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Air Quality Plan for the achievement of EU air quality limit value for nitrogen dioxide (NO₂) in Sheffield Urban Area (UK0007)

December 2015

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1 Introduction

1.1 This document

This document is the Sheffield Urban Area agglomeration zone (UK0007) updated air quality plan for the achievement of the EU air quality limit values for nitrogen dioxide (NO₂). This is an update to the air quality plan published in September 2011 (<http://uk-air.defra.gov.uk/library/no2ten/>).

This plan presents the following information:

- General information regarding the Sheffield Urban Area agglomeration zone
- Details of the NO₂ exceedance situation within the Sheffield Urban Area agglomeration zone
- Details of local air quality measures that have been implemented, will be implemented or are being considered for implementation in this agglomeration zone

This air quality plan for the Sheffield Urban Area agglomeration zone should be read in conjunction with the separate UK overview document and the list of UK and national measures. The UK overview document sets out, amongst other things, the authorities responsible for delivering air quality improvements and the list of UK and national measures that are applied in some or all UK zones. The measures presented in this zone plan, the accompanying UK overview document and the list of UK and national measures show how the UK will ensure that compliance with the NO₂ limit values is achieved in the shortest possible time.

This plan should also be read in conjunction with the supporting UK Technical Report which presents information on assessment methods, input data and emissions inventories used in the analysis presented in this plan.

1.2 Context

Two NO₂ limit values for the protection of human health have been set in the Air Quality Directive (2008/50/EC). These are:

- The annual mean limit value: an annual mean concentration of no more than 40 $\mu\text{g m}^{-3}$
- The hourly limit value: no more than 18 exceedances of 200 $\mu\text{g m}^{-3}$ in a calendar year

The Air Quality Directive stipulates that compliance with the NO₂ limit values will be achieved by 01/01/2010.

1.3 Zone status

The assessment undertaken for the Sheffield Urban Area agglomeration zone indicates that the annual limit value was exceeded in 2013 but is likely to be achieved before 2020 through the introduction of measures included in the baseline.

1.4 Plan structure

General administrative information regarding this agglomeration zone is presented in section 2.

Section 3 then presents the overall picture with respect to NO₂ levels in this agglomeration zone for the 2013 reference year of this air quality plan. This includes a declaration of exceedance situations within the agglomeration zone and presentation of a detailed source apportionment for each exceedance situation.

An overview of the measures already taken and to be taken within the agglomeration zone both before and after 2013 is given in section 4.

Baseline modelled projections for 2020, 2025 and 2030 for each exceedance situation are presented in section 5. The baseline projections presented here include, where possible, the impact of measures that have already been taken and measures for which the relevant authority has made a firm commitment to implement. However, it has not been possible to quantify the impact of all the measures. This section therefore also explains which measures have been quantified, and hence included in the model projections, and which measures have not been quantified.

2 General Information About the Zone

2.1 Administrative information

Zone name: Sheffield Urban Area

Zone code: UK0007

Type of zone: agglomeration zone

Reference year: 2013

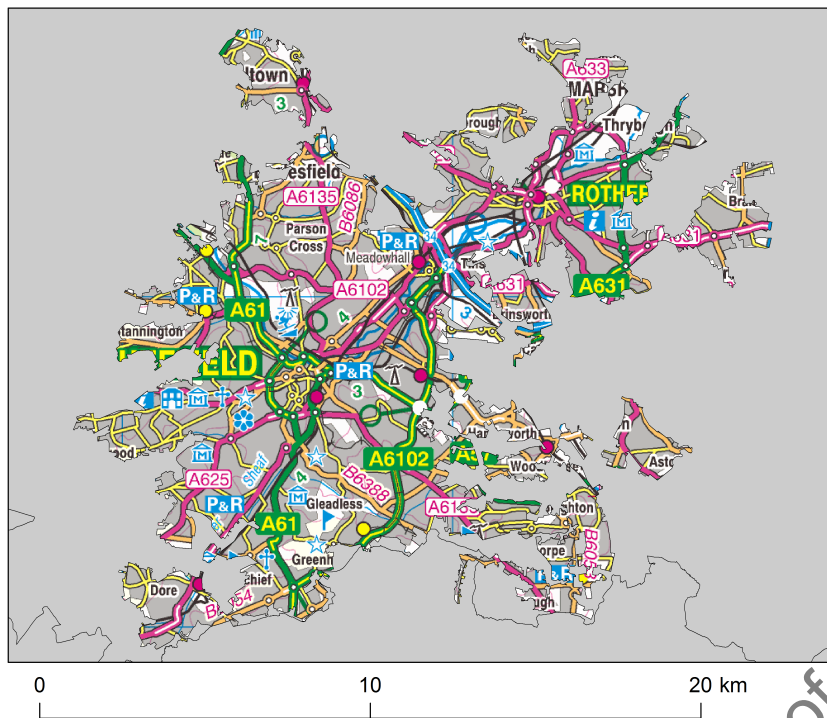
Extent of zone: Figure 1 shows the area covered by the Sheffield Urban Area agglomeration zone.

Local Authorities within the zone: Figure 2 shows the location of Local Authorities within the agglomeration zone. A list of these Local Authorities is also given below. The numbers in the list correspond to the numbers in Figure 2.

1. North East Derbyshire District Council
2. Rotherham Metropolitan Borough Council
3. Sheffield City Council

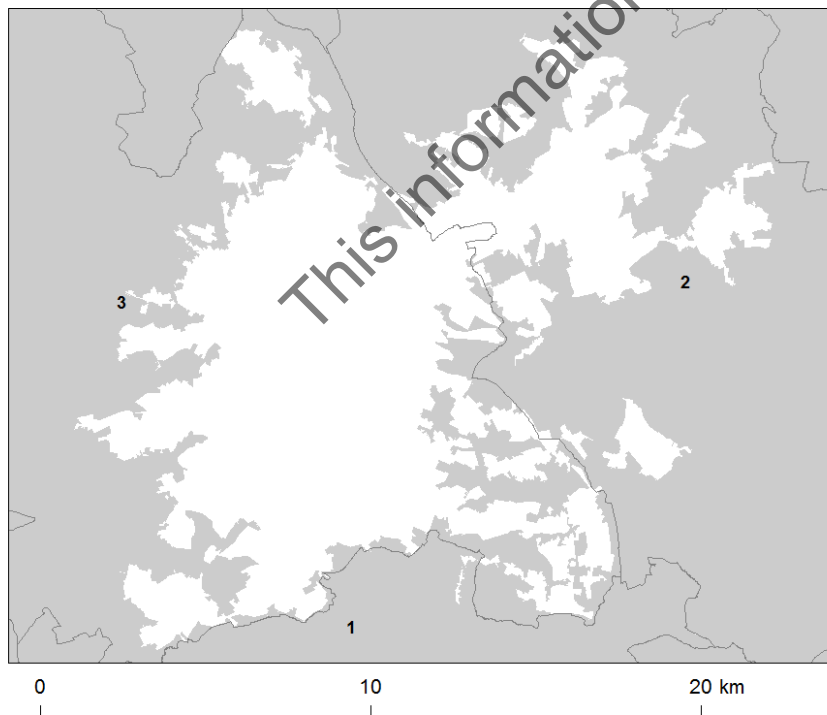
(Note: Local Authority boundaries do not necessarily coincide with zone boundaries. Hence Local Authorities may be listed within more than one zone plan.)

