2010 Air Quality Detailed Assessment of M1 AQMA

for

North West Leicestershire District Council

In fulfilment of

Part IV of the Environment Act 1995

Local Air Quality Management

Date: February 2011

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Executive Summary

The 2009 Update and screening assessment report found that the M1 AQMA order required to be amended in to reflect an exceedance of the 1-hour mean objective for NO_2.

During the drafting of the order it was found that a large proportion of the area declared either contained no relevant receptors or was unlikely to be exceeding the annual mean air quality objective.

As a result a detailed assessment was undertaken to provide an evidence base for the amendment of the area declared as an AQMA by North West District Council (M1 Air Quality Management Area) Order 2001 [13] as amended by the M1 Air Quality Management Area (nitrogen dioxide) Revocation Order 2004 [14].

The assessment was carried out using traffic modelling and diffusion tube monitoring data.

The detailed assessment found that, bar the area of the AQMA in the vicinity of Mole Hill Farm, the majority of the AQMA can be revoked.

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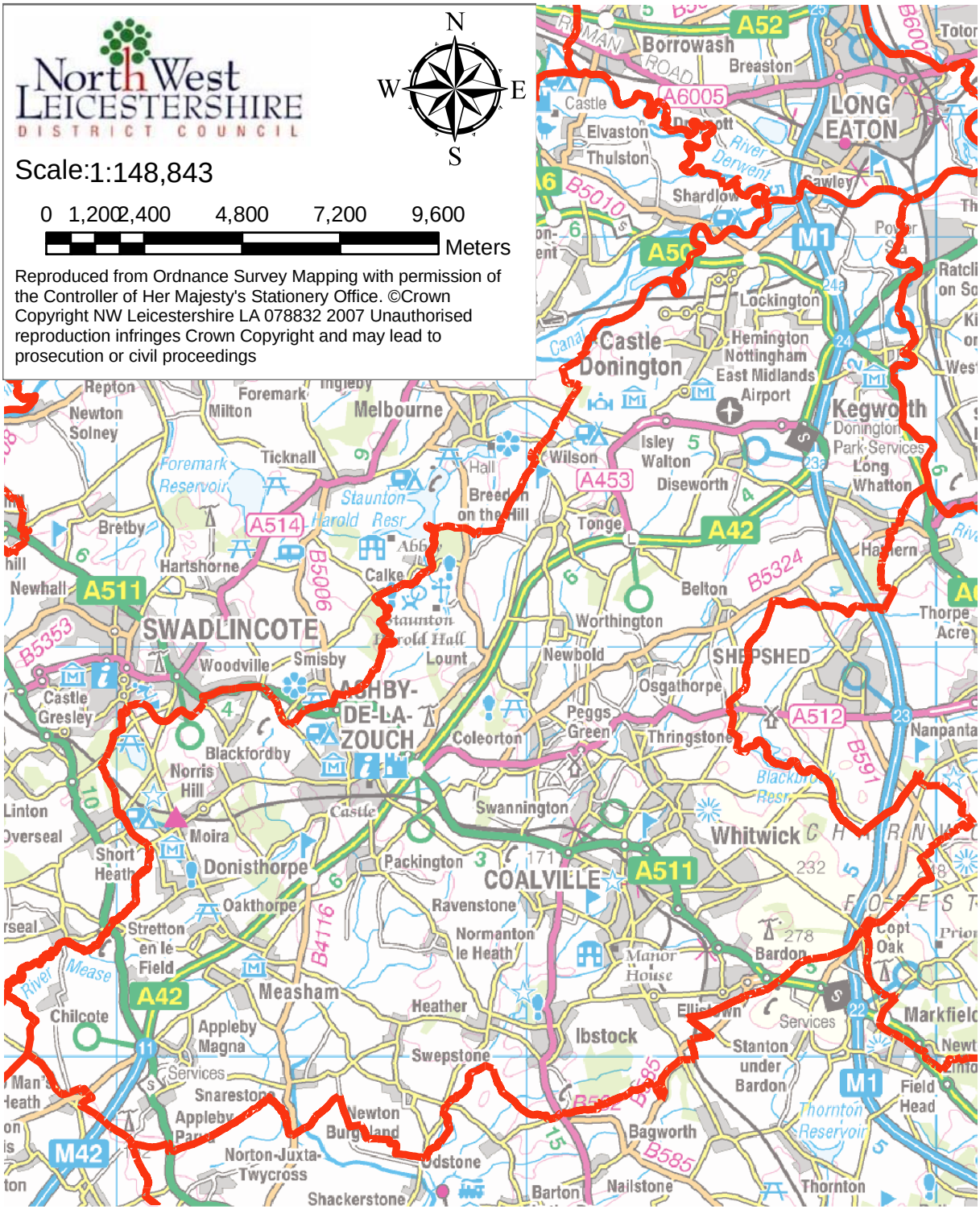
1.1 Description of Local Authority Area

Figure 1 Map of North West Leicestershire District



North West Leicestershire lies in the East Midlands Region and is both the name and geographical location. The district is situated in the heart of the National Forest and lies between Leicester, Burton-on-Trent, Derby and Nottingham, covering 105 square miles. The district is mostly rural with a large extent of industry historically from coal mining, but more recently with Nottingham East Midlands Airport and large quarries. The population of 88,800 live mainly in the principle towns of Coalville and Ashby-de-la-Zouch; and the large villages of Castle Donington, Kegworth and Ibstock. Three established main roads run through the district, the M42/A42 between Birmingham and Nottingham, the M1 and the A50/A511 from Leicester to Burton-on-Trent.

1.2 Purpose of Detailed Assessment Report

This report is being undertaken to confirm if the M1 AQMA can be reduced in area from that defined in the North West District Council (M1 Air Quality Management Area) Order 2001 [13] as amended by the M1 Air Quality Management Area (nitrogen dioxide) Revocation Order 2004 [14].

1.3 Air Quality Objectives

The air quality objectives applicable to Local Air Quality Management (LAQM) in England are set out in the Air Quality (England) Regulations 2000 (SI 2000/0928) [11] and the Air Quality (England) (Amendment) Regulations 2002 (SI 2002/3043) [12]. They are shown in Table 1. This table shows the objectives in units of microgrammes per cubic metre μgm^{-3} (for carbon monoxide the units used are milligrammes per cubic metre, mgm^{-3}). Table 1 includes the number of permitted exceedences in any given year (where applicable).

Table 1. Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.

Pollutant	Concentration	Measured as	Date to be achieved by
Benzene	16.25 μgm^{-3}	Running annual mean	31.12.2003
	5.00 μgm^{-3}	Running annual mean	31.12.2010
1,3-Butadiene	2.25 μgm^{-3}	Running annual mean	31.12.2003
Carbon monoxide	10.0 μgm^{-3}	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu gm^{-3}3$	Annual mean	31.12.2004
	0.25 μgm^{-3}	Annual mean	31.12.2008
Nitrogen dioxide	200 μgm^{-3} not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 μgm^{-3}	Annual mean	31.12.2005
Particles PM_{10} (gravimetric)	50 μgm^{-3}, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 μgm^{-3}	Annual mean	31.12.2004
Particles $PM_{2.5}$ (gravimetric) (not currently included in regulations)	25 μgm^{-3} (target)	Annual mean	2020
Sulphur dioxide	350 μgm^{-3}, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 μgm^{-3}, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 μgm^{-3}, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

1.4 Summary of Previous Review and Assessments

Six AQMAs were designated in North West Leicestershire during the first round of review and assessment for the level of nitrogen dioxide concentrations. After Further Assessments it was determined that only two of these locations required AQMA designations and the remaining four were revoked. The Update and Screening Assessment undertaken in 2006 [1] concluded that these two sites should remain AQMAs and identified three additional locations where Detailed Assessments should be undertaken to determine whether new AQMAs were required for nitrogen dioxide concentrations. The two AQMAs designated during the first round are presented in Figure 2 and Figure 3.

The Detailed Assessment [2] undertaken in September 2007 of the three locations identified as possible areas for AQMAs in the USA 2006 [1], the three locations were High Street/Bondgate in Castle Donington, Broom Leys Road, Coalville and Bardon Road, Coalville, found that exceedences of the nitrogen dioxide objective were occurring in Castle Donington at properties located next to the carriageway along High Street and Bondgate due to traffic emissions. Monitoring at both locations in Coalville identified nitrogen dioxide concentrations that exceeded the mean annual objective during 2005, 2006 and 2007. The Detailed Assessment concludes that AQMAs should be designated at all three locations. As a result of these reports, two additional AQMAs were designated; the first in Castle Donington, presented in Figure 4, and the second covering Broom Leys Road and Bardon Road in Coalville, presented in Figure 5.

The Air Quality Progress Report conducted in April 2008 [3] recommended that a detailed assessment of the village of Copt Oak and the area surrounding East midlands airport be undertaken to determine if AQMA's should be determined at these locations.

The Detailed Assessment of Copt Oak published in January 2009 [5] found that an AQMA should be declared and that the area should cross the district boundary to include an area within the borough of Hinckley and Bosworth as shown in Figure 6.

The Detailed assessment of East midlands airport published in March 2009 [4] concluded that the Air quality objective for NO_2 would not be exceeded within 1000m of the airport as a result of air traffic emissions.

The further assessment of Bardon Road, Coalville published in February 2009 [6] supported the original declaration of the AQMA comprising the four residential properties at Broom Leys Junction and the one hundred and seventy two residential properties on Bardon Road.

The further assessment of High street castle Donington published in April 2009 [7] supported the original declaration of the AQMA comprising ninety one residential properties on High Street and Bondgate, Castle Donington.

The update and screening assessment published October 2009 [8] found that a detailed assessment for SO_2 is required in some areas of the district in relation to the burning of solid fuel, a detailed assessment regarding this is currently being undertaken. The report also recommended that the M1 AQMA is expanded to include an exceedance of the 1-hour mean objective for NO_2 as the yearly mean has exceeded 60 μgm^{-3}.

The Progress Report published in April 2010 [9] found no significant change in the district.

A Further Assessment for the AQMA declared at Copt Oak is currently being undertaken.

