



Department
for Environment
Food & Rural Affairs



Department
for Transport

Air Quality Plan for tackling roadside nitrogen dioxide concentrations in Teesside Urban Area (UK0013)

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

air.quality@defra.gsi.gov.uk

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1 Introduction

1.1 This document

This document is the Teesside Urban Area agglomeration zone (UK0013) updated air quality plan for tackling roadside nitrogen dioxide (NO₂) concentrations. This is an update to the air quality plan published in December 2015 (<https://www.gov.uk/government/collections/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2015>).

This plan presents the following information:

- General information regarding the Teesside Urban Area agglomeration zone
- Details of NO₂ exceedance situation within the Teesside 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 Teesside Urban Area agglomeration zone should be read in conjunction with the separate UK Air Quality Plan for tackling roadside nitrogen dioxide concentrations (hereafter referred to as the overview document) which 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, and the accompanying UK overview document 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 $\mu\text{g}\text{m}^{-3}$
- The hourly limit value: no more than 18 exceedances of 200 $\mu\text{g}\text{m}^{-3}$ 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 Teesside Urban Area agglomeration zone indicates that the annual limit value was exceeded in 2015 but is likely to be achieved by 2024 through the introduction of measures included in the baseline. When combined with the measures outlined in the overview document for the UK we expect this zone to be compliant by 2021.

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 2015 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 2015 is given in Section 4.

Baseline modelled projections for each year from 2017 to 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: Teesside Urban Area

Zone code: UK0013

Type of zone: agglomeration zone

Reference year: 2015

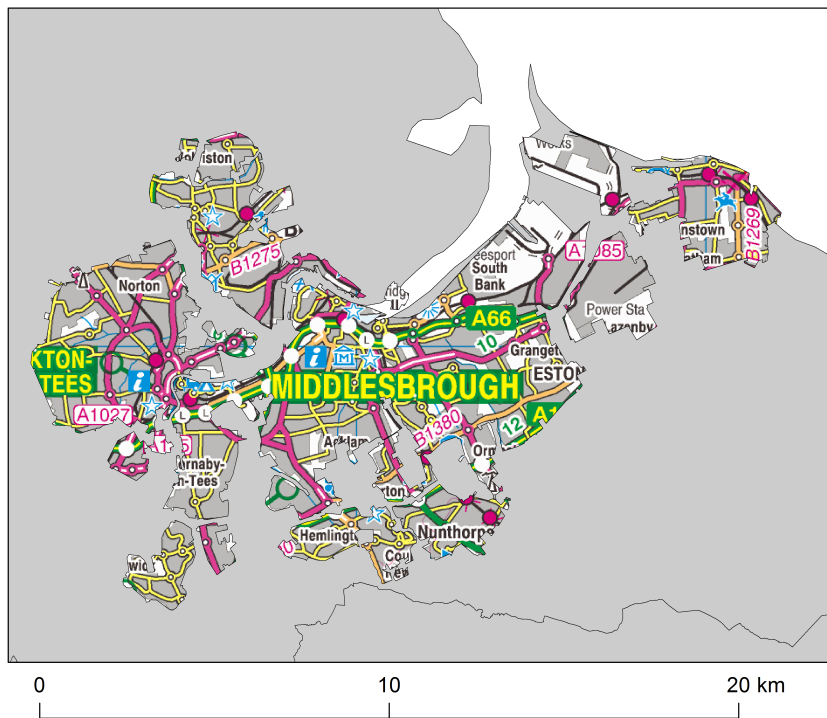
Extent of zone: Figure 1 shows the area covered by the Teesside Urban Area agglomeration zone.

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. Middlesbrough Borough Council
2. Redcar and Cleveland Borough Council
3. Stockton-on-Tees Borough Council

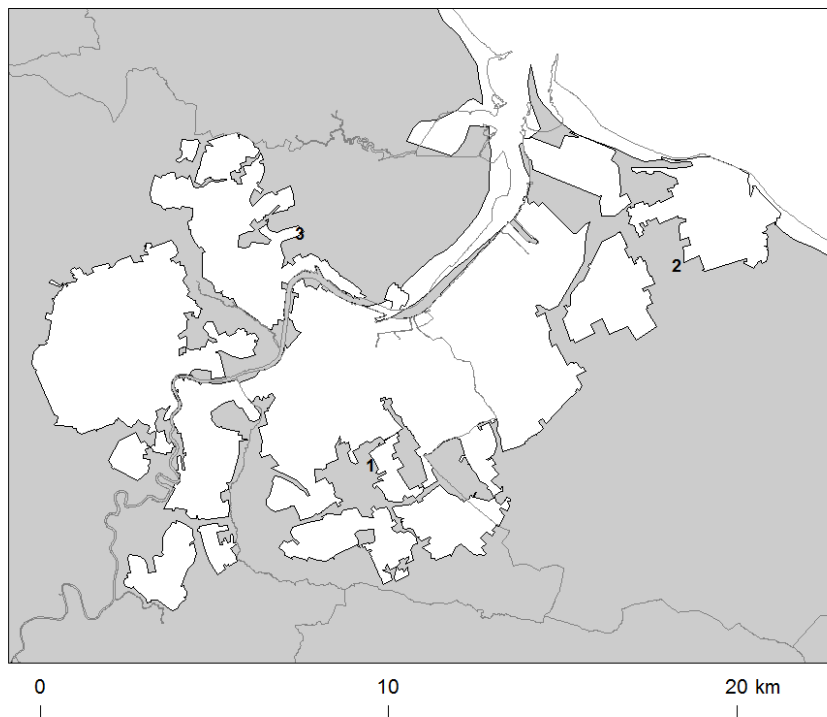
(Note: Local Authority boundaries do not necessarily coincide with zone boundaries. Hence Local Authorities may be listed within more than one zone plan.)

Figure 1: Map showing the extent of the Teesside Urban Area agglomeration zone (UK0013).



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Figure 2: Map showing Local Authorities within the Teesside Urban Area agglomeration zone (UK0013).



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2.2 Assessment details

Measurements

NO₂ measurements in this zone were available in 2015 from the following national network monitoring stations (NO₂ data capture¹ for each station in 2015 shown in brackets):

1. Billingham GB0421A (96%)
2. Middlesbrough GB0583A (96%)
3. Stockton-on-Tees A1305 Roadside GB1041A (67%)

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

Modelling

Modelling for the 2015 reference year has been carried out for the whole of the UK. This modelling covers the following extent within this zone:

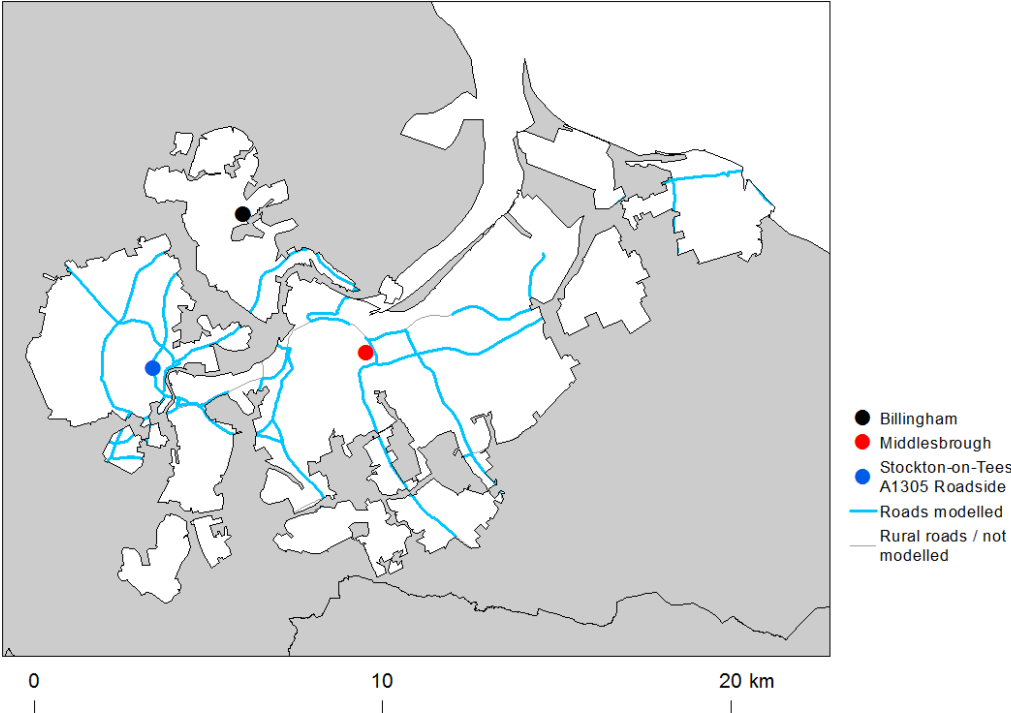
- Total background area within zone (approx): 119 km²
- Total population within zone (approx): 315,067 people

Zone maps

Figure 3 presents the location of the NO₂ monitoring stations within this zone for 2015 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.

¹Annual data capture is the proportion of hours in a year for which there are valid measurements at a monitoring station, expressed in this document as a percentage. The Implementing Provisions on Reporting (IPR) guidance requires that a minimum data capture of 85% is required for compliance reporting (that is 90% valid data, plus a 5% allowance for data loss due to planned maintenance and calibration). Monitoring stations with at least 75% data capture have been included in the modelling analysis to ensure that a greater number of operational monitoring sites have been used for model calibration and verification purposes. For more information on compliance reporting under European Directives see Section 2.3.

Figure 3: Map showing the location of the NO₂ monitoring stations with valid data in 2015 and roads where concentrations have been modelled within the Teesside Urban Area (UK0013) agglomeration zone.



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2.3 Air quality reporting

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. The most recent previous UK air quality plan for nitrogen dioxide was published in 2015. The plan and supporting documents are available at <https://www.gov.uk/government/collections/air-quality-plan-for-nitrogen-dioxide-no2-in-uk-2015> and the submission of this plan via e-reporting is published at <http://cdr.eionet.europa.eu/gb/eu/aqd/h/envvryhbq/>. Historic plans and programmes are available on <http://cdr.eionet.europa.eu/gb/eu/aqpp>.

3 Overall Picture for 2015 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 µgm⁻³)
- The hourly limit value (no more than 18 hourly exceedances of 200 µgm⁻³ in a calendar year)

Within the Teesside Urban Area agglomeration zone the annual limit value was exceeded in 2015. Hence, one exceedance situation for this zone has been defined, NO₂_UK0013_Annual_1, which covers exceedances of the annual limit value. This exceedance situation is described below.

3.2 Reference year: NO₂_UK0013_Annual_1

The NO₂_UK0013_Annual_1 exceedance situation covers all exceedances of the annual mean limit value in the Teesside Urban Area agglomeration zone in 2015.

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 2015. Table 2 summarises modelled annual mean NO₂ concentrations in this exceedance situation for the same time period. This table shows that, in 2015, 5.6 km of road length was modelled to exceed the annual limit value. There were no modelled background exceedances of the annual limit value. 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. Maps showing the modelled annual mean NO₂ concentrations for 2015 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 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 NO₂ concentration in this exceedance situation in 2015. 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_UK0013_Annual_1 exceedance situation (i.e. the source apportionment for all exceeding roads only) in 2015.

Table 1: Measured annual mean NO₂ concentrations at national network stations in NO₂_UK0013_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	2014	2015
Billingham (GB0421A)	32 (95)	30 (98)	32 (97)	29 (99)	27 (98)	29 (98)	28 (96)	27 (99)	28 (88)	28 (96)	26 (96)	21 (97)	20 (97)	20 (76)	19 (96)
Middlesbrough (GB0583A)	25 (96)	26 (82)	25 (93)	24 (65)	25 (93)	22 (96)	21 (99)	21 (99)	19 (97)	22 (97)	18 (99)	18 (96)	16 (98)	20 (84)	15 (96)
Redcar (GB0977A)	25 (83)	23 (94)	25 (96)	22 (98)	25 (51)	22 (84)	17 (65)								
Stockton-on-Tees A1305 Roadside (GB1041A)															17 (67)

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

Table 2: Annual mean NO₂ model results in NO₂_UK0013_Annual_1 for 2001 onwards.

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Road length exceeding (km)	10.2	3.2	34.3	20.6	16.4	15.7	12.2	8.9	10.0	17.2	8.3	8.4	9.7	6.0	5.6
Background exceeding (km ²)	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum modelled concentration (μgm^{-3}) (a)	48.8	43.0	79.9	72.1	76.5	74.0	72.3	84.0	75.8	84.0	74	74	65	64	68

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

Table 3: Modelled annual mean NO_x source apportionment at the location with the highest NO₂ concentration in 2015 in NO2_UK0013_Annual_1 (μgm⁻³) traffic count point 58357 on the A66; OS grid (m): 449600, 520600) .

