

Worcestershire
Regulatory Services

Supporting and protecting you

2015 Air Quality Updating and
Screening Assessment for Wyre Forest
District Council

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

November 2015

Local Authority Officer	Land and Air Quality Team
Department	Worcestershire Regulatory Services
Address	Wyre Forest House Finepoint Way Kidderminster Worcestershire DY11 7WF
Telephone	
e-mail	wrsenquiries@worcsregservices.gov.uk
Report Reference number	WFDC USA 2015
Date	November 2015

Executive Summary

Wyre Forest District Council has undertaken this Updating and Screening Assessment (USA) to fulfil requirements of Local Air Quality Management regime as set out in Part IV of the Environment Act 1995. The report provides an update on any relevant changes to local air quality that have occurred in the Wyre Forest District since the 2014 Air Quality Progress Report.

Wyre Forest District Council has not identified a requirement to move to a Detailed Assessment for any pollutants. The Council currently only monitor nitrogen dioxide (NO₂) levels within the District.

A Detailed Assessment was carried out for nitrogen dioxide in Stourport-on-Severn in 2014. The Assessment conclude that there was no requirement to declare an Air Quality Management Area (AQMA) as relevant receptors were all located at the first floor level and the guideline value for nitrogen dioxide was not exceeded at this level.

The AQMAs in Horsefair/Coventry Street, Kidderminster and Welch Gate, Bewdley continue to show exceedences and must be retained.

In 2014 four diffusion tubes in Kidderminster and one diffusion tube in Bewdley were removed as they were deemed unrepresentative of relevant exposure or were recording concentrations well below the air quality objective. Five additional diffusion tubes were deployed, four in Kidderminster and one in Bewdley, to extend diffusion tube monitoring within the AQMA areas.

Monitoring data for 2014 indicated that there were exceedences of the annual mean air quality objective of 40µg/m³ for nitrogen dioxide at four locations outside of the existing AQMAs. However, when the distance from road to the nearest receptor calculation was used, all four were below the air quality objective.

Concentrations at long term locations across the District have been relatively stable over the 5 year period to 2014. The reduction in concentrations in 2012 could be as a result of the reliability of the 2012 monitoring data related to the bias-adjustment factor provided by the supplier of diffusion tubes at the time.

Wyre Forest District Council

The USA has not identified any significant changes in emissions sources within the Wyre Forest District Council area.

The Hoobrook Link Road in Kidderminster is under construction and is due to open in the autumn of 2016, providing a link between the A451 Stourport Road and the A442 Worcester Road. It is anticipated this will need to be considered in future rounds of review and assessment.

Table of contents

1	Introduction	8
1.1	Description of Local Authority Area	8
1.2	Purpose of Report.....	9
1.3	Air Quality Objectives	9
1.4	Summary of Previous Review and Assessments	11
2	New Monitoring Data	15
2.1	Summary of Monitoring Undertaken	15
2.1.1	Automatic Monitoring Sites	15
2.1.2	Non-Automatic Monitoring Sites	16
2.2	Comparison of Monitoring Results with Air Quality Objectives	22
2.2.1	Nitrogen Dioxide	22
2.2.2	PM ₁₀	37
2.2.3	Sulphur Dioxide.....	37
2.2.4	Benzene.....	37
2.2.5	Other pollutants monitored	37
2.2.6	Summary of Compliance with AQS Objectives	37
3	Road Traffic Sources	38
3.1	Narrow Congested Streets with Residential Properties Close to the Kerb	38
3.2	Busy Streets Where People May Spend 1-hour or More Close to Traffic.....	38
3.3	Roads with a High Flow of Buses and/or HGVs.	38
3.4	Junctions.....	38
3.5	New Roads Constructed or Proposed Since the Last Round of Review and Assessment.....	39
3.6	Roads with Significantly Changed Traffic Flows.....	39
3.7	Bus and Coach Stations	39
4	Other Transport Sources.....	40
4.1	Airports.....	40
4.2	Railways (Diesel and Steam Trains)	40
4.2.1	Stationary Trains.....	40
4.2.2	Moving Trains	40
4.3	Ports (Shipping)	40
5	Industrial Sources.....	41
5.1	Industrial Installations	41
5.1.1	New or Proposed Installations for which an Air Quality Assessment has been Carried Out.....	41
5.1.2	Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced	41

5.1.3	New or Significantly Changed Installations with No Previous Air Quality Assessment.....	41
5.2	Major Fuel (Petrol) Storage Depots.....	42
5.3	Petrol Stations.....	42
5.4	Poultry Farms.....	42
6	Commercial and Domestic Sources	43
6.1	Biomass Combustion – Individual Installations	43
6.2	Biomass Combustion – Combined Impacts.....	43
6.3	Domestic Solid-Fuel Burning	43
7	Fugitive or Uncontrolled Sources.....	44
8	Conclusions and Proposed Actions.....	45
8.1	Conclusions from New Monitoring Data	45
8.2	Conclusions from Assessment of Sources	45
8.3	Proposed Actions.....	45
9	References.....	47

List of Tables

Table 1.1	Air Quality Objectives included in Regulations for the purpose of LAQM in England
Table 1.2	Summary of Previous Review and Assessments
Table 2.1	Details of Decommissioned and Additional Diffusion Tubes
Table 2.2	Details of Kidderminster Non-Automatic Monitoring Sites
Table 2.3	Details of Stourport-on-Severn Non-Automatic Monitoring Sites
Table 2.4	Details of Bewdley Non-Automatic Monitoring Sites
Table 2.5	Results of Kidderminster NO ₂ Diffusion Tubes in 2014
Table 2.6	Results of Stourport-on-Severn NO ₂ Diffusion Tubes in 2014
Table 2.7	Results of Bewdley NO ₂ Diffusion Tubes in 2014
Table 2.8	Results of Kidderminster NO ₂ Diffusion Tubes from 2010 to 2014
Table 2.9	Results of Stourport-on-Severn NO ₂ Diffusion Tubes from 2010 to 2014
Table 2.10	Results of Bewdley NO ₂ Diffusion Tubes from 2010 to 2014
Table 2.11	Concentration of Nitrogen Dioxide at the nearest receptor

List of Figures

Figure 1.1	Map of Welch Gate AQMA Boundary
Figure 1.2	Map of Horsefair/Coventry Street AQMA Boundary
Figure 2.1	Map of Stourport-on-Severn Automatic Monitoring Site
Figure 2.2	Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites within the Horsefair/Coventry Street AQMA

- Figure 2.3 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites within Kidderminster outside of the Horsefair/Coventry Street AQMA
- Figure 2.4 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites within Stourport-on-Severn
- Figure 2.5 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites within Bewdley

Appendices

- Appendix A QA/QC Data
- Appendix B Maps of Non-Automatic Monitoring Sites
- Appendix C Estimation of concentrations at nearest receptor calculations
- Appendix D 2014 Full Diffusion Tube Results

1 Introduction

1.1 Description of Local Authority Area

Wyre Forest District Council lies within the county of Worcestershire. It is surrounded by Bromsgrove DC, Wychavon DC, Malvern Hills DC, South Staffordshire DC, and Shropshire Council areas. The District area covers 75 square miles and has a population of approximately 98,960. It includes the towns of Kidderminster, Stourport-on-Severn and Bewdley, and several smaller villages.

Kidderminster, population 55,426 (2013), is the largest of the three towns and is the main centre for retail, industry and housing, situated approximately 12.5km from the M5 and M42 motorways. The town developed rapidly in the 19th Century as a world leading centre for the production of carpet. This manufacturing industry has been in decline since the 1970s.

Stourport-on-Severn, population of 20,434 (2013), is a popular day trip destination for residents from Birmingham and the Black Country. It lies at the confluence of the River Severn and the Staffordshire and Worcestershire Canal approximately 5km south of Kidderminster.

Bewdley has a population of approximately 9,000 and is a Georgian riverside town which boasts a wealth of interesting architecture and is a popular visitor destination.

To the east, the larger more accessible villages include Blakedown and Cookley which are served by both facilities and reasonable public transport, Blakedown having a railway station. Villages in the west which include Rock and Far Forest are smaller, have fewer facilities and more limited public transport.

The District is traversed by several A-roads including the A449, A451, A456 and A442. It is also served by national rail services from Kidderminster railway station, providing services to London and Birmingham.

1.2 Purpose of Report

This report fulfils the requirements of the Local Air Quality Management process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents. The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

The objective of this Updating and Screening Assessment is to identify any matters that have changed which may lead to risk of an air quality objective being exceeded. A checklist approach and screening tools are used to identify significant new sources or changes and whether there is a need for a Detailed Assessment. The USA report should provide an update of any outstanding information requested previously in Review and Assessment reports.

1.3 Air Quality Objectives

The air quality objectives applicable to LAQM **in England** are set out in the Air Quality (England) Regulations 2000 (SI 928), The Air Quality (England) (Amendment) Regulations 2002 (SI 3043), and are shown in Table 1.1. This table shows the objectives in units of microgrammes per cubic metre $\mu\text{g}/\text{m}^3$ (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedences in each year that are permitted (where applicable).

Table 1.1 Air Quality Objectives included in Regulations for the purpose of LAQM in England

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Benzene	16.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
	5.00 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu\text{g}/\text{m}^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	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
Nitrogen dioxide	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
Particles (PM_{10}) (gravimetric)	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
Sulphur dioxide	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

During the first Round of Review and Assessment, Wyre Forest District Council concluded that nitrogen dioxide concentrations in two areas of the district were likely to exceed the annual mean objective. The Council consequently declared two Air Quality Management Areas (AQMA's) in Welch Gate, Bewdley (see Figure 1.1) and at the Horsefair (Blackwell Street), Kidderminster and prepared an Air Quality Action Plan (AQAP) which aims to improve air quality within AQMAs in partnership with Worcestershire County Council. The AQAP was integrated into the 2nd Local Transport Plan (LTP2). During the second Round of Review and Assessment, no additional areas or sources were identified as requiring Detailed Assessment, and no additional AQMAs were declared.

The 2006 Updating and Screening Assessment identified the need for a Detailed Assessment of nitrogen dioxide concentrations Coventry Street/ Radford Avenue (Kidderminster). Consequently, the Horsefair AQMA was extended to include these additional locations (see Figure 1.2).

The 2008 Progress Report concluded that nitrogen dioxide concentrations were not improving, traffic management commitments were not being delivered by the County Council as set out in LTP2, and that a Detailed Assessment of nitrogen dioxide was required for the High Street, Stourport-on-Severn. Funding from Defra allowed the purchase of an automatic analyser to inform the Stourport Detailed Assessment, which began operating in October 2010.

The 2011 Progress Report concluded that Detailed Assessments would not be required at any additional locations. The outstanding Stourport-on-Severn Detailed Assessment would be delivered once communication issues with the automatic analyser were resolved.

The 2015 Stourport-on-Severn Detailed Assessment concluded that that there was no requirement to declare an AQMA around the junction of Bridge Street/York Street/New Street/High Street in Stourport-on-Severn.

Table 1.2 Summary of previous Review and Assessments

Date	Report	Outcome
December 1999	Stage 1 Air Quality Review & Assessment	Recommended further assessment of : Benzene, Lead, Nitrogen Dioxide, PM(10), Sulphur Dioxide, 1,3-Butadiene
July 2000	Stage 2 Air Quality Review & Assessment	Recommended further assessment of : Nitrogen Dioxide, PM(10)
May 2002	Stage 3 Air Quality Review & Assessment	Recommended AQMA considered at: Horsefair and Stourport Road Kidderminster, Welch Gate, Bewdley, High Street Stourport. Recommended expansion of NO ₂ diffusion tube network
January 2003	AQMA Declaration	Horsefair, Kidderminster and Welch Gate, Bewdley declared as AQMA for Nitrogen Dioxide.
July 2003	USA	Detailed assessment recommended at Horsefair & Welch Gate.
March 2004	Stage 4 Air Quality Review & Assessment	Confirmed that the 2 AQMA declarations undertaken in 2003 were valid. Recommended a traffic study to be conducted in Kidderminster.
October 2004	Air Quality Action Plan	Outlines Councils plan to address air quality within declared AQMA's
April 2005	Air Quality Strategy	Sets out WFDC Air Quality Strategy for the future
May 2005	Progress Report	Confirms progress with air quality work
June 2006	USA	Recommended detailed assessment in Coventry Street/Radford Avenue for NO ₂ and for SO ₂ assessment for Severn Valley Railway
November 2007	Detailed Assessment	NO ₂ Radford Avenue/Coventry Street.
April 2008	Progress Report	Confirms issues with progressing improvements within AQMA due to County Council Highways Delays. Confirms late arrival of SO ₂ detailed assessments due to 2007 Flood Damage.
January 2009	Detailed Assessment	SO ₂ at Severn Valley Railway confirmed no exceedence
July 2009	AQMA Declared	Radford Avenue/Coventry Street combined with the existing Horsefair declaration
April 2009	USA	Recommended detailed assessment of NO ₂ at Stourport-on-Severn.
June 2010	Combined Progress Report and Action Plan Progress report	Confirms outstanding Stourport-on-Severn detailed assessment required. Confirms new details submitted by County Council Highways department intended to improve air quality within existing AQMA's.

