of goods or people. Therefore, developments should be located and designed where practical to:

- accommodate the efficient delivery of goods and supplies;
- give priority to pedestrian and cycle movements, and have access to high quality public transport facilities;
- create safe and secure layouts which minimise

conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate establishing home zones.

6.4 Pedestrian catchments

Building Sustainable Transport into New Developments (DfT, 2008) gives the following advice on pedestrian catchment areas:

Traditional compact town layouts

Walking neighbourhoods are typically characterised as having a range of facilities within 10 minutes' walking distance (around 800 metres). However, the propensity to walk or cycle is not only influenced by distance but also the quality of the experience; people may be willing to walk or cycle further where their surroundings are more attractive, safe and stimulating. Developers should consider the safety of the routes (adequacy of surveillance, sight lines and appropriate lighting) as well as landscaping factors (indigenous planting, habitat creation) in their design.

The power of a destination determines how far people will walk to get to it. For bus stops in residential areas, 400 metres has traditionally been regarded as a cut-off point and in town centres, 200 metres (DOENI, 2000). People will walk up to 800 metres to get to a railway station, which reflects the greater perceived quality or importance of rail services.

6.5 Improving pedestrian safety

An OECD (2001) report on road safety recommends that whenever infrastructure is created or improved, highway authorities should "endeavour above all to create a safe environment for pedestrians," and that "this concern [should] underlie any land-use planning." This is the "putting pedestrians first rule," and it reflects a recognition that if, in highway works, people on foot are not considered first, they will end up being put last.



Bollards to prevent pavement parking

6.6 Giving pedestrians priority

Since Britain's first pedestrian town centre streets in Southend, Salisbury and Norwich in the 1960s, the provision of traffic-free or pedestrian priority areas in town centres has become widespread. Providing priority for pedestrians comes in various forms.

Pedestrianised streets

Pedestrianised streets are characterised by the exclusion of motor vehicles. This exclusion can be full time or service vehicles may be allowed to enter early in the morning and during late afternoons or evenings. Visitors' cars may be given access to evening activities, or to hotels. The road surface can be flush as in a fully pedestrian space, or an area for vehicles can be indicated by low kerbs, a change of surface or bollards. Whatever the surface and access arrangements, it is necessary to provide access routes for emergency vehicles.

Pedestrian precincts

Traffic-free shopping streets with or without linking arcades: open air, as in Leeds, or enclosed as in Eldon Square, Newcastle upon Tyne.

Pedestrian priority streets and areas

Pedestrian priority streets are those where only a few vehicles, such as buses, cycles or cars with blue badges, are allowed to enter, usually at low speeds. An early scheme in Oxford was monitored by TRRL, and



Photograph: Living Streets

Pavement parking

- Adequate footway and footpath widths
- Kerb line build-outs to minimise the time taken to cross carriageways and slow traffic
- Preventing parked vehicles blocking footways through better enforcement or physical means
- Good pedestrian access to public transport
- More crossings which provide effective pedestrian priority
- Fully protected pedestrian phases at traffic signals
- Median pedestrian refuges
- 20-mph speed limits

Infrastructure to improve pedestrian safety includes:

A more recent report (Mathieson et al., 2013) on the mobility and safety of older road users has, as one of the principal recommendations, the following:

Pedestrians – strong stakeholder views have been expressed about the inappropriate and inconsiderate use of footways and pedestrian areas by cyclists, parked vehicles and mobility scooters. There is a need for enforcement and encouragement for other users to consider the needs of older pedestrians who are fearful of being involved in an accident. Footways of appropriate width and adequately maintained for the older user must be considered in design and maintenance regimes.

In general, the fundamental requirements are to separate pedestrians from vehicle traffic and to limit vehicle speed. Separation can be in space, by providing separate areas for pedestrians and vehicles, or in time, by the use of traffic signals. The exception is that pedestrians and vehicles can share space in areas where traffic speeds are very low—see the paragraphs below on shared space in Section 6.7.



Light controlled pedestrian crossing



Pedestrian median refuge



Carriageway narrowing at an informal crossing



Pedestrian median refuge

filming of pedestrians showed that buses travelling at up to about 10mph appeared to be acceptable, in that pedestrians used the whole street but moved away from the paths of vehicles to avoid buses (Dalby, 1976). Buses travelling at higher speeds caused pedestrians to withdraw to the sides of the street.

