



# 2011 Air Quality Progress Report for *North Somerset District Council*

In fulfillment of Part IV of the Environment Act 1995  
Local Air Quality Management

Date 30 April 2011

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## Executive Summary

This is the second Progress Report of the fourth round of Review and Assessment. As the title implies, this report outlines any changes there have been over the past year running up, until March 2011, including emission levels, monitoring sites and further consideration of relevant locations.

Again as in previous assessments road transport remains the major source of local air pollution with this being generally limited to the areas close to the M5 motorway, particularly in the vicinity of motorway junctions, together with smaller settlements along the A38 and A370. The largest town in the district Weston-super-Mare, has the most widespread traffic generated pollution because of the population density and its role as a tourist destination especially during the summer months. Roads in and around the Airport show no discernable increase in pollution levels even with increases in passenger and freight throughput compared to 2010. Similarly, commuter routes into Bristol over the period 2008-2010 continue to show stable pollutant concentrations.

Industrial activities from on site activities continue to decline with further business closures as a result of economic circumstances.

The primary pollutants of nitrogen dioxide, benzene and PM<sub>10</sub> all show levels below their respective objectives at all relevant locations across North Somerset.

No Detailed Assessments are required.

No Air Quality Management Areas (AQMA's) are currently in place

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# 1 Introduction

## 1.1 Description of Local Authority Area

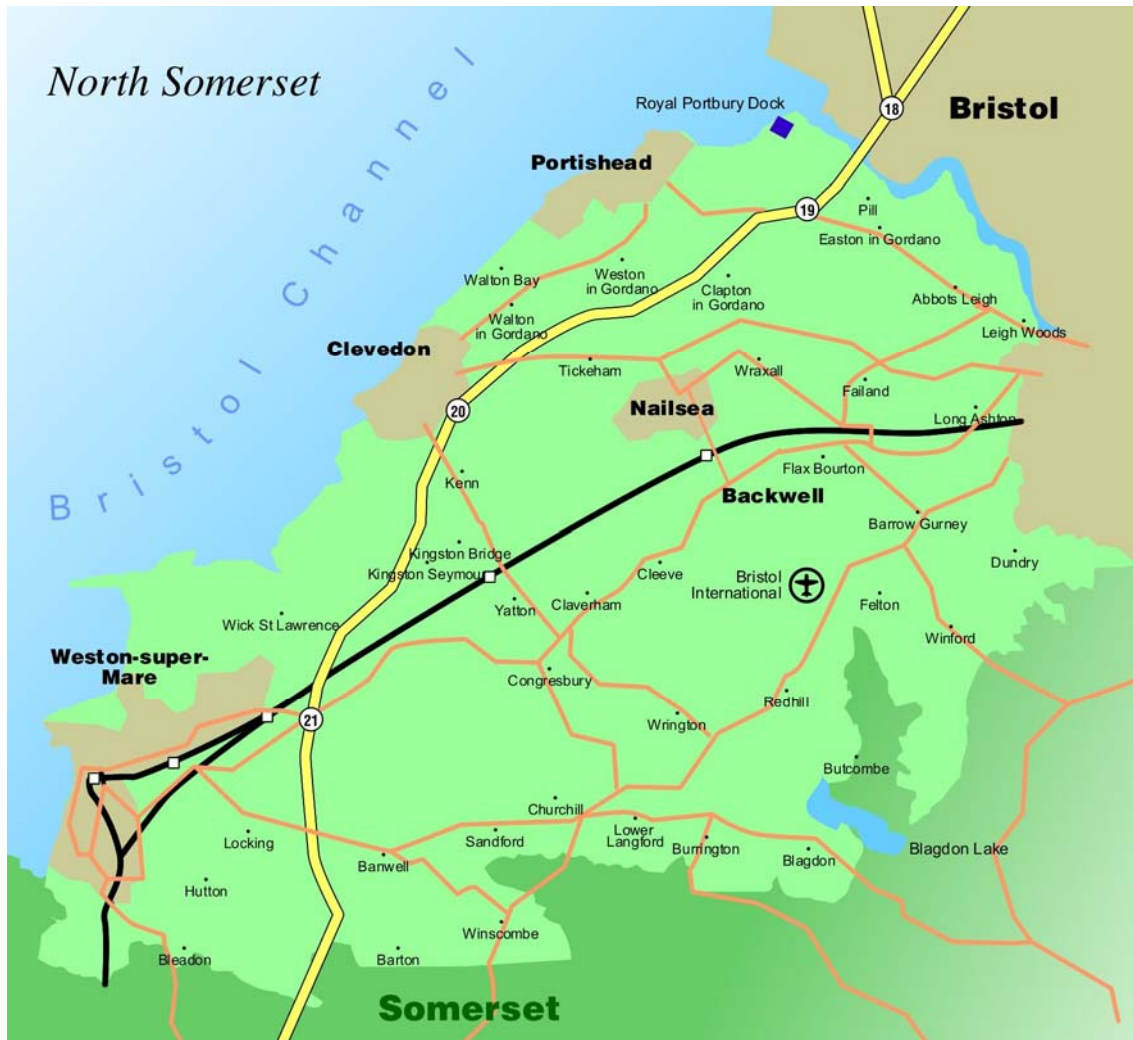


Fig 1 North Somerset

North Somerset covers an area of 145 square miles and is part of the West of England sub-region which includes the unitary authorities of Bristol, Bath and North East Somerset and South Gloucestershire.

North Somerset's geographical boundary stretches from the edge of Bristol and the river Avon in the north to the river Axe and Mendip Hills in the south. Two thirds of the area is designated as greenbelt or an Area of Outstanding Natural Beauty.

