Annual Progress Report (APR)

2020 Air Quality Annual Progress Report (APR) for East Lothian Council

In fulfilment of Part IV of the Environment Act 1995

Local Air Quality Management

June 2020

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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 potential exceedance of the Nitrogen dioxide (NO_2) annual mean Air Quality Objective (AQO) after submission of the 2013 Progress Report (Ref 1). 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 included in any Air Quality Action Plan (AQAP). The Further Assessment was completed in September 2014 and confirmed the findings of the previous Detailed Assessment in 2012 (Ref 4), namely that there were likely to be continued exceedance's of the annual mean NO_2 objective where relevant exposure exists.

The Further Assessment 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 NO_2 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 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 NO_2 emissions in 2013 and 2014 continued to exceed, or were very close to, the Annual Mean Air Quality Objective for NO_2 at some locations within the AQMA. The 2016 Progress Report (Ref 7) and monitoring results from 2015 indicated that all Air Quality Objectives were complied with and there were no exceedance's of any objectives, including the NO_2 Annual Mean AQO.

East Lothian Council continued to develop and, in February 2017, published an AQAP to outline the measures to be taken to ensure compliance with the Objectives (Ref 8).

However, the 2017 Progress Report (Ref 9) confirmed that during 2016 exceedance's of the NO_2 Annual Mean AQO within the AQMA were again recorded at two locations. There were no other exceedance's of any other AQO noted throughout the County

The 2018 Progress Report (Ref 10) and monitoring results from 2017 indicated that all Air Quality Objectives were complied with and there were no exceedance's of any objectives, including the NO_2 Annual Mean AQO.

The 2019 Progress Report (Ref 11) and monitoring results from 2018 again confirmed no exceedance of any Air Quality Objectives, including within the AQMA.

This Report and monitoring results from 2019 confirms there were no exceedance's of any AQO during 2019 with the last exceedance being recorded in 2016.

East Lothian Council will carry out a Detailed Assessment of Air Quality in Musselburgh and the results will be available late summer 2020. If the Detailed Assessment concludes future exceedance's of the AQO will be unlikely then East Lothian Council will revoke the AQMA in 2020/21.

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 01/01/19 to 31/12/19 indicate no exceedance's of the NO_2 Annual Mean AQO. East Lothian Council published the Musselburgh Air Quality Action Plan in February 2017. The AQAP outlines 13 short, medium and longer term measures to be implemented to improve air quality within the AQMA and throughout the County in general.

Local Priorities and Challenges

Some of the mitigation measures outlined in the AQAP continue to be very challenging (both financially and technically) to implement. In particular the development and implementation of the Local Transport Strategy in conjunction with the Local Development Plan will be key to managing air quality. The proposed transport mitigation measures set out in the LDP are anticipated to help improve Air Quality within the Musselburgh AQMA and beyond.

How to Get Involved

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

https://www.eastlothian.gov.uk/info/210568/environmental_health/12172/pollution/4

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

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1. Local Air Quality Management

This report provides an overview of air quality in East Lothian during 2019. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) (Ref 12) and the relevant Policy and Technical Guidance documents (Refs 13 and 14).

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

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 Air Quality Action Plan (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 are available online at https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=368

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
High Street, Musselburgh	NO_2 annual mean	Musselburgh	High Street, Musselburgh (A199) from its junction with Newbigging and extending westwards to the junction with Bridge Street and Mall Avenue	https://www.eastlothian.gov.uk/downloads/file/23473/air_quality_action_plan_2017

2.2 Cleaner Air for Scotland

Cleaner Air for Scotland – The Road to a Healthier Future (CAFS) (Ref 15) is a national cross-government strategy that sets out how the Scottish Government and its partner organisations propose to reduce air pollution further to protect human health and fulfil Scotland's legal responsibilities as soon as possible. A series of actions across a range of policy areas are outlined, a summary of which is available at https://www.gov.scot/Publications/2015/11/5671/17. Progress by East Lothian Council against relevant actions within this strategy is demonstrated below.

2.2.1 Transport – Avoiding travel – T1

All local authorities should ensure that they have a corporate travel plan (perhaps within a carbon management plan) which is consistent with any local air quality action plan. The East Lothian Local Transport Strategy (LTS) and associated action plans were adopted by Council on 30th October 2018 (Ref 16). The Active Travel

Improvement Plan (ATIP) for East Lothian, an associated plan of the LTS, has just been reviewed by East Lothian Council Road Services and it is intended to take this to Council in the autumn for approval. Through Smarter Choices Smarter Places, the Council has also employed a Behavioural Change Officer to encourage alternative transport modes in particular active travel.