Pedestrian areas are sections of town centres covering several streets and squares in which access by vehicles is limited. Such areas sometimes contain covered modern shopping centres or older arcades.

Experience and research shows that pedestrian streets and areas are popular with and attract pedestrians, reduce traffic accidents and increase retail activity (Living Streets, 2013). Access for bus services and

to car parks can be difficult in large precincts. Problems also arise in providing for people whose walking range is limited, although more and more centres have Shopmobility schemes that provide wheelchairs or mobility scooters for visitors with walking difficulties. Servicing shops in streets that have been re-designed for pedestrians can be another challenge.

6.7 Developing more balanced streets

The conversion of major roads into places

Cities such as Birmingham and Nottingham were once equipped with almost uncrossable inner ring roads where pedestrians were forced into ugly, threatening and smelly subways. These roads constrained the growth of city centres and deterred access by pedestrians.



York – pedestrian priority

They have since been transformed into tree-lined boulevards punctuated by spacious surface crossings and spaces for people to gather. Vehicle carriageways have been narrowed, footways widened and vehicle speeds reduced.

Both *Manual for Streets* (DfT, 2007) and *Street Design for All* (Davis, 2014) suggest ways in which the role of streets as places can be maintained despite modern levels of motor vehicle traffic.

Shared space

The use of shared space has become more common in recent years, having been pioneered in the Netherlands by engineer Hans Monderman. The approach involves removing much of the conventional apparatus of traffic control, including traffic signs, signals and markings. The approach can also include the removal of kerbs between carriageway and footway, known as a “level surface.”

Examples of this new philosophy can be seen in New Road, Brighton, Ashford in Kent, which has transformed part of its ring road, and in Coventry city centre, where traffic signals have been removed from a number of junctions. Poynton in Cheshire currently represents the most ambitious use of shared space. The village improvement scheme there involved the creation of a sequence of informal crossings highlighting pedestrian desire lines, a central reservation to assist pedestrians to cross a major road, narrow traffic lanes to keep vehicular speeds low, and repaved footways, including the repaving of the private shop forecourts to enhance the pedestrian environment.

Concerns have been expressed on behalf of blind and partially sighted people about the lack of clarity as to

which parts of the street might be used by vehicles. DfT guidance in Local Transport Note 1/11 on shared space makes it clear that the needs of all road users should be considered during the design phase and recommends the demarcation of “comfort space” areas where a level surface is part of the scheme. In Exhibition Road, London, tactile surfaces have been used to warn pedestrians with impaired vision that they are walking into a trafficked area.

6.8 Transport terminals

Railway stations and bus terminals attract large numbers of pedestrian journeys. Care should be taken that pedestrian routes to and from them are provided and are well signed. It is important that passengers arriving at stations should be able to find the way to nearby neighbourhoods and to buses to other parts of the town.

Direct pedestrian routes are part of the answer. Good information and clear signing to pedestrian routes and bus stops (with clear bus service information) are important too. Bus operators can help by clustering the stops of buses that go to the same district. Safe road crossings enable passengers to get to stops from both sides of the street. Routes should be step free to assist travellers with wheeled luggage and people using wheelchairs or baby buggies.



Fully pedestrianised



Pedestrian priority Gardner Street, Brighton

6.9 Wayfinding

Pedestrians are helped if walking routes are well signed and show the distances and/or times to useful destinations. Maps showing walking routes are also valuable, particularly in places frequented by tourists. Strangers often find it difficult to follow pedestrian routes and do not appreciate the nearness of many destinations.

Research by TfL for the Legible London scheme makes clear that not even the best street-based maps can be expected to suit the needs of all. The preferred mix of information is a wide variety of commercially available paper maps. A to Zs and “rough guides” plus carefully thought-out on-street fingerposts or other wayfinding displays (SDG/TfL, 2014).

Developments in digital wayfinding provide new opportunities to help walkers and encourage walking. All wayfinding systems should therefore be designed to work alongside digital guidance services (see Section 8).

Different settings call for different approaches to signing. Small-scale, discretely coloured, “heritage” signs, fitted to the speed of wandering tourists, are widely used in the centres of historic towns—though modern designs, if equally small and discrete, could be used. The Legible London project has done a great deal to improve signing for way finding in London and has shown that clear signing does not have to be intrusive.