Urban North Somerset includes Nailsea and the coastal towns of Clevedon, Portishead and Weston-super-Mare. The industrial sectors of the district include engineering, manufacturing, food processing, agriculture and tourism. The population in mid June 2010 was estimated at 210,900. The area benefits from good national and international transport links, with a regional Airport, several main line stations, a deep sea port in the north and the M5/M4 motorway networks.

## 1.2 Purpose of Progress Report

Progress Reports are required in the intervening years between the three-yearly Updating and Screening Assessment reports. Their purpose is to maintain continuity in the Local Air Quality Management process.

They are not intended to be as detailed as Updating and Screening Assessment Reports, or to require as much effort. However, if the Progress Report identifies the risk of exceedence of an Air Quality Objective, the Local Authority (LA) should undertake a Detailed Assessment immediately, and not wait until the next round of Review and Assessment.

## 1.3 Air Quality Objectives

The air quality objectives applicable to Local Air Quality Management (LAQM) in **England** are set out in the Air Quality (England) Regulations 2000 (SI 928), and the Air Quality (England) (Amendment) Regulations 2002 (SI 3043). They are shown in Table 1. This table shows the objectives in units of microgrammes per cubic metre  $\mu\text{g}/\text{m}^3$  (for carbon monoxide the units used are milligrammes per cubic metre,  $\text{mg}/\text{m}^3$ ). Table 1 includes the number of permitted exceedences in any given year (where applicable).

**Table 1 Air Quality Objectives included in Regulations for the purpose of Local Air Quality Management in England.**

<b>Pollutant</b>	<b>Concentration</b>	<b>Measured as</b>	<b>Date to be achieved by</b>
<b>Benzene</b>	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	5.00 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2010
<b>1,3-Butadiene</b>	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
<b>Carbon monoxide</b>	10.0 $\text{mg}/\text{m}^3$	Maximum daily running 8-hour mean	31.12.2003
<b>Lead</b>	0.5 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
	0.25 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2008
<b>Nitrogen dioxide</b>	200 $\mu\text{g}/\text{m}^3$ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2005
<b>Particles (PM<sub>10</sub>) (gravimetric)</b>	50 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 $\mu\text{g}/\text{m}^3$	Annual mean	31.12.2004
<b>Sulphur dioxide</b>	350 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 $\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times a year	15-minute mean	31.12.2005

## 1.4 Summary of Previous Review and Assessments

Round	Date	Procedure
Round 1	December 1998	First complete review and assessment as an initial Stage 1 review and assessment.
	October 2000	Completion of Stage 2 First review and assessment
	September 2001	Further review and assessment of identified 'hotspots'
	November 2001	Stage 3 draft report Proposed AQMA – Banwell Village
Round 2	February 2003	Updating and Screening Assessment Revocation of AQMA, June 2003, Banwell
	March 2004	Progress Report, no further action
	March 2005	Progress Report, no further action
	March 2006	Updating and Screening Assessment, no further action
	March 2007	Progress Report, no further action
	March 2008	Progress Report, no further action
Round 4	March 2009	Updating and Screening Assessment, no further action
	March 2010	Progress Report, no further action

### Outcome of last Progress Report 2010

This Progress Report indicated that all relevant locations/receptors close to major roads including the M5 and Airport had pollutant levels that met the air quality objectives.

## **2 New Monitoring Data**

### **2.1 Summary of Monitoring Undertaken**

#### **2.1.1 Automatic Monitoring Sites**

North Somerset Council does not carry out automatic monitoring.

#### **2.1.2 Non-automatic Monitoring**

Currently North Somerset operates 38 diffusion tubes for the sampling of nitrogen dioxide and at 25 of these locations monitoring also includes BTX diffusion tubes for the measurement of benzene concentrations.

Fig 2 denotes the distribution of monitoring sites across Weston-super-Mare located close to the most heavily trafficked roads in the town.

Fig 3 denotes monitoring sites along a busy commuter route in Banwell village with several road junctions.