Wyre Forest District Council

Date	Report	Outcome
July 2011	Combined Progress Report and Action Plan Progress report	No further detailed assessments required. Stourport-on-Severn detailed assessment to be completed once issues resolved.
May 2012	Detailed Assessment	Annualised data and insufficient information at Stourport on Severn to accurately define the boundaries of an AQMA. Extension of the monitoring network and full year's data capture from analyser to enable more accurate detailed assessment required. On-going.
July 2012	USA	No further areas identified requiring a detailed assessment.
November 2013	Progress Report	Existing AQMAs to be retained. Updated Detailed Assessment required at Stourport-on-Severn.
December 2014	Progress Report	Existing AQMAs to be retained. Updated Detailed Assessment required at Stourport-on-Severn.
March 2015	Detailed Assessment	No requirement to declare an AQMA at Stourport-on-Severn

Figure 1.1 Map of Welch Gate AQMA Boundary

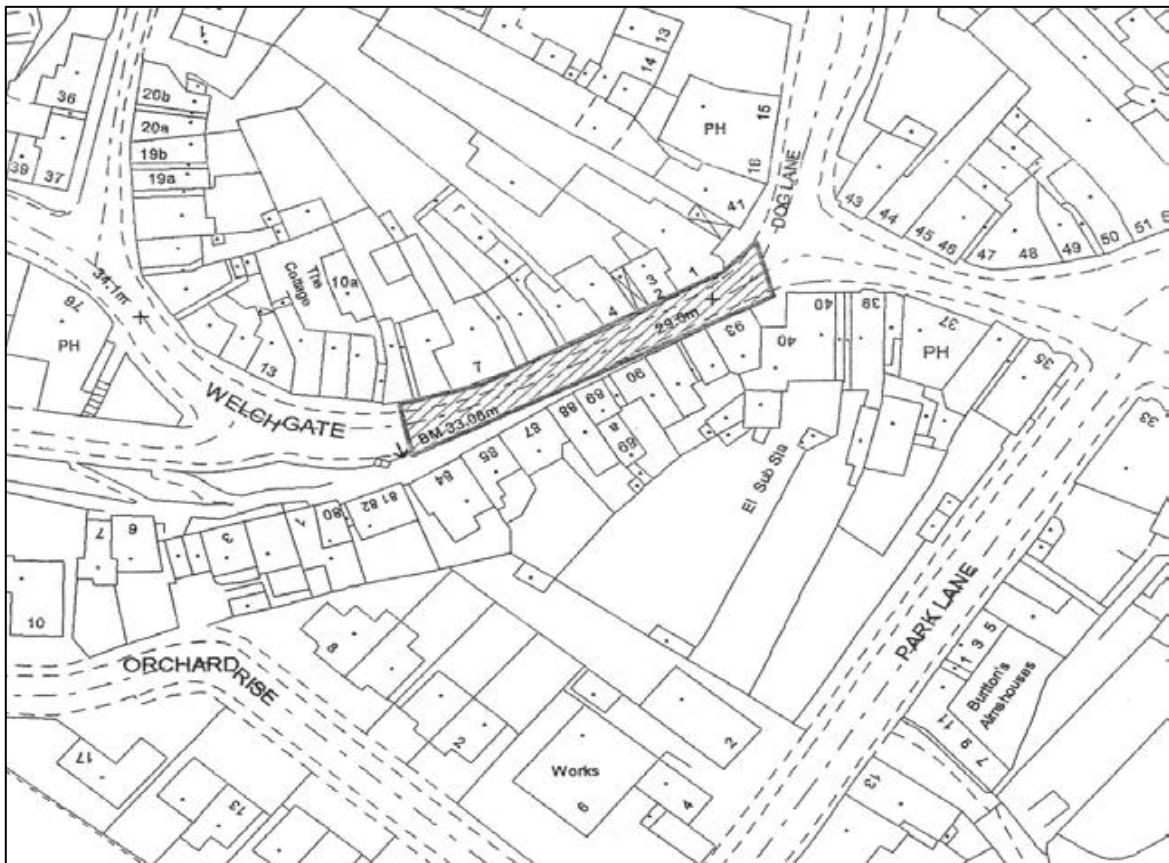
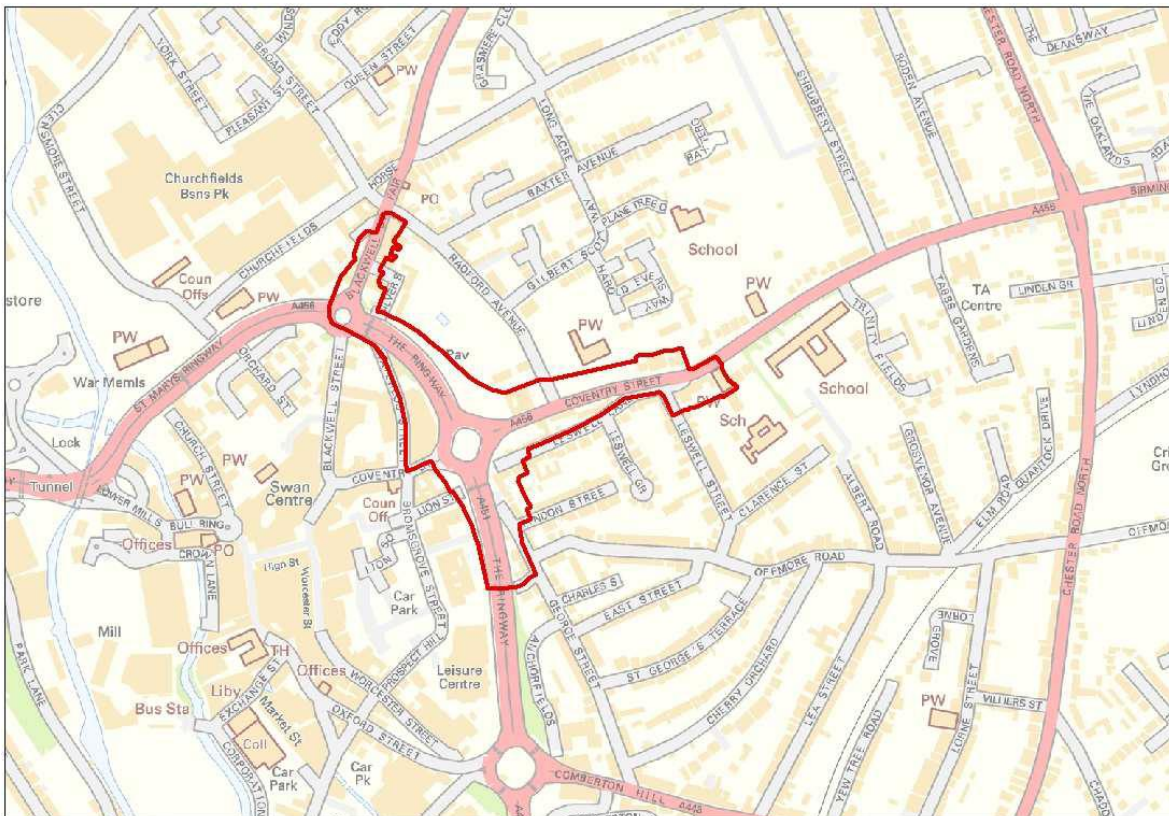


Figure 1.2 Map of Horsefair/Coventry Street AQMA Boundary



2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

Wyre Forest District Council installed an automatic monitor at Stourport-on-Severn in November 2010 in order to inform a Detailed Assessment. During the twelve month monitoring period 1st January 2013 to 31st December 2013, Bureau Veritas collected data from the automatic monitor on behalf of Worcestershire Regulatory Services (WRS) with calibration checks undertaken by WRS every 2 weeks. The automatic monitor was shut down in May 2014. The location of the automatic monitor is shown in Figure 2.1.

The Detailed Assessment was carried out for nitrogen dioxide around the junction of Bridge Street/York Street/New Street/High Street in Stourport-on-Severn. This area was identified as being at risk of exceeding the air quality objective for nitrogen dioxide in previous Wyre Forest District Council's Progress Reports and USAs.

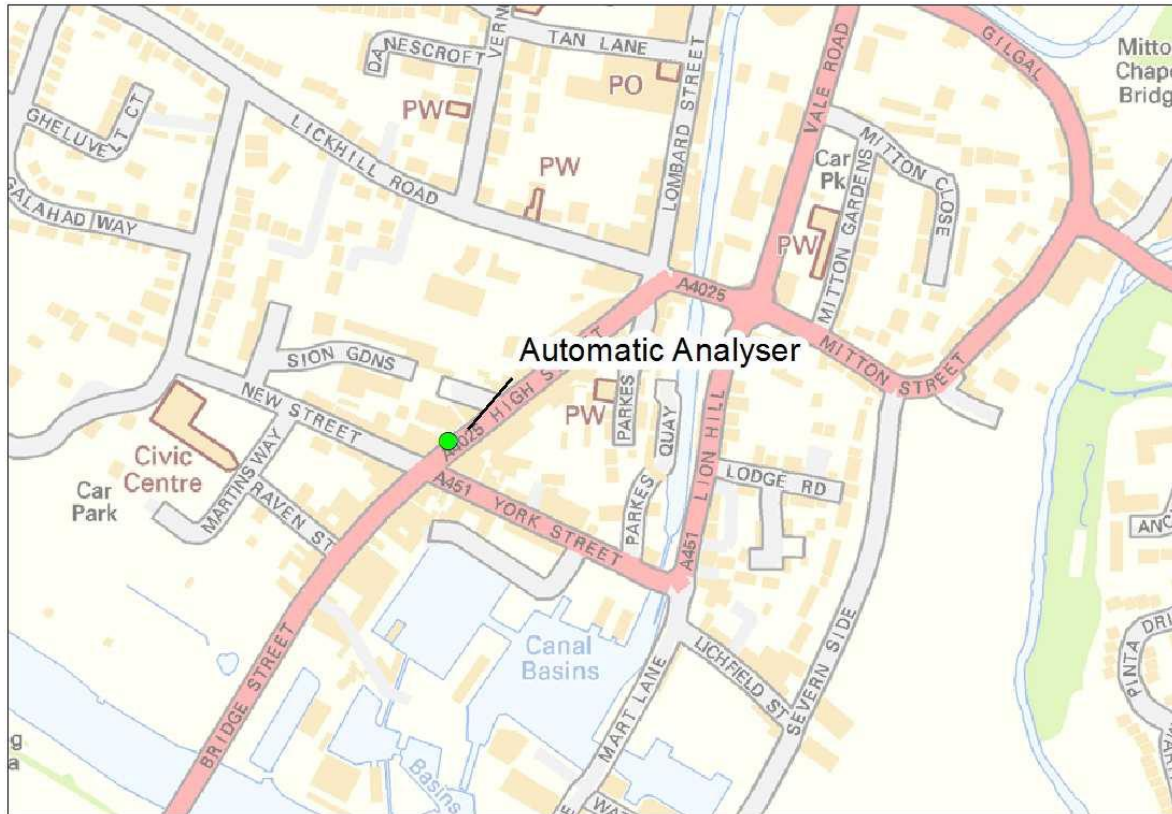
The Detailed Assessment was carried out using a combination of monitoring data and modeled concentrations. Concentrations of nitrogen dioxide were modeled for 2013 using the ADMS-Roads dispersion model. The model was verified against measurements made at the nitrogen dioxide diffusion tube monitoring locations on High Street, Bridge Street, York Street and New Street and at the automatic monitoring site located on High Street.

The assessment identified that the annual mean nitrogen dioxide objective was being exceeded at a number of relevant locations around the junction of Bridge Street/York Street/New Street/High Street at ground floor level however there were no exceedences at first floor level.

There were no exceedences of $60\mu\text{g}/\text{m}^3$ as an annual mean nitrogen dioxide concentration identified at locations of relevant exposure, and thus exceedences of the 1-hour objective were unlikely.

The Detailed Assessment concluded that there was no requirement to declare an AQMA in the assessment area as relevant receptors were all located at first floor level and the guideline value for nitrogen dioxide was not exceeded at this level.

Figure 2.1 Stourport-on-Severn Automatic Monitoring Site



2.1.2 Non-Automatic Monitoring Sites

During 2014, Wyre Forest District Council monitored annual mean nitrogen dioxide concentrations using passive diffusion tubes at forty six locations across the area. In a rationalisation exercise, four diffusion tubes in Kidderminster and one diffusion tube in Bewdley were decommissioned as they were deemed unrepresentative of relevant exposure or were recording concentrations well below the air quality objective. Five additional diffusion tubes were deployed, four in Kidderminster and one in Bewdley, to extend the monitoring sites within the AQMA areas, see Table 2.1.

Table 2.1 Details of Decommissioned and Additional Diffusion Tubes

Decommissioned Diffusion Tubes				
Site ID	Site Address	Site Type	X Coordinates	Y Coordinates
(F)CH	Party Boutique, Comberton Hill, Kidderminster	Roadside (Façade)	383702	276381
NH	Northumberland House, Stourport Road, Kidderminster	Roadside (Façade)	382441	275371
SR94	94 Stourport Road, Kidderminster	Roadside (Façade)	382401	275261
SE(K)	Serpentine Court, Kidderminster	Urban Background	382078	275631
LSMART(B)	Martins Newsagents, Load Street, Bewdley	Roadside	378656	275353
Additional Diffusion Tubes				
Site ID	Site Address	Site Type	X Coordinates	Y Coordinates
K1	50 Radford Avenue, Kidderminster	Roadside (Façade)	383391	277086
K2	34 Leswell Lane, Kidderminster	Roadside (Façade)	383657	276890
K3	53 Coventry Street, Kidderminster	Roadside (Façade)	383726	276909
K4	1 Silver Street, Kidderminster	Roadside (Façade)	383337	276998
B1	Adam & Eve, Load Street, Bewdley	Roadside (Façade)	378513	275317

The diffusion tubes for 2014 were prepared and analysed by Somerset Scientific Services using the 20% TEA in water method. Tubes are changed on a monthly basis. Further details of the diffusion tube QA/QC are presented in Appendix A. Maps of the diffusion tube monitoring locations are presented in Appendix B.