Railway stations, by contrast, are often disorienting in layout and full of harassed travellers and need something bigger and more strident. Examples from Central York, Legible London and a railway station in Copenhagen illustrate the different approaches (Figure 15). In street locations, signs and fingerposts need to be placed near lamp posts or other sources of light.

Figure 14: Signs for pedestrians providing differing degrees of clarity and ease of use



A Legible London finger post



Sign in a Copenhagen urban railway station



Finger post in York

7. Promoting Walking

Delivering Travel Plans through the Planning Process (DfT and DCLG, 2009) defines a travel plan as a long-term management strategy for an occupier or site that seeks to deliver sustainable transport objectives through positive action and is articulated in a document that is regularly reviewed. Travel plans have been used successfully for many years whether secured through planning or prepared on a voluntary basis. They are an important tool for promoting sustainable travel (e.g., walking, cycling, public transport, and help to reduce single-occupancy car use, as described in the report *Smarter Choices: Changing the Way We Travel* (Cairns et al., 2004). Travel plans are now being used to secure the provision of sustainable travel choices both to new developments and extensions of existing sites.

The DfT Smarter Choices and Sustainable Travel Towns programmes have shown the effectiveness of promoting walking. In the three “sustainable” towns (Worcester, Darlington and Peterborough), where residents were given information about cycling and walking, travel on foot increased by 10% to 13% (Sloman et al., 2010).

The travel plan process may be centred on an activity centre, such as a school, a workplace, or a hospital; on individuals, through Personal Travel Plans; or on a complete area, as in the Sustainable Travel Towns. In each case, the process involves identifying barriers to the use of sustainable travel modes, followed by a programme of information and persuasion to encourage their use, plus relatively low-cost investments to reduce or remove the barriers. These investments can include improvements to pedestrian infrastructure, including safer road crossings, provision of cycle racks, bus shelters, seats, real-time information, priority parking for car sharers and, where appropriate, support for improved public transport, at least for a limited period.

Getting the correct “building blocks” in place is key to securing successful travel plans: robust clear local policies are needed, which build on national and regional policy. To achieve clarity, local authorities should publish guidance, stating the nature and scale of new development that will require travel plans, what type of travel plan is needed in different situations and the broad objectives they are seeking. These objectives are more effective when linked to the wider spatial planning objectives of achieving effective use of existing transport networks, supporting sustainable accessibility to sites and encouraging more efficient use of land. Considering the transport assessment and travel plan as an integrated package to deal with the transport impacts of a development is the most effective approach. They should be submitted together with the planning application wherever possible.

Cairns et al. (2004) concluded that under a “high-intensity” scenario provided by a much more widespread implementation of good practice, albeit to a realistic level, travel changes could be:

- a reduction in peak period urban traffic of approximately 21% (off-peak 13%),
- a reduction of peak period nonurban traffic of approximately 14% (off-peak 7%) or
- a nationwide reduction in all traffic of approximately 11%.

These figures represent a cautious estimate of the effects of significantly scaling up work on soft factors from its current level. The scenario described is one where soft measures have benefited from a high-intensity policy buildup over a period of approximately 10 years. The “low-intensity” scenario is defined as a projection of the 2003–2004 levels of local and national activity on soft measures. This would achieve substantially smaller changes in travel behaviour, including a reduction in peak period urban traffic of approximately 5%, and a nationwide reduction in all traffic of 2% to 3%.

Using current DfT practice for estimating the value of the effects on travel times of a reduction in the number of vehicles, each £1 spent on soft measures could produce benefits of about £10 on average and considerably more in congested conditions.

Delivering sustainable low-carbon travel (DfT, 2009) states that marketing and communications are essential to winning support for proposals and for maximising changes in behaviour. Promoting sustainable travel is about winning hearts and minds as much as about providing practical support and information. Branding should be considered early on because it helps improve public recognition of plans and give coherence to their different parts.

The pilot stage of such a campaign was carried out in Loughborough (Leicestershire CC, 2013). The result of providing “personal travel planning” to individuals in 4,000 households was a reduction in car driver trips by 10%, while 14% of participants claimed to have changed their travel behaviour. Later stages of the campaign have shown increases in walking to work of 3% to 5%.

8. Looking to the Future

8.1 Sustainability

The threat of climate change has, for at least two decades, led to demands to raise the fuel-efficiency of buildings and to make day-to-day living less dependent on cars—“sustainable development.” This has, in turn, led to planning guidance to increase residential densities (see 8.2 below) and to prioritise walking, cycling and public transport. In the longer term, rising energy costs could reinforce these policies, or new power technologies could create a changed policy context.

