Appendix B. Air Quality

B.1. Planning Policy

B.1.1. Introduction

This section provides the National Planning Practice Guidance NPPG flowchart (Figure B-1) and details of local planning policies which are used to inform significance as described in Chapter 5 of the main ESR (HA549348-AMAR-EGN-SWI-RP-YE-000200).

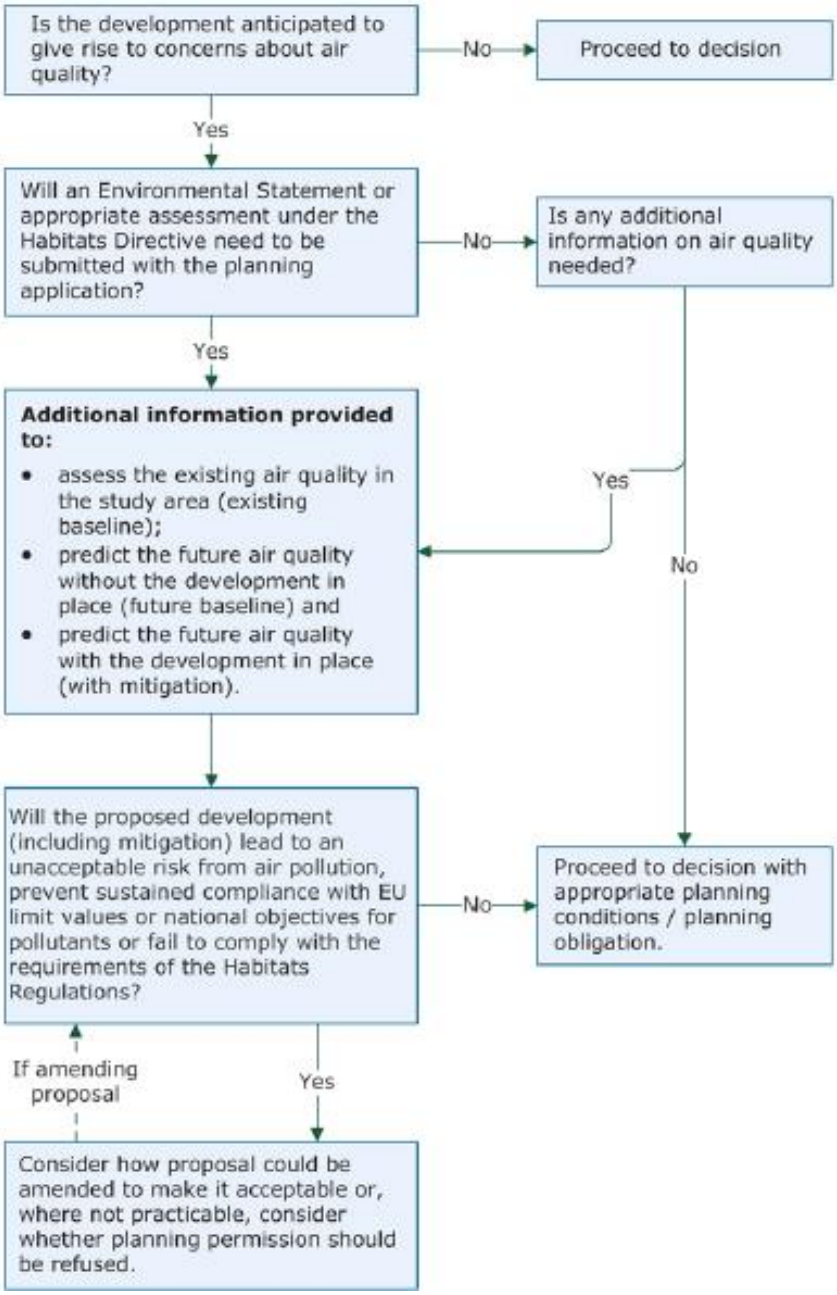


Figure B-1 National Planning Practice Guidance (NPPG) flowchart

B.1.2. Local planning policies relevant to air quality

A review of the local planning policy has identified the following planning policy issues of relevance to air quality:

B.1.2.1. Central Bedfordshire District Council

The Core Strategy and Development Management Policies Development Plan, 2009:

Policy DM3: High quality development: "All proposals for new development, including extensions will comply with the current guidance on noise, waste management, vibration, odour, water, light and airborne pollution."

New local plan first draft due to be released in December 2016.

B.1.2.2. Cherwell District Council

Cherwell Local Plan, adopted in 2015:

Policy ESD 10: Protection and Enhancement of Biodiversity and the Natural Environment: Air quality assessments will also be required for development proposals that would be likely to have a significantly adverse impact on biodiversity by generating an increase in air pollution"

Policy PSD 1: "Appropriate measures as recommended by the habitat regulation assessment have been incorporated to avoid or minimise the effect of the plan proposals on the SAC in relation to water quality, natural groundwater flow, air quality and recreational use."

"The major environmental challenge for our villages and rural areas is to maintain and enhance the quality of our natural, built and historic environment in the face of pressures for new development. In addressing this challenge the Local Plan aims to protect and enhance biodiversity; support a pattern of development which reduces people's need to travel, maximises opportunities to use public transport and, minimises additional levels of road traffic and pollution."

B.1.2.3. Daventry District Council

West Northamptonshire Joint Core Strategy Local Plan (Part 1), adopted 2014

"Other road improvements may be required where they will help to deliver improvements to air quality or relieve villages of unsuitable amounts of traffic. These improvements will need to be carefully managed to ensure that they also help to prioritise public transport, walking and cycling and meet the principles set out in Policy C1."

"Air quality, in particular, is a pressing concern for many places within the plan area, but is particularly focused on urban areas where there are heavy flows of traffic. There are presently eight designated Air Quality Management Areas: six within the urban area of Northampton, one along the M1 corridor between Junctions 15 and 15a and another located within Towcester."

"Due to the proximity of the site to the M1 itself, Junction 15 of the M1 and the associated Air Quality Management Areas, mitigation measures will be required to address the issues of noise and air pollution."

B.1.2.4. Harborough District Council

Harborough District Local Development Framework, Core Strategy, (2006 – 2028):

Policy CS14: Lutterworth: b) Transport interventions delivered in association with additional development in and around Lutterworth will focus on improving air quality and reducing the adverse effects of traffic flow in the town centre by: i) Resisting development which would result in additional Heavy Goods Vehicles passing through Lutterworth town centre; ii) Support for routeing schemes for Magna Park and other warehousing occupiers to prevent HGV traffic passing through Lutterworth; iii) Supporting the principle of the development of other uses on land within Lutterworth presently used by HGV generating development; iv) Locating future HGV generating business development to the south of the town with good access to the M1, A4303 and A426; v) Improving links within the existing urban area for walking, cycling and local bus provision; vi) Local traffic calming measures in the town centre, and appropriate junction improvements elsewhere in the town to improve traffic flow.

B.1.2.5. Luton District Council

Luton Local Plan, 2001-2011:

Policy ENV15 Pollution: "Planning permission will not be granted for development that is likely to generate (or be subject to) levels of pollution that threaten public health or safety, or jeopardize the quality of the environment. This policy applies to pollution to air, land and water, from any source, including noise, vibration, light, heat, radiation, leakage, dust, fumes, smoke emission or explosion."

Policy T11 Traffic Management: "The Borough Council will control and manage traffic on the highway network in order to: [A] give priority to local bus services; and [B] promote a safe and convenient environment for pedestrians and cyclists; and [C] improve the quality of the local environment."

A new local plan is under final review.

B.1.2.6. Milton Keynes District Council

Milton Keynes Core Strategy, adopted July 2013:

Policy CSA: "When considering development proposals, the council will take a positive approach that reflects the presumption in favour of sustainable development contained in the National Planning Policy Framework. It will always work pro-actively with applicants jointly to find solutions which mean that proposals can be approved wherever possible, and to secure development that improves the economic, social and environmental conditions in the area."

Policy CS12 Developing Successful Neighbourhoods: "New developments and major redevelopments must be designed to support sustainable lifestyles for all. This will include: …4. Appropriately locating development to maintain and improve current flood risk and air quality standards."

Local plan (2005):

Policy NE2: "Planning permission will be refused for development if it would be likely to adversely affect animal or plant species, or their habitat, specifically protected by law."

Policy D1: "Planning permission will be refused for development that would be harmful for any of the following reasons: (i) Additional traffic generation which would overload the existing road network or cause undue disturbance, noise or fumes (ii) Inadequate drainage, which would adversely affect surface water disposal, including flood control, or overload the existing foul drainage system (iii) An unacceptable visual intrusion or loss of privacy, sunlight and daylight (iv) Unacceptable pollution by noise, smell, light or other emission to air, water or land."

Policy D5: "Planning permission will be granted for proposals to develop renewable energy resources unless there would be: i) significant harm to the amenity of residential areas, due to noise, traffic, pollution or odour;"

B.1.2.7. Northampton District Council

West Northamptonshire Joint Core Strategy Local Plan (Part 1), adopted 2014:

Policy BN9 Planning for Pollution Control: "Proposals for new development which are likely to cause pollution or likely to result in exposure to sources of pollution or risks to safety will need to demonstrate that they provide opportunities to minimise and where possible reduce pollution issues that are a barrier to achieving sustainable development and healthy communities including:

a. *Maintaining and improving air quality, particularly in poor air quality areas, in accordance with national air quality standards and best practice;*
b. *Protecting and improving surface and groundwater water quality;*
c. *Minimising light pollution;*
d. *Ensuring remediation of contaminated land so as not to pose a risk to health and the environment; and*

e. *Reducing the adverse impacts of noise. Development that is likely to cause pollution, either individually or cumulatively, will only be permitted if measures can be implemented to minimise pollution to a level which provides a high standard of protection for health and environmental quality."*

B.1.2.8. South Bucks District Council

South Bucks Core Strategy, adopted 2011:

Core Policy 13: Environmental and Resource Management: "The Council will seek to ensure the prudent and sustainable management of the District's environmental resources by:

- Promoting best practice in sustainable design and construction. All new development must be water efficient and incorporate Sustainable Drainage Systems (SuDs) where feasible. All new residential development should achieve a minimum water efficiency target of 105 litres per person per day.

- Protecting and enhancing water quality and encouraging the remediation of land affected by contamination to bring it back to beneficial use. Particular regard should be had to maintaining the integrity of Burnham Beeches SAC.

- Seeking improvements in air quality, especially in the Air Quality Management Area adjacent to the motorways and close to Burnham Beeches SAC. New development will be directed away from existing sources of noise and air pollution to avoid adverse impacts on local communities. The Council will work closely with other local authorities to minimise aircraft noise from Heathrow Airport."

Core Policy 16: South of Iver (Opportunity Area): "The District Council will generally support appropriate employment generating development or redevelopment on Court Lane, Thorney Business Park and the Ridgeway Trading Estate, with particular encouragement to be given to uses that would result in a reduction in HGV movements. The Court Lane site is identified on the Proposals Map as a Major Developed Site in the Green Belt. Comprehensive redevelopment proposals should result in a significant reduction in HGV movements. Any scheme should: …..

- *Recognise the context of the site, and address issues including possible land contamination and the odour and air quality issues associated with the nearby water treatment works and M25."*

South Bucks District Local Plan, adopted 2011:

Policy EP3 - The use, design and layout of development: "Development will only be permitted where its scale, layout, siting, height, design, external materials and use are compatible with the character and amenities of the site itself, adjoining development and the locality in general. Poor designs which are out of scale or character with their surroundings will not be permitted. In assessing proposals, the Council will have regard to:- … (f) Use of Land and Buildings: The use of land and buildings should be compatible with the uses of adjacent land and buildings and with the character and amenities of the locality in general. Permission will not be granted for uses which would be, or which would have the potential to be, detrimental to the character and amenities of nearby properties or the locality in general by reason of noise, vibration, smell, pollution, disturbance, visual intrusion, loss of privacy, the impact of traffic, or other nuisance."

B.1.2.9. South Northamptonshire District Council

West Northamptonshire Joint Core Strategy Local Plan (Part 1), adopted 2014:

Policy BN9 Planning for Pollution Control: "Proposals for new development which are likely to cause pollution or likely to result in exposure to sources of pollution or risks to safety will need to demonstrate that they provide opportunities to minimise and where possible reduce pollution issues that are a barrier to achieving sustainable development and healthy communities including:

a. *Maintaining and improving air quality, particularly in poor air quality areas, in accordance with national air quality standards and best practice;*
b. *Protecting and improving surface and groundwater water quality;*
c. *Minimising light pollution;*
d. *Ensuring remediation of contaminated land so as not to pose a risk to health and the environment; and*

e. *Reducing the adverse impacts of noise. Development that is likely to cause pollution, either individually or cumulatively, will only be permitted if measures can be implemented to minimise pollution to a level which provides a high standard of protection for health and environmental quality."*

Policy T1: "Spatial strategy for towcester the role of towcester as a rural service centre will be supported and enhanced by the following development and other proposals:

a. *Housing development within the existing urban area and as part of the towcester south sustainable urban extension; (see policy t3)*
b. *Employment development as part of the regeneration of the town centre and as part of the towcester south sustainable urban extension;*
c. *The regeneration of towcester town centre, principally through the mixed-use development of the moat lane area; (see policy t2)*
d. *Additional services and facilities provided through the regeneration of the town centre and the towcester south sustainable urban extension;*
e. *Delivery of an a5 relief road and complementary sustainable transport measures to improve air quality and reduce congestion in the town centre;*
f. *The provision of additional comparison (non food) shopping floorspace within the town centre and local shopping facilities within the towcester south sustainable urban extension; and*
g. *Supporting the protection and improvement of the facilities provided at towcester racecourse. (see policy t5)."*

A New Local Plan (Part 2A) is under development, building on the Joint Core Strategy.

B.1.2.10. St Albans District Council

Strategic Local Plan, draft, 2016:

Strategic objective 5: "Providing a sustainable movement network which encourages the use of public 21 transport, walking and cycling and which improves access to services, jobs and facilities, particularly for rural settlements and those without the use of private vehicles. Traffic congestion will be managed to an acceptable level while parking will be appropriately priced and located. Improvements will be made to air quality and reductions made in carbon emissions."

Policy SLP25 Transport Strategy: Measures which reduce the need for travel and encourage more sustainable travel, by public and community transport, walking and cycling are encouraged. Within this approach, appropriate measures to better use existing roads, reduce congestion and pollution and to ensure the free flow of traffic will be supported. Measures include:

New Development: New development should be concentrated in accessible locations which will reduce the need to travel, encourage walking and cycling and where good public transport services can be provided or which connect into, maintain and improve the existing transport infrastructure and hierarchy. Appropriate transport and road access improvements will be required as part of the development at Broad Locations. Significant highway improvements will be required to facilitate large-scale development at East Hemel Hempstead.

Air quality: Measures to improve air quality along major roads, including enabling the removal of Air Quality Management Area (AQMA) designations.

A new Local Plan adoption is scheduled for May 2017.

B.1.2.11. Wycombe District Council

Policy CS18 Waste/Natural Resources and Pollution: "To minimise waste and encourage recycling, conserve natural resources, and avoid pollution the Council will require developments to: 1. Avoid unacceptable light, noise, air, soil or water pollution, including the risk to or affect on groundwater."

B.2. Operational assessment methodology

B.2.1. Introduction

This section includes details used in the operational assessment.

B.2.2. Dispersion model and set up

The ADMS-Roads model (version 4.0.1) developed by Cambridge Environmental Research Consultants Ltd (CERC) has been used for this study. ADMS-Roads is a detailed atmospheric dispersion model, which focuses on road traffic as a source of pollutant emissions.

The model takes into account emissions from light and heavy duty vehicles, travelling at certain speeds along a road 'link' over an average hour, and predicts the dispersion of these emissions using appropriate historical meteorological data.

B.2.2.1. Traffic Emissions

The traffic data for all scenarios was provided by Aecom, and emissions from traffic data were assessed using the emission factors provided within the latest version (version 1.1, (July 2015)) of the Highways England speed band emission factors spreadsheet for use with IAN 185/15.

B.2.2.2. Minimum Monin-Obukhov Length and Surface Roughness

The minimum Monin-Obukhov length describes the minimum stability of the atmosphere. For this model, a length of 30m was used representing "mixed urban/industrial".

The extent of mechanical turbulence (and hence, mixing) in the atmosphere is affected by the surface/ground over which the air is passing. Typical surface roughness values range from 1.5m (for cities, forests and industrial areas) to 0.0001m (for water or sandy deserts). In this assessment a surface roughness of 0.5m was used, corresponding to "parkland, open suburbia".