Figure 1: Map showing the extent of the Sheffield Urban Area agglomeration zone (UK0007).



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Figure 2: Map showing Local Authorities within the Sheffield Urban Area agglomeration zone (UK0007).



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2.2 Assessment details

Measurements

NO₂ measurements in this zone were available in 2013 from the following national network monitoring stations (NO₂ data capture for each station in 2013 shown in brackets):

1. Sheffield Centre GB0615A (61%)
2. Sheffield Devonshire Green GB1027A (16%)
3. Sheffield Tinsley GB0538A (79%)

Full details of monitoring stations within the Sheffield Urban Area agglomeration zone are available from <http://uk-air.defra.gov.uk/networks/network-info?view=aurn>.

Modelling

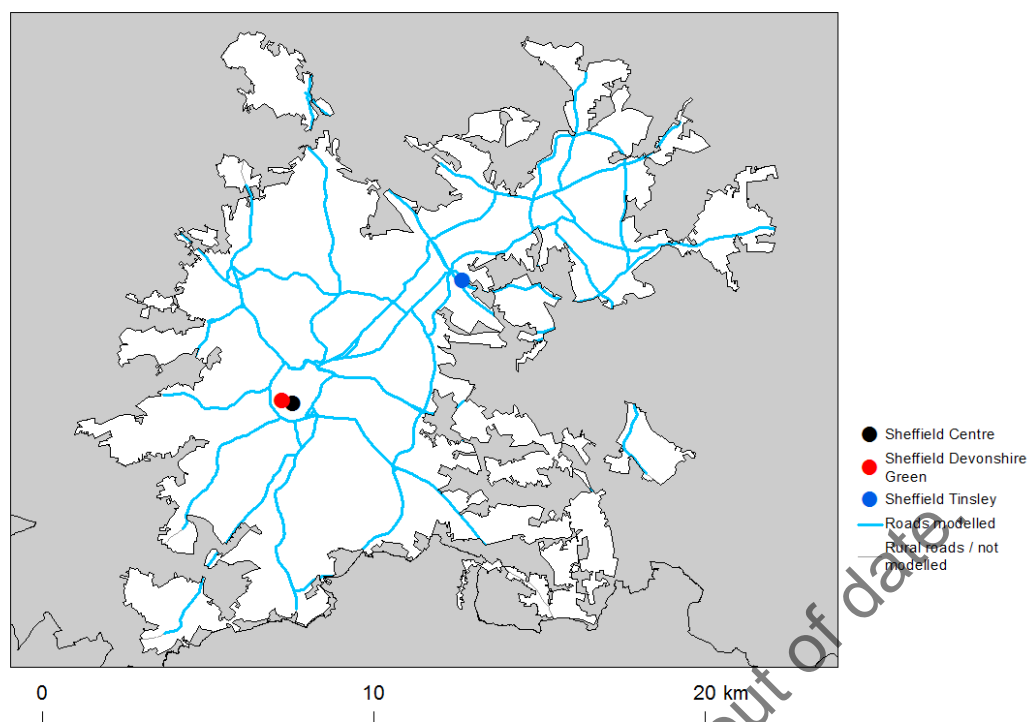
Modelling for the 2013 reference year has been carried out for the whole of the UK. This modelling covers the following extent within this zone:

- Total background area within zone (approx): 163 km²
- Total population within zone (approx): 577,551 people
- Total road length where an assessment of NO₂ concentrations has been made: 150 km in 2013 (and similar lengths in previous years)

Zone maps

Figure 3 presents the location of the NO₂ monitoring stations within this zone for 2013 and the roads for which NO₂ concentrations have been modelled. NO₂ concentrations at background locations have been modelled across the entire zone at a 1 km x 1 km resolution.

Figure 3: Map showing the location of the NO₂ monitoring stations with valid data in 2013 and roads where concentrations have been modelled within the Sheffield Urban Area (UK0007) agglomeration zone.



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2.3 Reporting under European Directives

From 2001 to 2012 the UK has reported annually on air quality concentrations using a standard Excel questionnaire (Decision 2004/461/EC). These questionnaires are available online from <http://cdr.eionet.europa.eu/gb/eu/annualair>. Since 2013 reporting has been via an e-reporting system (Decision 2011/850/EU) <http://cdr.eionet.europa.eu/gb/eu/>.

In addition, the UK has reported on air quality plans and programmes (Decision 2004/224/EC) since 2003. Historic plans and programmes are available on <http://cdr.eionet.europa.eu/gb/eu/aqpp>.

3 Overall Picture for 2013 Reference Year

3.1 Introduction

There are two limit values for the protection of health for NO₂. These are:

- The annual limit value (annual mean concentration of no more than 40 $\mu\text{g m}^{-3}$)
- The hourly limit value (no more than 18 hourly exceedances of 200 $\mu\text{g m}^{-3}$ in a calendar year)

Within the Sheffield Urban Area agglomeration zone the annual limit value was exceeded in 2013. Hence, one exceedance situation for this zone has been defined, NO₂_UK0007_Annual_1, which covers exceedances of the annual limit value. This exceedance situation is described below.

3.2 Reference year: NO₂_UK0007_Annual_1

The NO₂_UK0007_Annual_1 exceedance situation covers all exceedances of the annual mean limit value in the Sheffield Urban Area agglomeration zone in 2013.

Compliance with the annual limit value in this exceedance situation has been assessed using a combination of air quality measurements and modelling. Table 1 presents measured annual concentrations at national network stations in this exceedance situation since the 1st Daughter Directive (1999/30/EC) came into force in 2001. This shows that there were no measured exceedances of the annual limit value in this zone in 2013. Table 2 summarises modelled annual mean NO₂ concentrations in this exceedance situation for the same time period. This table shows that, in 2013, 34.9 km of road length was modelled to exceed the annual limit value. There were no modelled background exceedances of the annual limit value. Maps showing the modelled annual mean NO₂ concentrations for 2013 at background and at roadside locations are presented in Figures 4 and 5 respectively. All modelled exceedances of the annual limit value are coloured orange or red in the maps.