Another reason for biasing development towards more sustainable forms is the growth in the number of older people (see 8.3 below). The requirements of such individuals are fully compatible with environmental sustainability. What could suit older people better than good alternatives to cars, walkable neighbourhoods, safe and comfortable conditions for walking and public transport for longer journeys? Smaller gardens for easy maintenance could suit many.

Although the primary effect of climate change is forecast to be greater extremes in the weather, this will, of course, involve hot spells. Given such prospects, appropriate tree planting offers the triple benefits of absorbing carbon dioxide and greening the city and creating shade for walkers.

8.2 Residential densities

Housing density is a contentious topic. Architects such as Lord Rogers have argued that higher densities increase the practicality of travel on foot, by bike and by bus; create a “vibrancy” that results from drawing people together; and lead to a desirable architectural quality called “urbanity” (Fig 15). But residential densities in towns have been reducing for at least 150 years, and the English suburban tradition goes back at least to the 18th century. In a 2003 policy statement on “residential densities,” the Town and Country Planning Association, quoting “survey after survey,” says (TCPA, 2003):

- **80% of people anticipating leaving their present home would prefer to move to a house with a garden;**
- **75% of single people want a garden;**
- **people living in less densely occupied areas express greater satisfaction with their area than those in areas of high residential density—they perceive more community spirit, have more friends locally and have fewer complaints about their environment; and**
- **the most common complaint about urban areas is insufficient green space.**

Even though characteristics of towns, such as housing densities, change only slowly, there are reasons to expect that, in the foreseeable future, inner-city residential densities will be driven upwards. This will be particularly the case in towns and cities where demand for accommodation is strong. Shortage of building sites, the high cost of recycling “brownfield” land and political pressure for sustainable development will also play a part in raising residential densities. This will potentially create greater opportunities for walking, provided land use is mixed, and there are useful destinations within easy distance. It will also demand vigilance by planners to ensure that higher density developments are permeable for pedestrians and that walking routes that connect new places with old are given high priority.

8.3 Planning for more elderly and elderly disabled pedestrians

In 2013, 12.0% of those living in Great Britain were aged 70 and over—a total of 7.45 million. By 2032, this total is forecast to rise to 11.62 million, 16.6%.

The frailties of elderly people, their difficulties in walking and the aids they make use of are discussed in Section 2. But not all the elderly are frail; many are energetic and keen to work, and some have to work to maintain their income. This is indicated by the 2011 census data that found that, compared with the previous decennial count, those in the 65–74 age group who were still working had increased by 16% or 413,000 people.

Planners wanting to get an insight into being an elderly pedestrian may want to experiment with going out wearing clouded spectacles and earplugs or taking trips in a hand-propelled wheelchair. These are sobering experiences.

8.4 Rising concern about health and physical exercise

Doctors, health authorities, schools and campaigning groups are all working on raising public consciousness about the unhealthy side effects of sedentary lifestyles, being overweight and neglecting to take exercise. In time, these messages seem likely to have some effect on behaviour and on increasing walking. If so, they will enhance opportunities for planners to create places that are good to be in and comfortable to walk to and from.

8.5 Section 106 Agreements and Community Infrastructure Levy: Funds for street improvements

Local authority funds for street works are expected to be in short supply for the foreseeable future. But Section 106 agreements with developers related to planning obligations and the Community Infrastructure Levy can be used to pay for new and improved infrastructure for walking. For this to be possible, local authorities need to include a strategy and a walking network in their local plan that is spatially explicit so that both Section 106 Planning Agreements and Community Infrastructure Levy charges can be related to its delivery.

8.6 Streets as spaces for multiple activities rather than just corridors for movement

City streets and squares were once places in which people walked, hawkers sold their wares, markets came and went and other civic, religious and popular events took place—together with the movement of goods and people. Residential streets were places where children played. As streets in towns and cities filled with motor vehicles, they became more crowded and dangerous and squeezed out other uses. Reaction then set in and led to the creation of pedestrian shopping streets (in Essen as early as the 1930s), pedestrian zones and a wide variety of designs of spaces shared by people and vehicles. While many further pedestrian-only spaces will no doubt be created, conditions for pedestrians need to be improved over large parts of city centres, inner cities and suburbs by developing the concept of sharing. Twenty-mph zones are only a beginning. Street Design for All (Davis, 2014) provides many examples of ways in which the quality of a street as a place can be improved by good-quality design.

