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Highways & Transportation Consultant

**36 – 40 RICKMANSWORTH ROAD,
NORTHWOOD,
HA6 2QG**

HOWARTH HOMES

TRANSPORT STATEMENT

FEBRUARY 2016

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1.0 INTRODUCTION

- 1.1 My name is Dermot McCaffery. I am a highway and transportation consultant. I have 27 years experience in local authority and private consultancies in dealing with the highway development control aspects of development proposals. I am a Member of the Institute of Highway Engineers and the Institute of Road Safety Officers.
- 1.2 I have been appointed by Howarth Homes to provide highway support to a proposal to develop land at 36 – 40 Rickmansworth Road, Northwood.
- 1.3 The site and proposed development have been the subject of pre-application discussions and these have helped to inform this statement.

2.0 SITE LOCATION AND PROPOSED DEVELOPMENT

- 2.1 The site is located on the north side of the A404 Rickmansworth Road and approximately 60m east of the junction with Murray Road. The site comprises 3 detached houses with individual accesses that join Rickmansworth Road via a short service road.
- 2.2 The A404 Rickmansworth Road is a London Distributor Road and is one of the main routes through the north of the Borough. In the vicinity of the site it is subject to a 30mph speed limit. The centreline of the carriageway is denoted by hatched markings. There is also a hatched area along the northern side of the carriageway to visually narrow the wide carriageway.



2.3 Northwood tube station is 800m (10 minute) walk distance from the site and local shops and facilities are located along Pinner Road, approximately 610m to the east. The site has a PTAL rating of 2 as demonstrated by the TfL PTAL report contained in **Appendix 1**.

2.4 The proposed development comprises the replacement of the 3 detached houses with a development of 14 x 1-bed and 15 x 2-bed flats with a revised access arrangement.

3.0 HIGHWAY AND TRANSPORTATION CONSIDERATIONS

3.1 The highway considerations for the proposed development relate to the following:

- Access arrangements
- Parking provision and site layout

3.2 These issues will be considered in detail below.

Access arrangements

3.3 The proposed development will be served by a single access bellmouth located at the eastern end of the site frontage. The design of the bellmouth has been lead by the need for the development to accommodate refuse collection vehicles within the layout. The width of the access road beyond the bellmouth will be 4.1m with a 1.2m wide footway along the western edge.

3.4 Pre-application discussions with the Council included considerations of the visibility requirements for the access. A previous proposal in 2007 was dismissed at appeal due to the Inspector's concerns that adequate visibility could not be provided. Vehicle speed data were submitted to the Council as



part of the pre-application discussions and an agreement was reached that a visibility splay of 2.4m x 70m to the west would comply with the advice set out within *Manual for Streets 2* in respect of the recorded vehicle speeds. In order to assess the level of visibility that is required at the site access a vehicle speed survey was commissioned from a data collection specialist. This was carried out in accordance with TA 22/81 “*Vehicle Speed Measurement on All Purpose Roads*” and a representative sample of vehicle speeds was collected on 2 separate days. A copy of the survey report is included at **Appendix 2**.

- 3.5 Visibility splays are calculated on the 85th percentile wet weather speeds and these were recorded as:

Tuesday 11 th March	57kph westbound
	54kph eastbound
Wednesday 12 th March	59kph westbound
	54kph eastbound

- 3.6 The standards for visibility splays are contained in *Manual for Streets 2* (MfS2) and TD9/93 “*Highway Link Design*” of the Design Manual for Roads and Bridges (DMRB). The “Status and Application” section of MfS2 states

“DMRB is the design standard for trunk roads and motorways in England, Scotland and Wales. The strict application of DMRB to non-trunk routes is rarely appropriate for high design in built up areas, regardless of traffic volume.”

- 3.7 As such, the primary source for visibility splay standards is MfS2. This is supported by paragraph 1.3.6 of MfS2 which states,



“It is only where actual speeds are above 40mph for significant periods of the day that DMRB parameters for SSD (Stopping Sight Distances) are recommended.”