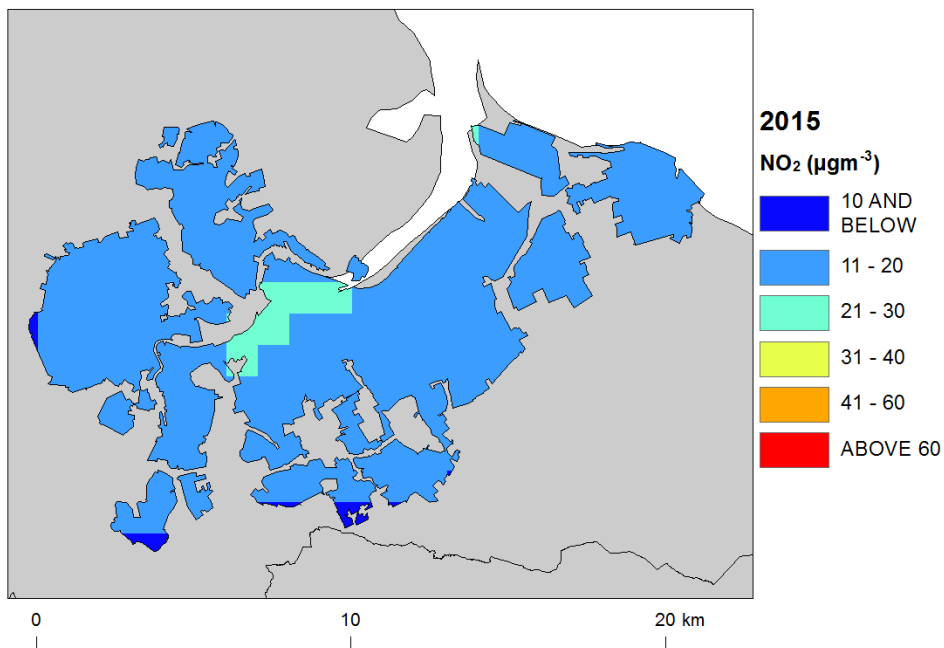
Spatial scale	Component	Concentration at highest road link (a)
Regional background sources NO _x (i.e. contributions from distant sources of > 30 km from the receptor).	Total	6.0
	From within the UK	3.5
	From transboundary sources (includes shipping and other EU member states)	2.5
Urban background sources NO _x (i.e. sources located within 0.3 - 30 km from the receptor).	Total	30.5
	From road traffic sources	18.6
	From industry (including heat and power generation)	4.0
	From agriculture	NA
	From commercial/residential sources	3.9
	From shipping	0.6
	From off road mobile machinery	2.5
	From natural sources	NA
	From transboundary sources	NA
From other urban background sources	0.9	
Local sources NO _x (i.e. contributions from sources < 0.3 km from the receptor).	Total	143.0
	From petrol cars	11.5
	From diesel cars	49.1
	From HGV rigid (b)	17.6
	From HGV articulated (b)	27.0
	From buses	3.9
	From petrol LGVs (c)	0.2
	From diesel LGVs (c)	33.7
From motorcycles	0.1	
From London taxis	0.0	
Total NO _x (i.e. regional background + urban background + local components)		179.6
Total NO ₂ (i.e. regional background + urban background + local components)		68

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

(b) HGV = heavy goods vehicle

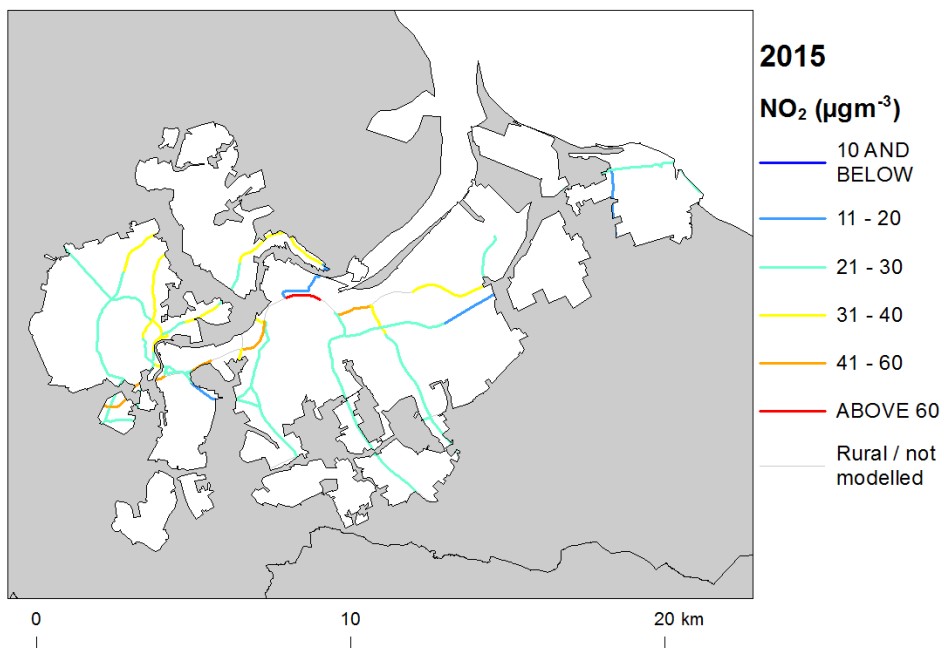
(c) LGV = light goods vehicle

Figure 4: Map of modelled background annual mean NO₂ concentrations 2015. 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 2015. 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 Teesside 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 diesel cars at the location of maximum exceedance with a contribution of 49.1 μgm^{-3} of NO_x out of a total of 179.6 μgm^{-3} of NO_x. Diesel cars, diesel LGVs and rigid and articulated HGVs were important sources on the primary roads with the highest concentrations. Diesel cars and diesel LGVs were important sources on the trunk roads with the highest concentrations.

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.

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.

Each local authority in the Teesside Urban Area agglomeration area has separate Local Transport Plans and its own specific plans from which common themes emerge in order to improve air quality. All recognise the need

to reduce emissions such as: increasing the modal share of active travel away from cars to public transport; implementing measures to support the growth of electric vehicles; and encouraging walking and cycling.

This includes, for example, in Middlesbrough, the installation of cycle paths and infrastructure along transport corridors to improve sustainable and carbon free journeys. These connect major trip generating locations to areas of housing, and to the rest of the network.

Businesses have also been provided the opportunity to establish their own fleet of pool bikes via Local Sustainable Transport Funding. To help widen the scope on the use of bikes, bike-ability training (Cycle proficiency for the 21st Century) has been offered to primary school children and this expected to last up to 2030. Free cycle parking schemes and promotional events have also been introduced.

So as to help reduce emissions from local authority fleet the purchasing of Euro VI vehicles has taken place as well as support for electric car uptake with on-site charging points. 20mph zones set up around the Borough to improve road safety, are also impacting on vehicle upon emissions.

Variable Messaging Signs are now located around Middlesbrough, highlighting delays on major carriageways to divert additional traffic which would increase standstill time, and the accumulation of pollution. Through the Strategic Transport Plan, the Tees Valley Combined Authority is committed to providing a high quality road network, which delivers consistency in journey time reliability and standards to cater for future economic and housing growth across the region. Building resilience in the network enables the reduction in both congestion and emissions along key areas of the network. The current major initiatives include a proposed new Tees Crossing - The A19 has been identified as a new high quality strategic route (an "expressway") - by Highways England, yet there remains a pinch point at the Tees flyover. There is a requirement for enhancements to the A19 corridor and potentially for an additional Tees River Crossing. Feasibility works are currently underway for this project, with renewed commitment for this in the Strategic Transport Plan. The A66 & A689 Strategic Study, commissioned in 2015 identified interventions necessary along the East - West A66 corridor from the A1 to the Teesport in order to overcome existing challenges, and ensure the future resilience and capacity of this important route. Four proposed pieces of infrastructure have been planned.

On public transport use a new rail station at James Cook University Hospital (a major trip generator) is helping provide alternatives to private car and improve connectivity. Work at Middlesbrough station is also improving accessibility as well as additional public works. Improvements to the East Coast Main Line, catering for future growth in both freight and passenger numbers across the North, such as the improvement of the Northallerton to Teesport rail line in the form of either improved gauge clearance or electrification. This is expected to reduce the use of freight by road particularly on the A66 where current exceedances exist.

