POLICY REVIEW & DEVELOPMENT REPORT

Type of Report: Update	**Portfolio(s): Environment**
Will be subject to a future Cabinet Report: **~~YES~~/NO** **Will be need to be recommended to Council:** **~~YES~~/NO**	
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OPEN / ~~EXEMPT~~ (delete as appropriate)	

Environment and Community Panel

Date: 24th February 2016
Subject: Air Quality Update

Summary
The Updating and Screening Assessment 2015 shows Nitrogen Dioxide levels still exceed the annual mean objective at one location within the Town Centre Air Quality Management Area (AQMA) but also follows a downward trend; whilst levels in Gaywood Clock AQMA have fluctuated. Work on the Detailed Assessment for PM_{10} in King's Lynn is nearly finished and will be published separately.

Recommendations
That the content of the report be noted

1.0 Introduction

This report updates work regarding the Council's statutory duty under the Environment Act 1995 to annually review and assess air quality across the Borough.

2.0 Background

The Council completes an annual report in accordance with statutory guidance and submits the annual report to DEFRA for peer review.

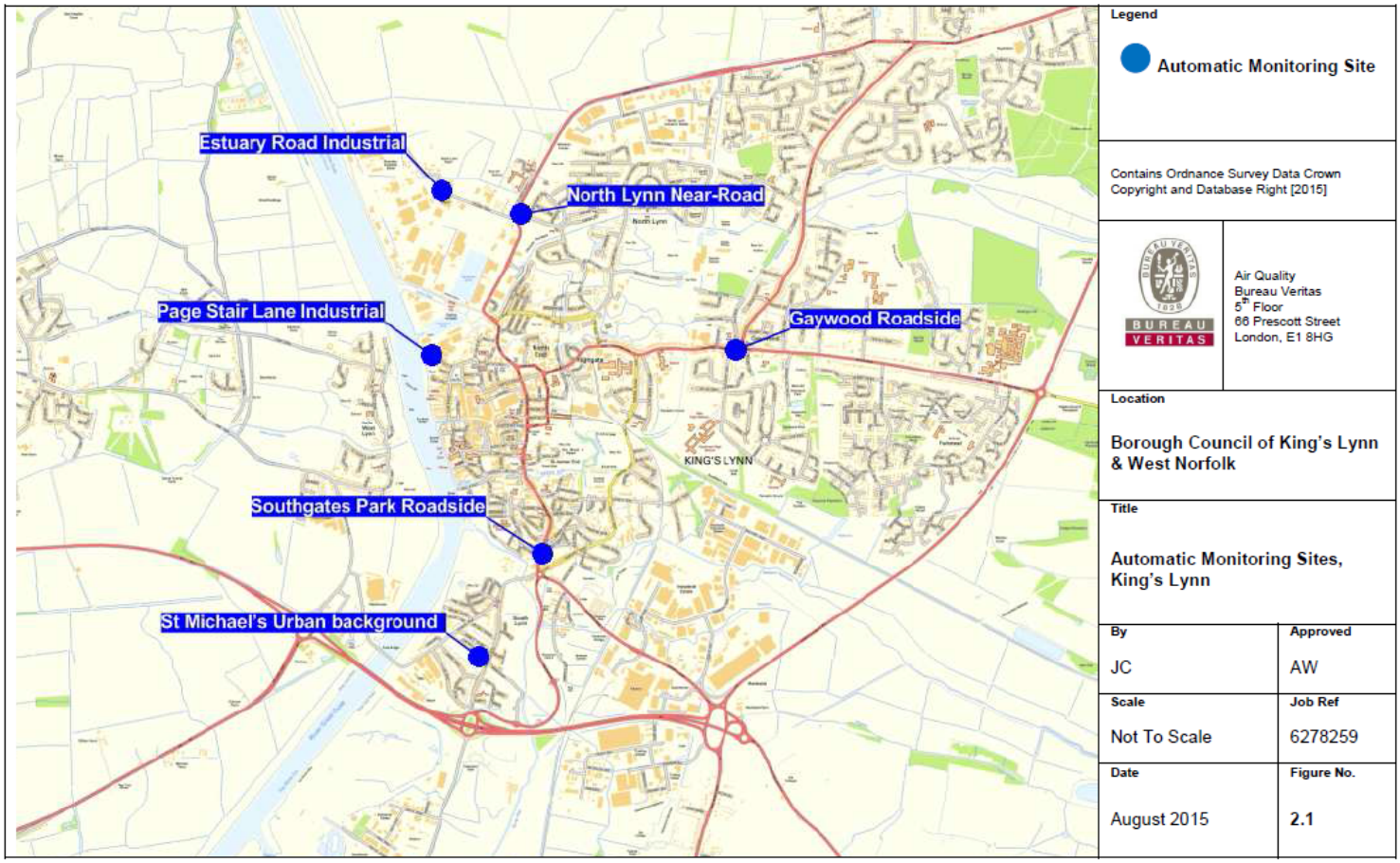
The Council has recently completed the Updating and Screening Assessment 2015 which has also been published on the Council website for public consultation and sent out for consultation with adjoining Local Authorities and internal consultees.