The maximum measured concentration in the zone varies due to changes in emissions and varying meteorology in different years. However, the models are also updated each year to take into account the most up-to-date science, so the modelled results for different years may not be directly comparable.

The modelling carried out for this exceedance situation has also been used to determine the annual mean NO_x source apportionment for all modelled locations. Emissions to air are regulated in terms of oxides of nitrogen (NO_x), which is the term used to describe the sum of nitrogen dioxide (NO₂) and nitric oxide (NO). Ambient NO₂ concentrations include contributions from both directly emitted primary NO₂ and secondary NO₂ formed in the atmosphere by the oxidation of NO. As such, it is not possible to calculate an unambiguous source apportionment specifically for NO₂ concentrations; therefore the source apportionment in this plan is presented for NO_x, rather than for NO₂ (for further details please see the UK Technical Report). Table 3 summarises the

modelled NO_x source apportionment for the section of road with the highest modelled NO₂ concentration in this exceedance situation in 2013. This is important information because it shows which sources need to be tackled at the location with the largest compliance gap in the exceedance situation.

Figure B.1 in Annex B presents the annual mean NO_x source apportionment for each section of road within the NO₂_UK0007_Annual_1 exceedance situation (i.e. the source apportionment for all exceeding roads only) in 2013. In this figure roads have been grouped into motorways, primary roads (major roads managed by local authorities) and trunk roads (major roads managed by highways authorities).

This information is out of date.

Table 1: Measured annual mean NO₂ concentrations at national network stations in NO2_UK0007_Annual_1 for 2001 onwards, μgm^{-3} (a). Data capture shown in brackets.

Site name (EOI code)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Rotherham Centre (GB0677A)	34 (95)	34 (95)	35 (97)	35 (97)	34 (93)	37 (78)	32 (67)						
Sheffield Centre (GB0615A)	37 (97)	34 (98)	39 (95)	31 (97)	35 (66)	36 (53)	34 (94)	30 (98)	37 (94)	39 (94)	34 (95)	37 (51)	32 (61)
Sheffield Devonshire Green (GB1027A)													36 (16)
Sheffield Tinsley (GB0538A)	45 (99)	41 (97)	46 (97)	40 (96)	32 (97)	40 (99)	35 (69)	38 (34)	34 (85)	35 (99)	34 (99)	35 (99)	32 (79)

(a) Annual Mean Limit Value = $40 \mu\text{gm}^{-3}$

Table 2: Annual mean NO₂ model results in NO2_UK0007_Annual_1 for 2001 onwards.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Road length exceeding (km)	128.3	76.4	141.0	112.7	111.3	104.4	105.1	58.2	65.0	102.6	56.1	63.7	34.9
Background exceeding (km ²)	38	0	9	2	3	0	0	0	1	5	0	0	0
Maximum modelled concentration (μgm^{-3}) (a)	65.6	64.4	76.4	68.6	72.8	67.9	72.0	72.9	67.8	73.9	65	67	57

(a) Annual Mean Limit Value = $40 \mu\text{gm}^{-3}$

Table 3: Modelled annual mean NOx source apportionment at the traffic count point with the highest modelled concentration in 2013 in NO2_UK0007_Annual_1 (μgm^{-3}) (traffic count point 36588 on the A630; OS grid (m): 440000, 386740).

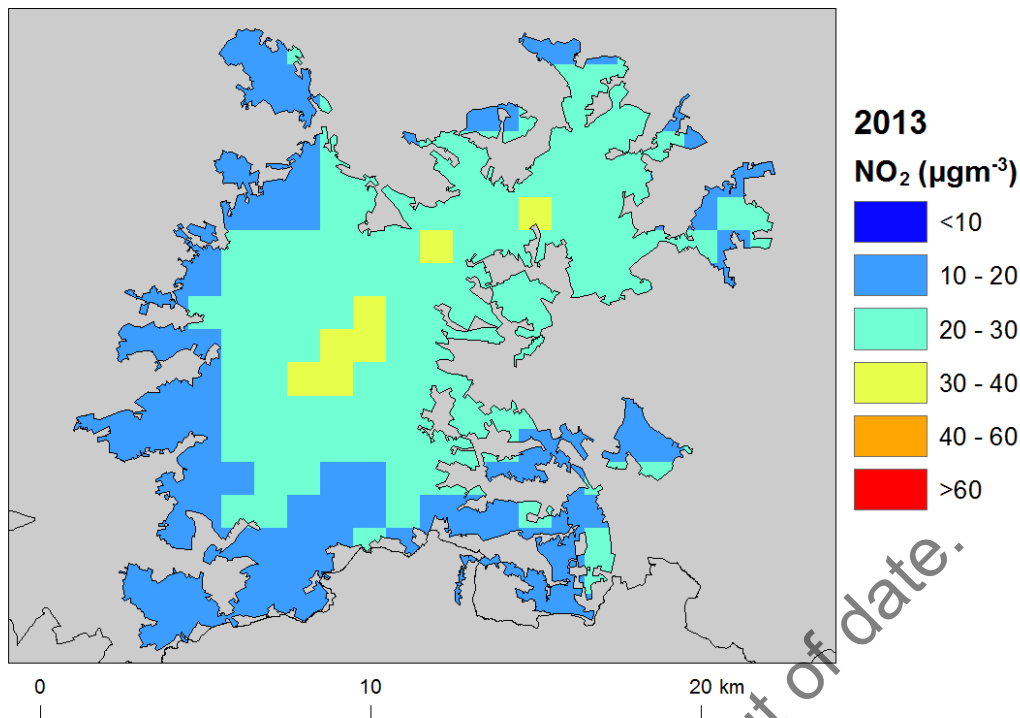
Spatial scale	Component	Concentration at highest road link (a)
Regional background sources NOx (i.e. contributions from distant sources of > 30 km from the receptor).	Total	14.0
	From within the UK	8.9
	From transboundary sources (includes shipping and other EU member states)	5.1
Urban background sources NOx (i.e. sources located within 0.3 - 30 km from the receptor).	Total	22.1
	From road traffic sources	12.4
	From industry (including heat and power generation)	4.3
	From agriculture	NA
	From commercial/residential sources	2.3
	From shipping	0.0
	From off road mobile machinery	2.0
	From natural sources	NA
	From transboundary sources	NA
Local sources NOx (i.e. contributions from sources < 0.3 km from the receptor).	From other urban background sources	1.0
	Total	113.1
	From petrol cars	11.6
	From diesel cars	41.3
	From HGV rigid (b)	18.5
	From HGV articulated (b)	11.0
	From buses	8.0
	From petrol LGVs (c)	0.3
	From diesel LGVs (c)	22.1
	From motorcycles	0.1
	From London taxis	0.0
Total NOx (i.e. regional background + urban background + local components)		149.1
Total NO ₂ (i.e. regional background + urban background + local components)		57

(a) Components are listed with NOx concentration of NA when there is no source from this sector.

