

Air Quality Plan for the achievement of EU air quality limit values for nitrogen dioxide (NO₂) in South West (UK0030)

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1. Introduction

1.1. This document

This document is the South West (UK0030) air quality plan for the achievement of the EU air quality limit values for nitrogen dioxide (NO₂).

This plan presents the following information:

- General information regarding the South West non-agglomeration zone
- Details of NO₂ exceedance situation(s) within the South West non-agglomeration zone
- Details of local air quality measures that have been implemented, will be implemented or are being considered for implementation in this non-agglomeration zone.

This air quality plan for South West should be read in conjunction with the separate UK overview document and the list of UK and national measures that are available on the Defra website (<http://www.defra.gov.uk/environment/quality/air/air-quality/eu/>). 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 and list of UK measures show how the UK will ensure that compliance with the NO₂ limit values is achieved as soon as possible.

This plan should also be read in conjunction with the supporting UK technical report (<http://www.defra.gov.uk/environment/quality/air/air-quality/eu/>), 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 limit value: an annual mean concentration of no more than 40 µg m⁻³
- The hourly limit value: no more than 18 hourly exceedances of 200 µg 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. However, where the limit values cannot be achieved by then, the Directive also allows Member States to postpone this attainment date until 01/01/2015 provided air quality plans are established demonstrating how the limit values will be met by this extended deadline.

1.3. Zone status

The assessment undertaken for the South West non-agglomeration zone indicates that the annual limit value is likely to be exceeded in 2010 but achieved by 2015 through introduction of the measures included in the baseline and the non-quantifiable local measures outlined in this plan. Postponement of the compliance date to 2015 is sought for this limit value in this zone.

The assessment undertaken for the South West non-agglomeration zone indicates that the hourly limit value not exceeded in this non-agglomeration zone in 2008.

1.4. Plan structure

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

Section 3 then presents the overall picture with respect to NO₂ levels in this non-agglomeration zone for the 2008 reference year of this air quality plan. This includes the declaration of exceedance situations within the non-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 non-agglomeration zone both before and after 2010 is given in section 4.

Baseline modelled projections for 2010, 2015 and 2020 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 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: South West

Zone code: UK0030

Type of zone: non-agglomeration zone

Reference year: 2008

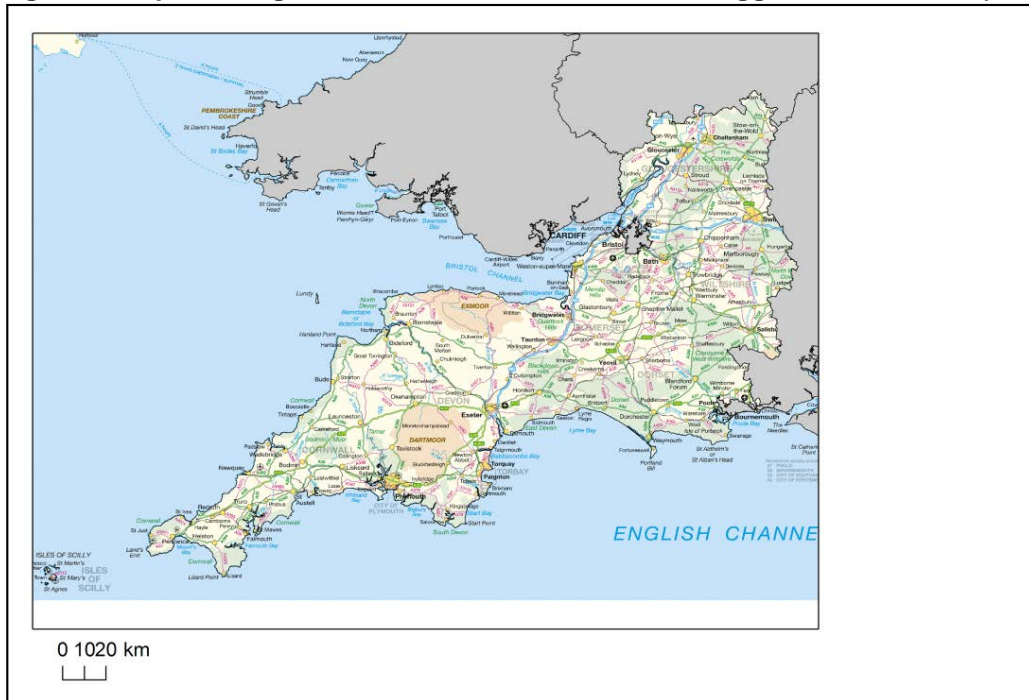
Extent of zone: Figure 1 shows the area covered by the South West non-agglomeration zone

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

1. Bath and North East Somerset Council
2. Bournemouth Borough Council
3. Bristol City Council
4. Cheltenham Borough Council
5. Christchurch Borough Council
- Cornwall Council (formerly 6. Caradon District Council, 7. Carrick District Council, 8. Kerrier District Council, 9. North Cornwall District Council, 10. Penwith District Council and 11. Restormel District Council)
12. Cotswold District Council
13. Council of the Isles of Scilly
14. East Devon District Council
15. East Dorset District Council
16. Exeter City Council
17. Forest of Dean District Council
18. Gloucester City Council
19. Mendip District Council
20. Mid Devon District Council
21. North Devon District Council
22. North Dorset District Council
23. North Somerset District Council
24. Plymouth City Council
25. Poole Borough
26. Purbeck District Council
27. Sedgemoor District Council
28. South Gloucestershire Council
29. South Hams District Council
30. South Somerset District Council
31. Stroud District Council
32. Swindon Borough Council
33. Taunton Deane District Council
34. Teignbridge District Council
35. Tewkesbury Borough Council
36. Torbay Council
37. Torridge District Council
38. West Devon Borough Council
39. West Dorset District Council
40. West Somerset District Council
41. Weymouth and Portland Borough Council
- Wiltshire Council (formerly 42. Kennet District Council, 43. North Wiltshire District Council, 44. Salisbury District Council and 45. West Wiltshire District Council)

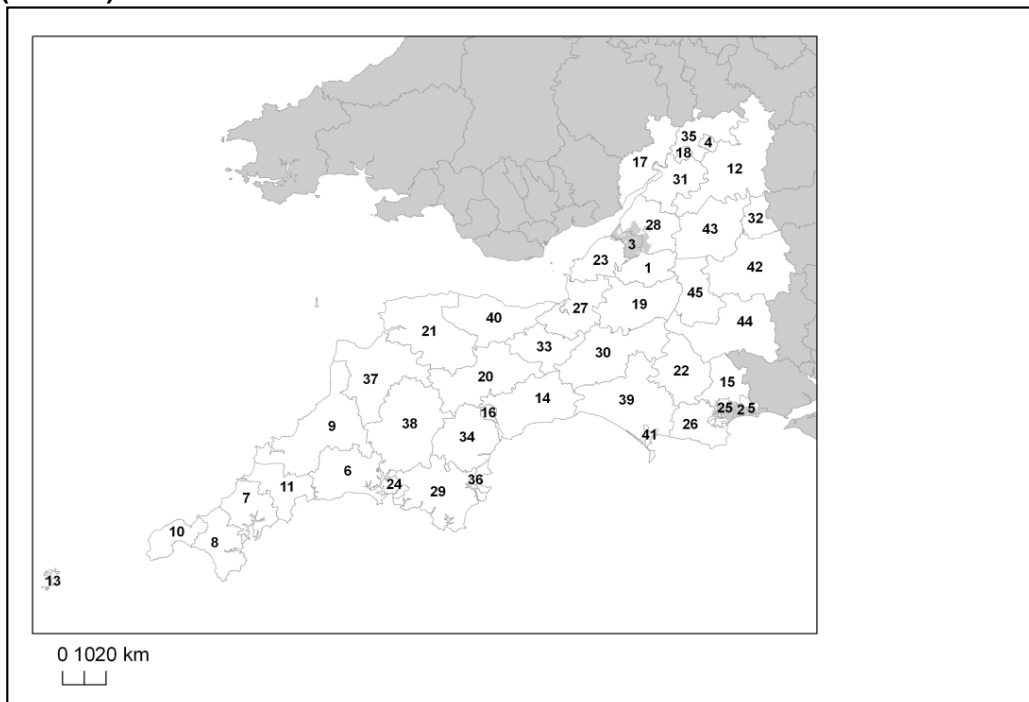
(Note: Local Authority boundaries do not necessarily coincide with zone boundaries. Hence Local Authorities may be listed within more than one zone plan.)