Table 2.2 Details of Kidderminster Non-Automatic Monitoring Sites

ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
23HF	23 Horsefair	Roadside	383350	277193	NO ₂	Y	N	Y(12m)	2.5m	N
HF(K)	Peacock PH, Horsefair	Roadside (façade)	383311	277087	NO ₂	Y	N	Y(<1m)	2.5m	Y
HF(K)(F)	Hudson Florists on Horsefair	Roadside (façade)	383304	277071	NO ₂	Y	N	Y (<1m)	2.5m	Y
SBR121	121 Stourbridge Road	Roadside (façade)	383905	277857	NO ₂	N	N	Y (<1m)	2.5m	Y
CSLOC	Land Oak Court, top of Coventry Street	Roadside (façade)	384205	277121	NO ₂	N	N	Y (<1m)	6.5m	Y
K3	53 Coventry Street	Roadside (façade)	383726	276909	NO ₂	Y	N	Y (<1m)	6m	Y
K2	34 Leswell Lane (10m to Coventry Street)	Roadside (façade)	383657	276890	NO ₂	Y	N	Y (<1m)	3m	Y
(F)69COV	69 Coventry Street	Roadside (façade)	383552	276870	NO ₂	Y	N	Y (<1m)	5.5m	Y
K1	50 Radford Avenue	Roadside (façade)	383391	277086	NO ₂	Y	N	Y (<1m)	2m	Y
K4	1 Silver Street	Roadside (façade)	383337	276998	NO ₂	Y	N	Y (<1m)	14m	Y
CAS	Casper Polish Shop, Comberton Hill	Roadside (façade)	383628	276378	NO ₂	N	N	Y (<1m)	9m	Y
(F)SGC	6/7 St George's Court	Roadside (façade)	383475	276760	NO ₂	N	N	Y (<1m)	10m	Y

Wyre Forest District Council

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
TCH	Top Comberton Hill on corner with the Firs	Roadside	384086	276228	NO ₂	N	N	Y (5m)	2m	N
(F)COMR(K)	Holmwood, Comberton Road	Roadside	384214	276242	NO ₂	N	N	Y (13.5m)	3.5m	N
SP(K)	Jay Park Crescent, Spennells	Urban Background	384486	274596	NO ₂	N	N	Y (11m)	2m	N
SR(K)	431 Stourport Road	Roadside	382429	275315	NO ₂	N	N	Y (9m)	3m	N
(F)447S	447 Stourport Road	Roadside (façade)	382447	275506	NO ₂	N	N	Y (<1m)	11m	Y
SPR2	Flat 2, Park House, Sutton Park Road	Roadside (façade)	382496	275417	NO ₂	N	N	Y (<1m)	7m	Y
SRLEC	Lucy Edwards Court, Sutton Road	Roadside (façade)	382183	276388	NO ₂	N	N	Y (<1m)	9.5m	Y
BH166	166 Bewdley Hill	Roadside	382135	276409	NO ₂	N	N	Y (2m)	5m	N
(F)BR(K)	52 Bewdley Road	Roadside (façade)	382437	276541	NO ₂	N	N	Y (<1m)	7m	Y
HAB203	203 Habberley Lane	Roadside (façade)	381713	278069	NO ₂	N	N	Y (<1m)	3m	Y
JAK	Jacksons PH (on road sign post)	Roadside	382350	277100	NO ₂	N	N	Y (5m)	6m	N
EXS	Barclays Bank, Exchange Street	Roadside (façade)	383191	276540	NO ₂	N	N	Y (<1m)	4m	Y

Table 2.3 Details of Stourport-on-Severn Non-Automatic Monitoring Sites

STOURPORT-ON-SEVERN

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
MR71(S)	71 Minster Road	Roadside (façade)	381405	272258	NO ₂	N	N	Y (< 1m)	7.5m	Y
(F)GIL	10 The Gilgal	Roadside (façade)	381483	271534	NO ₂	N	N	Y (< 1m)	2m	Y
(F)MS	7 Mitton Street	Roadside (façade)	381333	271360	NO ₂	N	N	Y (< 1m)	8m	Y
HS(S)	High Street, corner of York Street lamppost	Roadside (façade)	380974	271268	NO ₂	N	N	Y (< 1m)	4m	Y
KSW(S)	Kodak Spectacles Warehouse, High Street	Roadside (façade)	381072	271347	NO ₂	N	N	Y (< 1m)	4m	Y
HS15(S)	15 High Street	Roadside (façade)	381114	271380	NO ₂	N	N	Y (< 1m)	2.3m	Y
HS4(S)	4 High Street	Roadside (façade)	381169	271420	NO ₂	N	N	Y (< 1m)	4.4m	Y
BH(S)	Baldwin House, Lombard Street	Roadside (façade)	381165	271468	NO ₂	N	N	Y (< 1m)	2m	Y
A1/A2/A3	Analyser outside Bentleys, 36 High Street	Roadside (façade)	380994	271302	NO ₂	N	N	Y (< 1m)	3.6m	Y
(F)19YS(S)	19 York Street, Stourport	Roadside (façade)	380931	271307	NO ₂	N	N	Y (< 1m)	1.66m	Y
(F)25YS(S)	Stourport Nails Centre, 22 York Street	Roadside (façade)	380933	271247	NO ₂	N	N	Y (< 1m)	1.46m	Y
(F)14NS(S)	14 New Street	Roadside (façade)	383350	277193	NO ₂	N	N	Y (< 1m)	2.00m	Y
(F)LSNS(S)	Lumsdons Solicitors, New Street	Roadside (façade)	383311	277087	NO ₂	N	N	Y (< 1m)	1.47m	Y
(F)FBS(S)	Flamingos, Bridge Street	Roadside (façade)	383304	277071	NO ₂	N	N	Y (< 1m)	1.86m	Y

Table 2.4 Details of Bewdley Non-Automatic Monitoring Sites

BEWDELY

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Is monitoring collocated with a Continuous Analyser (Y/N)	Relevant Exposure? (Y/N with distance (m) to relevant exposure)	Distance to kerb of nearest road (N/A if not applicable)	Does this location represent worst-case exposure?
KID22(B)	22 Kidderminster Road	Roadside (façade)	373996	275464	NO ₂	N	N	Y (< 1m)	3m	Y
WG(B)	88 Welch Gate	Roadside (façade)	378465	275292	NO ₂	Y	N	Y (< 1m)	1m	Y
(F)WG42	42 Welch Gate	Roadside (façade)	378383	275328	NO ₂	Y	N	Y (< 1m)	1m	Y
HS(B)	Abacus Hairdressers, High Street	Roadside (façade)	378587	275279	NO ₂	N	N	Y (< 1m)	2m	Y
LS(B)	The Melting Pot, Load Street	Roadside (façade)	378590	275302	NO ₂	N	N	Y (< 1m)	3m	Y
B1	Adam & Eves, Load Street	Roadside (façade)	378513	275317	NO ₂	N	N	Y (< 1m)	1m	Y

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

As discussed above the automatic monitor was shut down in May 2014 on completion of the Stourport-on-Severn Detailed Assessment.

Diffusion Tube Monitoring Data

Measured concentrations at the 46 diffusion tube monitoring sites in 2014 and a summary of concentrations for the last five years since 2010 at all sites where monitoring data is available are presented in the tables and graphs below.

The results of these tubes in 2014 have been adjusted for bias using a national correction factor derived from Defra of 0.89.

The figures in bold below show those which exceed the air quality objective of $40\mu\text{g}/\text{m}^3$. Those in bold and underlined indicate a potential exceedence of the NO_2 hourly mean Air Quality Objective of $> 60\mu\text{g}/\text{m}^3$.

Table 2.5 Results of Kidderminster NO₂ Diffusion Tubes in 2014

Kidderminster

Site ID	Location	Site Type	In AQMA?	Triplicate or Co-located?	Data Capture (Months)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.89)
								2014 (µg/m ³)
23HF	23 Horsefair	Roadside	Y	N	12	N	N	36.61
HF(K)	Peacock PH, Horsefair	Roadside (façade)	Y	N	12	N	Y	61.00
HF(K)(F)	Hudson Florists on Horsefair	Roadside (façade)	Y	N	9	N	Y	60.30
SBR121	121 Stourbridge Road	Roadside (façade)	N	N	10	N	N	31.51
CSLOC	Land Oak Court, top of Coventry Street	Roadside (façade)	N	N	12	N	N	35.54
K3	53 Coventry Street	Roadside (façade)	Y	N	12	N	N	39.34
K2	34 Leswell Lane (10m to Coventry Street)	Roadside (façade)	Y	N	12	N	N	26.56
(F)69COV	69 Coventry Street	Roadside (façade)	Y	N	12	N	Y	50.40
K1	50 Radford Avenue	Roadside (façade)	Y	N	12	N	N	26.76
K4	1 Silver Street	Roadside (façade)	Y	N	12	N	N	28.11
CAS	Casper Polish Shop, Comberton Hill	Roadside (façade)	N	N	9	N	N	31.25
(F)SGC	6/7 St George's Court	Roadside (façade)	N	N	12	N	N	33.93
TCH	Top Comberton Hill on corner with the Firs	Roadside	N	N	10	N	Y	39.90

Wyre Forest District Council

Site ID	Location	Site Type	In AQMA?	Triplicate or Co-located?	Data Capture (Months)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.89)
								2014 ($\mu\text{g}/\text{m}^3$)
(F)COMR(K)	Holmwood, Comberton Road	Roadside	N	N	11	N	N	38.19
SP(K)	Jay Park Crescent, Spennells	Urban Background	N	N	12	N	N	15.33
SR(K)	431 Stourport Road	Roadside	N	N	12	N	Y	36.90
(F)447S	447 Stourport Road	Roadside (façade)	N	N	10	N	N	26.86
SPR2	Flat 2, Park House, Sutton Park Road	Roadside (façade)	N	N	12	N	N	39.91
SRLEC	Lucy Edwards Court, Sutton Road	Roadside (façade)	N	N	10	N	N	37.72
BH166	166 Bewdley Hill	Roadside	N	N	9	N	N	35.51
(F)BR(K)	52 Bewdley Road	Roadside (façade)	N	N	12	N	N	34.15
HAB203	203 Habberley Lane	Roadside (façade)	N	N	12	N	N	35.13
JAK	Jacksons PH (on road sign post)	Roadside	N	N	12	N	N	36.05
EXS	Barclays Bank, Exchange Street	Roadside (façade)	N	N	10	N	N	36.11

In **bold**, exceedence of the NO₂ annual mean AQS objective of 40 $\mu\text{g}/\text{m}^3$

Underlined, annual mean > 60 $\mu\text{g}/\text{m}^3$, indicating a potential exceedence of the NO₂ hourly mean AQS objective

Table 2.6 Results of Stourport-on-Severn NO₂ Diffusion Tubes in 2014

Stourport-on-Severn

Site ID	Location	Site Type	In AQMA?	Triplicate or Co-located?	Data Capture (Months)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.89)
								2014 (µg/m ³)
MR71(S)	71 Minster Road	Roadside (façade)	N	N	12	N	N	29.29
(F)GIL	10 The Gilgal	Roadside (façade)	N	N	12	N	N	28.25
(F)MS	7 Mitton Street	Roadside (façade)	N	N	12	N	N	27.03
HS(S)	High Street, corner of York Street lamppost	Roadside (façade)	N	N	9	N	N	37.65
KSW(S)	Kodak Spectacles Warehouse, High Street	Roadside (façade)	N	N	12	N	N	33.92
HS15(S)	15 High Street	Roadside (façade)	N	N	12	N	N	32.99
HS4(S)	4 High Street	Roadside (façade)	N	N	12	N	N	33.65
BH(S)	Baldwin House, Lombard Street	Roadside (façade)	N	N	12	N	N	28.90
A1/A2/A3	Analyser outside Bentleys, 36 High Street	Roadside (façade)	N	Triplicate	12	N	N	39.73 (Av)
(F)19YS(S)	19 York Street, Stourport	Roadside (façade)	N	N	12	N	N	27.30
(F)25YS(S)	Stourport Nails Centre, 22 York Street	Roadside (façade)	N	N	12	N	Y	37.9
(F)14NS(S)	14 New Street	Roadside (façade)	N	N	11	N	N	22.65
(F)LSNS(S)	Lumsdons Solicitors, New Street	Roadside (façade)	N	N	9	N	N	31.00
(F)FBS(S)	Flamingos, Bridge Street	Roadside (façade)	N	N	10	N	Y	37.00

In **bold**, exceedence of the NO₂ annual mean AQS objective of 40µg/m³

Table 2.7 Results of Bewdley NO₂ Diffusion Tubes in 2014

Bewdley

Site ID	Location	Site Type	In AQMA?	Triplicate or Co-located?	Data Capture (Months)	Data with less than 9 months has been annualised (Y/N)	Confirm if data has been distance corrected (Y/N)	Annual mean concentration (Bias Adjustment factor = 0.89)
								2014 ($\mu\text{g}/\text{m}^3$)
KID22(B)	22 Kidderminster Road	Roadside (façade)	N	N	12	N	N	35.90
WG(B)	88 Welch Gate	Roadside (façade)	Y	N	12	N	Y	50.90
(F)WG42	42 Welch Gate	Roadside (façade)	Y	N	12	N	N	31.00
HS(B)	Abacus Hairdressers, High Street	Roadside (façade)	N	N	12	N	N	28.87
LS(B)	The Melting Pot, Load Street	Roadside (façade)	N	N	12	N	N	38.28
B1	Adam & Eves, Load Street	Roadside (façade)	N	N	12	N	N	37.83

In **bold**, exceedence of the NO₂ annual mean AQS objective of 40 $\mu\text{g}/\text{m}^3$