The full site locations are listed in Table 2

**Table 2 Location of Nitrogen Dioxide and Benzene Diffusion Tubes**

Site No	Site Name	OS Grid Ref	Site type	Pollutants monitored	Dist. to kerb of nearest road (m)	Relevant Exposure Y/N (m)	Worst case location Y/N
1	Long Ashton Park & Ride (A370)	X 356169 Y 171227	B	NO <sub>2</sub> & B	15	NA	NA
2	Portbury (Priory Road)	X 349760 Y 175470	R	NO <sub>2</sub>	4	Y 7	N
3	Clevedon M5 Roundabout (Junc 20)	X 341623 Y 170589	K	NO <sub>2</sub> & B	2	N 85	Y
4	Ham Green, St Katherines School	X 353070 Y 175103	B	NO <sub>2</sub>	NA	NA	NA
5	Pill (Railway Line)	X 352379 Y 176021	B	NO <sub>2</sub>	NA	NA	NA
6	Portishead , High Street	X 346719 Y 176320	R	NO <sub>2</sub> & B	5	Y 8	Y
7	Portbury M5 (Junc 19)	X 349781 Y 175420	R	NO <sub>2</sub> & B	6	N 20	Y
8	Bristol Airport (A38)	X 351210 Y 165328	R	NO <sub>2</sub>	8	Y 14	N
9	Felton Primary School	X 351327 Y 165523	R	NO <sub>2</sub> & B	8	Y 9	Y
10	Downside Road (Homelea)	X 350928 Y165723	B	NO <sub>2</sub> & B	20	NA	NA
11	Downside Road (Top 8)	X 351092 Y165875	K	NO <sub>2</sub> & B	3	Y 4	Y
12	Nailsea, Link Road	X 347599 Y 170899	R	NO <sub>2</sub> & B	5	Y 6	Y
13	Yatton, High Street	X 343353 Y 165440	R	NO <sub>2</sub>	4	Y 6	Y
14	St Annes School (A370)	X 339748 Y 164207	R	NO <sub>2</sub>	4	Y 10	N
15	Abbots Leigh	X 354326 Y 173541	K	NO <sub>2</sub> & B	2	Y 3	Y
16	Backwell (A370)	X 348695 Y 168580	R	NO <sub>2</sub>	5	Y 8	Y
17	Churchill (A38)	X 344772 Y 159716	R	NO <sub>2</sub> & B	5	Y 6	N
18	Congresbury Cross (A370)	X 343 725 Y 163850	R	NO <sub>2</sub> & B	3	Y 4	Y
19	Congresbury , High Street	X 343825 Y 163709	R	NO <sub>2</sub>	3	Y 4	Y
20	Congresbury, Smallway	X 343733 Y 164122	R	NO <sub>2</sub>	3	Y 6	Y
	<b>WESTON - SUPER - MARE</b>						
21	High Street	X 331960 Y 161253	R	NO <sub>2</sub> & B	4	Y 5	Y
22	The Boulevard	X 332209 Y161693	R	NO <sub>2</sub>	4	Y 5	Y
23	M5 Roundabout (Junc 21)	X 337825 Y 162560	K	NO <sub>2</sub> & B	2	N 150	Y
24	Locking Road	X 334093 Y 161596	R	NO <sub>2</sub> & B	4	Y 8	N
25	Herulin Way	X 334495 Y 161263	K	NO <sub>2</sub> & B	2	Y 9	Y
26	Winterstoke Road	X 333297 Y 160497	R	NO <sub>2</sub> & B	4	Y 12	Y
27	Worle Parkway	X 336632 Y 162648	R	NO <sub>2</sub> & B	4	Y 13	N
28	Willow Close ( M5 Junc 21)	X 337610 Y162706	R	NO <sub>2</sub> & B	4	Y 150	N
29	The Drive	X 332919 Y161713	B	NO <sub>2</sub>	7	NA	NA
30	Bedford Road	X 332429 Y 159898	B	NO <sub>2</sub>	8	NA	NA
31	Somerset Avenue	X 336852 Y162114	K	NO <sub>2</sub> & B	2	N 18	Y

	<b>BANWELL VILLAGE</b>						
32	Pedestrian Crossing	X 339701 Y 169176	K	NO <sub>2</sub>	1	Y 16	Y
33	Primary School	X 339705 Y 159169	R	NO <sub>2</sub> & B	4	Y 8	Y
34	A Vicker (shop)	X 339774 Y 159169	K	NO <sub>2</sub> & B	2	Y 6	Y
35	Lp. 13 Junc Wovershill Road	X 339566 Y 159222	K	NO <sub>2</sub> & B	2	Y 5	Y
36	Lp. 3 East Street	X 339975 Y 159059	K	NO <sub>2</sub> & B	2	Y 6	Y
37	The Gables	X 339542 Y 159226	K	NO <sub>2</sub> & B	2	Y 5	Y
38	Bowling Green	X 339877 Y 159155	B	NO <sub>2</sub> & B	16	NA	NA

