



Department  
for Environment  
Food & Rural Affairs

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## **Draft Air Quality Plan for the achievement of EU air quality limit value for nitrogen dioxide (NO<sub>2</sub>) in Southend Urban Area (UK0021)**

**September 2015**



Llywodraeth Cymru  
Welsh Government



The Scottish  
Government  
Riaghaltas na h-Alba



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Any enquiries regarding this publication should be sent to us at:

[air.quality@defra.gsi.gov.uk](mailto:air.quality@defra.gsi.gov.uk)

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# 1 Introduction

## 1.1 This document

This document is the Southend Urban Area agglomeration zone (UK0021) updated air quality plan for the achievement of the EU air quality limit values for nitrogen dioxide (NO<sub>2</sub>). 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 Southend Urban Area agglomeration zone
- Details of the NO<sub>2</sub> exceedance situation within the Southend 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 Southend Urban Area agglomeration zone should be read in conjunction with the separate UK overview document. The UK overview document sets out, amongst other things, the authorities responsible for delivering air quality improvements and the national measures that are applied in some or all UK zones. The measures presented in this plan and the accompanying UK overview document show how the UK will ensure that compliance with the NO<sub>2</sub> limit values is achieved in the shortest possible time.

## 1.2 Context

Two NO<sub>2</sub> 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 NO<sub>2</sub> limit values will be achieved by 01/01/2010. However, where the limit values cannot be achieved by then, the Directive also allowed Member States to postpone this attainment date until 01/01/2015 at the latest provided air quality plans were established demonstrating how the limit values would be met by this extended deadline. Postponement of compliance until 01/01/2015 was granted by the European Commission for Southend Urban Area agglomeration zone.

## 1.3 Zone status

The assessment undertaken for the Southend 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 NO<sub>2</sub> levels in this agglomeration zone for the 2013 reference year of this air quality plan. This includes 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 take the measure(s). 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: Southend Urban Area

Zone code: UK0021

Type of zone: agglomeration zone

Reference year: 2013

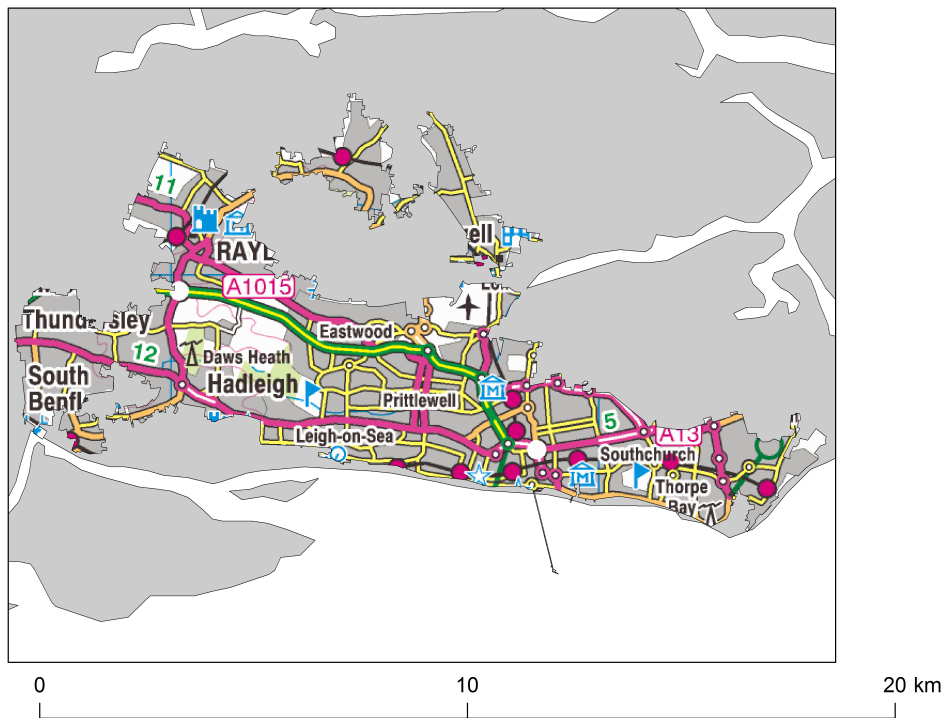
Extent of zone: Figure 1 shows the area covered by the Southend Urban Area agglomeration zone.

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. Castle Point Borough Council
2. Rochford District Council
3. Southend Borough Council