Table 2.8 Results of Kidderminster NO₂ Diffusion Tubes from 2010 to 2014

Kidderminster

Site ID	Site Name	Site Type	Within AQMA?	Annual Mean Concentration (µg/m ³) - Adjusted for Bias				
				2010 (Bias = 0.95)	2011 (Bias = 0.89)	2012 (Bias = 0.69)	2013 (Bias = 0.98)	2014 (Bias = 0.89)
23HF	23 Horsefair	Roadside	Y	37.3	32.0	30.4	45	36.6
HF(K)	Peacock PH, Horsefair	Roadside (façade)	Y	62.8	64.0	55.2	74	68.7
HF(K)(F)	Hudson Florists on Horsefair	Roadside (façade)	Y	74.1	67.9	64.7	76.4	67.9
SBR121	121 Stourbridge Road	Roadside (façade)	N	36.6	30.4	30.1	36	31.5
CSLOC	Land Oak Court, top of Coventry Street	Roadside (façade)	N	43.5	35.0	29.8	41	35.5
K3	53 Coventry Street	Roadside (façade)	Y	-	-	-	-	39.3
K2	34 Leswell Lane (10m to Coventry Street)	Roadside (façade)	Y	-	-	-	-	26.6
(F)69COV	69 Coventry Street	Roadside (façade)	Y	52.4	48.0	43.4	58	50.9
K1	50 Radford Avenue	Roadside (façade)	Y	-	-	-	-	26.8
K4	1 Silver Street	Roadside (façade)	Y	-	-	-	-	28.1
CAS	Casper Polish Shop, Comberton Hill	Roadside (façade)	N	35.5	32.0	26.4	37	31.3
(F)SGC	6/7 St George's Court	Roadside (façade)	N	37.0	30.5	26.1	38	33.9
TCH	Top Comberton Hill on corner with the Firs	Roadside	N	44.1	43.2	43.9	52	46.4
(F)COMR(K)	Holmwood, Comberton Road	Roadside	N	44.4	36.7	32.0	43	38.2
SP(K)	Jay Park Crescent, Spennells	Urban Background	N	18.4	14.8	11.0	17	15.3

Wyre Forest District Council

Site ID	Site Name	Site Type	Within AQMA?	Annual Mean Concentration ($\mu\text{g}/\text{m}^3$) - Adjusted for Bias				
				2010 (Bias = 0.95)	2011 (Bias = 0.89)	2012 (Bias = 0.69)	2013 (Bias = 0.98)	2014 (Bias = 0.89)
SR(K)	431 Stourport Road	Roadside	N	47.1	36.5	37.2	54	45
(F)447(S)	447 Stourport Road	Roadside (façade)	N	-	-	-	32	26.9
SPR2	Flat 2, Park House, Sutton Park Road	Roadside (façade)	N	38.9	32.6	33.3	39	39.9
SRLEC	Lucy Edwards Court, Sutton Road	Roadside (façade)	N	40.3	35.9	29.0	41	37.7
BH166	166 Bewdley Hill	Roadside	N	35.3	29.8	24.3	35	35.6
(F)BR(K)	52 Bewdley Road	Roadside (façade)	N	37.6	32.0	29.9	39	34.1
HAB203	203 Habberley Lane	Roadside (façade)	N	40.1	32.7	27.4	40	35.1
JAK	Jacksons PH (on road sign post)	Roadside	N	36.7	29.8	31.0	40	36.1
EXS	Barclays Bank, Exchange Street	Roadside (façade)	N	38.1	31.2	28.5	40	36.1

In **bold**, exceedence of the NO₂ annual mean AQS objective of 40 $\mu\text{g}/\text{m}^3$

Underlined, annual mean > 60 $\mu\text{g}/\text{m}$, indicating a potential exceedence of the NO₂ hourly mean AQS objective

Table 2.9 Results of Stourport-on-Severn NO₂ Diffusion Tubes from 2010 to 2014

Stourport-on-Severn

Site ID	Site Name	Site Type	Within AQMA?	Annual Mean Concentration (µg/m ³) - Adjusted for Bias				
				2010 (Bias = 0.95)	2011 (Bias = 0.89)	2012 (Bias = 0.69)	2013 (Bias = 0.98)	2014 (Bias = 0.89)
MR71(S)	71 Minster Road	Roadside (façade)	N	34.3	30.2	26.3	36	29.3
(F)GIL	10 The Gilgal	Roadside (façade)	N	33.2	26.6	25.2	31	28.3
(F)MS	7 Mitton Street	Roadside (façade)	N	29.5	22.0	19.9	30	27
HS(S)	High Street, corner of York Street lamppost	Roadside (façade)	N	41.1	38.6	33.2	45	37.7
KSW(S)	Kodak Spectacles Warehouse, High Street	Roadside (façade)	N	38.1	32.6	28.8	38	33.9
HS15(S)	15 High Street	Roadside (façade)	N	40.1	32.4	29.9	39	32.9
HS4(S)	4 High Street	Roadside (façade)	N	45.3	33.7	28.1	37	33.7
BH(S)	Baldwin House, Lombard Street	Roadside (façade)	N	42.5	27.8	24.8	30	28.9
A1/A2/A3	Analyser outside Bentleys, 36 High Street	Analyser	N	47.9	37.1	33.7	46	39.7
(F)19YS(S)	19 York Street, Stourport	Roadside (façade)	N	-	-	-	33	27.3
(F)25YS(S)	Stourport Nails Centre, 22 York Street	Roadside (façade)	N	-	-	-	39	45.8
(F)14NS(S)	14 New Street	Roadside (façade)	N	-	-	-	26	22.7
(F)LSNS(S)	Lumsdons Solicitors, New Street	Roadside (façade)	N	-	-	-	34	31
(F)FBS(S)	Flamingos, Bridge Street	Roadside (façade)	N	-	-	-	47	42

In **bold**, exceedence of the NO₂ annual mean AQS objective of 40µg/m³

Table 2.10 Results of Bewdley NO₂ Diffusion Tubes from 2010 to 2014

Bewdley

Site ID	Site Name	Site Type	Within AQMA?	Annual Mean Concentration (µg/m ³) - Adjusted for Bias				
				2010 (Bias = 0.95)	2011 (Bias = 0.89)	2012 (Bias = 0.69)	2013 (Bias = 0.98)	2014 (Bias = 0.89)
KID22(B)	22 Kidderminster Road	Roadside (façade)	N	38.7	33.7	36.4	43	35.9
WG(B)	88 Welch Gate	Roadside (façade)	Y	49.5	46.4	43.1	59	50.9
(F)WG42	42 Welch Gate	Roadside (façade)	Y	36.6	30.1	27.7	37	31
HS(B)	Abacus Hairdressers, High Street	Roadside (façade)	N	31.9	32.2	27.1	33	28.9
LS(B)	The Melting Pot, Load Street	Roadside	N	33.9	35.1	28.8	40	38.2
B1	Adam and Eve, Load Street	Roadside (façade)	N	-	-	-	-	37.8

In **bold**, exceedence of the NO₂ annual mean AQS objective of 40µg/m³

Figure 2.2 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Monitoring Sites Within Horsefair/Coventry Street AQMA

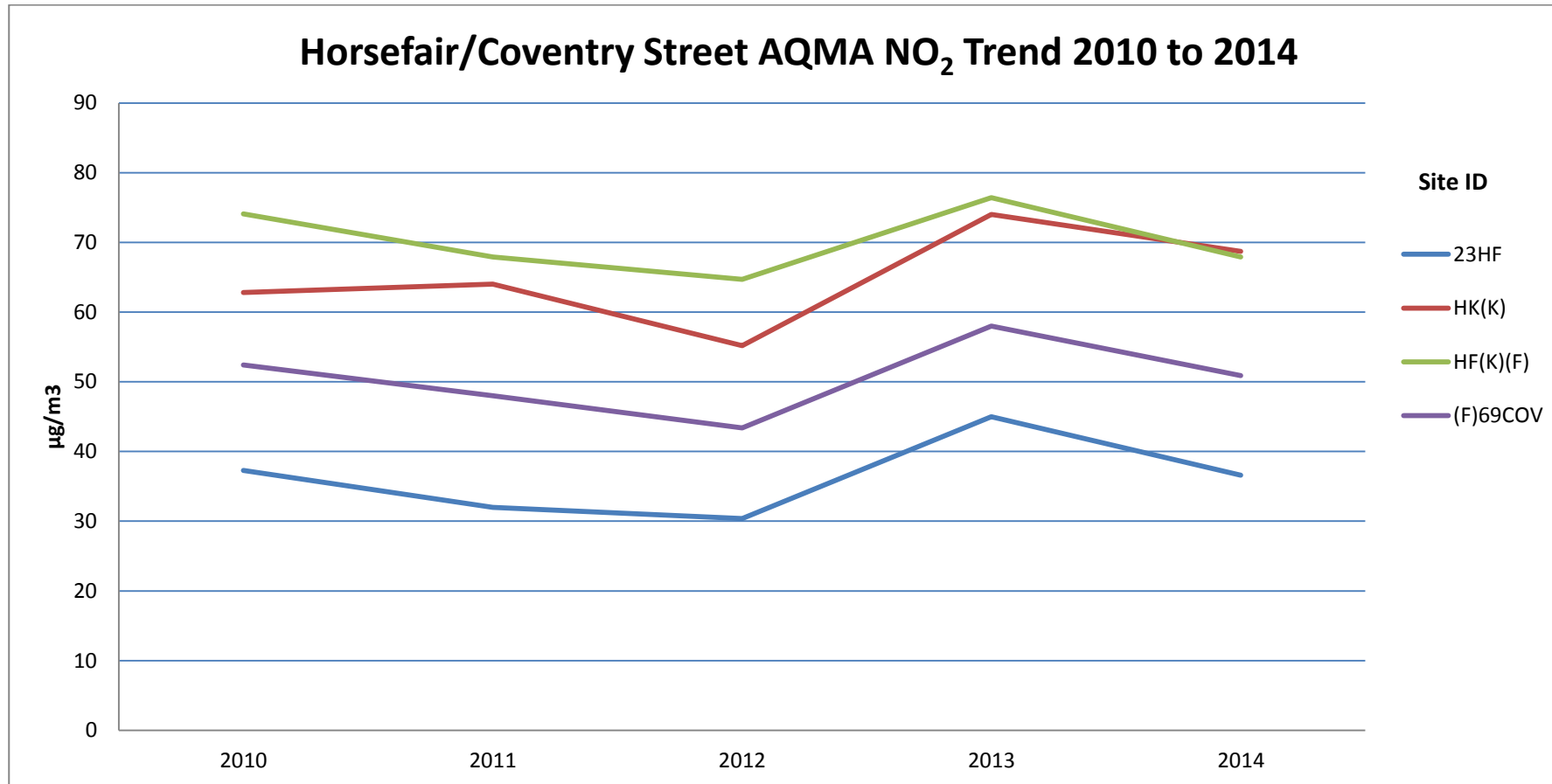


Figure 2.3 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites within Kidderminster outside of the Horsefair/Coventry Street AQMA

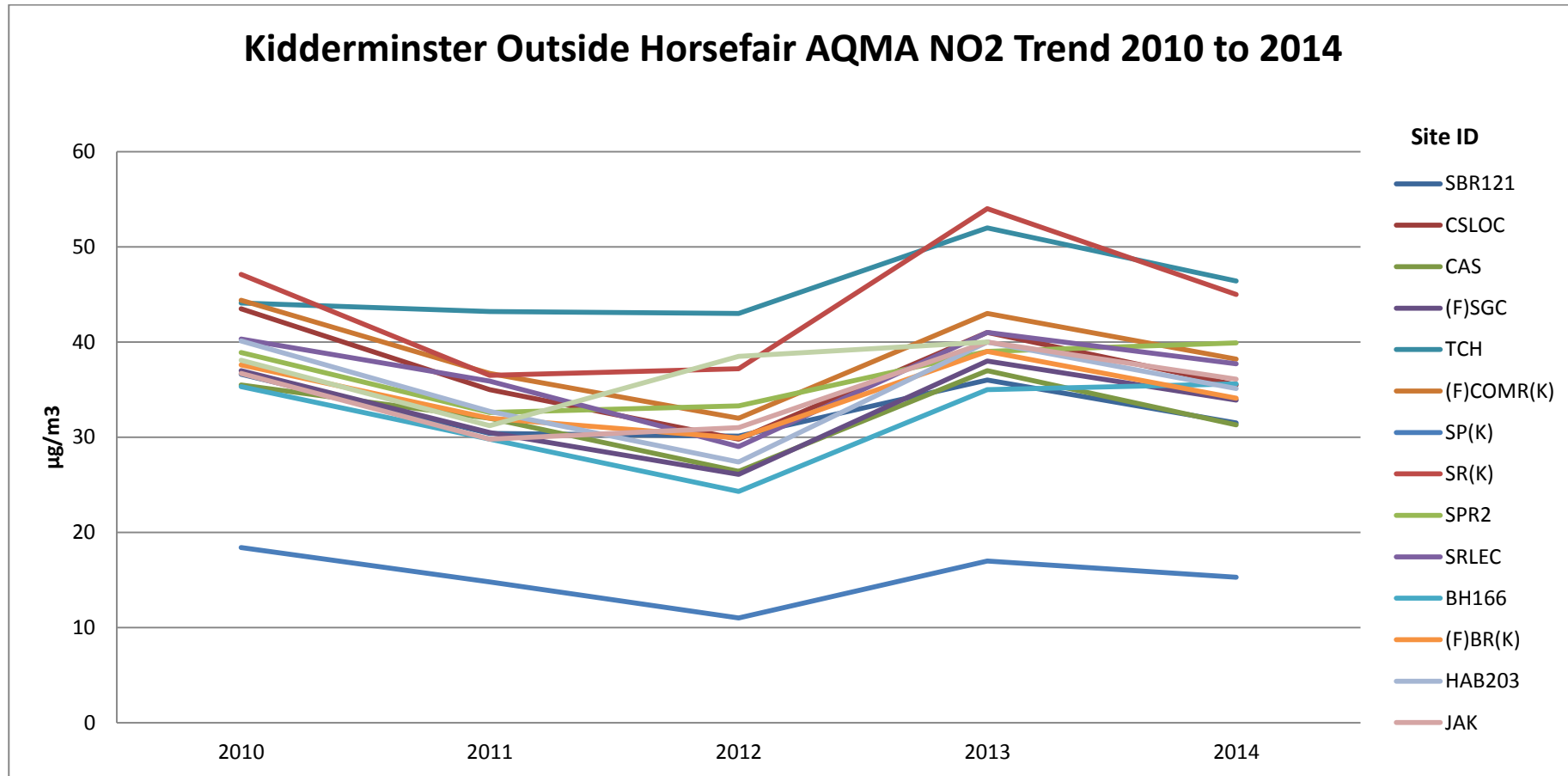


Figure 2.4 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites within Stourport-on-Severn