B.2.3. Receptors

B.2.3.1. Human receptors

Sensitive human receptors within 200m of the ARN have been identified and included in the assessment. Receptors included residential dwellings, schools and hospitals, and were selected based on their close proximity to the ARN.

Receptor locations are outlined in drawing HA549348-AMAR-EAQ-SWI-DR-YE-000001, Appendix A, and grid references shown in the results Table B-13 of this appendix. The human receptors have been modelled at a height of 1.5m, as representative of ground level receptors.

B.2.3.2. Ecological receptors

Ecological receptors have been identified within 200m of the ARN, and are outlined in Table B-1 Receptor locations for ecological assessment below. These have been included in the ecological assessment, and have been modelled at a height of 0m, as representative of ground level vegetation.

Table B-1 Receptor locations for ecological assessment

ID	Receptor Name	Site Designation	Local Authority	X	Y	Distance to nearest road, m
1	Ardley Cutting and Quarry 1	SSSI	Cherwell District Council	454943	225927	1
2	Ardley Cutting and Quarry 2	SSSI	Cherwell District Council	454933	225935	10
3	Ardley Cutting and Quarry 3	SSSI	Cherwell District Council	454924	225942	20

ID	Receptor Name	Site Designation	Local Authority	X	Y	Distance to nearest road, m
4	Ardley Cutting and Quarry 4	SSSI	Cherwell District Council	454892	225973	50
5	Ardley Cutting and Quarry 5	SSSI	Cherwell District Council	454844	226018	100
6	Wendlebury Meads and Mansmoor Closes 1	SSSI	Cherwell District Council	456637	217736	10
7	Wendlebury Meads and Mansmoor Closes 2	SSSI	Cherwell District Council	456629	217732	20
8	Wendlebury Meads and Mansmoor Closes 3	SSSI	Cherwell District Council	456603	217720	50
9	Wendlebury Meads and Mansmoor Closes 4	SSSI	Cherwell District Council	456555	217696	100
10	Shabbington Woods Complex 1	SSSI	Aylesbury Vale District Council	462635	210901	1
11	Shabbington Woods Complex 2	SSSI	Aylesbury Vale District Council	463079	210423	10
12	Shabbington Woods Complex 3	SSSI	Aylesbury Vale District Council	463069	210427	20
13	Shabbington Woods Complex 4	SSSI	Aylesbury Vale District Council	463034	210437	50
14	Shabbington Woods Complex 5	SSSI	Aylesbury Vale District Council	462983	210449	100
15	Aston Rowant 1	SSSI and NNR	Wycombe District Council	474091	196463	10
16	Aston Rowant 2	SSSI and NNR	Wycombe District Council	474096	196448	20
17	Aston Rowant 3	SSSI and NNR	Wycombe District Council	474107	196420	50
18	Aston Rowant 4	SSSI and NNR	Wycombe District Council	474125	196378	100
20	Aston Rowant Cutting 1	SSSI	South Oxfordshire District Council	472838	196577	10
21	Widdenton Park Wood 1	SSSI	Wycombe District Council	481832	192079	30
22	Widdenton Park Wood 2	SSSI	Wycombe District Council	481805	192069	50
23	Widdenton Park Wood 3	SSSI	Wycombe District Council	481764	192040	100
24	Reynolds Wood	Woodland Trust Site	Central Bedfordshire Council	496649	238972	30.2

There are six statutory designated sites within 200m of the ARN: Ardley Cutting and Quarry, Wendlebury Meads and Mansmoor Closes, Shabbington Woods Complex, Aston Rowant, Aston Rowant Cutting and

Widdenton Park Wood, all of which have been designated as Sites of Special Scientific Interest (SSSIs). Reynolds Wood, a Woodland Trust site, has also been included to ensure all ecological sites are included which are within 200m of the study area.

Table B-2 Ecological receptors nitrogen deposition critical loads

Designated site	Designation	Habitat	Total nitrogen deposition (kg N/ha/yr)			Empirical critical load (e.g. 20-30)
			Max	**Min**	**Average**	
Ardley Cutting and Quarry	SSSI	Calcareous grassland	19.5	15.7	18.6	15 - 25
Wendlebury Meads and Mansmoor Closes	SSSI	Neutral grasslands	18.5	18.5	18.5	20-30
Shabbington Woods Complex	SSSI	Neutral grasslands	17.1	17.1	17.1	20-31
Aston Rowant	SSSI and NNR	Broad-leaved, mixed and yew woodland	17.9	17.9	17.9	10 - 20
Aston Rowant Cutting	SSSI	Calcareous grassland	17.9	17.9	17.9	15 - 25
Widdenton Park Wood	SSSI	Broad-leaved, mixed and yew woodland	20.9	20.9	20.9	10 - 20
Reynolds Wood	Woodland Trust Site	Woodland	25.5	25.5	25.5	10 - 20

B.2.4. Meteorological data

Meteorological data for 2014 from the Bedford meteorological monitoring station was used in the dispersion modelling.

The 2014 meteorological data was chosen as this was the most recent full year of data and monitored air pollutant data used within model verification was based on annual mean concentrations from 2014. The wind rose for 2014 at Bedford is provided in Figure B-2, this indicates a predominantly south westerly wind direction as would be expected in the UK.

For the meteorological monitoring site, a surface roughness of 0.5m was used in this assessment, corresponding to ‘parkland, open suburbia’.

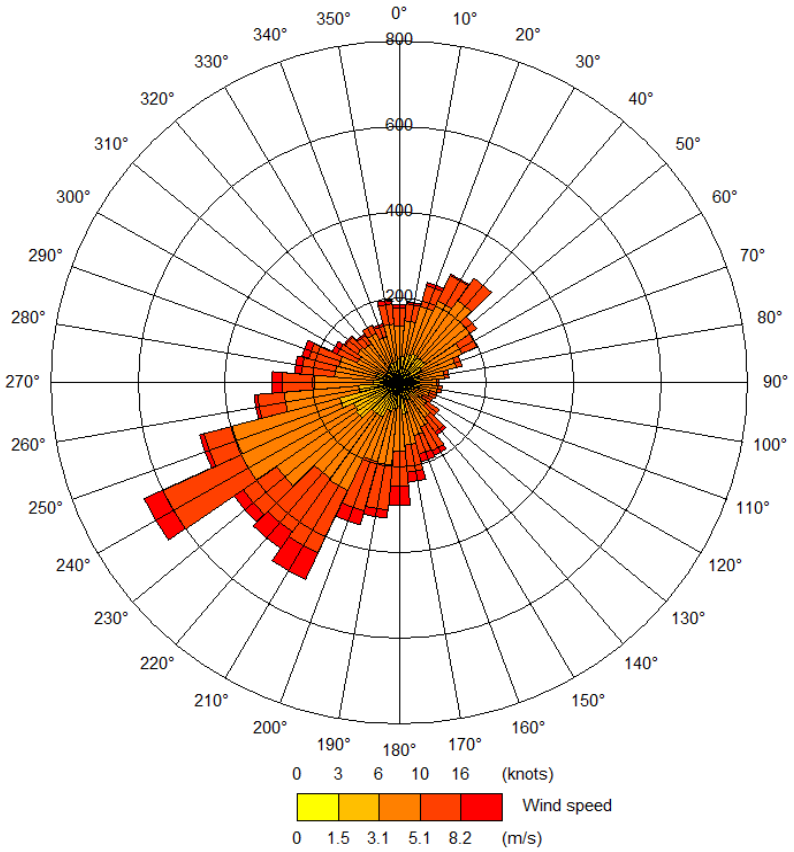


Figure B-2 Wind rose for Bedford in 2014

B.2.5. Baseline data

This section includes baseline data used in the main assessment (Chapter 5) of the main ESR (HA549348-AMAR-EGN-SWI-RP-YE-000200).

B.2.5.1. Local air quality monitoring

Measurements of pollutant concentrations in the local area are undertaken using both continuous monitoring instruments and passive monitoring diffusion tubes. Results of local monitoring are available from the Defra UK air website[1] and from local authority air quality reports. Monitoring is carried out for all of the pollutants of concern for this assessment (NO_2 and PM_{10}).

There were three continuous monitoring sites within 500m of the ARN operating in 2014. A summary of the site information and results is provided in Chapter 5 of the main ESR (HA549348-AMAR-EGN-SWI-RP-YE-000200). All three sites at roadside locations, predicted concentrations below the UK objectives for annual mean NO_2 in 2014. Table B-3 Number of 1 hour exceedances of the NO2 AQS objectives recorded by continuous monitoring (CM) sites in the study areaalso provides a summary of the number of hourly exceedances of the NO_2 objective. No exceedances of this objective are recorded by continuous monitoring sites within the study area. Table B-4 provides a summary of PM_{10} concentrations recorded at continuous monitoring sites in the study area. Concentrations are recorded as all being well below the objective.

[1] https://uk-air.defra.gov.uk/

Table B-3 Number of 1 hour exceedances of the NO2 AQS objectives recorded by continuous monitoring (CM) sites in the study area

Local authority	Receptor ID (drawing HA549348-AMAR-EAQ-SWI-DR-YE-000004)	Site type	2012	2013	2014
Luton Borough Council	296	Roadside	0	0	1
Milton Keynes Council	363	Roadside	0	0	0

*No data was available for receptor site 404 in Northampton Borough Council.

Table B-4 Annual mean PM10 concentrations (µg/m3) recorded by continuous monitoring (CM) sites in the study area

Local authority	Receptor ID (drawing HA549348-AMAR-EAQ-SWI-DR-YE-000004)	Site type	2012	2013	2014
Luton Borough Council	296	Roadside	20.0	20.0	19.0
Milton Keynes Council	363	Roadside	18.4	19.2	18.0

*No data was available for receptor site 404 in Northampton Borough Council.

In the vicinity of the Proposed Scheme, NO_2 is monitored using diffusion tubes at over 75 local authority sites across their administrative areas. A summary of diffusion tube monitoring results for local air quality monitoring sites within 500m of the ARN is presented below. Monitoring site information and annual mean concentrations for 2013 to 2015 is shown in Table B-1 Receptor locations for ecological assessment, and discussed below the table in more detail.

Any NO_2 annual mean concentrations exceeding the 40µg/m^3 air quality objective are highlighted in **bold**.

Table B-5 LAQM diffusion tube monitoring sites

Site ID	Site name	Grid reference		Site type[2]	In AQMA (Y/N)	NO_2 annual mean concentration (mg/m^3)		
		X	Y			2013	2014	2015
Central Bedfordshire District Council								
128	Chalton X	503925	225855	K	N	-	37.2	24.8
Cherwell District								
147	Hennef Way	446535	241721	R	Y	81.2	79.6	78.2
148	Fisher Close(Upper) July 15	446545	241722	R	Y	-	59.1	59.8
149	Fisher Close(Lower) July 2014	446545	241722	R	Y	-	52.1	49.3
150	Stroud Close 1	446334	241676	R	N	30.4	26.6	28.7
151	Fisher Close 1	446545	241714	R	N	28.7	26	26
152	Ermont Way 1	446828	241591	R	N	33.3	31.8	28.4

[2] Roadside, Background, Urban Background, Kerbside

Site ID	Site name	Grid reference		Site type[2]	In AQMA (Y/N)	NO_2 annual mean concentration (mg/m^3)		
		X	Y			2013	2014	2015
153	Ermont Way 2	446997	241315	R	N	35.4	33.9	29.3
172	Middleton 2014 (Middleton Stoney)	453397	223516	K	N	-	34.1	32.4
175	Ardley (B430)	454301	227498	R	N	26.9	30.7	29.6
Daventry District Council								
261	M1 Lilbourne	456572	276826	R	N	-	**60.5**	-
262	Yelvertoft Road, Lilbourne	456461	276872	R	N	-	28.3	-
263	Haythog Farm	457573	273884	R	N	-	31.7	-
265	Haythog Farmhouse	457673	273884	B	N	-	27.6	-
267	Buckby Wharf	461358	265469	R	N	-	25.5	-
270	A45, Windsor Close, ,Weedon	462862	259867	R	N	-	17.8	-
271	A45, Spring Lane, Flore	464353	260282	R	N	-	17.8	-
Harborough District Council								
285	Jazz Hair	454443	284348	R	N	**42.2**	39.2	-
288	6 The Terrace Rugby Road	454428	284274	R	N	34.2	27.6	-
289	4-9 regent court	454410	284326	R	N	**47.5**	38.8	-
291	24 Rugby Road Lutterworth	454432	284229	R	N	**41**	**40.7**	-
292	17 Rugby road Lutterworth	454476	284178	R	N	32.9	29.8	-
295	40 regent Street Lutterworth	454318	284288	R	N	-	20.9	-
Luton Borough Council								
296	LN01	505570	222754	R	N	-	36	-
302	LN15	505520	222407	R	Y	-	32.3	-
303	LN16	505492	222607	R	Y	-	37.5	-
304	LN17	505324	222812	R	Y	-	**41.2**	-
305	LN18	505014	223538	R	Y	-	29.6	-
306	LN19	505570	222754	B	N	-	33.1	-
307	LN20	505570	222754	B	N	-	34.1	-
308	LN21	505570	222754	B	N	-	34.6	-
315	LN28	507798	219832	K	N	-	**48.8**	-
316	LN29	504430	222275	R	N	-	**51.1**	-
319	LN32	506474	222144	R	N	-	**40.1**	-
320	LN33	506044	222645	R	N	-	**41.1**	-
332	LN45	506265	223673	B	N	-	21.2	-
334	LN47	504384	222469	R	N	-	**43.3**	-

Site ID	Site name	Grid reference		Site type[2]	In AQMA (Y/N)	NO_2 annual mean concentration (mg/m^3)		
		X	Y			2013	2014	2015
335	LN48	504742	222646	R	N	-	33.1	-
336	LN49	506401	222588	R	N	-	**41**	-
340	LN53	507711	219922	UB	N	-	33.9	-
341	LN54	507705	219916	UB	N	-	**40**	-
342	LN55	507714	219902	UB	N	-	36.1	-
343	LN56	507731	219892	UB	N	-	33.3	-
Milton Keynes District Council								
363	Wolverton Road, Newport Pagnell	486290	243344	R	N	33.2	29.6	-
374	222 Wolverton Rd, Blakelands	486069	243149	R	N	-	24.7	-
390	16-17 Greenlands, Newport Pagnell	486296	243208	UB	N	-	28.4	-
391	5-7 Greenlands, Newport Pagnell	486345	243230	UB	N	-	25	-
392	42-44 Walnut Close, Newport Pagnell	486495	243345	UB	N	-	19.9	-
381	64 Nicholas Mead, Great Linford	485070	239131	R	N	-	17.7	20.2
397	Roadbox 1 (Newport Pagnell)	486290	243344	K	N	-	31.4	-
386	Watling Street, Fullers Slade	480015	239400	R	N	-	18.1	-
Northampton Borough Council								
404	Hermitage Way	475893	256968	R	Y	35.9	32.7	-
416	Hermitage Way	475892	256968	R	Y	37.1	-	-
417	Hermitage Way Analyser	475893	256968	R	Y	35.7	38.4	37.6
418	Hermitage Way Analyser	475893	256968	R	Y	36.3	36.4	39.1
419	Hermitage Way Analyser	475893	256968	R	Y	36.7	39.1	37.6
420	Chestnut Avenue	475830	256475	R	Y	30.2	30.3	31.6
421	A45	475769	256414	R	Y	**42.4**	**44.6**	**40.9**
422	High Street Collingtree	475005	255394	R	Y	32.4	35.4	34
423	Crematorium	473465	256802	R	Y	33.3	35.3	34.1
South Bucks District Council								
498	Wexham, Black Park Rd	500518	184244	K	N	18	16	15
South Northamptonshire District Council								
527	K1	469577	258911	R	N	-	29.5	-

Site ID	Site name	Grid reference		Site type[2]	In AQMA (Y/N)	NO_2 annual mean concentration (mg/m^3)		
		X	Y			2013	2014	2015
528	K2	469575	258877	R	N	-	29.4	-
529	K3	469445	258900	R	N	-	35.9	-
530	H1	479225	250737	R	N	-	22.1	-
531	OS1	478031	241461	R	N	-	19.1	-
532	OS2	477881	241186	R	N	-	24.2	-
533	GPKa	475890	254870	R	N	-	28.3	-
534	RO1	475437	251288	R	N	-	23.1	-
535	RO2	475476	251816	R	N	-	31.2	-
536	RO3	475506	251655	R	N	-	27.5	-
538	RO6	475450	251264	R	N	-	22.7	-
St Albans District Council								
605	SA106	509668	212987	B	-	29.8	33.2	26.3
604	SA105	509012	213678	B	-	21.3	26.8	17.4
607	SA108	509099	214068	B	-	18.2	21.9	17.7
630	SA131	511351	203740	B	-	34.3	37.8	22.7
Wycombe District Council								
666	40 Marcourt Road	476602	195435	UB	Y	32.4	34.5	-
675	Knaves Beech	490784	190216	UB	Y	28.7	30.5	-
676	Wheeler End	480687	192431	R	Y	**60.7**	**52.8**	-
678	Handy Cross	485290	191280	UB	-	33.7	38.1	-
690	M40 Stokenchurch	475612	196223	R	Y	30.9	23.7	-
696	Wooburn Moor	491248	189816	R	Y	19.5	21.3	-
692	School Close	485891	191788	R	N	12.3	28.2	-

Central Bedfordshire

The only monitoring site in the study area in Central Bedfordshire is site 128 which is located close to the M1 north of Luton. This site measured NO_2 concentrations below the annual mean air quality objective in 2014 ($37.2\mu g/m^3$). The concentration at this site reduced further in 2015 to a concentration of $24.8\mu g/m^3$.