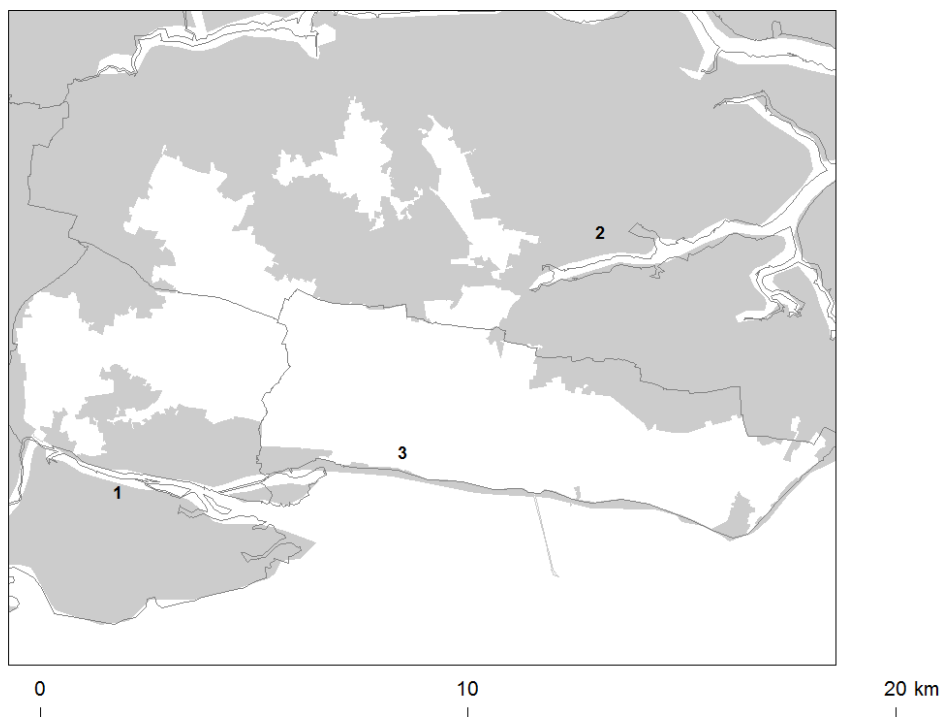
(Note: Local Authority boundaries do not necessarily coincide with zone boundaries. Hence Local Authorities may be listed within more than one zone plan.)

**Figure 1: Map showing the extent of the Southend Urban Area agglomeration zone (UK0021).**



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**Figure 2: Map showing Local Authorities within the Southend Urban Area agglomeration zone (UK0021).**



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## 2.2 Assessment details

### Measurements

NO<sub>2</sub> measurements in this zone were available in 2013 from the following national network monitoring stations (NO<sub>2</sub> data capture for each station in 2013 shown in brackets):

1. Southend-on-Sea GB0728A (95%)

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

### Modelling

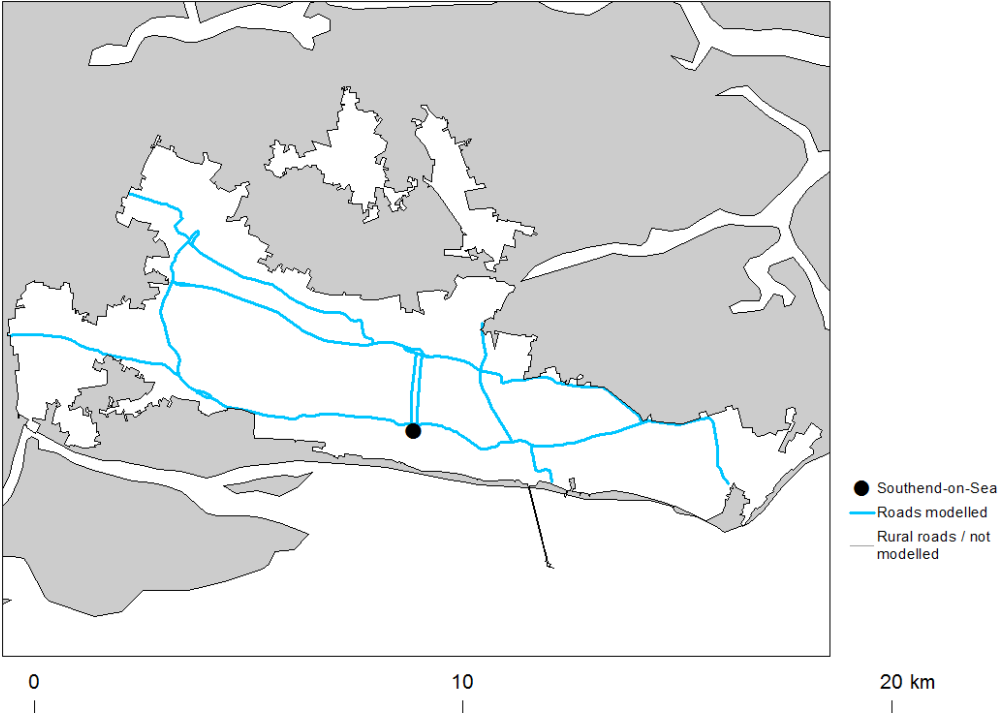
Modelling for the 2013 reference year has been carried out for the whole of the UK. This modelling covers the following extent within this zone:

- Total background area within zone (approx): 67 km<sup>2</sup>
- Total population within zone (approx): 243,360 people
- Total road length where an assessment of NO<sub>2</sub> concentrations have been made: 52 km in 2013 (and similar lengths in previous years)

### Zone maps

Figure 3 presents the location of the NO<sub>2</sub> monitoring stations within this zone for 2013 and the roads for which NO<sub>2</sub> concentrations have been modelled. NO<sub>2</sub> concentrations at background locations have been modelled across the entire zone at a 1 x 1 km<sup>2</sup> resolution.

**Figure 3: Map showing the location of the NO<sub>2</sub> monitoring stations with valid data in 2013 and roads where concentrations have been modelled within the Southend Urban Area (UK0021) 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) <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 NO<sub>2</sub>. These are:

- The annual limit value (annual mean concentration of no more than 40 µgm<sup>-3</sup>)
- The hourly limit value (no more than 18 hourly exceedances of 200 µgm<sup>-3</sup> in a calendar year)

Within the Southend Urban Area agglomeration zone the annual limit value was exceeded in 2013. Hence, one exceedance situation for this zone has been defined, NO<sub>2</sub>\_UK0021\_Annual\_1, which covers exceedances of the annual limit value. This exceedance situation is described below.