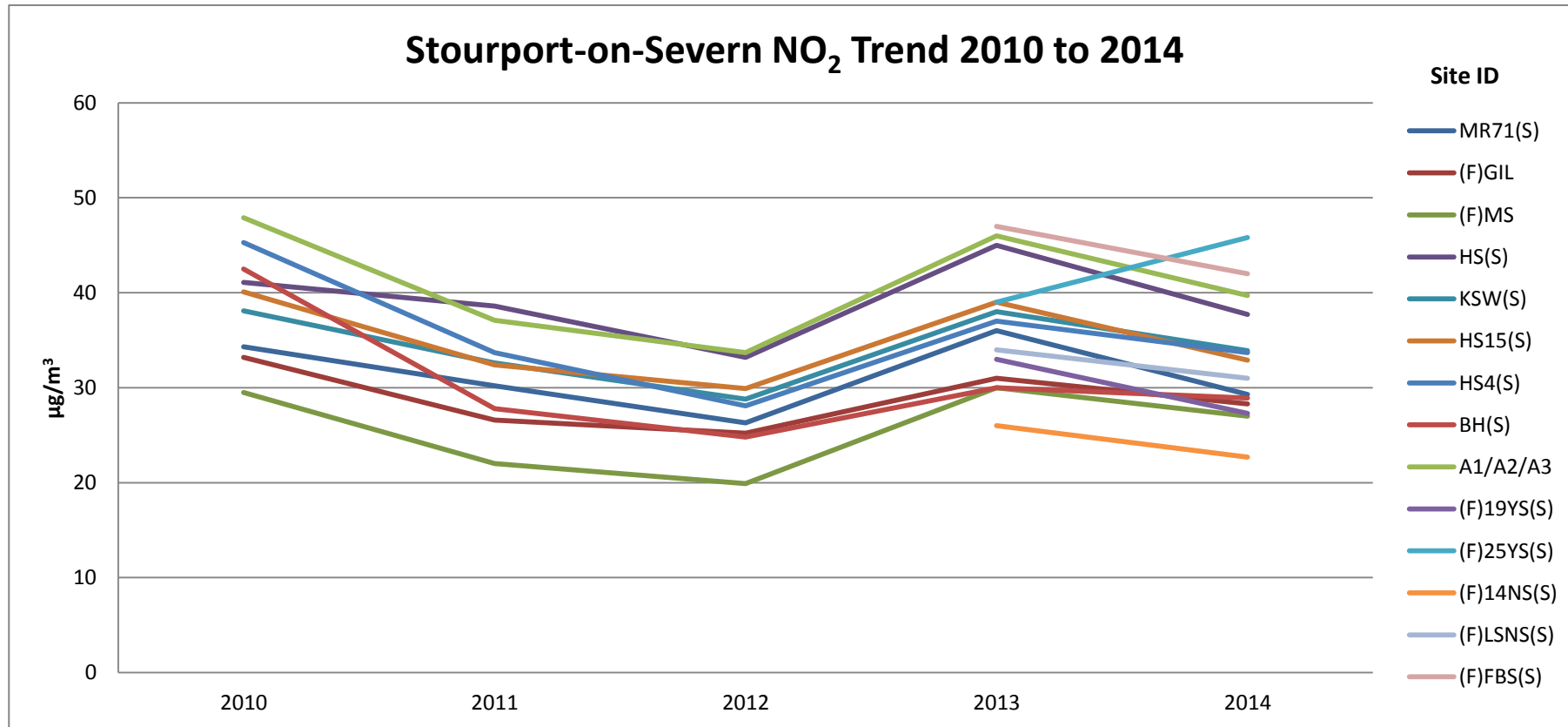
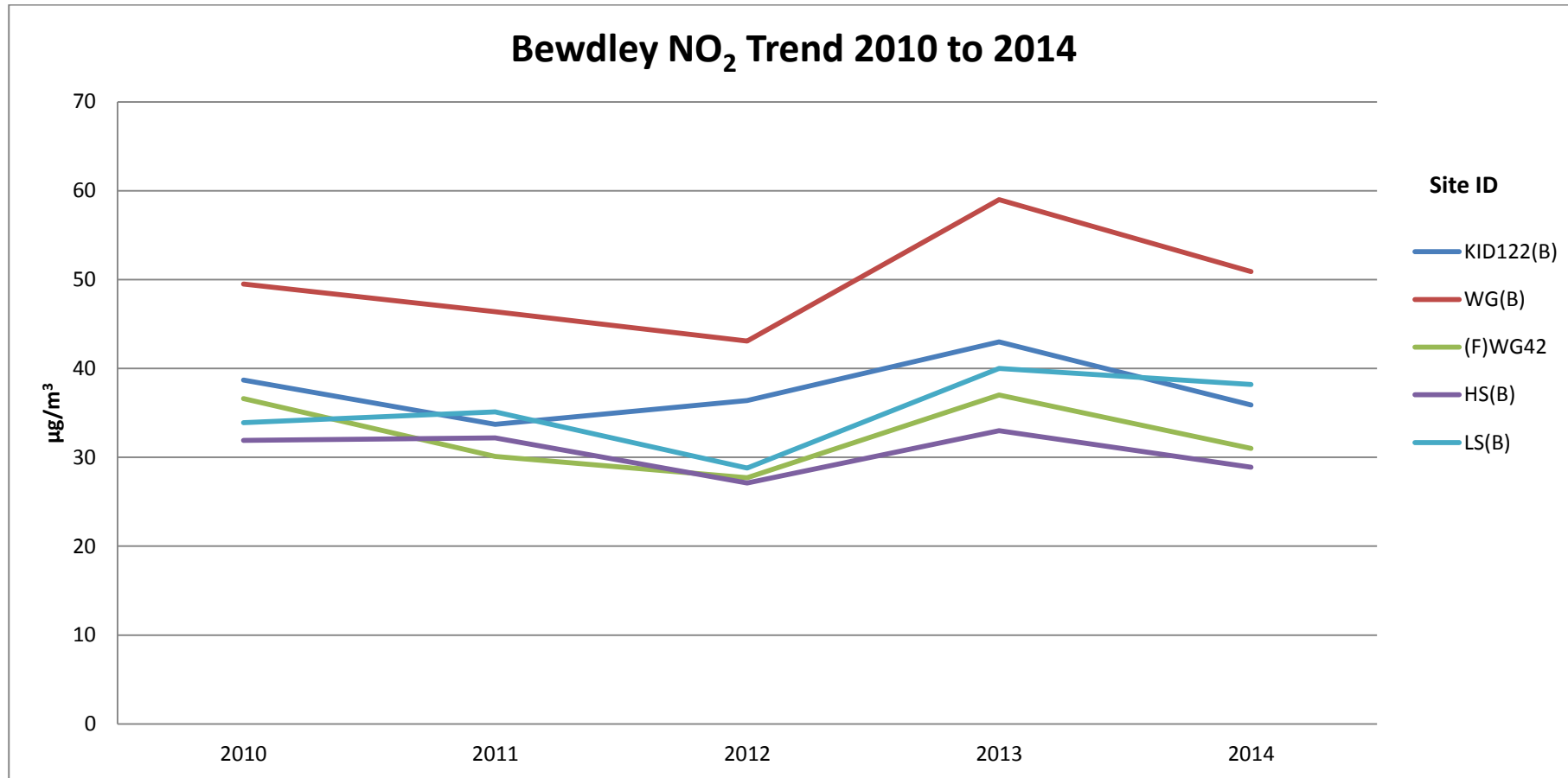


Figure 2.5 Trends in Annual Mean Nitrogen Dioxide Concentrations measured at Diffusion Tube Monitoring Sites within Bewdley



Exceedences

The 2014 monitoring results (adjusted for bias) indicate there are exceedences of the air quality objective of $40\mu\text{g}/\text{m}^3$ for NO_2 at eight sites. Four sites are within the existing AQMAs and four sites lie outside of the existing AQMAs, two in Kidderminster and two in Stourport-on-Severn. Table 2.11 below shows these eight sites and the estimate of the concentration at the nearest receptor. The calculations for Table 2.11 are shown in Appendix C.

Table 2.11 Concentration of Nitrogen Dioxide at the nearest receptor

Site ID	Location	In AQMA?	Roadside Measurement ($\mu\text{g}/\text{m}^3$)	Estimation of concentration at nearest receptor ($\mu\text{g}/\text{m}^3$)
HF(K)	Peacock PH, Horsefair	Y	68.7	61
HF(K)(F)	Hudson Florists on Horsefair	Y	67.9	60
(F)69COV	69 Coventry Street	Y	50.9	50.4
TCH	Top Comberton Hill on corner with the Firs	N	46.4	39.9
SR(K)	431 Stourport Road	N	45.0	36.9
(F)25YS(S)	Stourport Nails Centre, 22 York Street	N	45.8	37.9
(F)FBS(S)	Flamingos, Bridge Street	N	42.0	37.0
WG(B)	88 Welch Gate	Y	50.9	50.9

Taking into account the concentrations at the nearest receptors, this indicates that the four sites outside the existing AQMAs all fall below the air quality objective for NO_2 , although TCH can be considered borderline at $39.9\mu\text{g}/\text{m}^3$. At present there is no requirement to move to detailed assessment at these locations. The four sites within the existing AQMAs show exceedences of the air quality objective for NO_2 and concentrations at two sites in the Horsefair/Coventry Street AQMA measure above $60\mu\text{g}/\text{m}^3$ indicating a potential exceedence of the NO_2 hourly mean objective of $200\mu\text{g}/\text{m}^3$.

Trends

Horsefair/Coventry Street, Kidderminster AQMA

Measured concentrations in 2014 at diffusion tube locations (HF(K), HF(K)(F) and (F)69COV continue to exceed the air quality objective. However, they all show a reduction to 2013 concentrations and location 23HF has shown a decrease of $8.4\mu\text{g}/\text{m}^3$ to below the air quality objective when compared to 2013. Concentrations during the five year period to 2014 at locations 23HK and (F)69COV have remained

generally stable, whilst there has been a reduction at location HF(K)(F) and an increase at location HF(K). The concentrations at diffusion tube locations HF(K) and HF(K)(F) continue to exceed $60\mu\text{g}/\text{m}^3$ and have done consistently from 2010 onwards indicating a potential exceedence of the hourly mean objective for NO_2 , therefore the AQMA must be retained. The Horsefair/Coventry Street AQMA boundary is shown in Figure 1.2.

Welch Gate, Bewdley AQMA

Concentrations continue to exceed the air quality objective at location WG(B) in 2014, but shows a reduction of $8.1\mu\text{g}/\text{m}^3$ when compared to 2013. The 2014 concentration at location (F)WG42 shows a reduction of $6\mu\text{g}/\text{m}^3$ when compared to 2013. The five year trend in concentrations at location WG(B) shows a lot of variation and is now at approximately the same level above the air quality objective as 2010, therefore the AQMA must be retained. Concentrations at location (F)WG42 are consistently below the air quality objective of $40\mu\text{g}/\text{m}^3$ for NO_2 over the five year period. The Welch Gate AQMA boundary is shown in Figure 1.1.

Kidderminster

Measured concentrations at all diffusion tube locations outside the Horsefair/Coventry Street AQMA in Kidderminster have reduced in 2014 relative to 2013 with the exception of SPR2 which has shown an increase. Overall, the trend in measured NO_2 levels is generally stable over the five year period to 2014, with a slight reduction at some locations.

Stourport-on-Severn

Measured concentrations at all diffusion tube locations in Stourport-on-Severn have reduced in 2014 relative to 2013 with the exception of (F)25Y(S), where there was an increase in concentration of $6.8\mu\text{g}/\text{m}^3$ between 2013 and 2014, all are below the air quality objective of $40\mu\text{g}/\text{m}^3$ for NO_2 . There is a general downward trend in measured NO_2 levels in Stourport-on-Severn in the last 5 years.

Bewdley

Measured concentrations at the three locations outside of the Welch Gate AQMA show reductions in 2014 when compared with 2013. Overall, between 2010 and 2014, concentrations have remained generally stable at the three locations and are below the air quality objective of $40\mu\text{g}/\text{m}^3$ for NO_2 .

2.2.2 PM₁₀

Particulate Matter (PM₁₀) is not monitored within the Wyre Forest District Council area.

2.2.3 Sulphur Dioxide

Sulphur Dioxide (SO₂) is not monitored within the Wyre Forest District Council area.