(b) HGV = heavy goods vehicle

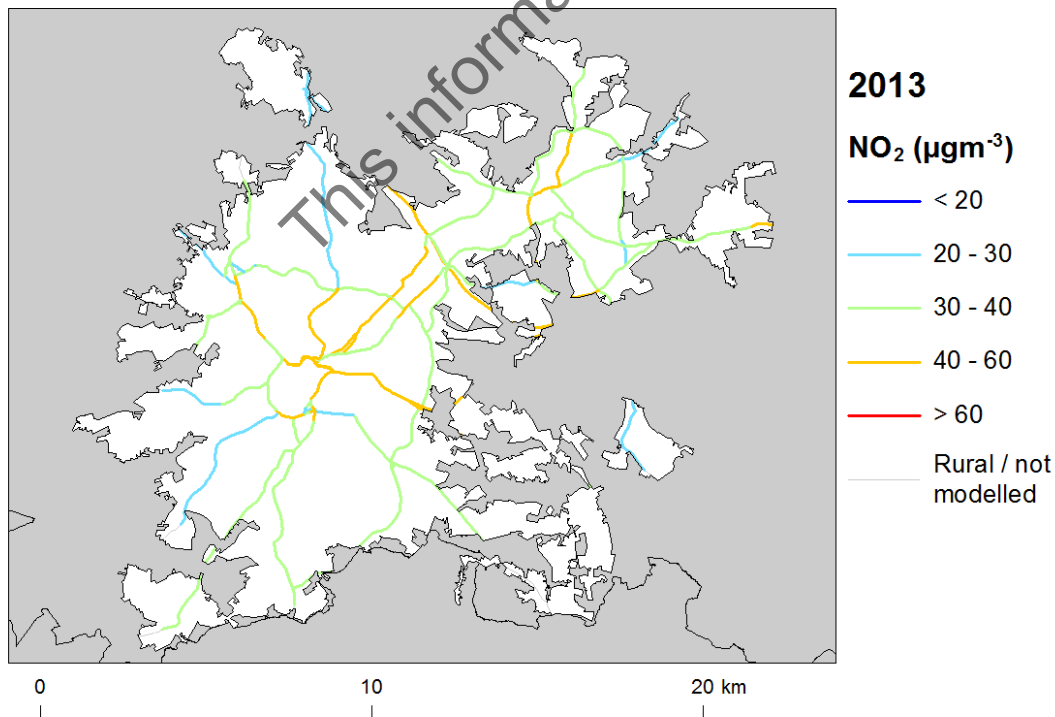
(c) LGV = light goods vehicle

Figure 4: Map of modelled background annual mean NO₂ concentrations 2013. Modelled exceedances of the annual limit value are shown in orange and red.



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Figure 5: Map of modelled roadside annual mean NO₂ concentrations 2013. Modelled exceedances of the annual limit value are shown in orange and red.



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4 Measures

4.1 Introduction

This section gives details of measures that address exceedances of the NO₂ limit values within Sheffield Urban Area agglomeration zone. This includes both measures that have already been taken and measures for which there is a firm commitment that they will be taken.

Section 5 then explains the extent to which it has been possible to incorporate the impacts of these measures into the baseline modelling carried out for this assessment.

4.2 Source apportionment

It is important to understand which sources are responsible for causing the exceedance in order to most effectively tailor measures to address the NO₂ exceedance situation described in section 3 above. This can be achieved by considering the source apportionment for the exceedance situation, also presented in section 3. A summary of what the source apportionment shows and the implications for which measures would therefore be appropriate is given here.

Local road traffic was the dominant source in this exceedance location in the reference year. The largest contribution was from cars at the location of maximum exceedance with a contribution of 52.9 μgm^{-3} of NOx out of a total of 149.1 μgm^{-3} of NOx. Cars, articulated HGVs, LGVs and rigid HGVs were important sources on the motorway roads with the highest concentrations in this exceedance situation. Cars, LGVs and on some roads articulated HGVs and rigid HGVs or buses were important sources on the primary roads with the highest concentrations. For all road links concentrations of NOx from diesel cars were approximately four times greater than NOx emissions from petrol cars. NOx concentrations from petrol LGVs are a small component of total NOx concentrations and less than 2% of total NOx from LGVs.

This indicates that appropriate measures should impact on local road traffic sources in this zone. Other measures to address the urban background sources may also be beneficial.

4.3 Measures

Measures potentially affecting NO₂ in this agglomeration zone have been taken and/or are planned at a range of administrative levels. These are:

- European Union
- National (i.e. England, Scotland, Wales, Northern Ireland or whole UK)
- Local (i.e. UK Local Authorities)

Details of European Union measures (e.g. Euro Standards, Fuel Quality Directives, Integrated Pollution Prevention and Control) can be found on the European Commission's website (http://ec.europa.eu/environment/air/index_en.htm). Details of national measures are given in the UK overview document and the list of UK and national measures.

Relevant Local Authority measures within this exceedance situation are listed in Table C.1 (see Annex C). Table C.1 lists measures which a local authority has carried out or is in the process of carrying out, plus additional measures which the local authority is committed to carrying out or is investigating with the expectation of carrying out in the future.

Sheffield's key air quality improvement strategy is to reduce pollutant emissions at source, by way of actively encouraging the switching of vehicle fuel from diesel to low polluting ones, traffic management and modal shift.

The emerging Sheffield Transport Strategy is intended to ensure that a robust, fit for purpose transport network is in place which is able to support the future economic growth and development of the city. It is important to ensure that new development is accessible to all, by a choice of modes, and with a keen emphasis on providing infrastructure which encourages the use of the most economically efficient and advantageous modes of transport. This is critical to reducing congestion, improving air quality and contributing to improving the health of the population, whilst provided for growth of the city and increases in trips associated with this.