Where locations have a time extension in place, a margin of tolerance has been defined by the Air Quality Directive (2008/50/EC) which applies to both NO<sub>2</sub> limit values up until the time extension expires. Data comparing assessed concentrations at locations within this agglomeration zone with the margin of tolerance are presented in e-reporting for 2013 (<http://cdr.eionet.europa.eu/gb/eu/annualair>).

## 3.2 Reference year: NO<sub>2</sub>\_UK0021\_Annual\_1

The NO<sub>2</sub>\_UK0021\_Annual\_1 exceedance situation covers all exceedances of the annual mean limit value in the Southend 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 NO<sub>2</sub> concentrations in this exceedance situation for the same time period. This table shows that, in 2013, 7.1 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 NO<sub>2</sub> 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<sub>x</sub> source apportionment for all modelled locations. Table 3 presents summary source apportionment information in this exceedance situation.

Table 3 summarises the modelled NO<sub>x</sub> source apportionment for the section of road with the highest modelled NO<sub>2</sub> 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. It is not possible to calculate an unambiguous source apportionment for annual mean NO<sub>2</sub> concentrations for the reasons discussed in the UK Technical Report<sup>1</sup>. Therefore no NO<sub>2</sub> source apportionment is provided.

Figure B.1 in Annex B presents the annual mean NO<sub>x</sub> source apportionment for each section of road within the NO<sub>2</sub>\_UK0021\_Annual\_1 exceedance situation (i.e. the source apportionment for all exceeding roads only) in 2013. Roads have been grouped into motorways, primary roads and trunk roads in this figure.

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<sup>1</sup>Technical report to be finalised for the final plan.

**Table 1: Measured annual mean NO<sub>2</sub> concentrations at national network stations in NO2\_UK0021\_Annual\_1 for 2001 onwards,  $\mu\text{gm}^{-3}$  (a). Data capture shown in brackets.**

Site name (EOI code)	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Southend-on-Sea (GB0728A)	26 (96)	25 (96)	25 (83)	24 (91)	23 (92)	20 (98)	25 (99)	23 (99)	20 (68)	20 (49)	22 (67)	24 (71)	20 (95)

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

**Table 2: Annual mean NO<sub>2</sub> model results in NO<sub>2</sub>\_UK0021\_Annual\_1 for 2001 onwards.**

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Road length exceeding (km)	6.0	5.5	16.5	8.3	8.3	8.3	10.5	8.7	8.7	10.9	8.7	8.7	7.1
Background exceeding (km <sup>2</sup> )	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum modelled concentration ( $\mu\text{gm}^{-3}$ ) (a)	49.0	41.6	56.4	53.1	57.1	55.3	53.8	54.8	53.2	61.4	57	55	56

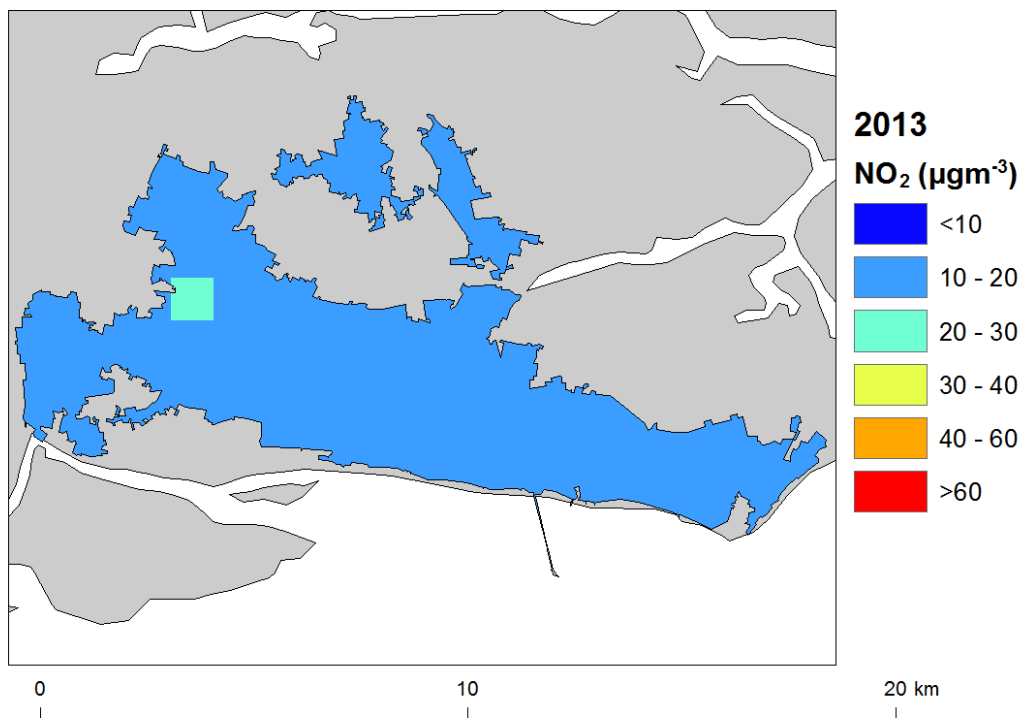
(a) Annual Mean Limit Value =  $40 \mu\text{gm}^{-3}$

