

Annual Progress Report (APR)



2016 Air Quality Annual Progress Report (APR) for East Lothian Council

In fulfilment of Part IV of the
Environment Act 1995

Local Air Quality Management

July 2016

Local Authority Officer	Colin Clark
Department	Partnership & Services for Communities
Address	John Muir House, Haddington, East Lothian EH41 3HA
Telephone	01620 827443
E-mail	cclark1@eastlothian.gov.uk
Report Reference number	APR2016
Date	July 2016

Executive Summary: Air Quality in Our Area

Air Quality in East Lothian

East Lothian Council considered the declaration of an Air Quality Management Area (AQMA) for the Nitrogen dioxide (NO₂) annual mean Air Quality Objective (AQO) after submission of the 2013 Progress Report (Ref 1) if monitoring results obtained from new monitoring locations, in addition to existing monitoring locations, confirmed that the NO₂ annual mean AQO had been exceeded in Musselburgh High Street. In November 2013, following completion of the 2013 Progress Report (Ref 1), an AQMA was declared in Musselburgh (Ref 2) in relation to breaches and likely breaches of the Nitrogen Dioxide annual mean air quality objective. The extent of the AQMA is High Street, Musselburgh (A199) from its junction with Newbigging and extending westwards to the junction with Bridge Street and Mall Avenue.

Following declaration of the AQMA East Lothian Council commissioned a Further Assessment (Ref 3) of Air Quality in Musselburgh. The assessment provided the technical justification for the measures the authority later includes in any Air Quality Action Plan (AQAP). The Further Assessment (Ref 3) was completed in September 2014 and confirmed the findings of the previous Detailed Assessment in 2012 (Ref 4), namely that there are likely to be continued exceedences of the annual mean NO₂ objective where relevant exposure exists.

The Further Assessment (Ref 3) estimated that ambient Nitrogen oxides (NO_x) reductions in the AQMA of up to 27% at some locations were required in order to achieve compliance with the annual mean NO₂ objective and, furthermore, that a source apportionment exercise indicates that emissions from buses form the largest contribution at all locations along the High Street AQMA. An integrated package of interventions would most likely be required to provide the best NO_x reductions. Measures that reduced overall traffic, reduced queuing and reduced bus numbers, where appropriate, would reduce road NO_x significantly. These measures are however very challenging (both financially and technically) to implement.

The contour plots and dispersion modelling prepared for the Further Assessment (Ref 3) indicated that the AQMA boundary included all relevant sources and did not require revocation or amendment at that time

The 2014 Progress Report (Ref 5) and 2015 Updating & Screening Assessment (Ref 6) confirmed that NO₂ emissions in 2013 and 2014 continued to exceed, or were very close to, the Annual Mean Air Quality Objective for NO₂ at some locations within the AQMA. However, monitoring results from 2015 indicate that all Air Quality Objectives were complied with and there were no exceedences of any objectives, including the NO₂ Annual Mean AQO.

Nonetheless, East Lothian Council will continue to develop and publish an AQAP to outline the measures to be taken to ensure compliance with the Objectives. It has been agreed with the Scottish Government that East Lothian Councils AQAP will be published by October 31st 2016 (Ref 7).

A summary of all previous Review and Assessment Reports is provided in Appendix E.

Actions to Improve Air Quality

Results of monitoring for the 12-month period from 01/03/15 to 29/02/16 indicate a reduction in NO₂ levels throughout the county, including within the AQMA, and also a reduction in Particulate matter (PM₁₀) in Musselburgh.

The reductions have been significant at both the western and eastern ends of the AQMA, with no exceedences noted. This could be attributable to the operation of the Split Cycle Offset Optimisation Technique (SCOOT) traffic signal management system and completion of town centre improvement works, in November 2014, to remove the signalling arm of the car park on High Street near the junction with Newbigging. While there are no plans to amend or revoke the existing AQMA, since at least 3 consecutive years data without exceedence will be required to do this, recent monitoring results are, nonetheless, encouraging.

Local Priorities and Challenges

East Lothian Council intend to complete all work required to identify mitigation measures to be included within the AQAP and, thereafter, publish its AQAP and commence work on all mitigation measures within the next reporting year.

Furthermore, it is anticipated that the Eco Stars Fleet Recognition Scheme will also be launched and that this will attract fleet operators from within East Lothian and beyond. This will assist in both reducing overall emissions to the local environment and educate operators to the benefits to be gained from, and links between, environmentally friendly fleet operation and commercial efficiencies for their businesses.

How to Get Involved

Further information on Air Quality within East Lothian, including access to annual air quality reports, can be obtained from the Councils website at:

http://www.eastlothian.gov.uk/info/1231/environmental_health/1583/air_quality_in_east_lothian

Information on local and national Air Quality, including access to real-time data and maps can be obtained from the Air Quality in Scotland website at:

<http://www.scottishairquality.co.uk/>

Table of Contents

Executive Summary: Air Quality in Our Area	i
Air Quality in East Lothian.....	i
Actions to Improve Air Quality.....	ii
Local Priorities and Challenges.....	iii
How to Get Involved.....	iii
1. Local Air Quality Management	1
2. Actions to Improve Air Quality	2
2.1 Air Quality Management Areas.....	2
2.2 Progress and Impact of Measures to address Air Quality in East Lothian.....	3
3. Air Quality Monitoring Data and Comparison with Air Quality Objectives	12
3.1 Summary of Monitoring Undertaken	12
3.1.1 Automatic Monitoring Sites	12
3.1.2 Non-Automatic Monitoring Sites.....	12
3.2 Individual pollutants.....	12
3.2.1 Nitrogen Dioxide (NO ₂).....	12
3.2.2 Particulate Matter (PM _{2.5})	14
3.2.3 Sulphur Dioxide (SO ₂)	14
3.2.4 Carbon Monoxide, Lead and 1,3-Butadiene	14
4. New Local Developments	15
4.1 Road Traffic Sources.....	15
4.2 Other Transport Sources.....	15
4.3 Industrial Sources.....	15
4.4 Commercial and Domestic Sources	15
4.5 New Developments with Fugitive or Uncontrolled Sources.....	16
5. Planning Applications	17
6. Conclusions and Proposed Actions	18
6.1 Conclusions from New Monitoring Data.....	18
6.2 Conclusions relating to New Local Developments	18
6.3 Proposed Actions	18
Appendix A: Monitoring Result	19
Appendix B: Full Monthly Diffusion Tube Results for 01/03/15 – 29/02/16	25
Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC	27
Appendix D: Maps of monitoring locations	30
Appendix E: Summary of Previous Rounds of Review and Assessment	35

Glossary of Terms 38

References 39

List of Tables

Table 1.1 – Summary of Air Quality Objectives in Scotland1

Table 2.1 – Declared Air Quality Management Areas.....2

Table 2.2 – Progress on Measures to Improve Air Quality6

1. Local Air Quality Management

This report provides an overview of air quality in East Lothian during 2015. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) (Ref 8) and the relevant Policy Guidance (Ref 9) and Technical Guidance (Ref 10) 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 an exceedance is considered likely the local authority must 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. This Annual Progress Report (APR) summarises the work being undertaken by East Lothian Council to improve air quality and any progress that has been made.

Table 1.1 – Summary of Air Quality Objectives in Scotland

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Nitrogen dioxide (NO ₂)	200 µg/m ³ not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40 µg/m ³	Annual mean	31.12.2005
Particulate Matter (PM ₁₀)	50 µg/m ³ , not to be exceeded more than 7 times a year	24-hour mean	31.12.2010
	18 µg/m ³	Annual mean	31.12.2010
Particulate Matter (PM _{2.5})	10 µg/m ³	Annual mean	31.12.2020
Sulphur dioxide (SO ₂)	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
Benzene	3.25 µg/m ³	Running annual mean	31.12.2010
1,3 Butadiene	2.25 µg/m ³	Running annual mean	31.12.2003
Carbon Monoxide	10.0 mg/m ³	Running 8-Hour mean	31.12.2003
Lead	0.25 µg/m ³	Annual Mean	31.12.2008

2. Actions to Improve Air Quality

2.1 Air Quality Management Areas

AQMAs are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare an AQAP within 12 months, setting out measures it intends to put in place in pursuit of the objectives.