2.2.2 Climate Change – Effective co-ordination of climate change and air quality policies to deliver co-benefits – CC2

Scottish Government expects any Scottish local authority which has or is currently developing a Sustainable Energy Action Plan to ensure that air quality considerations are covered.

East Lothian Council's Climate Change Strategy 2020–2025 (Ref 17) was approved by Cabinet in January 2020. The Climate Change Strategy sets out the Council's commitment to tackling the Climate Emergency at a local level and sets out the vision and overall aims for a 'Net Zero Council' and a 'Carbon Neutral East Lothian' with specific outcomes, key priority areas and actions over the next five years towards achieving these overall aims. The strategy was developed with an extensive consultation process, including input from the Council's Climate Change Planning & Monitoring Group (which includes the Senior Environmental Health & Public Protection Officer with responsibility for Air Quality Management) and two rounds of public consultation. This included public drop-in consultation events, which were also an opportunity for awareness-raising and engagement on ways to reduce carbon emissions and promote a more sustainable lifestyle.

One of the key Outcomes set out in the Council's Climate Change Strategy is: "Active Travel and Sustainable Transport are used for everyday journeys, to drastically cut emissions from transport and improve air quality", with the ambition and targets to: "Ensure that East Lothian has well-connected, healthy, active communities with improved air quality, where active travel and sustainable transport modes are the norm to access local services and amenities". This Outcome includes the specific Key Priority Area of "Improving Air Quality".

During the 5 years of this Climate Change Strategy the Council has committed to progressing the following actions to achieve these aims:

- Continue to improve air quality in Musselburgh's Air Quality Management Area with traffic management solutions, active travel and public transport

improvements, increased access to electric vehicle charging points and public awareness-raising campaigns;

- Investigate collaborative working with City of Edinburgh Council to identify solutions to tackle traffic congestion and air quality in Musselburgh;
- Reduce exposure to poor air quality through urban placemaking, including appropriate green network solutions such as hedges / use of landscaping to buffer emitting development;
- Explore innovative technological solutions to improve urban Air Quality
- Continue to support the work of the East Central Scotland Vehicle Emissions Partnership to promote and raise awareness of air quality, particularly around our schools, and to deter idling vehicles;
- Promote implications for long-term health and wellbeing, contribution to Placemaking, reducing social isolation and reducing inequalities through reduced reliance on cars;
- Take air quality into account in assessing development proposals, and encourage developers to design for improved air quality.

The Climate Change Strategy also promotes active travel (walking/cycling) and sustainable transport (e.g. electric vehicles; taking the bus or train), particularly for shorter journeys. The strategy aims to encourage behaviour change towards active and sustainable travel, which will help to reduce traffic-related air pollution (as well as wider benefits including contributing to reducing the carbon emissions that cause global warming, and improving health, wellbeing and physical activity levels).

2.2.3 Additional Actions, EV Infrastructure and the National Low Emissions Framework (NLEF)

One of six main objectives of CAFS to be achieved across Scotland is Place making: air quality not to be compromised by new or existing developments. Section 2.3.1 of the AQAP refers. Furthermore, the National Transport Strategy for Scotland (Ref 18) was updated in January 2016 and introduced 3 key strategic outcomes, one of which was to reduce emissions to tackle climate change. Another key outcome aims to improve journey times and connections by reducing congestion. Section 2.3.2 of the AQAP refers. Other relevant regional and National strategies that impact on air quality are discussed in the AQAP. These include South East of Scotland Transport

Partnership – SEStrans (in Section 2.3.3), East Lothian Council Local Transport Strategy (in Section 2.3.4), Strategic Development Plan for South East Scotland – SESplan (in Section 2.3.5), East Lothian Council Local Development Plan (Ref 19) (in Section 2.3.6) and Climate Change Declaration (in Section 2.3.7).

Over the last three years East Lothian Council have upgraded older Electric Vehicle (EV) charging units and increased the number of charge points in East Lothian to over 40, concentrating on creating hubs in town centres and ensuring that we have a strategic network of sites. Our programme for 2019 also included adding a further 20 charge points in residential areas where people do not have driveways (and therefore no option for charging at home) and in long-stay car parks in Haddington, Longniddry and Wallyford.