The emerging strategy envisages a legible, fast, high frequency public transport network, ultimately based on trams/light rail as far as is sustainable, that provides for a turn-up-and-go service that makes a much greater proportion of journeys in the city region practicable by public transport by opening up convenient interchange possibilities. This is to be complemented with world class walking infrastructure and cycling infrastructure, both to serve the public transport system and to serve trips in its own right. To achieve this, a defined network of routes for private motor traffic is to be developed so as to manage private traffic in a manner that does not cause undue disruption to public transport, walking and cycling trips (and vice versa). The intention is to improve the speed, comfort and capacity of the public transport system and of walking and cycling networks so to support development of the city, and so as to out-compete the private car for existing trips, tempting passengers onto these modes so as to reduce traffic congestion. The networks are also intended to provide the transport systems to support the development and cohesion of the wider City Region. This approach has been adopted to allow for growth in trips to be accommodated whilst maximizing air quality, availability and accessibility of land for economic development and to allow for an accessible, inclusive transport system.

By 2025 Sheffield intends that a healthier population will be living for longer thanks in part to the way their transport network operates. Improved air quality will see fewer people in the City dying from the effects of air pollution.

The area is developing infrastructure for refuelling Low Emission Vehicles and to secure suitable site/s. Local Sustainability Transport Fund and OLEV funding are used to support SMEs to switch to electric vehicles and for the installation of rapid charging points across South Yorkshire. Sheffield has been short-listed for the OLEV Go Ultra Low Cities and Taxis Schemes and is working with bus and taxi operators and other partners to develop their bids.

4.4 Measures timescales

Timescales for national measures are given in the UK overview document and list of UK and national measures.

Local Authorities report on progress with the implementation of their action plans annually and review action plan measures regularly. Information on local measures was collected in February/March 2015. Hence, any Local Authority action plans and measures adopted by Local Authorities after this time have not been included in this air quality plan, unless additional information was provided during the consultation process.

The reference year for this air quality plan is 2013. Where measures started and finished before 2013, then the improvement in air quality resulting from these measures will have already taken place before the reference year and the impact of these measures will have been included in the assessment where the measure has had an impact on the statistics used to compile the emission inventory. Many measures started before the reference year and will continue to have a beneficial impact on air quality well beyond the reference year. Measures with a start date before 2013 and an end date after 2013 may have an impact on concentrations in the reference year and a further impact in subsequent years. Where the Status column in Annex C is 'Implementation', this shows that this measure is already underway or that there is a commitment for this measure to go ahead. Where the Status is 'Planning', 'Preparation' or 'Other' the level of commitment is less clear and it is possible some of these measures may not go ahead.

5 Baseline Model Projections

5.1 Overview of model projections

Model projections for 2020, 2025 and 2030, starting from the 2013 reference year described in section 3, have been calculated in order to determine when compliance with the NO₂ limit values is likely to be achieved on the basis of EU, regional and local measures currently planned. Details of the methods used for the baseline emissions and projections modelling are provided in the UK technical report.

For national measures, it has not been possible to quantify the impact of all measures on emissions and ambient concentrations. The impact for all quantifiable measures has been included in the baseline projections.

The impacts of the individual Local Authority measures have not been explicitly included in the baseline model projections. However, measures may have been included implicitly if they have influenced the traffic counts for 2012 (used as a basis for the compilation of the emission inventory) or in the traffic activity projections to 2020 and beyond (used to calculate the emissions projections). It should be recognised that these measures will have a beneficial impact on air quality, even if it has not been possible to quantify this impact here.

5.2 Baseline projections: NO₂_UK0007_Annual_1

Table 4 presents summary results for the baseline model projections for 2020, 2025 and 2030 for the NO₂_UK0007_Annual_1 exceedance situation. This shows that the maximum modelled annual mean NO₂ concentration predicted for 2020 in this exceedance situation is 38 μgm^{-3} . Hence, the model results suggest that compliance with the NO₂ annual limit value is likely to be achieved before 2020 under baseline conditions in this exceedance situation.

Figures 6 and 7 show maps of projected annual mean NO₂ concentrations in 2020, 2025 and 2030 for background and roadside locations respectively. Maps for 2013 are also presented here for reference.

It should be noted that the baseline projections presented here include the impacts of some measures, where they can be quantified, that have already been or will be implemented.

Table 4: Annual mean NO₂ model results in NO₂_UK0007_Annual_1.

	2013	2020	2025	2030
Road length exceeding (km)	34.9	0.0	0.0	0.0
Background exceeding (km ²)	0	0	0	0
Maximum modelled concentration NO ₂ (μgm ⁻³) (a)	57	38	31	29
Corresponding modelled concentration NOx (μgm ⁻³) (b)	149	90	70	63

(a) Annual Mean Limit Value = 40 μgm⁻³

(b) NOx is recorded here for comparison with the NOx source apportionment graphs for 2013 presented in Annex B of this plan. Limit values for EU directive purposes are based on NO₂.

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Figure 6: Background baseline projections of annual mean NO₂ concentrations in 2020, 2025 and 2030. 2013 is also included here for reference. Modelled exceedances of the annual limit value are shown in orange and red.