A summary of AQMAs declared by East Lothian Council can be found in Table 2.1. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries will be available online at <http://uk-air.defra.gov.uk/aqma/list>

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
High Street, Musselburgh 2013	<ul style="list-style-type: none"> • NO₂ annual mean 	Musselburgh	High Street, Musselburgh (A199) from its junction with Newbigging and extending westwards to the junction with Bridge Street and Mall Avenue	Submission date of 31 st October 2016 agreed with Scottish Government

2.2 Progress and Impact of Measures to address Air Quality in East Lothian

East Lothian Council has taken forward a number of measures during the current reporting year of 2015 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. More detail on these measures will be found in the air quality Action Plan when it is published. Key completed measures to date are:

- The East Central Scotland Vehicle Emissions Partnership – East Lothian Council work in partnership with Midlothian, West Lothian and Falkirk Councils to provide a voluntary Vehicle Emissions Testing Programme aimed at raising awareness of vehicle emissions and impacts on air quality amongst the general public. The partnership also investigates complaints of idling and provides an educational element to increasing awareness of air quality impacts from road traffic.
- SCOOT - Town centre improvement works were completed late November 2014, which included the upgrading of the traffic signals at High Street / Newbigging junction including the removal of the car park access arm from the junction which will improve the operation and reduce the average cycle time under SCOOT (Split Cycle Offset Optimisation Technique) operation. This will also reduce the overall delay to pedestrians by lowering the maximum waiting times.

East Lothian Councils Local Development Plan (LDP) is a critical component in the development of the Action Plan and will allow for the potential impacts upon traffic generation that future development may create, especially within the Musselburgh AQMA, to be properly assessed. Progress on the following measures has been slower than expected, mainly due to the delayed finalisation of the LDP:

- Creation of a micro-simulation traffic model of the strategic and local road network and thereafter prediction of the cumulative traffic impacts having regard to the development of the preferred sites identified in the LDP. The results of the traffic modelling will not be available until the end of August 2016. Modelling of several preferred transport related mitigation measures will then be carried out with a view to assessing their impacts on reducing

emissions within the AQMA and thereafter identify which measures to formally take forward within the Action Plan.

East Lothian Council expects the following measures to be completed over the course of the next reporting year:

- Eco Stars Fleet Recognition Scheme – East Lothian Council have secured funding from the Scottish Government and are in process of establishing an Eco Stars Fleet Recognition Scheme within East Lothian. The scheme provides recognition for best operational practices and guidance for making improvements to fleet operators with the ultimate aim of reducing fuel consumption and reduced emissions. The Council's own fleet, together with Commercial Fleet Operators will be encouraged to engage with the scheme which will have a positive impact on emissions, including within the AQMA in Musselburgh High Street.
- Promotion of Cleaner Vehicles – The Council's own fleet, together with transport companies and commercial fleet operators will contribute to improvements continually with newer, cleaner vehicle's being programmed for phased commissioning, including the part electrification of Lothian Buses travelling through the AQMA in Musselburgh High Street.
- Enforcement of idling provisions of The Road Traffic (Vehicle Emission) (Fixed Penalty) (Scotland) Regulations 2003 – East Lothian Council intend to appoint Traffic Wardens to educate and, where necessary, enforce traffic regulations, especially within the AQMA, in order to reduce pollution from stationary vehicles whose drivers leave the engines idling unnecessarily.
- Traffic Related Mitigation Measures – when the micro-simulation traffic model referred to above is completed by end of August 2016 several traffic related mitigation measures will then be modelled with a view to assessing their impacts on reducing emissions within the AQMA and thereafter identify which of these measures to take forward within the Action Plan. Measures that will be considered for modelling and taking forward in the AQAP may include, but not be limited to:
 - The formation of a Giratory encompassing High Street, Newbigging, Pinkie Road and Dalrymple Loan in Musselburgh,

- Diverting some traffic away from the AQMA by forming one-way systems
- Relocating bus-stops within the AQMA.

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
1	East Central Scotland Vehicle Emissions Partnership	Public information	East Lothian Council work in partnership with Midlothian, West Lothian and Falkirk Councils to provide a voluntary Vehicle Emissions Testing Programme aimed at raising awareness of vehicle emissions and impacts on air quality amongst the general public.	Vehicle Emissions Officer East Central Scotland Vehicle Emissions Partnership at West Lothian Council		2003	.		Completed / ongoing		
2	SCOOT - Split Cycle Offset Optimisation Technique	Traffic Management	SCOOT is a system of Urban Traffic Control and monitors queue lengths at all junctions on the main arterial routes and alters signal timing to suit. This is monitored every 120 seconds and although monitored by East Lothian Council is controlled by the City of Edinburgh Council through their Traffic Control Room.	ELC Road Services		2013			Completed / ongoing		The use of SCOOT can reasonably be expected to achieve savings in delay of 20% or more with associated reductions in emissions within the AQMA.

East Lothian Council

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
3	Local Development Plan (LDP)	Policy Guidance and Development Control	East Lothian Council are in process of finalising the latest Local Development Plan (LDP). The LDP will seek to integrate land use and transport and minimise the need to travel as well as the distance travelled. It will do this by promoting town centres as accessible locations for a mix of land uses and services and by providing community services locally. It will help promote active travel choices and public transport as alternatives to other motorised transport.	ELC Development Management					To be completed	2016	Where development of sites identified in the LDP indicates impacts on air quality, developers may be required to put in place mitigation measures to off-set these impacts from the development.

East Lothian Council

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
4	Construction of micro-simulation traffic model of the strategic and local road network	Transport Planning and Infrastructure	SIAS have been commissioned to build a micro-simulation (S-paramics) model of the strategic and local road network to form a 2012 base and predict cumulative traffic impacts on the strategic and local road network having regard to future development of the preferred sites identified in the LDP.	ELC Road Services					To be completed	August 2016	Modelling of the preferred transport related mitigation measures can be carried out, upon completion of the traffic model, to calculate vehicle emissions and their impacts upon Air Quality Objective pollutant levels and confirm which measures to take forward for inclusion in the draft Action Plan

East Lothian Council

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
5	Modelling of Traffic-related mitigation measures	Transport Planning and Infrastructure	Modelling of traffic related mitigation measures to be carried out to identify those measures to be included within the Action Plan.	ELC Environmental Health					To be completed. Awaiting confirmation of mitigation measures to be taken forward for modelling and possible inclusion within Action Plan.	September 2016	Measures could include: The formation of a Giratory encompassing High Street, Newbigging, Pinkie Road and Dalrymple Loan in Musselburgh; Diverting traffic away from the AQMA by forming one-way systems; the relocation of bus-stops within the AQMA.
6	Implementation of Traffic-related mitigation measures	Transport Planning and Infrastructure	Implementation of measures that modelling has confirmed for inclusion in the Action Plan.	ELC Road Services		October 2016			To be completed.	TBC	This cannot be achieved until the results of modelling of traffic related mitigation measures described above are known.

East Lothian Council

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
7	Enforcement of idling provisions of The Road Traffic (Vehicle Emission) (Fixed Penalty) (Scotland) Regulations 2003	Traffic Management	Prevention of unnecessary pollution from stationary vehicles within the AQMA and other busy town centres within the County.	ELC Traffic Wardens (to be recruited)					Planned	2017	It is intended to educate motorists and make them aware of idling impacts on the local environment. Fixed penalties will assist to enforce message and to deter idling.
8	Eco Stars	Vehicle Fleet Efficiency	East Lothian Council have secured funding from the Scottish Government and are in process of establishing an Eco Stars Fleet Recognition Scheme within East Lothian. The scheme provides recognition for best operational practices and guidance for making improvements to fleet operators with the ultimate aim of reducing fuel consumption and reduced emissions. The Council's own fleet, together with Commercial Fleet Operators will be encouraged to engage with the scheme which will have a positive impact on emissions, including within the AQMA in Musselburgh High Street.	ELC Environmental Health		June-September 2016			To be completed.	October 2016	The scheme is currently being established with assistance from Transport and Travel Research (Scotland) Ltd and it is hoped to officially launch the scheme in October 2016.