Cherwell

There are nine monitoring sites in this local authority within the study area, all of which are located along the M40. Only three monitoring sites recorded concentrations above the annual mean NO_2 objective. The highest concentration was recorded at site 147 on the A422 into Banbury ($79.6\mu g/m^3$). The concentration at this site in 2015 reduced to $78.2\mu g/m^3$. Sites 148 and 149 are located on the same road as 147 and both have concentrations above $50\mu g/m^3$. None of these exceedances are within an AQMA.

Daventry

Seven monitoring locations are located within the study area in Daventry District Council. The only site that recorded concentrations that exceed the mean annual NO_2 objective is site 261 ($60.5\mu g/m^3$) which is located close to the M1 and is not within an AQMA.

Harborough

Six diffusion tube monitoring sites are located within the study area in Harborough District Council. Only site 291 recorded concentrations that exceeded the annual mean objective for 2014 ($40.7\mu g/m^3$) which is located to the west of the M1 within Lutterworth AQMA.

Luton

Twenty monitoring sites are located within the study area in Luton District Council. Eight out of these twenty sites reported concentrations that exceed the annual mean objective for NO_2 in 2014. The highest recorded concentration was 51.1µg/m^3 at site 316 which is located in Luton to the west of the M1 within the Luton No.2 AQMA. All other sites with exceedances are located within Luton urban area with the exception of site 315 which is located along the M1 south of Luton.

Milton Keynes

None of the NO_2 concentrations recorded at the fourteen sites which are located within the study area in Milton Keynes District Council exceed the annual mean objective for NO_2 in 2014 in Milton Keynes. There is no data available for 2015 except for site 381 which is recorded as being well below the objective.

Northampton

Nine monitoring sites are located within the study area in Northampton District Council. Only site 421 recorded concentrations that exceed the annual mean objective for NO_2. This site is located along the A45, within Northampton AQMA No. 5. NO_2 concentrations at this site have exceeded the annual mean objective in the years 2013, 2014 and 2015 with the highest concentration recorded in 2014 (44.6µg/m^3).

South Bucks District Council

The only monitoring site in the study area in South Bucks District Council is site 498 which is located close to the M40 and South Bucks AQMA 1. This site measured NO_2 concentrations below the annual mean air quality objective in 2014 (27.0µg/m^3). Concentrations recorded at this site reduced further in 2015 to 26.0µg/m^3.

South Northamptonshire

None of the NO_2 concentrations recorded eleven sites which are located within the study area in South Northamptonshire District Council exceeded the objective for NO_2 in 2014 in South Northamptonshire.

St Albans

Four sites are located within the study area in St Albans District Council. Reported concentrations at all four sites were below the annual mean NO_2 annual mean objective in 2014 and 2015.

Wycombe

Seven sites are located with the study area in Wycombe District Council. Only site 676, which is located near the M40 and in the Wycombe AQMA No. 1, exceeded the objective in 2014 (52.8µg/m^3).

Highways England scheme specific monitoring

The monitoring carried out for Highways England was undertaken between 2013 and 2014 over a 12 month period. Results from this monitoring were used along with local authority monitoring data for model verification purposes.

The results from the monitoring survey indicate exceedances of the objective existed along the M1 to the north of Northampton and between J15 and J15a within the Northampton AQMA No.1. The exceedances recorded are at worst case receptor locations close to the M1 around 20-30m from the roadside. All other monitoring sites recorded concentrations below the NO_2 annual mean objective.

Table B-6 Scheme specific diffusion tube monitoring sites undertaken by Highways England monitoring in 2013-2014

Highways England ID	Site ID (HA549348-AMAR-EAQ-SWI-DR-YE-000004)	Grid reference		Site type	Annual mean NO_2 (µg/m^3)	Percentage data capture (%)
		X	Y			
M1J13J19_001_0813	702	454804	284747	Background	22.0	100
M1J13J19_002_0813	703	454674	283839	Background	30.6	83

Highways England ID	Site ID (HA549348-AMAR-EAQ-SWI-DR-YE-000004)	Grid reference		Site type	Annual mean NO_2 ($\mu g/m^3$)	Percentage data capture (%)
		X	Y			
M1J13J19_003_0813	704	456423	279172	Roadside	27.3	100
M1J13J19_004_0813	705	457533	273984	Roadside	36.5	100
M1J13J19_005_0813	706	456496	276873	Roadside	25.2	100
M1J13J19_010_0813	711	457935	270369	Roadside	27.1	100
M1J13J19_011_0813	712	458859	269415	Roadside	26.6	100
M1J13J19_013_0813	713	459737	268160	Roadside	25.5	75
M1J13J19_014_0813	714	461321	265443	Roadside	23.4	100
M1J13J19_015_0813	715	461478	265542	Roadside	**40.3**	100
M1J13J19_016_0813	716	466594	259633	Roadside	**46.2**	100
M1J13J19_017_0813	717	470123	260196	Roadside	30.1	100
M1J13J19_018_0813	718	469578	258922	Roadside	33.0	100
M1J13J19_019_0813	719	469509	259045	Roadside	31.3	100
M1J13J19_020_0813	720	473465	256802	Roadside	**40.0**	100
M1J13J19_021_0813	721	474933	255439	Roadside	**43.9**	42
M1J13J19_022_0813	722	475273	253342	Roadside	22.7	100
M1J13J19_023_0813	723	476448	254400	Roadside	22.7	100
M1J13J19_024_0813	724	475834	256446	Background	31.8	100
M1J13J19_025_0813	725	479234	250738	Roadside	24.2	100
M1J13J19_026_0813	726	485724	243755	Roadside	34.8	100
M1J13j19_027_0813	727	486131	243198	Background	29.5	100
M1J13J19_028_0813	728	486299	243212	Background	34.9	100
M1J13J19_030_0813	729	488582	239570	Background	23.9	83
M1J13J19_031_0813	730	495955	237646	Roadside	33.1	100
M1J13J19_032_0813	731	496296	238214	Roadside	27.6	100
M1J13J19_034_0813	733	501824	229596	Roadside	24.9	25
M1J13J19_34B_0813	734	501824	229596	Roadside	25.6	50
M1J13J19_35A_0913	735	486290	243344	Roadside	37.9	92
M1J13J19_35B_0913	736	486290	243344	Roadside	39.7	92
M1J13J19_35C_0913	737	486290	243344	Roadside	38.7	92
M1J13J19_037_0813	741	501022	231257	Background	16.5	100
M1J13J19_038_0813	742	475305	255422	Roadside	24.0	100
M1J13J19_039_0813	743	456331	276949	Roadside	21.7	83
M1J13J19_045_0813	744	488101	241433	Urban background	24.5	75
Exceedance of the annual mean objective in **bold**.						

B.2.5.2. Background pollution concentrations

Background concentrations refer to the existing levels of pollution in the atmosphere, produced by a variety of sources, such as roads and industrial processes. Defra has produced estimated background air pollution data for each 1x1km^2 OS grid square for each local authority area in the UK. Background maps are available for 2013 and projected through to 2030.

Estimated background air pollution data for 2014 for NO_2 and PM_{10} for the local authorities close to the scheme are presented in Table B-7.

As the table shows, none of the background concentrations are above the relevant annual AQS objective concentration for NO_2 or PM_{10} (40µg/m^3) other than the maximum annual mean NO_2 concentration in South Bucks District Council. This maximum background in South Bucks is outside of the study area (close to J15 on the M25).

Table B-7 Predicted background pollutant concentrations for 2014

Local Authority	Annual mean NO_2 concentration (µg/m3)			Annual mean PM_{10} concentration (µg/m3)		
	Max	Min	Average	Max	Min	Average
Central Bedfordshire Council	25.1	9.8	13.0	19.6	14.1	16.1
Cherwell District Council	21.7	9.0	12.0	19.3	13.6	15.4
Daventry District Council	21.3	9.8	12.0	19.3	13.6	15.4
Harborough District Council	21.6	10.2	12.5	18.5	13.3	15.2
Luton Borough Council	27.5	14.9	20.5	19.5	15.2	16.6
Milton Keynes Borough Council	24.5	10.9	13.9	19.8	13.8	15.8
Northampton District Council	25.8	13.2	17.6	19.2	14.8	16.9
South Bucks District Council	41.6	13.8	21.4	20.9	14.5	16.4
South Northamptonshire District Council	23.8	9.9	11.6	19.4	13.7	15.4
St Albans District Council	29.9	12.9	17.7	19.8	14.5	16.5
Wycombe District Council	24.0	10.3	12.9	18.3	13.4	14.7
Air quality objective (exceedances in bold)	40			40		

Comparison between the Defra modelled background concentrations and monitored background results has been provided in Table B-8. Defra modelled results were between 2.5% and 17.2% different to observed concentrations for the same year at the nine sites.

Table B-8 Comparison between Defra modelled background concentrations and local monitoring

Local Authority	Site ID	Name	Grid reference		Monitored NO_2 2014	Background NO_2 2014	Difference µg/m^3	% change
			X	Y				
Luton Borough Council	332	LN45	506265	223673	21.2	21.8	-0.6	-3.0
Luton Borough Council	337	LN50	507924	220821	21.8	23.3	-1.5	-6.5
Milton Keynes Council	392	42-44 Walnut Close, Newport Pagnell	486495	243345	19.9	19.4	0.5	2.5
Milton Keynes Council	393	6 Atherstone Court, Two Mile Ash	481331	238825	12.6	13.3	-0.7	-5.5
Milton Keynes Council	394	1 Tudor Gardens, Stony Stratford	479459	239536	10.6	12.8	-2.2	-17.2
Northampton Borough Council	415	Riverside	475655	259833	21.0	20.0	1.1	5.3
Midlands	702	M1J13J19_001_0813	454804	284747	22.0	18.8	3.2	17.0
Midlands	741	M1J13J19_037_0813	501022	231257	16.5	19.9	-3.3	-16.8
Luton Borough Council	332	LN45	506265	223673	21.2	21.8	-0.6	-3.0

B.2.6. Sites used for verification

Verification has been completed using 40 monitoring sites across the study area. Where appropriate the location of diffusion tubes used within the verification process was updated following the site visit and location reviews.

Verification followed the methodology outlined in the Local Air Quality Management Technical Guidance (LAQM TG.16)[3].

The following method has been used:

- Comparison of the modelled Road NO_x versus the monitored Road NO_x. Road NO_x measured at the diffusion tube monitoring sites was calculated using the latest Defra NO_x to NO_2 calculator, available on the LAQM website[4].
- A verification factor was calculated based on regression, which was applied to the modelled Road NO_x concentrations.
- The adjusted modelled Road NO_x contribution was then used to calculate the Road NO_2 component using the Defra NO_x to NO_2 calculator.
- Comparison of model performance close to main road sources was checked to determine if a distance based verification factor was required.
- The modelled versus monitored adjustment required across the scheme was reviewed, which showed that groups of monitoring sites tended to display similar model performance in different areas. As such a number of verification areas were established to refine the model verification process. These were identified as: areas where the model was under-predicting close to the M1, and also in Luton, M1 south of Luton, M40 and A508.

The air quality monitoring data collected as part of this assessment was reviewed to determine the suitability of each of the monitoring locations for inclusion in the model verification process. The criteria used to determine the suitability of the monitoring data for inclusion into the verification process is outlined below:

- Monitoring location was required to be within 200m of a road within the study area;
- Monitoring data in 2014 was required to be >=75% complete;
- Monitoring data influenced by major road emissions sources which were missing from the traffic model, and hence could not be included in the dispersion model was excluded; or
- Monitoring data from Sites where the exact location could not be accurately identified or validated was excluded.

A number of monitoring sites were not used in the verification process, and the reasons are detailed Table B-9.

[3] Defra LAQM Technical Guidance 2016 (LAQM TG.16).
4 http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html#NOxNO2calc version 5.1 Defra (2016) Local Air Quality Management Technical Guidance

Table B-9 Monitoring sites removed from the verification process

Site ID	Location	Reasoning
261&262	Lilbourne (M1)	Road adjacent to the monitoring site is not included in the traffic model.
315	Farley Green, Luton (M1)	Road adjacent to the monitoring site is not included in the traffic model.
421	Wooton (A45)	Monitoring location is close to petrol station entrance, emissions from queuing traffic are not included in the model.
503	Beaconsfield (M40)	Roads adjacent to the monitoring site are not included in the traffic model.
527	Kislingbury (M1)	Site location could not be verified.
531	Old Stratford (A5)	Site location could not be verified.
533	Collingtree (M1, A45)	Roads adjacent to the monitoring site are not included in the traffic model.
534	Roade (A508)	Roads adjacent to the monitoring site are not included in the traffic model.
535	Roade (A508)	Roads adjacent to the monitoring site are not included in the traffic model.
536	Roade (A508)	Roads adjacent to the monitoring site are not included in the traffic model.
675	High Wycombe (M40)	The diffusion tube site location could not be verified.
676	Lane End (M40)	Road adjacent to the monitoring site is not included in the traffic model.
690	Stockenchurch (M40)	Site location could not be verified.
706	Lilbourne (M1)	Road adjacent to the monitoring site is not included in the traffic model.
714&715	Long Buckby Wharf (M1)	Road adjacent to the monitoring site is not included in the traffic model.
716	Upper Heyford (M1)	Site location could not be verified.
727	Newport Pagnel (M1)	Site is located elevated and therefore concentrations are over-predicted.
729	Milton Keynes	Roads adjacent to the monitoring site are not included in the traffic model.
730	Brogborough (A421)	Road adjacent to the monitoring site is not included in the traffic model.
731	Marston Moretaine (A421)	Site location could not be verified.
733	Toddington (M1)	Site location could not be verified.

A review was undertaken of the modelled versus monitoring performance across the whole study area. It was identified that groups of monitoring sites tended to display similar model performance. As a result a number of verification zones were defined. The description of the verification zones is presented below and the locations shown in drawing HA549348-AMAR-EAQ-SWI-DR-YE-000008, Appendix A:

- Zone 1 – M1 (receptors along the M1 J6a-J10 and J12-J20, including A45)
- Zone 2 – M1 Luton (receptors along the M1 north of J11)

- Zone 3 – M1 South of Luton (along the M1 J10-11)
- Zone 4 – A508
- Zone 5 – M40

The summary results and model performance statistics is provided in Table B-10 and graphs showing model performance for each zone provided in Figure B-3 M1 model performanceto Figure B-7.

The ADMS Road model includes the effect of vehicle induced turbulence to the road. This means that the model uses a difference approach for the receptors located near to the road. As a result, it was considered appropriate to analyse the verification results to determine if the model adjustment factor depends on the distance from the road. The ratio of modelled vs monitored concentrations has been plotted against distance from the road centreline. This has been undertaken for all the verification points and for those points near to the M1. The results are shown in Figure B-8 and Figure B-9. No evidence for the requirement of a different factor was identified.