East Lothian Council are also developing policies to require developers to provide appropriate charging infrastructure alongside new housing and on retail and industrial sites, and are working to ensure charge points are integrated into our own developments e.g. school extensions, and social housing.

On 10th September 2019 East Lothian Council Road Services presented to Cabinet an updated position and strategy for the delivery of electric vehicle charge points in East Lothian. East Lothian EV network proposals recommended a further 119 destination chargers and 6 more journey chargers. Since the 23rd March 2020, as a consequence of the Coronavirus Pandemic and it's impacts upon travel, all progress on the introduction of EV infrastructure has stopped. A full review of the demand will be carried out later in the year to reset the Councils ambitions on this item of business.

The National Low Emission Framework (NLEF) (Ref 20) is an air quality focussed, evidence based appraisal process developed to help local authorities consider transport related actions to improve local air quality, where transport is identified as the key contributor to local air quality problems. The NLEF supports and builds on the work already being done through the LAQM system. The NLEF appraisal process is a two-stage process: Stage One appraisal is a screening exercise to be undertaken by all Local Authorities using existing data, compiled as part of existing LAQM and AQAP duties and incorporating consideration of wider land use and transport planning work; Stage Two, the assessment process, will be carried out by local

authorities, supported by SEPA, through the National Modelling Framework (NMF). Stage Two assessments will only be carried out by those authorities with transport related AQMA's where the Stage One screening process justifies consideration of an introduction of a Low Emission Zone (LEZ). It was anticipated that local authorities would report the outcome of their first Stage One Screening exercise with their LAQM Annual Progress Report due by 30 June 2019 but this will be deferred until 30 June 2020.

2.3 National Low Emission Framework (NLEF) Stage 1 Screening Appraisal for East Lothian Council

The NLEF, which is now part of the review and assessment process for LAQM reporting in Scotland, contributes to the Cleaner Air for Scotland strategy by aiming to improve local air quality in areas where air quality objectives are exceeded, or likely to be exceeded, primarily due to emissions from transport.

The NLEF is directly linked to Air Quality Action Planning (AQAP) for local authorities with Air Quality Management Areas (AQMAs), and will help to identify actions to improve local air quality within AQMAs. The NLEF appraisal takes the form of a two-stage process, as summarised in Table 2.2:

Table 2.2 – NLEF Appraisal Process

Stage		Outcome	Actions Required
1	Screening	• decision on whether to proceed to stage two assessment	• screening process to identify actions that will benefit air quality within the AQMA • screening evidence should form part of the Annual Progress Report, with the decision agreed by Scottish Government and SEPA
2	Assessment	• decision to proceed with introduction of LEZ or identification of alternative transport-related measures required to improve air quality • Stage two assessment report agreed by Scottish Government and SEPA	• NMF approach to support assessment of sources of pollution and options • quantitative impact assessment (based on predicted change in pollutant concentrations) • consideration of consequential impacts (e.g. congestion, export of pollution)

The NLEF Stage 1 Screening Appraisal for East Lothian Council is detailed in Table 2.3. It is the opinion of East Lothian Council that proposed measures are sufficient and there is therefore no need to proceed to a Stage 2 Assessment. There have been no exceedances of the Air Quality Objectives within the County since 2016. Pollutant concentrations are also reducing to a point where they are well within the Annual Mean Air Quality Objective for Nitrogen dioxide, maximum levels being $32ug^{-3}$ at 69 and 147 High Street, meeting the Air Quality Objective by 20%. Furthermore, the AQMA in Musselburgh comprises only a section of a single street, Musselburgh High Street, from its junction with Newbigging and extending westwards to the junction with Bridge Street and Mall Avenue. It is considered that due to its small geographical area it would be neither appropriate nor proportionate to introduce an LEZ for this AQMA.