Previous air quality reports have highlighted areas of poor air quality within King's Lynn and two Air Quality Management Areas (AQMA) have been declared due to the exceedance of the Nitrogen Dioxide (NO_2) annual mean objective of 40 ug/m^3 along London Road/ Railway Road one way system and the Gaywood Clock area.

To help assess air quality the Council in 2014 had 3 air quality monitoring stations (AQMS), 4 Dust Screening Units and Diffusion Tubes at 69 locations where there may be exceedances of the one of the air quality strategy objectives.

Table 1 – Air Quality Monitoring Stations (AQMS)			
Site Name	**Pollutant**	**Source**	**Notes**
North Lynn	PM10 (fine dust)	Fugitive Industrial/ Commercial	Completing Detailed Assessment then relocate to Stoke Ferry for additional Detailed Assessment for PM_{10}
Gaywood Clock	Nitrogen Dioxide	Transport	Located within AQMA
Southgates	Nitrogen Dioxide	Transport	Located adjacent to AQMA
Page Stair Lane, KL	Dust (PM_{10})	Fugitive Industrial/ Commercial	Completing Detailed Assessment
Estuary Close, KL	Dust (PM_{10})	Fugitive Industrial/ Commercial	Completing Detailed Assessment
Furlong Drove, Stoke Ferry	Dust (PM_{10})	Industrial point source	To be part of separate Detailed Assessment
St Michael's South Lynn	Dust (PM_{10})	Urban Background for Willows Incinerator Industrial point source	To be installed in Stoke Ferry to provide data for separate Detailed Assessment

Fig 1 Map of Automatic Monitoring Sites in King's Lynn



3.0 Updating and Screening Assessment (USA) 2015

The Updating and Screening Assessment (USA) 2015 has considered monitoring data from 2014 for the following Pollutants;

3.1 Benzene - no current monitoring undertaken as previous monitoring showed compliance with objective. No new potential sources identified. Short term monitoring was carried out in 2015 at King's Lynn taxi rank and is reported separately.

3.2 Sulphur Dioxide - no current monitoring undertaken as previous monitoring showed compliance with objective. No new potential sources identified. Short term monitoring was carried out in 2015 at King's Lynn taxi rank and is reported separately.

3.3 PM_{10} - monitoring around King's Lynn was carried out at 4 sites. Data collected is currently being assessed as part of a Detailed Assessment which will be reported separately in spring 2016. Data currently indicates PM_{10} levels in King's Lynn for 2014 comply with the annual mean objective and the 24 hour mean objectives. Additional monitoring was carried out in Stoke Ferry and showed no exceedances of the annual or 24 hour mean objectives for PM_{10}.