Site type

B – background

K – kerbside

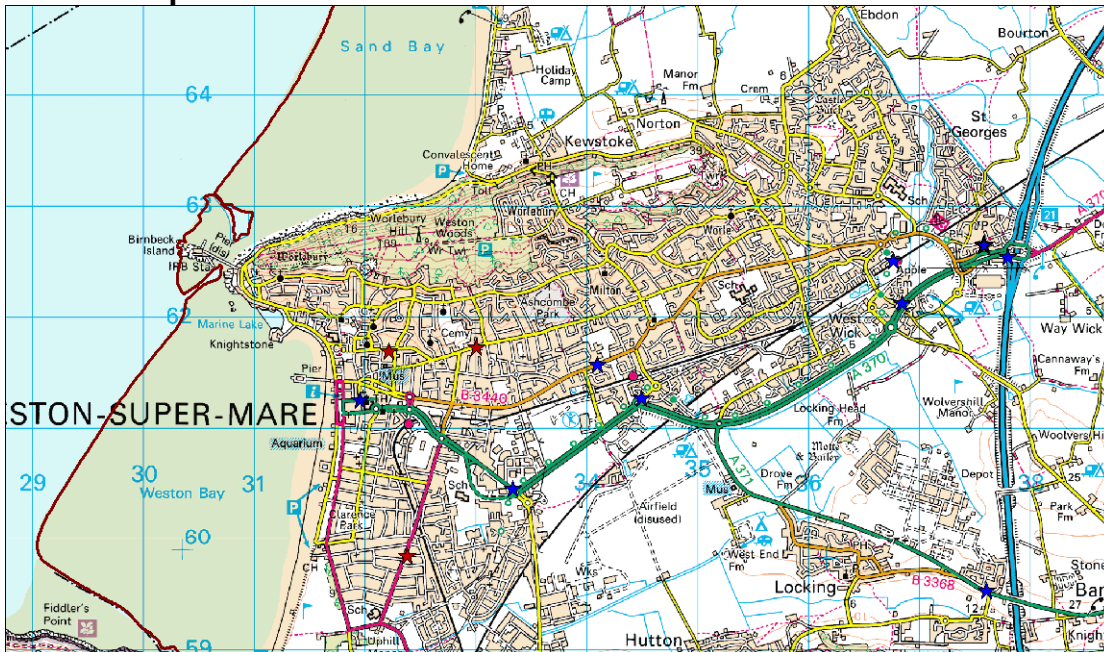
R – roadside

Relevant Exposure (Yes or No) with distance in metres to relevant exposure

NA – Not applicable

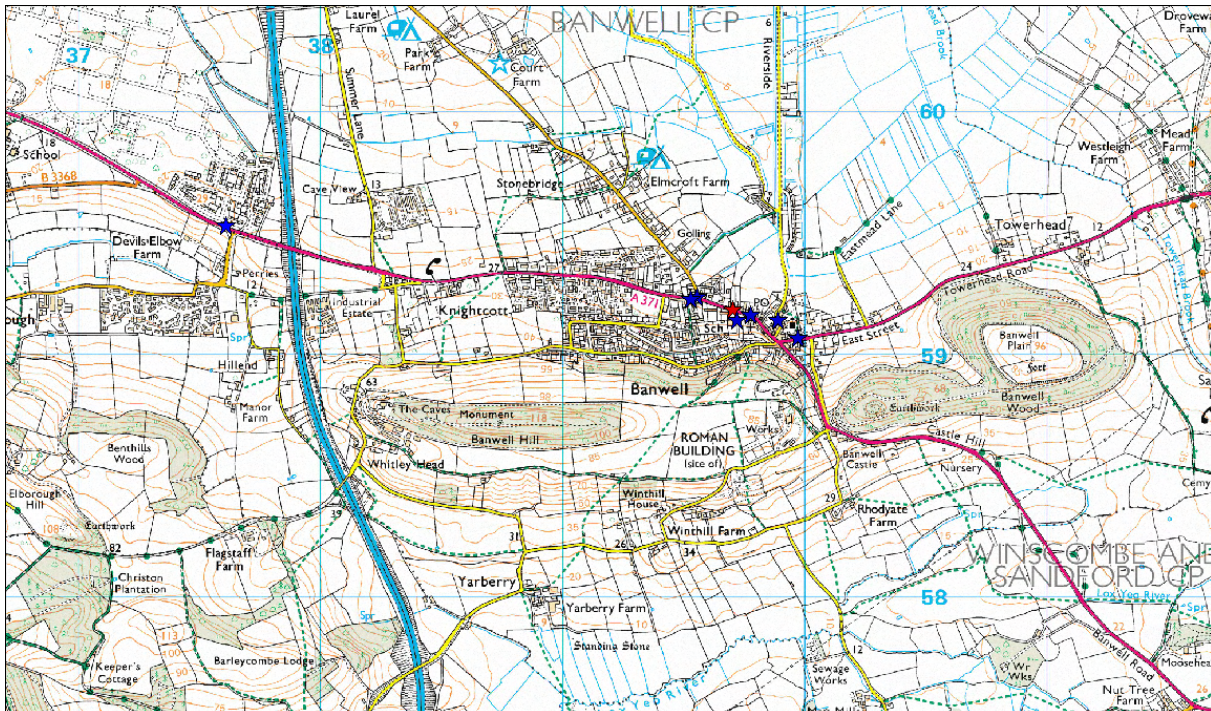
### Diffusion tube monitoring sites 2010

#### Weston-super-Mare



Blue star – NO<sub>2</sub> and BTX    Red star – NO<sub>2</sub>

#### Banwell



## 2.2 Comparison of Monitoring Results with Air Quality Objectives

### 2.2.1 Nitrogen Dioxide

<b>Relevant NO2 Objectives</b>
<b>Hourly Mean</b>
UK objective to be achieved by 31 December 2005 (< 18 times a year): 200 ug/m <sup>3</sup>
EU objective to be achieved by 31 December 2010 (< 18 times a year): 200 ug/m <sup>3</sup>
<b>Annual Mean</b>
UK Limit Value to be achieved by 31 December 2005: 40 ug/m <sup>3</sup>
EU Limit Value to be achieved by 31 December 2010: 40 ug/m <sup>3</sup>

The two objectives for the nitrogen dioxide, the annual mean and one hour mean concentrations should have been achieved by 2005. The annual mean is applied to any location where members of the public might be regularly exposed such as facades of buildings close to busy roads, in particular residential properties, schools, libraries and hospitals. The one hour mean objective should be applied to any outdoor location where members of the public could be exposed to the pollutant for one hour or more such as busy town centres.

Bias corrected values for 2010, Table 3, indicate all relevant receptors in North Somerset apart from junction 21 of the M5 motorway at Weston-super-Mare had annual pollutant levels below or well below the 40 ug/m<sup>3</sup> objective. In the case of junction 21, the concentration, corrected for tube bias, was 47.2 ug/m<sup>3</sup> however the nearest residential property in Willow Close is over 150 metre away negating the need for a further assessment. The other motorway junctions at Clevedon and Portbury again have elevated levels but do not challenge the objective. Pollutants levels across the remainder of Weston-super-Mare continue to be well within the objective and are broadly in line with 2009 results.

Monitoring in the village of Banwell as in previous years again showed elevated levels of nitrogen dioxide, with the highest concentrations measured at the 'constriction point' close to A Vickers (retail shop), a location often suffering from queuing traffic during rush hours. However, none of the monitoring sites exceeded the annual mean with Table 3, sites 32 – 38, reflecting the relatively constant traffic flows of between 10,000 – 11,000 vehicles as an annual average daily traffic count (vehicles a day, AADT) along the A371.

### 2.2.2 Annual Mean Nitrogen Dioxide 2008 – 2011

Comparative concentrations over a 3 year period in Table 4, indicate that the majority of locations appear to have changed very little during this time with pollutant levels well below the 40 ug/m<sup>3</sup>. However receptors along the A370 toward junction 21 of the motorway, the busiest route in North Somerset apart from the motorway, and further on toward Bristol continue to have values very close to 30 ug/m<sup>3</sup> this is especially so at Congresbury where all receptors show the reduction in air quality from the considerable congestion that can occur due to holiday traffic especially at weekends and when the motorway is closed and the A370 acts as an alternative route.