Table 2.3 – NLEF Stage 1 Screening Appraisal

No.	NLEF Stage 1 Screening Appraisal Question	Appraisal Response
1	What is the name of the declared AQMA(s)?	Musselburgh High Street
2	What pollutants are the AQMA(s) declared for?	Nitrogen dioxide – Exceedance of the Annual Mean Air Quality Objective
3	What are the main sources of air pollution, or other factors, contributing to the declaration of the AQMA? *(If the main source is not transport–related no further screening is required).*	The source apportionment exercise conducted as part of East Lothian Councils Further Assessment of Air Quality in Musselburgh indicates that emissions from buses form the largest contribution at all locations along the High St AQMA. The largest proportion that can be attributed to emissions from buses is seen at 147 High St with 38% of the NOx emissions estimated to be as a result of moving and queuing buses, and buses at bus stops. On average throughout the AQMA, 29% of NOx emissions can be attributed to bus activity. In the case of moving versus queuing traffic, queuing traffic contributes the largest proportion at all locations except 87 High St. The largest proportion that can be attributed to queuing traffic is seen at 69 High St with 57% of the total NOx emissions estimated to be as a result of queuing traffic. On average throughout the AQMA, 34% of the total NOx emissions can be attributed to queuing traffic

No.	NLEF Stage 1 Screening Appraisal Question	Appraisal Response
4	Are the declared AQMA(s) (and therefore area(s) of exceedance) restricted in nature geographically to a small area for which a Low Emission Zone (LEZ) would not be appropriate or proportionate (e.g. single streets, road junctions, small town centre)?	Yes. The AQMA forms part of a single street within a small town centre and, as such, the introduction of an LEZ would not be appropriate or proportionate.
5	Do the monitored concentrations within the AQMA(s) meet the air quality objective(s)? If yes, for how long has compliance been achieved? If not, what are the extent of the exceedances?	There have been no exceedance's of any Air Quality Objectives, including the Nitrogen dioxide Annual Mean for which the AQMA was declared in 2013, since 2016.
6	What is the current trend for pollutant concentrations within the AQMA(s) (state the trend for each pollutant declared)?	There has been a general downward trend in Nitrogen dioxide concentrations within the AQMA since 2015 with highest current levels recorded in 2019 at T31 (69 High Street) and T6 (147 High Street) of 32ug/m^3.

No.	NLEF Stage 1 Screening Appraisal Question	Appraisal Response
7	Are there any major planned developments which could impact air quality within or surrounding the AQMA(s)?	In October 2019 Planning Permission 18/00485/PPM was granted for a proposed mixed use development at Old Craighall including 1500 homes. An Air Quality Assessment by Resource and Environmental Consultants (REC) (Ref 21) was submitted in support of the application. It was concluded that the development, including in conjunction with other committed developments in the Musselburgh cluster, would not have a significant impact upon local air quality, in particular on the Musselburgh High Street Air Quality Management Area. No exceedances of Air Quality Objectives are predicted to arise when the development becomes operational in 2024.
8	What are the current trends for vehicle movements within the AQMA and surrounding areas?	As a consequence of the Coronavirus Pandemic and associated impacts on national travel behaviour demand has significantly dropped off approximately 45%, however, as we move through the phased return this is increasing but unlikely to return to pre-covid 19 level before 2021.

No.	NLEF Stage 1 Screening Appraisal Question	Appraisal Response
9	Provide evidence showing how the AQAP (and associated plans, programmes and strategies) will deliver significant improvements towards achieving the air quality objective(s) in as short a timescale as possible?	The results of pollutant monitoring within the AQMA has shown a reduction in concentration levels since the introduction of the Action Plan to the point where there have been no recorded exceedances since 2016. Funding has been secured from the Scottish Government to engage the services of Air Quality Consultants to carry out a detailed assessment of Air Quality within the AQMA in Summer 2020 with a view to revoking the AQMA later in the year.

2.4 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 2020 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.4. More detail on these measures can be found in the air quality Action Plan.

Key completed measures are:

- **Improving Links with Local Transport Strategy (Measure No 1)** - The development of the Local Transport Strategy was deferred because of the delay in determining the exact nature of the interventions associated with the LDP. To identify these interventions SIAS were 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. The micro-simulation traffic modelling work is now complete and ELC consulted on the LTS in conjunction with its Strategic environmental assessment. The Local Transport Strategy (LTS) and associated action plans were adopted by Council on 30th October 2018. The Active Travel Improvement Plan (ATIP) for East Lothian, an associated plan of the LTS, has just been reviewed and will be recommended to Council later this year.

  East Lothian Council engaged Consultants to look at the 'case for change' to review current transport problems and opportunities and look to identify appropriate solutions to improve transport systems. This is a wide ranging review and will consider the existing and proposed transport interventions identified within the current Local development plan, evaluate the growth agenda and external considerations, which may re-determine some transport mitigation.

