2015 Updating and Screening Assessment for Knowsley MBC

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

January 2016

Local Authority Officer	Keith Dooley
Department	Environmental Health and Consumer Protection Service
Address	Knowsley MBC 2nd Floor Yorkon Building Archway Road Huyton Knowsley Merseyside L34 9FB
Telephone	0151 443 4712
e-mail	keith.dooley@knowsley.gov.uk
Report Reference number	Knowsley 15
Date	January 2016

Executive Summary

Local Authorities in the UK have the statutory duty to review and assess air quality on a regular basis which involves the production of reports on a three year cycle. 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

Previous Updating and Screening Assessments have been undertaken and all the pollutants included for the purpose of Local Air Quality Management were reassessed individually and the outcome of the review was that none of the Air Quality Objectives were predicted to be exceeded by the due dates and that a Detailed Assessment was not required.

Road transport is the main source of local air pollution in Knowsley and has shown a decrease in air pollution levels in recent years. The Council's urban monitoring site operating 1999–2014 indicates a stable level of pollutants. Nitrogen dioxide diffusion tube monitoring carried out in previous years at various sites has now been discontinued as levels were consistently below Air Quality Objectives.

Local monitoring data, the planning system, the environmental permitting regime and traffic information have been utilised so that there is a continuing examination of the local air quality to ensure that all Air Quality Objectives are met.

This Updating and Screening Assessment details the automatic real-time monitoring and considers whether new or proposed developments have the potential to impact local air quality which may lead to an exceedence of Air Quality Objectives.

Based on the findings of this Updating and Screening Assessment, Knowsley Metropolitan Borough Council has found that the levels of nitrogen dioxide and particulates (PM_{10}) do not exceed the specific Air Quality Objectives and that no new or significantly changed sources have been identified which are likely to lead to any potential exceedences of Air Quality objectives. Therefore, it is not necessary to proceed to a detailed assessment.

Table of contents

1 Introduction 6

1.1 Description of Local Authority Area 6

1.2 Purpose of Report 8

1.3 Air Quality Objectives 8

1.4 Summary of Previous Review and Assessments 9

2 New Monitoring Data 11

2.1 Summary of Monitoring Undertaken 11

2.1.1 Automatic Monitoring Sites 11

2.1.2 Non-Automatic Monitoring Sites 14

2.2 Comparison of Monitoring Results with Air Quality Objectives 15

2.2.1 Nitrogen Dioxide 15

2.2.2 PM_{10} 19

2.2.3 Sulphur Dioxide 21

2.2.4 Benzene 21

2.2.5 Other pollutants monitored 21

2.2.6 Summary of Compliance with AQS Objectives 21

3 Road Traffic Sources 22

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb 22

3.2 Busy Streets Where People May Spend 1-hour or More Close to Traffic 22

3.3 Roads with a High Flow of Buses and/or HGVs. 22

3.4 Junctions 22

3.5 New Roads Constructed or Proposed Since the Last Round of Review and Assessment 23

3.6 Roads with Significantly Changed Traffic Flows 23

3.7 Bus and Coach Stations 23

4 Other Transport Sources 24

4.1 Airports 24

4.2 Railways (Diesel and Steam Trains)… 24

4.2.1 Stationary Trains 24

4.2.2 Moving Trains 24

4.3 Ports (Shipping) 24

5 Industrial Sources 25

5.1 Industrial Installations 25

5.1.1 New or Proposed Installations for which an Air Quality Assessment has been Carried Out 25

5.1.2 Existing Installations where Emissions have Increased Substantially or New Relevant Exposure has been Introduced 25

5.1.3 New or Significantly Changed Installations with No Previous Air Quality Assessment 26
5.2 Major Fuel (Petrol) Storage Depots 26
5.3 Petrol Stations 26
5.4 Poultry Farms 26
6 Commercial and Domestic Sources 27
6.1 Biomass Combustion – Individual Installations 27
6.2 Biomass Combustion – Combined Impacts 27
6.3 Domestic Solid-Fuel Burning 27
7 Fugitive or Uncontrolled Sources 28
8 Conclusions and Proposed Actions 29
8.1 Conclusions from New Monitoring Data 29
8.2 Conclusions from Assessment of Sources 29
8.3 Proposed Actions 29
9 References 31