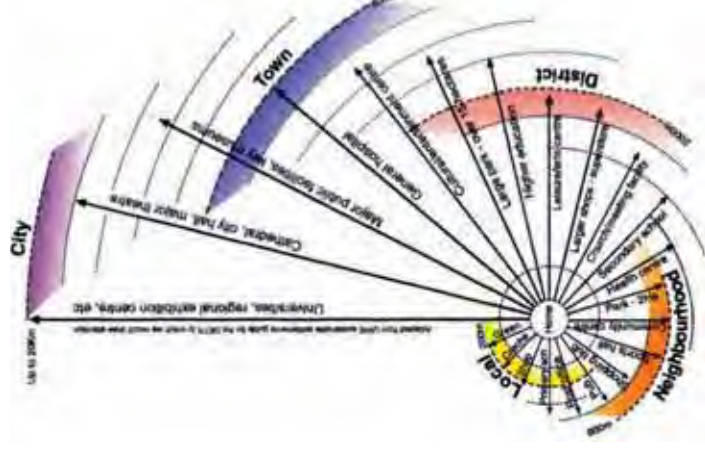


Figure 15: Provision of good social facilities
Rogers Partnership/The Urban Task Force

The presence of more elderly people at work (and walking to work), increasing total numbers of elderly people and growing numbers of very old people, all need to be considered when planning for pedestrians. Compared with younger people, the elderly typically walk more slowly, find steps and stairs more difficult, are more tired by long or steep inclines, find seats and resting particularly welcome, have poorer eyesight and hearing and are more timid when crossing busy streets.

A combination of level, good-quality pavements and walking routes, protected crossings of busy streets and attractive place at which to stop and sit are thus core considerations in planning for elderly pedestrians. Median pedestrian refuges are a particular help for older people in busy roads and at junctions. Pavement scooters need to be considered too. One possibility is that they might be required to share reserved lanes with cyclists—although the acceptability of this has yet to be proved.

8.7 Navigation on foot by smart phones and other digital aids

Digital technology, and the invention of numerous mobile phone applications, is causing a slow revolution in the lives of urban travellers. Drivers in San Francisco, having been guided, perhaps, to selected streets by their sat navs, are guided further to empty on-street parking places—thereby minimising the pollution and congestion of fruitless circling.

Meanwhile, bus companies in many cities tell passengers when the next bus will arrive by digital displays at stops, apps on smart phones or in response to a text message coded with the number of the stop.

Likewise, pedestrians can use iPhones to plug in postcode destinations and be guided to them by maps in their displays. An array of other kinds of app can be used to flag up good pubs and even, in a reverse direction, to enable merchants to attract the attention of passing walkers.

Developments in digital wayfinding technology will continue to provide new opportunities to encourage walking. Smart phones are likely to become ever more useful and widespread. All wayfinding systems should therefore be designed to work alongside digital guidance services. It should be kept in mind that the future may require a combination of sophisticated personal wayfinding by smart phone and very simple on-street finger posts. In this fast-developing digital field, it is likely that all manner of other services will

emerge over the coming decade. This could prompt people to walk more often or further.

8.8 Autonomous vehicles

Autonomous (or self-driving) road vehicles may be just around the corner, at least on some types of road. In the case of cars, manufacturers are, bit by bit, automating and interconnecting conventional vehicles—starting with motorway cruise control, which responds to the vehicle ahead to maintain a safe headway, including self-parking. Firms such as Google, having demonstrated safe self-driving cars, are now turning to developing fuel-efficient, low-polluting, self-driving cars for the sprawling suburbs. Such vehicles, travelling door to door like a taxi, could be rented from car-clubs or privately owned.

One important characteristic of the new sensory technologies is that they can detect pedestrians and, if necessary, stop. Will such vehicles usher in an urban driving and car-owning revolution? Will lines of on-street parked cars fade away as inner-city residents opt to join autonomous car clubs? Will small versions of such vehicles turn up on pavements, as is planned for Central Milton Keynes later in 2015?

A Pandora's box of possibilities is opened up by the possibility of true autonomous mobility. Might it lead to more or less walking? Might it lead to more or less attractive street environments? Might it, above all, usher in the possibility of shared space on an almost citywide scale? That is certainly a vision worth pursuing.