The provision of a Town Rider bus service is linking Middlesbrough Town Centre with the Boroughs major industrial and employment zone and college, which previously had no public transport.

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. Local authorities were asked to review and, where necessary, provide updates to measures in March/April 2017. 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 2015. Where measures started and finished before 2015, 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 2015 and an end date after 2015 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 each year from 2017 to 2030, starting from the 2015 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 2015 (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_UK0013_Annual_1

Table 4 presents summary results for the baseline model projections for each year from 2017 to 2030 for the NO₂_UK0013_Annual_1 exceedance situation. This shows that the maximum modelled annual mean NO₂ concentration predicted for 2020 in this exceedance situation is 52 μgm^{-3} . By 2024, the maximum modelled annual mean NO₂ concentration is predicted to drop to 40 μgm^{-3} . Hence, the model results suggest that compliance with the NO₂ annual limit value is likely to be achieved by 2024 under baseline conditions.

Figure 6 and 7 presents maps of projected annual mean NO₂ concentrations at background and roadside locations respectively in 2024, the year at which compliance is achieved. For reference Figures 8 and 9 show maps of projected annual mean NO₂ concentrations in 2020, 2025 and 2030 for background and roadside locations respectively.

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.

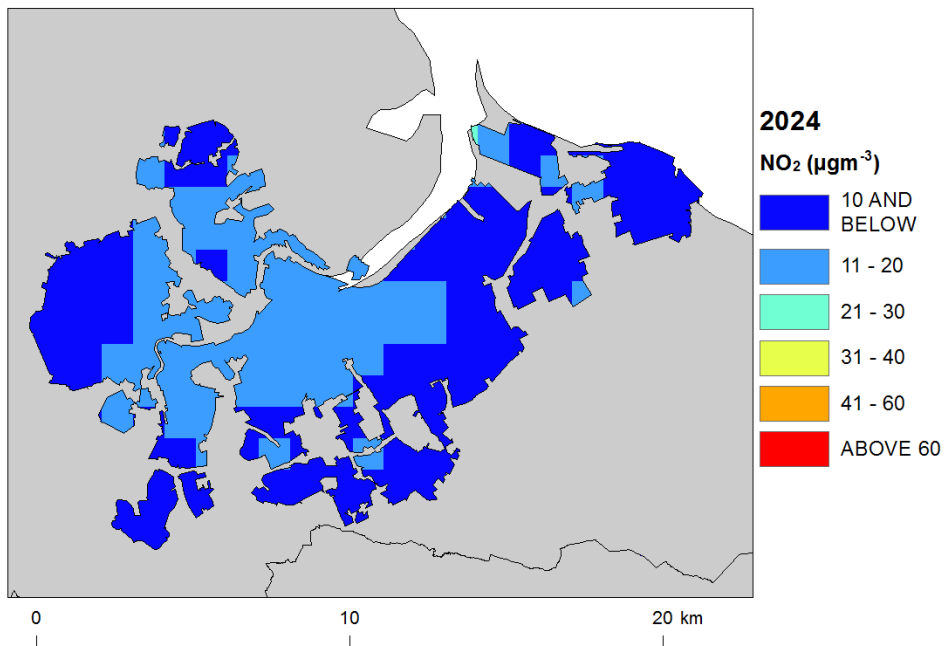
Table 4: Annual mean NO₂ model results in NO₂_UK0013_Annual_1.

	2015	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Road length exceeding (km)	5.6	5.6	4.5	3.9	2.4	2.4	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Background exceeding (km ²)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Maximum modelled concentration NO ₂ (μgm ⁻³) (a)	68	62	59	56	52	49	45	43	40	38	36	35	33	32	31
Corresponding modelled concentration NO _x (μgm ⁻³) (b)	180	159	148	138	128	117	108	100	94	87	82	78	74	70	68

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

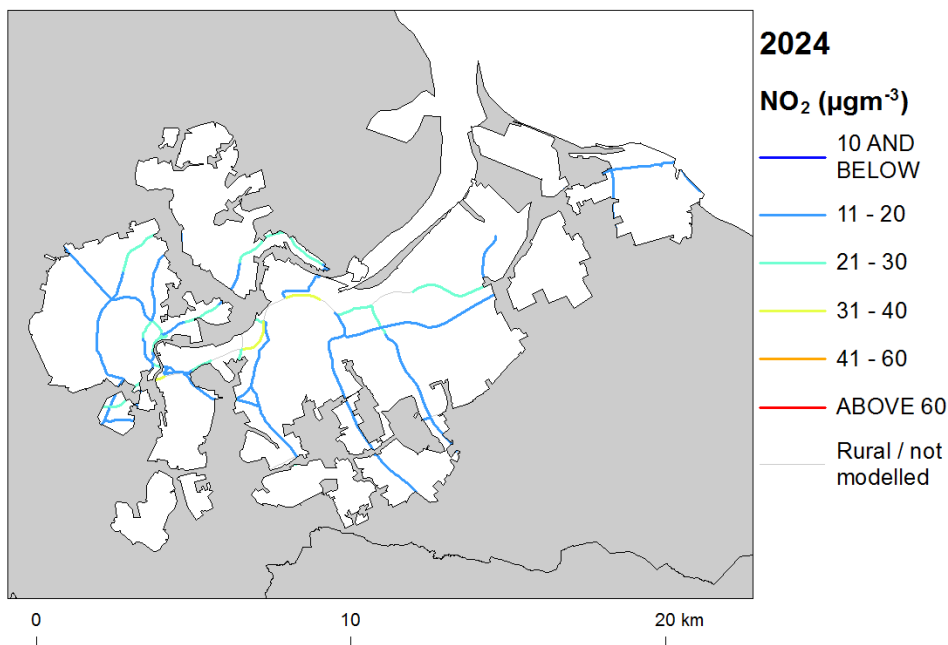
(b) NO_x is recorded here for comparison with the NO_x source apportionment graphs for 2015 presented in Annex B of this plan. Limit values for EU directive purposes are based on NO₂.

Figure 6: Background baseline projections of annual mean NO₂ concentrations in 2024, the year at which compliance is achieved under baseline conditions. Modelled exceedances of the annual limit value are shown in orange and red.



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Figure 7: Roadside baseline projections of annual mean NO₂ concentrations in 2024, the year at which compliance is achieved under baseline conditions. Modelled exceedances of the annual limit value are shown in orange and red.



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Figure 8: Background baseline projections of annual mean NO₂ concentrations in 2020, 2025 and 2030. 2015 is also included here for reference. Modelled exceedances of the annual limit value are shown in orange and red.