List of Tables

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

Table 2.1 Details of Automatic Monitoring Sites

Table 2.2 Results of Automatic Monitoring of Nitrogen Dioxide: Comparison with Annual Mean Objective

Table 2.3 Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with 1-hour mean Objective

Table 2.4 Results of Nitrogen Dioxide Diffusion Tubes (2010 to 2015)

Table 2.5 Results of Automatic Monitoring of PM_{10}: Comparison with Annual Mean Objective

Table 2.6 Results of Automatic Monitoring for PM_{10}: Comparison with 24-hour mean Objective

Table 8.1 Details of Automatic Monitoring Sites to be installed in 2016

List of Figures

Figure 1.1 A map showing Knowsley and surrounding area

Figure 1.2 A map showing the major urban areas and roads in Knowsley

Figure 2.1 Map of Automatic Monitoring Sites

Appendices

Appendix 1 QA/QC Data

1 Introduction

1.1 Description of Local Authority Area

Knowsley is one of six Local Authority districts that comprise the Liverpool City Region (the others being Liverpool, Sefton, St Helens, Wirral, and Halton). It is located at the heart of the North West, between Liverpool and Manchester and covers an area of 33 square miles; just over ten miles from south to north, and up to seven miles across.

In recent years, Knowsley has experienced further population loss and now has around 146,000 people living in 65,000 households. However, the rate of decline has decreased and national projections indicate that the population should grow by approximately 4,000 between 2011 and 2021. The urban areas are Kirkby, Huyton, Stockbridge Village, Prescot, Whiston and Halewood. Each has a distinct character as do the villages of Knowsley, Cronton and the rural areas of Simonswood and Tarbock.

Figure 1.1 A map showing Knowsley and surrounding area

Knowsley is home to a wide range of industrial and commercial developments and is an important location for employment in the Liverpool City Region and a major source of workers for the area. The borough has a large industrial base concentrated mainly on Knowsley Business Park in Kirkby, the Huyton, Kings and Prescot Business Parks, as well as the Jaguar Land Rover car plant in Halewood.

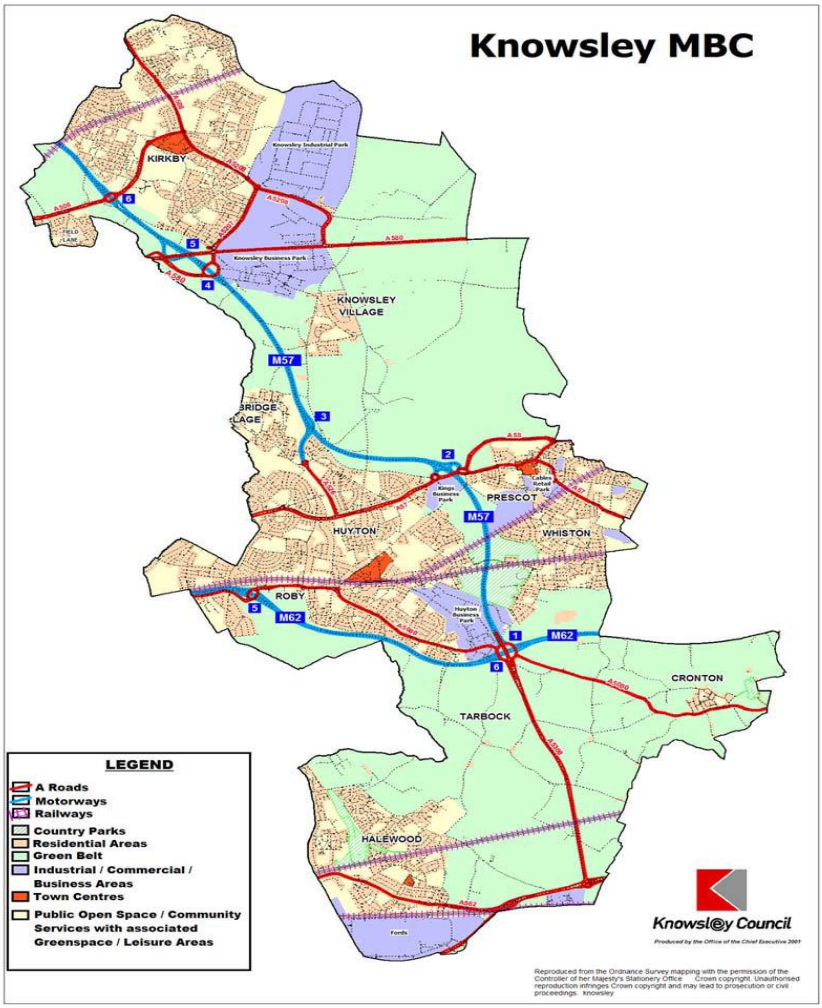
Neighbouring Authorities also house large industries that can have an impact on the air quality of Knowsley. For example, Fiddlers Ferry power station in Warrington lies to the south of the borough and the Shell oil refinery and petro-chemical complex in Ellesmere Port lie to the south west of Knowsley as well as major glass manufacturing sites in St Helens.