East Lothian Council

Measure No.	Measure	Category	Focus	Lead Authority	Planning Phase	Implementation Phase	Key Performance Indicator	Target Pollution Reduction in the AQMA	Progress to Date	Estimated Completion Date	Comments
9	Electrification of Lothian Buses in Musselburgh	Promoting Low Emission Transport	Minimisation of pollution within AQMA by providing electric charging facility to allow buses to switch to electric operation.	ELC Road Services					To be completed.		

3. Air Quality Monitoring Data and Comparison with Air Quality Objectives

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how local concentrations of the main air pollutants compare with the objectives.

East Lothian Council undertook automatic (continuous) monitoring at 1 site during 2015.

Table A.1 in Appendix A shows the details of the site. Data values from March 2015 – February 2016 have been reported due to low data capture rates from the automatic monitor during January-February 2015. National monitoring results are available at <http://www.scottishairquality.co.uk/>.

Maps showing the location of the monitoring sites are provided in Appendix D.

3.1.2 Non-Automatic Monitoring Sites

East Lothian Council undertook non-automatic (passive) monitoring of NO₂ at 23 sites during 2015. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D.

Further details on bias adjustment for the diffusion tubes are included in Appendix B.

3.2 Individual pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for annualisation and bias. Further details on adjustments are provided in Appendix B.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³.

For diffusion tubes, the full dataset of monthly mean values for the year from March 2015 – February 2016 is provided in Appendix B. This continuous 12-month period of data was used due to low data capture rates from the automatic monitor during January-February 2015. Details of ratified data for the automatic monitor for 2015 are provided in Appendix C. There was no exceedence of the annual mean air quality objective for the period 01/03/15 to 29/02/16.

Table A.4 in Appendix A compares the ratified continuous monitored NO₂ hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m³, not to be exceeded more than 18 times per year. There were no exceedences of the hourly mean air quality objective for the period 01/03/15 to 29/02/16.

Particulate Matter (PM₁₀)

Table A.5 in Appendix A compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past 5 years with the air quality objective of 18µg/m³.

Table A.6 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past 5 years with the air quality objective of 50µg/m³, not to be exceeded more than 7 times per year.

There were no exceedences of the annual mean or daily mean air quality objectives in 2015.

3.2.2 Particulate Matter (PM_{2.5})

East Lothian Council do not currently monitor PM_{2.5} and have no plans to do so in the future.

3.2.3 Sulphur Dioxide (SO₂)

East Lothian Council do not currently monitor Sulphur dioxide (SO₂).

3.2.4 Carbon Monoxide, Lead and 1,3-Butadiene

East Lothian Council do not currently monitor Carbon Monoxide, Lead or 1,3-Butadiene.

4. New Local Developments

4.1 Road Traffic Sources

East Lothian Council can confirm that there are no new:

- Narrow congested streets with residential properties close to the kerb.
- Busy streets where people may spend one hour or more close to traffic.
- Roads with a high flow of buses and/or HGVs.
- Junctions.
- New roads constructed or proposed.
- Roads with significantly changed traffic flows.
- Bus or coach stations.

since the 2015 Updating & Screening Assessment (Ref 6).

4.2 Other Transport Sources

East Lothian Council can confirm that there are no new:

- Airports.
- Locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15m.
- Locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30m.
- Ports for shipping.

since the 2015 Updating & Screening Assessment (Ref 6).

4.3 Industrial Sources

East Lothian Council can confirm that there are no new:

- **Industrial installations:** new or proposed installations for which an air quality assessment has been carried out.
- **Industrial installations:** existing installations where emissions have increased substantially or new relevant exposure has been introduced.
- **Industrial installations:** new or significantly changed installations with no previous air quality assessment.
- Major fuel storage depots storing petrol.
- Petrol stations.
- Poultry farms.

since the 2015 Updating & Screening Assessment (Ref 6).

4.4 Commercial and Domestic Sources

East Lothian Council can confirm that there are no new:

- Biomass combustion plant – individual installations.
- Areas where the combined impact of several biomass combustion sources may be relevant.
- Areas where domestic solid fuel burning may be relevant.
- Combined Heat & Power (CHP) plant.

since the 2015 Updating & Screening Assessment (Ref 6).

4.5 New Developments with Fugitive or Uncontrolled Sources

East Lothian Council can confirm that there are no new:

- Landfill sites.
- Quarries.
- Unmade haulage roads on industrial sites.
- Waste transfer stations etc.
- Other potential sources of fugitive particulate emissions.

since the 2015 Updating & Screening Assessment (Ref 6).

5. Planning Applications

There are no major planning applications currently being considered that could impact upon air quality. However, East Lothian Council are in process of finalising the Local Development Plan (LDP) and, as part of this process, a number of preferred sites throughout the county have been identified that may be used to accommodate up to 10, 000 new homes. A number of these sites are within the Musselburgh 'cluster' area and the cumulative impacts of these developments on the AQMA will have to be taken into account when determining associated planning applications. Air Quality Assessments will be required on a case-by-case basis but where assessments indicates that air quality is likely to be an issue, mitigation measures will need to be identified. These could include, but not be limited to, providing new housing with infrastructure to support modes of transport with low impact on air quality (e.g. electric vehicle charging points); or financial contributions from developers towards other infrastructure that may be required to off-set impacts upon air quality (e.g. alterations to road network). Developments that result in a breach of AQOs or significant increases in pollutant concentrations within an existing AQMA will not be supported.

The LDP will seek to integrate land use and transport and minimise the need to travel as well as the distance travelled. It will do this by promoting town centres as accessible locations for a mix of land uses and services and by providing community services locally. It will help promote active travel choices and public transport as alternatives to other motorised transport.

6. Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

Monitoring for the 12-month period from 01/03/15 to 29/02/16 indicates that all Air Quality Objectives were complied with including the Annual Mean Objective for NO₂ for which an AQMA was declared in 2013. The reductions in NO₂ levels within the AQMA in Musselburgh could be attributable, in part, to the introduction of the SCOOT Traffic Management System and the completion of Town Centre improvement works in November 2014 that included removing the signalling arm at the car park on High Street opposite the Newbigging junction at the eastern end of the AQMA.

6.2 Conclusions relating to New Local Developments

There have been no new local developments that would impact on air quality that have not been considered in previous rounds of review and assessments.

6.3 Proposed Actions

The new monitoring data has not identified any new exceedences of the objectives for any pollutant. Furthermore, no exceedence of the NO₂ annual mean objective was recorded during the monitoring period. As such, no new additional monitoring is required at this point, although existing monitoring of NO₂ will continue throughout East Lothian, including Musselburgh, while PM10 monitoring will continue in Musselburgh. The AQMA does not require amending or revoking. While the new monitoring results are encouraging and indicate a downward trend in NO₂ levels in the period 2011-2015, revocation of the AQMA can only be considered when 3 consecutive years data without exceedence have been obtained.

As such, East Lothian Council shall continue to develop and publish an AQAP by the end of 2016 and will report progress in the next Annual Progress Report due in June 2017.

Appendix A: Monitoring Result

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Inlet Height (m)
NO _x	Musselburgh North High Street - NO _x	Roadside	333 941	672837	NO ₂	N	Gas-phase chemilluminescence detection	5	3	1.5
PM ₁₀	Musselburgh North High Street - BAM	Roadside	333 941	672837	PM ₁₀	N	BAM	5	3	1.5

(1) 0 if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).