Fig 2 - Annual Mean PM_{10} Trend

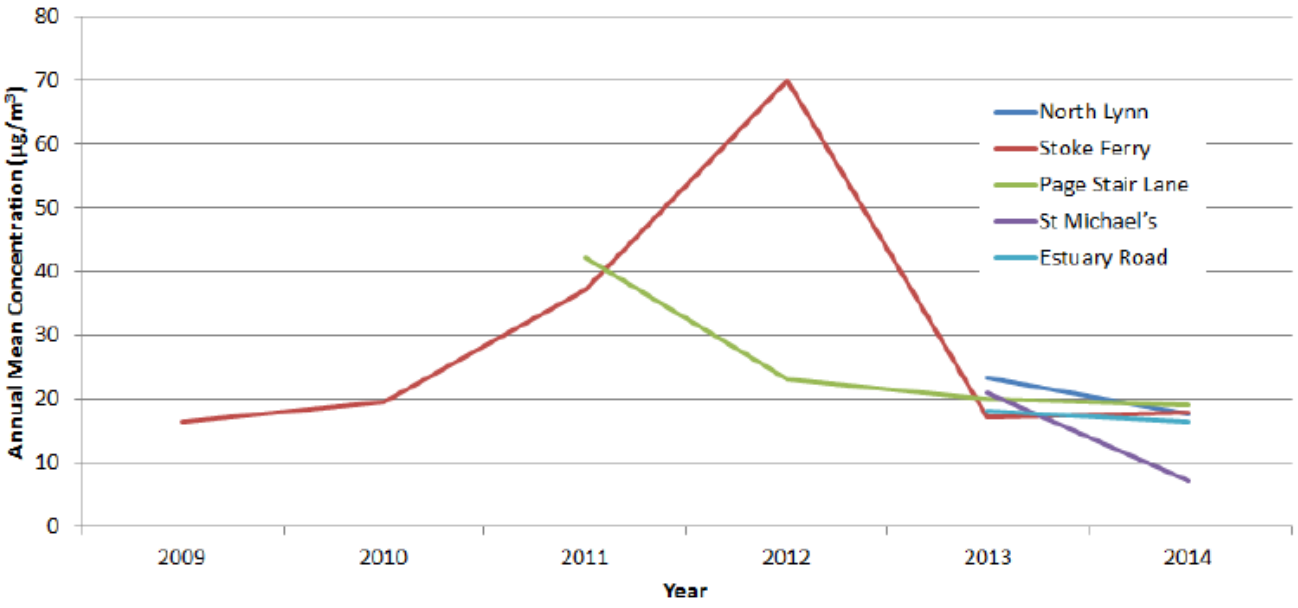


Table 2 - PM_{10} 24 Hour Mean Objective Trends				
Site	Number of Daily Means > 50 ug/m^3			
	2011	2012	2013	2014
North Lynn	-	-	1	4
Page Stair Lane	22	193	20	3
Estuary Close	-	-	13	1
St Michaels	-	-	13	1
Stoke Ferry	78	16	6	7
*24 Hour Mean Objective allows up to 34 exceedances per year				

3.4 Nitrogen Dioxide – Two AQMS and Diffusion Tubes at 69 locations measured NO_2 at several locations within the Borough.