**Table 3: Modelled annual mean NOx source apportionment at the traffic count point with the highest modelled concentration in 2013 in NO2\_UK0021\_Annual\_1 ( $\mu\text{gm}^{-3}$ ) (traffic count point 46683 on the A127; OS grid (m): 581000, 189570).**

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	9.9
	From within the UK	5.6
	From transboundary sources (includes shipping and other EU member states)	4.3
Urban background sources NOx (i.e. sources located within 0.3 - 30 km from the receptor).	Total	17.5
	From road traffic sources	11.3
	From industry (including heat and power generation)	1.6
	From agriculture	NA
	From commercial/residential sources	1.3
	From shipping	2.1
	From off road mobile machinery	1.2
	From natural sources	NA
	From transboundary sources	NA
From other urban background sources	0.0	
Local sources NOx (i.e. contributions from sources < 0.3 km from the receptor).	Total	115.4
	From petrol cars	12.2
	From diesel cars	42.2
	From HGV rigid	21.5
	From HGV articulated	9.0
	From buses	3.5
	From petrol LGVs	0.4
	From diesel LGVs	26.4
From motorcycles	0.2	
From London taxis	0.0	
Total NOx (i.e. regional background + urban background + local components)		142.9
Total NO <sub>2</sub> (i.e. regional background + urban background + local components)		56

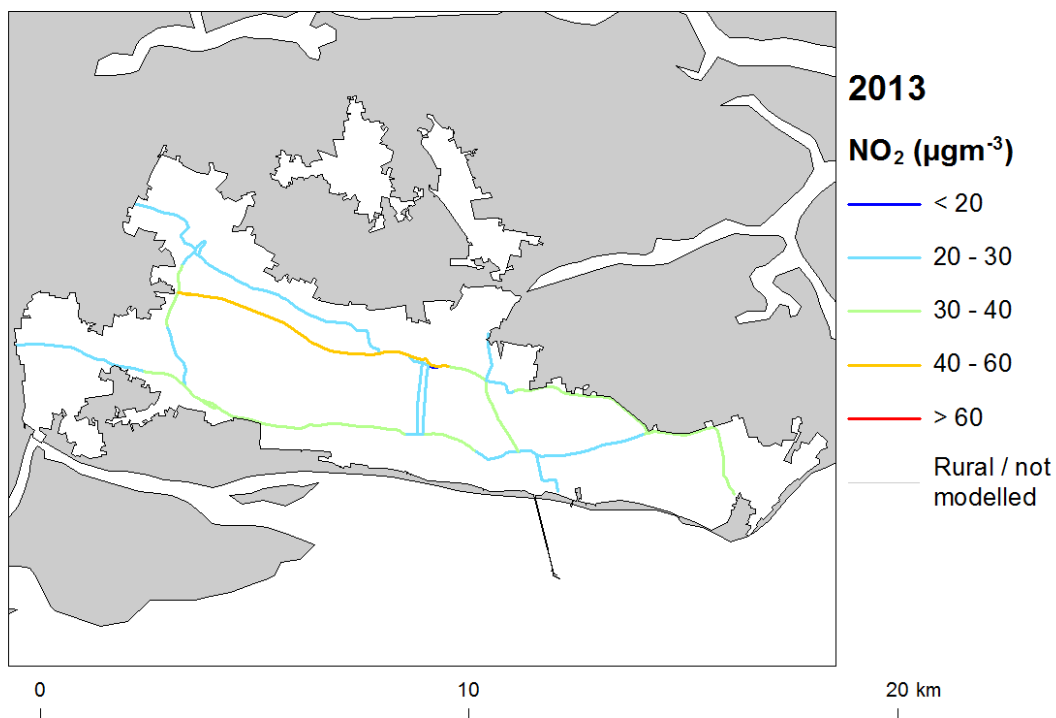
(a) Components are listed with NOx concentration of NA when there is no source from this sector.

**Figure 4: Map of modelled background annual mean NO<sub>2</sub> 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 NO<sub>2</sub> 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 (section 4) gives details of measures that address exceedances of the NO<sub>2</sub> limit values within Southend 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 NO<sub>2</sub> 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 54.4  $\mu\text{gm}^{-3}$  of NO<sub>x</sub> out of a total of 142.9  $\mu\text{gm}^{-3}$  of NO<sub>x</sub>. Cars, LGVs, rigid HGVs and articulated HGVs were important sources on the primary roads with the highest concentrations. For all road links concentrations of NO<sub>x</sub> from diesel cars were approximately four times greater than NO<sub>x</sub> emissions from petrol cars. NO<sub>x</sub> concentrations from petrol LGVs are a small component of total NO<sub>x</sub> concentrations and less than 2% of total NO<sub>x</sub> from LGVs.

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

### 4.3 Measures

Measures potentially affecting NO<sub>2</sub> 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](http://ec.europa.eu/environment/air/index_en.htm)). Details of national measures are given in the UK overview document.

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.

The Area's focus on improving air quality has been promoting modal shift away from the use of private cars by facilitating behavior change to sustainable forms of public transport or walking and cycling and also car clubs.

This has many benefits, such as reduced congestion, improved journey times and improved air quality. This not only improves the environment but also better public health.