(2) N/A if not applicable

Table A.2 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube collocated with a Continuous Analyser?
T1	Musselburgh – Newbigging Junction	Roadside	334659	672720	NO ₂	Y	Y (15m)	2m	N
T4	Musselburgh - 87 High St	Roadside	334526	672700	NO ₂	Y	Y (15m)	4m	N
T6	Musselburgh – 147 High Street	Roadside	334392	672652	NO ₂	Y	Y 20m)	3m	N
T7	Musselburgh – 183 High St	Roadside	334301	672632	NO ₂	Y	Y 20m)	3m	N
T8	Musselburgh - Mall Av	Roadside	334172	672524	NO ₂	N	Y (25m)	4m	N
T9	Musselburgh – 45 Bridge Street	Roadside	334105	672750	NO ₂	N	Y (3m)	4m	N
T10	Musselburgh – 150 North High St	Roadside	333800	672822	NO ₂	N	Y (3m)	4m	N
T11	Tranent – 89 High St	Roadside	340686	672692	NO ₂	N	Y (3m)	3m	N
T12	Tranent – 82 High St	Roadside	370738	672687	NO ₂	N	Y (4m)	3m	N
T13	Tranent – 55 High Street	Roadside	340608	672738	NO ₂	N	Y (4m)	3m	N
T14	Tranent – 26 High St	Roadside	340570	672780	NO ₂	N	Y (2m)	2m	N
T15	Tranent – 58 Bridge St	Roadside	340112	672905	NO ₂	N	Y (5m)	2m	N
T16	Haddington - Lyn Lea	Urban	352249	673631	NO ₂	N	Y 8m)	3m	N
T23	Musselburgh - Co-located 133 N High St	Roadside	333941	672837	NO ₂	N	Y (5m)	3m	Y
T24	Musselburgh - Co-located 133 N High St	Roadside	333941	672837	NO ₂	N	Y (5m)	3m	Y
T25	Musselburgh - Co-located 133 N High St	Roadside	333941	672837	NO ₂	N	Y (5m)	3m	Y
T26	Wallyford - 116 Salters Rd	Roadside	336691	672055	NO ₂	N	Y (5m)	2m	N
T27	Wallyford - 71 Salters Rd	Roadside	336769	672127	NO ₂	N	Y (5m)	2m	N
T28	Musselburgh - 15 Bridge Street	Roadside	334164	672708	NO ₂	N	Y (5m)	3m	N
T29	Musselburgh - 167 High Street	Roadside	334354	672643	NO ₂	Y	Y (5m)	3m	N
T30	Musselburgh - 137 High Street	Roadside	334427	672664	NO ₂	Y	Y (5m)	3m	N
T31	Musselburgh - 69 High Street	Roadside	334580	672713	NO ₂	Y	Y (5m)	3m	N
T32	Musselburgh - 86 High Street	Roadside	334578	672695	NO ₂	Y	Y (5m)	3m	N

(1) 0 if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).

(2) N/A if not applicable.

Table A.3 – Annual Mean NO₂ Monitoring Results 2011-2015

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ Annual Mean Concentration (µg/m ³)				
					2011	2012	2013	2014	2015 ⁽³⁾
NO _x	Roadside	Automatic	96	85	24	24	24	23	22
T1	Roadside	Passive Diffusion Tube	100	100	30	30	30	30	27
T4	Roadside	Passive Diffusion Tube	91.7	91.7	26	25	25	25	25
T6	Roadside	Passive Diffusion Tube	100	100	40	43	42	43	36
T7	Roadside	Passive Diffusion Tube	91.7	91.7	36	39	37	38	33
T8	Roadside	Passive Diffusion Tube	100	100	24	24	24	23	21
T9	Roadside	Passive Diffusion Tube	100	100	26	27	26	28	24
T10	Roadside	Passive Diffusion Tube	100	100	35	33	34	34	31
T11	Roadside	Passive Diffusion Tube	100	100	22	30	32	33	31
T12	Roadside	Passive Diffusion Tube	100	100	24	28	28	25	24
T13	Roadside	Passive Diffusion Tube	100	100	29	28	28	29	27
T14	Roadside	Passive Diffusion Tube	91.7	91.7	33	26	24	24	21
T15	Roadside	Passive Diffusion Tube	91.7	91.7	19	19	19	17	16
T16	Urban	Passive Diffusion Tube	100	100	12	8	8	8	8
T23	Roadside	Passive Diffusion Tube	100	100	24	24	23	23	22
T24	Roadside	Passive Diffusion Tube	100	100	24	25	24	22	22
T25	Roadside	Passive Diffusion Tube	100	100	24	26	24	23	22
T26	Roadside	Passive Diffusion Tube	91.7	91.7	26	23	23	24	21
T27	Roadside	Passive Diffusion Tube	100	100	20	23	24	22	21
T28	Roadside	Passive Diffusion Tube	100	100	N/A	29	26	26	23
T29	Roadside	Passive Diffusion Tube	91.7	91.7	N/A	42	38	39	32
T30	Roadside	Passive Diffusion Tube	100	100	N/A	34	30	32	27
T31	Roadside	Passive Diffusion Tube	100	100	N/A	47	43	44	35
T32	Roadside	Passive Diffusion Tube	100	100	N/A	32	34	37	30

Notes: Exceedences of the NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedence of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

(1) data capture for the monitoring period (01/03/15 – 29/02/16), in cases where monitoring was only carried out for part of the year in 2015.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) Automatic Data capture for 2015 was 85% due to lack of data for Jan-Feb 2015. Accordingly, data presented is for 12 month period 01/03/15-29/02/16

Table A.4 – 1-Hour Mean NO₂ Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾				
					2011	2012	2013	2014	2015
NO _x	Roadside	Automatic	85	85	0 (94)	0	0 (101)	0 (78)	0 (75)

Notes: Exceedences of the NO₂ 1-hour mean objective (200µg/m³ not to be exceeded more than 18 times/year) are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 85%, the 99.8th percentile of 1-hour means is provided in brackets.

Table A.5 – Annual Mean PM₁₀ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	PM ₁₀ Annual Mean Concentration (µg/m ³)				
				2011	2012	2013	2014	2015
PM ₁₀	Roadside	88.6	88.6	13	12	16	17	12

Notes: Exceedences of the PM₁₀ annual mean objective of 18µg/m³ are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Table A.6 – 24-Hour Mean PM₁₀ Monitoring Results

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2015 (%) ⁽²⁾	PM ₁₀ 24-Hour Means > 50µg/m ³ ⁽³⁾				
				2011	2012	2013	2014	2015
PM ₁₀	Roadside	88.6	88.6	1 (30)	0	2 (32)	3	1

Notes: Exceedences of the PM₁₀ 24-hour mean objective (50µg/m³ not to be exceeded more than 7 times/year) are shown in **bold**.

(1) data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(2) data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