Table B-10 Verification zone model performance

M1		M1 Luton		M1 South of Luton		A508		M40	
Adjustment factor – 1.41		Adjustment factor – 1.68		Adjustment factor – 0.93		Adjustment factor – 1.14		Adjustment factor – 1.98	
Within +10%	8	Within +10%	1	Within +10%	2	Within +10%	1	Within +10%	1
Within -10%	11	Within -10%	3	Within -10%	3	Within -10%	1	Within -10%	2
Within +-10%	19	Within +-10%	4	Within +-10%	5	Within +-10%	2	Within +-10%	3
Within +10 to 25%	1	Within +10 to 25%	0	Within +10 to 25%	0	Within +10 to 25%	0	Within +10 to 25%	0
Within -10 to 25%	6	Within -10 to 25%	0	Within -10 to 25%	0	Within -10 to 25%	0	Within -10 to 25%	0
Within +-10 to 25%	7	Within +-10 to 25%	0	Within +-10 to 25%	0	Within +-10 to 25%	0	Within +-10 to 25%	0
Over +25%	0	Over +25%	0	Over +25%	0	Over +25%	0	Over +25%	0
Under -25%	0	Under -25%	0	Under -25%	0	Under -25%	0	Under -25%	0
Greater +-25%	0	Greater +-25%	0	Greater +-25%	0	Greater +-25%	0	Greater +-25%	0
Within +-25%	26	Within +-25%	0	Within +-25%	0	Within +-25%	0	Within +-25%	0
Total	26	Total	4	Total	5	Total	2	Total	0
Uncertainties Assessment		**Uncertainties Assessment**		**Uncertainties Assessment**		**Uncertainties Assessment**		**Uncertainties Assessment**	
Correlation	0.93	Correlation	0.92	Correlation	0.92	Correlation	-1.00	Correlation	1.00
RMSE (µg/m^3)	5.37	RMSE (µg/m^3)	7.80	RMSE (µg/m^3)	1.32	RMSE (µg/m^3)	1.42	RMSE (µg/m^3)	10.47
Fractional bias	0.03	Fractional bias	0.03	Fractional bias	0.00	Fractional bias	0.02	Fractional bias	-0.01