Figure 2 Kegworth AQMA (highlighted in blue).

Figure 3 M1 AQMA (Outlined in Dark Blue)

0 500 1,000 2,000 m

1:29,179

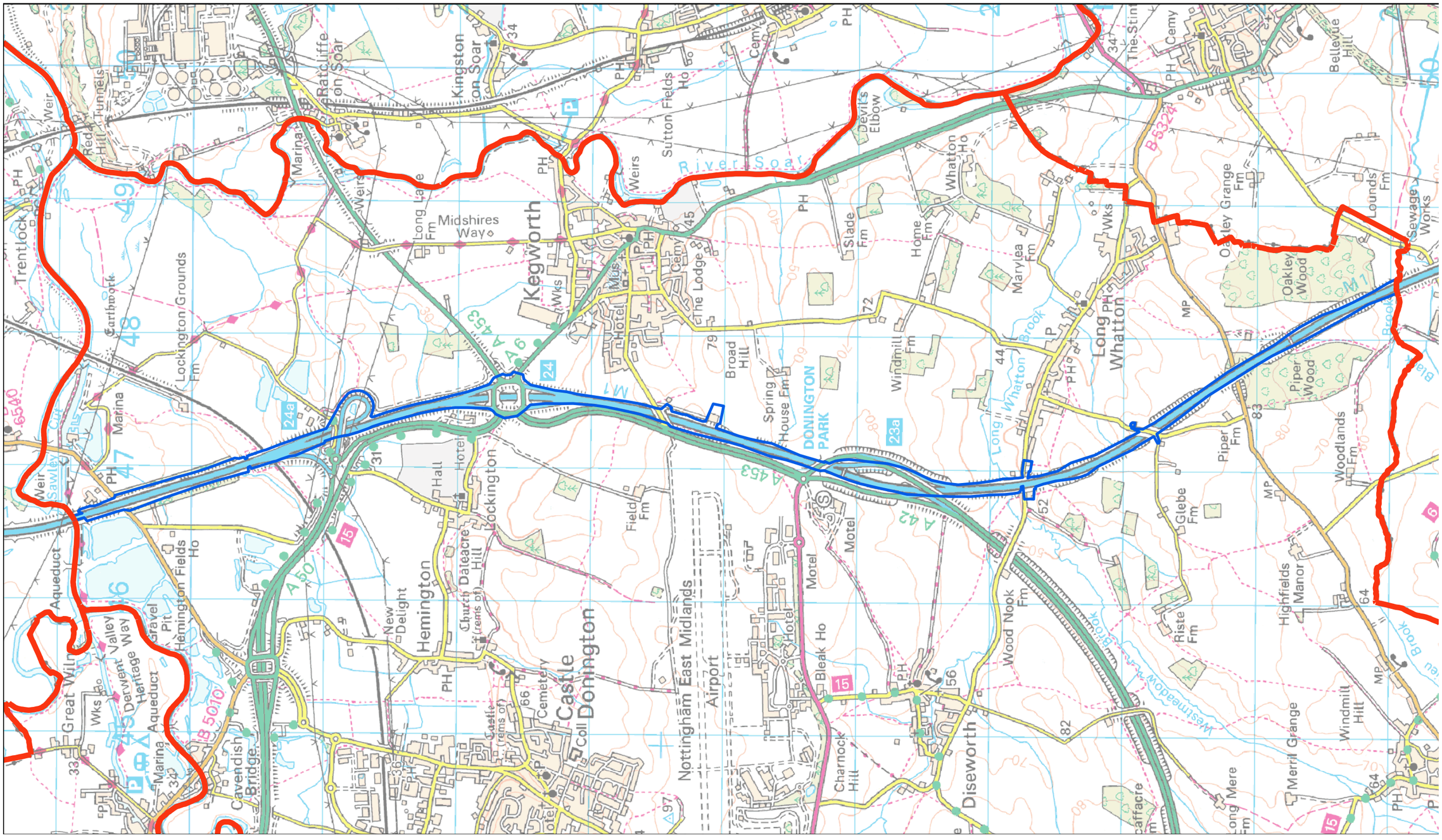
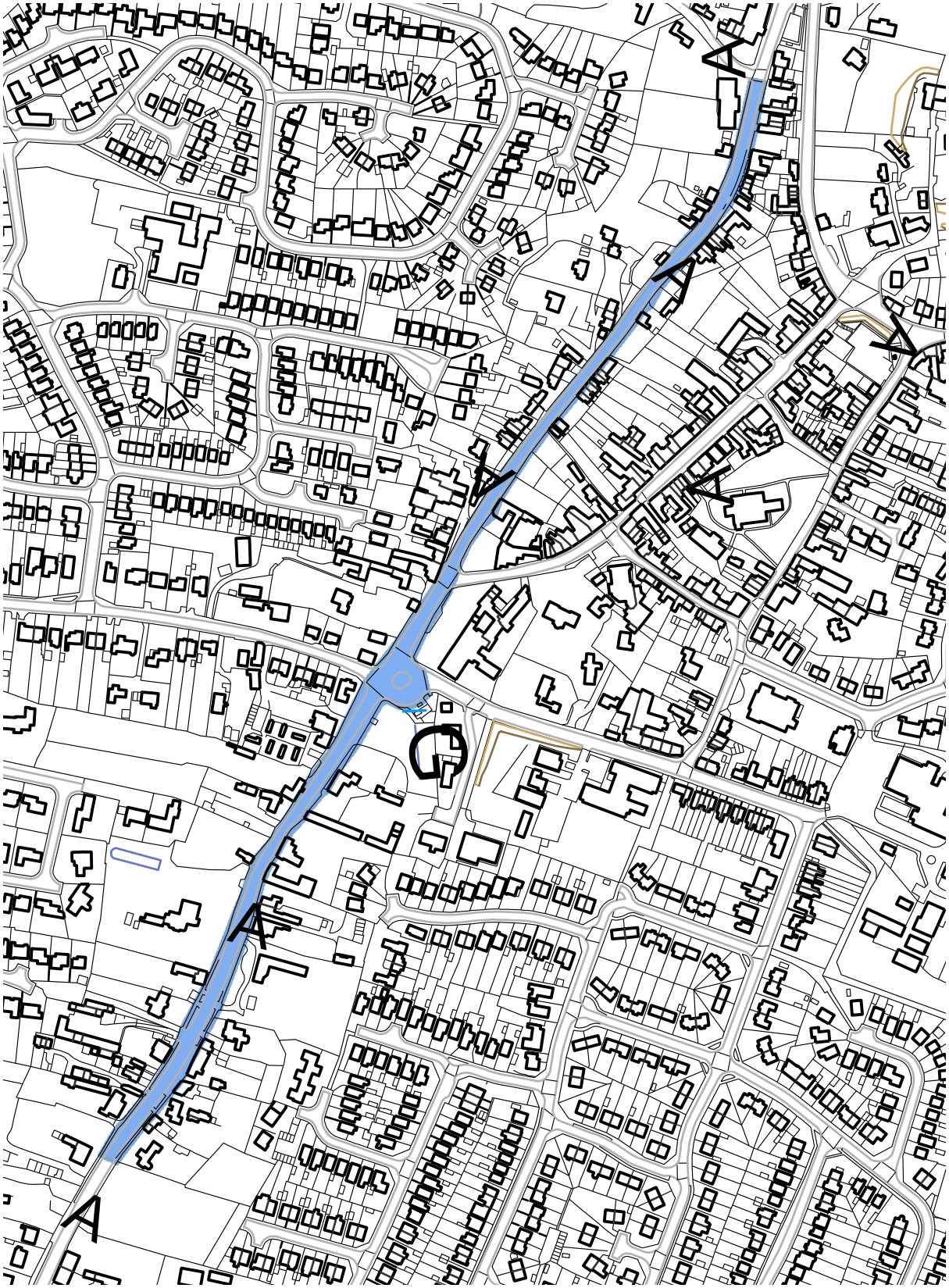