Figure 1. Map showing the extent of the South West non-agglomeration zone (UK0030).



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Figure 2. Map showing Local Authorities within the South West non-agglomeration zone (UK0030).



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2.2. Assessment details

Measurements

NO₂ measurements in this zone were available in 2008 from the following national network monitoring stations (NO₂ data capture for each station in 2008 shown in brackets):

- Bath Roadside GB0647A (97.2%)
- Charlton Mackrell GB0957A (28.8%)
- Exeter Roadside GB0640A (87.3%)
- Plymouth Centre GB0687A (81.4%)
- Somerton GB0044R (16.4%)
- Yarnar Wood GB0013R (81.7%)

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

Modelling

Modelling for the 2008 reference year has been carried out for the whole of the UK (see the UK technical report). This modelling covers the following extent within this zone:

- Total background area within zone (approx): 24329 km²
- Total population within zone (approx): 4105371 people
- Total road length where an assessment of NO₂ concentrations have been made: 648.9 km in 2008 (and similar lengths in previous years).

Zone maps

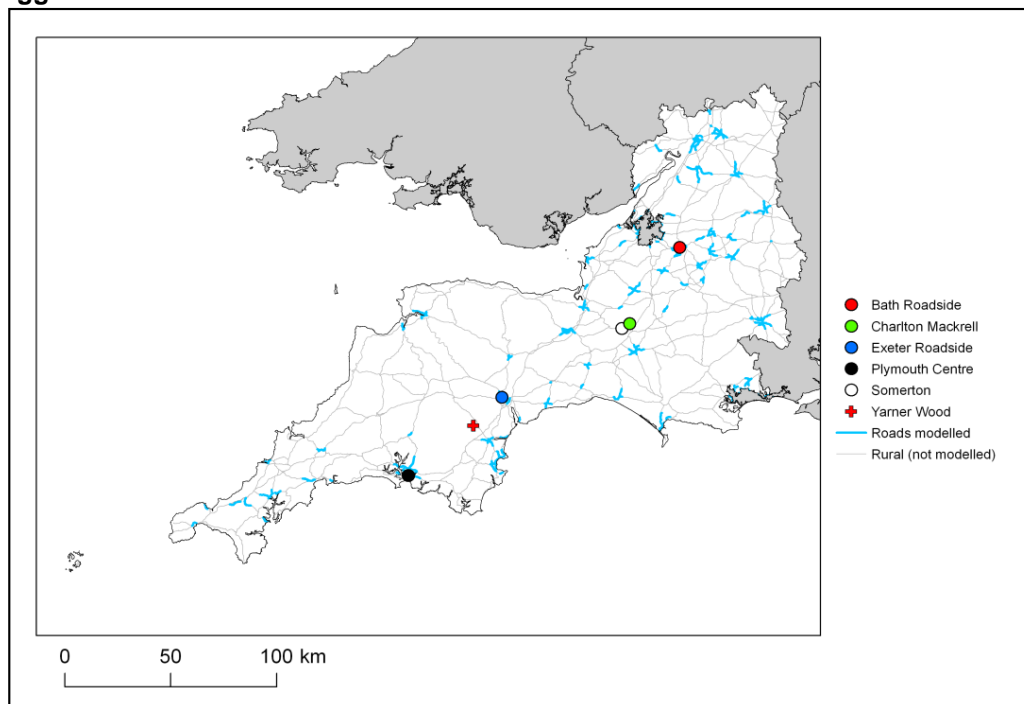
Figure 3 presents the location of the NO₂ monitoring stations within this zone for 2008 and the roads for which NO₂ concentrations have been modelled. NO₂ concentrations at background locations have been modelled across the entire zone at a 1 x 1 km² resolution.

2.3. Reporting Under European Directives

Since 2001 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>

In addition, the UK has reported on air quality plans and programmes (Decision 2004/224/EC) on an annual basis depending on the reported concentrations in the previous year. Plans and programmes were first reported in this zone in 2004. Plans and programmes for 2004 and all other years for which they have been required are available from <http://cdr.eionet.europa.eu/gb/eu/aqpp>.

Figure 3. Map showing the location of the NO₂ monitoring sites with valid data in 2008 and roads where concentrations have been modelled within the South West (UK0030) non-agglomeration zone.



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3. Overall Picture for 2008 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 South West non-agglomeration zone only the annual limit value was exceeded in 2008. Hence, one exceedance situation for this zone has been defined, NO₂_UK0030_Annual_1, which covers the exceedance of the annual limit value. This exceedance situation is described below.

For both NO₂ limit values, a margin of tolerance for 2008 and other years has been defined in the Air Quality Directive (2008/50/EC). Data comparing assessed concentrations at locations within this non-agglomeration zone with the 2008 margin of tolerance are presented in the annual reporting questionnaire for 2008 (<http://cdr.eionet.europa.eu/gb/eu/annualair>).

3.2. Reference year: NO₂_UK0030_Annual_1

The NO₂_UK0030_Annual_1 exceedance situation covers all exceedances of the annual mean limit value in the South West non-agglomeration zone in 2008.

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 mean 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 measured exceedances of the annual limit value at Bath Roadside (GB0647A) in 2008. Table 2 summarises modelled annual mean NO₂ results in this exceedance situation for the same time period. This table shows that, in 2008, 62.4 km of road length was modelled to exceed the annual limit value. There were no modelled background exceedances of this limit value. Table 2 also shows that the maximum modelled annual mean NO₂ concentration in 2008 was 64.7 µgm⁻³. Maps showing the modelled annual mean NO₂ concentrations for 2008 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 these maps.

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

The modelling carried out for this exceedance situation has also been used to determine the annual mean NO_x source apportionment for all modelled locations, along with an indicative annual mean NO₂ source apportionment. Table 3 presents summary source apportionment information in this exceedance situation for 2008, including:

- The modelled NO_x and indicative NO₂ source apportionment for the section of road with the highest modelled NO₂ concentration in this exceedance situation in 2008. This is important information because it shows which sources need to be tackled at the point with the largest compliance gap in the exceedance situation. It is not possible to calculate an unambiguous source apportionment for annual mean NO₂ concentrations for the reasons discussed in the UK Technical Report. We have, however, developed a method to provide an indicative source apportionment for annual mean NO₂ concentrations for these air quality plans. This method involves calculating the maximum and minimum possible contribution from each source to the NO₂ concentration. The final source apportionment has been calculated as the average of the minimum and maximum contributions for each source, with the results normalised so that the contributions sum to the total modelled NO₂ concentration. Further information on the methods used for source apportionment are provided in the UK Technical Report.

- The maximum NO_x contribution from each source from across all the roads included in this exceedance situation in 2008. This is important information because it highlights all the key sources that need to be tackled within the exceedance situation in order to achieve compliance across the entire area of the exceedance situation.

Figure A1.1 in Annex 1 presents the annual mean NO_x source apportionment for each section of road within the NO_2 _UK0030_Annual_1 exceedance situation (i.e. the source apportionment for all exceeding roads only) in 2008. Roads have been grouped into motorways, trunk roads and primary road in this figure.