The Area has made significant efforts to promote modal shifts away from using cars. The main alternative modes of travelling have been focused on promoting cycling, including improving existing routes and creating new ones. Roads are also graded to the bike-ability levels for suitable journey planning.

A social enterprise has been set up to offer recycled cycles at affordable prices. The enterprise offers advice on all sustainable modes of transport as well as bike hire, bike service and repair. There are also initiatives aimed at reducing single occupancy levels in cars and car sharing scheme/car clubs have been implemented along with the installation of electric vehicle charging posts.

Approximately £40 million has been invested in improvements to the A127 via the South East Local Enterprise Partnership. These improvements are targeted at relieving bottlenecks at key junctions to improve traffic flow.

## 4.4 Measures timescales

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

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.

The reference year for this air quality plan is 2013. Hence 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. Hence 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 NO<sub>2</sub> 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: NO<sub>2</sub>\_UK0021\_Annual\_1

Table 4 presents summary results for the baseline model projections for 2020, 2025 and 2030 for the NO<sub>2</sub>\_UK0021\_Annual\_1 exceedance situation. This shows that the maximum modelled annual mean NO<sub>2</sub> concentration predicted for 2020 in this exceedance situation is 37  $\mu\text{g}\text{m}^{-3}$ . Hence, the model results suggest that compliance with the NO<sub>2</sub> 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 NO<sub>2</sub> 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 NO<sub>2</sub> model results in NO<sub>2</sub>\_UK0021\_Annual\_1.**

	2013	2020	2025	2030
Road length exceeding (km)	7.1	0.0	0.0	0.0
Background exceeding (km <sup>2</sup> )	0	0	0	0
Maximum modelled concentration NO <sub>2</sub> (μgm <sup>-3</sup> ) (a)	56	37	30	27
Corresponding modelled concentration NOx (μgm <sup>-3</sup> ) (b)	143	82	64	57

(a) Annual Mean Limit Value = 40 μgm<sup>-3</sup>

(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 NO<sub>2</sub>.

Figure 6: Background baseline projections of annual mean NO<sub>2</sub> 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.