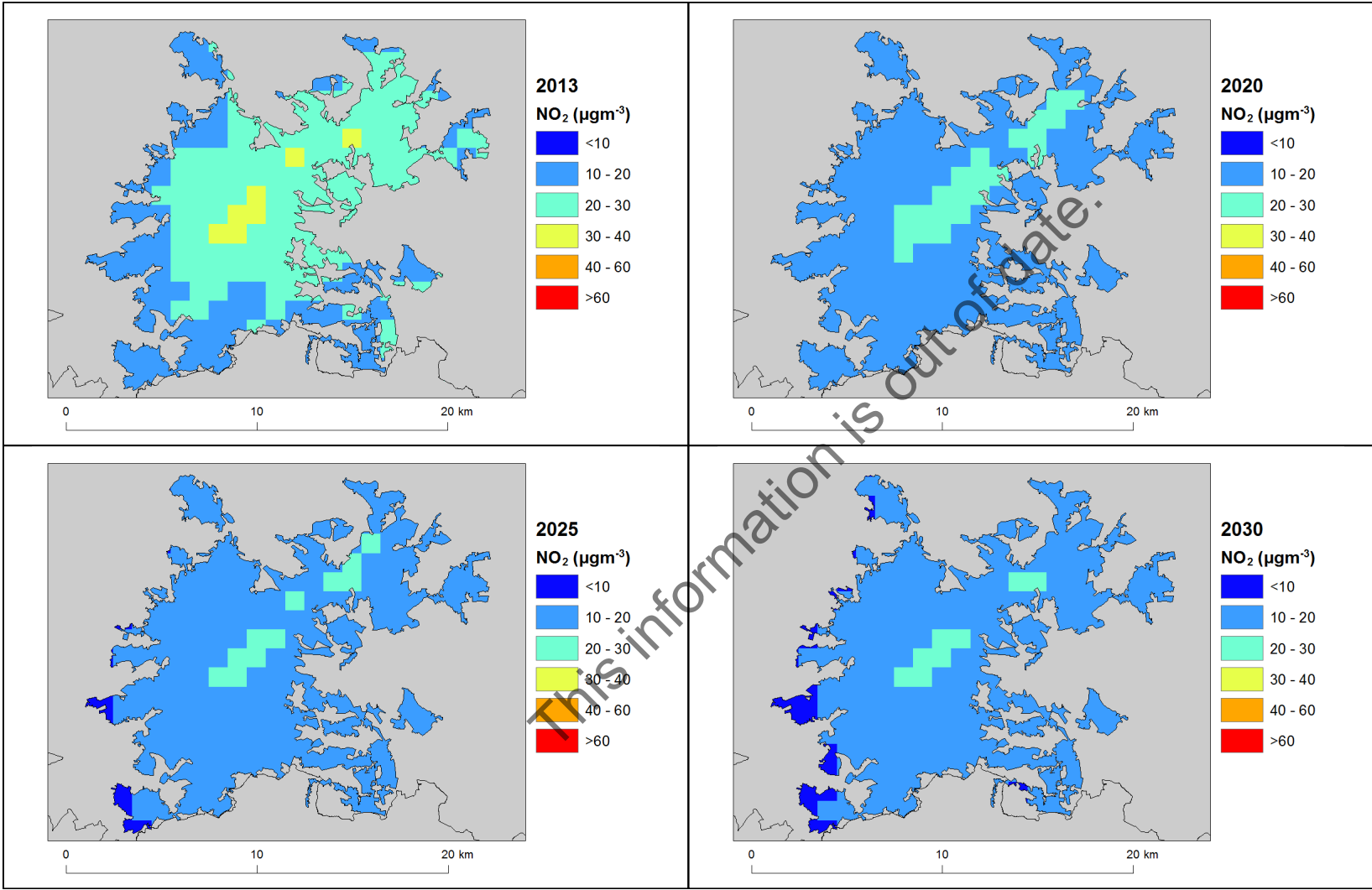
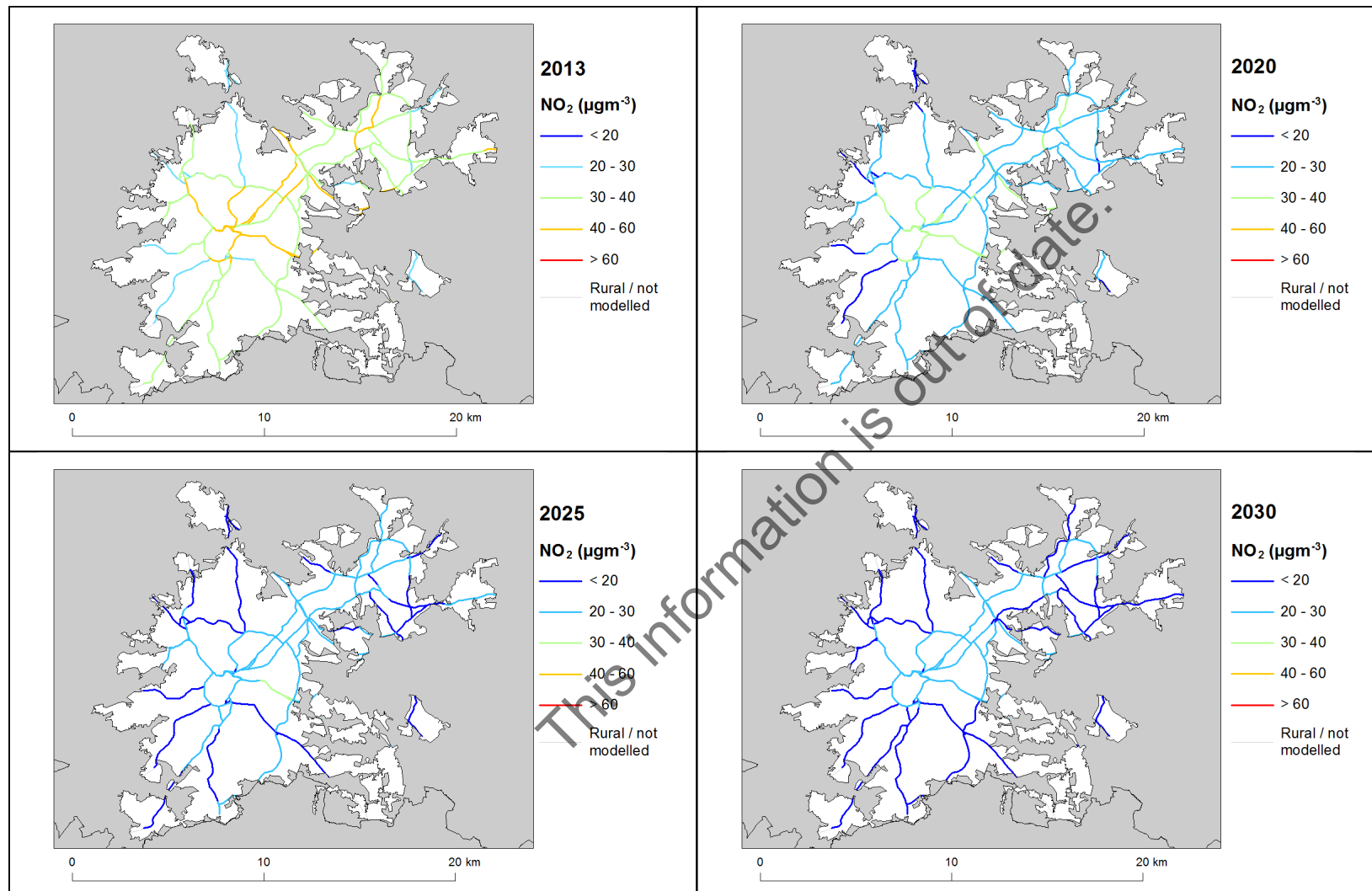


Figure 7: Roadside baseline projections of annual mean NO₂ concentrations in 2020, 2025 and 2030. 2013 is also included here for reference. Modelled exceedances of the annual limit value are shown in orange and red.