3.8 As the recorded 85thile speeds are less than 64kph (40mph) it is appropriate to apply the standards within MfS2 for the development site access.

3.9 Paragraph 10.1.5 of MfS2 sets out the basic formula for calculating visibility splay distances, thus:

$$\text{Visibility distance} = vt + v^2/2(d = 0.1a)$$

where v = speed (m/s)

t = driver perception/reaction time
(secs)

d = deceleration (m/s²)

a = gradient

3.10 If the highest speeds are taken for each direction the resulting visibility distances are:

$$\text{To east} = 55 + 2.4 = 57.4\text{m}$$

$$\text{To west} = 48 + 2.4 = 50.4\text{m}$$

(NOTE: 2.4m added to visibility distance as per paragraph 10.2.5 of MfS2)

3.11 If reference is made to Table 3 in TD 9/93 of the DMRB as a safety check, notwithstanding the application of MfS2, then the Desirable Minimum stopping sight distance for a design speed of 60kph is 90m with *One Step Below Desirable Minimum* being 70m.



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- 3.12 The proposed site access has been designed with visibility splays of 2.4m x 70m to the west and 2.4m x 90m to the east. The visibility splay to the east is unobstructed at any distance due to the alignment of Rickmansworth Road. The visibility splay to the west has been the point of contention in the past and restrained by property boundaries and the alignment of the main carriageway. The splay of 2.4m x 70m exceeds that required by MfS2 and complies with the *One Step Below Desirable Minimum* for the DMRB.
- 3.13 In its pre-application response the Council has requested further vehicle speed surveys to justify the above visibility splay calculations. As the speed surveys were carried out in compliance with the Department for Transport's Standard TA22/81, and the level of visibility provided to the west exceeds that required by the standards in *Manual for Streets 2* there is no justification for additional survey data.
- 3.14 The Council has suggested in its pre-application response that a right turning facility should be provided for the development access. The most up to date advice on this matter is contained within paragraphs 9.4.7 and 9.4.8 of *Manual for Streets 2*. The general approach is not to provide right turning facilities for side road junctions and accesses that are lightly trafficked. The provision of turning lanes can lead to higher traffic speeds. There is no **need** to provide a right turning lane for capacity reasons and the forward visibility along Rickmansworth Road (especially for vehicles travelling west) is very good such that vehicles waiting to turn right into the completed development will not present a hazard.



Parking Provision and site layout

- 3.15 The development of 29 flats will provide 35 parking spaces for residents plus 2 spaces for visitors (total of 37 spaces). Four of the spaces will be suitable for disabled drivers. This is an overall provision of 1.2 spaces per flat (excluding spaces for visitors).
- 3.16 The current parking standards appear within Appendix C to the “*Local Plan Part 2 – Development Management Policies October 2015*”. The standards require 1 to 1.5 spaces per 1 or 2 bedroom flat. Additional spaces must be provided for visitors. As such, the proposed parking provision complies with these standards. The layout of the parking areas ensures that all spaces will be a minimum of 2.4m x 4.8m with at least 6.0m reversing aisles. The spaces for disabled drivers comply with the advice within “*Inclusive Mobility*” and include additional width to facilitate easy entry and exit from vehicles.
- 3.17 There is a requirement within the above standards to provide 1 cycle parking space per flat. The proposed ground floor layout shows how 2 cycle stores will be provided with a capacity for 46 bicycles.
- 3.18 As requested by the Council in its pre-application response the site layout will accommodate the turning manoeuvres of a 10.5m refuse vehicle. An area will be provided to the front of the building to enable this vehicle to turn. The area has been assessed using the Autotrack program and the swept path generated is shown on the site layout drawing. This swept path includes the 300mm safety margin as requested by officers. The refuse vehicle will be able to enter the site and manoeuvre close to the communal bin store which is located within the building with access gained via a pedestrian door a short distance from the front of the building. In this way, the carry distance from the bin store to the waiting refuse vehicle is minimised in line with the requirements of Part H6 of the Building Regulations.