Traffic movements within the borough also play a significant role when considering air quality. Knowsley has a variety of road communication links. The M57 is the 'backbone' of the Borough, running North West to South East. The M62 and A580 (East Lancashire Road) link with the M57 and cut through the Borough East to West. The southerly extension to the M57 was completed in 1996 and has been given the Route Number A5300. The motorway and main A roads are connected via a network of smaller roads which link the many towns in Knowsley.

The main sources of air pollution in Knowsley, as identified from pervious air quality review and assessments and the work carried out in the Merseyside Atmospheric Emissions Inventory are from road traffic vehicle emissions and from industrial sources.

The junction of the M62 with the M57 at Tarbock Island was identified as a major congestion hotspot particularly at rush hour periods. In 2008 Tarbock Island interchange was re-aligned in order to improve traffic flow through the junction. Since the work was undertaken congestion levels at this junction have significantly reduced. There are 14 Part A1 and 28 Part A2/B Installations in Knowsley MBC.

Figure 1.2 A map showing the major urban areas and roads in Knowsley



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 micrograms per cubic metre $\mu g/m^3$ (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 $\mu g/m^3$	Running annual mean	31.12.2003
	5.00 $\mu g/m^3$	Running annual mean	31.12.2010
1,3-Butadiene	2.25 $\mu g/m^3$	Running annual mean	31.12.2003
Carbon monoxide	10.0 mg/m^3	Running 8-hour mean	31.12.2003
Lead	0.5 $\mu g/m^3$	Annual mean	31.12.2004
	0.25 $\mu g/m^3$	Annual mean	31.12.2008
Nitrogen dioxide	200 $\mu g/m^3$ not to be	1-hour mean	31.12.2005

	exceeded more than 18 times a year		
	40 µg/m^3	Annual mean	31.12.2005
Particles (PM_{10}) (gravimetric)	50 µg/m^3, not to be exceeded more than 35 times a year	24-hour mean	31.12.2004
	40 µg/m^3	Annual mean	31.12.2004
Sulphur dioxide	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266 µg/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 1 - Review and Assessment
The first review and assessment process was carried out between 2000 and 2002. The assessment did not identify any exceedences of the current Air Quality Objectives. Consequently there was no requirement to proceed to a detailed assessment nor to declare any Air Quality Management Areas within the borough.

Round 2 - Review and Assessment
The second of the review and assessment process was carried out between 2003 and 2005. The assessment did not identify any exceedences of the current Air Quality Objectives. Consequently there was no requirement to proceed to a detailed assessment or to declare any Air Quality Management Areas within the borough.