Figure 4 Castle Donington Air Quality Management Area

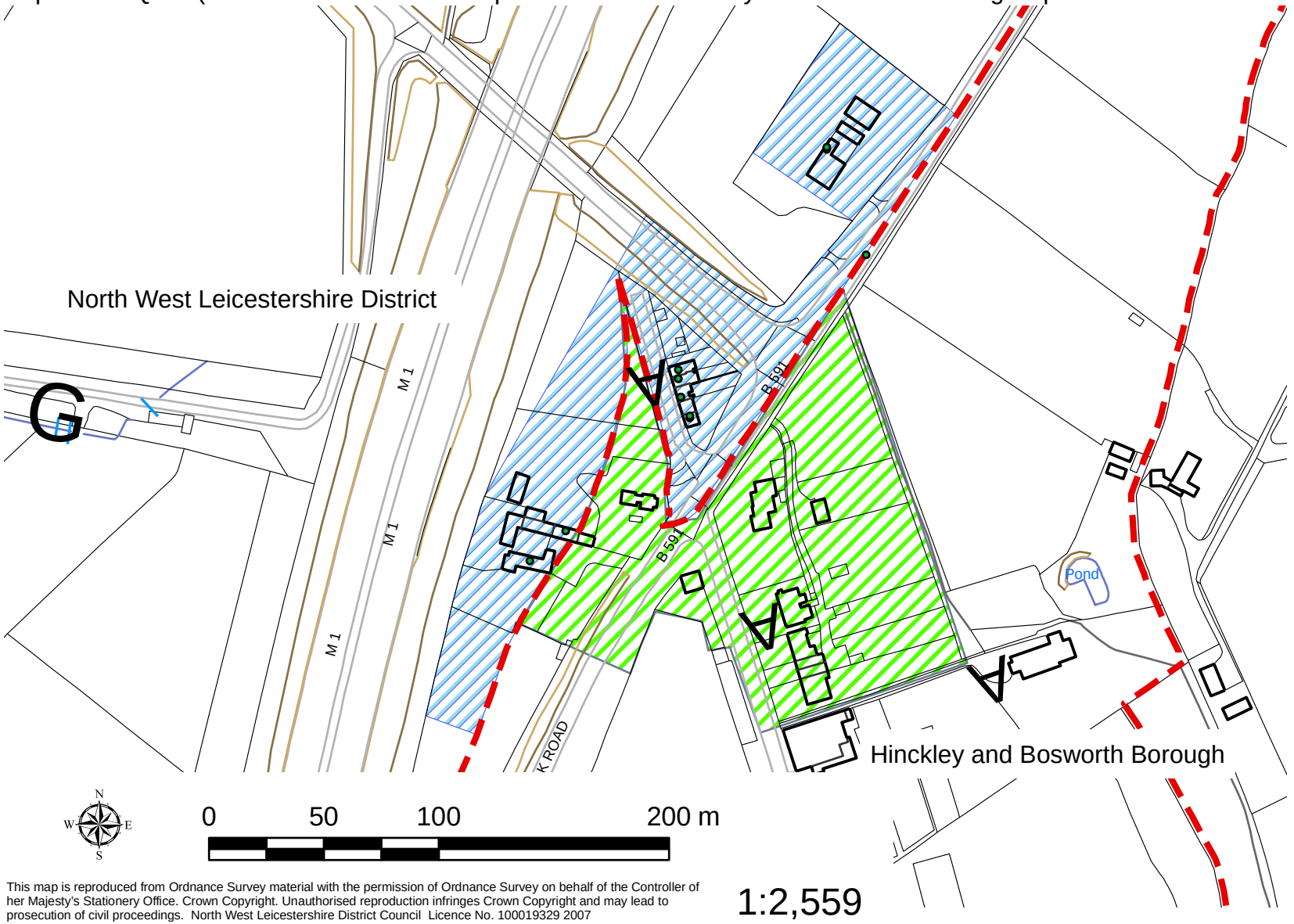


0 25 50 100 150 200

1:3,556 Meters

Figure 5 Coalville Air Quality Management Area (Bardon Road and Broom Leys Junction)

Figure 6 Copt Oak AQMA (North west Leicestershire portion in Blue Hinckley and Bosworth Borough's potential area in Green)



2 Current status of the M1 AQMA

The M1 was declared as an AQMA in 2001, by the North West District Council (M1 Air Quality Management Area) Order 2001 [13], for a potential exceedance of the annual mean objective for NO_2. The area declared included the entire length of the M1 within North West Leicestershire District as shown in Figure 7. The portion of the AQMA south of Shepshed was revoked in 2004, by the M1 Air Quality Management Area (nitrogen dioxide) Revocation Order 2004 [14]. This resulted in the currently declared area shown in Figure 3.

A large proportion of the area declared has no relevant receptors. As such North West Leicestershire has divided the currently declared AQMA into sections. These sections are areas where there is no relevant receptor and sections that require assessment to determine whether they should be retained or revoked. The sections are shown in Figure 8, there are 2 sections of the M1 where there are relevant receptors. The rest of the M1 AQMA is surrounded by agricultural land. For ease of reference the sections of the M1 which are subject to assessment have been labelled as ‘Mole Hill Farm House’ and ‘M1 Long Whatton’

3 Monitoring Undertaken

Currently North West Leicestershire only undertakes diffusion tube monitoring within the M1 AQMA. There are 4 tubes located within the ‘Mole Hill Farm House’ section of the AQMA and 1 Tube located within the ‘M1 Long Whatton’ section of the AQMA. RPS group on behalf of the Highways Agency also have a tube located within the ‘M1 Long Whatton’ section of the AQMA. Details of QA:QC procedures are presented in Appendix A

Figure 7 Area of the M1 AQMA declared in 2001 (outlined in dark blue)