- **Improving Links with Local Development Plan (Measure No 2)** - The East Lothian Local Development Plan 2018 was adopted on 27th September 2018. The Local Development Plan 2018 used a compact spatial strategy to allocate land for over 10,000 new homes and land for new employment in East

Lothian. This primarily involved the expansion of existing settlements in order to deliver the level of growth as sustainably as possible. Where possible, existing infrastructure such as transport, utilities and education facilities were upgraded to accommodate this growth. In some areas new infrastructure was required. The majority of these new homes and infrastructure are either completed, are under construction, or have live planning consents.

Policies in the LDP 2018 set out how new development must contribute towards sustainable growth, and how the social, economic and environmental impacts are managed. In relation to air quality and environmental impacts, policy NH12 is used to manage the effects of new development, and sets out when an Air Quality Assessment would be required in support of a proposal. Policies relating to development location and transport impact (T1 and T2) as well as design policies (DP2, DP3 and DP4) assist with decision making on new development proposals and their impacts upon air quality.

Supplementary Guidance (SG) provides more detailed and location specific measures on how the LDP 2018 strategies would be delivered and how policies would be applied. This included the Town Centre Strategies SG which seeks to encourage less vehicle use within town centres, more public transport use, and more walking and cycling, all of which contribute to better air quality. The Developer Contributions Framework SG set out the type of contributions that developers would be required to provide as part of new development in order to ensure both residential only sites and mixed-use sites have access to facilities. This reduces the need to travel therefore reducing environmental impacts and improving air quality.

Supplementary Planning Guidance further expands upon specific policy areas or strategies of the LDP 2018. This includes the Green Network Strategy SPG which provides guidance on how to connect parts of East Lothian via walking and cycling routes, reducing car travel and emissions. The Design Standards for New Housing Areas SPG places the movement and experiences of people at the top of the design agenda, and sets out criteria for designing new development to provide easy walking routes, access to open space, improving health and wellbeing through better air quality, reducing levels of noise, and managing the effects of climate change. It also encourages electric vehicle charging in new developments to reduce carbon emissions.

East Lothian has one air quality management area (AQMA) which is Musselburgh High Street. This, together with other parts of the county, are continually monitored. The LDP 2018 contains proposals (PROP T19, T20 and T21) setting out a range of improvements to improve air quality in this AQMA. The annual air quality monitoring report provides the latest figures and shows how Musselburgh High Street and other areas are performing. The results of this report are used to inform policy planning. Following the introduction of the Planning (Scotland) Act 2019, work has now been started by the Scottish Government on preparing the National Planning Framework 4. This will be part of the development plan and include national policy. East Lothian has started the early stages of reviewing the LDP 2018 and preparing the next LDP under the new development planning system set out in the 2019 Act. The first stage of the LDP process will be the production of an Evidence Report which will then lead to a draft LDP2. The Evidence Report must contain information on the issues set out in the 2019 Act. Preparation will begin with research and information gathering including a review of what the LDP 2018 policies have achieved in relation to air quality. East Lothian has grown quite significantly in the last 5-10 years, and it is important to establish a baseline in terms of the social, economic and environmental position to look to the future and what changes could be introduced to further improve the area. For the Evidence Report, the Council will look at areas that may be constrained in terms of air quality, what could be done to improve areas that are not performing as well, and how to continue to protect areas that are. An overall strategy will emerge from the information gathered and engagement undertaken. Once the Evidence Report has passed the gate check procedure, LDP2 can be prepared. The LDP2 will then set out a clear long-term direction in terms of growth, investment and change. LDP2 will contain the policies and proposals required to deliver and achieve the strategy set out in the Evidence Report.

East Lothian will also be contributing towards the preparation of an Indicative Regional Spatial Strategy. This will be a high level strategic planning document prepared jointly for regions of Scotland. East Lothian remains in the defined south east region, and will contribute towards the RSS with other authorities (Edinburgh, Midlothian, West Lothian and Fife).

The Regional Spatial Strategy will provide a long-term strategic approach to planning across south east Scotland. It is likely to focus on environmental and climate issues primarily and how to continue to support south east Scotland in terms of sustainable growth. Air quality is linked closely with various aspects of spatial planning including health, transport, employment, construction and materials.