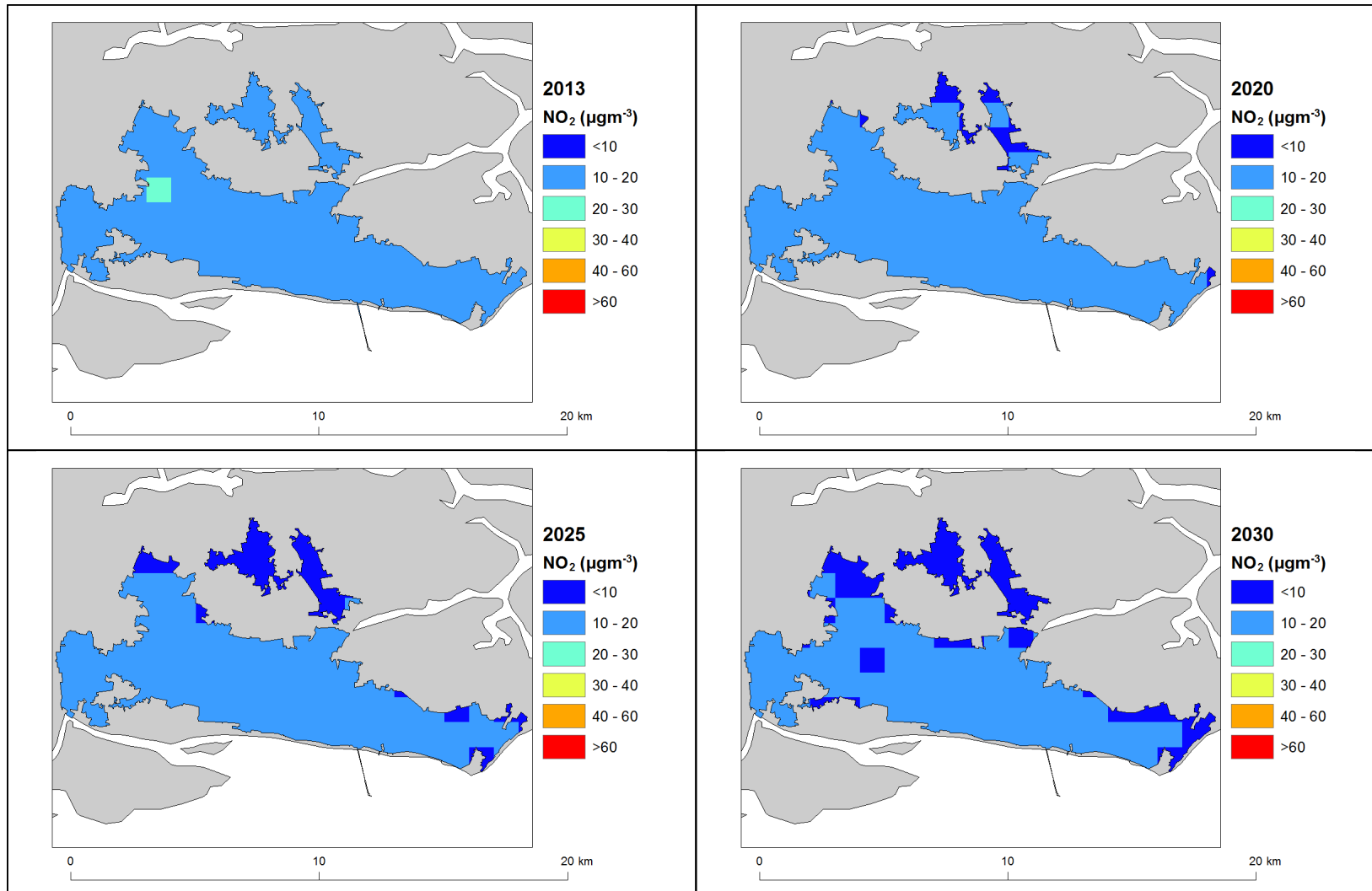
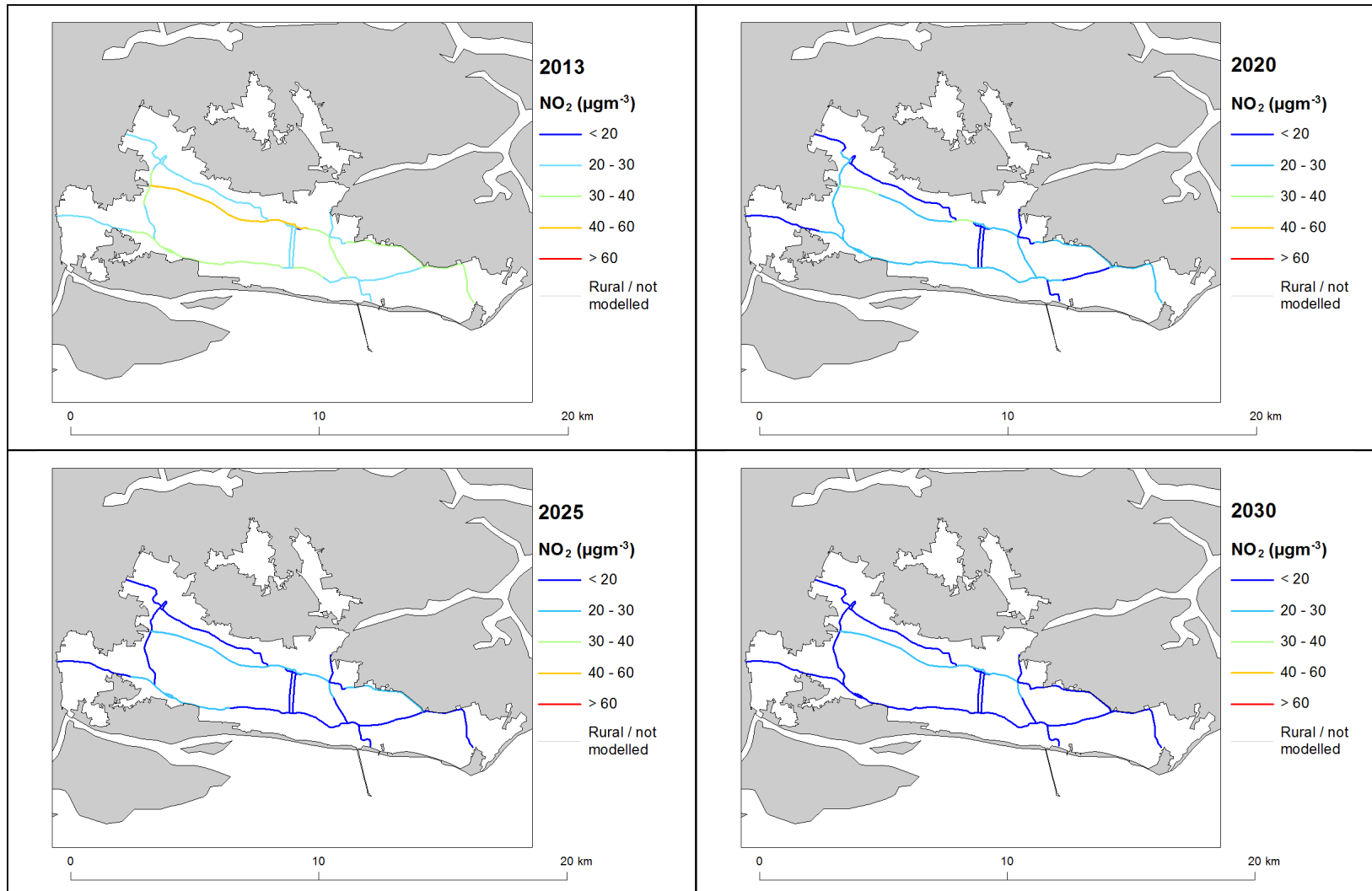


Figure 7: Roadside baseline projections of annual mean NO<sub>2</sub> concentrations in 2020, 2025 and 2030. 2013 is also included here for reference. Modelled exceedances of the annual limit value are shown in orange and red.