0 750 1,500 3,000 m

1:43,439

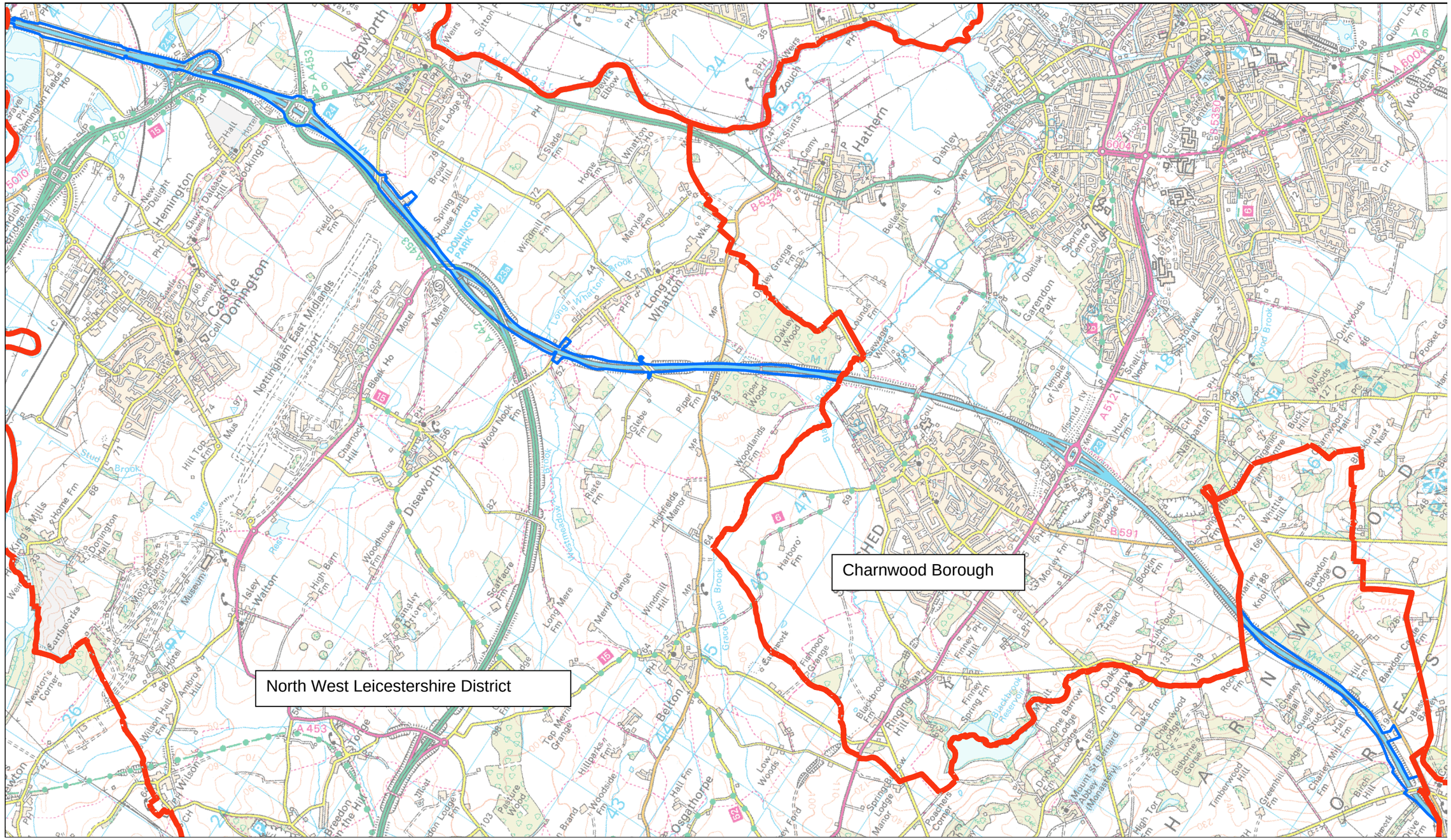


Figure 8 Current AQMA sectioned up for assessment

0 475 950 1,900 m

1:28,477

Legend

- No Relevant Receptor
- Futher Assessment Needed

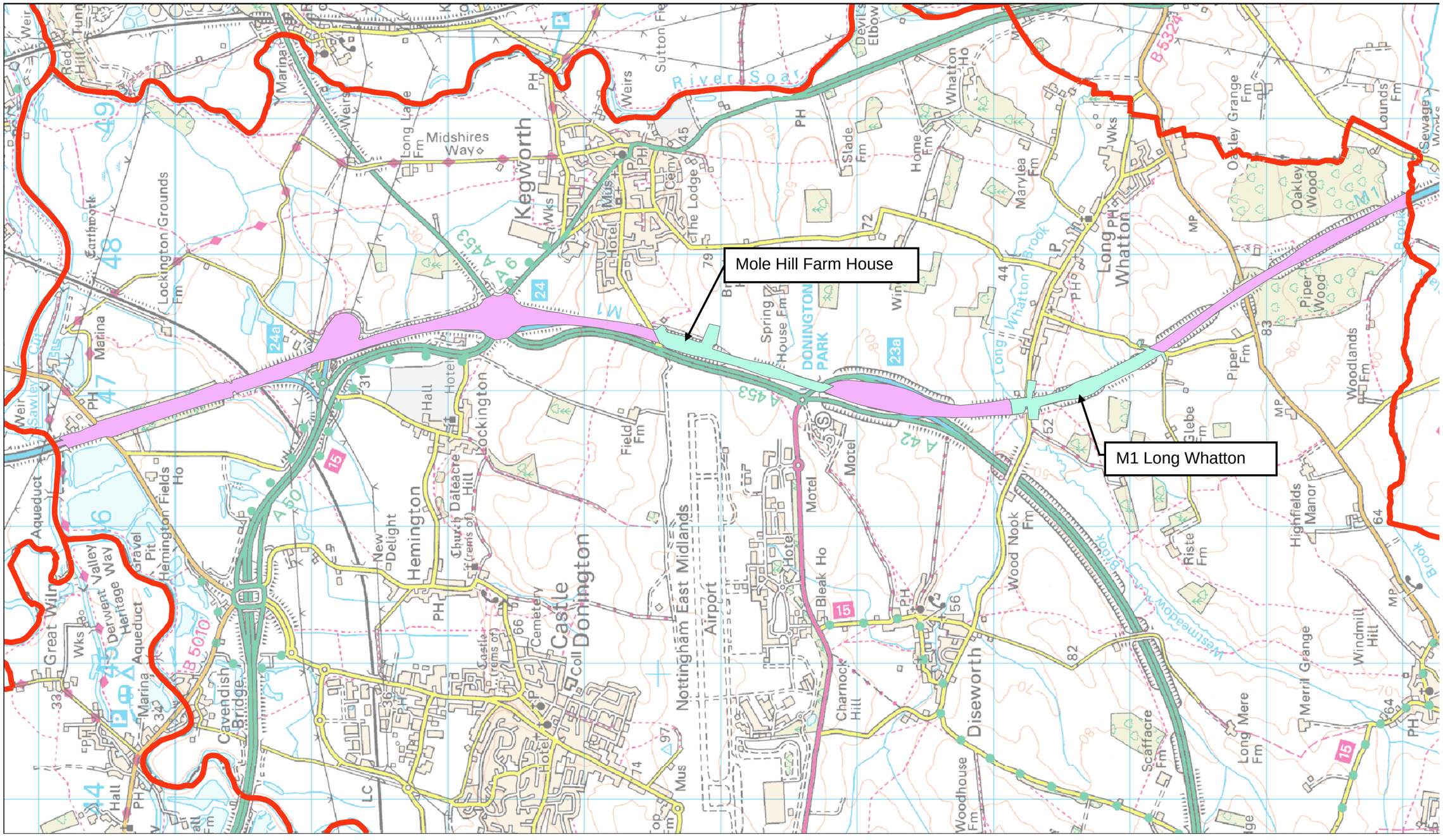


Figure 9 NO_2 Tube locations within the 'Mole Hill Farm House' Section of the M1 AQMA

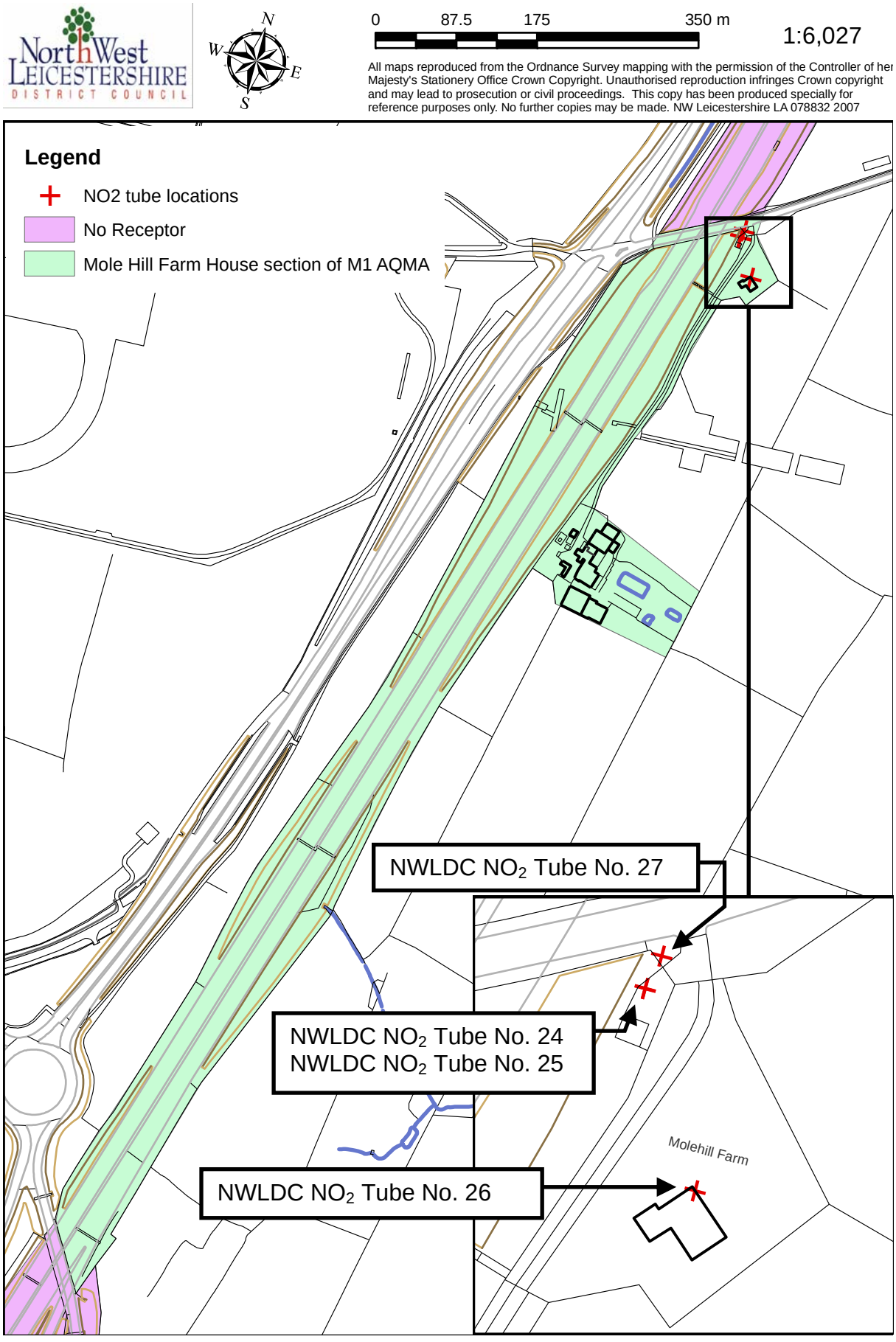


Figure 10 NO_2 Tube locations within the 'M1 Long Whatton' section of the M1 AQMA

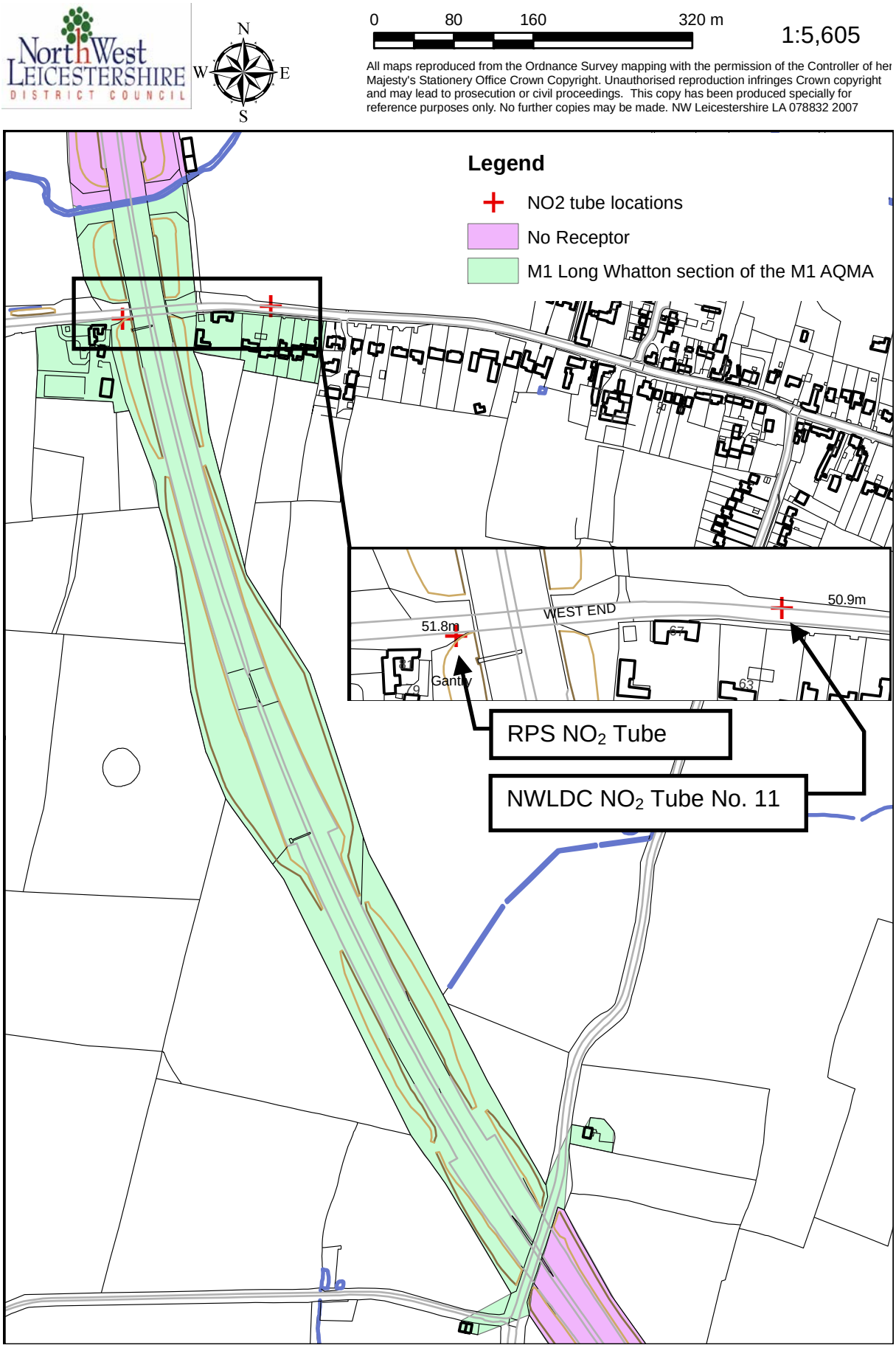


Table 2. Details of NO_2 monitoring locations

Site Name		Location type	OS Grid Ref		Local tube No.		Pollutants Monitored	In AQMA ?	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Worst-case Location ?
LAQM Archive Name	Local Name		X	Y	Old	New					
North West Leicestershire Monitoring Tubes											
86692 - NWLeicestershire 11N	Long Whatton W M1	other	447024	323757	19	11	NO_2	Y	N	N/A	N
86705 - NWLeicestershire 24N	M1 Mole AQM	Other	447435	326460	10	24	NO_2	Y	N	N/A	N
86706 - NWLeicestershire 25N	M1 Mole 2 AQM	Other	447435	326460	28	25	NO_2	Y	N	N/A	N
86707 - NWLeicestershire 26N	Molehill House	Roadside	447457	326420	25	26	NO_2	Y	0	50	Y
86708 - NWLeicestershire 27N	Keg Mole	other	447436	326468	18	27	NO_2	Y	N	N/A	N
Highways Agency Tube											
	Long Whatton M1 (RPS)	other	446857	323742	N/A	N/A	NO_2	Y	N	N/A	N