Round 3 - Review and Assessment
The third of the review and assessment process was carried out between 2006 and 2008. The assessment did not identify any exceedences of the current Air Quality Objectives. Consequently there was no requirement to proceed to a detailed assessment or to declare any Air Quality Management Areas within the borough

Round 4 - Review and Assessment
The fourth round of the review and assessment process was carried out between 2009 and 2011. The Updating & Screening Assessment 2009 (USA), considered the results of air quality monitoring carried out in 2008 at Briery Hey Avenue, Kirkby and various diffusion tube locations across Knowsley. In addition, the assessment consisted of applying various screening criteria for the purpose of considering

whether new or significantly changed sources of air pollutants may lead to an exceedence of an Air Quality Objective for any of the seven key pollutants. The USA indicated no exceedences were likely to occur in Knowsley.

Round 5 - Review and Assessment

Round 5 in 2012 the USA did not identify any exceedences. It was found there was no evidence to suggest that the levels of any of the seven pollutants may exceed the specific Air Quality Objectives and consequently there was no requirement to proceed to a detailed assessment or to declare any Air Quality Management Areas within the borough.

Population exposure to traffic-related pollutants is expected to be higher near major roads with a high percentage of HGV's, at busy road junctions, and in narrow and congested town centre streets. Several investigations have found Knowsley has no sensitive population exposed to these areas.

2 New Monitoring Data

2.1 Summary of Monitoring Undertaken

2.1.1 Automatic Monitoring Sites

At the end of 2013 Knowsley Council had one real time AUN type site located on Briery Hey Avenue, in Northwood Kirkby. The site became operational in March 2008. Grid Reference for monitoring location is X341774, Y398802.

Further details are provided in Table 2.1.The location of the monitor is shown in Fig 2.1.Information regarding the QA/QC for the monitoring equipment is provided in Appendix 1.

The monitoring equipment is located in an urban background location. The monitors are calibrated by local officers every two weeks and in 2014 they were serviced on a 6 monthly basis by **Enviro Technology** Services. The equipment is enclosed in a secure groundhog unit and contains

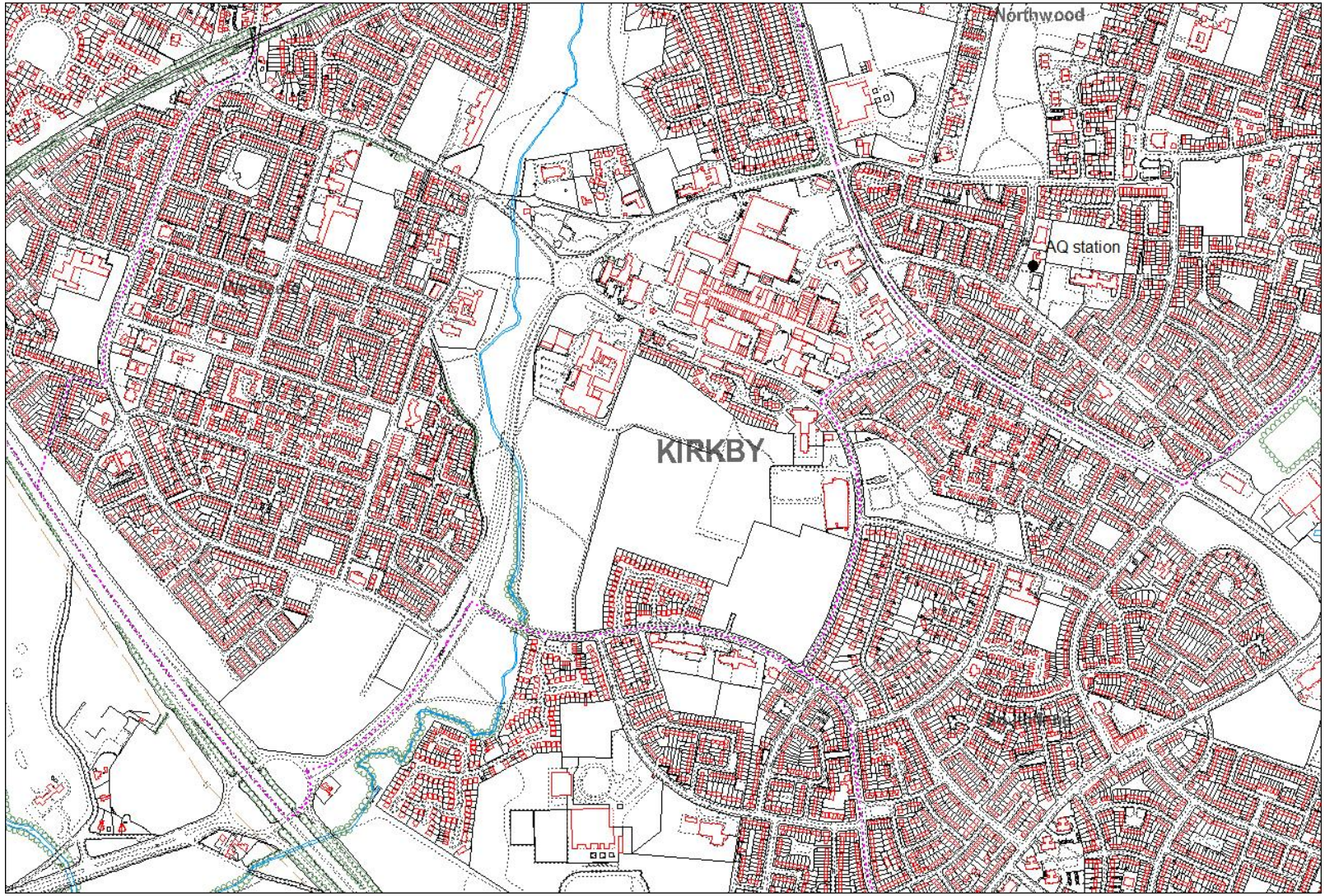
- Chemiluminescent NOx monitor
- Met One BAM 1020 with a PM_{10} head
- Met One BAM 1020 with a $PM_{2.5}$ head