2.2.4 Benzene

Benzene is not monitored within the Wyre Forest District Council area.

2.2.5 Other pollutants monitored

No other pollutants are monitored within the Wyre Forest District Council area.

2.2.6 Summary of Compliance with AQS Objectives

Wyre Forest District Council has examined the results from monitoring in the District. Concentrations within the AQMA's still exceed the air quality objective for nitrogen dioxide at Horsefair/Coventry Street, Kidderminster and Welch Gate, Bewdley and both AQMA's should remain.

Wyre Forest District Council has examined the results from monitoring in the District. Concentrations outside of the AQMA are all below the objectives at relevant locations, therefore there is no need to proceed to a Detailed Assessment.

3 Road Traffic Sources

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Wyre Forest District Council confirms that there are no new/newly identified congested streets with a flow above 5,000 vehicles per day and residential properties close to the kerb, that have not been adequately considered in previous rounds of Review and Assessment.

3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic

Wyre Forest District Council has assessed new/newly identified busy streets where people may spend 1 hour or more close to traffic, that were not assessed in previous rounds of Review and Assessment, and concluded that it will not be necessary to proceed to a Detailed Assessment.

3.3 Roads with a High Flow of Buses and/or HGVs.

Wyre Forest District Council confirms that there are no new/newly identified roads with high flows of buses/HGVs.

3.4 Junctions

Wyre Forest District Council confirms that there are no new/newly identified busy junctions/busy roads.

3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment

The Hoobrook Link Road in Kidderminster is currently under construction and is due to open in the autumn of 2016 providing a link between the A451 Stourport Road and the A442 Worcester Road. It is anticipated this will need to be considered in future rounds of review and assessment.

Wyre Forest District Council confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

Wyre Forest District Council confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

Wyre Forest District Council confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

Wyre Forest District Council confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)

4.2.1 Stationary Trains

Wyre Forest District Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.

4.2.2 Moving Trains

Wyre Forest District Council confirms that there are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.

4.3 Ports (Shipping)

Wyre Forest District Council confirms that there are no ports or shipping that meet the specified criteria within the Local Authority area.

5 Industrial Sources

5.1 Industrial Installations

5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out

Wyre Forest District Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced

Wyre Forest District Council confirms that there are no industrial installations with substantially increased emissions or new relevant exposure in their vicinity within its area or nearby in a neighbouring authority.

5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment

Wyre Forest District Council confirms that there are no new or proposed industrial installations for which planning approval has been granted within its area or nearby in a neighbouring authority.

5.2 Major Fuel (Petrol) Storage Depots

There are no major fuel (petrol) storage depots within the Local Authority area.

5.3 Petrol Stations

Wyre Forest District Council confirms that there are no petrol stations meeting the specified criteria.

5.4 Poultry Farms

Wyre Forest District Council confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Wyre Forest District Council confirms that there are no biomass combustion plant in the Local Authority area.

6.2 Biomass Combustion – Combined Impacts

Wyre Forest District Council confirms that there are no biomass combustion plant in the Local Authority area.

6.3 Domestic Solid-Fuel Burning

Wyre Forest District Council confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

Wyre Forest District Council confirms that there are no potential sources of fugitive particulate matter emissions in the Local Authority area.

8 Conclusions and Proposed Actions

8.1 Conclusions from New Monitoring Data

The 2014 monitoring results (adjusted for bias) indicate there are exceedences of the air quality objective of $40\mu\text{g}/\text{m}^3$ for nitrogen dioxide at eight sites within the District. Four of the eight sites are within the existing AQMA's which must be retained. The four sites outside the AQMAs all fall below the air quality objective for NO_2 when taking into account the concentrations at the nearest receptors. However, one could be considered as borderline but at present there is no requirement to move to detailed assessment at this site or any other areas.

Measured concentrations at locations in the Kidderminster and Bewdley areas show that they have remained generally stable over the five year period to 2014 with a slight reduction at some locations. Measured concentrations at locations in Stourport-on-Severn have shown a general downward trend in the last five years with the exception of one location, where there was a significant increase in concentration between 2013 and 2014, however all are below the air quality objective.

In 2014 the Council removed four diffusion tubes in Kidderminster and one diffusion tube in Bewdley as they were deemed unrepresentative of relevant exposure or were recording concentrations well below the air quality objective. Five diffusion tubes were added, four in Kidderminster and one in Bewdley, to extend the monitoring sites within the AQMA areas

8.2 Conclusions from Assessment of Sources

Wyre Forest District Council's assessment of sources has not identified any likely exceedences from new or significantly changed local developments.

8.3 Proposed Actions

Wyre Forest District Council confirms that the existing AQMAs at Horsefair/Coventry Street, Kidderminster and Welch Gate, Bewdley must be retained. The Council have not identified a requirement to move to Detailed Assessment for any pollutants and will continue to monitoring nitrogen dioxide levels across its area. It is anticipated that

Wyre Forest District Council

the new Hoobrook Link Road will need to be considered in future rounds of review and assessment.

Wyre Forest District Council confirms that it will continue to progress the implementation of the Air Quality Action Plan for Worcestershire. An annual report on progress, as required, will be submitted to Defra in 2016.

9 References

1. DEFRA (2009) 'Local Air Quality Management Technical Guidance LAQM TG.(09)'
2. DEFRA (2015) 'National Diffusion Tube Bias Adjustment Factor Spreadsheet v.03/15'
3. Department for Transport 'Traffic Count Points for Worcestershire' accessed 23rd November 2015
4. EPUK & IAQM (2015) 'Land-Use Planning & Development Control: Planning For Air Quality v1.1'
5. NO₂ Distance from roads calculator used for regression of values available at: <http://laqm.defra.gov.uk/tools-monitoring-data/no2-falloff.html>
6. Wyre Forest District Council (June 2010) '2010 Combined Progress Report and Action Plan Progress Report'
7. Worcestershire Regulatory Services (July 2011) '2011 Combined Progress Report and Action Plan Progress Report for Wyre Forest District Council '
8. Wyre Forest District Council (Sept 2011) Churchfields Masterplan Supplementary Planning Document
9. Worcestershire Regulatory Services (July 2012) '2012 Updating and Screening Assessment Report for Wyre Forest District Council'
10. Worcestershire Air Quality Action Plan September, 2013
11. Worcestershire Regulatory Services (Nov 2013) '2013 Annual Progress Report for Wyre Forest District Council'
12. Worcestershire Regulatory Services (Dec 2014) '2014 Annual Progress Report for Wyre Forest District Council'
13. Worcestershire Regulatory Services (March 2015) '2015 Detailed Assessment Report for Wyre Forest District Council'

Appendices

Appendix A: QA/QC Data

Appendix B: Maps of Non-Automatic Monitoring Sites

Appendix C: Estimation of concentrations at nearest receptor calculations

Appendix D: 2014 Full Diffusion Tube Results

Appendix A: QA/QC Data

Factor from Local Co-location Studies

No local co-location studies for nitrogen dioxide have been undertaken in 2014.

Diffusion Tube Bias Adjustment Factors

The following UKAS accredited company provides Wyre Forest District Council with nitrogen dioxide diffusion tubes and analysis:

Somerset Scientific Services,
The Crescent
County Hall
Taunton
TA1 4DY

Tel: 0300 123 2224

Email: somersetscientific@somerset.gov.uk

The 20% Triethanolamine (TEA) / De-ionised Water preparation method is used.

The bias adjustment factor applied to the results in 2014 was 0.89 (Spreadsheet Version No. 03/15) which were derived from the national studies. Results from all sites for 2014 are shown in Appendix D.

Short-term to Long-term Data Adjustment

No annualisation of 2014 data in accordance with Box 3.2 of TG(09) was required.

QA/QC of Automatic Monitoring

No Automatic Monitoring Data is available for 2014.

QA/QC of Diffusion Tube Monitoring

Under the WASP Scheme Somerset Scientific Services performed 100% satisfactory for all periods in 2014. Tube precision was generally 'Good' throughout 2014.

Appendix B: Maps of Non-Automatic Monitoring Sites

Figure B.1 North East of Kidderminster Town Centre

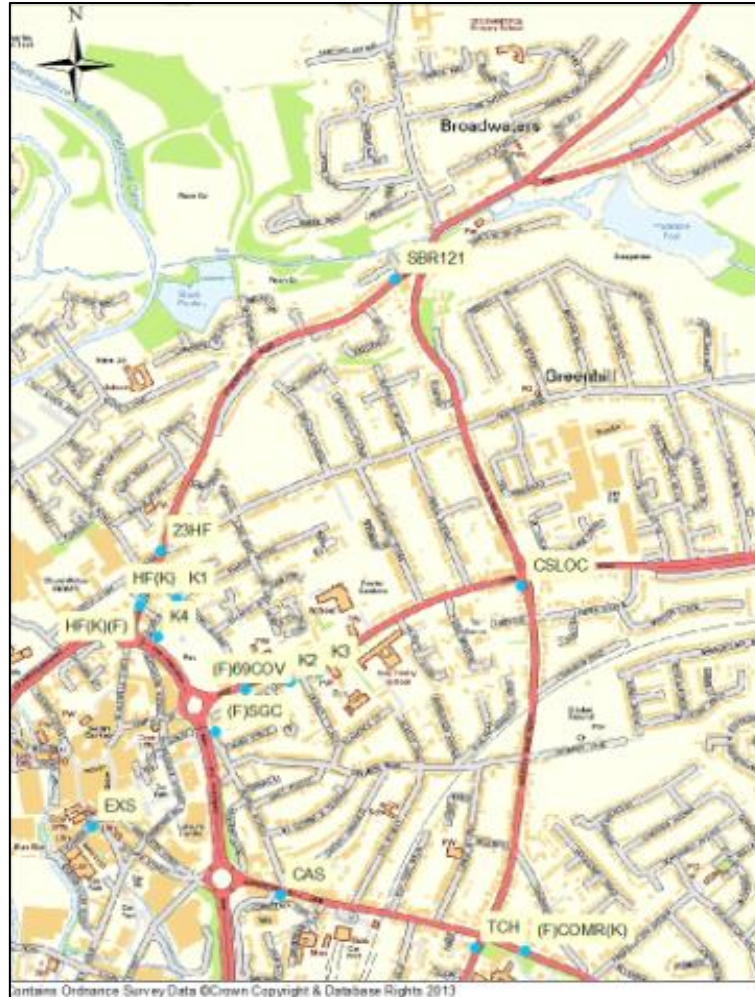


Figure B.2 Blakebrook and Foley Park Areas of Kidderminster



Figure B.3 Franche Area of Kidderminster

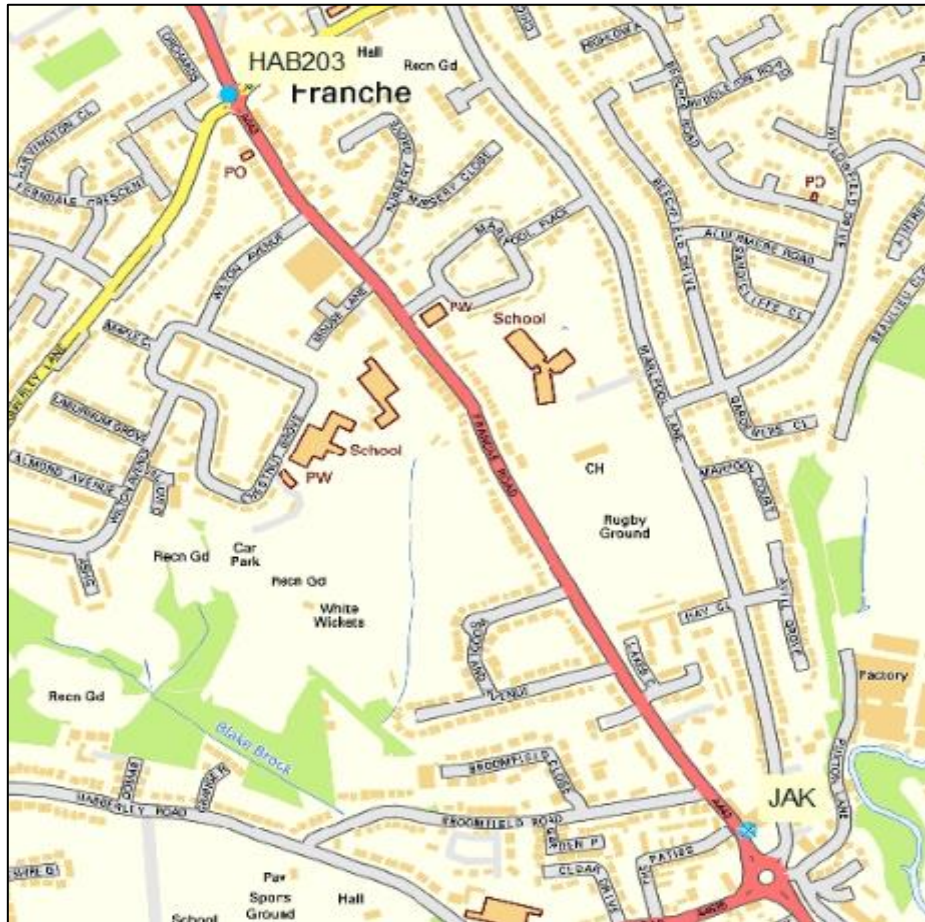


Figure B.4 Spennells Area of Kidderminster (Urban Background)