Table 3. Annual mean results from NO_2 diffusion tubes (Bias Adjusted)

Site ID	Location	Within AQMA ?	Data Capture for monitoring period [a] %	Data Capture for full calendar year 2009 [b] %	Bias Adjusted Annual mean concentrations (μgm^{-3})			
					2006 [c,d]	2007 [c, d]	2008 [c,d]	2009 [c]
86692 - NWLeicestershire 11N	LW M1	Y	91.7%	91.7%	28.3	33.9	29.9	30.07
86705 - NWLeicestershire 24N	M1 Mole AQM	Y	91.7%	91.7%	**57.7**	**55.7**	**68.1**	**67.3**
86706 - NWLeicestershire 25N	M1 Mole 2 AQM	Y	91.7%	91.7%	**60.5**	**63.3**	**68.9**	**71.2**
86707 - NWLeicestershire 26N	Molehill House	Y	91.7%	91.7%	39.7	38.9	35.3	**43.8**
86708 - NWLeicestershire 27N	Keg Mole	Y	83.3%	83.3%	**58.7**	**56.5**	**69.67**	**50.7**
	Long Whatton M1 (RPS)	Y		100%		21.2	23.8	27.9

Value exceeds 60 μgm^{-3}

a i.e. data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
b i.e. data capture for the full calendar year (e.g. if monitoring was carried out for six months the maximum data capture for the full calendar year would be 50%.)
c Means should be "annualised" as in Box 3.2 of TG(09), if monitoring was not carried out for the full year.
d Annual mean concentrations for previous years are optional.

4 Comparison of Results and modelling with Air Quality Objectives

4.1 Mole Hill Farm House Section of AQMA

Monitoring results within this section of the AQMA has either been very close to or exceeded the annual mean air quality objective for Nitrogen Dioxide (NO_2).

The level of NO_2 has exceeded 60 μgm^{-3} in 2006, 2007, 2008 and 2009 at some locations. Therefore, the Authority, in line with Paragraph 5.17 of the technical guidance [17], is assuming that the 1-hour mean objective is being exceeded. Permission to amend the AQMA to include and exceedance of the 1-hour mean air quality objective for Nitrogen Dioxide was given at a North West Leicestershire District Council Cabinet meeting on the 21st of September 2010 [29].

4.2 M1 Long Whatton Section of AQMA

Due to the distance of the NWLDC NO_2 tube from the nearest receptor to the M1 (58m) is greater that 10m the use of the distance correction calculation is not recommended. As such it is necessary to undertake a DMRB air quality screening model and correct the value using the measured data.

Traffic data for West End Long Whatton is only available for 2008. There is no significant change in the NO_2 level at the NWLDC Tube in Long Whatton for the years 2006 2007 2008 and 2009 as shown in Table 3. Running the model for 2008 is therefore appropriate. The DMRB model requires the background NO2 level.

North west Leicestershire does not have a monitoring point appropriate to use a a local background. For the purposes of this assessment the use of the Estimated Background Air Pollution Maps for 2008 and Projections for Other Years published by DEFRA [26] will be used (see Table 4).

Table 4. Background data to be used in DMRB model

Local_Auth_Code	x	y	geo_area	EU_zone_agglom_01	NO2_08
184	446500	323500	6	32	23.05219

Taken from Estimated Background Air Pollution Maps for 2008 and Projections for Other Years

The DMRB model will be ran for the 3 locations shown in Figure 11. The 2 locations adjacent to number 67 West End Long Whatton represent the most likely locations to be effected by traffic related NO_2. The input parameters and output of the DMRB model is present in Table 5.

Figure 11 Map of DMRB modelling locations

Table 5. Results and inputs of DMRB air quality assessment

Name	Link 1 (M1)						Link 2 (West End)						Grid Reference		Year	NO_2 Annual mean μgm^{-3}		Correction factor (measured / modelled)	Corrected modelled result for NO_2 (modelled x Correction Factor)
	Distance to Link Centre (m)	AADT	Average Speed (Kmh^{-1})	Road type	%LDV	%HDV	Distance to Link Centre (m)	AADT	Average Speed (Kmh^{-1})	Road type	%LDV	%HDV	X	Y		modelled	measured		
NWLDC Tube location	120	95198	112.65	A	85.46	14.54	3	2745	64.4	C	94.18	5.82	447024	323757	2008	26.71	29.9	1.12	29.90
nearest property (corner nearest West End)	62	95198	112.65	A	85.46	14.54	5	2745	64.4	C	94.18	5.82	446966	323750	2008	31.65			35.42
nearest property (corner nearest M1)	60	95198	112.65	A	85.46	14.54	14	2745	64.4	C	94.18	5.82	446966	323741	2008	31.76			35.54

5 Conclusions and Proposed Actions

The findings of this report show that the area of the M1 AQMA can be reduced.

Modelling of the level of NO_2 in the ‘M1 Long Whatton’ section of the AQMA has shown that annual mean air quality objective for NO2 is not being exceeded in this section of the AQMA and it can be revoked in this area.

The areas of the AQMA that contain no relevant receptors can be revoked.

The ‘Mole Hill Farm House’ section of the AQMA should be retained.

5.1 Proposed Actions

- To revoke the areas of the AQMA in which there are no relevant receptors
- To revoke the area of the AQMA around Long Whatton shown in Figure 10.
- To amend the AQMA to include an exceedance of the 1-hour mean objective for NO_2
- To amend the Area of the AQMA to the area known as ‘Mole Hill Farm House’ in Figure 9

6 References

6.1 Previous Review and Assessment Reports

[1] North West Leicestershire District Council, 2006, *Air Quality Updating and Screening Assessment 2006*. Coalville: North West Leicestershire District Council,.

[2] North West Leicestershire District Council, 2007, *Air Quality Detailed Assessment for Coalville and Castle Donington*. Coalville: North West Leicestershire District Council.

[3] Conestoga-Rovers & Associates (Europe) Ltd, 2008, *Air Quality Progress Report 2008 Report No. 933628*. Coalville: North West Leicestershire District Council.

[4] Conestoga-Rovers & Associates (Europe) Ltd, 2009a, *Air Quality Detailed Assessment For East Midlands Airport Report No.933690-1*. Coalville: North West Leicestershire District Council.

[5] Conestoga-Rovers & Associates (Europe) Ltd, 2009b, *Air Quality Detailed Assessment For Copt Oak Report No. 933690-2-RPT2*. Coalville: North West Leicestershire District Council.

[6] Conestoga-Rovers & Associates (Europe) Ltd, 2009c, *Air Quality Further Assessment Of Bardon Road AQMA, Coalville Report No. 933690-2-RPT3*. Coalville: North West Leicestershire District Council.

[7] *Conestoga-Rovers & Associates (Europe) Ltd, 2009d, Air Quality Further Assessment of Castle Donington AQMA Report No.933690-4*. Coalville: North West Leicestershire District Council.

[8] North West Leicestershire District Council, 2009, *Air Quality Update and Screening Assessment 2009*. Coalville: North West Leicestershire District Council.

[9] North West Leicestershire District Council, 2010, *Air Quality Progress Report 2010*, Coalville: North West Leicestershire District Council.

6.2 Acts, Statutory Instruments and Orders

[10] Environment Act 1996 (c. 25), London: Her Majesty's Stationary Office Available at: http://www.legislation.gov.uk/ukpga/1995/25/contents [Accessed 25/10/2010]

[11] *Air Quality (England) Regulations 2000* SI 2000/0928, London: HMSO Available at: http://www.legislation.gov.uk/uksi/2000/928/contents/made [Accessed 25/10/2010]

[12] *Air Quality (England) (Amendment) Regulations 2002* SI 2002/3043, London: HMSO. Available at: http://www.legislation.gov.uk/uksi/2002/3043/contents/made [Accessed 25/10/2010]

[13] *North West Leicestershire District Council (M1 Air Quality Management Area) Order 2001*, 2001, Coalville: North West Leicestershire District Council. Available at http://www.nwleics.gov.uk/pages/m1_mole_hill_farm_kegworth [Accessed 07/02/2011]

[14] *M1 Air Quality Management Area (nitrogen dioxide) Revocation Order 2004*, 2004, Coalville: North West Leicestershire District Council. Available at http://www.nwleics.gov.uk/pages/m1_mole_hill_farm_kegworth [Accessed 07/02/2011]

6.3 British Standards

[15] British Standards Institution, 2007. *BS EN 15259:2007 Air quality. Measurement of stationary source emissions. Requirements for Progress Report 32 measurement sections and sites and for the measurement objective, plan and report*. Milton Keynes: BSI

[16] British Standards Institution 2007. *BS ISO 4226:2007 - Air quality. General aspects. Units of measurement*. Milton Keynes: BSI

6.4 Technical guidance

[17] Department for Environment Food and Rural Affairs, 2009, *Local Air Quality Management Technical Guidance LAQM.TG(09)*. Department for Food and Rural Affairs

[18] Department for Environment Food and Rural Affairs, 2009. *Local Air Quality Management Policy Guidance LAQM.PG(09).* London: Department for Environment Food and Rural Affairs

[19] Department for Environment Food and Rural Affairs, 2003. *Local Air Quality Management Technical Guidance LAQM.TG(03)*. London: Department for Environment Food and Rural Affairs

6.5 Other Documents

[20] AEA, 2007a, National Atmospheric Emissions Inventory. www.naei.org.uk Department for Environment Food and Rural Affairs

[21] AEA, 2007b, Air Quality Archive via the internet www.airquality.co.uk Department for Environment Food and Rural Affairs

[22] AEA, 2010, Quality assurance/quality control (QA/QC) framework. [Online] London: Department for Environment, Food and Rural Affairs. Available at: http://laqm1.defra.gov.uk/review/tools/no2/qa-qc.php [Accessed 27/10/2010]

[23] Air Quality Consultants Limited, 2010, *Diffusion Tube Bias Correction Factors*. [online] London: Department for Environment Food and Rural Affairs. Available at: http://laqm1.defra.gov.uk/documents/tools/diffusiontube300910.xls [Accessed 27/10/2010]

[24] Department for Environment Food and Rural Affairs, 2007, *The Air Quality Strategy for England, Scotland, Wales and Northern Ireland. CM 7169 NIA 61/06-07*, London: Her Majesty's Stationary Office. Available at http://laqm1.defra.gov.uk/review/tools/background-maps-info.php?year=2008 [Accessed 07/02/2011]

[25] Department for Transport, 2008. *Annual Average Daily Traffic Flows.* London: Department for Transport http://www.dft.gov.uk/matrix

[26] Department for Environment, Food and Rural Affairs. 2009 . *Estimated Background Air Pollution Maps for 2008 and Projections for Other Years*. [online] London: Department for Environment, Food and Rural.