Funding has been secured to allow automatic monitoring to take place in Huyton and Halewood in 2016.

Table 2.1 Details of Automatic Monitoring Sites

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	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?
Briery Hey Northwood	Urban background	X 341774	Y 398802	NO_x PM10 PM2.5	No	Y (35m)	16m	No

Figure 2.1 Map of Automatic Monitoring Sites



2.1.2 Non-Automatic Monitoring Sites

Knowsley MBC carried out non-automatic monitoring for NO_2 using nitrogen dioxide diffusion tubes. The tubes were located at numerous roadside and kerbside locations throughout Knowsley .The monitoring was carried out for a period of five years after which it was decided that the combination of cost and levels of pollutant had stabled enough to below an actionable level to discontinue the diffusion tubes. Details of the diffusion tubes can be found in table 2.4

2.2 Comparison of Monitoring Results with Air Quality Objectives

2.2.1 Nitrogen Dioxide

Automatic Monitoring Data

Automatic monitoring of nitrogen dioxide has been carried out at Briery Hey Avenue in Kirkby, which is a residential location with relevant exposure. As Table 2.2 and 2.3 shows, both the annual mean and the 24-hour mean results are below the objectives and therefore no further action is required, however monitoring at this location will continue.

The data capture for nitrogen dioxide at the site was less than 90% for 2014 due to equipment malfunction. The data capture period was from 16 September 2014 to 31 December 2014. Therefore, the data has been annualised using the methodology in Box 3.2 of TG(09) and details of the processes are contained in Appendix A. The 99.8th percentile of the 1 hour mean concentration is also indicated in Table 2.3 addition to the number of exceedances of the hourly mean. The 99.8th percentile of 1-hour mean concentrations does not exceed the threshold of exceed 200 µg/m^3.