Figure B-3 M1 model performance

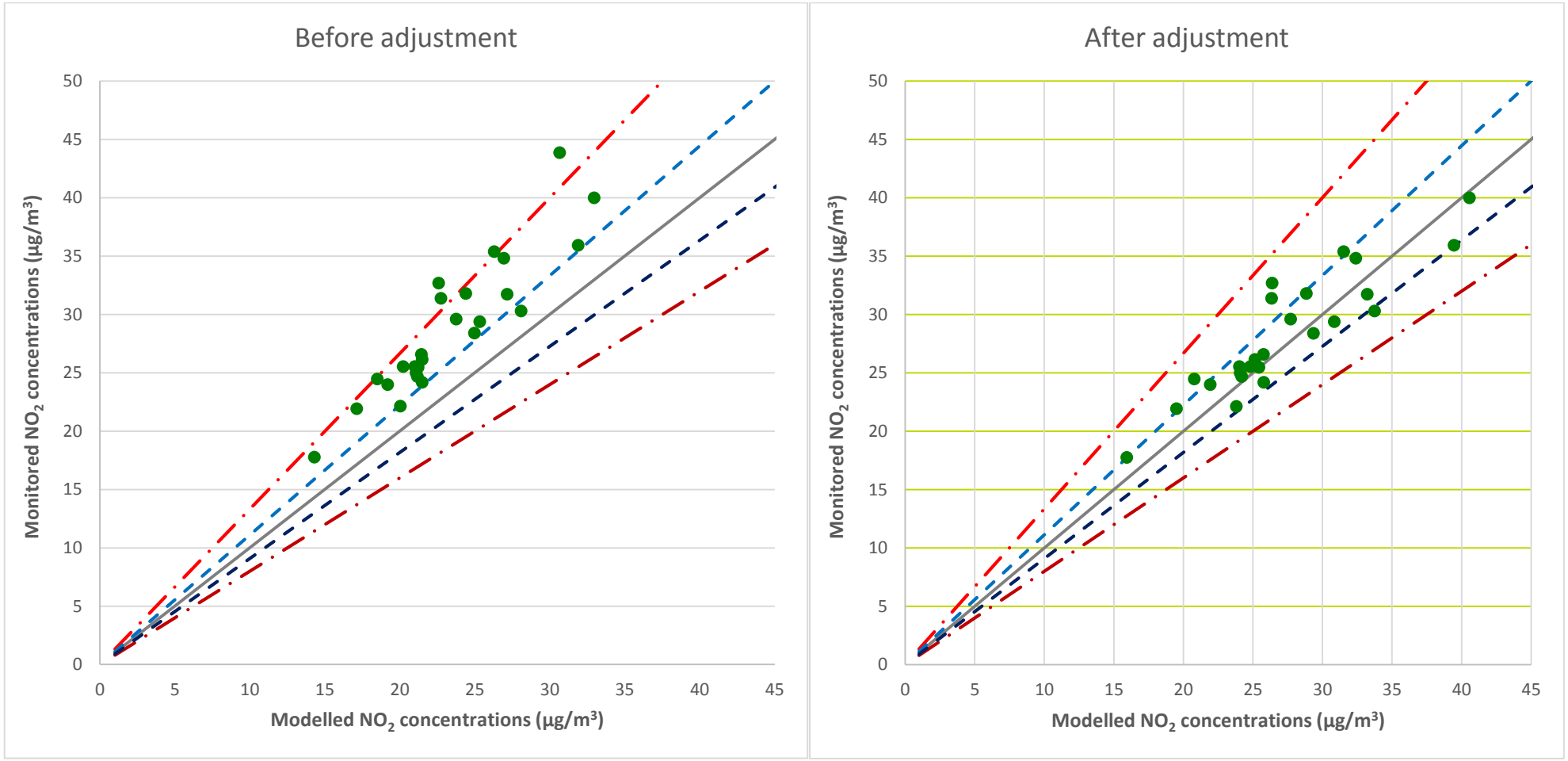


Figure B-4 M1 Luton model performance

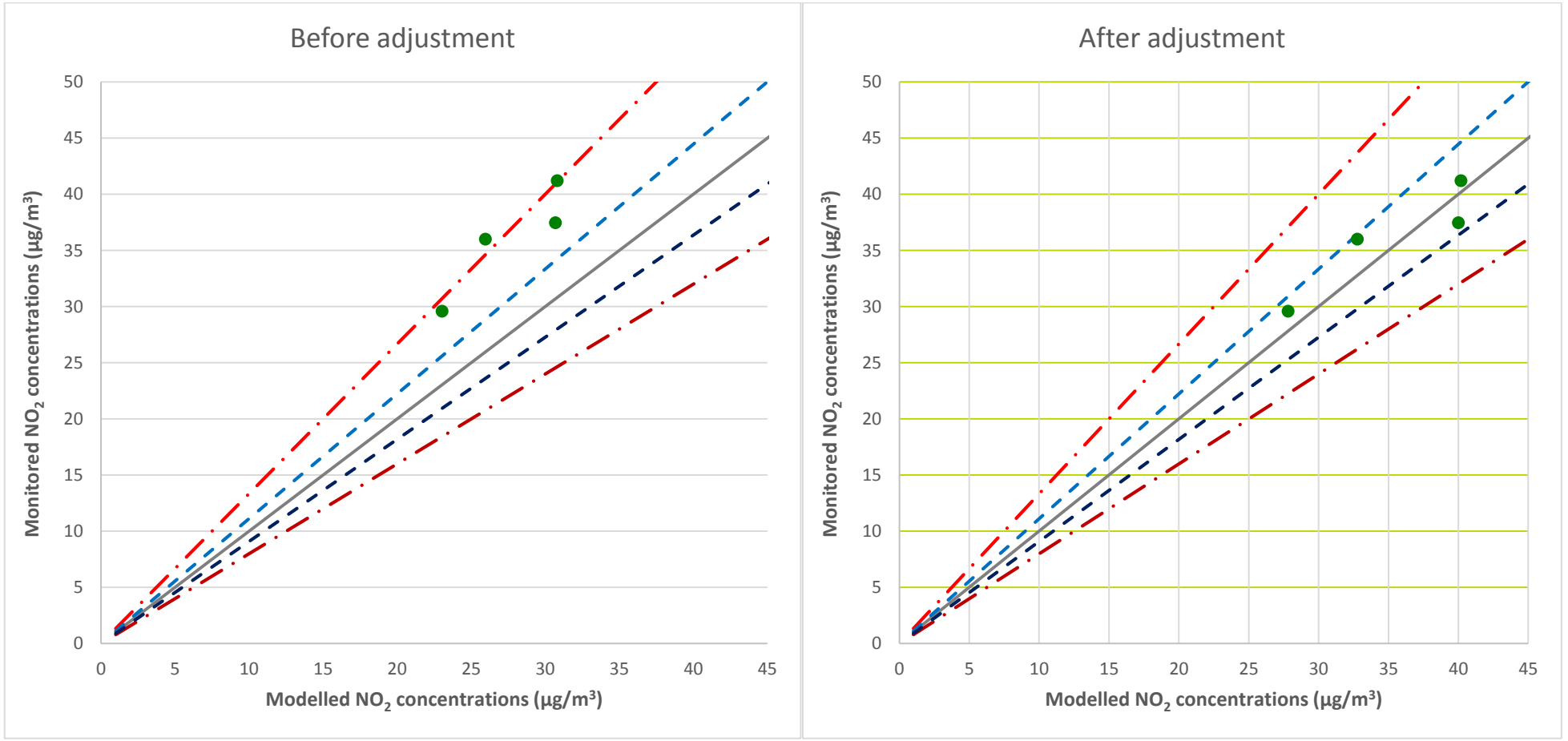


Figure B-5 M1 south of Luton model performance

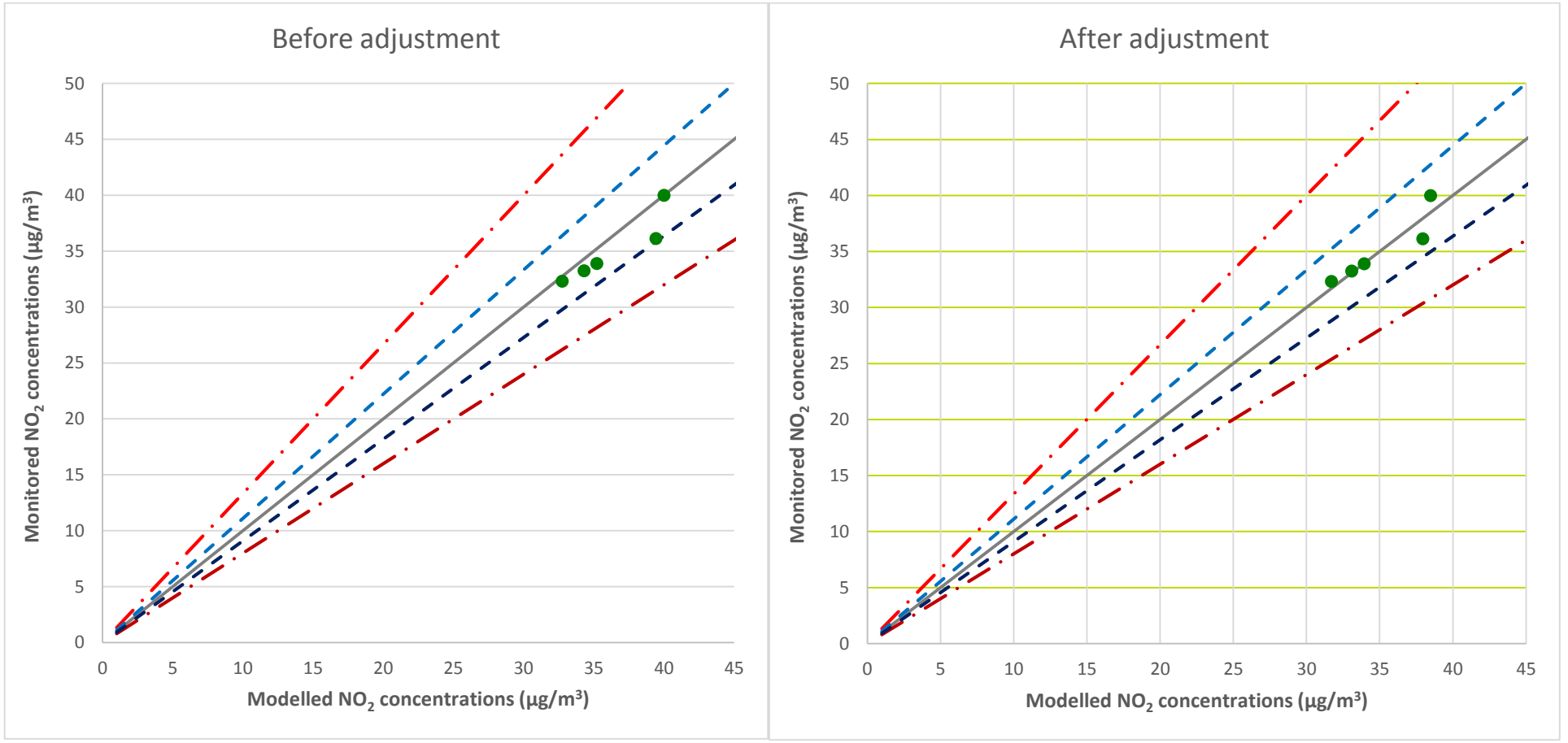


Figure B-6 M1 A508 model performance

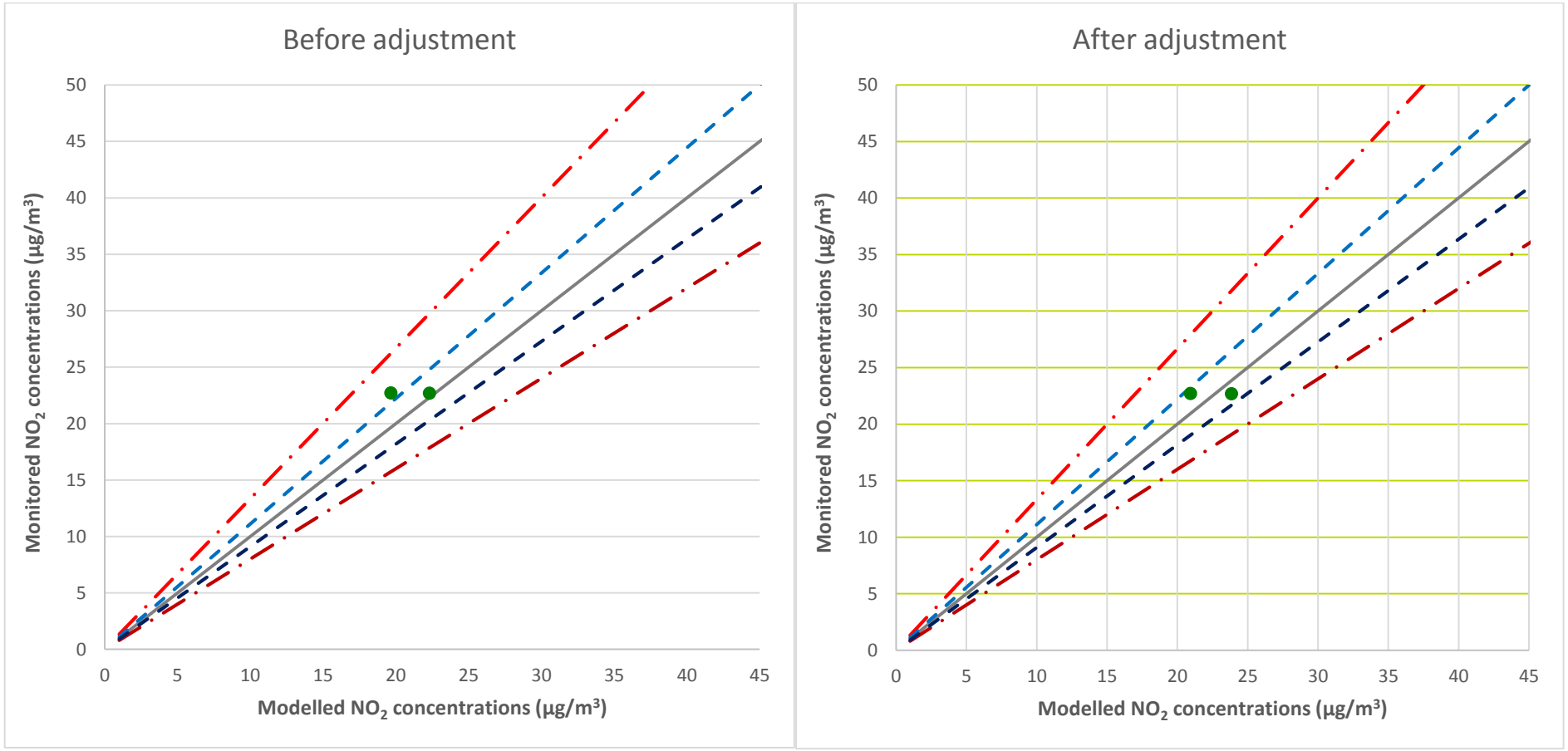


Figure B-7 M40 model performance

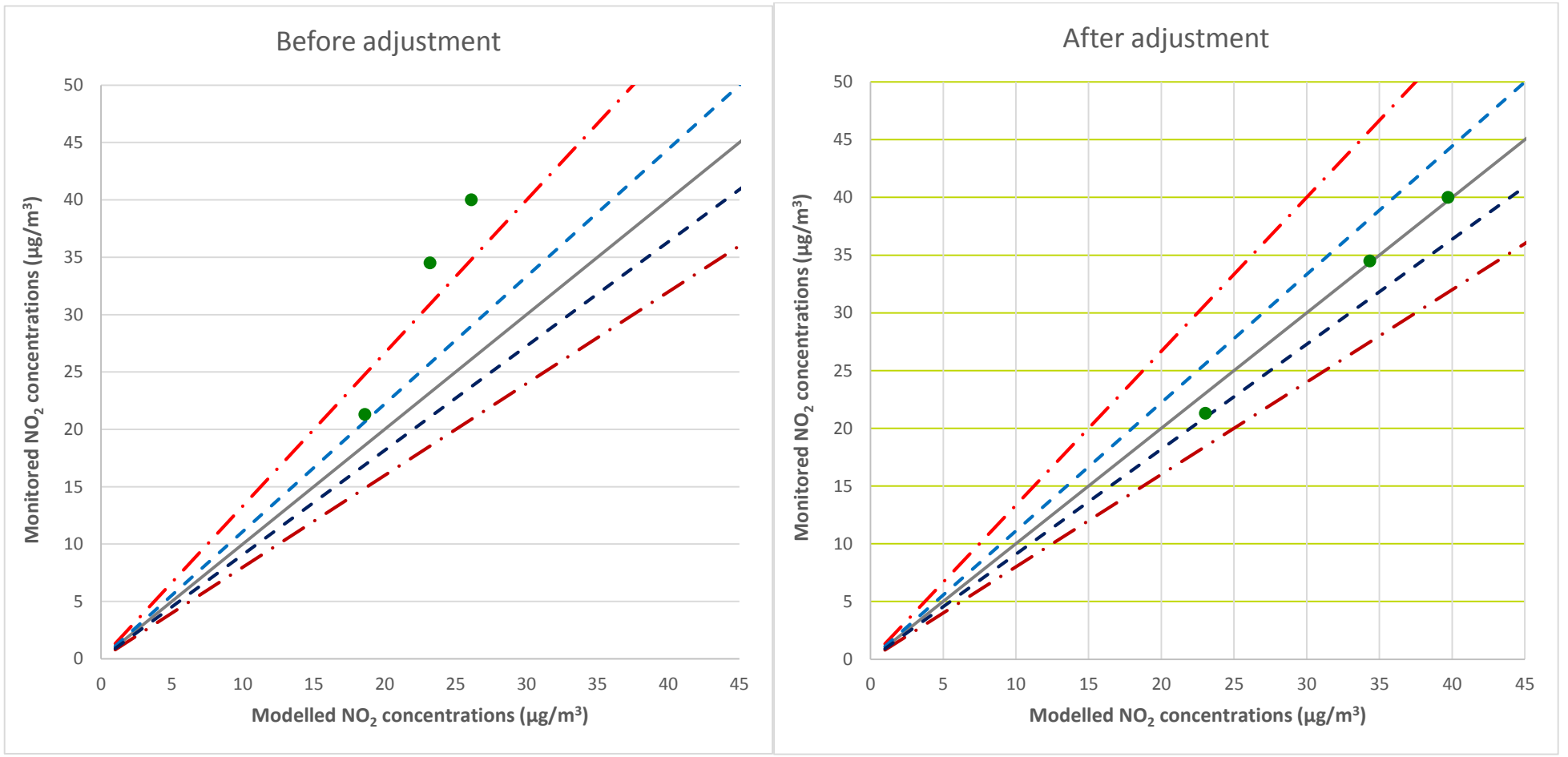


Figure B-8 All verification points – distance from road vs ratio of monitored and modelled concentrations

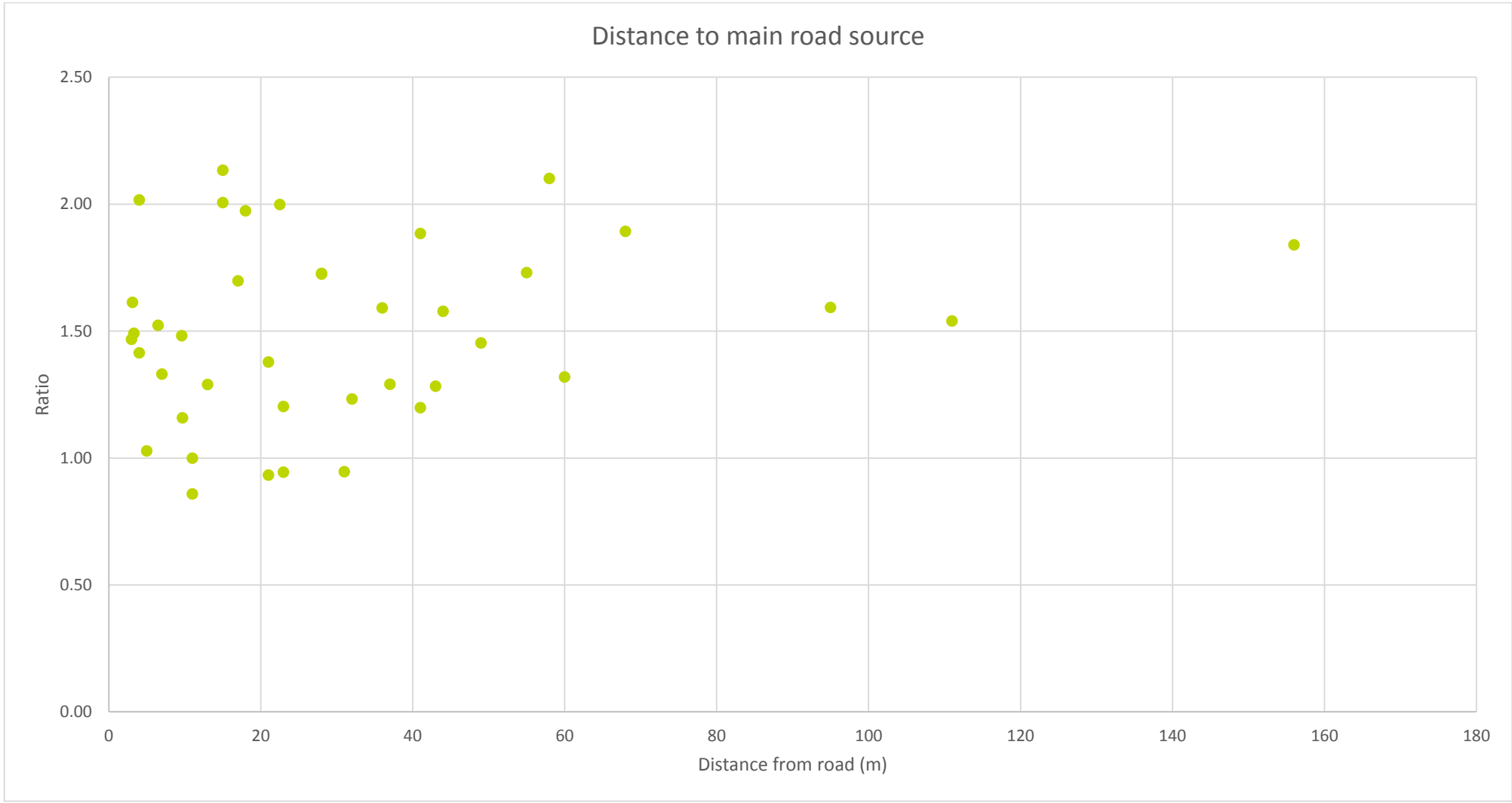
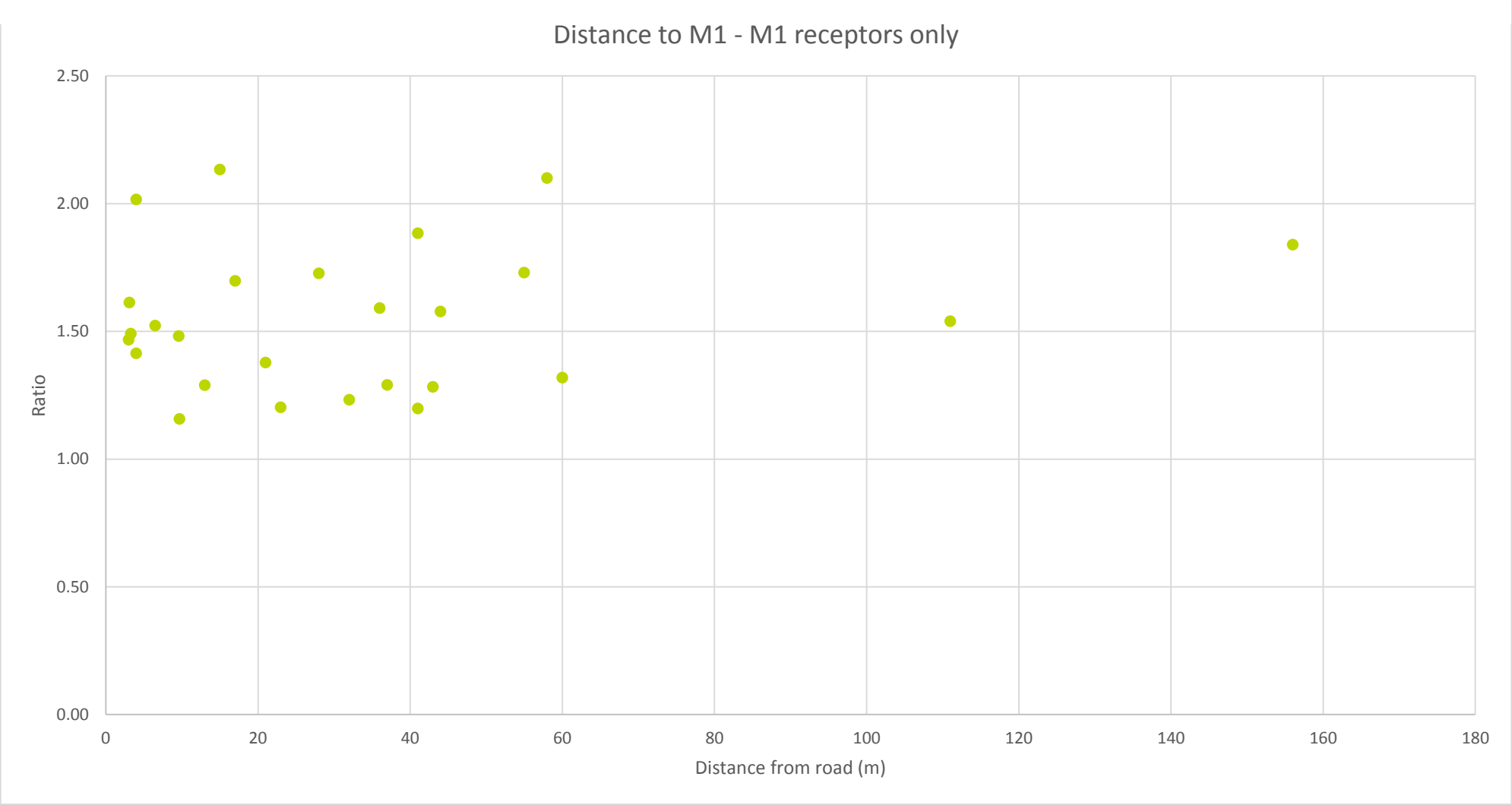


Figure B-9 M1 verification points – distance from road vs ratio of monitored and modelled concentrations



B.3. Operational phase impacts

B.3.1.1. Ecological receptor results

Annual mean NO_x concentrations

The modelled annual mean NO_x concentrations magnitude of change as a result of the Proposed Scheme for the assessment year (2021) is shown in Table B-11.

Table B-11 Annual mean NO_x concentrations in 2021

Receptor ID (HA549348-AMAR-EAQ-SWI-DR-YE-000002)	Site Name	Annual mean NO_x concentration (ug/m^3)			Change in NO_x (ug/m^3)	Magnitude of change
		Baseline (2014)	2021 DM	2021 DS		
1	Ardley Cutting and Quarry 1	11.8	42.3	41.8	-0.5	Small Beneficial
2	Ardley Cutting and Quarry 2	11.8	30.4	30.0	-0.4	Small Beneficial
3	Ardley Cutting and Quarry 3	11.8	24.4	24.1	-0.3	Imperceptible
4	Ardley Cutting and Quarry 4	11.8	14.8	14.6	-0.2	Imperceptible
5	Ardley Cutting and Quarry 5	10.7	9.6	9.5	-0.1	Imperceptible
6	Wendlebury Meads and Mansmoor Closes 1	10.0	21.0	20.6	-0.4	Small Beneficial
7	Wendlebury Meads and Mansmoor Closes 2	10.0	16.4	16.1	-0.3	Imperceptible
8	Wendlebury Meads and Mansmoor Closes 3	10.0	10.0	9.8	-0.2	Imperceptible
9	Wendlebury Meads and Mansmoor Closes 4	10.0	6.1	6.0	-0.1	Imperceptible
10	Shabbington Woods Complex 1	10.3	2.6	2.6	0.0	Imperceptible
11	Shabbington Woods Complex 2	10.2	43.2	42.3	-0.9	Small Beneficial
12	Shabbington Woods Complex 3	10.2	25.0	24.5	-0.5	Small Beneficial
13	Shabbington Woods Complex 4	10.2	11.9	11.6	-0.2	Imperceptible
14	Shabbington Woods Complex 5	10.3	7.3	7.2	-0.1	Imperceptible
15	Aston Rowant 1	9.7	66.7	65.9	-0.8	Small Beneficial
16	Aston Rowant 2	9.7	33.1	32.7	-0.4	Small Beneficial
17	Aston Rowant 3	9.7	17.8	17.6	-0.2	Imperceptible
18	Aston Rowant 4	9.7	10.7	10.6	-0.2	Imperceptible

Receptor ID (HA549348-AMAR-EAQ-SWI-DR-YE-000002)	Site Name	Annual mean NO_x concentration (ug/m^3)			Change in NO_x (ug/m^3)	Magnitude of change
		Baseline (2014)	2021 DM	2021 DS		
20	Aston Rowant Cutting 2	9.7	36.8	36.3	-0.5	Small Beneficial
21	Widdenton Park Wood 1	10.7	20.7	20.3	-0.3	Imperceptible
22	Widdenton Park Wood 2	10.7	13.6	13.4	-0.2	Imperceptible
23	Widdenton Park Wood 3	10.7	8.3	8.2	-0.1	Imperceptible
24	Reynolds Wood	12.0	7.5	7.7	0.2	Imperceptible

Table B-12 Annual mean nutrient nitrogen deposition in 2021

Receptor ID (HA549348-AMAR-EAQ-SWI-DR-YE-000002)	Site name	Critical load	Nitrogen deposition (kg N ha^{-1} yr^{-1}) in 2021			
			Baseline	2021 DM	2021 DS	Change
1	Ardley Cutting and Quarry 1	15 - 25	20.7	24.1	24.1	-0.02
2	Ardley Cutting and Quarry 2	15 - 25	20.7	23.6	23.6	-0.02
3	Ardley Cutting and Quarry 3	15 - 25	20.7	23.3	23.3	-0.02
4	Ardley Cutting and Quarry 4	15 - 25	20.7	22.8	22.8	-0.01
5	Ardley Cutting and Quarry 5	15 - 25	20.7	22.5	22.5	-0.01
6	Wendlebury Meads and Mansmoor Closes 1	20-30	17.8	20.0	20.0	-0.02
7	Wendlebury Meads and Mansmoor Closes 2	20-30	17.8	19.8	19.8	-0.01
8	Wendlebury Meads and Mansmoor Closes 3	20-30	17.8	19.4	19.4	-0.01
9	Wendlebury Meads and Mansmoor Closes 4	20-30	17.8	19.2	19.2	-0.01
10	Shabbington Woods Complex 1	20-31	16.7	17.9	17.9	0.00
11	Shabbington Woods Complex 2	20-31	16.7	19.9	19.9	-0.04
12	Shabbington Woods Complex 3	20-31	16.7	19.1	19.1	-0.02
13	Shabbington Woods Complex 4	20-31	16.7	18.4	18.4	-0.01
14	Shabbington Woods Complex 5	20-31	16.7	18.2	18.2	-0.01
15	Aston Rowant 1	10 - 20	29.4	34.4	34.4	-0.03
16	Aston Rowant 2	10 - 20	29.4	32.9	32.9	-0.02
17	Aston Rowant 3	10 - 20	29.4	32.2	32.2	-0.01
18	Aston Rowant 4	10 - 20	29.4	31.8	31.8	-0.01
20	Aston Rowant Cutting 2	15 - 25	29.4	33.1	33.1	-0.02