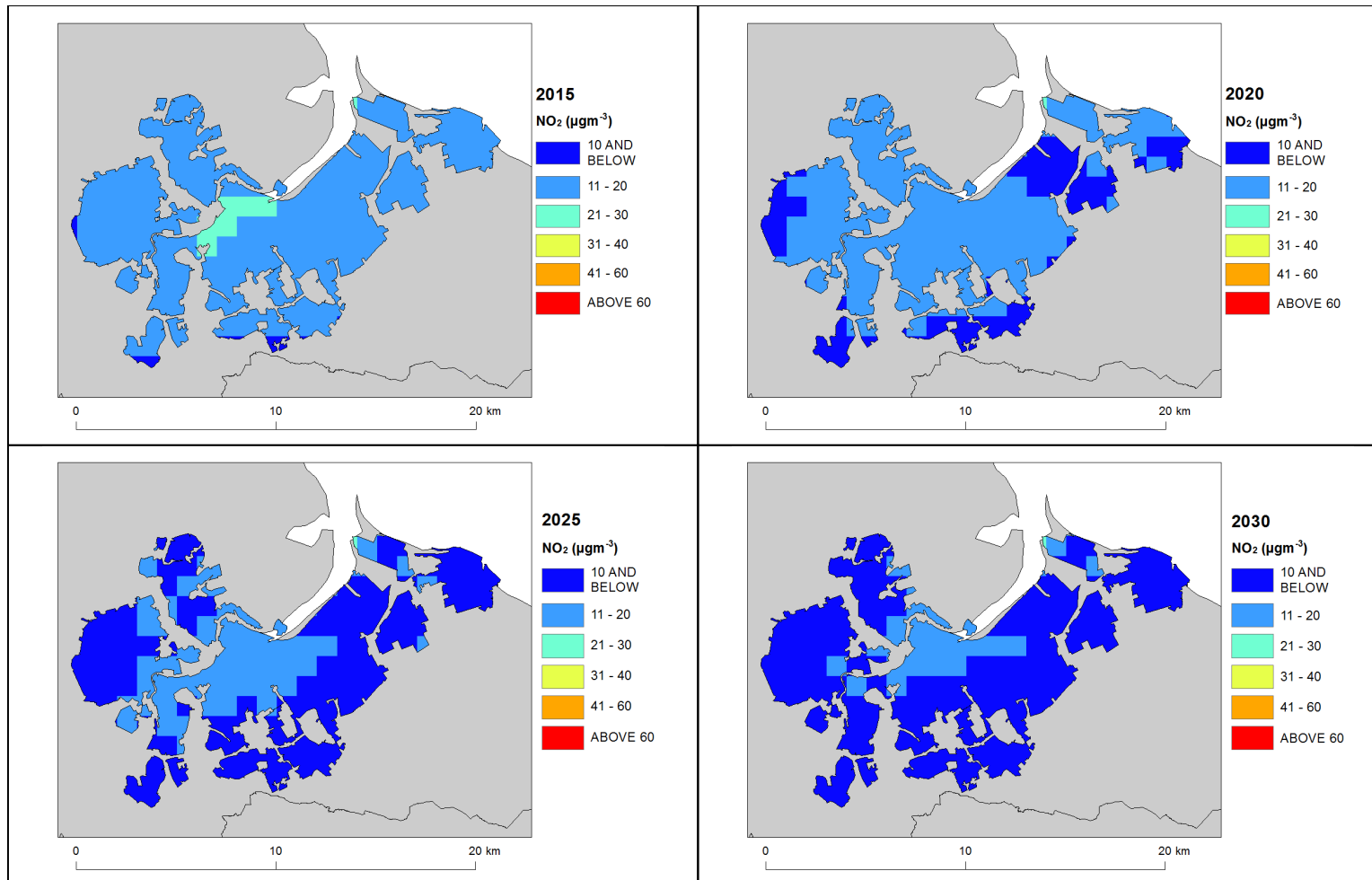
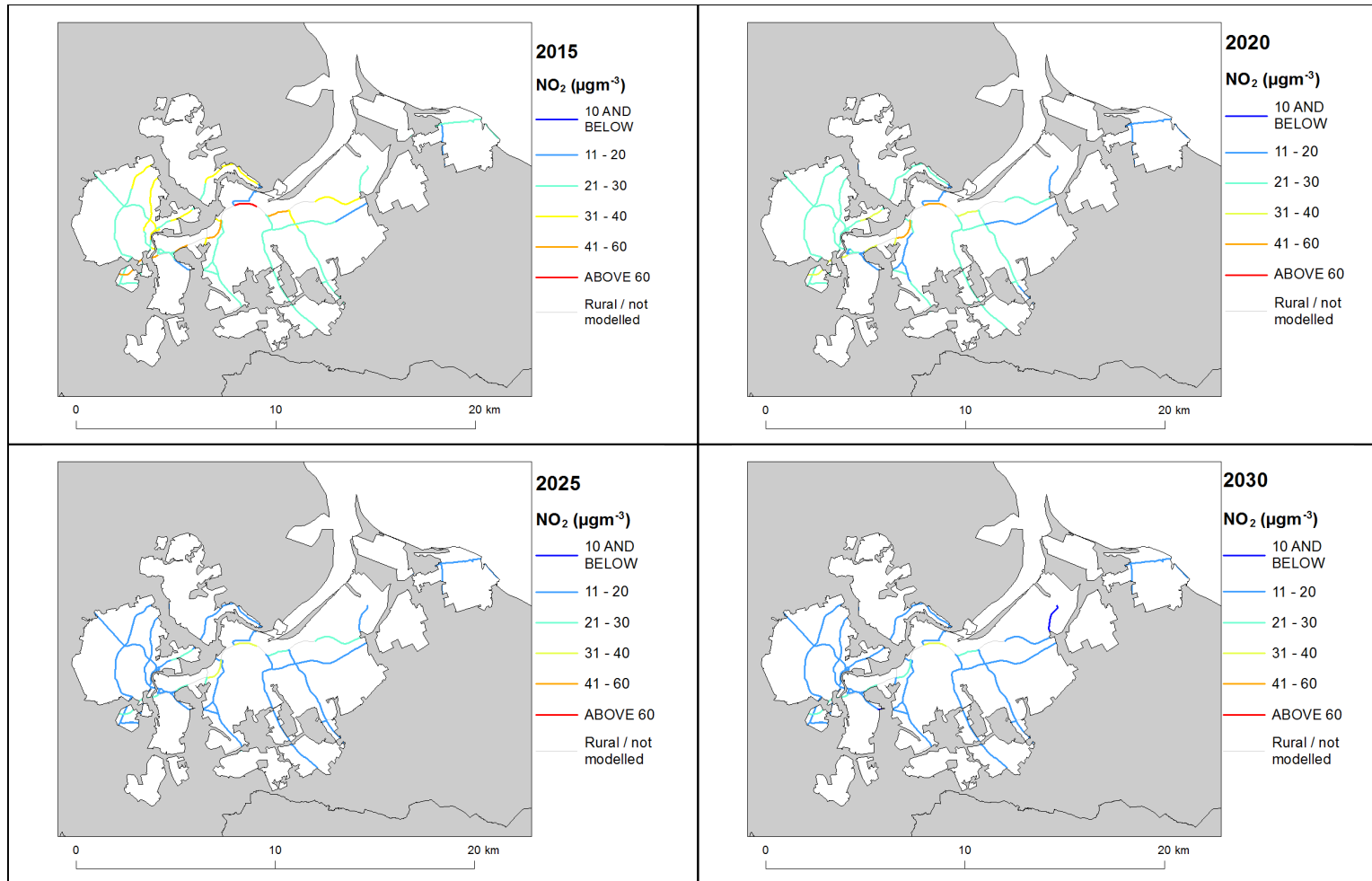


Figure 9: Roadside baseline projections of annual mean NO₂ concentrations in 2020, 2025 and 2030. 2015 is also included here for reference. Modelled exceedances of the annual limit value are shown in orange and red.