**Table 3 Nitrogen Dioxide, Diffusion Tube Results 2010  
Annual Mean Concentrations (ug/m<sup>3</sup>)**

Site No	Site Name	Data Capture, Monitoring period (%)	Data Capture, full calendar year (%)	Annual Mean Concentration 2010 (ug/m <sup>3</sup> ) adjusted for bias
1	Long Ashton Park & Ride (A370)	100	100	22.0
2	Portbury (Priory Road)	100	100	26.8
3	Clevedon M5 Roundabout (Junc 20)	100	83	34.1
4	Ham Green, St Katherines School	100	83	18.6
5	Pill (Railway Line)	100	100	23.2
6	Portishead, High Street	100	92	24.0
7	Portbury M5 (Junc 19)	100	92	28.7
8	Bristol Airport (A38)	100	92	16.6
9	Felton Primary School	100	67	25.2
10	Downside Road (Homelea)	100	100	15.3
11	Downside Road (Top 8)	100	92	25.9
12	Nailsea, Link Road	92	92	25.7
13	Yatton, High Street	100	92	23.3
14	St Annes School (A370)	100	100	30.7
15	Abbots Leigh	92	100	26.7
16	Backwell (A370)	100	100	20.9
17	Churchill (A38)	92	100	29.5
18	Congresbury Cross (A370)	92	100	29.4
19	Congresbury, High Street	100	92	30.7
20	Congresbury, Smallway	100	83	29.5
	<b>WESTON-SUPER-MARE</b>			
21	High Street	100	100	29.3
22	The Boulevard	92	100	29.3
23	M5 Roundabout (Junc 21)	100	100	<b>47.2</b>
24	Locking Road	100	100	26.2
25	Herulin Way	100	100	31.0
26	Winterstoke Road	100		30.5
27	Worle Parkway	100	100	30.5
28	Willow Close (M5 Junc 21)	100	100	26.0
29	The Drive	100	92	15.2
30	Bedford Road	100	100	19.5

31	Somerset Avenue	100	92	18.7
	<b>BANWELL VILLAGE</b>			
32	Pedestrian Crossing	100	92	28.9
33	Primary School	100	92	18.1
34	A Vicker (shop)	100	100	32.4
35	Lp 13 Junc Wolvershill Road	100	100	27.6
36	Lp 3 East Street	100	100	24.6
37	The Gables	100	100	29.0
38	Bowling Green	100	100	15.0

Bias adjustment 0.77

**Table 4 Trends in Nitrogen Dioxide, Diffusion Tube Results 2008-2010  
Annual Mean Concentrations (ug/m<sup>3</sup>), Adjusted for bias**

Site No	Site Name	2008	2009	2010
1	Long Ashton Park & Ride (A370)	22.6	23.1	22.0
2	Portbury (Priory Road)	27.9	27.1	26.8
3	Clevedon M5 Roundabout (Junc 20)	40.1	26.7	34.1
4	Ham Green, St Katherines School	20.2	18.7	18.6
5	Pill (Railway Line)	21.4	25.1	23.2
6	Portishead, High Street	22.9	26.6	24.0
7	Portbury M5 (Junc 19)	28.8	32.5	28.7
8	Bristol Airport (A38)	20.3	19.6	16.6
9	Felton Primary School	27.5	25.1	25.2
10	Downside Road (Homelea)	17.7	18.8	15.3
11	Downside Road (Top 8)	28.1	24.1	25.9
12	Nailsea, Link Road	28.2	29.1	25.7
13	Yatton, High Street	21.1	22.9	23.3
14	St Annes School (A370)	32.4	30.3	30.7
15	Abbots Leigh	36.0	29.6	26.7
16	Backwell (A370)	21.1	20.6	20.9
17	Churchill (A38)	25.9	27.9	29.5
18	Congresbury Cross (A370)	26.9	32.0	29.4
19	Congresbury, High Street	26.9	31.8	30.7
20	Congresbury, Smallway	20.0	24.5	29.5
	<b>WESTON-S-MARE</b>			
21	High Street	31.7	31.2	29.3
22	The Boulevard	31.6	29.1	29.3
23	M5 Roundabout (Junc 21)	56.2	52.7	47.2
24	Locking Road	32.7	30.1	26.2
25	Herulin Way	31.7	35.9	31.0
26	Winterstoke Road	27.7	27.0	30.5
27	Worle Parkway	26.8	26.1	30.5
28	Willow Close (M5 Junc 21)	26.5	26.5	26.0
29	The Drive	16.3	19.2	15.2
30	Bedford Road	19.2	21.6	19.5
31	Somerset Avenue	20.2	22.5	18.7
	<b>BANWELL VILLAGE</b>			
32	Pedestrian Crossing	28.7	27.9	28.9
33	Primary School	19.4	22.9	18.1
34	A Vicker (shop)	36.7	35.0	32.4
35	Lp 13 Junc Wolverhill Road	26.7	26.0	27.6
36	Lp 3 East Street	24.4	24.0	24.6
37	The Gables	26.9	29.5	29.0
38	Bowling Green	16.1	16.9	15.0

Bias adjustment for individual years  
2008 – 0.87, 2009 – 0.86, 2010 – 0.77

### 2.2.3 PM<sub>10</sub>

<p><b>Relevant PM<sub>10</sub> Objectives</b></p> <p><b>24 hour mean</b></p> <p>Provisional UK objective to be achieved by 31 December 2010 (&lt; 7 times a year); 50 ug/3</p> <p><b>Annual Mean</b></p> <p>UK Objective to be achieved by December 2004: 40 ug/m<sup>3</sup></p> <p>Provisional UK objective to be achieved by December 2010: 20 ug/m<sup>3</sup></p>
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North Somerset Council does not carry out any automatic monitoring for particulate. As with other pollutants the only real source of PM<sub>10</sub> is road traffic. The 2009 USA<sup>1</sup> and subsequent Progress Report indicated that the objectives are very unlikely to be exceeded at any relevant location. Primary PM<sub>10</sub> data contained on the UK Air Quality Archive ([www-air.defra.gov.uk/archive](http://www-air.defra.gov.uk/archive)) background maps and projections for future years indicate that values of 10 – 22 ug/m<sup>3</sup> will be found across the district, these concentrations reflecting the proximity of receptors to local roads. In 2010 three quarry sites were operating, this has since been reduced to two, in addition one other ready-mix site has closed permanently whilst two others remain 'moth-balled' until further notice due to the continuing low demand for their product. No relevant exposures are within 400 metres of either operating quarry.