Receptor ID (HA549348-AMAR-EAQ-SWI-DR-YE-000002)	Site name	Critical load	Nitrogen deposition (kg N ha^{-1} yr^{-1}) in 2021			
			Baseline	2021 DM	2021 DS	Change
21	Widdenton Park Wood 1	10 - 20	29.6	32.6	32.6	-0.02
22	Widdenton Park Wood 2	10 - 20	29.6	32.2	32.2	-0.01
23	Widdenton Park Wood 3	10 - 20	29.6	32.0	31.9	-0.01

B.3.1.2. Human receptor results

Table B-13 Annual mean NO_2 concentrations

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
1	511580	203882	14	30.2	18.7	18.8	21.3	21.4	0.1
2	511054	205709	14	24.8	15	15.1	17.1	17.2	0.1
3	510725	206048	14	42.5	28	28.2	32	32.1	0.1
4	510246	205973	14	18.7	10.8	10.8	12.3	12.3	0
5	509281	207781	14	31.6	19.4	19.5	22.2	22.2	0
6	509664	210761	15	39.4	24.9	25	28.4	28.5	0.1
7	509624	210804	15	27.5	16.5	16.5	18.8	18.9	0
8	509428	210759	15	17.5	9.7	9.7	11.1	11.1	0
9	509428	210900	15	17.5	9.7	9.7	11.1	11.1	0
10	509506	211056	15	19.2	10.9	10.9	12.4	12.4	0
11	510015	211450	15	18.6	10.4	10.4	11.9	11.9	0
12	509828	211420	15	24.4	14.4	14.4	16.4	16.5	0
13	509922	211423	15	20.3	11.6	11.6	13.2	13.3	0
14	510067	211521	15	17.7	9.9	9.9	11.3	11.3	0
15	509459	212177	15	25.6	15.3	15.3	17.4	17.5	0
16	509316	212938	15	22.6	13.3	13.3	15.1	15.1	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
17	509301	213003	15	22	12.9	12.9	14.7	14.7	0
18	509538	213121	15	26.9	16.3	16.3	18.6	18.6	0
19	509399	214536	15	25.5	15.9	16	18.1	18.2	0.1
20	509093	214098	15	19.5	11.3	11.3	12.9	12.9	0
21	508925	214781	15	20.4	11.9	11.9	13.6	13.6	0
22	508786	214870	15	19.3	11.2	11.2	12.8	12.8	0
23	509045	214898	15	24.3	14.7	14.7	16.7	16.8	0.1
24	509024	215579	15	30.3	19.3	19.4	22	22.1	0.1
25	508990	215540	15	23.6	14.4	14.4	16.4	16.4	0.1
26	509177	216161	16	23	13.9	13.9	15.8	15.9	0.1
27	509371	217486	16	16.5	9.2	9.3	10.5	10.6	0
28	508639	217936	16	22.4	13.2	13.3	15.1	15.2	0.1
29	508631	217959	16	22.1	13.1	13.2	14.9	15	0.1
30	508609	218016	16	22.7	13.2	13.3	15	15.1	0.1
31	508606	218071	16	23.2	13.5	13.6	15.4	15.5	0.1
32	509123	218674	16	20.1	11.7	11.7	13.3	13.3	0
33	508164	218815	16	17.4	9.6	9.7	11	11	0
34	508138	218759	16	16.9	9.3	9.3	10.6	10.6	0
35	508101	218641	16	19.4	11.1	11.1	12.6	12.6	0
36	508257	219308	16	20.6	11.8	11.8	13.4	13.5	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
37	508212	219390	16	22	13	13	14.8	14.8	0
38	507860	219765	16	24.2	14.4	14.4	16.4	16.5	0.1
39	507913	219834	16	21.9	12.9	12.9	14.6	14.7	0
40	507977	219893	16	19.6	11.2	11.2	12.8	12.8	0
41	508013	219934	16	18.6	10.4	10.5	11.9	11.9	0
42	507701	220162	16	21	11.8	11.9	13.5	13.5	0
43	507703	219926	16	37.9	24.6	24.7	28	28.2	0.2
44	507745	219870	16	34.2	21.8	21.9	24.8	24.9	0.1
45	507823	219842	16	24.9	14.9	15	17	17.1	0
46	507538	220328	16	23.5	13.6	13.7	15.5	15.6	0.1
47	507468	220427	16	23.7	13.7	13.8	15.6	15.7	0.1
48	507442	220474	16	23.2	13.4	13.5	15.3	15.3	0.1
49	507346	220596	16	23.7	13.7	13.8	15.6	15.7	0.1
50	507244	220742	16	23.1	13.3	13.3	15.1	15.2	0.1
51	507218	220888	16	20	11.1	11.2	12.7	12.7	0
52	507080	220920	16	24.2	14.1	14.2	16.1	16.1	0.1
53	506969	221003	16	28	16.9	17	19.3	19.4	0.1
54	506949	221078	16	23.7	13.8	13.9	15.8	15.8	0.1
55	506898	221212	16	20.8	11.8	11.8	13.4	13.5	0
56	506602	221475	17	21.6	12.3	12.4	14.1	14.1	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
57	506447	221536	17	26.2	15.6	15.7	17.8	17.9	0.1
58	506342	221643	17	24.9	14.7	14.7	16.7	16.8	0.1
59	506198	221824	17	22	12.6	12.6	14.3	14.4	0
60	505963	221938	17	26.6	16.1	16.2	18.3	18.4	0.1
61	505808	222031	17	36.1	22.5	22.7	25.7	25.8	0.2
62	505725	222097	17	38.3	24.2	24.4	27.6	27.8	0.2
63	505748	222139	17	28.9	17.2	17.2	19.6	19.6	0.1
64	506026	222123	17	23.2	13	13.1	14.9	14.9	0
65	506098	222096	17	22.3	12.4	12.4	14.1	14.1	0
66	505628	222217	17	33.7	20.7	20.8	23.6	23.8	0.1
67	505605	222201	17	51.6	34.6	34.8	39.4	39.7	0.3
68	506022	222195	17	23.5	13.3	13.3	15.1	15.1	0
69	505701	222954	17	24	13.4	13.4	15.3	15.3	0
70	505701	222918	17	26.5	14.8	14.9	16.9	17	0
71	505606	222747	17	33.4	19.8	19.9	22.6	22.6	0.1
72	505186	222125	17	19.2	10.5	10.5	11.9	11.9	0
73	505198	222710	17	32.7	19.4	19.4	22.1	22.1	0
74	505060	223397	17	28.3	16.6	16.6	18.9	19	0.1
75	505165	223393	17	35.4	22.2	22.4	25.3	25.5	0.1
76	505210	223331	17	36.5	23.2	23.3	26.4	26.6	0.2

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
77	505098	223477	17	34.4	21.4	21.5	24.4	24.5	0.1
78	505271	223167	17	34.4	21.6	21.7	24.6	24.8	0.2
79	505299	223084	17	38	24.7	24.8	28.1	28.3	0.2
80	505343	222832	17	48.5	32.4	32.6	36.9	37.1	0.2
81	505261	222926	17	27.7	16.5	16.6	18.8	18.9	0.1
82	505261	222768	17	37.2	23.1	23	26.3	26.3	0
83	505391	223559	17	28.9	16.9	16.9	19.3	19.3	0.1
84	505305	223536	17	31.7	19.1	19.2	21.8	21.8	0.1
85	505238	223456	17	47.5	31.7	31.9	36.1	36.4	0.3
86	505271	223391	17	49.4	33.6	33.8	38.3	38.6	0.3
87	505012	223585	17	31.9	19.6	19.7	22.4	22.5	0.1
88	505139	223594	17	43	28.4	28.7	32.4	32.7	0.2
89	505074	223678	17	43.1	28.6	28.8	32.6	32.8	0.2
90	505020	223748	17	43.2	28.7	28.9	32.7	33	0.3
91	504946	223854	17	40.6	26.6	26.8	30.4	30.6	0.2
92	504824	223994	17	46	31	31.3	35.4	35.7	0.3
93	504708	223812	17	21.8	12.3	12.3	14	14	0
94	504686	223875	17	22.5	12.8	12.8	14.6	14.6	0
95	504593	224028	17	23.1	13.2	13.3	15.1	15.1	0.1
96	504481	224178	17	22.1	12.5	12.5	14.3	14.3	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
97	504665	224362	17	32.5	20.3	20.4	23.1	23.2	0.1
98	504721	224250	17	32.6	20.4	20.5	23.2	23.3	0.1
99	504797	224117	17	32.5	20.3	20.4	23.1	23.3	0.1
100	504579	224513	17	34.5	21.8	22	24.9	25	0.2
101	504516	224908	17	27.2	16.1	16.2	18.3	18.4	0.1
102	504525	225073	17	25.9	15.5	15.5	17.6	17.7	0
103	504557	224919	17	27.9	16.4	16.5	18.7	18.8	0.1
104	504759	224868	17	29.5	15.5	15.5	17.7	17.7	0.1
105	504867	224805	17	27.1	14.3	14.3	16.3	16.3	0.1
106	504202	226285	17	20.2	11.8	11.8	13.4	13.4	0
107	504097	226146	17	22.6	13.4	13.4	15.2	15.3	0
108	504162	226163	17	20.1	11.7	11.7	13.3	13.3	0
109	504022	226189	17	21.7	12.7	12.8	14.5	14.6	0
110	503777	226127	17	37	23.4	23.6	26.7	26.9	0.2
111	503565	226092	17	21.4	13.6	13.7	15.4	15.6	0.1
112	503579	226173	17	23.3	14.5	14.6	16.5	16.6	0.1
113	503024	228671	18	40.2	25.6	25.9	29.2	29.5	0.3
114	503210	228705	18	23.9	14.5	14.6	16.6	16.7	0.1
115	502069	228865	18	18.3	10.4	10.5	11.9	11.9	0
116	502609	229493	18	21.1	12.3	12.4	14	14.1	0.1

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
117	502038	229434	18	19	10.9	11	12.4	12.5	0.1
118	502179	229384	18	17.4	9.8	9.9	11.2	11.3	0
119	501850	229633	18	21.5	12.4	12.4	14.1	14.2	0.1
120	501692	229447	18	22	13.1	13.2	14.9	15	0.1
121	502154	229910	18	25.5	15.2	15.3	17.4	17.5	0.1
122	502239	230199	18	24.4	14.9	14.9	17	17	0
123	501021	232820	18	26.9	16.3	16.5	18.6	18.8	0.2
124	501048	232991	18	32.1	20	20.3	22.8	23.2	0.3
125	500906	233247	18	32.6	20.3	20.6	23.1	23.4	0.3
126	500669	233205	18	16.5	9.1	9.2	10.4	10.4	0.1
127	500053	234916	19	23.3	13.6	13.8	15.5	15.7	0.2
128	497796	236250	19	15.9	8.7	8.7	9.9	9.9	0
129	495809	236978	19	20.6	11.7	11.8	13.4	13.5	0.1
130	496536	237388	19	25.8	15.7	15.9	17.9	18.1	0.2
131	496669	237377	19	21.7	12.7	12.9	14.5	14.7	0.1
132	495961	237652	19	23.8	14.3	14.5	16.3	16.5	0.2
133	496005	237718	19	23.9	14.3	14.4	16.4	16.5	0.1
134	496154	238035	19	19.2	11.1	11.2	12.7	12.7	0
135	496208	238157	19	18.5	10.6	10.7	12.1	12.2	0
136	496270	238169	19	20.4	11.9	11.9	13.6	13.6	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
137	496329	238270	19	20.8	12.2	12.3	13.9	14	0
138	496328	238202	19	22.9	13.5	13.6	15.4	15.4	0.1
139	496477	238175	19	20.4	11.8	11.8	13.4	13.5	0
140	496457	238285	19	19.7	11.3	11.3	12.9	12.9	0
141	496386	238308	19	22.6	13.3	13.3	15.2	15.2	0.1
142	496426	238826	19	15.9	8.9	8.9	10.1	10.2	0
143	498238	240283	20	14.3	7.8	7.8	8.9	8.9	0
144	498333	240300	20	14.8	8.1	8.1	9.2	9.2	0
145	498200	241454	20	14.3	7.9	8	9	9.1	0
146	498530	241325	20	14.8	8.3	8.3	9.4	9.5	0
147	498814	240943	20	13.6	7.4	7.4	8.4	8.4	0
148	499008	241112	20	14.3	7.8	7.8	8.9	8.9	0
149	499088	241352	20	14.8	8.1	8.1	9.2	9.2	0
150	499099	241574	20	15.3	8.4	8.5	9.6	9.6	0
151	499222	241626	20	15.8	8.8	8.8	10	10	0
152	499235	241735	20	17.7	10.1	10.1	11.5	11.5	0
153	499346	241758	20	17.5	9.9	10	11.3	11.3	0
154	499409	241600	20	16.2	9.1	9.1	10.4	10.4	0
155	499804	241872	20	14.5	7.9	8	9	9.1	0
156	499785	241920	20	14.9	8.2	8.2	9.3	9.4	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
157	499895	242027	20	14.3	7.9	7.9	9	9	0
158	500031	242227	20	14.7	8.2	8.2	9.3	9.4	0
159	500032	242271	20	15	8.3	8.4	9.5	9.5	0
160	500085	242357	20	15.4	8.6	8.7	9.8	9.9	0.1
161	500112	242393	20	15.4	8.6	8.7	9.8	9.9	0
162	500131	242510	20	16.9	9.6	9.7	11	11	0.1
163	500143	242589	20	19.7	11.6	11.7	13.2	13.3	0.1
164	500289	242767	20	19.3	11.3	11.4	12.9	13	0.1
165	500537	243020	20	17.6	10.1	10.2	11.6	11.6	0.1
166	500720	243060	20	14.8	8.2	8.3	9.4	9.4	0
167	500884	243276	20	16.1	9.1	9.1	10.3	10.4	0
168	501814	244642	21	17.5	10	10.1	11.5	11.5	0
169	501572	244940	21	13.9	7.6	7.6	8.7	8.7	0
170	502114	245315	21	19.7	11.4	11.5	13	13.1	0
171	502429	245863	21	20.6	12.1	12.1	13.7	13.8	0
172	502443	245882	21	21	12.3	12.4	14.1	14.1	0
173	502219	246234	21	16.9	9.3	9.3	10.6	10.6	0
174	502348	246179	21	18.1	10.1	10.1	11.5	11.5	0
175	502502	246294	21	17	9.3	9.3	10.6	10.6	0
176	503027	246306	21	22.3	12.8	12.8	14.6	14.6	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
177	499912	242493	20	18.1	10.5	10.5	11.9	12	0
178	499889	242538	20	16.1	9.1	9.1	10.3	10.4	0
179	499755	242611	20	14.2	7.8	7.8	8.9	8.9	0
180	499739	242650	20	14	7.7	7.7	8.7	8.7	0
181	499709	242086	20	18	10.4	10.5	11.9	11.9	0.1
182	499511	241886	20	16.9	9.5	9.6	10.9	10.9	0
183	498720	242213	20	17.7	10.1	10	11.5	11.5	0
184	496034	238187	19	19.9	11.6	11.7	13.3	13.4	0.1
185	495618	237828	19	22.5	13.6	13.7	15.5	15.6	0.1
186	488769	242814	24	26.7	15.9	16.1	18.2	18.3	0.2
187	488794	242749	24	28.5	17	17.3	19.4	19.7	0.3
188	488657	243000	24	27.7	16.3	16	18.6	18.3	-0.3
189	488600	243011	24	20.5	11.5	11.4	13.1	13	-0.1
190	488616	243118	24	23.6	13.5	13.3	15.4	15.2	-0.2
191	488580	243092	24	21.5	12.1	12	13.8	13.7	-0.1
192	489050	243417	24	17.7	9.8	9.8	11.2	11.1	-0.1
193	488392	242693	24	17.5	9.7	9.7	11	11	0
194	487163	242534	22	25.4	14.7	14.9	16.7	16.9	0.2
195	486821	242749	24	29.8	17.6	18	20.1	20.5	0.4
196	486729	242585	22	23.5	13.3	13.5	15.1	15.3	0.2