Table 2.2 Results of Automatic Monitoring of Nitrogen Dioxide: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for period of monitoring %	Valid Data Capture 2014 %	Annual Mean Concentration μg/m^3				
					2010	2011	2012	2013	2014
Kirkby, Briery Hey	Urban Background	N	29.0	29.0	22.8	18	20.3	21	26.9

Table 2.3 Results of Automatic Monitoring for Nitrogen Dioxide: Comparison with 1-hour mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for period of monitoring %	Valid Data Capture 2014 %	Number of Exceedences of Hourly Mean (200 μg/m^3)				
					2010	2011	2012	2013	2014
Kirkby, Briery Hey	Urban Background	N	29.0	29.0	0	0	0	0	0 (112.2 μg/m^3)

Diffusion Tube Monitoring Data

Knowsley MBC carried out non-automatic monitoring for NO_2 using nitrogen dioxide diffusion tubes. The tubes were located at numerous roadside and kerbside locations throughout Knowsley .The monitoring was carried out for a period of five years after which it was decided that the combination of cost and levels of pollutant had stabled enough to below an actionable level to discontinue the diffusion tubes. Details of the diffusion tubes can be found in table 2.4

Table 2.4 Results of Nitrogen Dioxide Diffusion Tubes (2010 to 2014)

Site ID	Site Type	Within AQMA?	Annual mean concentration (adjusted for bias) μg/m^3				
			2010 (Bias Adjustment Factor = 0.92)	2011 (Bias Adjustment Factor = 0.89)	2012 (Bias Adjustment Factor = 0.97)	2013 (Bias Adjustment Factor = XX)	2014 (Bias Adjustment Factor = XX)
Cherryfield Drive 1	Kerbside	N	34	40	37	N/A	N/A
Valley Road 1	Roadside	N	27	35	28	N/A	N/A
Tithebarn Lane 1	Roadside	N	26	30	26	N/A	N/A
Valley Road 2 (M57)	Roadside	N	39	36	36	N/A	N/A
Bewley Drive 1	Kerbside	N	22	31	28	N/A	N/A
Bewley Drive 2	Kerbside	N	26	30	27	N/A	N/A
Cherryfield Drive 2	Kerbside	N	26	29	29	N/A	N/A
Cherryfield Drive 3	Kerbside	N	27	34	28	N/A	N/A
Cherryfield Drive 4	Kerbside	N	28	37	32	N/A	N/A
Kirkby Row 1	Kerbside	N	25	30	28	N/A	N/A
Hall Drive 1	Kerbside	N	27	33	28	N/A	N/A
County Road 1	Kerbside	N	27	34	29	N/A	N/A
County Road 2	Roadside	N	26	28	29	N/A	N/A

2.2.2 PM_{10}

Monitoring of PM_{10} has been carried out at Briery Hey Avenue in Kirkby, which is a residential location with relevant exposure. As Table 2.5 and 2.6 show, both the annual mean and the 24-hour mean results are below the objectives and therefore no further action is required, however monitoring at this location will continue.

The data capture for PM_{10} at the site was less than 90% for 2014 due to equipment malfunction. The data capture period was from 1 January 2014 to 24 April 2014 and from 3 November 2014 to 31 December 2014. Therefore, the data has been annualised using the methodology in Box 3.2 of TG(09) and details of the processes are contained in Appendix A. The 90^{th} percentile of the 24 hour mean concentration is also indicated in Table 2.6 addition to the number of exceedances of the hourly mean. The 90^{th} percentile of 24-hour concentrations does not exceed 50 $\mu g/m^3$.

The Kirkby station uses Beta Attenuation Monitors (BAM) to monitor the Particles. As per TG09 the BAM meets the equivalence criteria for monitoring providing the results are corrected for slope. The data in this report has had the correction factor of applied so it can be compared to the National Air Quality Objectives. The correction is achieved by dividing the values by 1.21.

Table 2.5 Results of Automatic Monitoring of PM_{10}: Comparison with Annual Mean Objective

Site ID	Site Type	Within AQMA?	Valid Data Capture for monitoring Period %	Valid Data Capture 2014 %	Confirm Gravimetric Equivalent (Y or NA)	Annual Mean Concentration μg/m³				
						2010	2011	2012	2013	2014
Kirkby, Briery Hey	Urban Background	N	46.3	46.3	Y	22	24	23	25	18

Table 2.6 Results of Automatic Monitoring for PM_{10}: Comparison with 24-hour mean Objective