4.0 CONCLUSIONS

- 4.1 The site is within a residential area with good access to local facilities. There is an existing access to Rickmansworth Road that serves 3 dwellings.
- 4.2 The proposed development has been the subject of pre-application discussions and these have informed the highways aspects of the scheme. The proposed access will accommodate the car and delivery vehicle traffic movements that will be generated. Visibility for emerging drivers complies with the relevant standards for the recorded vehicle speeds on Rickmansworth Road.
- 4.3 The site layout will enable refuse vehicles to enter the site, manoeuvre and leave in forward gear. This is a safer arrangement than the existing which relies on all servicing to take place from the Rickmansworth Road carriageway.
- 4.4 The development will include car and cycle parking in accordance with the adopted parking standards. This includes spaces for disabled drivers and visitors.
- 4.5 In summary, the proposed development complies with the Council's standards and best practice highway design standards and will not result in an adverse impact to the safety of highway users.

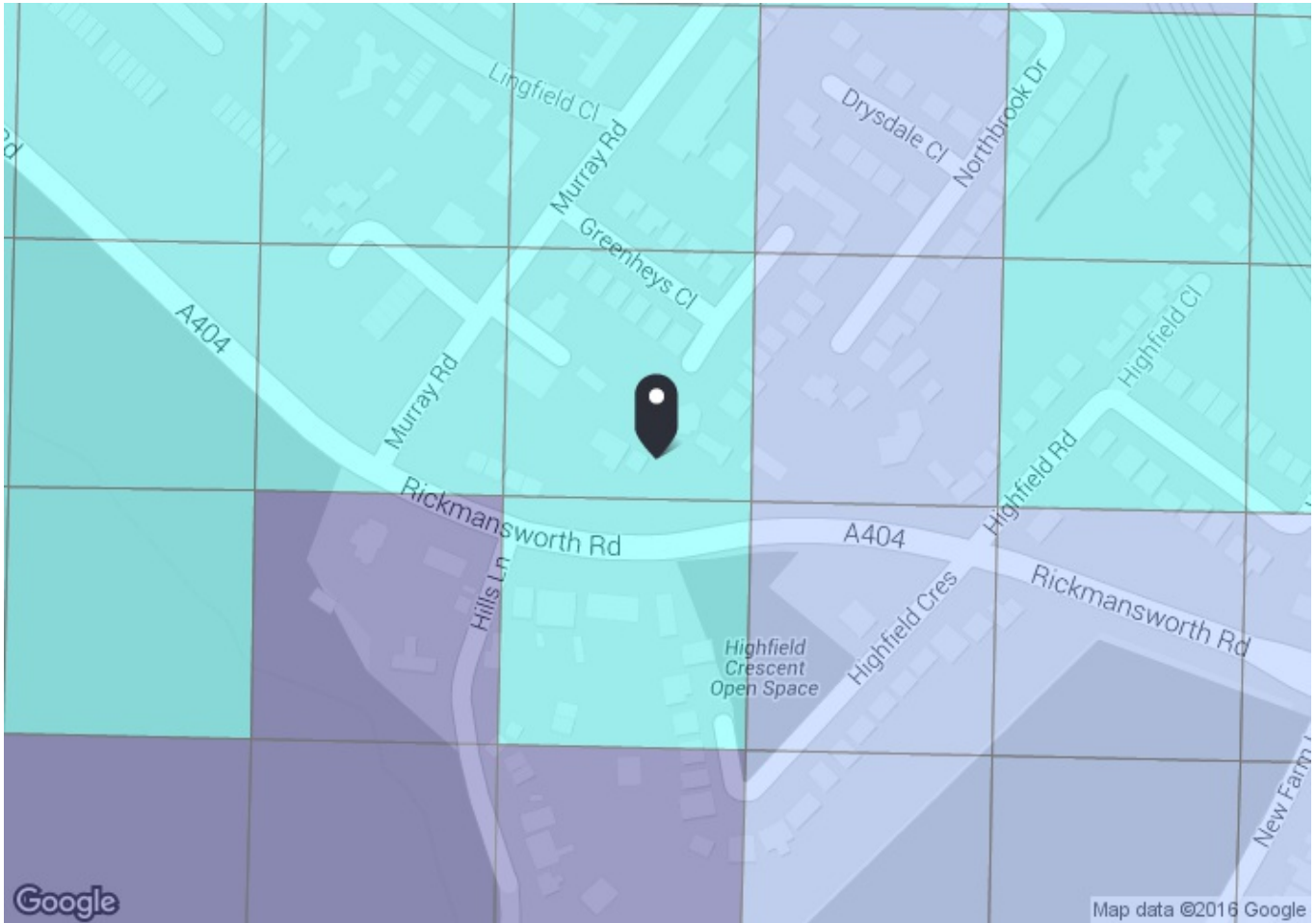


36 – 40 RICKMANSWORTH ROAD, NORTHWOOD

TRANSPORT STATEMENT

FEBRUARY 2016

APPENDIX 1



PTAL output for 2011 (Base year)
2