East Lothian Council will continue to work both at the local and regional levels of development planning to continually improve air quality in the short and longer term, and will work closely with the public, landowners, businesses, and regulatory bodies on effective strategies to support this on small and large scale projects and development proposals.

- **Enforcement of idling provisions of the Road Traffic (Vehicle Emission) (Fixed Penalty) (Scotland) Regulations 2003 (Measure No 4)** – East Lothian Council Road Services continue to be in discussions with NSL Ltd, who provide the Parking Attendant Service within the County, and are exploring the technicalities of them taking on this role. To alleviate the effect of indiscriminate parking at the eastbound bus stop on the High Street during peak hour traffic, a parking attendant has been instructed to monitor and take appropriate action to keep traffic moving.
- **Eco Stars Fleet Recognition Scheme (Measure No 6)** – East Lothian Council secured funding from the Scottish Government and, in February 2017, formally launched 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. East Lothian Council are members of the scheme and are proud to have recently been awarded a 5 Star rating. The scheme had 59 members in 2017, 100 members in 2018, 136 members in 2019 and now has 165 members. Funding has been secured from the Scottish Government to allow the scheme to continue to operate and expand through 2020/21.

- **SCOOT Traffic Management System (Measure No 7)** – Funding remains in place to upgrade the SCOOT system and integrate new signalised junctions into the system. A 5-year project to future proof Musselburgh infrastructure for sustainable modes is underway. East Lothian Council have applied for funding with Sustrans, a UK Sustainable Transport Charity, to develop this project. This project will examine the performance of all transport networks to accommodate significant modal shift to active travel. A review of all SCOOT arrangements will be considered in the context of this work.
- **AQMA Signage (Measure No 9)** – East Lothian Council commissioned a City Tree within the AQMA in Musselburgh during late Summer of 2018. As well as providing the locus for the Tree, the structure also contains signage and information on Air Quality. The tree had to be removed in Autumn 2019 due to problems with the irrigation system.
- **The East Central Scotland Vehicle Emissions Partnership (Measure No 10)** – East Lothian Council works in partnership with Midlothian, West Lothian, Falkirk and, since 2019, Stirling Councils with a common aim of 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. Further information on the work of the Partnership can be obtained at the following link: http://switchoffandbreathe.org/about/
- **Provision of Information regarding Air Quality and Travel Options (Measure No 13)** – Information on Air Quality within East Lothian, including access to annual air quality reports, can be obtained from the Council's App or website at: https://www.eastlothian.gov.uk/info/210568/environmental_health/12172/pollution/4

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

- **Bus Stop Relocations on High Street, Musselburgh (Measure No 3)** – The local network Musselburgh town centre mitigations tested within the Musselburgh and Tranent Traffic Model (MTTM) for the High Street are:

- Adjusting the eastbound lane arrangement for Mall Avenue at the A199 High Street/ Bridge Street junction.
- Consolidation of pedestrian crossings between Bridge Street and Kilwinning Street.
- Moving westbound bus lay-by into car parking spaces and further back from the Bridge Street junction to remove the traffic obstruction on the High Street.
- Extending the eastbound bus lay-by to remove bus dwell obstruction on the High Street before Shorthope Street
- Adding a bus lay-by westbound on the A199 Linkfield road opposite Loretto School
- A right turn on the High Street for Kilwinning street.

The timing of these measures is currently unknown but will include new signalised junctions and re-signalisation of junctions. Following an initial consultation in 2018 to examine options to future proof Musselburgh's infrastructure for sustainable modes of travel, East Lothian Council instructed AECOM to undertake phase 2 of the project to develop visualisations to test public acceptability and encourage engagement. It is anticipate further consultation will commence late autumn. To progress scheme development, East Lothian Council has bid into SUSTRANS paths for everyone and hope to receive confirmation that the bid has been successful shortly. The project plan will look to deliver comprehensive re-allocation of street space over a 5 year period, subject to funding.