Site ID	Site Type	Within AQMA ?	Valid Data Capture for monitoring Period %	Valid Data Capture 2014 %	Confirm Gravimetric Equivalent	Number of Exceedences of 24-Hour Mean (50 μg/m³)				
						2010	2011	2012	2013	2014
Kirkby, Briery Hey	Urban Background	N	46.3	46.3	Y	1	18	14	8	4 (30.8 μg/m³)

2.2.3 Sulphur Dioxide

Monitoring of sulphur dioxide ceased in December 2007 when the Page Moss One Stop Shop site was decommissioned. It was decided when the monitoring station was moved to Northwood, Kirkby no further monitoring would take place as the monitoring data collected at the Page Moss One Stop Shop had consistently shown between 2000 and 2007 that no exceedances of the sulphur dioxide objectives had occurred in that time.

2.2.4 Benzene

No Benzene monitoring is carried out in the Knowsley MBC area….

2.2.5 Other pollutants monitored

No monitoring of other pollutants is carried out in the Knowsley MBC area.…

2.2.6 Summary of Compliance with AQS Objectives

Knowsley MBC has examined the results from monitoring in the borough. Concentrations are all below the objectives, therefore there is no need to proceed to a Detailed Assessment.

3 Road Traffic Sources

Knowsley Metropolitan Borough Council has identified no new significant 'Road Traffic Sources' in 2014.

3.1 Narrow Congested Streets with Residential Properties Close to the Kerb

Knowsley MBC 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

Knowsley MBC confirms that there are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

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

Knowsley MBC confirms that there are no new/newly identified roads with high flows of buses/HDVs.

3.4 Junctions

Knowsley MBC 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

Knowsley MBC confirms that there are no new/proposed roads.

3.6 Roads with Significantly Changed Traffic Flows

Knowsley MBC confirms that there are no new/newly identified roads with significantly changed traffic flows.

3.7 Bus and Coach Stations

Knowsley MBC confirms that there are no relevant bus stations in the Local Authority area.

4 Other Transport Sources

4.1 Airports

Knowsley MBC confirms that there are no airports in the Local Authority area.

4.2 Railways (Diesel and Steam Trains)…

4.2.1 Stationary Trains

Knowsley MBC 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

Knowsley MBC 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)

Knowsley MBC 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

The following applications approved in 2014 included air quality assessments. The air quality assessments submitted with these applications indicated that there is no likelihood of a breach of any air quality objective as a result of these developments.

Application Number: 14/00594/FUL

Proposal: Installation of a standby electricity generation plant

Location: Unit 5b, Moorgate Point, Moorgate Road, Southdene, Kirkby, Knowsley, L33 7HX,

Application Number: 13F/2313 (Neighbouring Authority: Liverpool City Council)

Proposal: To demolish existing buildings and erect 31 no. retail units (Use Class A1) and 7 no. restaurant units (A3). Retain 4 no. retail units and remodelling of former MFI unit, to provide 4 no. non-food retail units with associated landscaping, parking, access and highway works

Location: Land at Edge Lane - bounded by Edge Lane to the north, including existing retail units on the northern side; Milton Road to the west, Olive Mount Cutting and Binns Way to the south; Garnett Street, Runic Street and Rathbone Road to the east, Liverpool L13

Knowsley MBC has assessed new/proposed industrial installations, and concluded that it will not be necessary to proceed to a Detailed Assessment.

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

Knowsley MBC 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

Knowsley MBC 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

Knowsley MBC confirms that there are no petrol stations meeting the specified criteria**.**

5.4 Poultry Farms

Knowsley MBC confirms that there are no poultry farms meeting the specified criteria.

6 Commercial and Domestic Sources

6.1 Biomass Combustion – Individual Installations

Knowsley MBC confirms that there are no biomass combustion plants in the Local Authority area.

6.2 Biomass Combustion – Combined Impacts

Knowsley MBC confirms that there are no biomass combustion plants in the Local Authority area.

6.3 Domestic Solid-Fuel Burning

Knowsley MBC confirms that there are no areas of significant domestic fuel use in the Local Authority area.

7 Fugitive or Uncontrolled Sources

Knowsley MBC 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 monitoring has not identified any potential or actual exceedances in the borough and AQ objectives have been met.