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Nicola Gunn

From: Bloomer, David <David.Bloomer@lancashire.gov.uk>
Sent: 05 October 2018 13:40
To: Robert Major
Cc: LHS Customer Service; planning
Subject: app3/2018/0688 Henthorn Road Clitheroe

Follow Up Flag: Follow up
Flag Status: Completed

Categories: Yellow Category

Morning Rob

The proposal is outline for the development of land off Henthorn Road comprising of 110 residential dwellings.

The Transport Assessment (TA) accompanying the application identifies a number of junctions where the impact of the traffic generated by the proposal would require further consideration. . Henthorn Road is a cul de sac and all traffic to and from the development will be required to utilise Henthorn Road and exit onto the wider network via a number of streets all of which are residential in character. The impact of this traffic will be discussed further later in this email.

Site Access Arrangements , the site proposed is a 5.5m carriageway with 2m footways either side. The footway along the easterly side extends in a north easterly direction along Henthorn Road to its junction with Blakewater Road. There is a localised carriageway widening proposed between the site access and Blakewater Road to bring the carriageway width to 5.5m. Visibility splays proposed for the site access exceed those required by guidance within Manual for Streets for a 20mph speed limit and are based on the prevailing traffic speeds. On the basis of the submitted plans , the proposed access is acceptable in principle but would be subject to detailed design under a S278 agreement .

Site Accessibility

Walk. Continuous footways between the site and the wider highway network are achievable and footway improvements are proposed by the applicant. Although the following route option is not considered by the applicant, the red edge of the proposed site extends along Henthorne Road in a south westerly direction between the site access and a public right of way (FP 3-1-fp7). This would provide for an off road link and whilst being of a predominantly recreational nature it would enable pedestrian access to the leisure facilities at Edisford Bridge (approx. 1400m).

Using the existing highway network the TA refers to the National Travel Survey and details various statistics suggesting that walking is a viable option from the proposed site , however the statistics submitted do not differentiate between the various age groups or provide sufficient detail to make any plausible assumptions.. Bearing this in mind , the propensity to walk from the site is dictated by a number of factors such as age group, weather, purpose of trip, the need to combine trips to make better use of time. In terms of the facilities near to the site. The nearest convenience store is located on Henthorn Road approximately 900m from the centre of the site which falls outside the 800m "walkable neighbourhood" concept promoted by MfS 1 and 2 . Similarly access to the local primary school is quoted as 1km from the centre of the site. An argument is put forward that using the National Travel Survey statistics of 46% of 5 – 10 year olds walk to school and of these 80% do so for journeys under 1 mile. The conclusion being that " there is a reasonable expectation that most children at the application site will walk to school". Extrapolating these figures and no doubt assuming ideal walking conditions the percentage is

likely to be significantly less than "most children". The figure is more likely to be in the region of 30%.

In considering secondary school, it is accepted that there is a greater propensity for older pupils to walk to school or utilise the school bus services which are accessible from the site. Two school bus services are available serving Bowland County High School and Ribblesdale County High School.

Cycling, there are no specific off road cycle routes available for the residents of the proposed site and as such whilst cycling to school may be feasible in distance terms, the traffic speed survey undertaken by the applicant (30 – 32mph) suggests that it may not be considered a viable option for children of primary school age

Public Transport,

Accessibility to public transport is good although this access is limited to a single circular service (No.2) to Clitheroe town centre.

The service, which is operated on behalf of Lancashire County Council i.e. it is a subsidised service.

Travel Plan

The applicant has submitted a travel plan with the aim of reducing traffic generated to / from the site. The target set is a reduction in the trip rate from the peak 2 way flow from 0.663 to 0.527 which represents a reduction in traffic from an evening peak hour flow of 73 vehicles to 58 vehicles. The terms and parameters of any travel plan for the site would be the subject of a planning condition if planning permission is ultimately granted

Trip Rates,

The TA details the anticipated trip rates for a development of this size and breaks it down to peak hour arrivals and departures. A review of these trip rates has been undertaken and the results obtained are comparable with the TA providing slightly more robust rates (i.e. the TA rates are slightly higher than those obtained in the review).