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
197	486663	242876	24	30.8	18.3	18.7	20.9	21.3	0.4
198	487845	242288	22	21.3	12	12	13.6	13.7	0.1
199	487834	242028	22	27.6	16.3	16.5	18.6	18.8	0.2
200	487839	241957	22	30.3	18.4	18.6	20.9	21.2	0.3
201	487883	241590	22	22.2	12.6	12.7	14.3	14.5	0.2
202	488047	241518	22	23.2	13.5	13.8	15.4	15.7	0.2
203	488142	241384	22	21.1	12.1	12.3	13.8	14	0.2
204	488163	241312	22	20.4	11.6	11.7	13.3	13.4	0.1
205	488216	241167	22	17.8	9.9	10	11.3	11.4	0.1
206	487727	241606	22	20.6	11.5	11.6	13.1	13.2	0.1
207	486642	241504	22	18.2	9.8	9.8	11.2	11.2	0
208	486534	241579	22	20.7	11.4	11.4	13	13	0
209	486353	241824	22	19.9	11	11	12.5	12.5	0
210	486427	241721	22	21.5	12	12	13.7	13.7	0
211	486372	241628	22	21.1	11.7	11.6	13.3	13.2	-0.1
212	486347	241490	22	21.5	11.9	11.8	13.6	13.5	-0.1
213	486221	241398	22	19.9	10.9	10.8	12.4	12.3	0
214	486147	241478	22	22.7	12.7	12.6	14.5	14.4	-0.1
215	486046	241441	22	21.7	12.1	12	13.7	13.7	0
216	486107	241289	22	18.5	10	10	11.4	11.4	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
217	485995	241237	22	19.8	10.9	11.1	12.5	12.6	0.2
218	485899	241420	22	26	14.9	15	17	17.1	0.1
219	486014	241138	22	20.5	11.4	11.6	13	13.2	0.2
220	485909	241264	22	21.6	12.1	12.2	13.8	13.9	0.2
221	485864	241277	22	24.4	13.8	14.1	15.8	16	0.3
222	485937	241128	22	17.5	9.4	9.5	10.7	10.8	0.1
223	485687	241211	22	22.6	12.6	12.8	14.3	14.6	0.3
224	485651	241296	22	18.9	10.2	10.3	11.6	11.7	0.1
225	485763	241335	22	20.4	11.2	11.3	12.7	12.9	0.2
226	486074	240992	22	18.8	10.1	10.2	11.5	11.7	0.1
227	485976	240862	22	19.7	10.5	10.6	12	12	0
228	485939	240903	22	18.9	10	10.1	11.4	11.5	0
229	486223	240873	22	20.3	11	11	12.5	12.6	0.1
230	486207	240756	22	20.3	11.1	11.2	12.7	12.8	0.1
231	486039	240724	22	17.4	9.2	9.2	10.5	10.5	0
232	486098	240621	22	17.5	9.3	9.3	10.5	10.6	0
233	486249	240595	22	18.7	10.1	10.2	11.5	11.6	0.1
234	486355	240550	22	19.7	10.8	11	12.3	12.5	0.2
235	486323	240491	22	19.1	10.3	10.4	11.8	11.9	0.1
236	486328	240398	22	17.6	9.3	9.4	10.7	10.7	0.1

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
237	486453	240397	22	22.6	12.6	12.8	14.4	14.5	0.2
238	486407	240364	22	19.5	10.6	10.8	12.1	12.3	0.2
239	486443	240277	22	18.5	9.9	10.1	11.3	11.5	0.2
240	486542	240173	22	21.1	11.9	12.2	13.6	14	0.3
241	486760	240229	22	18.8	10.2	10.3	11.6	11.8	0.2
242	487054	240317	22	17.6	9.7	9.8	11	11.2	0.2
243	487228	240363	22	18.1	10.2	10.4	11.6	11.8	0.2
244	487455	240433	22	17.5	9.7	9.8	11.1	11.2	0.1
245	488561	239559	22	17.2	9.2	9.3	10.5	10.6	0.1
246	488399	239500	22	16.6	8.8	8.9	10.1	10.2	0.1
247	487685	239746	22	15.8	8.3	8.4	9.5	9.5	0
248	487477	239478	22	17.2	9	9.1	10.3	10.4	0.1
249	487351	239466	22	17.4	9.1	9.1	10.4	10.4	0
250	489730	240439	22	22.5	12.8	13.1	14.6	14.9	0.3
251	489973	240328	22	22.8	13	13.3	14.8	15.2	0.3
252	490170	240225	22	21.5	12.2	12.5	13.9	14.2	0.3
253	490451	240318	22	23.9	13.7	14.1	15.7	16	0.4
254	489448	240888	22	23.2	13.4	13.7	15.3	15.6	0.3
255	495213	237916	19	20.9	12.8	12.8	14.6	14.6	0
256	495249	237874	19	21	12.4	12.4	14.1	14.1	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
257	494163	238209	19	22.5	12.8	12.9	14.6	14.7	0.1
258	494308	238170	19	21.8	12.4	12.4	14.1	14.2	0.1
259	493103	238227	19	17	9.3	9.3	10.6	10.6	0
260	493122	238293	19	18.9	10.4	10.4	11.8	11.9	0
261	493133	238407	19	28.6	16.5	16.4	18.9	18.7	-0.2
262	493328	238890	19	16.8	9.1	9.1	10.3	10.4	0.1
263	493273	238897	19	17.1	9.2	9.3	10.5	10.6	0.1
264	493387	238861	19	16.8	9.1	9.1	10.3	10.4	0.1
265	493088	238682	19	24.2	14	14.2	15.9	16.2	0.3
266	489957	238128	22	19.4	10.6	10.5	12.1	12	-0.1
267	486231	240042	22	17	9	9.1	10.3	10.3	0.1
268	486123	239989	22	17.6	9.5	9.6	10.9	11	0.1
269	486014	240007	22	17.3	9.2	9.3	10.5	10.6	0.1
270	485891	239917	22	17.7	9.2	9.3	10.5	10.6	0
271	485796	241527	22	19.1	10.4	10.4	11.8	11.9	0
272	488988	242391	22	26.1	15.3	15.5	17.4	17.7	0.3
273	489142	241730	22	21.1	12.1	12.3	13.8	14	0.2
274	489146	241585	22	23.7	13.9	14.1	15.9	16.1	0.3
275	486139	243180	24	31.3	18.8	19.2	21.4	21.9	0.5
276	485937	243071	24	19.1	10.6	10.7	12.1	12.2	0.1

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
277	485977	243272	24	21.9	12.5	12.8	14.3	14.6	0.3
278	485916	243103	24	18.3	10.1	10.2	11.5	11.6	0.1
279	486434	243105	24	27	15.7	16.1	18	18.3	0.4
280	486281	243185	24	36.2	22.4	22.9	25.5	26.1	0.6
281	486220	243265	24	33.3	20.2	20.7	23.1	23.6	0.5
282	486352	243373	24	21.6	12.1	12.2	13.7	13.9	0.1
283	486352	243411	24	21.7	12.1	12.2	13.8	14	0.1
284	486167	243277	24	41.3	26.1	26.7	29.7	30.5	0.7
285	486013	243422	24	37	23	23.6	26.3	26.9	0.7
286	485717	243377	24	17.1	9.3	9.4	10.6	10.7	0.1
287	485782	243679	24	32.2	19.9	20.4	22.6	23.2	0.6
288	485694	243795	24	33.1	20.5	21.1	23.4	24	0.6
289	485635	243899	24	31.9	19.6	20.1	22.4	23	0.6
290	485517	244119	24	29.3	18.1	18.6	20.6	21.2	0.6
291	483746	245732	24	14.9	8.2	8.3	9.3	9.5	0.1
292	482081	247056	24	15.4	8.5	8.6	9.7	9.8	0.1
293	480343	248952	26	20.9	12.3	12.6	14	14.3	0.3
294	480260	249400	26	19.7	11.5	11.7	13.1	13.4	0.3
295	479297	250600	26	22.4	13.3	13.7	15.2	15.6	0.4
296	479249	250731	26	28.9	18	18.6	20.5	21.3	0.7

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
297	479133	250842	26	20.1	11.7	12	13.4	13.6	0.3
298	479025	250949	26	17.5	10	10.1	11.4	11.5	0.2
299	478948	250761	26	14.5	8	8	9.1	9.1	0
300	475268	253338	26	18.8	10.6	10.5	12.1	12	-0.1
301	475341	253049	26	17.7	9.9	9.8	11.3	11.2	0
302	475325	252857	26	13	6.9	6.9	7.9	7.9	0
303	475549	252199	26	21.6	12.4	12.3	14.1	14.1	-0.1
304	475517	252125	26	22.4	12.8	12.8	14.6	14.6	-0.1
305	475445	251957	26	16.6	9.2	9.1	10.5	10.4	0
306	475493	251866	26	21.1	12	12	13.7	13.6	-0.1
307	475491	251672	26	19.2	10.8	10.7	12.3	12.2	0
308	475442	251440	26	18.3	10.2	10.2	11.7	11.6	0
309	475470	251429	26	24.7	14.3	14.3	16.3	16.2	-0.1
310	475025	250444	26	12.1	6.4	6.4	7.3	7.3	0
311	475096	250212	26	20.4	11.6	11.6	13.2	13.2	-0.1
312	474765	249352	26	11.4	6	6	6.8	6.8	0
313	475028	248929	26	11.5	6.1	6	6.9	6.9	0
314	474974	247842	25	18.9	10.9	10.7	12.4	12.2	-0.2
315	475033	247514	25	12.3	6.5	6.5	7.4	7.4	0
316	475084	247179	25	11.2	5.8	5.8	6.6	6.6	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
317	475441	246798	25	20.6	12	11.9	13.7	13.5	-0.2
318	475425	246746	25	15.6	8.7	8.6	9.9	9.8	-0.1
319	475566	246581	25	23.3	13.9	13.6	15.8	15.5	-0.3
320	476685	245268	25	12.2	6.5	6.5	7.4	7.4	0
321	476576	245014	25	11.3	5.9	5.9	6.7	6.7	0
322	476804	244697	25	11.8	6.2	6.1	7	7	0
323	478211	242754	23	13	6.9	6.9	7.9	7.8	0
324	478042	241975	23	13.5	7.3	7.2	8.3	8.2	0
325	477649	241483	23	21.4	13	12.9	14.8	14.7	-0.2
326	478038	241451	23	14.6	8.1	8	9.2	9.1	-0.1
327	478308	241385	23	13.4	7.3	7.2	8.3	8.2	-0.1
328	479405	240697	23	13.8	7.1	7	8	8	0
329	479694	240396	23	14.5	7.6	7.5	8.6	8.6	0
330	479874	240175	23	14.5	7.6	7.6	8.7	8.6	0
331	480240	240059	23	15.8	8.4	8.3	9.5	9.5	0
332	480303	239860	23	16.1	8.5	8.5	9.7	9.6	0
333	480490	239794	23	16.4	8.7	8.7	9.9	9.9	0
334	480742	239834	23	17.4	9.4	9.4	10.7	10.7	-0.1
335	481173	239932	23	14.1	7.3	7.3	8.3	8.3	0
336	481181	239814	23	14.5	7.5	7.5	8.6	8.6	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
337	475790	254716	27	25.2	15.7	15.8	17.8	18	0.2
338	475649	255166	27	24.9	15.1	15.2	17.3	17.3	0.1
339	475741	255951	27	21.4	12.5	12.6	14.3	14.4	0.1
340	475933	256181	27	19.5	10.8	10.9	12.4	12.4	0
341	475817	256316	27	29.7	17.5	17.7	20	20.2	0.2
342	475669	256261	27	21.7	12.3	12.3	14.1	14	-0.1
343	475653	256338	27	24	13.9	13.7	15.9	15.7	-0.2
344	475777	256630	27	21.3	12	12	13.7	13.7	0
345	475837	256927	27	22.8	13.1	13.2	14.9	15	0.1
346	475893	256736	27	26.9	16	16.1	18.2	18.3	0.1
347	475852	256532	27	28.8	17.1	17.2	19.5	19.6	0.1
348	475920	256868	27	23.3	13.3	13.5	15.1	15.4	0.2
349	474980	255370	27	47.1	31.8	32.4	36.3	36.9	0.6
350	474880	255481	27	43.2	28.6	29.3	32.6	33.4	0.8
351	474574	255685	27	28.6	17.6	18	20.1	20.6	0.5
352	473382	256851	27	42.8	28.4	29.1	32.3	33.2	0.8
353	469577	258872	28	32.1	19.9	20.6	22.7	23.4	0.7
354	469477	258991	28	21.2	12.3	12.6	14	14.3	0.3
355	468081	259779	28	17.1	9.7	9.8	11.1	11.1	0
356	469305	260158	28	15.6	8.7	8.7	9.9	9.9	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
357	469455	260251	28	14.7	8	8	9.2	9.2	0
358	466605	259608	28	24.2	15	15.2	17.1	17.3	0.2
359	466400	259695	28	19	11	11.1	12.6	12.7	0.1
360	465589	259980	28	16.2	8.5	8.5	9.7	9.7	0.1
361	465290	260095	28	14.9	7.8	7.9	8.9	9	0.1
362	464708	261094	28	21.2	12.6	12.9	14.4	14.7	0.3
363	463746	260963	28	12.2	7.2	7.3	8.2	8.3	0.1
364	461866	264437	29	20.9	12.1	12.3	13.8	14	0.2
365	461679	265428	29	18.1	10.3	10.4	11.7	11.8	0.1
366	461368	265372	29	19	10.9	11	12.4	12.6	0.2
367	461509	265566	29	22	12.9	13.1	14.8	15	0.2
368	459745	268170	29	25.6	15.5	15.7	17.7	17.9	0.2
369	460059	268044	29	23.4	13.9	14.1	15.8	16.1	0.2
370	459279	268883	29	18.1	10.4	10.5	11.8	11.9	0.1
371	458764	269464	29	16.5	9.3	9.3	10.6	10.7	0.1
372	457593	273857	30	29.4	18	18.3	20.5	20.8	0.3
373	457123	274753	30	16.7	9.3	9.4	10.6	10.7	0.1
374	456754	276579	30	27.7	16.8	17.1	19.2	19.4	0.3
375	456528	276883	30	27.9	16.9	17.1	19.2	19.5	0.3
376	456373	277106	30	17.1	9.5	9.6	10.8	10.9	0.1

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
377	456292	277261	30	15.8	8.7	8.7	9.9	9.9	0.1
378	456007	278508	30	16.7	9.2	9.3	10.5	10.5	0.1
379	455082	282503	31	16.6	9.2	9.2	10.4	10.5	0
380	455029	282692	31	18.7	10.6	10.6	12.1	12.1	0.1
381	455332	283830	31	18.9	10.6	10.6	12.1	12.1	0
382	454742	283924	31	27.5	16.1	16.1	18.4	18.4	0
383	454677	283860	31	18.7	10.4	10.4	11.9	11.9	0
384	510926	206013	14	23.5	14.1	14.1	16	16.1	0
385	472677	257867	27	17.3	9.9	10	11.3	11.4	0.1
386	472750	257899	27	19.4	11.5	11.6	13.1	13.2	0.1
387	431832	259625	1	17.2	9.6	9.6	11	10.9	0
388	432284	258897	1	13.3	7.1	7.1	8.1	8.1	0
389	436023	256398	1	18.5	10.6	10.5	12.1	12	0
390	438912	252002	2	23.1	12.9	12.9	14.7	14.7	-0.1
391	446764	241635	3	22.4	12.7	12.7	14.5	14.5	0
392	440500	249444	2	19.5	11.4	11.4	13	13	-0.1
393	440327	249210	2	14.4	8	8	9.1	9.1	0
394	445588	244094	3	19.7	11.7	11.6	13.3	13.2	-0.1
395	445415	243719	3	29.8	18.9	18.7	21.5	21.3	-0.1
396	445522	243724	3	39.3	25.7	25.5	29.3	29.1	-0.3