Table 1. Measured annual mean concentrations at national network stations in NO₂_UK0030_Annual_1 for 2001 onwards, µgm⁻³. (Data capture shown in brackets) (a)

Site name (EOI code)	2001	2002	2003	2004	2005	2006	2007	2008	2009
Bath Roadside (GB0647A)	57 (84%)	56 (98%)	60 (95%)	55 (98%)	64 (94%)	69 (98%)	63 (98%)	65 (97%)	65 (98%)
Charlton Mackrell (GB0957A)								11.2 (29%)	9 (96%)
Exeter Roadside (GB0640A)	41 (90%)	38 (93%)	41 (95%)	40 (96%)	43 (83%)	39 (97%)	39 (99%)	38 (87%)	40 (99%)
Plymouth Centre (GB0687A)	33 (96%)	26 (97%)	28 (92%)	27 (89%)	25 (98%)	22 (45%)	23 (85%)	21 (81%)	27 (89%)
Somerton (GB0044R)			12.4 (40%)	8.7 (89%)	8.3 (87%)	8.3 (81%)	8.4 (93%)	12.3 (16%)	
Yarner Wood (GB0013R)			10.7 (29%)	7.8 (99%)	9.2 (82%)	5.2 (88%)	5.6 (91%)	5.3 (82%)	4.3 (87%)

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

Table 2. Annual mean NO₂ model results in NO₂_UK0030_Annual_1 for 2001 onwards

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Road length exceeding (km)	43.9	2.3	223.5	83.1	85.7	78.5	77.2	62.4	65.6
Background area exceeding (km ²)	1	0	3	0	0	0	0	0	0
Maximum modelled concentration (µgm ⁻³) (a)	57.2	45.8	68.1	63.1	67.1	59.0	61.4	64.7	69.8

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

Table 3. Source apportionment summary information for 2008 in NO₂_UK0030_Annual_1 (µgm⁻³).

Spatial scale	Component	Highest road link (a)		Maximum (b)
		NOx	NO2 (d)	NOx
Regional background sources (i.e. contributions from distant sources of > 30 km from the receptor)	Total	5.3	(c)	
	From within the UK	1.5	(c)	4.0
	From transboundary sources (includes shipping and other EU Member States)	3.8	(c)	5.1
Urban background sources (i.e. sources located within 0.3 - 30 km from the receptor)	Total	25.4	13.3	-
	From road traffic sources	17.4	5.6	29.9
	From industry (including heat and power generation)	1.7	(c)	22.7
	From agriculture	0.0	(c)	0.0
	From commercial/residential sources	2.7	(c)	6.7
	From shipping	0.8	(c)	22.5
	From off road mobile machinery	1.5	(c)	11.9
	From natural sources	0.0	(c)	0.0
	From transboundary sources	0.0	(c)	0.0
	From other urban background sources	1.3	(c)	3.3
Local sources (i.e. contributions from sources < 0.3 km from the receptor)	Total	119.0	51.4	-
	From cars	53.0	21.7	53.0
	From HGV rigid	23.4	10.1	37.4
	From HGV articulated	14.2	6.2	43.3
	From Buses	12.3	5.4	38.3
	From LGVs	15.5	7.7	15.5
	From motorcycles	0.8	0.3	0.8
Total (i.e. regional background + urban background + local components)		149.8	64.7	-

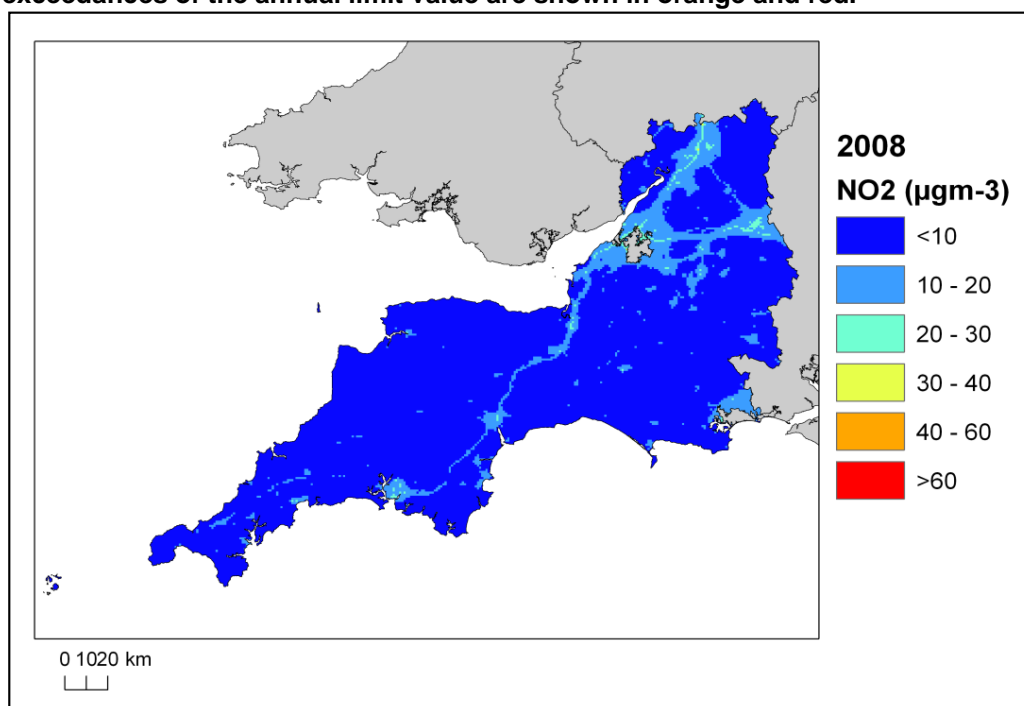
(a) The road with the highest modelled annual mean NO₂ concentration in this exceedance situation in 2008 is a section of the A38, traffic count point id 58063 (OS grid (m): 251400, 56890).

(b) This column gives the maximum contribution for each component from all the roads included in the exceedance situation.

(c) The combined modelled annual mean NO₂ concentration contribution for these components is 7.7 µgm⁻³. A more detailed NO₂ source apportionment is currently unavailable for these sectors.

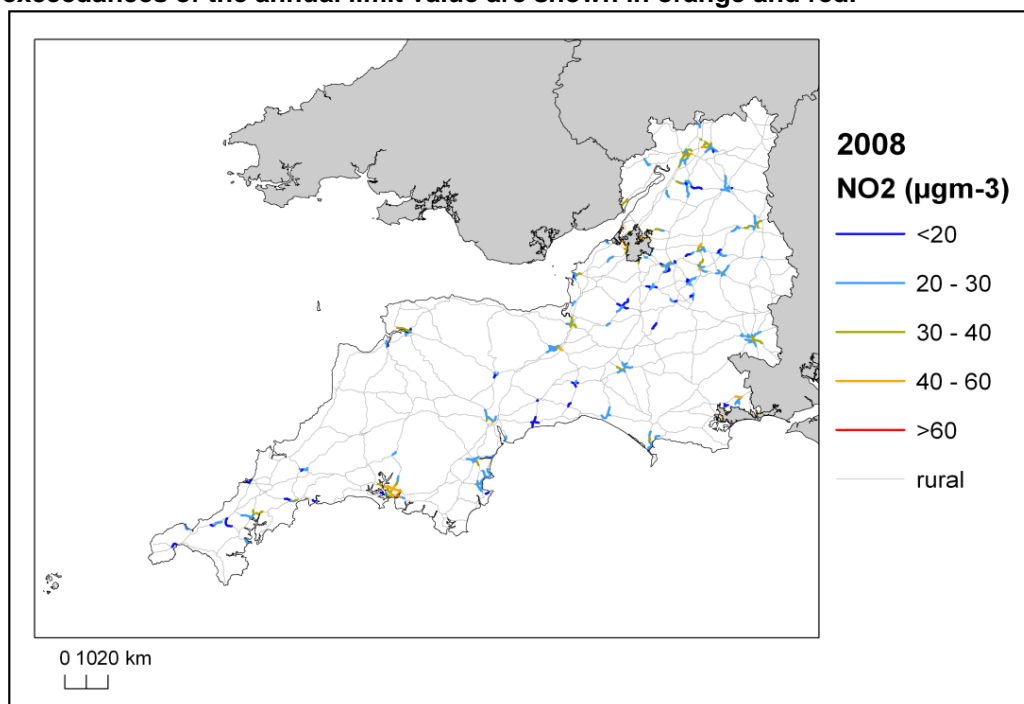
(d) Source apportionment for NO₂ is indicative, see UK Technical Report.

Figure 4. Map of modelled background annual mean NO₂ concentrations 2008. 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 2008. 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 NO₂ limit values within South West non-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(s) 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 53 $\mu\text{g m}^{-3}$ of NO_x out of a total of 149.8 $\mu\text{g m}^{-3}$ of NO_x. Cars and rigid HGVs were important sources on the trunk roads with the highest concentrations. Cars and on some roads articulated HGVs and rigid HGVs and buses were important sources on the primary roads with the highest concentrations.