Annexes

A References

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.

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

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

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

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

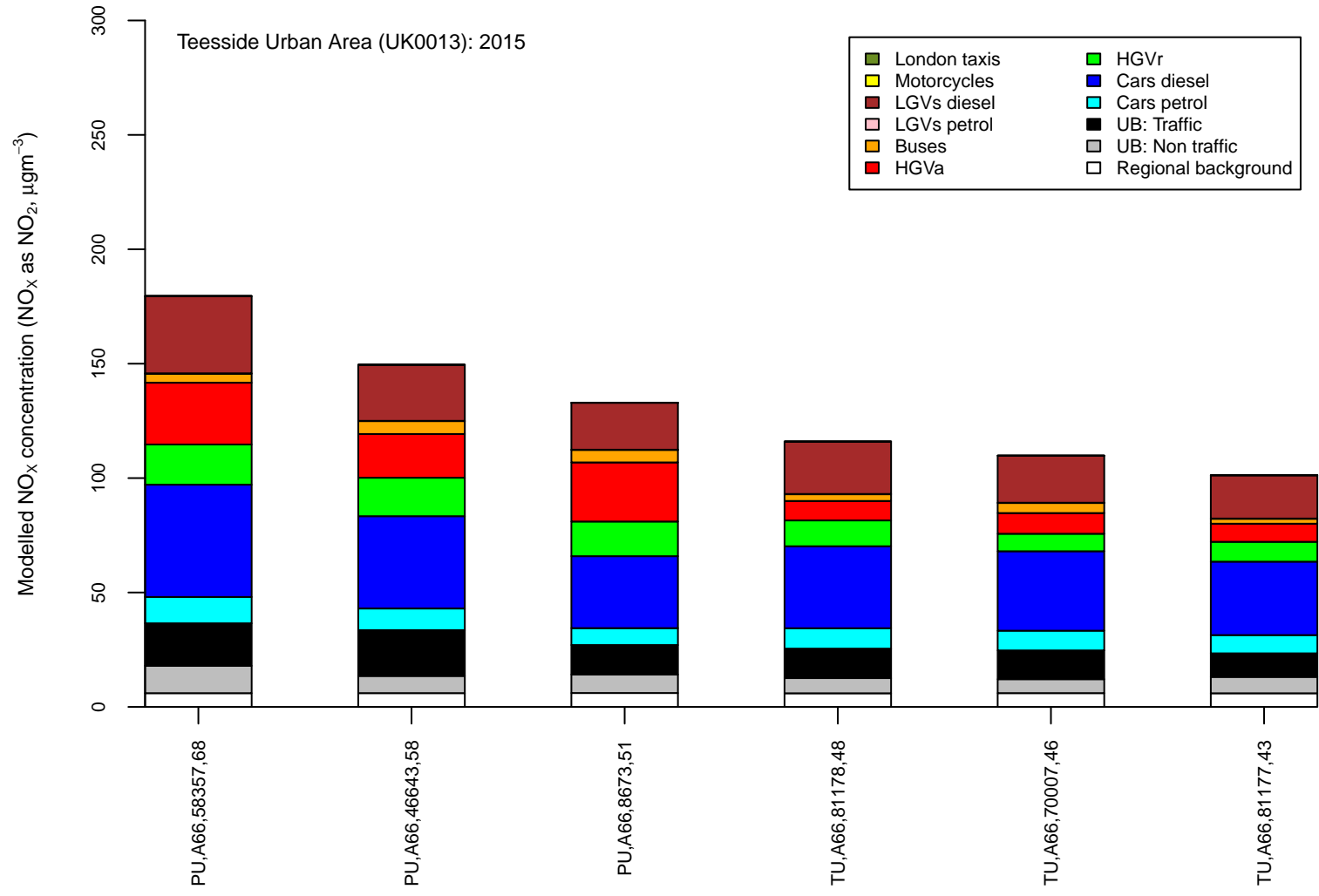
IPR 2013. Guidance on the Commission Implementing Decision laying down rules for Directives 2004/107/EC and 2008/50/EC of the European Parliament and of the Council as regards the reciprocal exchange of information and reporting on ambient air (Decision 2011/850/EU). http://ec.europa.eu/environment/air/quality/legislation/pdf/IPR_guidance1.pdf

UK Air Quality Plan for tackling roadside nitrogen dioxide concentrations 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 2015.



Road class (MU = motorway, PU = primary road, TU = trunk road), road number, census id 15 and modelled NO₂ concentration (μgm⁻³)

C Tables of measures

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Table C.1 Relevant Local Authority measures within Teesside Urban Area (UK0013)