[27] Highways Agency, 1992 (updated June 2010). *Design Manual for Roads and Bridges Volume 11, Section 3 Environmental Assessment Progress Report 34 Techniques*. Birmingham: Highways Agency. Available at: http://www.standardsforhighways.co.uk/dmrb/index.htm [accessed 25/10/2010].

[28] Laxen & Marner, 2003, *Analysis of the Relationship between 1-Hour and Annual Mean Nitrogen Dioxide at UK Roadside and Kerbside Monitoring Sites*.

[29] North West Leicestershire District Council Cabinet Members, 2010, *Minutes of Cabinet meeting 21/09/2010*, Coalville: North West Leicestershire District Council. Available at: http://minutes.nwleics.gov.uk:81/aksnwleicester/users/public/admin/kab12.pl?cmte=CBT&meet=47&arc=71 [Accessed 27/10/2010]

7 Appendices

Appendix A QA:QC Data

2009 Tube Data

- **Diffusion Tube Bias Adjustment Factors**

  North West Leicestershire District Councils tube preparation and analysis was done by Gradko International, Method 50% TEA in Acetone

  RPS group's tubes preparation and analysis was done by Gradko International, Method 20% TEA in water.

  Bias adjustment factor from Review and assessment helpdesk spreadsheet (v30092010)[23] is 0.97 for 50% TEA in Acetone and 0.90 for 20% TEA in Water

- **QA/QC of diffusion tube monitoring**

  Gradko has participated in AEA intercomparison and WASP for at least the past 5 years. Rated as "Good" in WASP. [22]

2008 Tube Data

- **Diffusion Tube Bias Adjustment Factors**

  North West Leicestershire District Councils tube preparation and analysis was done by Gradko International, Method 50% TEA in Acetone

  RPS group's tubes preparation and analysis was done by Gradko International, Method 20% TEA in water.

  Bias adjustment factor from Review and assessment helpdesk spreadsheet (v30092010)[23]is 0.94 for 50% TEA in Acetone and 0.92 for 20% TEA in Water.

- **QA/QC of diffusion tube monitoring**

Gradko International were rated as "Good" in WASP for 2008 [22] overall and in each monthly trial, the AEA intercomparison results are bias -11%, precision 3%

2007 Tube Data

- **Diffusion Tube Bias Adjustment Factors**

  North West Leicestershire District Councils tube preparation and analysis was done by Gradko International, Method 50% TEA in Acetone

  RPS group's tubes preparation and analysis was done by Gradko International, Method 20% TEA in water.

  Bias adjustment factor from Review and assessment helpdesk spreadsheet (v30092010)[23] 0.99 for 50% TEA in Acetone and 0.89 for 20% TEA in Water.

- **QA/QC of diffusion tube monitoring**

  Gradko International were rated as "Good" in WASP for rounds 97 – 101 (Apr 2007 – Apr 2008) [22]

2006 Tube Data

- **Diffusion Tube Bias Adjustment Factors**

  North West Leicestershire District Councils tube preparation and analysis was done by Gradko International, Method 50% TEA in Acetone

  Bias adjustment factor from Review and assessment helpdesk spreadsheet (v30092010)[23] 1.01 for 50% TEA in Acetone

- **QA/QC of diffusion tube monitoring**

  WASP Scores are unavailable for this year [22].

Appendix B West End Long Whatton Traffic Data

SITE: 45240003 Lady Gate/West End/Long Mere Ln/The Green, Diseworth *Road No:* C8204
Report contains count(s): 23621 *Sitecode:* RIOT *GR:* 445234 324183

Movement: M1 - From:(App1) Lady Gate /Road C8204
To:(App2) West End /Road C8215

For : 0700 to 1900 Thursday 02 Oct 2008 For Each Vehicle Class

Time_Per.:	*PCL*	*M/C*	*CAR*	*LGV*	*MGV*	*HGV*	*BUS*	*MTRVEH*	*Total*
0700-0800	0	0	16	2	0	0	3	21	21
0800-0900	0	0	21	5	1	0	3	30	30
0900-1000	0	0	17	3	0	0	2	22	22
1000-1100	0	0	10	6	0	0	2	18	18
1100-1200	0	0	16	3	0	0	3	22	22
1200-1300	1	0	22	4	1	0	3	30	31
1300-1400	2	0	17	1	1	1	3	23	25
1400-1500	0	0	23	1	0	0	2	26	26
1500-1600	0	0	36	5	0	2	2	45	45
1600-1700	0	0	34	4	0	0	1	39	39
1700-1800	1	0	60	8	0	0	3	71	72
1800-1900	0	0	39	1	0	0	1	41	41
AM-Peak	0	0	21	6	1	0	3	30	30
Start-time	0700	0700	0800	1000	0800	0700	0700	0800	0800
PM-Peak	2	0	60	8	1	2	3	71	72
Start-time	1300	1200	1700	1700	1200	1500	1200	1700	1700
0700-1900	4	0	311	43	3	3	28	388	392
0700-1800	4	0	272	42	3	3	27	347	351

Movement: M2 - From:(App1) Lady Gate /Road C8204
To:(App3) Long Mere Lane /Road F8612

For : 0700 to 1900 Thursday 02 Oct 2008 For Each Vehicle Class

Time_Per.:	*PCL*	*M/C*	*CAR*	*LGV*	*MGV*	*HGV*	*BUS*	*MTRVEH*	*Total*
0700-0800	0	0	1	0	0	0	0	1	1
0800-0900	0	0	1	0	0	0	0	1	1
0900-1000	0	0	1	0	0	0	0	1	1
1000-1100	0	0	0	0	0	0	0	0	0
1100-1200	0	0	0	0	0	1	0	1	1
1200-1300	0	0	0	0	0	0	0	0	0
1300-1400	0	0	0	0	0	0	0	0	0
1400-1500	0	0	0	0	0	0	0	0	0
1500-1600	0	0	2	1	0	0	0	3	3
1600-1700	0	0	2	0	0	0	0	2	2
1700-1800	0	0	1	0	0	0	0	1	1
1800-1900	2	0	1	0	0	0	0	1	3
AM-Peak	0	0	1	0	0	1	0	1	1
Start-time	0700	0700	0700	0700	0700	1100	0700	0700	0700
PM-Peak	2	0	2	1	0	0	0	3	3
Start-time	1800	1200	1500	1500	1200	1200	1200	1500	1500
0700-1900	2	0	9	1	0	1	0	11	13
0700-1800	0	0	8	1	0	1	0	10	10

Movement: M3 - From:(App1) Lady Gate /Road C8204
To:(App4) The Green /Road C8215

For : 0700 to 1900 Thursday 02 Oct 2008 For Each Vehicle Class

Time_Per.:	*PCL*	*M/C*	*CAR*	*LGV*	*MGV*	*HGV*	*BUS*	*MTRVEH*	*Total*
0700-0800	0	0	3	1	0	1	1	6	6
0800-0900	0	0	5	3	0	0	0	8	8
0900-1000	0	0	5	1	1	0	0	7	7
1000-1100	0	0	3	1	0	0	0	4	4
1100-1200	0	0	4	1	0	0	0	5	5
1200-1300	0	0	13	1	0	0	0	14	14
1300-1400	0	0	2	2	0	2	0	6	6
1400-1500	0	0	3	0	1	1	1	6	6
1500-1600	0	0	10	1	0	0	0	11	11
1600-1700	1	0	13	0	0	0	0	13	14
1700-1800	0	0	23	0	0	0	0	23	23
1800-1900	0	0	17	0	0	0	0	17	17
AM-Peak	0	0	5	3	1	1	1	8	8
Start-time	0700	0700	0800	0800	0900	0700	0700	0800	0800
PM-Peak	1	0	23	2	1	2	1	23	23
Start-time	1600	1200	1700	1300	1400	1300	1400	1700	1700
0700-1900	1	0	101	11	2	4	2	120	121
0700-1800	1	0	84	11	2	4	2	103	104

SITE: 45240003 Lady Gate/West End/Long Mere Ln/The Green, Diseworth *Road No:* C8204
Report contains count(s): 23621 *Sitecode:* RIOT *GR:* 445234 324183

Movement: M4 - From:(App4) The Green /Road C8215
To:(App1) Lady Gate /Road C8204

For : 0700 to 1900 Thursday 02 Oct 2008 For Each Vehicle Class

Time_Per.:	*PCL*	*M/C*	*CAR*	*LGV*	*MGV*	*HGV*	*BUS*	*MTRVEH*	*Total*
0700-0800	0	0	11	1	0	0	0	12	12
0800-0900	0	0	26	3	0	0	0	29	29
0900-1000	0	0	14	0	0	0	0	14	14
1000-1100	0	0	11	2	0	1	0	14	14
1100-1200	0	0	6	2	0	0	0	8	8
1200-1300	0	0	6	0	0	1	0	7	7
1300-1400	0	0	8	2	1	0	0	11	11
1400-1500	0	0	6	0	0	1	0	7	7
1500-1600	0	0	8	3	0	0	0	11	11
1600-1700	0	0	11	0	0	0	1	12	12
1700-1800	0	0	7	2	0	0	0	9	9
1800-1900	0	0	12	0	0	0	0	12	12
AM-Peak	0	0	26	3	0	1	0	29	29
Start-time	0700	0700	0800	0800	0700	1000	0700	0800	0800
PM-Peak	0	0	12	3	1	1	1	12	12
Start-time	1200	1200	1800	1500	1300	1200	1600	1600	1600
0700-1900	0	0	126	15	1	3	1	146	146
0700-1800	0	0	114	15	1	3	1	134	134