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
397	445819	243505	3	30.9	19.5	19.4	22.2	22.1	-0.2
398	446960	241704	3	30.3	18.5	18.5	21.1	21.1	0
399	446575	241725	3	39	25	25	28.5	28.5	0
400	447583	241620	3	20.9	12.2	12.2	13.9	13.9	0
401	447518	241258	3	22.8	13.5	13.4	15.4	15.3	-0.1
402	447554	240852	3	29.1	17.8	17.7	20.3	20.2	-0.1
403	448303	237168	4	19.4	11.1	11.1	12.7	12.7	0
404	449944	234034	4	16.8	9.4	9.4	10.7	10.7	0
405	451281	230233	5	13.8	7.5	7.5	8.5	8.5	0
406	452367	230359	5	14.5	8	7.9	9.1	9.1	0
407	454285	227917	5	13.7	7.2	7.2	8.2	8.2	0
408	455009	228266	5	16.6	9.4	9.3	10.7	10.6	0
409	454866	227255	5	23.5	14.4	14.2	16.4	16.2	-0.2
410	455154	224875	6	16	9	9	10.3	10.3	0
411	454480	223915	6	13.6	7.4	7.4	8.4	8.4	0
412	454891	223316	6	20.4	12.6	12.6	14.4	14.3	-0.1
413	460463	215391	7	17.2	10.1	10	11.5	11.4	-0.1
414	460541	214943	7	12.8	7	6.9	7.9	7.9	0
415	461380	213971	7	12.7	6.8	6.8	7.8	7.8	0
416	461883	213966	7	14.3	8	7.9	9.1	9	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
417	462266	212984	7	13.9	7.7	7.6	8.7	8.7	0
418	462589	209820	8	15.8	9	9	10.3	10.2	-0.1
419	462166	207672	8	14.6	8.1	8.1	9.2	9.2	0
420	462359	204962	9	20.5	12.3	12.2	14	13.9	-0.1
421	461914	205050	9	18.6	10.8	10.8	12.3	12.3	0
422	461878	204985	9	23.2	14	14	15.9	15.9	0
423	461472	205073	9	14.5	7.9	7.9	9	9	0
424	461584	205129	9	20.7	12.2	12.2	13.9	13.9	0
425	462968	204896	9	18.7	10.9	10.9	12.4	12.4	0
426	463224	204742	9	17.9	10.3	10.3	11.8	11.8	0
427	463470	204669	9	16.2	9.2	9.2	10.5	10.4	0
428	463462	204365	9	26.3	16.6	16.4	18.9	18.7	-0.1
429	464111	203882	9	17.5	10.1	10.1	11.5	11.5	-0.1
430	464656	203742	9	24.6	15.3	15.2	17.4	17.3	-0.1
431	464778	203506	9	25	15.7	15.5	17.8	17.7	-0.1
432	465056	203579	9	17.7	10.3	10.2	11.7	11.6	-0.1
433	465373	203354	9	23.3	14.2	14.2	16.2	16.2	0
434	465567	203215	9	24	14.8	14.7	16.8	16.7	-0.1
435	465910	203217	9	17.7	10.2	10.2	11.6	11.6	0
436	466691	203006	9	18.8	11	11	12.5	12.5	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
437	467315	202815	9	18.4	10.7	10.6	12.2	12.1	0
438	468202	202177	9	15.5	8.7	8.7	9.9	9.9	0
439	468535	202038	9	15.7	8.8	8.8	10	10	0
440	468530	202006	9	16.7	9.5	9.5	10.8	10.8	0
441	468688	201786	9	17.1	9.8	9.7	11.1	11.1	0
442	468781	201721	9	17.7	10.2	10.1	11.6	11.6	0
443	468967	201432	9	18.8	11	11	12.5	12.5	0
444	468702	201192	9	15.3	8.5	8.5	9.7	9.7	0
445	470199	200197	10	40.3	27.2	27	31	30.7	-0.3
446	471924	198613	10	13.8	7.5	7.5	8.5	8.5	0
447	471854	197671	10	23.6	14.5	14.4	16.5	16.5	-0.1
448	471491	197372	10	14.3	7.8	7.8	8.9	8.8	0
449	472331	198164	10	15.2	8.4	8.4	9.6	9.6	0
450	472371	198267	10	13	6.9	6.9	7.9	7.8	0
451	474954	196493	10	38.6	26.3	25.7	30	29.3	-0.6
452	475208	196216	10	18.6	10.9	10.8	12.4	12.4	-0.1
453	475340	196212	10	22.7	13.9	13.8	15.8	15.8	-0.1
454	475435	196308	10	37.6	25.1	24.9	28.6	28.4	-0.2
455	475651	196213	10	34	22.3	22.1	25.4	25.2	-0.2
456	475842	195952	10	17.5	10.1	10.1	11.6	11.5	-0.1

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
457	476220	195878	10	33	21.4	21.2	24.4	24.2	-0.2
458	476643	195347	10	39.6	26.4	26.2	30.1	29.9	-0.3
459	476875	194571	11	20.8	12.5	12.4	14.2	14.1	-0.1
460	477573	193740	11	17.8	10.2	10.2	11.7	11.6	-0.1
461	477448	193523	11	17.3	9.9	9.9	11.3	11.2	0
462	477651	193244	11	15.3	8.5	8.5	9.7	9.6	0
463	478255	192870	11	21.1	12.7	12.6	14.5	14.4	-0.1
464	478865	192583	11	18.6	10.9	10.8	12.4	12.3	-0.1
465	479658	192747	11	21.6	13	12.9	14.8	14.7	-0.1
466	478492	192739	11	21.1	12.7	12.6	14.4	14.4	-0.1
467	479897	192601	11	31.2	20.1	19.9	22.9	22.7	-0.2
468	479967	192667	11	28.8	18.2	18.1	20.8	20.6	-0.2
469	480622	192471	11	40.7	27.3	27	31.1	30.8	-0.3
470	480755	192437	11	48.8	33.7	33.3	38.4	38	-0.4
471	481355	192378	11	28.1	17.8	17.7	20.3	20.1	-0.2
472	483571	191029	11	34.9	22.5	22.3	25.7	25.5	-0.2
473	483229	191144	11	25.6	15.6	15.5	17.8	17.7	-0.1
474	485232	191138	12	34.1	21.4	21.2	24.4	24.2	-0.1
475	485285	191272	12	32.9	20.2	20.2	23.1	23	0
476	486425	191437	12	32.1	20.5	20.4	23.3	23.2	-0.1

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
477	486769	191420	12	34.8	22.1	22	25.2	25	-0.1
478	488996	190873	12	23.9	14.2	14.1	16.1	16.1	-0.1
479	489654	190860	12	22.4	12.9	12.9	14.7	14.7	0
480	489933	190467	12	31	18.9	18.8	21.6	21.5	-0.1
481	489937	190297	12	28.9	17.5	17.4	19.9	19.8	-0.1
482	490948	190143	12	55.6	37.3	37.1	42.5	42.3	-0.2
483	491082	189989	12	34.9	22	21.9	25.1	25	-0.1
484	491509	189894	12	33.4	20.9	20.9	23.9	23.8	-0.1
485	491819	189777	12	27.1	16.4	16.3	18.7	18.6	-0.1
486	491958	189554	12	35.9	22.8	22.7	26	25.9	-0.1
487	492859	189736	12	29.5	18.2	18.1	20.7	20.6	-0.1
488	493943	189892	13	30.6	19.5	19.5	22.3	22.2	-0.1
489	494664	189612	13	28.4	17.5	17.4	19.9	19.8	-0.1
490	494596	189449	13	28.1	17.3	17.2	19.7	19.6	-0.1
491	495000	189252	13	29.4	18.1	18.1	20.7	20.6	-0.1
492	495461	189474	13	21.2	12.4	12.4	14.1	14.1	0
493	495864	188796	13	20.4	11.9	11.9	13.6	13.6	0
494	497797	188242	13	27.9	17.3	17.3	19.7	19.7	0
495	496211	187999	13	15.5	8.6	8.6	9.8	9.8	0
496	497615	188037	13	25.9	15.9	15.9	18.1	18.1	0

Receptor ID	Grid Reference		Reference map page (HA549348-AMAR-EAQ-SWI-DR-YE-000001)	Annual mean NO_2 concentration (µg/m^3)					
				2014	Future projections based on LAQM TG.16		Highways England IAN 170		
					2021				
	X	Y		Base	DM	DS	DM	DS	Magnitude of change
497	499943	186454	13	24.1	14.4	14.3	16.4	16.3	0
498	498782	186992	13	35.3	22.7	22.6	25.8	25.7	-0.1
499	498761	186855	13	30.3	19	18.9	21.6	21.5	-0.1
500	500592	186017	13	28.5	17.5	17.4	19.9	19.9	-0.1
501	468569	201539	9	26.8	16.9	16.8	19.3	19.2	-0.1
502	471993	197926	10	19.2	11.3	11.2	12.8	12.8	-0.1
503	470887	199407	10	17.3	10	9.9	11.4	11.3	0
504	508226	218484	16	16.1	8.8	8.8	10	10	0
505	507803	219188	16	16.1	8.8	8.8	10	10	0
506	505388	222507	17	41.9	26.8	27	30.6	30.8	0.2
507	505454	222326	17	29.1	17.3	17.4	19.7	19.8	0.1
508	505466	222616	17	49.3	32.3	32.5	36.8	37.1	0.3
509	505540	222303	17	48	31.8	32.1	36.3	36.5	0.3
510	503185	226593	17	17.4	10.8	10.8	12.3	12.4	0.1
511	489289	240292	22	18.2	10.1	10.3	11.6	11.8	0.2
512	473823	255563	27	16.4	9	9	10.3	10.3	0
513	471373	257095	27	14	7.5	7.5	8.5	8.5	0
514	464624	260642	28	14.5	7.9	7.9	9	9	0.1
515	455882	219709	6	17.3	10	10	11.4	11.4	0

B.3.1.3. PCM Compliance Table

Inputs				Defra PCM model and compliance information					Highways England - Receptor result annual mean NO_2 concentration (µg/m^3) (nearest receptor to Defra link)				
Scheme	Defra's PCM data			Total NO_2 (µg/m^3)			Compliance information		2021				
Air quality assessment link ID	Defra link census ID	Zone Ref No.	Is the zone compliant? (2013)	NO_2 2020	NO_2 2025	PCM concentration NO_2 2021 (opening year)	Maximum modelled NO_2 concentration in zone 2011	Projected compliance year	Receptor	DM	DS	Change (DM-DS)	Equivalent PCM DS (µg/m^3)
23214_21044	74775	32	No	28.0	23.0	27.0	65	2020	357	9.3	9.3	0.0	27.0
23214_21044	74775	32	No	28.0	23.0	27.0	65	2020	357	9.3	9.3	0.0	27.0
2050_65000	74775	32	No	28.0	23.0	27.0	65	2020	357	9.3	9.3	0.0	27.0
65000_2050	74775	32	No	28.0	23.0	27.0	65	2020	357	9.3	9.3	0.0	27.0
23214_65000	74775	32	No	28.0	23.0	27.0	65	2020	357	9.3	9.3	0.0	27.0
23214_65000	74775	32	No	28.0	23.0	27.0	65	2020	357	9.3	9.3	0.0	27.0
21044_1614	74775	32	No	28.0	23.0	27.0	65	2020	356	10.0	10.0	0.0	27.0
21044_1614	74775	32	No	28.0	23.0	27.0	65	2020	355	11.3	11.3	0.0	27.0
21044_1614	74775	32	No	28.0	23.0	27.0	65	2020	355	11.3	11.3	0.0	27.0
21044_1614	74775	32	No	28.0	23.0	27.0	65	2020	355	11.3	11.3	0.0	27.0
4034_2509	28557	32	Yes	25.0	21.0	24.2	65	2020	386	13.4	13.5	0.1	24.3
2510_2509	28557	32	Yes	25.0	21.0	24.2	65	2020	386	13.4	13.5	0.1	24.3
2510_2509	28557	32	Yes	25.0	21.0	24.2	65	2020	386	13.4	13.5	0.1	24.3
3093_3055	77419	32	No	29.0	24.0	28.0	65	2020	348	15.5	15.7	0.2	28.2
3093_3055	77419	32	No	29.0	24.0	28.0	65	2020	346	18.7	18.8	0.1	28.1
26031_3093	77419	32	No	29.0	24.0	28.0	65	2020	344	13.9	14.0	0.0	28.0
2093_3093	77419	32	No	29.0	24.0	28.0	65	2020	347	20.0	20.1	0.1	28.1
2093_3093	77419	32	No	29.0	24.0	28.0	65	2020	341	20.5	20.7	0.2	28.2

Inputs				Defra PCM model and compliance information					Highways England - Receptor result annual mean NO_2 concentration (µg/m^3) (nearest receptor to Defra link)				
Scheme	Defra's PCM data			Total NO_2 (µg/m^3)			Compliance information		2021				
Air quality assessment link ID	Defra link census ID	Zone Ref No.	Is the zone compliant? (2013)	NO_2 2020	NO_2 2025	PCM concentration NO_2 2021 (opening year)	Maximum modelled NO_2 concentration in zone 2011	Projected compliance year	Receptor	DM	DS	Change (DM-DS)	Equivalent PCM DS (µg/m^3)
22003_99018	78263	31	Yes	24.0	20.0	23.2	64	2020	208	13.2	13.2	0.0	23.2
22003_99018	78263	31	Yes	24.0	20.0	23.2	64	2020	211	13.5	13.5	-0.1	23.1
13715_83184	78263	31	Yes	24.0	20.0	23.2	64	2020	214	14.8	14.7	-0.1	23.1
13715_83184	78263	31	Yes	24.0	20.0	23.2	64	2020	221	16.1	16.4	0.3	23.5
13715_83184	8718	31	Yes	17.0	14.0	16.4	64	2020	241	11.7	11.9	0.2	16.6
13715_83184	8718	31	Yes	17.0	14.0	16.4	64	2020	267	10.3	10.4	0.1	16.5
13715_13968	8718	31	Yes	17.0	14.0	16.4	64	2020	268	11.0	11.1	0.1	16.5
13715_13968	8718	31	Yes	17.0	14.0	16.4	64	2020	270	10.6	10.6	0.0	16.4
13715_13968	73039	29	No	30.0	25.0	29.0	66	2020	92	35.4	35.7	0.3	29.3
13715_13968	73039	29	No	30.0	25.0	29.0	66	2020	79	28.1	28.3	0.2	29.2
97570_13681	73040	29	Yes	25.0	20.0	24.0	66	2020	82	26.3	26.3	0.0	24.0
13715_13968	73040	29	Yes	25.0	20.0	24.0	66	2020	73	22.1	22.1	0.0	24.0
83188_83182	73040	29	Yes	25.0	20.0	24.0	66	2020	73	22.1	22.1	0.0	24.0
21011_83181	73040	29	Yes	25.0	20.0	24.0	66	2020	73	22.1	22.1	0.0	24.0
45715_41273	73040	29	Yes	25.0	20.0	24.0	66	2020	73	22.1	22.1	0.0	24.0
45715_41750	73040	29	Yes	25.0	20.0	24.0	66	2020	73	22.1	22.1	0.0	24.0
45815_41750	73040	29	Yes	25.0	20.0	24.0	66	2020	73	22.1	22.1	0.0	24.0
41266_45815	73040	29	Yes	25.0	20.0	24.0	66	2020	73	22.1	22.1	0.0	24.0
41266_45815	81080	29	No	28.0	22.0	26.8	66	2020	71	22.6	22.6	0.1	26.9

Inputs				Defra PCM model and compliance information					Highways England - Receptor result annual mean NO_2 concentration (µg/m^3) (nearest receptor to Defra link)				
Scheme	Defra's PCM data			Total NO_2 (µg/m^3)			Compliance information		2021				
Air quality assessment link ID	Defra link census ID	Zone Ref No.	Is the zone compliant? (2013)	NO_2 2020	NO_2 2025	PCM concentration NO_2 2021 (opening year)	Maximum modelled NO_2 concentration in zone 2011	Projected compliance year	Receptor	DM	DS	Change (DM-DS)	Equivalent PCM DS (µg/m^3)
41324_45205	73040	29	Yes	25.0	20.0	24.0	66	2020	73	22.1	22.1	0.0	24.0
45206_41322	73042	29	No	29.0	24.0	28.0	66	2020	509	36.3	36.5	0.3	28.3
41322_45207	73042	29	No	29.0	24.0	28.0	66	2020	67	39.4	39.7	0.3	28.3