Traffic Impact

Using the traffic prediction figures derived from the TRICS database the applicant has distributed the generated traffic flows on to the network and identified 3 junctions requiring further analysis namely

- 1 Henthorn Road / Eshton Terrace
- 2 Woone Lane / Eshton Terrace
- 3 Whalley Road / Greenacre Street

Further modelling of these junctions for the current year, taking into account committed developments in the area and future growth in 2023 and 2028 shows that of the junctions identified above only junction 1 above (Henthorn Road / Eshton Terrace) shows any sign of becoming stressed but to a level which would not be considered "severe" in respect of the NPPF

It is accepted that certain elements of the road network have localised issues notably Eshton Terrace / Henthorn Road and Whalley Road / Greenacre Street but it was evident during a number of visits to the site that these were effectively managed by the courteous nature of drivers which allowed traffic flows to be maintained through these junctions.

One issue that cannot be managed in this manner is the effect of the level crossing. Again during visits to the site the effects of a closed level crossing were observed and as expected traffic queues built up but not to an extent that they had a severe impact on the network and these queues cleared quickly once the crossing reopened

Summary

The proposed development is on the edge of the residential area and it is evident that following recent housing development along Henthorn Road that the perceived traffic levels have increased however the modelling submitted with the application has not shown that the impact of the existing and predicted traffic flows are such that it could be construed as being "severe" in respect of the NPPF and on this basis I am satisfied that the proposed development will not have a detrimental effect on the functioning of the highway network. However it should be noted that there exists areas where minor delays do occur but these are locally managed by highway users on a courtesy basis. There are no highway mitigation measures that can be employed to minimise the delays in these areas which will not result in a detrimental impact on the amenity levels currently enjoyed by local residents.

Notwithstanding the above, the proposed development lies at the extreme of acceptable walking distances for pedestrian trips to local amenities and in recognition of this it is requested that a S106 contribution of £40,000 per annum be made available to sustain and promote local public transport.

Should your council be minded to approve this application I would request that the following conditions be attached to any permission that may be granted

1. The new estate road/access between the site and Henthorn Road shall be constructed in accordance with the Lancashire County Council Specification for Construction of Estate Roads to at least base course level before any development takes place within the site. Reason: To ensure that satisfactory access is provided to the site before the development hereby permitted becomes operative.
2. No part of the development hereby approved shall commence until a scheme for the construction of the site access and the off-site works of highway improvement has been submitted to, and approved by, the Local Planning Authority in consultation with the Highway Authority. Reason: In order to satisfy the Local Planning Authority and Highway Authority that the final details of the highway scheme/works are acceptable before work commences on site.
3. No part of the development hereby approved shall be occupied or opened for trading until the approved scheme referred to in Condition 2 has been constructed and completed in accordance with the scheme details. Reason: In order that the traffic generated by the development does not exacerbate unsatisfactory highway conditions in advance of the completion of the highway scheme/works.
4. Prior to the first use of the development hereby permitted, a Travel Plan shall be submitted to, and approved in writing by, the Local Planning Authority in consultation with the Highway Authority. The Business Travel Plan shall be implemented within the timescale set out in the approved plan and will be audited and updated at intervals not greater than 18 months to ensure that the approved Plan is carried out. Reason: To promote and provide access to sustainable transport options.
5. For the full period of construction, facilities shall be available on site for the cleaning of the wheels of vehicles leaving the site and such equipment shall be used as necessary to prevent mud and stones being carried onto the highway. The roads adjacent to the site shall be mechanically swept as required during the full construction period. Reason: To prevent stones and mud being carried onto the public highway to the detriment of road safety.
6. Prior to work commencing on site a construction management plan is produced for approval. This should highlight how deliveries during construction will be managed and where workers on the site will park during construction. Reason: to minimise the impact of construction on existing residents in the vicinity of the site.

Notes

1. The grant of planning permission will require the applicant to enter into an appropriate Legal Agreement, with the County Council as Highway Authority. The Highway Authority hereby reserves the right to provide the highway works within the highway associated with this proposal. Provision of the highway works includes design, procurement of the work by contract and supervision of the works. The applicant should be advised to contact the contact the Environment Directorate for further information by telephoning the Developer Support Section (Area South) on 0300 123 6780, or writing to Developer Support Section, Lancashire County Council, Environment Directorate, Cuerden - Mill Depot, Cuerden Way, Cuerden, PR5 6BJ or email lhscustomerservice@lancashire.gov.uk
- 2 The alterations to the existing highway as part of the new works may require changes to the existing street lighting at the expense of the client/developer

Dave Bloomer
Development Control
Lancashire County Council

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