Movement: M5 - From:(App4) The Green /Road C8215
To:(App2) West End /Road C8215

For : 0700 to 1900 Thursday 02 Oct 2008 For Each Vehicle Class

Time_Per.:	*PCL*	*M/C*	*CAR*	*LGV*	*MGV*	*HGV*	*BUS*	*MTRVEH*	*Total*
0700-0800	2	3	73	6	1	2	0	85	87
0800-0900	1	1	89	13	1	0	2	106	107
0900-1000	2	0	34	4	1	0	1	40	42
1000-1100	0	0	28	3	2	0	0	33	33
1100-1200	1	0	19	1	2	0	0	22	23
1200-1300	0	0	27	6	0	1	0	34	34
1300-1400	0	0	36	3	1	3	0	43	43
1400-1500	0	1	52	7	3	0	1	64	64
1500-1600	2	2	29	9	3	1	1	45	47
1600-1700	3	2	55	14	1	0	1	73	76
1700-1800	1	0	107	12	1	0	1	121	122
1800-1900	0	0	58	9	0	1	0	68	68
AM-Peak	2	3	89	13	2	2	2	106	107
Start-time	0700	0700	0800	0800	1000	0700	0800	0800	0800
PM-Peak	3	2	107	14	3	3	1	121	122
Start-time	1600	1500	1700	1600	1400	1300	1400	1700	1700
0700-1900	12	9	607	87	16	8	7	734	746
0700-1800	12	9	549	78	16	7	7	666	678

Movement: M6 - From:(App4) The Green /Road C8215
To:(App3) Long Mere Lane /Road F8612

For : 0700 to 1900 Thursday 02 Oct 2008 For Each Vehicle Class

Time_Per.:	*PCL*	*M/C*	*CAR*	*LGV*	*MGV*	*HGV*	*BUS*	*MTRVEH*	*Total*
0700-0800	0	0	0	0	0	0	0	0	0
0800-0900	0	0	1	0	0	0	0	1	1
0900-1000	0	0	0	0	0	0	0	0	0
1000-1100	0	0	0	0	0	0	0	0	0
1100-1200	0	0	1	1	0	0	0	2	2
1200-1300	0	0	1	0	0	0	0	1	1
1300-1400	0	0	1	0	0	0	0	1	1
1400-1500	0	0	1	0	0	0	0	1	1
1500-1600	0	0	0	1	0	1	0	2	2
1600-1700	0	0	1	0	0	0	0	1	1
1700-1800	0	0	0	0	0	0	0	0	0
1800-1900	0	0	1	0	0	0	0	1	1
AM-Peak	0	0	1	1	0	0	0	2	2
Start-time	0700	0700	0800	1100	0700	0700	0700	1100	1100
PM-Peak	0	0	1	1	0	1	0	2	2
Start-time	1200	1200	1200	1500	1200	1500	1200	1500	1500
0700-1900	0	0	7	2	0	1	0	10	10
0700-1800	0	0	6	2	0	1	0	9	9

SITE: 45240003 Lady Gate/West End/Long Mere Ln/The Green, Diseworth *Road No:* C8204
Report contains count(s): 23621 *Sitecode:* RIOT *GR:* 445234 324183

Movement: M7 - From:(App3) Long Mere Lane /Road F8612
To:(App4) The Green /Road C8215

For : 0700 to 1900 Thursday 02 Oct 2008 For Each Vehicle Class

Time_Per.:	*PCL*	*M/C*	*CAR*	*LGV*	*MGV*	*HGV*	*BUS*	*MTRVEH*	*Total*
0700-0800	0	0	0	0	0	0	0	0	0
0800-0900	0	0	0	0	0	0	0	0	0
0900-1000	0	0	0	0	0	0	0	0	0
1000-1100	0	0	0	0	0	0	0	0	0
1100-1200	0	0	1	0	0	0	0	1	1
1200-1300	0	0	0	0	0	0	0	0	0
1300-1400	0	0	1	0	0	0	0	1	1
1400-1500	0	0	1	0	0	0	0	1	1
1500-1600	0	0	1	0	0	0	0	1	1
1600-1700	0	0	2	1	0	1	0	4	4
1700-1800	0	0	0	0	0	0	0	0	0
1800-1900	2	0	1	0	0	0	0	1	3
AM-Peak	0	0	1	0	0	0	0	1	1
Start-time	0700	0700	1100	0700	0700	0700	0700	1100	1100
PM-Peak	2	0	2	1	0	1	0	4	4
Start-time	1800	1200	1600	1600	1200	1600	1200	1600	1600
0700-1900	2	0	7	1	0	1	0	9	11
0700-1800	0	0	6	1	0	1	0	8	8

Movement: M8 - From:(App3) Long Mere Lane /Road F8612
To:(App1) Lady Gate /Road C8204

For : 0700 to 1900 Thursday 02 Oct 2008 For Each Vehicle Class

Time_Per.:	*PCL*	*M/C*	*CAR*	*LGV*	*MGV*	*HGV*	*BUS*	*MTRVEH*	*Total*
0700-0800	0	0	1	0	0	0	0	1	1
0800-0900	0	0	1	0	0	0	0	1	1
0900-1000	0	0	0	0	0	0	0	0	0
1000-1100	0	0	0	0	0	0	0	0	0
1100-1200	0	0	0	1	0	0	0	1	1
1200-1300	0	0	0	0	0	0	0	0	0
1300-1400	0	0	0	0	0	0	0	0	0
1400-1500	0	0	0	0	0	0	0	0	0
1500-1600	0	0	0	0	0	0	0	0	0
1600-1700	0	0	3	0	0	0	0	3	3
1700-1800	0	0	0	0	0	1	0	1	1
1800-1900	0	0	1	0	0	0	0	1	1
AM-Peak	0	0	1	1	0	0	0	1	1
Start-time	0700	0700	0700	1100	0700	0700	0700	0700	0700
PM-Peak	0	0	3	0	0	1	0	3	3
Start-time	1200	1200	1600	1200	1200	1700	1200	1600	1600
0700-1900	0	0	6	1	0	1	0	8	8
0700-1800	0	0	5	1	0	1	0	7	7

Movement: M9 - From:(App3) Long Mere Lane /Road F8612
To:(App2) West End /Road C8215

For : 0700 to 1900 Thursday 02 Oct 2008 For Each Vehicle Class

Time_Per.:	*PCL*	*M/C*	*CAR*	*LGV*	*MGV*	*HGV*	*BUS*	*MTRVEH*	*Total*
0700-0800	0	0	1	0	1	0	0	2	2
0800-0900	0	0	0	0	0	0	0	0	0
0900-1000	0	0	1	0	0	0	0	1	1
1000-1100	0	0	0	0	0	0	0	0	0
1100-1200	0	0	0	0	0	1	0	1	1
1200-1300	0	0	1	0	0	0	0	1	1
1300-1400	0	0	0	0	0	1	0	1	1
1400-1500	0	0	1	0	0	0	0	1	1
1500-1600	0	0	0	1	0	2	0	3	3
1600-1700	0	0	0	1	0	1	0	2	2
1700-1800	0	0	0	0	0	1	0	1	1
1800-1900	0	0	1	0	0	0	0	1	1
AM-Peak	0	0	1	0	1	1	0	2	2
Start-time	0700	0700	0700	0700	0700	1100	0700	0700	0700
PM-Peak	0	0	1	1	0	2	0	3	3
Start-time	1200	1200	1200	1500	1200	1500	1200	1500	1500
0700-1900	0	0	5	2	1	6	0	14	14
0700-1800	0	0	4	2	1	6	0	13	13

SITE: 45240003 Lady Gate/West End/Long Mere Ln/The Green, Diseworth *Road No:* C8204
Report contains count(s): 23621 *Sitecode:* RIOT *GR:* 445234 324183

Movement: M10 - From:(App2) West End /Road C8215
To:(App3) Long Mere Lane /Road F8612

For : 0700 to 1900 Thursday 02 Oct 2008 For Each Vehicle Class

Time_Per.:	*PCL*	*M/C*	*CAR*	*LGV*	*MGV*	*HGV*	*BUS*	*MTRVEH*	*Total*
0700-0800	0	0	0	0	0	0	0	0	0
0800-0900	0	0	0	0	0	0	0	0	0
0900-1000	1	0	0	0	0	0	0	0	1
1000-1100	0	0	0	0	0	1	0	1	1
1100-1200	0	0	0	0	0	0	0	0	0
1200-1300	0	0	0	0	0	0	0	0	0
1300-1400	0	0	0	0	0	0	0	0	0
1400-1500	0	0	0	0	0	2	0	2	2
1500-1600	0	0	0	1	0	2	0	3	3
1600-1700	0	0	1	0	0	1	0	2	2
1700-1800	0	0	0	0	0	0	0	0	0
1800-1900	0	0	1	0	0	0	0	1	1
AM-Peak	1	0	0	0	0	1	0	1	1
Start-time	0900	0700	0700	0700	0700	1000	0700	1000	0900
PM-Peak	0	0	1	1	0	2	0	3	3
Start-time	1200	1200	1600	1500	1200	1400	1200	1500	1500
0700-1900	1	0	2	1	0	6	0	9	10
0700-1800	1	0	1	1	0	6	0	8	9