Agricultural operations in this and adjoining districts have negligible input to fugitive emissions. The Bristol Port Company operations based at Portbury Dock on the south side of the river Avon have improved slightly but trading conditions continue to show levels below that of 2007.

No Biomass combustion facilities are currently operating.

As there are no other major PM<sub>10</sub> sources or known 'hotspots' in the district we can assume the relevant objectives are being met in North Somerset.

### 2.2.4 Sulphur Dioxide

<p><b>Relevant Sulphur Dioxide Objectives</b></p> <p><b>1-hour mean</b></p> <p>UK objective to be achieved by December 2004</p> <p>350 ug/m<sup>3</sup> not to be exceeded more than 24 times a year</p> <p><b>24-hour mean</b></p> <p>UK objective to be achieved by December 2004</p> <p>125 ug/m<sup>3</sup> not to be exceeded more than 3 times a year</p>
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Sulphur dioxide is monitored at two locations within North Somerset, Nailsea and Portishead using diffusion tubes with both being representative of relevant exposures. The mean values for 2010 were 2.2 and 3.8 respectively are very much in line with 2010 and well within the objective.

### 2.2.5 Benzene

<b>Relevant Benzene Objective</b>
UK running annual mean to be achieved by 31 December 2003: 16.2ug/m <sup>3</sup> UK running annual mean to be achieved by 31 December 2010: 5ug/m <sup>3</sup>

Benzene is monitored at 30 locations in the district using BTX diffusion tubes with almost all of this pollutant arising from traffic emissions. All of these sites are listed in Table 2 their designations being as either background, roadside or kerbside. Levels of pollutant in Table 5 across the district show there are no exceedences of the above objectives and all meet the 2010 standard.

**Table 5 Benzene, Diffusion Tube Results 2010  
Annual Mean Concentrations (ug/m<sup>3</sup>)**

Site No	Site Name	Data Capture for Monitoring period (%)	Data Capture for full calendar year(%)	Annual Mean Concentration 2010 (ug/m <sup>3</sup> )
1	Long Ashton Park & Ride (A370)	100	100	0.7
3	Clevedon M5 Roundabout (Junc 20)	100	83	0.8
4	Ham Green, St Katherines School	100	83	0.8
5	Pill (Railway Line)	100	100	0.7
6	Portishead, High Street	100	92	0.8
7	Portbury M5 (Junc 19)	100	92	0.8
9	Felton Primary School	92	67	0.7
10	Downside Road (Homelea)	100	100	0.8
11	Downside Road (Top 8)	100	92	0.9
12	Nailsea, Link Road	92	100	0.8
14	St Annes School (A370)	100	100	0.9
15	Abbots Leigh	100	100	0.8
16	Backwell (A370)	92	92	0.8
17	Churchill (A38)	92	100	0.8
18	Congresbury Cross (A370)	92	92	0.9
	<b>WESTON-SUPER-MARE</b>			
21	High Street	92	92	1.0
23	M5 Roundabout (Junc 21)	100	100	0.9
24	Locking Road	100	100	1.1
25	Herulin Way	100	100	0.9
26	Winterstoke Road	100		0.9
27	Worle Parkway	100	100	1.3
28	Willow Close (M5 Junc 21)	100	100	0.8
30	Bedford Road	100	100	0.8
31	Somerset Avenue	100	100	0.8
	<b>BANWELL VILLAGE</b>			
33	Primary School	92	92	1.2
34	A Vicker (shop)	100	92	1.2
35	Lp 13 Junc Wolverhill Rd	100	92	1.0
36	Lp 3 East Street	100	100	0.9
37	The Gables	100	100	0.9
38	Bowling Green	100	100	0.8

### **2.2.6 Other pollutants monitored**

Monitoring of ozone using diffusion tubes continued in 2010 at two locations regarded as 'worst case scenarios' namely on the Airport boundary on Downside Road and at Churchill on the A38 junction with the A368. Ozone levels over the year, although not directly comparable with the 8-hour mean gave an annual mean of 31.2 ug/m<sup>3</sup> on Downside Road and 24.6 at Churchill. These concentrations were very similar to those recorded in 2009 and well below the existing limits.

### **2.2.7 Summary of Compliance with AQS Objectives**

North Somerset District Council has examined the results from monitoring in the North Somerset District. Concentrations are all below the objectives, therefore there is no need to proceed to a Detailed Assessment.

### **3 New Local Developments**

The application for the expansion of Bristol Airport was considered by the Planning and Regulatory Committee on the 24 May 2010. Their decision was to approve the application subject to it being referred to the Secretary of State. This has taken place and the minister decided not to 'call in' the application providing a legal agreement between the Council and the Airport was completed. This agreement has now been completed. Entec UK Ltd, the Airport's main consultants developed the Environmental Statement (ES)<sup>2</sup> describing the air quality identified at and associated with the Airport and its immediate surroundings. It also assesses the potential effects of the proposed development and expansion of the Airport to handle 10 million passengers by 2016 during various construction phases and subsequent operations and also identifies appropriate mitigation and enhancement measures with the aim of minimising any reductions in air quality.