Figure B.5 Stourport-on-Severn

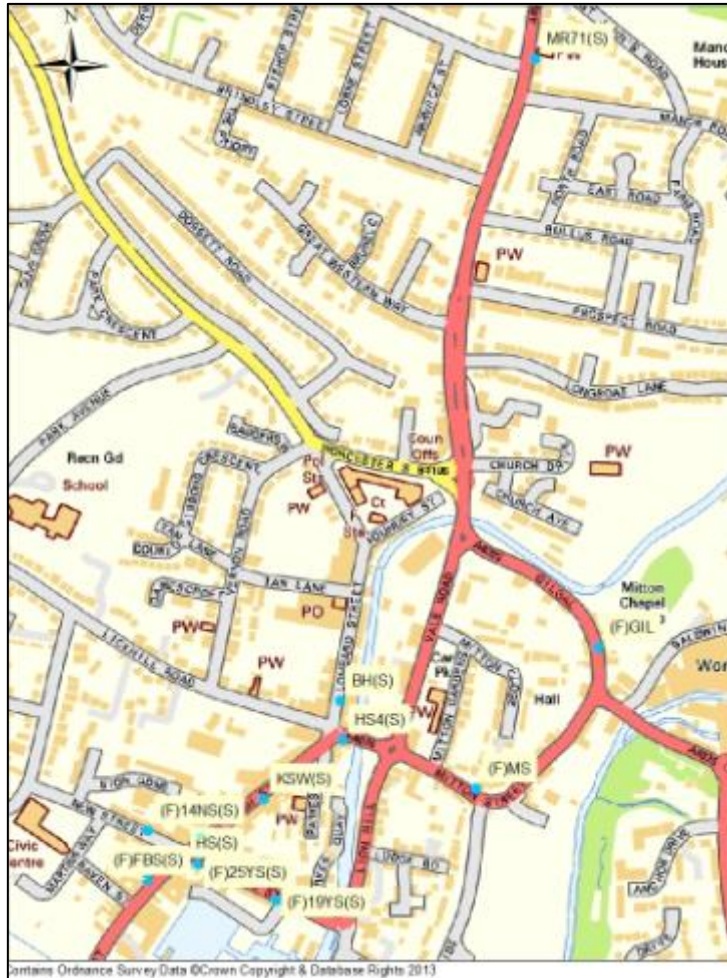


Figure B.6 Bewdley




Appendix C – Estimation of concentrations at nearest receptor calculations

Results from monitoring locations demonstrating exceedences of NO₂ objective or borderline sites have been estimated to nearest receptor location, where appropriate, using the NO₂ distance from road calculator tool available from Defra. A copy of each calculation is provided below and summarised in Table C.1.

Table C.1 – Summary of Estimations of concentrations at nearest Receptor

Site ID	Location	In AQMA	Tube distance from kerb (m)	Receptor distance from kerb (m)	Local annual mean background N02 ($\mu\text{g}/\text{m}^3$)	Measured annual mean concentration at tube location	Estimation of concentration at nearest receptor
HF(K)	Peacock PH, Horsefair	Y	2.5	4.5	15.82	68.7	61
HF(K)(F)	Hudson Florists on Horsefair	Y	2.5	4.5	15.82	67.9	60
(F)69COV	69 Coventry Street	Y	5.5	5.8	19.74	50.9	50.4
TCH	Top Comberton Hill on corner with the Firs	N	2.0	5.0	15.97	46.4	39.9
SR(K)	431 Stourport Road	N	3.0	9.0	16.39	45.0	36.9
(F)25YS(S)	Stourport Nails Centre, 22 York Street	N	1.6	4.5	11.42	45.8	37.9
(F)FBS(S)	Flamingos, Bridge Street	N	2.0	4.5	15.85	42.0	37.0
WG(B)	88 Welch Gate	Y	1	1	10.31	50.9	50.9

Figure C.1 – Location HF(K) NO₂ Distance from road calculation

This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph. 

Enter data into the yellow cells


Step 1	How far from the KERB was your measurement made (in metres)?	(Note 1)	2.5	metres
Step 2	How far from the KERB is your receptor (in metres)?	(Note 1)	4.5	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)?	(Note 2)	15.82	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)?	(Note 2)	68.7	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor	(Note 3)	61.0	µg/m ³

Note 1: In some cases the term "kerb" may be taken to be the edge of the trafficked road - see the FAQ at <http://laqm2.defra.gov.uk/FAQs/Monitoring/Location/index.htm> for further details. Distances should be measured horizontally from the kerb and assumes that the monitor and receptor have similar elevations. Each distance should be greater than 0.1m and less than 50m (In practice, using a value of 0.1m when the monitor is closer to the kerb than this is likely to be reasonable). The receptor is the location for which you wish to make your prediction. The monitor can either be closer to the kerb than the receptor, or further from the kerb than the receptor. The closer the monitor and the receptor are to each other, the more reliable the prediction will be. When your receptor is further from the kerb than your monitor, it is recommended that the receptor and monitor should be within 20m of each other. When your receptor is closer to the kerb than your monitor, it is recommended that the receptor and monitor should be within 10m of each other.

Note 2: The measurement and the background must be for the same year. The background concentration could come from the national maps published at www.airquality.co.uk, or alternatively from a nearby monitor in a background location.

Note 3: The calculator follows the procedure set out in Box 2.3 of LAQM TG(09). The results will have a greater uncertainty than the measured data. More confidence can be placed in results where the distance between the monitor and the receptor is small than where it is large.

Figure C.2 – Location HF(K)(F) NO₂ Distance from road calculation

This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph. 

Enter data into the yellow cells


Step 1	How far from the KERB was your measurement made (in metres)?	(Note 1)	2.5	metres
Step 2	How far from the KERB is your receptor (in metres)?	(Note 1)	4.5	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)?	(Note 2)	15.82	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)?	(Note 2)	67.9	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor	(Note 3)	60.3	µg/m ³

Note 1: In some cases the term "kerb" may be taken to be the edge of the trafficked road - see the FAQ at <http://laqm2.defra.gov.uk/FAQs/Monitoring/Location/index.htm> for further details. Distances should be measured horizontally from the kerb and assumes that the monitor and receptor have similar elevations. Each distance should be greater than 0.1m and less than 50m (In practice, using a value of 0.1m when the monitor is closer to the kerb than this is likely to be reasonable). The receptor is the location for which you wish to make your prediction. The monitor can either be closer to the kerb than the receptor, or further from the kerb than the receptor. The closer the monitor and the receptor are to each other, the more reliable the prediction will be. When your receptor is further from the kerb than your monitor, it is recommended that the receptor and monitor should be within 20m of each other. When your receptor is closer to the kerb than your monitor, it is recommended that the receptor and monitor should be within 10m of each other.

Note 2: The measurement and the background must be for the same year. The background concentration could come from the national maps published at www.airquality.co.uk, or alternatively from a nearby monitor in a background location.

Note 3: The calculator follows the procedure set out in Box 2.3 of LAQM TG(09). The results will have a greater uncertainty than the measured data. More confidence can be placed in results where the distance between the monitor and the receptor is small than where it is large.

Figure C.3 – Location (F)69COV NO₂ Distance from road calculation

This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph. 

Enter data into the yellow cells


Step 1	How far from the KERB was your measurement made (in metres)? (Note 1)	5.5	metres
Step 2	How far from the KERB is your receptor (in metres)? (Note 1)	5.8	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)? (Note 2)	19.74	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)? (Note 2)	50.9	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor (Note 3)	50.4	µg/m ³

Note 1: In some cases the term "kerb" may be taken to be the edge of the trafficked road - see the FAQ at <http://laqm2.defra.gov.uk/FAQs/Monitoring/Location/index.htm> for further details. Distances should be measured horizontally from the kerb and assumes that the monitor and receptor have similar elevations. Each distance should be greater than 0.1m and less than 50m (In practice, using a value of 0.1m when the monitor is closer to the kerb than this is likely to be reasonable). The receptor is the location for which you wish to make your prediction. The monitor can either be closer to the kerb than the receptor, or further from the kerb than the receptor. The closer the monitor and the receptor are to each other, the more reliable the prediction will be. When your receptor is further from the kerb than your monitor, it is recommended that the receptor and monitor should be within 20m of each other. When your receptor is closer to the kerb than your monitor, it is recommended that the receptor and monitor should be within 10m of each other.

Note 2: The measurement and the background must be for the same year. The background concentration could come from the national maps published at www.airquality.co.uk, or alternatively from a nearby monitor in a background location.

Note 3: The calculator follows the procedure set out in Box 2.3 of LAQM TG(09). The results will have a greater uncertainty than the measured data. More confidence can be placed in results where the distance between the monitor and the receptor is small than where it is large.

Figure C.4 – Location TCH NO₂ Distance from road calculation

This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph. 

Enter data into the yellow cells


Step 1	How far from the KERB was your measurement made (in metres)? (Note 1)	3	metres
Step 2	How far from the KERB is your receptor (in metres)? (Note 1)	9	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)? (Note 2)	16.39	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)? (Note 2)	45	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor (Note 3)	36.9	µg/m ³

Note 1: In some cases the term "kerb" may be taken to be the edge of the trafficked road - see the FAQ at <http://laqm2.defra.gov.uk/FAQs/Monitoring/Location/index.htm> for further details. Distances should be measured horizontally from the kerb and assumes that the monitor and receptor have similar elevations. Each distance should be greater than 0.1m and less than 50m (In practice, using a value of 0.1m when the monitor is closer to the kerb than this is likely to be reasonable). The receptor is the location for which you wish to make your prediction. The monitor can either be closer to the kerb than the receptor, or further from the kerb than the receptor. The closer the monitor and the receptor are to each other, the more reliable the prediction will be. When your receptor is further from the kerb than your monitor, it is recommended that the receptor and monitor should be within 20m of each other. When your receptor is closer to the kerb than your monitor, it is recommended that the receptor and monitor should be within 10m of each other.

Note 2: The measurement and the background must be for the same year. The background concentration could come from the national maps published at www.airquality.co.uk, or alternatively from a nearby monitor in a background location.

Note 3: The calculator follows the procedure set out in Box 2.3 of LAQM TG(09). The results will have a greater uncertainty than the measured data. More confidence can be placed in results where the distance between the monitor and the receptor is small than where it is large.

Figure C.5 – Location SR(K) NO₂ Distance from road calculation

This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph. 

Enter data into the yellow cells


Step 1	How far from the KERB was your measurement made (in metres)? (Note 1)	3	metres
Step 2	How far from the KERB is your receptor (in metres)? (Note 1)	9	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)? (Note 2)	16.39	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)? (Note 2)	45	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor (Note 3)	36.9	µg/m ³

Note 1: In some cases the term "kerb" may be taken to be the edge of the trafficked road - see the FAQ at <http://laqm2.defra.gov.uk/FAQs/Monitoring/Location/index.htm> for further details. Distances should be measured horizontally from the kerb and assumes that the monitor and receptor have similar elevations. Each distance should be greater than 0.1m and less than 50m (In practice, using a value of 0.1m when the monitor is closer to the kerb than this is likely to be reasonable). The receptor is the location for which you wish to make your prediction. The monitor can either be closer to the kerb than the receptor, or further from the kerb than the receptor. The closer the monitor and the receptor are to each other, the more reliable the prediction will be. When your receptor is further from the kerb than your monitor, it is recommended that the receptor and monitor should be within 20m of each other. When your receptor is closer to the kerb than your monitor, it is recommended that the receptor and monitor should be within 10m of each other.

Note 2: The measurement and the background must be for the same year. The background concentration could come from the national maps published at www.airquality.co.uk, or alternatively from a nearby monitor in a background location.

Note 3: The calculator follows the procedure set out in Box 2.3 of LAQM TG(09). The results will have a greater uncertainty than the measured data. More confidence can be placed in results where the distance between the monitor and the receptor is small than where it is large.

Figure C.6 – Location (F)25YS(S) NO₂ Distance from road calculation

This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph. 

Enter data into the yellow cells


Step 1	How far from the KERB was your measurement made (in metres)? (Note 1)	1.6	metres
Step 2	How far from the KERB is your receptor (in metres)? (Note 1)	4.5	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)? (Note 2)	11.42	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)? (Note 2)	45.8	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor (Note 3)	37.9	µg/m ³

Note 1: In some cases the term "kerb" may be taken to be the edge of the trafficked road - see the FAQ at <http://laqm2.defra.gov.uk/FAQs/Monitoring/Location/index.htm> for further details. Distances should be measured horizontally from the kerb and assumes that the monitor and receptor have similar elevations. Each distance should be greater than 0.1m and less than 50m (In practice, using a value of 0.1m when the monitor is closer to the kerb than this is likely to be reasonable). The receptor is the location for which you wish to make your prediction. The monitor can either be closer to the kerb than the receptor, or further from the kerb than the receptor. The closer the monitor and the receptor are to each other, the more reliable the prediction will be. When your receptor is further from the kerb than your monitor, it is recommended that the receptor and monitor should be within 20m of each other. When your receptor is closer to the kerb than your monitor, it is recommended that the receptor and monitor should be within 10m of each other.

Note 2: The measurement and the background must be for the same year. The background concentration could come from the national maps published at www.airquality.co.uk, or alternatively from a nearby monitor in a background location.

Note 3: The calculator follows the procedure set out in Box 2.3 of LAQM TG(09). The results will have a greater uncertainty than the measured data. More confidence can be placed in results where the distance between the monitor and the receptor is small than where it is large.

Figure C.7 – Location (F)FSBS) NO₂ Distance from road calculation

This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph. 