(3) If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

Appendix B: Full Monthly Diffusion Tube Results for 01/03/15 – 29/02/16

Table B.1 – NO₂ Monthly Diffusion Tube Results for <Year>

Site ID	Location	01/03/15 - 29/02/16												AVERAGE	Data Capture %	BIAS ADJUSTED (0.82 local) ⁽¹⁾
		Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb			
T1	Musselburgh – Newbigging Junction	34	32	32	25	30	23	35	42	42	40	34	31	33	100	27
T4	Musselburgh - 87 High St	29	-	26	22	22	20	30	35	41	33	36	35	30	91.7	25
T6	Musselburgh – 147 High Street	50	51	46	45	43	30	48	48	45	30	43	44	44	100	36
T7	Musselburgh – 183 High St	42	45	40	35	39	-	45	47	36	33	42	38	40	91.7	33
T8	Musselburgh - Mall Av	29	25	21	21	21	19	28	34	30	25	29	27	26	100	21
T9	Musselburgh – 45 Bridge Street	32	30	28	21	28	20	31	38	31	28	34	29	29	100	24
T10	Musselburgh – 150 North High St	45	37	32	31	34	28	36	39	42	41	48	38	38	100	31
T11	Tranent – 89 High St	44	39	32	28	34	32	42	52	44	36	32	44	38	100	31
T12	Tranent – 82 High St	34	30	23	22	27	23	33	36	29	27	29	32	29	100	24
T13	Tranent – 55 High Street	34	32	24	22	29	30	39	45	39	30	38	38	33	100	27
T14	Tranent – 26 High St	31	28	21	19	22	18	30	32	26	-	31	24	26	91.7	21
T15	Tranent – 58 Bridge St	24	23	18	14	16	1	23	26	23	19	23	30	20	91.7	16
T16	Haddington - Lyn Lea	12	10	7	5	6	5	11	14	12	8	14	15	10	100	8
T23	Musselburgh - 133 N High St ⁽¹⁾	30	29	24	23	23	19	30	32	27	24	26	28	26	100	22
T24	Musselburgh - 133 N High St ⁽¹⁾	29	31	25	20	24	20	27	33	26	26	29	29	27	100	22
T25	Musselburgh - 133 N High St ⁽¹⁾	29	34	26	20	25	20	27	31	26	24	32	27	27	100	22
T26	Wallyford - 116 Salters Rd	33	32	20	19	26	18	33	-	31	20	26	27	26	91.7	21
T27	Wallyford - 71 Salters Rd	27	28	15	19	17	19	28	21	39	30	35	26	25	100	21
*T28	Musselburgh - 15 Bridge Street	29	33	23	23	27	23	35	39	20	29	31	29	28	100	23
*T29	Musselburgh - 167 High Street	45	48	44	39	18	32	-	52	38	30	42	45	39	91.7	32
*T30	Musselburgh - 137 High Street	35	37	31	30	30	24	32	39	37	32	28	34	32	100	27
*T31	Musselburgh - 69 High Street	50	49	33	44	38	36	45	53	48	31	49	43	43	100	35
*T32	Musselburgh - 86 High Street	38	33	31	25	32	29	38	44	46	34	52	42	37	100	30

Three of the diffusion tubes are co-located with the continuous analyser on Musselburgh North High Street (Tube Numbers T23, T24 and T25). The bias adjustment factor has been calculated from the comparison of the diffusion tubes and continuous analyser measurements during the monitoring period. The average for the co-located tubes was 26.7 µg/m³. The average for the continuous analyser was 22 µg/m³. This provided a diffusion tube bias adjustment factor of 0.86.

Method	Average for period (µg/m ³)
Analyser	22
Tubes	26.7
BIAS ADJUSTMENT	0.82

Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC

Produced by Ricardo Energy & Environment on behalf of the Scottish Government

EAST LOTHIAN MUSSELBURGH N HIGH ST 01 January to 31 December 2015

These data have been fully ratified by Ricardo Energy & Environment

POLLUTANT	NO ₂	NO _x	PM ₁₀ *+
Maximum hourly mean	86 µg m ⁻³	388 µg m ⁻³	109 µg m ⁻³
Maximum daily mean	50 µg m ⁻³	140 µg m ⁻³	54 µg m ⁻³
99.8th percentile of hourly means	75 µg m ⁻³	245 µg m ⁻³	-
98.08th percentile of daily means	-	-	35 µg m ⁻³
Average	19 µg m ⁻³	40 µg m ⁻³	12 µg m ⁻³
Data capture	84.9 %	84.9 %	88.6 %

NO_x mass units are NO_x as NO₂ µg m⁻³

* PM₁₀ Indicative Gravimetric Equivalent µg m⁻³

+ PM₁₀ instruments: BAM using a gravimetric factor of 0.83333 for Indicative Gravimetric Equivalent from 1 January 2015

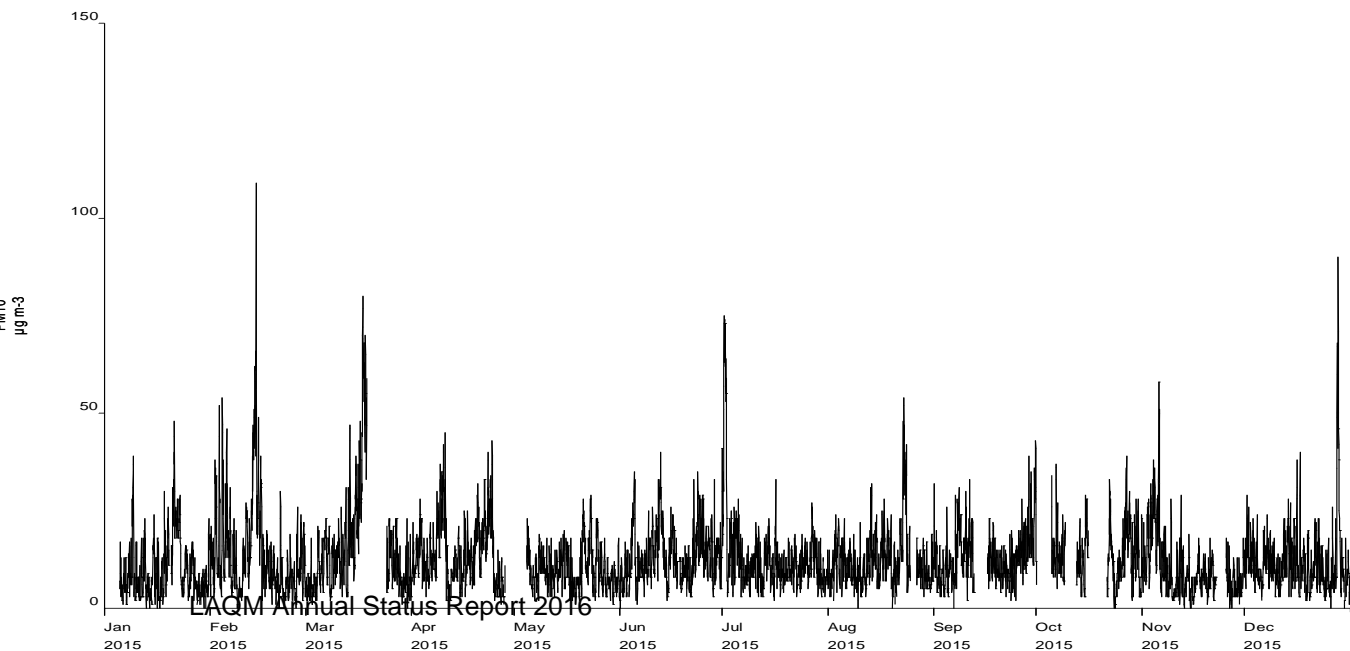
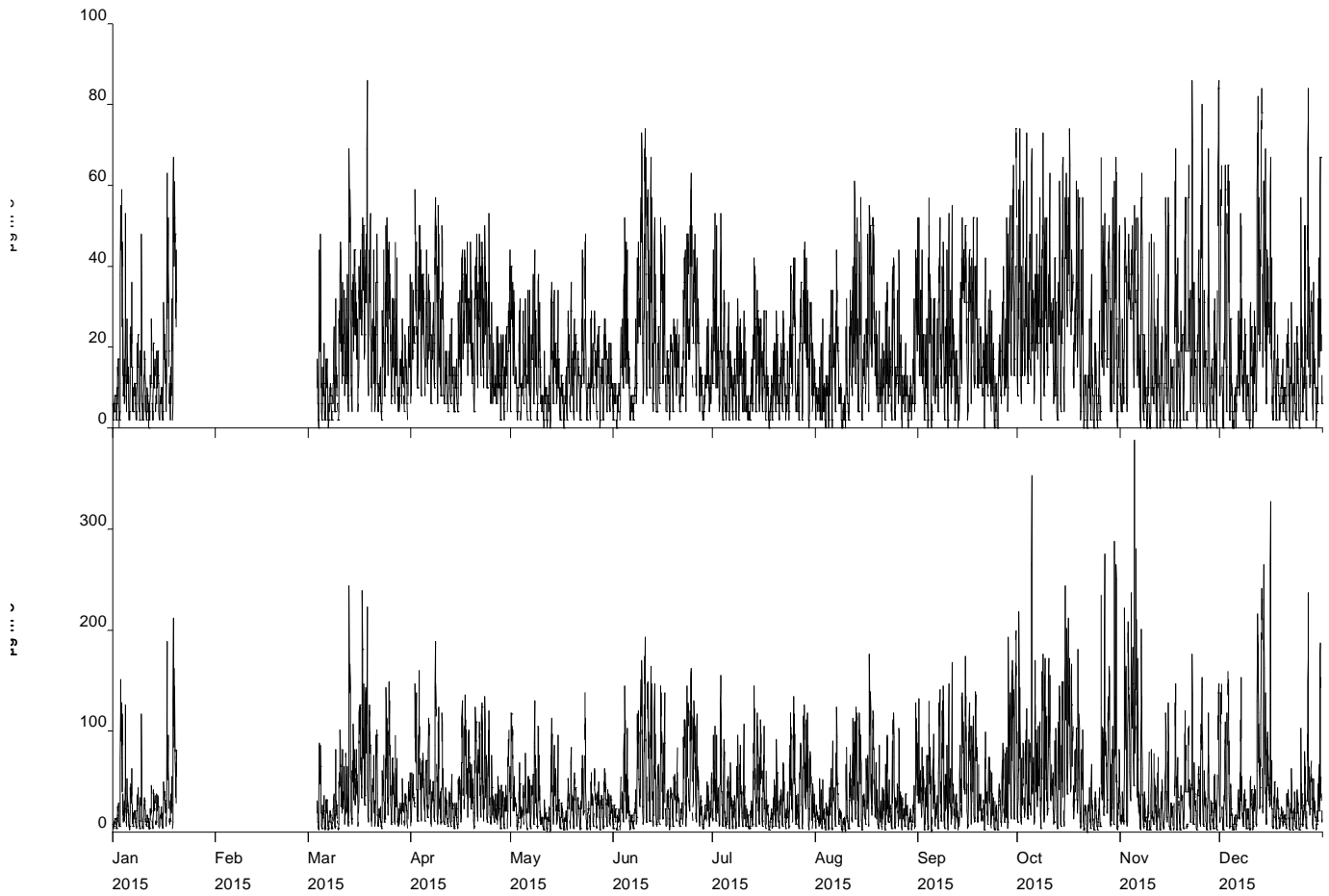
All gaseous pollutant mass units are at 20°C and 1013mb. Particulate matter concentrations are reported at ambient temperature and pressure.