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

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

Details of European Union measures (e.g. euro standards, fuel quality directives, integrated pollution prevention and control) can be found on the European Commission's website (http://ec.europa.eu/environment/air/index_en.htm). Details of national measures are given in the UK overview document and list of UK and National measures.

Relevant Local Authority measures within this exceedance situation are listed in Table A2.1 (see Annex 2). Relevant Local Authority measures are considered to be those measures which directly target, or are in close geographical proximity to roads and/or background grid squares in exceedance of one or other of the NO₂ limit values. Other Local Authority measures may also have been taken in this zone, but they are not listed in this table. All the measures listed in Table A2.1 have been carried out, are in the process of being carried out or a firm commitment had been made to carry them out on the timetables listed at the point at which information on local measures was collected.

4.4. Measures timescales

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

Information on local measures was collected in autumn 2009. Hence, any Local Authority action plans and measures adopted by Local Authorities after this time have not been included in this air quality plan. Many of the measures listed in Annex 2 will either have happened before autumn 2009 or have

been planned for implementation before or during 2010. Others will be planned for after 2010. It should be noted that many of the measures taken before or during 2010 will continue to have a beneficial impact on air quality after the end of 2010.

Local Authorities report on progress with the implementation of their action plans annually and review action plan measures regularly. Where future Local Authority measures to improve air quality are under consideration these would be included in future local authority action plans and published by the local authority.

5. Baseline Model Projections

5.1. Overview of model projections

Baseline projections for 2010

Model projections for 2010, starting from the 2008 reference year described in section 3, have been calculated in order to determine whether compliance with the NO₂ limit values is likely to be achieved for each exceedance situation by the original deadline for compliance of 01/01/2010. Details of the methods used for the baseline emissions and concentration 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 2007 (used as a basis for the compilation of the emission inventory) or in the traffic activity projections to 2010 and beyond (used to calculate the emission 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.

A number of the local measures in Table A2.1 can be considered to be 'smarter choices' measures (see <http://www.dft.gov.uk/pgr/sustainable/smarterchoices/ctwwt/> for a detailed description of this type of measure). We have quantified the impact of this group of measures on a national scale within the projections. Details of how this has been done can be found in the UK technical report. Table A2.1 indicates which local measures we have considered to be 'smarter choices'.

Baseline projections for 2015

Model projections for 2015, starting from the 2008 reference year described above, have been calculated in order to determine whether compliance with the NO₂ limit values is likely to be achieved for each exceedance situation by the revised deadline for compliance of 01/01/2015 on the basis of EU-wide measures and the measures currently planned. This modelling is described in detail in the UK technical report. Many of the measures listed in annex 2 of this document and the supporting list of UK and national measures will continue or will continue to have an impact beyond the original deadline for compliance of 01/01/2010.

5.2. Baseline projections: NO₂_UK0030_Annual_1

Table 4 presents summary results for the baseline model projections for 2010, 2015 and 2020 for the NO₂_UK0030_Annual_1 exceedance situation. This shows that the maximum modelled annual mean NO₂ concentration predicted for 2010 in this exceedance situation is 54 µgm⁻³. By 2015, the maximum modelled annual mean NO₂ concentration is predicted to drop to 37.6 µgm⁻³. Hence, the model results suggest that compliance with the NO₂ annual limit value is likely to be achieved by 2015 under baseline conditions in this exceedance situation. Postponement of the compliance date to 2015 is sought for this limit value this zone.

The projected modelled NO_x and indicative NO₂ annual mean source apportionments for 2010, 2015 and 2020 at the location with the biggest compliance gap in 2008 are presented in Table 5. In 2010 and 2015, the model results suggest that this location will continue to have the highest annual mean NO₂ concentration within this exceedance situation. However, in 2020 the model indicates that the location with the highest annual mean NO₂ concentration within this exceedance situation will be elsewhere. Information regarding the new location with the highest NO₂ concentration, including the source apportionment is given in Table 6. The locations of maximum concentration in each year are given in the footnote to this table. This source apportionment information is useful because it shows which sources need to be tackled at the point with the largest compliance gap in the exceedance situation.

Table 7 shows the maximum NO_x contribution from each source apportionment component from any road across the whole exceedance situation. This source apportionment information is useful because it highlights all the key sources that need to be tackled within the exceedance situation in order to achieve compliance across the entire area of the exceedance situation. It should be noted that this table only includes roads which continue to be in exceedance in the relevant year. Hence, for example, the road with the largest contribution from cars in 2010 may no longer be included in the table in 2015 if the road is predicted to be compliant in 2015.

Figures 6 and 7 show maps of projected annual mean NO₂ concentrations in 2010, 2015 and 2020 at background and roadside locations respectively. Maps for 2008 are also presented here for reference.

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

Table 4. Annual mean NO₂ model results in NO₂_UK0030_Annual_1

	2008	2010	2015	2020
Road length exceeding (km)	62.4	28.5	0.0	0.0
Background area exceeding (km ²)	0	0	0	0
Maximum modelled concentration (µgm ⁻³) (a)	64.7	54.0	37.6	27.4

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

Table 5. Modelled source apportionment for 2010, 2015 and 2020 under baseline conditions for traffic count point 58063 on the A38 (the road section with the maximum modelled annual mean NO₂ concentration in 2008 in NO₂_UK0030_Annual_1. OS grid (m): 251400, 56890). 2008 results are also presented here for reference (units: µgm⁻³).

Spatial scale	Component	NOx				NO2 (indicative)			
		2008	2010	2015	2020	2008	2010	2015	2020
Regional background sources (i.e. contributions from distant sources of > 30 km from the receptor)	Total	5.3	4.7	4.1	3.5	(a)	(b)	(c)	(d)
	From within the UK	1.5	1.3	1.2	1.0	(a)	(b)	(c)	(d)
	From transboundary sources (includes shipping and other EU Member States)	3.8	3.3	3.0	2.5	(a)	(b)	(c)	(d)
Urban background sources (i.e. sources located within 0.3 - 30 km from the receptor)	Total	25.4	20.3	15.1	11.0	13.3	11.3	9.3	7.5
	From road traffic sources	17.4	12.9	8.6	5.1	5.6	5.3	5.0	4.8
	From industry (including heat and power generation)	1.7	1.5	1.4	1.3	(a)	(b)	(c)	(d)
	From agriculture	0.0	0.0	0.0	0.0	(a)	(b)	(c)	(d)
	From commercial/residential sources	2.7	2.7	2.5	2.2	(a)	(b)	(c)	(d)
	From shipping	0.8	0.8	0.8	0.8	(a)	(b)	(c)	(d)
	From off road mobile machinery	1.5	1.5	0.8	0.5	(a)	(b)	(c)	(d)
	From natural sources	0.0	0.0	0.0	0.0	(a)	(b)	(c)	(d)
	From transboundary sources	0.0	0.0	0.0	0.0	(a)	(b)	(c)	(d)
	From other urban background sources	1.3	1.0	1.0	1.0	(a)	(b)	(c)	(d)
Local sources (i.e. contributions from sources < 0.3 km from the receptor)	Total	119.0	93.6	56.8	30.1	51.4	42.7	28.2	16.0
	From cars	53.0	35.6	24.5	16.3	21.7	15.8	12.2	8.7
	From HGV rigid	23.4	20.8	10.7	3.8	10.1	9.2	5.1	1.9
	From HGV articulated	14.2	12.3	6.2	2.0	6.2	5.6	3.0	1.0
	From Buses	12.3	11.0	6.5	3.0	5.4	4.9	3.1	1.5
	From LGVs	15.5	13.3	8.4	4.6	7.7	6.9	4.6	2.6
	From motorcycles	0.8	0.7	0.5	0.4	0.3	0.3	0.2	0.2
Total (i.e. regional background + urban background + local components)		149.8	118.6	76.0	44.6	64.7	54.0	37.6	23.6

(a) The total annual mean NO₂ contribution for all components labelled (a) in 2008 was modelled to be 7.7 µgm⁻³.