Annexes

A References

Air Quality Expert Group (AQEG, 2004). Nitrogen Dioxide in the United Kingdom. <http://uk-air.defra.gov.uk/library/aqeg/publications>

Decision 2004/224/EC. Commission Decision of 20 February 2004 laying down arrangements for the submission of information on plans or programmes required under Council Directive 96/62/EC in relation to limit values for certain pollutants in ambient air. From the Official Journal of the European Union, 6.3.2004, En series, L68/27

Decision 2004/461/EC. Commission Decision of 29 April 2004 laying down a questionnaire to be used for annual reporting on ambient air quality assessment under Council Directives 96/62/EC and 1999/30/EC and under Directives 2000/69/EC and 2002/3/EC of the European Parliament and of the Council. From the Official Journal of the European Union, 30.4.2004, En series, L156/78

Decision 2011/850/EU Commission Implementing Decision of 12 December 2011 laying down rules for Directives 2004/107/EC and 2008/50/EC of the European Parliament and of the Council as regards the reciprocal exchange of information and reporting on ambient air quality. From the Official Journal of the European Union, 17.12.2011, En series, L335/86

CDR Central Data Repository. <http://cdr.eionet.europa.eu/>

Air Quality Directive 2008/50/EC. Council Directive 2008/50/EC, of 21 May 2008. On ambient air quality and cleaner air for Europe. From the Official Journal of the European Union, 11.6.2008, En series, L152/1

1st Daughter Directive 1999/30/EC. Council Directive 1999/30/EC, of 22 April 1999 relating to limit values for sulphur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air (The First Daughter Directive). From the Official Journal of the European Communities, 29.6.1999, En Series, L163/41.

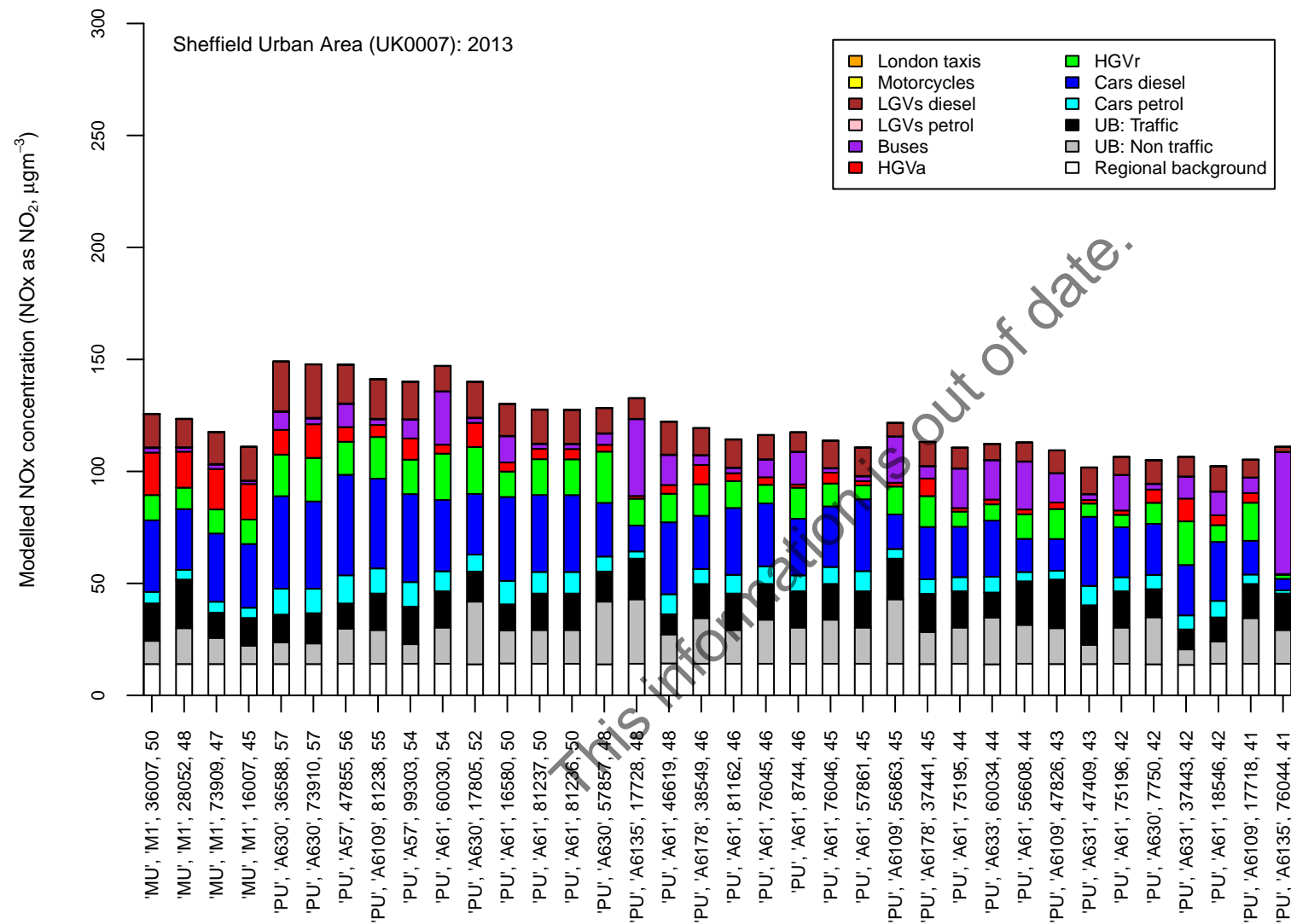
UK overview document, List of UK and National Measures and the UK technical report are available at: <http://www.gov.uk/defra>.

B Source apportionment graphs

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Figure B.1: Annual mean roadside NO_x source apportionment plots for all roads exceeding the annual mean NO₂ limit value in 2013.



Road class (MU = motorway, PU = primary road, TU = trunk road), road number, census id 12 and modelled NO₂ concentration (μgm^{-3})

C Tables of measures

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Table C.1 Relevant Local Authority measures within Sheffield Urban Area (UK0007)