Pollutant	Air Quality Regulations (2000) and Air Quality (Scotland) Amendment Regulations 2002	Exceedences	Days
Nitrogen Dioxide	Annual mean > 40 µg m ⁻³	0	-
Nitrogen Dioxide	Hourly mean > 200 µg m ⁻³	0	0
PM10 Particulate Matter (Gravimetric)	Daily mean > 50 µg m ⁻³	1	1
PM10 Particulate Matter (Gravimetric)	Annual mean > 18 µg m ⁻³	0	-

Note: For a strict comparison against the objectives there must be a data capture of >90% throughout the calendar year

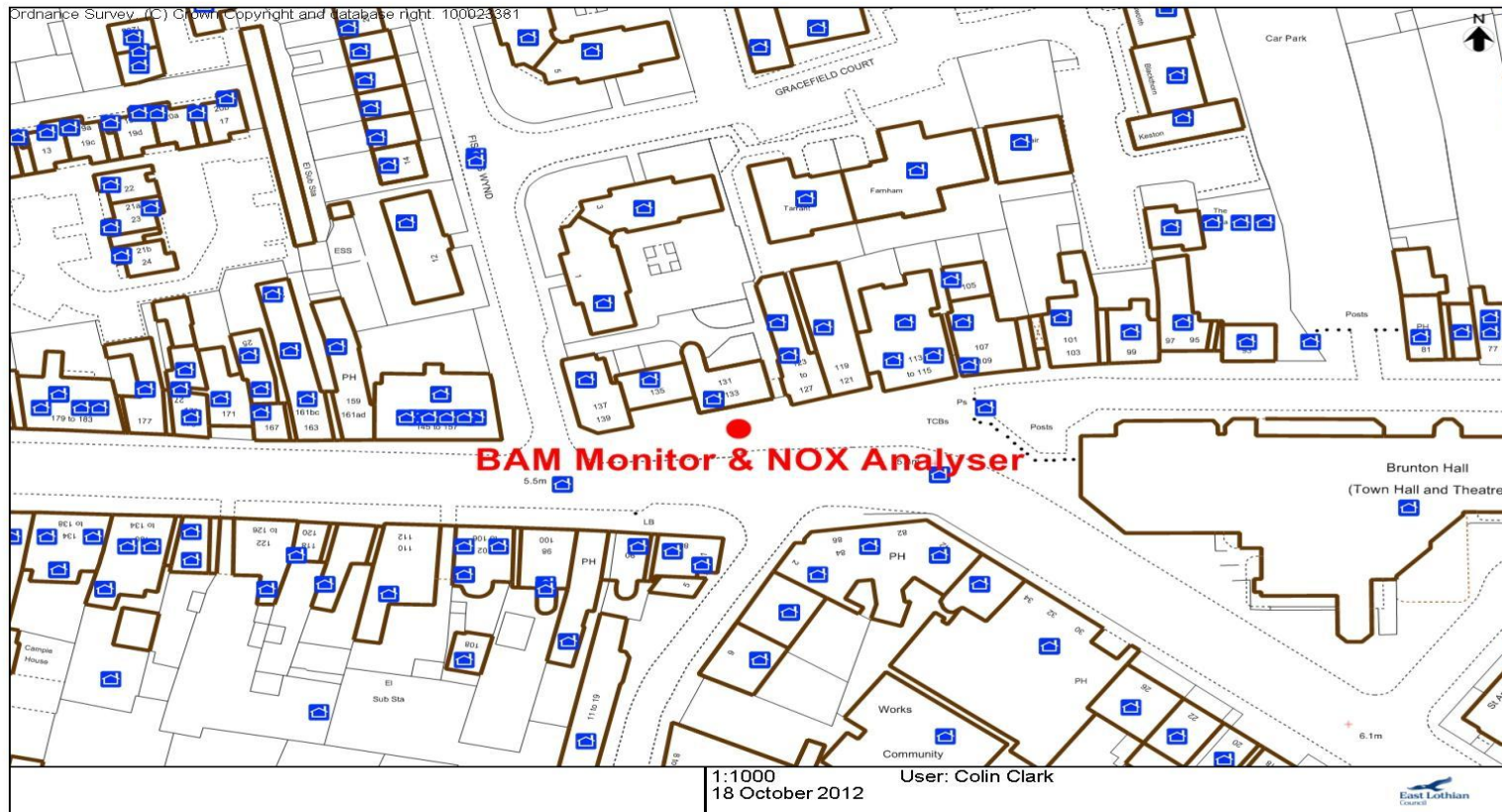
Produced by Ricardo Energy & Environment on behalf of the Scottish Government

East Lothian Musselburgh N High St Hourly Mean Data for 01 January to 31 December 2015