40 Rickmansworth Rd, Northwood, Greater London HA6 2QG, UK

Easting: 509159, Northing: 190911

Grid Cell: 136304

Report generated: 10/02/2016

Calculation Parameters

Day of Week	M-F
Time Period	AM Peak
Walk Speed	4.8 kph
Bus Node Max. Walk Access Time (mins)	8
Bus Reliability Factor	2.0
LU Station Max. Walk Access Time (mins)	12
LU Reliability Factor	0.75
National Rail Station Max. Walk Access Time (mins)	12
National Rail Reliability Factor	0.75

Map key - PTAL

0 (Worst)	1a
1b	2
3	4
5	6a
6b (Best)	

Map layers

- PTAL (cell size: 100m)

Calculation data

Mode	Stop	Route	Distance (metres)	Frequency(vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI
Bus	MAXWELL ROAD LEAF CLOSE	331	527.81	3	6.6	12	18.6	1.61	1	1.61
LUL	Northwood	'Watford-BStreetSF'	803.94	2.33	10.05	13.63	23.67	1.27	0.5	0.63
LUL	Northwood	'Watford-AldSfast'	803.94	3.67	10.05	8.92	18.97	1.58	1	1.58
LUL	Northwood	'Aldg-WatfordSlow'	803.94	3.67	10.05	8.92	18.97	1.58	0.5	0.79
LUL	Northwood	'BakStr-WatfordSlow'	803.94	1.67	10.05	18.71	28.76	1.04	0.5	0.52
LUL	Northwood	'Wembley-WatfordSL'	803.94	0.67	10.05	45.53	55.58	0.54	0.5	0.27
Total Grid Cell AI:										5.4



36 – 40 RICKMANSWORTH ROAD, NORTHWOOD

TRANSPORT STATEMENT

FEBRUARY 2016

APPENDIX 2



Speed Survey at

36 - 40 Rickmansworth Road, Northwood

Tuesday 11th & Wednesday 12th March 2014

for:

Highway Planning

Countsequential Ltd

3 Lewes Road - Bromley
Kent - BR1 2RN

T 020 8402 1742

M 07973 280966

E info@countsequential.co.uk

REF: HP/626

36 - 40 Rickmansworth Road, Northwood - Point of Survey



36 - 40 Rickmansworth Road, Northwood - photos



SPEED SURVEY RESULTS

**36 - 40 RICKMANSWORTH ROAD,
NORTHWOOD**

TUESDAY 11th MARCH 2014

Countsequential Ltd

3 Lewes Road - Bromley
Kent - BR1 2RN

T 020 8402 1742
M 07973 280966

E info@countsequential.co.uk

DATE : 11th MARCH 2014

DAY: TUESDAY

LOCATION : 36-40 RICKMANSWORTH ROAD, NORTHWOOD

WEATHER : DRY

CARRIAGEWAY : SINGLE

ROADWORKS : NONE

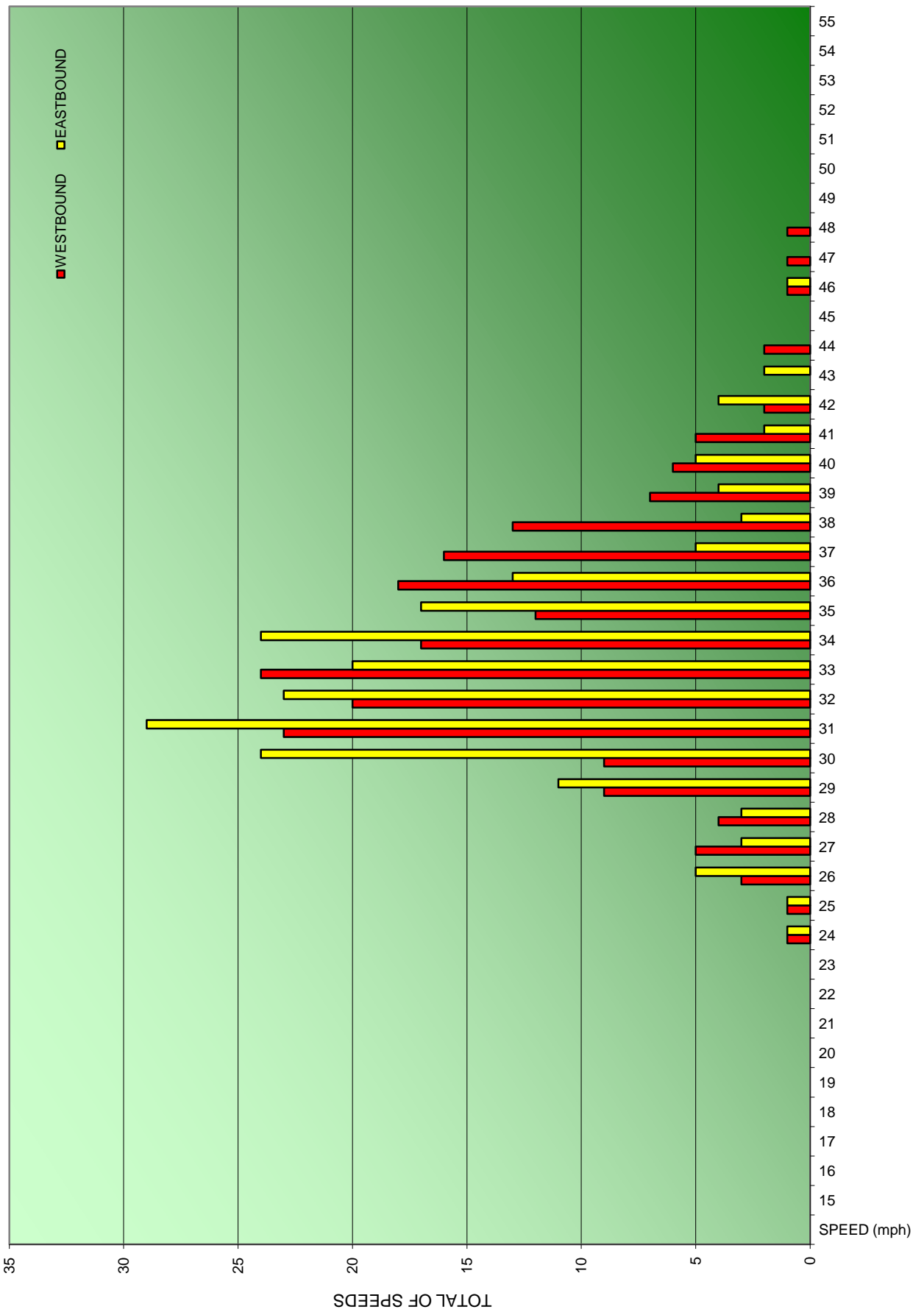
36-40 RICKMANSWORTH ROAD, NORTHWOOD			
TIME : 10:20 - 11:45			
SPEED (mph)	WESTBOUND	EASTBOUND	SPEED (kph)
	NUMBER OF VEHICLES	NUMBER OF VEHICLES	
15			24
16			26
17			27
18			29
19			31
20			32
21			34
22			35
23			37
24	1	1	39
25	1	1	40
26	3	5	42
27	5	3	43
28	4	3	45
29	9	11	47
30	9	24	48
31	23	29	50
32	20	23	51
33	24	20	53
34	17	24	55
35	12	17	56
36	18	13	58
37	16	5	60
38	13	3	61
39	7	4	63
40	6	5	64
41	5	2	66
42	2	4	68
43		2	69
44	2		71
45			72
46	1	1	74
47	1		76
48	1		77
49			79
50			80
51			82
52			84
53			85
54			87
55			89
TOTAL	200	200	
85th%ile - dry	38	36	mph
	61	58	kph
85th%ile - wet	57	54	kph
SSD (DMRB*)	85	78	m
SSD (MfS**)	55	50	m