# 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/>

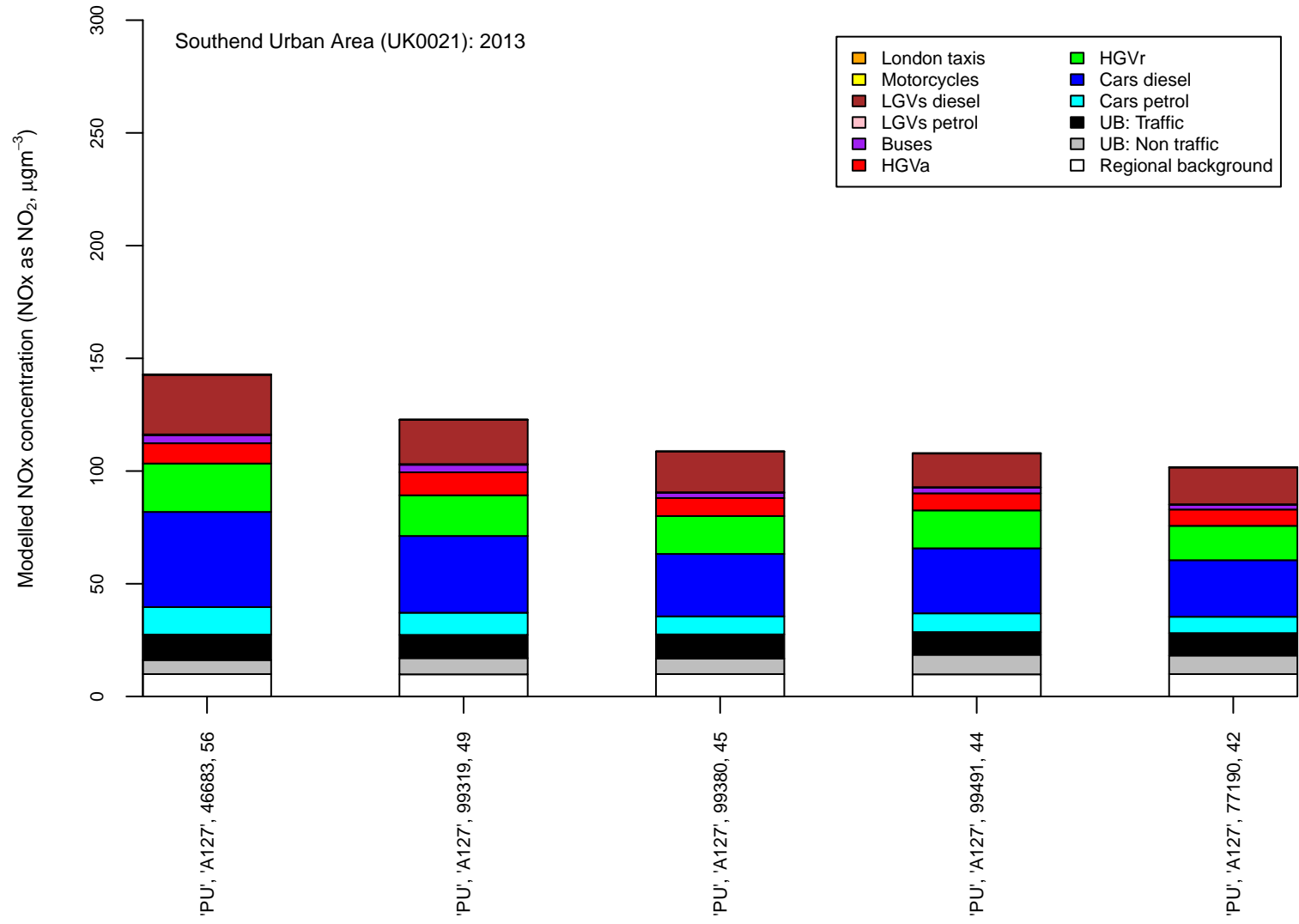
Air Quality Directive 2008/50/EC. Council Directive 2008/50/EC, of 21 May 2008. On ambient air quality and cleaner air for Europe. From the Official Journal of the European Union, 11.6.2008, En series, L152/1

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.

## **B Source apportionment graphs**

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Figure B.1: Annual mean roadside NO<sub>x</sub> source apportionment plots for all roads exceeding the annual mean NO<sub>2</sub> limit value in 2013.



Road class (MU = motorway, PU = primary road, TU = trunk road), road number, censusid 12 and modelled NO<sub>2</sub> concentration (μgm<sup>-3</sup>)

## **C Tables of measures**

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**Table C.1 Relevant Local Authority measures within Southend Urban Area (UK0021)**

Measure code	Description	Focus	Classification	Status	Other information
Southend Borough Council_1	UTC, SCOOT loops	Reduce congestion	Traffic planning and management: Other measure	Implementation	Start date: 2008 Expected end date: 2018 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_2	Victoria Gateway made into a bus and rail interchange and a shared space area.	Re-prioritising road space	Traffic planning and management: Encouragement of shift of transport modes	Evaluation	Start date: 2010 Expected end date: 2011 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_3	Ideas in Motion Travel map	To show walking and cycling routes including off road. Roads are graded to the Bikeability levels for suitable journey planning	Public information and Education: Leaflets	Evaluation	Start date: 2009 Expected end date: 2009 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_4	Workplace Travel Plan	Reducing single occupancy levels in cars and action plans	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2003 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_5	Encouraging/Facilitating home working	Reduce car usage and therefore congestion at peak times	Other measure: Other measure	Planning	Start date: 2003 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_6	LSTF - Ideas in Motion Sustainable Travel Branding	Promoting travel change behaviour	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2011 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_7	LSTF - Personalised Travel Planning	Contacting households in deprived areas of Southend	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2011 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A