Fig 3 – AQMS NO_2 Annual Mean Trends

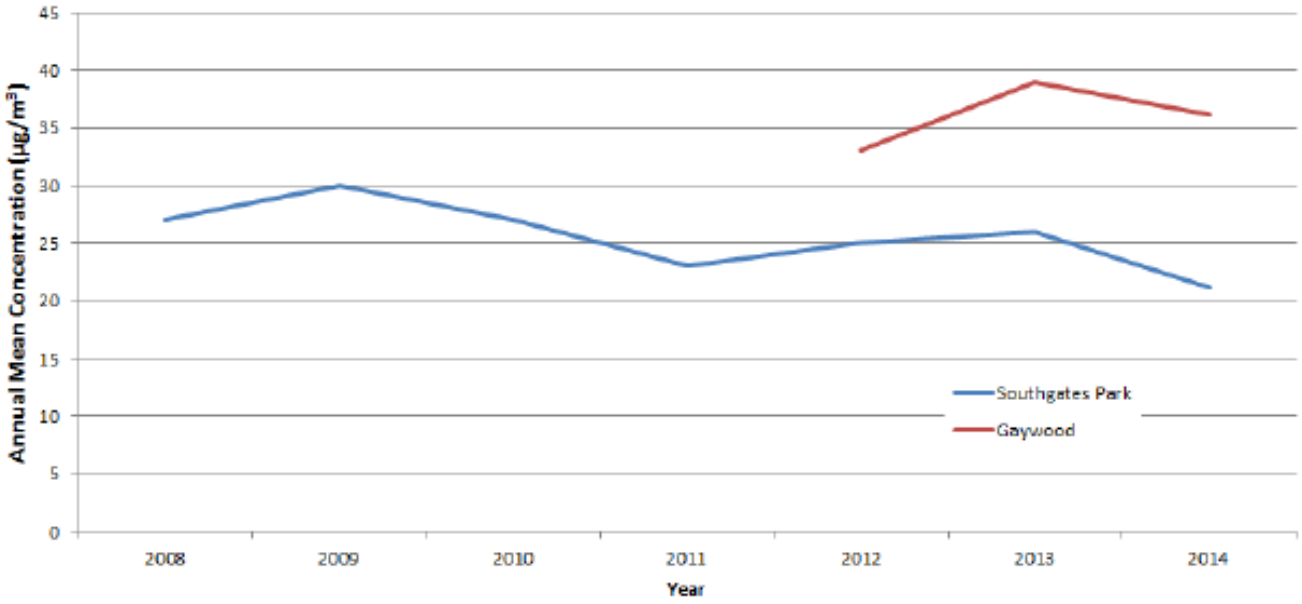


Table 3 – AQMS NO_2 Annual Mean

Site ID	Site Type	Within AQMA?	Valid Data Capture for Monitoring Period %	Valid Data Capture 2014 %	Annual Mean Concentration (µg/m^3)						
					2008	2009	2010	2011	2012	2013	2014
Southgates Park, King's Lynn	Roadside	Y	98.7	98.7	27	30	27	23	25	26	21
Gaywood, King's Lynn	Roadside	Y	98.0	98.0	-	-	-	-	33	39	36

Data collected shows the general downward trend at the Southgates AQMS whilst the Gaywood Clock area show more fluctuations in levels over the last three years.

During 2014 Diffusion Tubes were used at 69 sites across the Borough to measure levels of Nitrogen Dioxide, only two sites showed an exceedance of the 40 ug/m^3 Annual Mean Objective.

Table 4 – Diffusion Tube NO_2 Annual Mean Exceedances

Site ID	Site Name	Within AQMA?	2014 Annual Mean Concentration (µg/m^3) – Local Bias Adjustment factor = 0.9	Comments
2	Railway Road 4	Y – Town Centre	47.1	Exceedences in each of six previous years.
5	Bus Station	N	46.0	Exceedences in each of three previous years.

The Bus Station Site is not a relevant point for the annual mean objective but for the 1 hour mean objective instead. The annual mean level at this site would need to exceed 60 ug/m^3, therefore this site does comply with the relevant 1 hour mean objective for NO_2.

Five additional Diffusion Tube sites within the Town Centre AQMA along Railway Road and London Road have levels within 10% of the NO_2 40 ug/m^3 annual mean objective.

No Diffusion Tube sites within the Gaywood Clock AQMA exceeded the NO_2 40 ug/m^3 annual mean objective, but one site was within 10%.

Since the Sainsbury's and Tesco developments along Hardwick Road monitoring since 2012 at the residential caravan park has shown NO_2 levels remain below the 40 ug/m^3 annual mean (31.5 ug/m^3 & 25.4 ug/m^3).

Most Diffusion Tube monitoring occurs in and around the existing AQMAs. However from time to time Environmental Quality receives requests for short term monitoring, the results are shown below are in Table 5.

Table 5 – Diffusion Tube Results		
Site	**NO_2 Level (ug/m^3)**	**Notes**
King John Bank, Walpole	19.7	Background level in response to Biogas Power Station planning application at Sutton Bridge. Decommissioned for 2015
Roydon Common	8.9	Rural background following concerns over impact from Willows Incinerator planning application Decommissioned for 2015
Roydon Common	10.7	
St Michaels School	18.4	Urban & Rural background following concerns over impact from Willows Incinerator planning application Decommissioned for 2015
Ferry Square, West Lynn	13.1	
Main Road, West Winch	24.2	
Saddlebow Caravan Park	14.8	
Hillen Road	16.9	
Lynn Road, Saddlebow	10.4	

High Road, Saddlebow	11.1	
Sydney Terrace	14.7	
Burney Road	16.6	
Feltwell Road, Southery	12.5	Background levels following concern of HGV traffic through village Decommissioned for 2015
West Walton	13.4	Background levels following concern of traffic build up outside School Decommissioned for 2015
West Walton	11.1	