LOWEST SPEED	24 mph	24 mph
MEAN SPEED	34 mph	33 mph
MEDIAN SPEED	34 mph	32 mph
HIGHEST SPEED	48 mph	46 mph

* SSD based on Design Manual for Roads and Bridges

** SSD based on Manual for Streets

36-40 RICKMANSWORTH ROAD - Tuesday 11th March 2014



SPEED SURVEY RESULTS

**36 - 40 RICKMANSWORTH ROAD,
NORTHWOOD**

WEDNESDAY 12th MARCH 2014

Countsequential Ltd

3 Lewes Road - Bromley
Kent - BR1 2RN

T 020 8402 1742
M 07973 280966

E info@countsequential.co.uk

DATE : 12th MARCH 2014

DAY: WEDNESDAY

LOCATION : 36-40 RICKMANSWORTH ROAD, NORTHWOOD

WEATHER : DRY

CARRIAGEWAY : SINGLE

ROADWORKS : NONE

36-40 RICKMANSWORTH ROAD, NORTHWOOD			
TIME : 14:00 - 15:25			
SPEED (mph)	WESTBOUND	EASTBOUND	SPEED (kph)
	NUMBER OF VEHICLES	NUMBER OF VEHICLES	
15			24
16			26
17			27
18			29
19			31
20			32
21			34
22			35
23			37
24		1	39
25			40
26	2	6	42
27	5	5	43
28	4	13	45
29	7	9	47
30	4	21	48
31	15	27	50
32	17	24	51
33	21	28	53
34	19	18	55
35	20	10	56
36	15	16	58
37	23	5	60
38	16	8	61
39	11	2	63
40	3	1	64
41	7	2	66
42	4	2	68
43	4		69
44	2	1	71
45			72
46			74
47			76
48			77
49		1	79
50	1		80
51			82
52			84
53			85
54			87
55			89
TOTAL	200	200	
85th%ile - dry	39	36	mph
	63	58	kph
85th%ile - wet	59	54	kph
SSD (DMRB*)	89	78	m
SSD (MfS**)	57	50	m

LOWEST SPEED	26 mph	24 mph
MEAN SPEED	35 mph	32 mph
MEDIAN SPEED	35 mph	27 mph
HIGHEST SPEED	50 mph	49 mph

* SSD based on Design Manual for Roads and Bridges

** SSD based on Manual for Streets

36-40 RICKMANSWORTH ROAD - Wednesday 12th March 2014