- **Development of Green Travel Plans (Measure No 11) and Promotion of Cycling and Walking (Measure 12) –** The Smarter Choices, Smarter Places (SCSP) Programme is a Paths for All grant scheme to support behaviour change initiatives to increase active and sustainable travel. The programme is funded through Transport Scotland (Sustainable Transport team) and aims to make walking and cycling a mode of choice for short local journeys in our towns, cities and villages. It also encourages other forms of sustainable choices such as public transport use and car share. This will help to cut Scotland's carbon emissions and improve our air quality. It will help reverse the trend towards sedentary lifestyles and will tackle health inequalities. ELC

receives funding through the scheme and in 2019/20 will engage a behavioural change officer to work with communities, groups and organisations to encourage greener, more active travel options. The Council also organised a 'beat the streets' game to foster greater belief in walking and cycling through community participation interacting in a socially interactive game. The beat the streets project has concluded. A final report is being prepared to inform readers of the level of success achieved and legacy projects. An i-bike officer and improved messaging on active sustainable travel options is being prepared

No Progress on the following measures has been made:

- **Electrification of Lothian Buses in Musselburgh (Measure No 5)** – Due to a lack of commitment from relevant stakeholders regarding funding this project may not be taken forward. Other funding avenues are being explored.
- **Longer Trains and platforms at Musselburgh Rail Station (Measure No 8)** – Developer contributions are being collected through the planning process and individual agreements entered into with Network Rail. Longer platforms are required because longer train sets are needed to accommodate the predicted increased patronage. The platforms are only needed close to full build out of all committed and LDP allocations. It is unlikely this will be delivered until CP7. (2024-2029). Further work is being undertaken through the STAG (Scottish Transport Appraisal Group) East Lothian Access strategy working with Transport Scotland rail branch and Network rail to increase capacity on the East Coast Main Line and North Berwick branch line.

Table 2.4 – 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	Improving Links with Local Transport Strategy	Transport planning and infrastructure		ELC Road Services					The Local Transport Strategy (LTS) and associated action plans were adopted by Council on 30th October 2018. The Active Travel Improvement Plan (ATIP) for East Lothian, an associated plan of the LTS has been reviewed and will be recommended to Council later this year.	Completed Oct 2018	Ongoing

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
2	Improving Links with Local Development Plan	Policy Guidance and Development Control	The proposed LDP contains transport mitigation measures that are intended to manage through traffic within Musselburgh town centre, including within the AQMA. Future traffic growth is anticipated to arise as a result of growth from existing users of the transport network and form committed developments (i.e. development that already has planning permission) as well as from new planned and uncommitted development across East Lothian. The proposed transport mitigation measures set out in the LDP are anticipated to help improve Air Quality within the Musselburgh AQMA.	ELC Planning Service					The East Lothian Local Development Plan 2018 was adopted on 27th September 2018. Following the introduction of the Planning (Scotland) Act 2019, work has now been started by the Scottish Government on preparing the National Planning Framework 4. This will be part of the development plan and include national policy. East Lothian has started the early stages of reviewing the LDP 2018 and preparing the next LDP under the new development planning system set out in the 2019 Act. As part of this, results from ongoing monitoring of air quality will be used to identify whether there have been any changes that would need to be considered as part of future strategies for the forthcoming LDP.	Completed Sep 2018	Ongoing

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	Bus Stop Relocations on High Street, Musselburgh	Traffic Management	To improve the flow of traffic within the AQMA and reduce congestion.	ELC Road Services					Following an initial consultation in 2018 to examine options to future proof Musselburgh's infrastructure for sustainable modes of travel, East Lothian Council instructed AECOM to undertake phase 2 of the project to develop visualisations to test public acceptability and encourage engagement. It is anticipate further consultation will commence late autumn. To progress scheme development, East Lothian Council has bid into SUSTRANS paths for everyone and hope to receive confirmation that the bid has been successful shortly. The project plan will look to deliver comprehensive re-allocation of street space over a 5 year period, subject to funding.	Ongoing	

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	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.	ELC Road Services					To alleviate the effect of indiscriminate parking at the eastbound bus stop on the High Street during peak hour traffic, a parking attendant has been instructed to monitor and take appropriate action to keep traffic moving.	Ongoing	
5	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 Transport Services, Lothian Buses					Due to a lack of commitment from relevant stakeholders regarding funding this project may not be taken forward. Other funding avenues are being explored.	Unknown	

6	Eco Stars Fleet Recognition Scheme	Vehicle Fleet Efficiency	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.	ELC Env Health					East Lothian Council formally launched an Eco Stars Fleet Recognition Scheme within East Lothian in February 2017. 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. East Lothian Council are members of the scheme and are proud to have been awarded a 5 star rating. The scheme had 59 members in 2017, 100 members in 2018, 136 members in 2019 and now has 165 members. Funding has been secured from the Scottish Government to allow the scheme to continue to operate and expand through 2020/21.	Established Feb 2017	Ongoing