Measure code	Description	Focus	Classification	Status	Other information
Middlesbrough Borough Council_1	Middlesbrough Cycle Centre provides pool bikes via Yorkshire Bike Library	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2016 Expected end date: 2018 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_2	Free, indoor secure cycle centre for town centre bike parking. Located in Middlesbrough bus station transport hub, the Cycle Centre offers showers, lockers and help and advice	To encourage cycling in the town	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: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_3	Bikeability (Cycle proficiency for the 21st Century) offered to primary school children	To encourage cycling in the town	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2006 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_4	Middlesbrough Bike Academy provides a wealth of cycle maintenance training to assist people cycling more frequently	To encourage cycling in the town	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2013 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_5	Child pedestrian training delivered across all primary schools. Walk leader co-ordinators deliver guided walks to groups.	To encourage alternatives to vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2006 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_6	Installation of physical traffic calming initiatives to keep vehicle speeds low	To improve safety however the measure should also reduce exhaust emissions.	Traffic planning and management: Reduction of speed limits and control	Planning	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_7	Council Fleet Vehicle Procurement -Prioritising uptake of low emission vehicles - the intention to purchase Euro 6 specification vehicles as part of the ongoing fleet renewal programme	To reduce emissions	Public procurement: Other measure	Implementation	Start date: 2015 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Middlesbrough Borough Council_8	Alternative refuelling infrastructure to promote Low Emission Vehicles, EV recharging, gas fuel recharging has been installed at the Councils Depot Facility.	To promote low emission vehicle use	Public procurement: Other measure	Implementation	Start date: 2011 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_9	Taxi licensing policy limits the age of a vehicle for a first time license to 3 years old. The maximum age that a vehicle can be licensed as a taxi is 8 years old. (except for London style Taxis and side loading wheelchair accessible vehicles approved by the Council which can be up to 10 years old)	To control the age of taxi vehicles which in turn encourages the use of newer vehicles producing less emissions in the fleet	Permit systems and economic instruments: Introduction/increase of environment taxes	Implementation	Start date: 2010 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_10	Variable Messaging Signs are used on the strategic network to alert drivers to traffic problems and assist in managing the traffic.	To reduce traffic congestion	Traffic planning and management: Other measure	Evaluation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_11	20mph zones across entire Borough to improve safety, and subsequently reduce emissions through engine efficiency	To reduce emissions as a product of increased safety	Traffic planning and management: Reduction of speed limits and control	Evaluation	Start date: 2012 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_12	Installation of strategic bus priority infrastructure to improve reliability and speed of journey	To improve bus efficiency and encourage use of the bus network	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_13	Work based travel plans available to any Middlesbrough-based organisation. Picked up as part of planning conditions for large developments.	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2001 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_14	Home working is supported at Middlesbrough Council to remove the need for transport.	To reduce vehicle use	Other measure: Other measure	Evaluation	Start date: 2008 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Middlesbrough Borough Council_15	Dedicated journey planning website across The Tees Valley is supported www.connectteesvalley.co.uk . Work with Job Centre to promote journey planning for unemployed people looking to get back in to work.	Promotion of sustainable modes of transport	Traffic planning and management: Encouragement of shift of transport modes	Evaluation	Start date: 2010 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_16	There is a 100% coverage of school travel plans in Middlesbrough, completed by 2010	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Evaluation	Start date: 2009 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_17	Widespread promotion of cycling initiatives across the Borough through a range of approaches	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2001 Expected end date: 2020 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_18	Widespread promotion of walking initiatives across the Borough through a range of approaches	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2009 Expected end date: 2020 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_19	Ongoing work with operators to promote rail travel across the Borough	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_20	Ongoing work with operators to promote bus travel across the Borough	To reduce vehicle use	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_21	Websites are used to promote all sustainable transport information - www.connectteesvalley.com / www.middlesbrough.gov.uk / www.menvcity.org.uk	To reduce vehicle use	Public information and Education: Internet	Evaluation	Start date: 2008 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_22	A series of printed material available, supporting sustainable transport. This includes walking/cycling maps, guided route golders and public transport literature	To reduce vehicle use	Public information and Education: Leaflets	Evaluation	Start date: 2001 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Middlesbrough Borough Council_23	Improvements to public transport hubs. Installation of new station at James Cook University Hospital to support passenger facilities.	To reduce vehicle use	Traffic planning and management: Improvement of public transport	Evaluation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_24	Create new and improved Cycling Infrastructure, Sustainable Transport networks that improve connectivity. The Council adopted 10 year infrastructure plan for walking and cycling improvements.	Promotion of sustainable modes of transport	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Implementation	Start date: 2012 Expected end date: 2023 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_25	Work to address pinch points on highway network undertaken to address bus route inefficiency.	To improve bus efficiency and encourage use of the bus network	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2001 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_26	Promotion of www.liftshare.com - publicly available car sharing website to reduce single occupancy car journeys	To reduce vehicle numbers	Other measure: Other measure	Evaluation	Start date: 2008 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_27	Tees Valley Strategic Transport Plan - The Tees Valley has ambitious plans to grow the local economy and transport is central to helping us deliver growth. The Strategic Transport Plan will support sustainable transport initiatives through its aims and themes.	Growing the transport network	Other measure: Other measure	Planning	Start date: 2016 Expected end date: 2026 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_28	Rail improvements to Darlington & Middlesbrough Train Stations, ensuring they are ready for the new Inter-City Express trains, High Speed Rail and Northern Powerhouse Rail. Including Middlesbrough & Darlington Master Plans	To reduce vehicle use	Traffic planning and management: Improvement of public transport	Planning	Start date: 2016 Expected end date: 2026 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_29	Improve Rail links between the Tees Valley and the rest of the country including key airports and ports	To reduce vehicle use	Traffic planning and management: Improvement of public transport	Planning	Start date: 2016 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
Middlesbrough Borough Council_30	Improve the East Coast Main Line, catering for future growth in both freight and passenger numbers across the North. Including the improvement of the Northallerton to Teesport rail line.	To reduce vehicle use	Traffic planning and management: Improvement of public transport	Planning	Start date: 2016 Expected end date: 2026 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_31	Introduce Newer Trains, such as the High Speed Rail Trains.	To reduce vehicle use	Traffic planning and management: Improvement of public transport	Planning	Start date: 2016 Expected end date: 2026 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_32	New Tees Crossing - The A19 has been identified as a new high quality strategic route - an expressway - by Highways England, yet there remains a pinch point at the Tees flyover. There is a requirement for enhancements to the A19 corridor and potentially for an additional Tees River Crossing. Feasibility works are currently underway for this project, costs for which are currently estimated between 269 to 450 million.	To reduce traffic congestion	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2016 Expected end date: 2026 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_33	Further improvements to the LRN (Local Road Network) via the Area Action Plan, drawing on LGF schemes and will inform the future use of the Tees Valley Funding.	To reduce traffic congestion	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2016 Expected end date: 2026 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_34	Improving the East - West A66 corridor from the A1(M) to Teesport. The A66 & A689 Strategic Study, commissioned in 2015 identified interventions necessary along the corridor, in order to overcome existing problems and ensure the future resilience and capacity of this important route. Four proposed pieces of infrastructure have been planned.	To reduce traffic congestion	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2016 Expected end date: 2026 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_35	Bus Fares & Ticketing System - Including concessionary fares and introduction of contactless payment terminals, review of the pop card.	To improve bus efficiency and encourage use of the bus network	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2016 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