(b) The total annual mean NO₂ contribution for all components labelled (b) in 2010 is predicted to be 6 µgm⁻³.

(c) The total annual mean NO₂ contribution for all components labelled (c) in 2015 is predicted to be 4.3 µgm⁻³.

(d) The total annual mean NO₂ contribution for all components labelled (d) in 2020 is predicted to be 2.7 µgm⁻³.

Table 6. Modelled source apportionment for 2010, 2015 and 2020 under baseline conditions for traffic count point with the highest concentration in these years in NO₂_UK0030_Annual_1 (a). 2008 results are also presented here for reference (units: µgm⁻³).

Spatial scale	Component	NOx				NO2 (indicative)			
		2008	2010	2015	2020	2008	2010	2015	2020
Regional background sources (i.e. contributions from distant sources of > 30 km from the receptor)	Total	5.3	4.7	4.1	4.5	(b)	(c)	(d)	(e)
	From within the UK	1.5	1.3	1.2	2.3	(b)	(c)	(d)	(e)
	From transboundary sources (includes shipping and other EU Member States)	3.8	3.3	3.0	2.2	(b)	(c)	(d)	(e)
Urban background sources (i.e. sources located within 0.3 - 30 km from the receptor)	Total	25.4	20.3	15.1	31.3	13.3	11.3	9.3	16.6
	From road traffic sources	17.4	12.9	8.6	3.7	5.6	5.3	5.0	14.8
	From industry (including heat and power generation)	1.7	1.5	1.4	1.1	(b)	(c)	(d)	(e)
	From agriculture	0.0	0.0	0.0	0.0	(b)	(c)	(d)	(e)
	From commercial/residential sources	2.7	2.7	2.5	2.9	(b)	(c)	(d)	(e)
	From shipping	0.8	0.8	0.8	22.0	(b)	(c)	(d)	(e)
	From off road mobile machinery	1.5	1.5	0.8	0.8	(b)	(c)	(d)	(e)
	From natural sources	0.0	0.0	0.0	0.0	(b)	(c)	(d)	(e)
	From transboundary sources	0.0	0.0	0.0	0.0	(b)	(c)	(d)	(e)
	From other urban background sources	1.3	1.0	1.0	0.7	(b)	(c)	(d)	(e)
Local sources (i.e. contributions from sources < 0.3 km from the receptor)	Total	119.0	93.6	56.8	21.8	51.4	42.7	28.2	10.7
	From cars	53.0	35.6	24.5	11.9	21.7	15.8	12.2	5.8
	From HGV rigid	23.4	20.8	10.7	2.7	10.1	9.2	5.1	1.3
	From HGV articulated	14.2	12.3	6.2	1.6	6.2	5.6	3.0	0.8
	From Buses	12.3	11.0	6.5	2.0	5.4	4.9	3.1	0.9
	From LGVs	15.5	13.3	8.4	3.4	7.7	6.9	4.6	1.8
	From motorcycles	0.8	0.7	0.5	0.2	0.3	0.3	0.2	0.1
Total (i.e. regional background + urban background + local components)		149.8	118.6	76.0	57.6	64.7	54.0	37.6	27.4

(a) The road with the maximum annual mean NO₂ concentration in different years is as follows. 2008: A section of the A38 (count point id 58063). 2010: A section of the A38 (count point id 58063). 2015: A section of the A38 (count point id 58063). 2020: A section of the A3029 (count point id 58285). (OS grid (m): 251400, 56890; 251400, 56890; 251400, 56890; 251400, 56890).

(b) The total annual mean NO₂ contribution for all components labelled (b) in 2008 was modelled to be 7.7 µgm⁻³.

(c) The total annual mean NO₂ contribution for all components labelled (c) in 2010 is predicted to be 6 µgm⁻³.

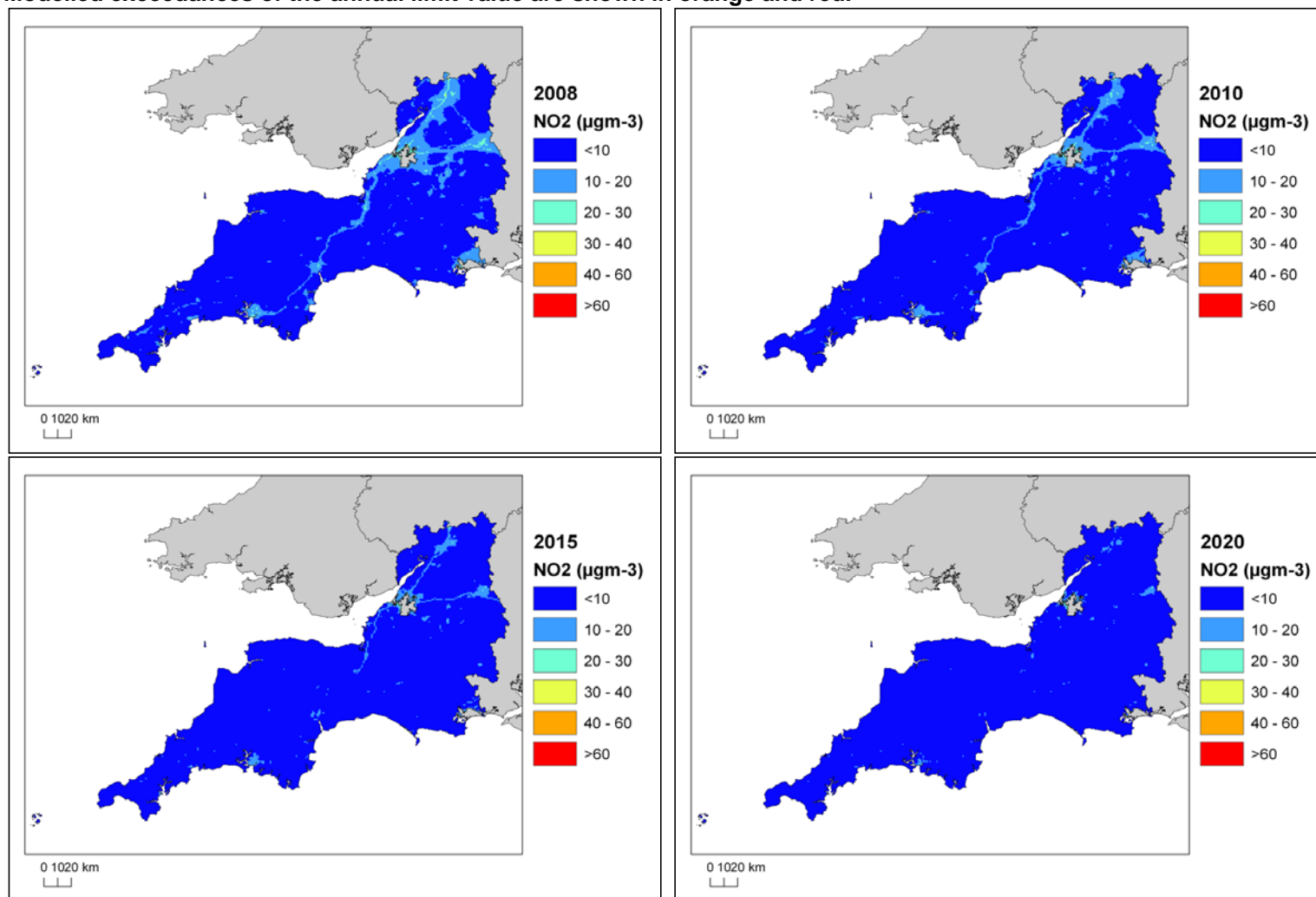
(d) The total annual mean NO₂ contribution for all components labelled (d) in 2015 is predicted to be 4.3 µgm⁻³.

(e) The total annual mean NO₂ contribution for all components labelled (e) in 2020 is predicted to be 1.9 µgm⁻³.

Table 7. The maximum NO_x contribution from each source from across all the roads included in the exceedance situation on which exceedances remain in 2010, 2015 and 2020 under baseline conditions. Zeros indicate that there are no exceedances in the relevant year.