The air quality strategy concentrations apply where there is a relevant public exposure over the appropriate averaging period. This ES does not predict any exceedence of the AQ objectives at any receptor considered and, therefore the risk of significant effects on human health is considered to be extremely small.

Elsewhere, at the Ashlands, Portishead and Locking Camp, Weston-s-Mare, some limited house building has commenced. However the number of completions will still be very low compared to 2007-2008, thus the effect in local AQ will be negligible.

#### **3.1 Road Traffic Sources**

There are no newly identified congested streets, junctions, roads with significantly changed traffic flows or new bus and coach stations since the last Updating and Screening Assessment (USA).

#### **3.2 Other Transport Sources**

Since the last USA there are no new transport sources operating in North Somerset.

#### **3.3 Industrial Sources**

Since the last USA there are no new industrial sources. One of the two operating asphalt plants in the district has been removed. The total number of industrial installations has continued to decline due to economic circumstances.

#### **3.4 Commercial and Domestic Sources**

Currently there are no biomass plants operating in North Somerset. Similarly there are no areas of significant domestic solid-fuel burning either.

### **3.5 New Developments with Fugitive or Uncontrolled Sources**

Since the last USA there are no new locations in North Somerset with relevant exposures of fugitive or uncontrolled dust sources.

North Somerset District Council confirms that there are no new or newly identified local developments which may have an impact on air quality within the Local Authority area.

North Somerset confirms that all the following have been considered –

- **Road traffic sources**
- **Other transport sources**
- **Industrial sources**
- **Commercial and domestic sources**
- **New developments with fugitive or uncontrolled sources.**

## 4 Local / Regional Air Quality Strategy

As part of this wider area based strategy, a local air quality strategy (LAQS) for North Somerset Council has been developed, which together with the individual Local Air Quality Strategies for the other three unitary authorities of the former-Avon area, will help underpin this Areas-based Strategy. The development of this LAQS for North Somerset Council aims to ensure that the Council moves towards building a healthier community and improving the quality of life and the environment through actions and initiatives to improve air quality locally. This will require the integration of air quality considerations into the various planning functions of the individual local authorities, including land-use (development planning and control), transport, economic, environmental and sustainable planning.

The objectives of this LAQS are to thereby identify how North Somerset Council can assist in securing air quality improvements across the local authority, both within any AQMA's identified and external to them, through planning frameworks and wider activities within the local authority. The specific aims and objectives for North Somerset are as follows:

- To meet the national air quality objectives;
- To prevent the deterioration of air quality where it is already satisfactory;
- To ensure that North Somerset makes a contribution to the reduction of CO<sub>2</sub> emissions in line with national targets;
- To support policies in the Local Transport Plan and North Somerset Local Plan, and the emerging Community Plan
- To protect and enhance the environment so that plants, animals and people are free from the consequences of pollution.

Corporate commitment to the promotion and implementation of initiatives and policies that reduce air quality impacts, or at the very least do not add to them, is vital for overall improvements to be made. The LAQS for North Somerset Council will be most effective if adopted corporately across and within the Authority. North Somerset Council is thereby recommended to continue within its work programme on air quality management, and in so doing:

- Maintain, where appropriate, the air quality monitoring programme underway across the Authority;
- Maintain, and where appropriate improve upon, collaboration across Council departments within the Authority such that air quality is considered at the earliest stage possible in development, transport and other planning proposals and processes within the Authority;
- Consider emerging pollutants within the EU Daughter Directive, and which may require action on the part of local government;
- Consider any further reviews of the (National) Air Quality Strategy, with respect to implications for the air quality objectives, which may require action on the part of North Somerset Council; and
- Continue collaboration with air quality professionals within the other authorities of the former-Avon area to maximise opportunities for sharing resources, experience and information.

The Local Air Quality Strategy for North Somerset council will provide the context for ensuring air quality considerations are included in planning frameworks across the Council.

## **5 Planning Applications**

The planning application for Bristol Airport was approved, as reported in section 3

Proposed large scale development along the south of the Bristol City boundary with North Somerset has now been abandoned following the removal of the Regional Spatial Strategy (RSS) by the Secretary of State.

## 6 Air Quality Planning Policies

The North Somerset Development Plan provides the framework for local and regional planning and is made up of several statutory planning policy documents listed below. These documents are used to determine planning applications across North Somerset and any possible effects on local air quality.

- The Regional Planning Guidance (RPG10) outlines planning direction for the entire South West.
- The Joint Replacement Structure Plan applies to the former Avon area.
- The North Somerset Replacement Local Plan (RLP) is the most important local planning document as it sets out the local planning direction up until the end of 2011.  
It applies and implements all national and regional planning policies including specific air quality guidance for North Somerset.
- The developing Local Development Framework (LDF) will provide local planning guidance to replace the North Somerset Local Plan.
- Also included as part of the Development Plan are the North Somerset Waste Local Plan and the Minerals Working in the former Avon Local Plan.

Further information is available at:-

[www.n-somerset.gov.uk/planningpolicy/developmentplan](http://www.n-somerset.gov.uk/planningpolicy/developmentplan)

## 7 Local Transport Plans and Strategies

The Joint Local Transport Plan sets out how North Somerset will deliver improved transport services across the district. It is a joint plan with the former CUBA<sup>3</sup> authorities working collectively as the West of England Partnership.

The plan is in three parts:-

- The Strategy sets out the long term policy review and vision for the years 2011-2026
- The Delivery Plan will be prepared in 2011 and set out how North Somerset intend to achieve the proposals in the short term.
- Supplementary documents cover walking, parking, public transport, traffic management and freight, cycling and rural transport.