Measure code	Description	Focus	Classification	Status	Other information
Southend Borough Council_8	School Travel Plans	Action plans	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2003 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_9	LSTF - Cycle Southend and Ideas in Motion	Encourage and promote cycling to all in the Borough	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2008 Expected end date: 2017 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_10	LSTF - Ideas in Motion	Encourage and promote walking to all in the Borough	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2011 Expected end date: 2017 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_11	LSTF - Promotion of the use of trains	Promotion of the use of trains through Ideas in Motion and to promote Active Travel through Public Health	Traffic planning and management: Encouragement of shift of transport modes	Evaluation	Start date: 2011 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_12	LSTF - Ideas in Motion	Behavioural change campaign to encourage the use of sustainable transport	Public information and Education: Internet	Planning	Start date: 2011 Expected end date: 2017 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_13	Encourage development of Car Clubs	Seeking car clubs through section 106 agreements	Other measure: Other measure	Planning	Start date: 2001 Expected end date: 2025 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_14	Travel Centre includes a number of bus services and is a short walk to the Town Centre and railway line	Provide sustainable travel options	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2004 Expected end date: 2006 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Southend Borough Council_15	Sustainable Motion	A social enterprise set up to offer recycled cycles for affordable prices. They also offer advice on all sustainable modes of transport as well as bike hire, bike service and repair.	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Evaluation	Start date: 2013 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_16	LSTF	Providing safe routes and cycle parking for cyclists	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Implementation	Start date: 2011 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_17	Better Bus Area (BBA)	Improve bus reliability	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2012 Expected end date: 2014 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_18	TGSE/LSTF - Infrastructure upgrades, new RTP1, bus shelters and interchanges	Improve bus infrastructure	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2014 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_19	LTP3, Policy 12 - Maintain Air Quality	To ensure no AQMA areas are declared for transport	Other measure: Other measure	Evaluation	Start date: 2011 Expected end date: 2026 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_20	Electric vehicle charging posts	To encourage the uptake of electric vehicles	Other measure: Other measure	Planning	Start date: 2012 Expected end date: 2026 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_21	EV promotional events	To encourage uptake of electric vehicles	Public procurement: New vehicles, including low emission vehicles	Implementation	Start date: 2012 Expected end date: 2026 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Southend Borough Council_22	Cuckoo corner, strategic highway improvement	Junction Improvement to reduce congestion and improve journey time reliability	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2011 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_23	Tesco, strategic highway improvement	Junction Improvement to support future employment and Housing growth	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2014 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_24	City Beach, shared space	Re-prioritising road space	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2011 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_25	The Bell, strategic highway improvement	Junction Improvement to support future employment and Housing growth	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2018 Expected end date: 2019 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_26	Kent Elms, strategic highway improvement	Junction Improvement to support future employment and Housing growth	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2016 Expected end date: 2017 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Southend Borough Council_27	A127 Progress road, strategic highway improvement	Junction Improvement to support employment growth, reduce congestion and improve journey time reliability	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2011 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Rochford District Council_1	Staff travel plan	Effective routing/Mileage dissuaded where travel is out of county	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2011 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Reduced staff mileage Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Rochford District Council_2	Homeworking/Mobile working policy	Reduces emissions resulting from journeys to/from work	Other measure: Other measure	Implementation	Start date: 2010 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: None Target emissions reduction: N/A
Rochford District Council_3	Webpages at <a href="http://www.rochford.gov.uk/airquality">www.rochford.gov.uk/airquality</a> and <a href="http://www.essexair.org">www.essexair.org</a>	Air quality education and data provision	Public information and Education: Internet	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: None Target emissions reduction: N/A
Rochford District Council_4	Essential mileage payments linked to CO2 output of vehicle	Incentivised use of efficient vehicles for work journeys	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: Mileage claim statistics Target emissions reduction: N/A
Rochford District Council_5	National charges for Environmental Permits	Reduced fees for better environmental performance	Permit systems and economic instruments: Introduction/increase of environment charges	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Local Source affected: Industry including heat and power production Indicator: Risk-ratings Target emissions reduction: N/A
Rochford District Council_6	Climate Change Commitment	Environmentally-friendly procurement and maintenance	Other measure: Other measure	Implementation	Start date: 2008 Expected end date: 2030 Spatial scale: Local Source affected: Commercial and residential sources Indicator: None Target emissions reduction: N/A
Rochford District Council_7	Membership of Essex Air <a href="http://www.essexair.org">www.essexair.org</a>	Air quality projects, knowledge-sharing and policy formation	Other measure: Other measure	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: None Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Rochford District Council_8	Adoption of Essex Transport Strategy (LTP3)	Reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology	Traffic planning and management: Other measure	Implementation	Start date: 2011 Expected end date: 2026 Spatial scale: Whole agglomeration Source affected: Transport Indicator: Primary and secondary performance measures and targets for each outcome Target emissions reduction: N/A
Rochford District Council_9	Adoption of Local Development Framework Core Strategy	Support of improvements to the strategic road network. Prevent additional exposure in areas of known poor air quality. Manage the contribution towards transport infrastructure improvements to enhance the broader network to mitigate impacts on existing communities.	Other measure: Other measure	Implementation	Start date: 2011 Expected end date: 2026 Spatial scale: Local Source affected: Transport Indicator: None Target emissions reduction: N/A
Rochford District Council_10	Introduction of staff salary sacrifice scheme for bicycles	Modal shift	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2015 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: None Target emissions reduction: N/A