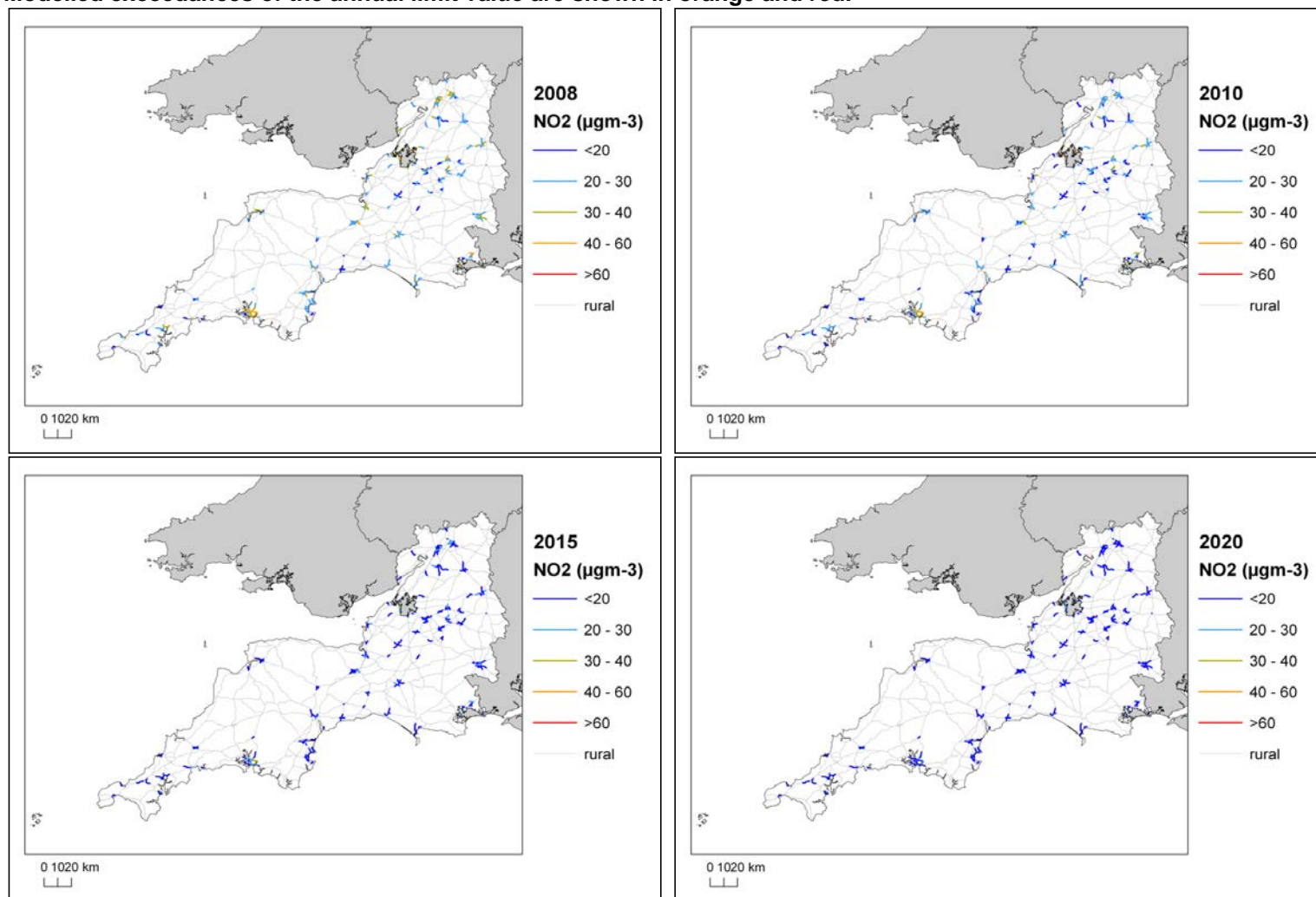
Spatial scale	Component	NO _x			
		2008	2010	2015	2020
Regional background sources (i.e. contributions from distant sources of > 30 km from the receptor)	From within the UK	4.0	3.3	0.0	0.0
	From transboundary sources (includes shipping and other EU Member States)	5.1	3.4	0.0	0.0
Urban background sources (i.e. sources located within 0.3 - 30 km from the receptor)	From road traffic sources	29.9	23.2	0.0	0.0
	From industry (including heat and power generation)	22.7	17.6	0.0	0.0
	From agriculture	0.0	0.0	0.0	0.0
	From commercial/residential sources	6.7	6.2	0.0	0.0
	From shipping	22.5	21.5	0.0	0.0
	From off road mobile machinery	11.9	4.0	0.0	0.0
	From natural sources	0.0	0.0	0.0	0.0
	From transboundary sources	0.0	0.0	0.0	0.0
	From other urban background sources	3.3	1.8	0.0	0.0
Local sources (i.e. contributions from sources < 0.3 km from the receptor)	From cars	53.0	35.6	0.0	0.0
	From HGV rigid	37.4	33.2	0.0	0.0
	From HGV articulated	43.3	37.6	0.0	0.0
	From Buses	38.3	34.3	0.0	0.0
	From LGVs	15.5	13.3	0.0	0.0
	From motorcycles	0.8	0.7	0.0	0.0

Figure 6. Background baseline projections of annual mean NO₂ concentrations in 2010, 2015 and 2020. 2008 is also included here for reference. 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 2010, 2015 and 2020. 2008 is also included here for reference. Modelled exceedances of the annual limit value are shown in orange and red.



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References

Air Quality Expert Group (AQEG, 2004). Nitrogen Dioxide in the United Kingdom.
<http://www.defra.gov.uk/environment/quality/air/airquality/publications/nitrogen-dioxide/index.htm>

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, L 156/78

UK technical report, UK overview document and List of UK and National measures are available at <http://www.defra.gov.uk/environment/quality/air/air-quality/eu/>

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.

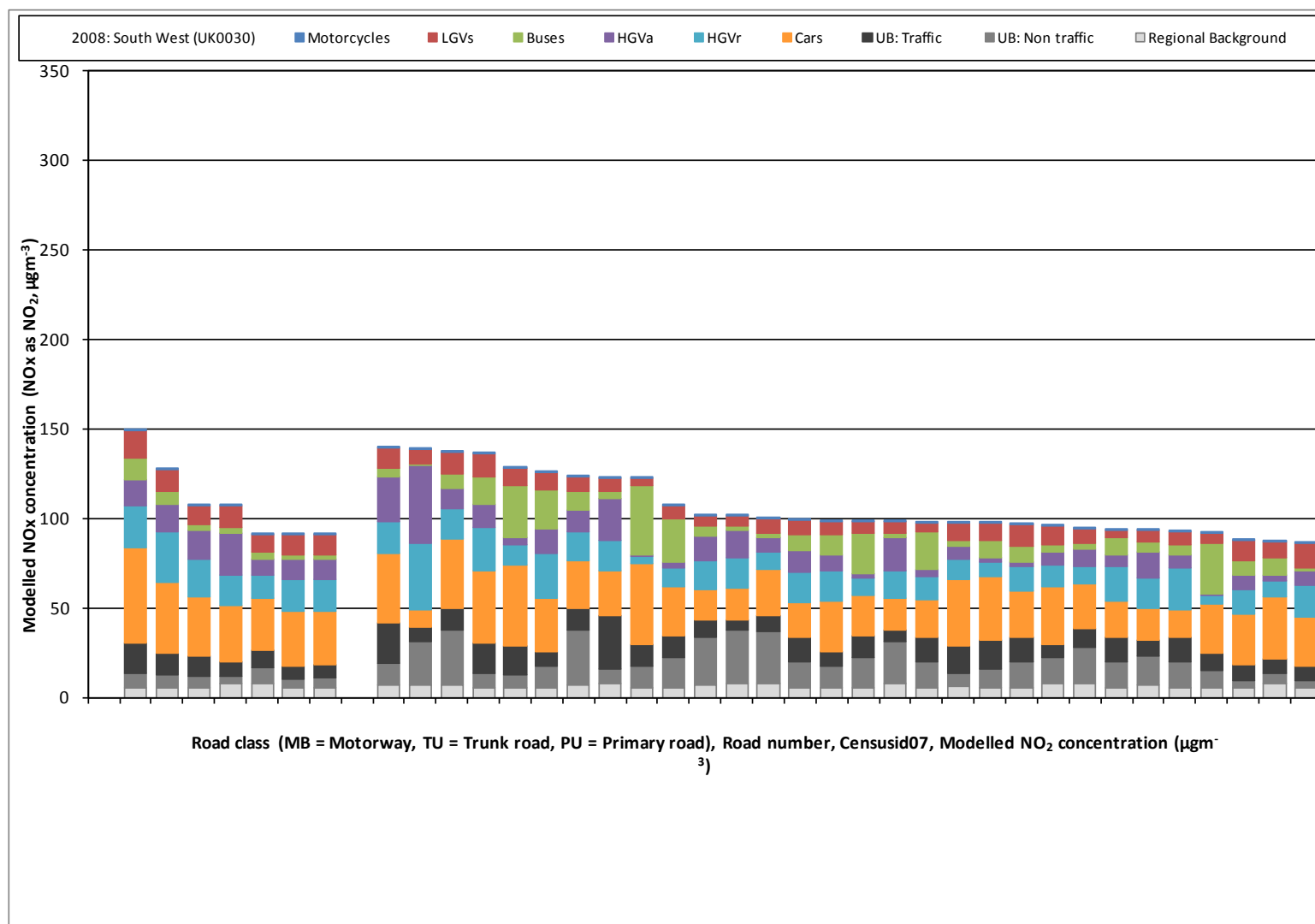
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Annex 2: Tables of measures