3.5 Environmental Quality has also considered a number of planning and IPPC Permit applications for air quality impacts.

Table 6 - Applications		
Site	**Type**	**Notes**
Land at Broomhill, Downham Market	Residential for 150 dwellings	Potential increase in traffic related emissions
Norfolk Street, King's Lynn	Conversion to flats adjacent to AQMA	Potential for existing AQMA to impact on new development
Manor Farm, Heacham	Residential for 166 dwellings	Potential increase in traffic related emissions
Hardwick Estate Extension, King's Lynn	Outline mixed business/ industrial	Potential increase in traffic related emissions
Railway Road, King's Lynn	Redevelopment of hotel within AQMA	Potential for existing AQMA to impact on development
King's Lynn Bus Station Refurbishment	Commercial, with changes to traffic flow through AQMA	Potential increase in traffic related emissions through AQMA
Railway Road, Downham Market	Outline for up to 32 dwellings	Potential increase in traffic related emissions
Market Lane, Walpole St Andrew	Poultry Farm	Potential emission of PM_{10}
Didlington Farm	Poultry Farm	IPPC Permit applications
Baptist Road, Upwell	Biomass Boiler	Potential PM_{10} emissions
Rollesby Road, King's Lynn	Biomass Boiler	Potential PM_{10} emissions
Gayton Road, King's Lynn	CHP plant	Potential NO_2 emissions
Thornham Road, Methwold	Crop Drying	Potential PM_{10} emissions
Church Lane, Tottenhill	Quarry Extension	Potential PM_{10} emissions
Lynn Road, Crimplesham	Quarry Extension	Potential PM_{10} emissions

Mill Drove, Blackborough End	Quarry Extension	Potential PM_{10} emissions
Station Road, West Dereham	Waste Baler	Potential NO_2 & PM_{10} emissions
British Sugar, Wissington	Bio energy plant	Scoping enquiry

3.6 USA 2015 conclusions are: -

- 2014 NO_2 monitoring data shows exceedance of NO_2 annual mean objective in Town Centre AQMA and several sites show levels remain within 10% of the annual mean objective but overall general downward trend
- 2014 NO_2 monitoring data shows no exceedances at Gaywood Clock but levels are fluctuating and some sites are within 10% of annual mean objective
- 2014 PM_{10} monitoring data showed no exceedances of the PM_{10} annual or 24 hour mean objectives
- Three biomass facilities have been assessed and it was concluded that it will not be necessary to proceed to a Detailed Assessment for these sites
- Several planning applications for fugitive or uncontrolled emissions have been considered and it was found no further assessment would be required
- No changes or amendments of the two current AQMAs are proposed
- No need to declare any new AQMAs; but the Detailed Assessment will confirm this separately

3.7 USA proposed actions are: -

- Continue with current monitoring programme to identify any future changes in pollutants concentrations
- Undertake further monitoring in Stoke Ferry to confirm existing PM_{10} concentrations and then proceed to a monitoring based Detailed Assessment
- Proceed to an annual report in 2016

4.0 Detailed Assessment

As mentioned in the USA 2015, PM_{10} monitoring has continued at North Lynn AQMS and Page Stair Lane and Estuary Close Dust Screening Units. This data is currently being reviewed and will be included in a Detailed Assessment which will be published in spring 2016.

Further monitoring will be carried out in Stoke Ferry with a view to complete a monitoring based Detailed Assessment in the future.

5.0 Bus Station Taxi Rank

As part of the King's Lynn bus station redevelopment, the taxi rank was relocated inside to the ground floor of the Cattle Market car park. This lead to various concerns being raised by the taxi trade, one of which was related to air quality. The Environmental Quality Team had already relocated one Diffusion Tube to the head of the new taxi rank to monitor if levels of NO_2 would build up inside, but following concerns additional short term and 8 hour monitoring was undertaken in August/September 2015 and again in December 2015. The results showed that there were no breaches of the exposure limits for benzene, carbon monoxide, carbon dioxide, sulphur dioxide and NO_2.

It should be noted that levels of NO_2 measured outside at the old monitoring location at the bus station were higher than the levels of NO_2 measured at the head of the new taxi rank. Monitoring results have been published on the Council's website.