North Somerset currently has bids with central government for significant transport investment as below:-

- Ashton Vale to Temple Meads Rapid Transport route will link the Long Ashton Park and Ride to Bristol City Centre.
- The Weston package is a range of measures aimed at supporting sustainable developments in the town and the immediate area. In addition improvements to junction 21 of the M5 are also being sought urgently
- The South Bristol Link scheme was submitted in March 2010 but is currently being reviewed by the Department of Transport.

Confirmation or otherwise that North Somerset can continue to progress the above projects is expected shortly.

Options are still being considered for the former Portishead Rail Corridor with further developments expected in 2011.

## 8 Climate Change Strategies

North Somerset Council adopted a Climate Change Policy statement in June 2008. Further to this the council's Carbon Management Plan 2009-2014 and summary Carbon Management Strategy set out how we will reduce carbon emissions by 30% of those recorded in 2008/09 by 2014. Through our commitment, the council were awarded the Carbon Trust Standard in January 2010.

As part of our Local Area Agreement we have set a target to achieve a 12.5% reduction per capita carbon emissions from 2008-2011. Activity contributing to meeting this target includes: specifications for new development; home energy efficiency policies; sustainable travel initiatives and continued efforts to encourage waste minimisation.

The council is also working with the Energy Saving Trust to develop a sustainable energy action plan. This will be produced by June 2011. In addition the council signed up to the West of England Carbon Challenge.

In April 2010 the council were required to register as a participant for the Carbon Reduction Commitment Energy Efficiency Scheme (CRC EES). As an organisation spending more than £500,000 annually on energy, we have to purchase 'carbon credits' for the carbon emissions we generate.

Further information is available from North Somerset's Sustainability Co-ordinator, [jessica.harper@n-somerset.gov.uk](mailto:jessica.harper@n-somerset.gov.uk)

## **9 Implementation of Action Plans**

North Somerset have no AQMA's or Action Plans currently in place.

## **10 Conclusions and Proposed Actions**

### **10.1 Conclusions from New Monitoring Data**

- As in 2010 only one location in North Somerset had an annual mean concentration above the objective. This was for nitrogen dioxide on the roundabout of the M5 junction at Weston-s-Mare. However the nearest receptor to this location is in Willow Close over 150 meters away from the source. Both the other motorway junctions at 19 and 20 had elevated nitrogen dioxide levels but fell well short of the objective.
- Other busy roads, in particular the A38, A369 and A370 the main commuter routes had values well below the other pollutant objectives.
- In Banwell, a village that can suffer from standing traffic during commuter hours, again showed monitored levels for nitrogen dioxide and benzene below the objectives.
- As in 2010 Benzene concentrations were well within the objective at all locations.
- Similarly PM10, Sulphur dioxide and Ozone all below the objective.

### **10.2 Conclusions relating to New Local Developments**

All new developments in North Somerset during the last year relate to very limited growth in the retail sector with the remainder being in residential housing, again on a very small scale. Neither of these will compromise local air quality at any location.

### **10.3 Other Conclusions**

None

### **10.4 Proposed Actions**

- No Detailed Assessments are required.
- No AQMA's need to be considered.
- Re-appraisal of existing monitoring locations is planned.
- The next action will be the submission of an Updating and Screening Assessment in 2012.

## **11 References**

1. USA – North Somerset Council, Updating and Screening Assessment 2009
2. Entec UK Ltd, Bristol 2009, Bristol International Airport Ltd, Development and Enhancement of Bristol International Airport, Environmental Statement, Volume 3 Air Quality
3. CUBA – Council's that used to be Avon

## Appendices

### Appendix A: QA:QC Data, Nitrogen Dioxide

#### Diffusion Tube Bias Adjustment Factors – March 2011

Laboratory	Method	Year	No. of Studies	Factor
Bristol Scientific Services	20% TEA in Water	2010	4	0.77
Cardiff Scientific Services	50% TEA in Acetone	2010	4	0.85
Environ. Scientific Group	50% TEA in Acetone	2010	2	1.31
Gradko	20% TEA in Water	2010	9	0.95
Gradko	50% TEA in Acetone	2010	6	0.93
Harwell Scientific Services	50% TEA in Acetone	2010	3	0.78
South Yorkshire Labs	50% TEA in Acetone	2010	1	0.92
Staffordshire Scientific Services	20% TEA in Water	2010	2	0.91
West Yorkshire Analytical Services	50% TEA in Acetone	2010	11	0.92

The above factors were obtained from the National Diffusion Tube Bias Adjustment Factors Spreadsheet maintained by the National Physical Laboratory in conjunction with Air Quality Consultants Ltd. Diffusion tubes were supplied to North Somerset from Bristol Scientific Services. Tubes were prepared using 50ul of 20% triethanolamine in water with subsequent analysis following the procedures in the harmonised 'Practical Guidance' document.

#### Factor from Local Co-location Studies (if available)

No co-location study was undertaken in North Somerset.

#### Discussion of Choice of Factor to Use

The bias adjustment factor used from the above table corresponded to data supplied from Bristol Scientific Services (BSS). As there is no co-location data generated in North Somerset or is available close by and as the tubes were prepared by BSS, as was the case in 2009, it was appropriate to use the factor based on 4 completed field studies in 2010.

#### QA/QC of Diffusion tube monitoring

Bristol Scientific Services has continued to participate in the WASP proficiency scheme throughout 2010. The laboratories performance is based on the standardised result ( $\mu\text{g}$  of  $\text{NO}_2$ ) reported divided by the actual spiked amount from

April 2011

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four tubes every quarter. The results from these tests gave the laboratory a minimum performance equal to 51.62 which defines the laboratory as good.

[www.laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework](http://www.laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework)

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