Annex 1: Source apportionment graphs

Figure A1.1 Annual mean roadside NO_x source apportionment plots for all roads exceeding the annual mean NO₂ limit value in 2008



Annex 2: Tables of measures

Table A2.1 Relevant Local Authority measures taken before or during 2010 within South West (UK0030)

LA (a)	Measure code (b)	Title	Description	Other information
Bristol	Local_Bristol_H1	Area speed reduction through 20mph zones within AQMA	Progress on 20 mph zones around schools and adjacent to Showcase bus routes delivered through LTP. Draft Road Hierarchy Review proposes 20 mph speed limit in all residential areas.	<ul style="list-style-type: none"> • Type: Technical; Education/information • Sources affected: Transport • Spatial scale: local • Implementation date: 2007 • Reduction timescale: Short term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_H2	Extend and improve further the planned cycling facilities AQMA	Pedestrian and cycle improvements to be incorporated into Greater Bristol Bus Network Major Scheme (GBBN) programme of works now due to commence in 2008/09. Connect2 cycle route from Nailsea to Bristol to be developed in partnership with Sustrans. Pilot city centre bike rental scheme (Hour Bike) to commence in 2008. Internet cycle trip planner to go live in 2008.	<ul style="list-style-type: none"> • Type: Technical; Education/information • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_C1	Expand Council green fleet/ trial new technologies	Bristol City Council maintains a large fleet of alternative fuel fleet vehicles, which totals over 100 LPG and hybrid vehicles. New fuels / technologies will be evaluated when they become viable.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2007 • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_H3	Discuss freight transshipment centre and undertake study to cost and quantify AQ benefits	The Bristol freight consolidation scheme now serves 63 retailers in central Bristol and will be integrated in to the new £500m shopping centre (Cabot Circus) from September 2008.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_G1	Travel Plans with increased incentives for schools and organisations within the	Continued progress being made on workplace travel plans through LTP and Planning process. Sustainable Schools Strategy being developed. Additional focus on school travel plans to increase the take-up rate and achieve the target of all schools having a travel plan by 2010. 118 schools now have travel plans.	<ul style="list-style-type: none"> • Type: Education/information • Sources affected: Transport • Spatial scale: local • Implementation date: 2007 • Reduction timescale: Long term • Regulatory: No

LA (a)	Measure code (b)	Title	Description	Other information
		AQMA		<ul style="list-style-type: none"> • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_H4	Safer routes to Schools to be extended within the AQMA	SRS approach being integrated into the Health Schools initiative described in 2 above and delivered through LTP.	<ul style="list-style-type: none"> • Type: Education/information • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_F1	Extension of travel marketing	Continued promotion of driver behaviour materials and integration of air quality issues into wider BCC publicity and transport awareness work. Improved Air Quality web pages on Council's web site. Real-time bus information now available on web site.	<ul style="list-style-type: none"> • Type: Education/information • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Short term • Regulatory: No • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_G2	Expand car clubs to include private developments and business clubs	The Bristol Car Club has continued to expand and now has 39 cars and 600 members. Since the pilot project ended in 2006 the club has continued to operate without Council subsidy. Growth of the club continues to be boosted by funding secured by the Council through Section 106 contributions from planning applications.	<ul style="list-style-type: none"> • Type: Education/information • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_A1	Speed management strategy through LTP would have additional resources targeted in AQMA	Some progress through LTP but no additional AQAP measures introduced.	<ul style="list-style-type: none"> • Type: Education/information • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_E1	Extend use of SVD to buses inside AQMA and co-ordinate UTC with other measures	A strategy to clean up buses is still being considered and may result in a formal approach to the Traffic Commissioner regarding the use of new powers to regulate emissions from buses.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Bristol_AQActionplan_1

LA (a)	Measure code (b)	Title	Description	Other information
Bristol	Local_Bristol_H5	Undertake study of 'hot-spots' in AQMA where engineering measures feasible	Scheme being progressed to alleviate traffic problems at one of the worst polluted junctions in Bristol (adjacent to Junction 3 of M32).	<ul style="list-style-type: none"> • Type: Education/information • Sources affected: Transport • Spatial scale: local • Implementation date: 2007 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_H6	Additional staff resources to enforce parking/delivery restrictions to ease/speed flows	Review of Council's parking strategy and enforcement programme is completed. Targeted enforcement remains a core activity of the Council's parking management strategy and Showcase bus route programme. Plans to introduce extensive Controlled Parking Zones are being drawn up.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Short term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_F2	Air quality awareness, advice for motorists, promotion of alternative fuels, real-time pollution information	There will be an increased focus on Smarter Choices measures including information and awareness provision.	<ul style="list-style-type: none"> • Type: Education/information • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Short term • Regulatory: No • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_A2	M32 bus lane and detrunking progressing through LTP and further study planned	Proposals for a new 1250m bus lane and reduced speed limits through junction 3 of the M32 are awaiting final completion of Greater Bristol Bus Network funding agreements with DfT.	<ul style="list-style-type: none"> • Type: Technical; Education/information • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_A3	RUC key measure in LTP and could be anticipated for 2008	Major upgrade of Bristol's UTM system is underway including a new traffic control room, expansion of the SCOOT network and automatic number plate recognition (ANPR) and CCTV systems, which will enable better management of traffic and handling of road incidents.	<ul style="list-style-type: none"> • Type: Technical; Education/information • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Bristol_AQActionplan_1
Bristol	Local_Bristol_G3	Personalised	7th PTP project completed in Bristol in 2007. The	<ul style="list-style-type: none"> • Type: Education/information

LA (a)	Measure code (b)	Title	Description	Other information
		Travel Planning (PTP)	project was extended to promote the newly completed showcase bus route through a nearby area. Changing driver behaviour to reduce emissions was an integral part of this project. Previous projects have achieved around a 10% decrease in car trips among participating households. Further areas planned for 2008/09.	<ul style="list-style-type: none"> • Sources affected: Transport • Spatial scale: local • Implementation date: 2007 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Bristol_AQActionplan_1
PLYMOUTH	Local_Plymouth_A1	Physical Traffic Management	Reallocation of road space and increased priority for buses, cyclists and pedestrians in AQMA's.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: Phase 1 Complete - Ongoing. • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_H1	Physical Traffic Management	Tree Planting in the AQMAs.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: Feasibility study Ongoing. • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_A2	Physical Traffic Management	Travel Plans in the AQMAs.	<ul style="list-style-type: none"> • Type: Education/information • Sources affected: Transport • Spatial scale: local • Implementation date: 9 in place - more being created. • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_E1	Land Use Planning	Land Use Planning.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: Local Development Framework accepted. • Reduction timescale: Short term • Regulatory: No • Smarter Choices (c) : No