Middlesbrough Borough Council_36	Tees Valley Bus Network Improvement project - the Transport Committee agreed to adopt a twin track approach to further investigation of the delivery models for the future Tees Valley bus network.	To improve bus efficiency and encourage use of the bus network	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2016 Expected end date: 2026 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_37	Middlehaven Dock Bridge is being built as part of a regeneration scheme, creating a gateway to Middlehaven. Enhancing access to the A66 and Riverside Park, enhancing the business and regeneration zones.	To reduce traffic congestion	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2016 Expected end date: 2026 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_38	Portrack Relief Road is part of a multi-million pound scheme to relieve congestion on the A19 Trunk Road	To reduce traffic congestion	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2016 Expected end date: 2026 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_39	A multi million pound relief road from Longlands to Ladgate Lane is proposed to ease congestion on both Marton Road and Cargo Fleet Lane, providing an alternative through route to access the south of Middlesbrough.	To reduce traffic congestion	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2016 Expected end date: 2026 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Middlesbrough Borough Council_40	Build a database of all predicted future housing and employment developments, aiding to inform transport impact modelling analysis to identify future congestion points on the transport network	To improve the networks efficiency	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2016 Expected end date: 2026 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_1	Provision of cycle paths	Reduce emissions through the transport network	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Implementation	Start date: 2012 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_2	Upgrading of cycle paths	Reduce emissions through the transport network	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Implementation	Start date: 2012 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Redcar and Cleveland Borough Council_3	Promotion of cycling facilities	Reduce emissions through the transport network	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Implementation	Start date: 2012 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_4	Passenger facilities at railways	Reduce emissions through the transport network	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2013 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Other, please specify Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_5	Bus route improvements	Reduce emissions through the transport network	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2010 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_6	Events held in the Borough (400 to date)	Reduce emissions through the transport network	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2011 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_7	Promotion of cycling	Reduce emissions through the transport network	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2015 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_8	Personalised Travel Planning	Reduce emissions through the transport network	Traffic planning and management: Encouragement of shift of transport modes	Planning	Start date: 2015 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_9	Highways Agency environmental investigation of Greystone Roundabout (A174) for future construction. Installation of 3 NOx tubes	N/A	Traffic planning and management: Other measure	Planning	Start date: 2014 Expected end date: 2030 Spatial scale: Local Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_10	Euro VI vehicles procurement: Public sector	Reduce emissions through the procurement process	Public procurement: New vehicles, including low emission vehicles	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Redcar and Cleveland Borough Council_11	Euro VI vehicles procurement: Company vehicles	Reduce emissions through the procurement process	Public procurement: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_12	Tenderers are asked to provide sustainability details	Reduce emissions through the procurement process	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_13	Vehicle bidders submit narrative response of fuel efficiency during procurement process	Reduce emissions through the procurement process	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_14	Air pollution NOx tube partnership study with charity, Sustrans (Get Moving Redcar and Cleveland project)	Promote cycle uptake through the partnership	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2014 Expected end date: 2016 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_15	Buddy system to reduce vehicles	Promote car sharing	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_16	Vehicle Retrofitting programmes	Reduce emissions through the fleet management process	Retrofitting: Retrofitting emission control equipment to vehicles	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_17	Fleet efficiency and recognition schemes	Reduce emissions through the fleet management process	Other measure: Other measure	Implementation	Start date: 2015 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_18	Route Management Plans/ Strategic routing strategy for HGV's	Reduce emissions through the fleet management process	Traffic planning and management: Freight transport measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Redcar and Cleveland Borough Council_19	Fleet management zero policy for idling	Reduce emissions through the fleet management process	Traffic planning and management: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_20	Lighter fleet vehicles limited to 62mph	Reduce emissions through the fleet management process	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_21	Electric car uptake (2 bought by Council with on site charging points)	Reduce emissions through the fleet management process	Public procurement: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_22	Driver training and ECO driving aids	Reduce emissions through the fleet management process	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_23	School Capital Maintenance Programme- Number of boilers upgraded	Reduce emissions from old boilers across the Borough	Other measure: Other measure	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Other, please specify Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_24	Employee car salary sacrifice scheme	N/A	Public procurement: Other measure	Other	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Redcar and Cleveland Borough Council_25	Manage small waste oil burners (SWOBs)	Manage emissions by identification of additional waste oil burners	Permit systems and economic instruments: Other measure	Other	Start date: 2015 Expected end date: 2015 Spatial scale: Whole agglomeration Source affected: Industry including heat and power production Indicator: How many are found or removed Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Redcar and Cleveland Borough Council_26	Taxi emission testing	N/A	Permit systems and economic instruments: Introduction/increase of environment taxes	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole agglomeration Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_1	Urban Traffic Management and Control (UTM)	Linked traffic signal control to reduce congestion	Traffic planning and management: Other measure	Implementation	Start date: 2010 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_2	20mph zones in residential areas where practical	N/A	Traffic planning and management: Reduction of speed limits and control	Implementation	Start date: 2005 Expected end date: 2017 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_3	Core bus route road space re-prioritisation	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_4	Focus on large employers and new developments	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2009 Expected end date: 2020 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_5	Partnership work with Sustrans to deliver ongoing active travel promotions to residents and businesses	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2009 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_6	PTP delivered to 8000 households in 2014	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_7	Cycling maps, guides, cycle training, guided rides etc.	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2013 Expected end date: 2014 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Stockton-on-Tees Borough Council_8	Walking maps and guided walks	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2006 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_9	Web pages focusing on cycling	N/A	Public information and Education: Internet	Implementation	Start date: 2008 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_10	Web pages focusing on walking	N/A	Public information and Education: Leaflets	Implementation	Start date: 2008 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_11	New bus shelters at all town centre locations in the Borough, rail station improvements at all stations including signage, access improvements and new waiting facilities	N/A	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2009 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_12	Focus on access to town centres and routes to schools	N/A	Traffic planning and management: Expansion of bicycle and pedestrian infrastructure	Implementation	Start date: 2009 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_13	5 year Borough wide programme of infrastructure improvements to decrease bus journey times on core routes	N/A	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2010 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_14	Policy in place for sustainable procurement of services	N/A	Other measure: Other measure	Implementation	Start date: 2011 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_15	Policy in place for prioritisation of electric vehicles for Council pool vehicle use	N/A	Public procurement: Other measure	Implementation	Start date: 2011 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Stockton-on-Tees Borough Council_16	Large network of EV charging posts across the borough, including a rapid charger in Stockton Town Centre	N/A	Public procurement: Other measure	Implementation	Start date: 2010 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_17	Free parking for EV's in charging bays	N/A	Traffic planning and management: Differentiation of parking fees	Implementation	Start date: 2011 Expected end date: 2018 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_18	School Travel Plans - 10 years of work to ensure all schools have a travel plan and are actively working to reduce single occupancy vehicle journeys	N/A	Traffic planning and management: Other measure	Implementation	Start date: 2005 Expected end date: 2010 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_19	Cycle to work schemes	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2016 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_20	Discount bus and rail tickets for staff	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2007 Expected end date: 2013 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_21	Station improvements encompassing car park expansions, on site information, waiting facilities and security	N/A	Traffic planning and management: Improvement of public transport	Implementation	Start date: 2010 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_22	District Heating Scheme	N/A	Low emission fuels for stationary and mobile sources: Other measure	Preparation	Start date: 2018 Expected end date: 2030 Spatial scale: Local Source affected: Industry including heat and power production Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_23	Fleet eco-driving training. Training fleet vehicle drivers to drive in an environmentally aware way	N/A	Other measure: Other measure	Implementation	Start date: 2009 Expected end date: 2012 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A

Measure code	Description	Focus	Classification	Status	Other information
Stockton-on-Tees Borough Council_24	Existing taxis to meet Euro 3 standard, new taxis to meet Euro 4	N/A	Permit systems and economic instruments: Introduction/increase of environment taxes	Implementation	Start date: 2014 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_25	Promotion of home working for council staff	N/A	Traffic planning and management: Encouragement of shift of transport modes	Implementation	Start date: 2010 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_26	Use the 'Drivers Certificate of Professional Competence' as there are training includes modules that cover ECO driving.	N/A	Other measure: Other measure	Implementation	Start date: 2011 Expected end date: 2015 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_27	Purchasing of vehicles that comply to the latest Euro 6 emissions legislation.	N/A	Other measure: Other measure	Implementation	Start date: 2015 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A
Stockton-on-Tees Borough Council_28	Route optimisation projects for refuse vehicles.	N/A	Other measure: Other measure	Implementation	Start date: 2012 Expected end date: 2030 Spatial scale: Whole town or city Source affected: Transport Indicator: N/A Target emissions reduction: N/A