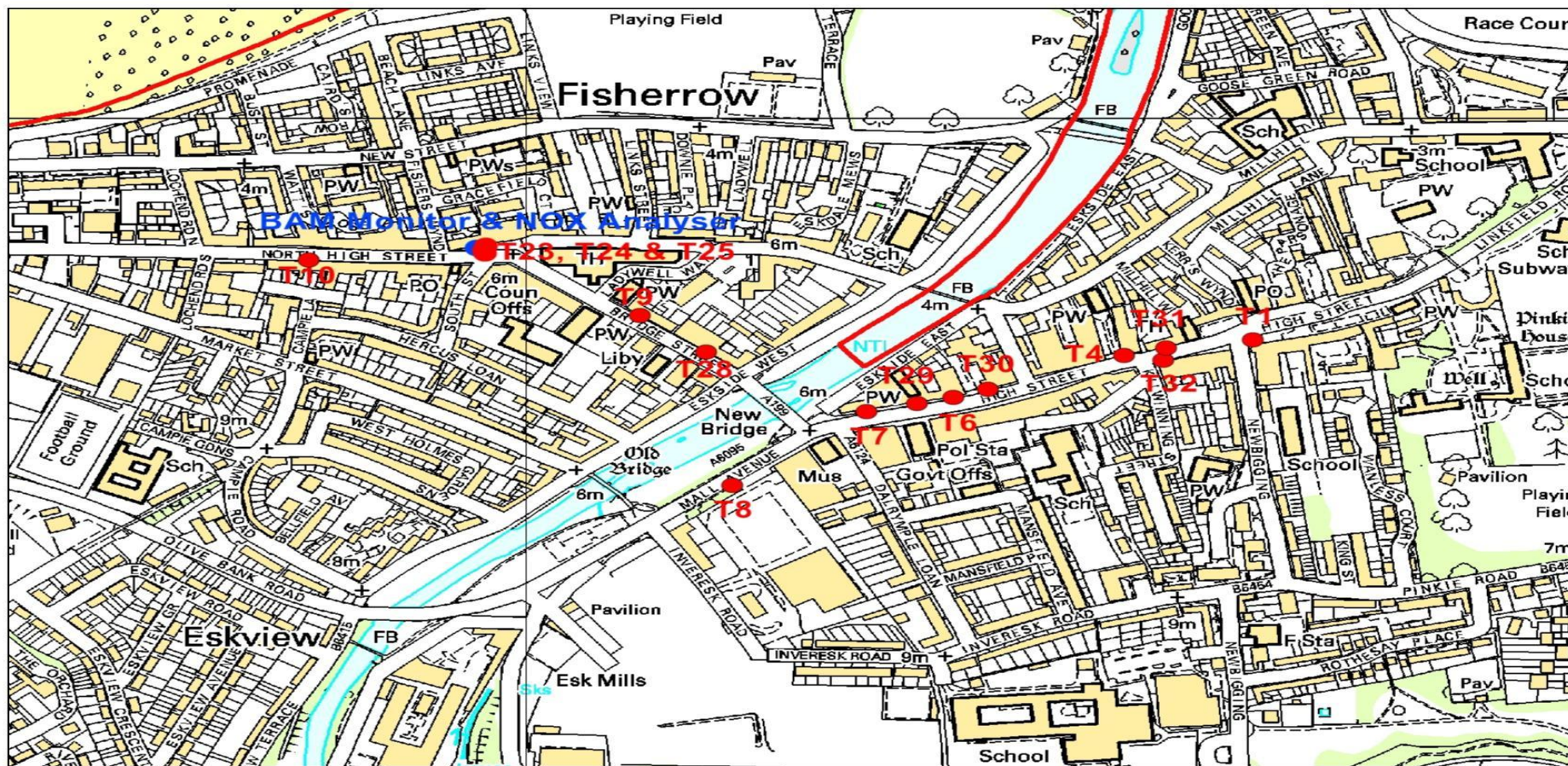


Appendix D: Maps of monitoring locations

Map of Automatic Monitoring Site in Musselburgh



Map of Non-Automatic Monitoring Sites in Musselburgh

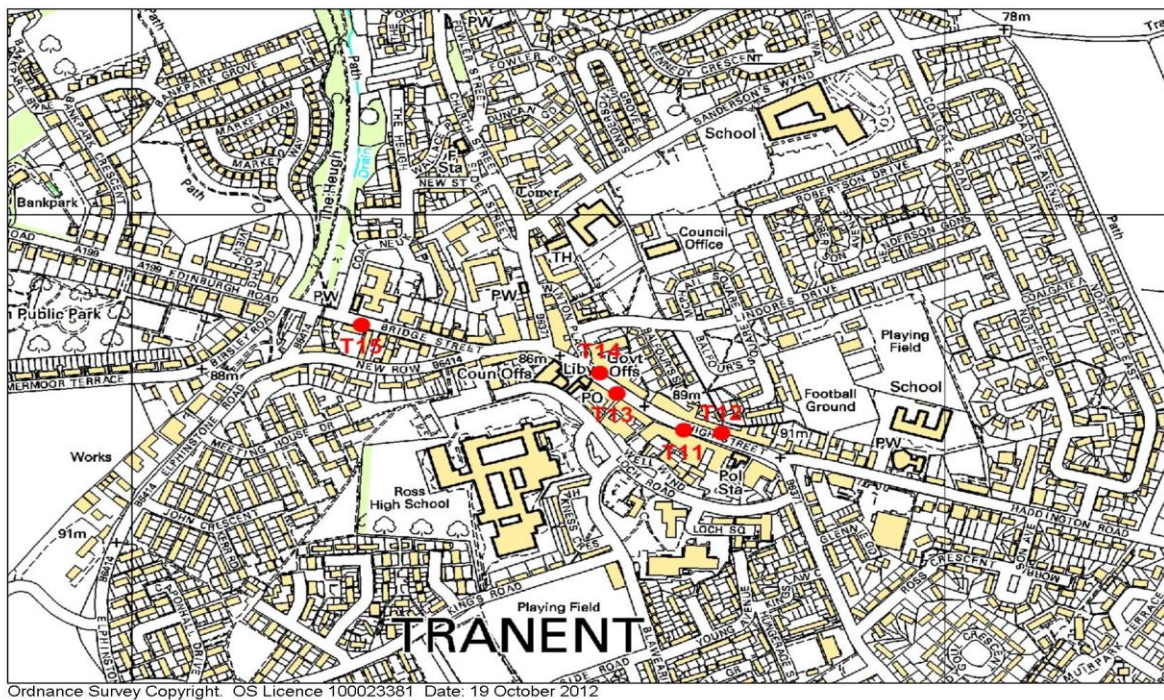


Ordnance Survey Copyright. OS Licence 100023381 Date: 19 October 2012

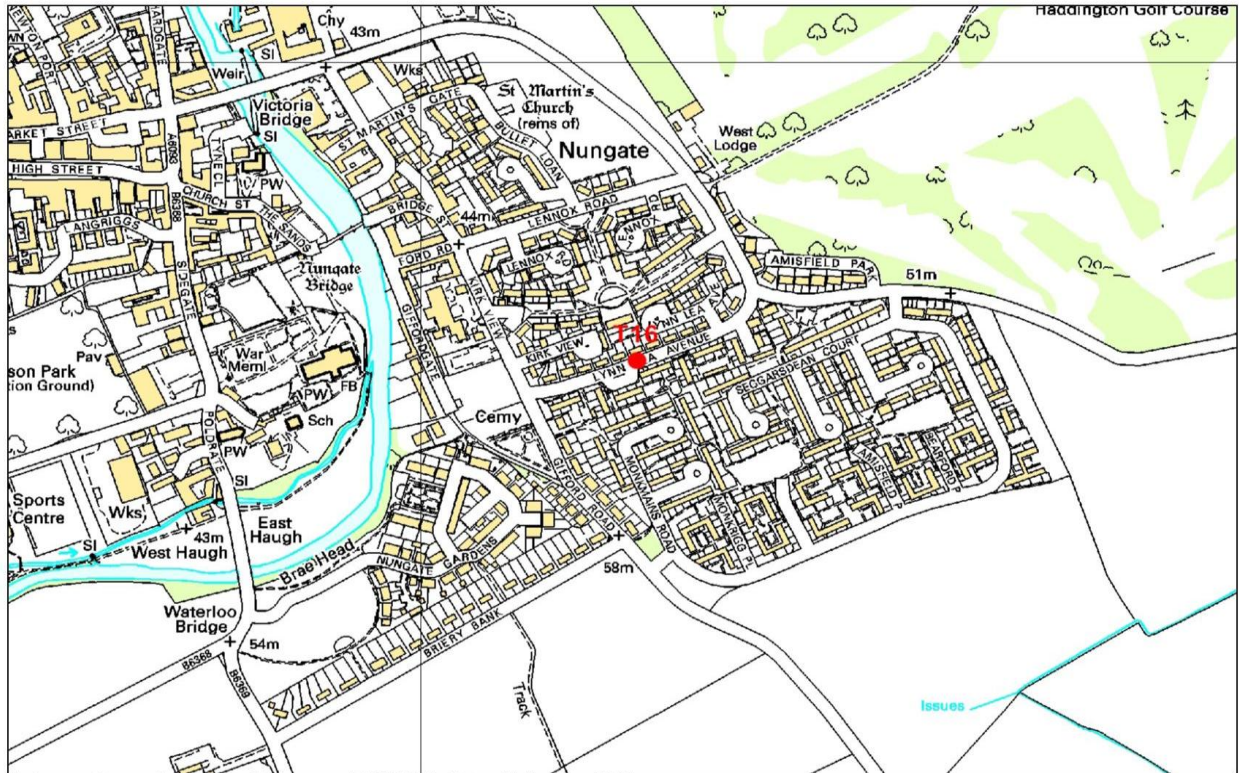
Map of Non-Automatic Monitoring Sites in Wallyford