Enter data into the yellow cells


Step 1	How far from the KERB was your measurement made (in metres)?	(Note 1)	2	metres
Step 2	How far from the KERB is your receptor (in metres)?	(Note 1)	4.5	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)?	(Note 2)	15.82	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)?	(Note 2)	42	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor	(Note 3)	37.0	µg/m ³

Note 1: In some cases the term "kerb" may be taken to be the edge of the trafficked road - see the FAQ at <http://laqm2.defra.gov.uk/FAQs/Monitoring/Location/index.htm> for further details. Distances should be measured horizontally from the kerb and assumes that the monitor and receptor have similar elevations. Each distance should be greater than 0.1m and less than 50m (In practice, using a value of 0.1m when the monitor is closer to the kerb than this is likely to be reasonable). The receptor is the location for which you wish to make your prediction. The monitor can either be closer to the kerb than the receptor, or further from the kerb than the receptor. The closer the monitor and the receptor are to each other, the more reliable the prediction will be. When your receptor is further from the kerb than your monitor, it is recommended that the receptor and monitor should be within 20m of each other. When your receptor is closer to the kerb than your monitor, it is recommended that the receptor and monitor should be within 10m of each other.

Note 2: The measurement and the background must be for the same year. The background concentration could come from the national maps published at www.airquality.co.uk, or alternatively from a nearby monitor in a background location.

Note 3: The calculator follows the procedure set out in Box 2.3 of LAQM TG(09). The results will have a greater uncertainty than the measured data. More confidence can be placed in results where the distance between the monitor and the receptor is small than where it is large.

Figure C.8 – Location WG(B) NO₂ Distance from road calculation

This calculator allows you to predict the annual mean NO₂ concentration for a location ("receptor") that is close to a monitoring site, but nearer or further the kerb than the monitor. The next sheet shows your results on a graph. 

Enter data into the yellow cells

Step 1	How far from the KERB was your measurement made (in metres)?	(Note 1)	1	metres
Step 2	How far from the KERB is your receptor (in metres)?	(Note 1)	1	metres
Step 3	What is the local annual mean background NO ₂ concentration (in µg/m ³)?	(Note 2)	10.31	µg/m ³
Step 4	What is your measured annual mean NO ₂ concentration (in µg/m ³)?	(Note 2)	50.9	µg/m ³
Result	The predicted annual mean NO ₂ concentration (in µg/m ³) at your receptor	(Note 3)	50.9	µg/m ³

Note 1: In some cases the term "kerb" may be taken to be the edge of the trafficked road - see the FAQ at <http://laqm2.defra.gov.uk/FAQs/Monitoring/Location/index.htm> for further details. Distances should be measured horizontally from the kerb and assumes that the monitor and receptor have similar elevations. Each distance should be greater than 0.1m and less than 50m (In practice, using a value of 0.1m when the monitor is closer to the kerb than this is likely to be reasonable). The receptor is the location for which you wish to make your prediction. The monitor can either be closer to the kerb than the receptor, or further from the kerb than the receptor. The closer the monitor and the receptor are to each other, the more reliable the prediction will be. When your receptor is further from the kerb than your monitor, it is recommended that the receptor and monitor should be within 20m of each other. When your receptor is closer to the kerb than your monitor, it is recommended that the receptor and monitor should be within 10m of each other.

Note 2: The measurement and the background must be for the same year. The background concentration could come from the national maps published at www.airquality.co.uk, or alternatively from a nearby monitor in a background location.

Note 3: The calculator follows the procedure set out in Box 2.3 of LAQM TG(09). The results will have a greater uncertainty than the measured data. More confidence can be placed in results where the distance between the monitor and the receptor is small than where it is large.

Appendix D: 2014 Full Diffusion Tube Results

Table D.1 Kidderminster monthly diffusion tube results for nitrogen dioxide in 2014 ($\mu\text{g}/\text{m}^3$)

Tube ref	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average	Bias adj	Adj Average	Months Capture
23HF	23 Horsefair (derelict building)	54.12	36.74	48.20	41.16	41.69	35.92	41.27	31.80	36.09	38.15	48.48	40.10	41.14	0.89	36.61	12
HF(K)	Horsefair (lamppost @ peacock PH, Blackwell St)	78.22	70.88	85.20	72.72	83.74	57.98	62.99	67.27	72.31	75.08	107.91	91.31	77.13	0.89	68.65	12
HF(K) (F)	Hudson Florists on Horsefair (façade)	81.25	73.90				62.78	78.68	65.35	79.37	76.35	81.35	87.56	76.29	0.89	67.90	9
SBR121	121 Stourbridge Road (façade)	42.16	25.74	43.51		35.85	25.03	32.47	33.13	39.34	35.91	40.99		35.41	0.89	31.51	10
CSLOC	Flats at top of Coventry Street - Land Oak Court (façade)	44.71	44.79	46.35	45.04	25.15	29.47	31.23	34.09	40.55	40.52	44.03	53.19	39.93	0.89	35.54	12
K3	53 Coventry Street, downspout, façade, 6m to kerb	48.94	44.16	51.91	51.15	46.38	36.50	29.74	34.31	52.81	42.70	54.82	36.98	44.20	0.89	39.34	12
K2	34 Leswell Lane, downspout, Façade, 3m to kerb, 10m to Coventry Street	39.52	32.91	34.72	28.56	27.12	21.18	20.94	21.45	34.05	27.78	36.69	33.18	29.84	0.89	26.56	12
(F) 69COV	69 Coventry Street (façade)	40.58	65.47	67.28	60.95	66.45	52.33	45.35	48.39	58.20	63.44	62.03	55.83	57.19	0.89	50.90	12
K1	50 Radford Avenue, 2m to kerb, façade even tho it is lamppost (9' to building)	40.28	39.26	34.28	27.10	25.15	17.91	19.77	21.48	27.66	29.95	38.46	39.56	30.07	0.89	26.76	12
K4	1 Silver Street(façade)	49.63	40.95	35.86	26.01	25.32	14.41	20.60	25.18	28.29	35.60	36.96	40.14	31.58	0.89	28.11	12
CAS	Casper Polish Shop, Comberton Hill on drainpipe on side of building)	41.56	43.59	40.67	34.60	30.66	24.28	30.86	31.16	38.60				35.11	0.89	31.25	9
(F)SGC	6/7 St George's Court (façade)	39.13	40.51	44.17	42.44	37.88	33.18	30.59	28.65	38.97	41.61	40.54	39.73	38.12	0.89	33.93	12

Wyre Forest District Council

Tube ref	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Average	Bias adj	Adj Average	Months Capture
TCH	Top Comberton Hill (lamppost) on corner with the Firs (white building)		56.23	64.33	50.98		38.45	45.85	46.52	56.61	52.06	51.97	58.58	52.16	0.89	46.42	10
(F)COMR(K)	Holmwood, Comberton Road (roadside)	49.63	49.57	48.09	41.35	39.44		21.81	35.75	45.52	47.02	48.43	45.43	42.91	0.89	38.19	11
SP(K)	Spennells (located at Jay Park Crescent roadside) (left Heronswood, left Captains Pool, right Jays Park)	24.07	18.13	23.41	14.90	14.54	10.01	9.98	9.61	17.48	14.83	28.57	21.22	17.23	0.89	15.33	12
(F)447S	447 Stourport Road (façade)	31.30	31.08	36.03	30.71	27.58	25.31	25.71	24.28	33.73	29.59	37.14	29.67	30.18	0.89	26.86	12
SR(K)	Stourport Road, (431 roadside)	54.79	52.27	61.38	49.00		36.40	43.56		51.14	46.35	63.53	47.68	50.61	0.89	45.04	10
SPR2	Flat 2, Park House, Sutton Park Road (façade)	50.60	49.57	48.87	45.18	40.82	32.34	33.33	35.16	42.41	48.72	51.47	46.15	43.72	0.89	38.91	12
SRLEC	Flats at crossroads - Lucy Edwards Court (façade), Sutton Road	42.04	44.54	51.93	44.60	41.98	33.27	33.64			40.58	41.31	49.95	42.38	0.89	37.72	10
BH166	166 Bewdley Hill (lamppost against garden wall)		39.95		41.86	38.46		15.93	25.02	37.58	36.09	48.66	35.17	35.41	0.89	35.51	9
(F)BR(K)	52 Bewdley Road (façade)	55.41	40.07	43.23	44.92	38.34	29.75	27.57	28.48	24.51	36.88	50.88	40.41	38.37	0.89	34.15	12
HAB203	203 Habberley Lane (Façade)	46.05	40.83	45.19	34.41	39.26	32.25	34.70	34.83	45.61	33.05	45.80	41.68	39.47	0.89	35.13	12
JAK	Jacksons PH (on road sign post)	53.41	41.08	45.46	40.78	38.46	32.78	33.46	29.01	43.10	37.00	48.84	42.72	40.51	0.89	36.05	12
EXS	Exchange Street (between Barclays and clothes shop opposite bus stop - façade)	67.64	49.00		42.82	34.70	28.83	28.33	29.82	36.42	44.29	43.85		40.57	0.89	36.11	10

Table D.2 Stourport-on-Severn & Bewdley monthly diffusion tube results for nitrogen dioxide in 2014 ($\mu\text{g}/\text{m}^3$)

Tube ref	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average	Bias adj	Adj Average	No of Months capture
Stourport-on-Severn																	
MR71	71 Minster Road (façade)	43.19	37.32	39.20	33.29	25.56	31.09	28.51	25.16	28.86	35.66	33.47	33.59	32.91	0.89	29.29	12
(F)GIL	10 The Gilgal (façade)	43.49	31.69	37.11	31.20	21.88	28.82	18.35	25.27	33.97	34.38	40.77	33.95	31.74	0.89	28.25	12
(F)MS	7 Mitton Street (white house opposite Hollybush PH)	29.13	25.81	33.86	21.16	29.90	28.87	28.84	24.10	34.20	34.07	38.14	36.39	30.37	0.89	27.03	12
(F)19YS(S)	19 York Street, Stourport	35.39	30.66	36.99	32.24	27.53	29.11	26.54	31.68		28.13	36.82	22.24	30.67	0.89	27.30	12
(F)25YS(S)	Stourport Nails Centre, 22 York Street, Stourport	59.15	47.37	52.41	43.03	53.34	35.67	39.01	34.73	43.24	54.61	81.53	73.82	51.49	0.89	45.83	12
(F)14NS(S)	14 New Street, Stourport	29.73	23.27	31.95	25.05	23.54	23.19	24.68		24.06	20.02	34.65	19.84	25.45	0.89	22.65	11
(F)FBS(S)	Flamingo's, 21 Bridge Street, Stourport	40.77	42.46	52.29	51.73	45.02				48.85	40.95	51.01	52.39	47.28	0.89	42.08	9
(F)LSNS(S)	Lumsdons Solicitors, New Street, Stourport		34.83	41.69	34.33	31.91	29.62	31.35		38.51	31.94	43.35	30.78	34.83	0.89	31.00	10
HS(S)	High Street corner of York Street lamppost o/s sweet shop	53.22	27.33	48.24	48.43	38.88	36.36			45.47		55.77	27.03	42.30	0.89	37.65	9
KSW(S)	Kodak Spectacles Warehouse, High Street (façade)	48.27	41.31	43.89	40.60	34.07	34.64	30.04	26.34	40.23	38.15	47.07	32.77	38.11	0.89	33.92	12
HS15(S)	15 High Street (façade)	41.50	39.68	43.19	36.24	32.76	31.64	31.83	28.37	39.12	38.45	45.17	36.93	37.07	0.89	32.99	12
HS4(S)	4 High Street (façade)	35.70	43.13	41.11	40.31	36.45	35.62	30.04	26.45	40.74	39.91	43.67	40.59	37.81	0.89	33.65	12

Wyre Forest District Council

Tube ref	Location	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Average	Bias adj	Adj Average	No of Months capture
BH(S)	Baldwin House, Lombard Street (façade)	39.93	32.96	40.30	33.17	29.43	30.01	29.51	24.68	30.55	31.76	38.46	28.84	32.47	0.89	28.90	12
A1	Analyser outside Bentleys, 36 High Street	45.79	40.77	49.92	43.50	47.75	45.16	44.73	44.02	50.83	39.37	46.89	44.30	45.25	0.89	40.27	12
A2	Analyser outside Bentleys, 36 High Street	44.76	38.95	50.90	42.22	49.89	46.69	42.80	42.85	49.45	38.33	47.43	43.80	44.84	0.89	39.91	12
A3	Analyser outside Bentleys, 36 High Street	41.62	37.56		43.73	43.46	47.38	45.06	44.18	51.76	34.51	46.12	46.11	43.77	0.89	39.00	12
Bewdley																	
KID22(B)	22 Kidderminster Road (Façade)	48.51	37.01	43.19	42.68	40.07	38.58	36.15	27.84	44.26	39.43	43.13	42.58	40.29	0.89	35.90	12
(F)WG42	42 Welch Gate, Bewdley (façade)	42.22	33.32	39.72	32.53	31.75	24.17	29.04	34.25	41.43	32.32	43.22	34.04	34.83	0.89	31.00	12
WG(B)	88 Welch Gate, Bewdley	77.17	52.39	54.90	60.84	57.14	59.29	47.92	54.23	54.91	52.12	64.71	50.72	57.19	0.89	50.90	12
HS(B)	High Street. Drainpipe on Abacus Hairdressers opposite the Talbot Inn (façade)	37.87	32.17	39.43	32.76	20.81	27.79	30.17	28.64	34.71	32.20	38.46	34.31	32.44	0.89	28.87	12
LS(B)	Load Street, Bewdley (The Melting Pot)	53.34	37.01	45.34	43.96	45.01	43.63	37.95	37.99	44.22	35.36	50.02	42.27	43.01	0.89	38.28	12
B1	Adam & Eves, Load Street, on the Lamppost, it is façade location, 1m to kerb	47.60	37.86	43.43	45.24	40.49	41.92	40.87	39.80	44.49	36.57	49.88	42.18	42.53	0.89	37.85	12