Measure code	Description	Focus	Classification	Status	Other information
North East Derbyshire District Council_1	Liaison with Highways Agency regarding M1 motorway	Liaison with Highways Agency regarding M1 motorway	Traffic planning and management: Other measure	Implementation	Start date: 2014 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Rotherham Metropolitan Borough Council_1	Low emission strategy	Development of Rotherham MBC's Low Emission Strategy	Public procurement: Other measure	Preparation	Start date: 2015 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Transport Indicator: Not available Target emissions reduction: N/A
Rotherham Metropolitan Borough Council_2	M1 smart motorway scheme	Highways Agency Scheme. Speed limits may be imposed for mitigation of the air quality impact of the scheme	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2015 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Not available Target emissions reduction: 0
Rotherham Metropolitan Borough Council_3	ECO Stars	South Yorkshire ECO Stars Fleet Recognition Scheme, provides a 'road map' to each member to reduce emissions	Other measure: Other measure	Implementation	Start date: 2008 Expected end date: 2017 Spatial scale: Whole town or city Source affected: Transport Indicator: Not available Target emissions reduction: N/A
Rotherham Metropolitan Borough Council_4	Infrastructure for refuelling low emission vehicles (1) 'Inmotion' Electric Vehicle Project	Scheme targets SMEs in South Yorkshire to provide charging points and leasing of electric vehicles (LSTF)	Public procurement: Other measure	Implementation	Start date: 2014 Expected end date: 2016 Spatial scale: Local Source affected: Transport Indicator: Not available Target emissions reduction: N/A
Rotherham Metropolitan Borough Council_5	Develop the infrastructure for refuelling low emission vehicles (2) CNG refuelling infrastructure	Develop the infrastructure for CNG refuelling - feasibility	Public procurement: Other measure	Preparation	Start date: 2014 Expected end date: 2014 Spatial scale: Local Source affected: Transport Indicator: Not available Target emissions reduction: N/A
Rotherham Metropolitan Borough Council_6	Develop the infrastructure for refuelling low emission vehicles (3) Hydrogen vehicle re-fuelling infrastructure and vehicle trial	Hydrogen re-fuelling infrastructure and vehicle trial in partnership with ITM Power	Public procurement: Other measure	Implementation	Start date: 2014 Expected end date: 2016 Spatial scale: Local Source affected: Transport Indicator: Not available Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Rotherham Metropolitan Borough Council_7	Public Health/Community Protection PM2.5 Project to develop a Health Improvement Plan	PM2.5 action plan and communication strategy	Public information and Education: Other mechanisms	Planning	Start date: 2015 Expected end date: 2017 Spatial scale: Local Source affected: Transport Indicator: Not available Target emissions reduction: N/A
Rotherham Metropolitan Borough Council_8	Care4air	South Yorkshire Care4air campaign	Public information and Education: Internet	Implementation	Start date: 2005 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Transport Indicator: Not available Target emissions reduction: N/A
Rotherham Metropolitan Borough Council_9	Clean energy generation from Transport Assets. Photo-voltaic installation, wind turbine, timers in bus shelters	Clean energy generation schemes	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2013 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: Not available Target emissions reduction: N/A
Rotherham Metropolitan Borough Council_10	Improvements to Rotherham Bus Services	Rotherham Bus Partnership	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2014 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: Not available Target emissions reduction: N/A
Rotherham Metropolitan Borough Council_11	Local road schemes – Waverley link road/ Halfpenny Link	Road schemes to alleviate congestion	Traffic planning and management: Other measure	Implementation	Start date: 2015 Expected end date: 2017 Spatial scale: Local Source affected: Transport Indicator: Not available Target emissions reduction: N/A
Rotherham Metropolitan Borough Council_12	Emissions and Air Quality Planning Guidance	Development Control	Other measure: Other measure	Implementation	Start date: 2015 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Transport Indicator: Not available Target emissions reduction: N/A
Rotherham Metropolitan Borough Council_13	Promoting green infrastructure	Green infrastructure project to protect human health	Traffic planning and management: Other measure	Planning	Start date: 2015 Expected end date: 2020 Spatial scale: Local Source affected: Transport Indicator: Not available Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Rotherham Metropolitan Borough Council_14	Rotherham MBC Fleet Improvement Programme	Rotherham MBC Fleet Improvement	Other measure: Other measure	Implementation	Start date: 2015 Expected end date: 2018 Spatial scale: Local Source affected: Transport Indicator: Not available Target emissions reduction: N/A
Rotherham Metropolitan Borough Council_15	CVTF – Turning up the Heat on NOx	CVTF project - retrofitting technology to reduce NOx emissions in AQMAs	Retrofitting: Retrofitting emission control equipment to vehicles	Implementation	Start date: 2014 Expected end date: 2015 Spatial scale: Local Source affected: Transport Indicator: Annual mean nitrogen dioxide at AQMA monitoring sites Target emissions reduction: 0.03
Rotherham Metropolitan Borough Council_16	Taxi Licensing	Standards for licensed taxis	Other measure: Other measure	Preparation	Start date: 2015 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Transport Indicator: Not available Target emissions reduction: N/A
Sheffield City Council_1	Assess feasibility of a low emission zone	Undertake study to establish feasibility	Other measure: Other measure	Other	Start date: 2014 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: Recommendation: 30% traffic emissions reduction by 2015 Target emissions reduction: Task and Finish Work Packages and Leads setup
Sheffield City Council_2	Develop Infrastructure for Refuelling Low Emission Vehicles	Identify funding / partner / investor to establish infrastructure	Public procurement: Other measure	Planning	Start date: 2015 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Transport Indicator: Secure suitable site/s Target emissions reduction: 20% reduction in NOx
Sheffield City Council_3	Promote Smarter Travel Choices	Reduce private car emissions	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2008 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Transport Indicator: Achieve reduction from private car by 2020 Target emissions reduction: 0.05

Measure code	Description	Focus	Classification	Status	Other information
Sheffield City Council_4	Improve Engine Performance of Commercial Diesel Vehicles	Reduce diesel emissions from commercial vehicles	Retrofitting: Retrofitting emission control equipment to vehicles	Other	Start date: 2012 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Transport Indicator: Achieve reduction from commercial vehicles by 2020 Target emissions reduction: 0.2
Sheffield City Council_5	Mitigate the Impact of the M1 motorway (particularly in the Tinsley Area)	Reduce vehicle emissions from the motorway through partnership working with the Highways Agency (HA)	Traffic planning and management: Other measure	Implementation	Start date: 2014 Expected end date: 2018 Spatial scale: Local Source affected: Transport Indicator: Construct Smart Motorway and barrier along M1 J34 south slip Target emissions reduction: Up to 5% of annual EU limit value
Sheffield City Council_6	Develop Policies to Support Better Air Quality	Restrict new sensitive uses (homes, schools etc.) from being developed in areas where national air quality objectives are being exceeded, unless significant mitigation measures are included within those developments.	Other measure: Other measure	Other	Start date: 2013 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Other, please specify Indicator: Sheffield Local Plan will have policies aimed at improving air quality Target emissions reduction: Up to 2% of annual EU limit value
Sheffield City Council_7	Control Industrial Emissions	Regulate installations which are permitted under the Environmental Permitting Regulations	Permit systems and economic instruments: IPPC permits	Implementation	Start date: 2013 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Industry including heat and power production Indicator: Install abatement equipment and employ the "best available techniques" to control emissions Target emissions reduction: 1-2%