LA (a)	Measure code (b)	Title	Description	Other information
				<ul style="list-style-type: none"> • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_D1	Partnership & Travel Plans	Advice / incentives for cleaning up larger vehicles e.g. by retrofitting.	<ul style="list-style-type: none"> • Type: Other • Sources affected: Transport • Spatial scale: local • Implementation date: Not implemented. • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_F1	Partnership & Travel Plans	Information and Awareness Raising.	<ul style="list-style-type: none"> • Type: Other • Sources affected: Transport • Spatial scale: local • Implementation date: Ongoing. • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_D2	Partnership & Travel Plans	Parking and delivery restrictions in AQMAs.	<ul style="list-style-type: none"> • Type: Other • Sources affected: Transport • Spatial scale: local • Implementation date: No info. • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_D3	Partnership & Travel Plans	Incentives to scrap older vehicles.	<ul style="list-style-type: none"> • Type: Economic/fiscal • Sources affected: Transport • Spatial scale: local • Implementation date: No info. • Reduction timescale: Long term • Regulatory: Yes • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_A3	Partnership & Travel Plans	Traffic management at pollution hotspots.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: Ongoing.

LA (a)	Measure code (b)	Title	Description	Other information
				<ul style="list-style-type: none"> • Reduction timescale: Short term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_A4	Physical Traffic Management	Taxi emissions - New Taxi Licensing Policy proposed with stricter standards.	<ul style="list-style-type: none"> • Type: Other • Sources affected: Transport; Industry including heating and power production • Spatial scale: local • Implementation date: Ongoing. • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_G1	Physical Traffic Management	Safer Routes to School focus in AQMAs.	<ul style="list-style-type: none"> • Type: Other • Sources affected: Transport • Spatial scale: local • Implementation date: Various - ongoing. • Reduction timescale: Short term • Regulatory: No • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_G2	Physical Traffic Management	Cycling facilities in AQMAs.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: Ongoing. • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_A5	Physical Traffic Management	Roadside Emissions Testing in AQMAs.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: Ongoing. • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1

LA (a)	Measure code (b)	Title	Description	Other information
PLYMOUTH	Local_Plymouth_A6	Physical Traffic Management	Enforce law against idling vehicles.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: Not at present • Reduction timescale: Short term • Regulatory: Yes • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_A7	Physical Traffic Management	Promote and assist freight emissions agreements.	<ul style="list-style-type: none"> • Type: Other • Sources affected: Transport • Spatial scale: local • Implementation date: Not at present. • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_A8	Public Transport Initiatives - Bus	Implement actions in AQAP by including in APR updates.	<ul style="list-style-type: none"> • Type: Other • Sources affected: Transport • Spatial scale: local • Implementation date: Ongoing. Draft report completed. • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_C1	Public Transport Initiatives - Bus	Greener Council fleet.	<ul style="list-style-type: none"> • Type: Other • Sources affected: Transport • Spatial scale: local • Implementation date: Ongoing. • Reduction timescale: Medium term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_C2	Partnership & Travel Plans	PCC Staff Green Travel plans.	<ul style="list-style-type: none"> • Type: Economic/fiscal • Sources affected: Transport • Spatial scale: local • Implementation date: Ongoing. • Reduction timescale: Long term • Regulatory: Yes

LA (a)	Measure code (b)	Title	Description	Other information
				<ul style="list-style-type: none"> • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Plymouth_AQActionplan_1
PLYMOUTH	Local_Plymouth_H2	Promotion, Education & Awareness Raising	Tree Planting included at design stage for new road building / improvements to existing roads.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: Ongoing. • Reduction timescale: Short term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Plymouth_AQActionplan_1
Gloucester	Local_Gloucester_G1	Travelsmart	Encourage local trips by non-car modes - promote alternatives through a 'TravelSmart' intervention.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Gloucester_AQActionplan_1
Gloucester	Local_Gloucester_G2	School Travel Plans	Encourage local trips by non-car modes - promote the use of alternative modes through School Travel Plans.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Gloucester_AQActionplan_1
Gloucester	Local_Gloucester_E1	Traffic management	Reduce through traffic - improvements/control of the signals at the junction of Barton Street, Bruton Way, Trier Way and Eastgate Street. Environmental controlled link to real-time air quality monitoring.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Gloucester_AQActionplan_1
Gloucester	Local_Gloucester_A1	Reduce bus emissions	Reduced bus emissions - replacement by March 2009 of the fleet (bus service no. 1) with Euro-4 compliant vehicles by the bus operator Stagecoach.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local

LA (a)	Measure code (b)	Title	Description	Other information
				<ul style="list-style-type: none"> • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Gloucester_AQActionplan_1
Gloucester	Local_Gloucester_G3	Travel Plans	Encourage local trips by non-car modes/Reduce through traffic - promote the use of alternative modes and alternative routes through Business/Employer Travel Plans.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : Yes • Reference (d): Local_zone30_Gloucester_AQActionplan_1
Gloucester	Local_Gloucester_A2	Bus emissions	Continue to work with bus operators to upgrade existing bus fleet to Euro-4 compliant vehicles that are less polluting.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Gloucester_AQActionplan_1
Gloucester	Local_Gloucester_E2	Bypass	Completion of the Gloucester South West bypass that will allow traffic to skirt Gloucester on the western side.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_Gloucester_AQActionplan_1
Taunton Dean	Local_Taunton_Dean_H1	Air quality monitoring	Air quality monitoring within the AQMA's to remain in place to ascertain the justification for the existence of the AQMA.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: Yes • Smarter Choices (c) : No • Reference (d): Local_zone30_TauntonDean_AQActionplan_1

LA (a)	Measure code (b)	Title	Description	Other information
Taunton Dean	Local_Taunton_Dean_H2	Air Quality Assessments	Air quality assessment to be included in each road development or planning application affecting the AQMA's.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: Yes • Smarter Choices (c) : No • Reference (d): Local_zone30_TauntonDean_AQActionplan_1
Taunton Dean	Local_Taunton_Dean_H3	Integration of AQAP with LTP	Integration of AQAP with LTP	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_TauntonDean_AQActionplan_1
Taunton Dean	Local_Taunton_Dean_E1	SCOOT	Optimisation of the SCOOT Urban Traffic Control system in East Reach AQMA and all of the town centre	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : No • Reference (d): Local_zone30_TauntonDean_AQActionplan_1
Taunton Dean	Local_Taunton_Dean_G1	Travel Plans	Work and School Travel Plan Officers posts initiated to promote Travel Planning across Taunton Deane	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No • Smarter Choices (c) : Yes • Reference (d): Local_zone30_TauntonDean_AQActionplan_1
Taunton Dean	Local_Taunton_Dean_D1	Parking Strategy	A Parking strategy has been developed as part of the Transport strategy incorporated into the Urban Development Framework (UDF). The Taunton Transport Strategy Review 2 currently underway will cover parking strategy.	<ul style="list-style-type: none"> • Type: Technical • Sources affected: Transport • Spatial scale: local • Implementation date: 2008 • Reduction timescale: Long term • Regulatory: No

LA (a)	Measure code (b)	Title	Description	Other information
				<ul style="list-style-type: none"> • Smarter Choices (c) : No • Reference (d): Local_zone30_TauntonDean_AQActionplan_1

(a) Name of responsible Local Authority.

(b) The Letter in the measure code indicates the main source sector that will be affected by the measure. Letters are assigned as follows: A - measures to reduce emissions from mobile sources, B - measures to reduce emissions from stationary sources, C - fuels and petrol stations, D - Economic incentives to reduce emissions (e.g. congestion charging, controlled parking zones), E - measures related to traffic planning/redesigning infrastructure, F - information/educational measures, G - change of transport mode (e.g. scheme to encourage people out of cars and onto bikes), H - Other.

(c) Measures have been classified as 'smarter choices' or not based on expert judgement

(d) References available for download from: <http://uk-air.defra.gov.uk/library/NO2ten/>