Map of Non-Automatic Monitoring Sites in Tranent



Map of Non-Automatic Monitoring Sites in Haddington



Appendix E: Summary of Previous Rounds of Review and Assessment

Summary of Previous Review and Assessment Reports				
ROUND	REPORT TYPE	REPORT DUE DATE	REPORT COMPLETION DATE	CONCLUSIONS
2	Updating & Screening Assessment	April 2003	March 2004	No further assessments required for Carbon Monoxide, Benzene, Lead and 1,3-Butadiene . Detailed Assessments required for: Nitrogen Dioxide due to road traffic sources in Musselburgh High St and Sulphur Dioxide due to industrial sources (Cockenzie Power Station and Lafarge Cement Works) PM10 due to road traffic sources in Musselburgh High St and North High St and also due to industrial source (Cockenzie Power Station)
2-1	Detailed Assessment	April 2004	April 2005	Nitrogen Dioxide due to road traffic in Musselburgh High St expected to meet Objectives by target year of 2005. No Further Assessment required at this time. Sulphur Dioxide in vicinity of Cockenzie Power Station was not forecast to exceed Objectives. 15-minute mean Objective forecast to be slightly exceeded in vicinity of Lafarge Cement Works, although abatement equipment to be installed should ensure that Objective will be met. No further assessments required at this time. PM10 Annual Mean Objective forecast to be exceeded in Musselburgh High St due to roadwork's and Cockenzie due to emissions from Coal Plant at Cockenzie Power Station. However, results were based on Osiris monitoring system and use of correction factors. Further Assessments to be carried out by East Lothian Council using TEOM Analyser for road traffic sources in Musselburgh and by SEPA using Gravimetric Sampler for industrial source in Cockenzie.
2-2	Progress Report	April 2005	August 2005	Nitrogen Dioxide levels due to road traffic sources continue to comply with Objectives within Musselburgh and throughout East Lothian. PM10 Further Assessments due to road traffic sources in Musselburgh and industrial source in Cockenzie still to be completed and results to be incorporated in Updating and Screening Assessment Report due in April 2006.
3	Updating & Screening Assessment	April 2006	August 2006	No exceedences of any Objectives forecast. No Further Assessments required
3-1	Progress Report	April 2007	July 2007	Nitrogen Dioxide levels due to road traffic sources in Musselburgh and proposed expansions of Musselburgh Racecourse and Wallyford Village continue, and are forecast, to comply with Objectives. PM10 levels due to road traffic in Musselburgh complied with using local correction factor but exceeded using national correction factor. TEOM unit to be replaced with a BAM unit following results of Equivalence Study carried out by DEFRA.
3-2	Progress Report	April 2008	February 2009	Nitrogen Dioxide levels due to road traffic sources in Musselburgh and proposed expansions of Musselburgh Racecourse and Wallyford Village continue, and are forecast, to comply with Objectives. Passive monitoring to be introduced in Wallyford.

Summary of Previous Review and Assessment Reports				
Round	Report Type	Report Due Date	Report Completion Date	Conclusions
4	Updating & Screening Assessment	April 2009	November 2009	PM10 and Nitrogen Dioxide levels in Musselburgh will require to be subject of a Detailed Assessment due to the Biomass Unit located at Queen Margaret University. The results of the Updating and Screening Assessment carried out for all other pollutants indicates that current Air Quality Objectives are being complied with.
4-1.1	Detailed Assessment of Nitrogen Dioxide and PM10 due to QMU Biomass Unit	2010	October 2010	PM10 and Nitrogen Dioxide levels continue to be met
4-1	Progress Report	April 2010	October 2010	All AQO's being complied with
4-2	Progress Report	April 2011	June 2011	Detailed Assessment of Nitrogen Dioxide required for Musselburgh High Street. All other AQO's being complied with.
4-2.1	Detailed Assessment of Nitrogen Dioxide in Musselburgh due to Road Traffic	2012	May 2012	AQMA required for Bridge Street and High Street due to forecast exceedence of Annual Mean AQO if additional monitoring confirms predicted exceedences.
5	Updating & Screening Assessment	April 2012		AQMA required for Bridge Street and High Street due to forecast exceedence of Annual Mean AQO <u>if additional monitoring confirms predicted exceedences in 2012.</u>
5-1	Progress Report	April 2013	August 2013	AQMA to be declared in Musselburgh in relation to exceedences of NO2 Annual Mean Objective. Further Assessment to be commissioned.
5-1.1	Further assessment	November 2014	June 2014	It is estimated that ambient NOx reductions in the AQMA of between 0% and 27% are required in order to achieve compliance with the annual mean NO2 objective. The source apportionment exercise indicates that emissions from buses form the largest contribution at all locations along the High St AQMA. Modelling of the mitigation scenarios agreed with the Council indicates that an integrated package of interventions would provide the best NOx reductions. Measures that reduce overall traffic, reduce queuing and reduce bus numbers, where appropriate, will reduce road NOx significantly.
5-2	Progress Report	April 2014	August 2014	Monitoring results for 2013, indicate that the current AQMA boundary includes all relevant sources and does not require revocation or amendment at this time. NO ₂ levels in AQMA continue to exceed or remain very close to objective.
6-1	Updating & Screening Assessment	April 2015	September 2015	Monitoring results for 2014, indicate that the current AQMA boundary includes all relevant sources and does not require revocation or amendment at this time. NO ₂ levels in AQMA continue to exceed or remain very close to objective. Progress is being made wrt development of Action Plan with draft expected early 2016.
6-2	Annual Progress Report	June 2016	July 2016	No exceedences of Air Quality Objectives with downward trend noted in NO ₂ . Action Plan being progressed. Awaiting results of Micro-simulation traffic model to allow traffic-related mitigation measures to be identified for inclusion in Action Plan.

Glossary of Terms

Please add a description of any abbreviation included in the ASR – An example is provided below.

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA intends to achieve air quality limit values'
AQMA	Air Quality Management Area – An area where air pollutant concentrations exceed / are likely to exceed the relevant air quality objectives. AQMAs are declared for specific pollutants and objectives
APR	Air quality Annual Progress Report
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NO _x	Nitrogen Oxides
PM ₁₀	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM _{2.5}	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO ₂	Sulphur Dioxide

References

1. East Lothian Council, Local Air Quality Management: Progress Report, August 2013
2. East Lothian Council High Street, Musselburgh (Air Quality Management Order) 2013
3. East Lothian Council, Local Air Quality Management, Further Assessment of Air Quality in Musselburgh, September 2014
4. East Lothian Council, Local Air Quality Management: Detailed Assessment, June 2012
5. East Lothian Council, Local Air Quality Management: Progress Report, July 2014
6. East Lothian Council, Local Air Quality Management: Updating and Screening Assessment, October 2015
7. E-Mail confirmation from Scottish Government, 04 April 2016
8. The Stationary Office, The Environment Act 1995
9. Part IV of The Environment Act 1995: Local Air Quality Management, Policy Guidance PG(S) (16), March 2016, The Scottish Government
10. Part IV of The Environment Act 1995: Local Air Quality Management, Technical Guidance LAQM.TG (09), Department of Environment, Food and Rural Affairs, 2009.