Movement: M11 - From:(App2) West End /Road C8215
To:(App4) The Green /Road C8215

For : 0700 to 1900 Thursday 02 Oct 2008 For Each Vehicle Class

Time_Per.:	*PCL*	*M/C*	*CAR*	*LGV*	*MGV*	*HGV*	*BUS*	*MTRVEH*	*Total*
0700-0800	1	1	51	12	0	0	0	64	65
0800-0900	0	0	96	9	0	0	1	106	106
0900-1000	0	0	46	5	1	0	0	52	52
1000-1100	1	0	30	7	0	1	0	38	39
1100-1200	0	0	35	5	2	0	0	42	42
1200-1300	0	0	31	6	2	0	0	39	39
1300-1400	1	0	43	6	0	1	0	50	51
1400-1500	0	0	21	5	2	2	0	30	30
1500-1600	1	2	48	9	0	0	3	62	63
1600-1700	3	3	76	8	0	0	0	87	90
1700-1800	2	1	90	6	0	0	0	97	99
1800-1900	0	0	48	2	0	1	0	51	51
AM-Peak	1	1	96	12	2	1	1	106	106
Start-time	0700	0700	0800	0700	1100	1000	0800	0800	0800
PM-Peak	3	3	90	9	2	2	3	97	99
Start-time	1600	1600	1700	1500	1200	1400	1500	1700	1700
0700-1900	9	7	615	80	7	5	4	718	727
0700-1800	9	7	567	78	7	4	4	667	676

Movement: M12 - From:(App2) West End /Road C8215
To:(App1) Lady Gate /Road C8204

For : 0700 to 1900 Thursday 02 Oct 2008 For Each Vehicle Class

Time_Per.:	*PCL*	*M/C*	*CAR*	*LGV*	*MGV*	*HGV*	*BUS*	*MTRVEH*	*Total*
0700-0800	0	1	29	3	0	1	2	36	36
0800-0900	1	0	40	3	2	1	4	50	51
0900-1000	1	0	22	3	1	1	2	29	30
1000-1100	0	0	17	3	0	1	2	23	23
1100-1200	0	0	10	3	1	0	2	16	16
1200-1300	0	0	20	4	0	0	2	26	26
1300-1400	0	0	21	1	0	0	0	22	22
1400-1500	1	1	18	1	1	0	2	23	24
1500-1600	2	0	30	2	2	1	3	38	40
1600-1700	0	0	29	2	0	0	2	33	33
1700-1800	1	1	26	3	0	0	1	31	32
1800-1900	0	0	57	2	0	0	3	62	62
AM-Peak	1	1	40	3	2	1	4	50	51
Start-time	0800	0700	0800	0700	0800	0700	0800	0800	0800
PM-Peak	2	1	57	4	2	1	3	62	62
Start-time	1500	1400	1800	1200	1500	1500	1500	1800	1800
0700-1900	6	3	319	30	7	5	25	389	395
0700-1800	6	3	262	28	7	5	22	327	333

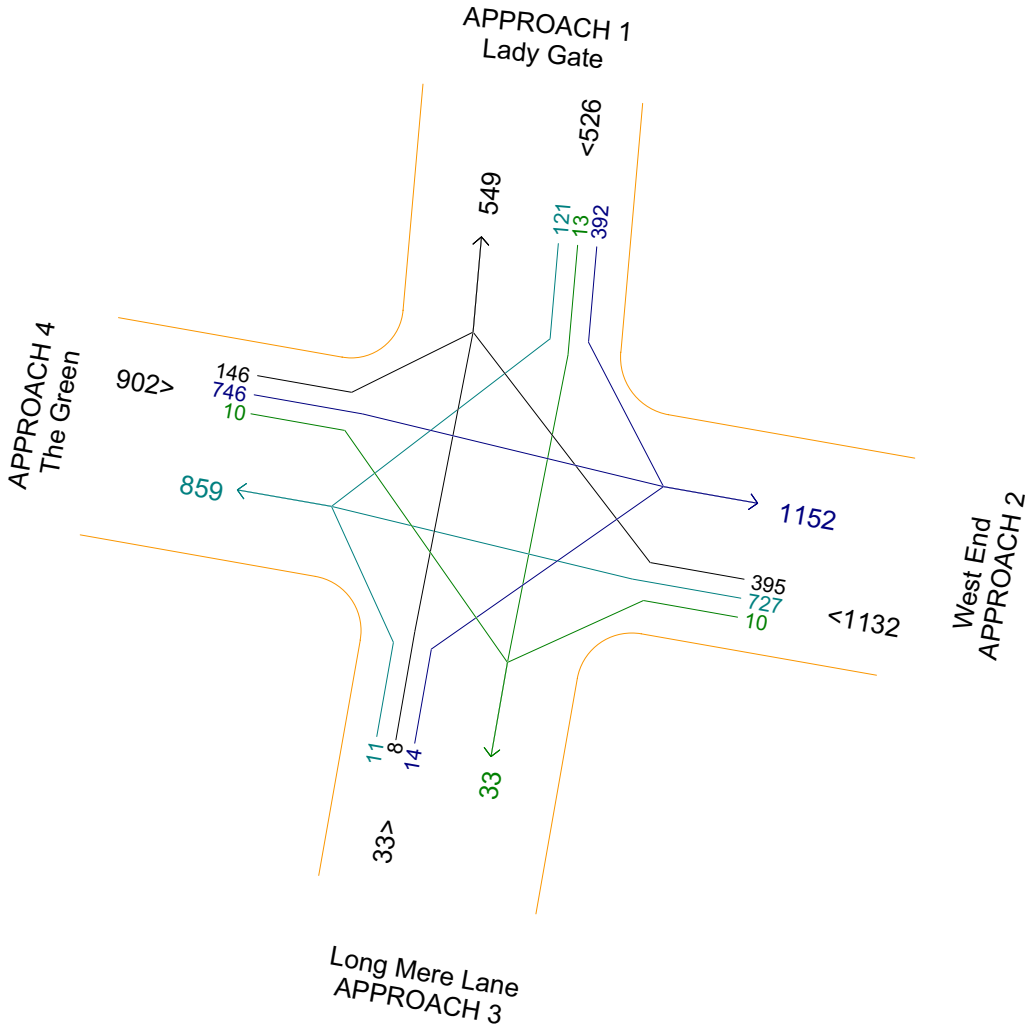
Leicestershire County Council - TARA2000 Traffic Database

Analysis of Traffic at a Road Junction **Report Date: 25 Nov 2010**

Site: 45240003 Lady Gate/West End/Long Mere Ln/The Green, Diseworth *GR:*445234 324183

Count No: 23621 For 0700 to 1900 Thursday 02 Oct 2008 *PERIOD:* 0700 to 1900

Vehicle Class: Total



Move	PCL	M/C	CAR	LGV	MGV	HGV	BUS	MTR VEH	Total
1to2	4	0	311	43	3	3	28	388	392
1to3	2	0	9	1	0	1	0	11	13
1to4	1	0	101	11	2	4	2	120	121
2to1	6	3	319	30	7	5	25	389	395
2to3	1	0	2	1	0	6	0	9	10
2to4	9	7	615	80	7	5	4	718	727
3to1	0	0	6	1	0	1	0	8	8
3to2	0	0	5	2	1	6	0	14	14
3to4	2	0	7	1	0	1	0	9	11
4to1	0	0	126	15	1	3	1	146	146
4to2	12	9	607	87	16	8	7	734	746
4to3	0	0	7	2	0	1	0	10	10
Total	37	19	2115	274	37	44	67	2556	2593

East Bound

Time_Per.:	Pedal Cycle	Motor Cycle	CAR	LGV	MGV	HGV	BUS	Motor Vehicle	total	From	To
0700-1900	4	0	311	43	3	3	28	388	392	Lady Gate	West End
0700-1900	12	9	607	87	16	8	7	734	746	The Green	West End
0700-1900	0	0	5	2	1	6	0	14	14	Long Mere Lane	West End

West Bound

Time_Per.:	Pedal Cycle	Motor Cycle	CAR	LGV	MGV	HGV	BUS	Motor Vehicle	total	From	To
0700-1900	1	0	2	1	0	6	0	9	10	West End	Long Mere Lane
0700-1900	9	7	615	80	7	5	4	718	727	West End	The Green
0700-1900	6	3	319	30	7	5	25	389	395	West End	Lady Gate

12 hour count	Pedal Cycle	Motor Cycle	CAR	LGV	MGV	HGV	BUS	Motor Vehicle	total	
	16	9	923	132	20	17	35	1136	1152	eastbound
	16	10	936	111	14	16	29	1116	1132	westbound

conver to AADF (x1.219)

	Pedal Cycle	Motor Cycle	CAR	LGV	MGV	HGV	BUS	Motor Vehicle	total	
	20	11	1125	161	24	21	43	1385	1404	eastbound
	20	12	1141	135	17	20	35	1360	1380	westbound

	LDV			HDV			total
	2585			160			2745
	94.18%			5.82%			

Appendix C M1 Traffic Data

User Licence - Traffic Data
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Paul Baden (roadtraff.stats@dft.gsi.gov.uk)
Road Traffic Website Manager
On behalf of the Department for Transport

Annual average daily flows (AADF) represents the number of vehicles passing through the count point on an average day of the year

Traffic figures are the total vehicle kilometres driven in a year on a count point. This is calcalculated as AADF * length of link in km * days in the year . The figure is in thousands of veh km

More detailed definitions are provided at www.dft.gov.uk/matrix/forms/definitions.aspx

Region Name	East Midlands	East Midlands
Local Authority Code	2450	2450
Local Authority Name	Leicestershire County Council	Leicestershire County Council
Count Point No.	36005	36005
Road	M1	M1
RdSeq	350	350
Street	N/A	N/A
Road Category Name	M or A Class Trunk Motorway	M or A Class Trunk Motorway
LenNet	6.8	6.8
dOpened	01/01/1982	01/01/1982
dClosed		
SRefE	447400	447400
SRefN	322600	322600
Year	2008	2009
PC	0	0
2WMV	311	300
CAR	69690	69062
BUS	264	283
LGV	11355	11560
HGVR2	3651	3370
HGVR3	462	464
HGVR4	417	400
HGVA3	1132	1043
HGVA5	4911	4218
HGVA6	3005	2903
HGV	13578	12398
All_MV	95198	93603