8.2 Conclusions from Assessment of Sources

No new or significantly changed sources have been identified which are likely to lead to any potential exceedences of AQ objectives and therefore it is not necessary to proceed to a detailed assessment.

8.3 Proposed Actions

The Updating and Screening Assessment has not identified the need to proceed to a Detailed Assessment at this time.

Funding has been secured to install two new automatic air quality monitoring sites and therefore help improve air quality monitoring in Knowsley. It is anticipated that these sites will be operational from early 2016. Data collection and servicing of the new sites, as well as the existing Kirkby site, will be managed by We Care 4 Air. Details of the new sites are contained in Table 8.1.

The 2016 Progress Report will be submitted in Summer 2016.

Table 8.1 Details of Automatic Monitoring Sites to be Installed in 2016

Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Relevant Exposure? *(Y/N with distance (m) to relevant exposure)*	Distance to kerb of nearest road *(N/A if not applicable)*
Tarbock Road, Huyton	Urban background	345555	389413	NO_x PM_{10}	No	TBA	Y	TBA
Higher Road, Halewood	Urban background	345223	389691	NO_x $PM_{2.5}$	No	TBA	Y	TBA

9 References

DEFRA (2009) *Local Air Quality Management, Technical Guidance LAQM. TG(09)*

We Care for Air (2016) *Air Quality Monitoring Station Report for Knowsley Council, Air Quality Monitoring Station at Kirkby 2014 Annual Report*

Appendices

Appendix A: QA/QC Data

PM Monitoring Adjustment

The Kirkby station uses Beta Attenuation Monitors (BAM) to monitor the Particles. As per TG09 the BAM meets the equivalence criteria for monitoring providing the results are corrected for slope. The data in this report has had the correction factor of applied so it can be compared to the National Air Quality Objectives. The correction is achieved by dividing the values by 1.21.

Conversion factors for ppb to µg/m^3

Conversion rates at 20°C and 101.3kPa for Nitrogen dioxide

1.91 x ppb = µg/m3

Short-term to Long-term Data Adjustment

Nitrogen dioxide

Site	Site Type	Annual Mean (µg/m^3)	Period Mean (µg/m^3)	Ratio
Speke	AURN	24.7	25.5	0.97
Queens Dr	AURN	34.5	40.5	0.85
Warrington	AURN	19.8	23.4	0.84
Wigan	AURN	21.8	25.9	0.84
			Average	0.876

Kirkby Site period mean = 30.7 µg/m^3

Annual Mean= 30.7 x 0.876 = 26.9 µg/m^3

Particulate Matter <10

Site	Site Type	Annual Mean (µg/m^3)	Period Mean (µg/m^3)	Ratio
Speke	AURN	14.5	15.9	0.91
Warrington	AURN	15.5	17.1	0.91
Salford Eccles	AURN	17.6	19.7	0.90
			Average	0.906

Kirkby Site period mean = 20.2 µg/m^3

Annual Mean= 20.2 x 0.906 = 18.3 µg/m^3

QA/QC of Automatic Monitoring

Data from an analyser is stored on the logger as 'raw' or 'uncorrected' data, therefore data needs to be corrected or 'validated'. To validate data, the analysers need to be checked against a referenced standard of 'zero' air and 'span' gas. There are two methods available to correct data by using calibration checks to verify that the analyser is corrected for any response change:

- Daily automatic calibration checks
- Fortnightly manual calibration checks

The air quality monitoring station at Kirkby uses manual calibration checks. A regular manual calibration is performed at the AQMS at Kirkby. This check is performed to verify the response of the analyser in reference to the 'zero' and 'span' by introducing a high concentration of NO gas. These results are also used to validate the data for the NO_x analyser. All of the calibration results are then used to create a calibration factor, which is used to correct the data.

In 2014 the monitors were calibrated by local officers every two weeks and were serviced on a 6 monthly basis by **Enviro Technology** Services. In 2015 the servicing was contract was transferred to **We Care 4 Air**. We Care 4 Air also assisted in compiling and ratifying data from 2014.