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	SCOOT Traffic Management System	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					Funding remains in place to upgrade the SCOOT system and integrate new signalised junctions into the system. A 5-year project to future proof Musselburgh infrastructure for sustainable modes is underway. East Lothian Council have applied for funding with Sustrans, a UK Sustainable Transport Charity, to develop this project. This project will examine the performance of all transport networks to accommodate significant modal shift to active travel. A review of all SCOOT arrangements will be considered in the context of this work.	Ongoing	

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
8	Longer Trains and platforms at Musselburgh Rail Station	Transport planning and infrastructure	Provision of infrastructure to provide alternative mode of transport	ELC Road Services					Developer contributions are being collected through the planning process and individual agreements entered into with Network Rail. The platforms are only needed close to full build out of all committed and LDP allocations Further work is being undertaken through the STAG (Scottish Transport Appraisal Group) East Lothian Access strategy working with Transport Scotland rail branch and Network rail to increase capacity on the East Coast Main Line and North Berwick branch line.	It is unlikely this will be delivered until CP7. (2024-2029)	

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	AQMA Signage	Public Information	Increase awareness of Air Quality	ELC Env Health					East Lothian Council commissioned a City Tree within the AQMA in Musselburgh during late Summer of 2018. As well as providing the locus for the Tree, the structure also contains signage and information on Air Quality. The tree had to be removed in Autumn 2019 due to problems with the irrigation system.	Completed Sep 2018	Ongoing
10	The East Central Scotland Vehicle Emissions Partnership	Public Information	East Lothian Council work in partnership with Midlothian, West Lothian and Falkirk Councils 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.	Vehicle Emissions Officer, East Central Scotland Vehicle Emissions Partnership at West Lothian Council		2003			The partnership has secured funding to continue through 2020/21 and was expanded further when Stirling Council became a partner authority in 2019.	Completed 2003	Ongoing

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
11	Development of Green Travel Plans	Promoting Travel Alternatives	The Smarter Choices, Smarter Places (SCSP) Programme is a Paths for All grant scheme to support behaviour change initiatives to increase active and sustainable travel. The programme is funded through Transport Scotland (Sustainable Transport team) and aims to make walking and cycling a mode of choice for short local journeys in our towns, cities and villages. It also encourages other forms of sustainable choices such as public transport use and car share. This will help to cut Scotland's carbon emissions and improve our air quality. It will help reverse the trend towards sedentary lifestyles and will tackle health inequalities.	ELC Road Services					ELC receives funding through the scheme and in 2019/20 will engage a behavioural change officer to work with communities, groups and organisations to encourage greener, more active travel options. The Council also bid to run a 'beat the streets' game to foster greater belief in walking and cycling through community participation interacting in a socially interactive game. The beat the streets project has concluded. A final report is being prepared to inform readers of the level of success achieved and legacy projects. A i-bike officer and improved messaging on active sustainable travel options is being prepared.	Ongoing	

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
12	Promotion of cycling and walking	Promoting Travel Alternatives	The Smarter Choices, Smarter Places (SCSP) Programme is a Paths for All grant scheme to support behaviour change initiatives to increase active and sustainable travel. The programme is funded through Transport Scotland (Sustainable Transport team) and aims to make walking and cycling a mode of choice for short local journeys in our towns, cities and villages. It also encourages other forms of sustainable choices such as public transport use and car share. This will help to cut Scotland's carbon emissions and improve our air quality. It will help reverse the trend towards sedentary lifestyles and will tackle health inequalities.	ELC Road Services					ELC receives funding through the scheme and in 2019/20 will engage a behavioural change officer to work with communities, groups and organisations to encourage greener, more active travel options. The Council also bid to run a 'beat the streets' game to foster greater belief in walking and cycling through community participation interacting in a socially interactive game. The beat the streets project has concluded. A final report is being prepared to inform readers of the level of success achieved and legacy projects. A i-bike officer and improved messaging on active sustainable travel options is being prepared.	Ongoing	

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
13	Provision of Information regarding Air Quality and Travel Options	Public Information	Increase awareness of Air Quality and alternative modes of transport and travel options	ELC Env Health ELC Road Services					Information on Air Quality within East Lothian, including access to annual air quality reports, can be obtained from the Councils website at: https://www.eastlothian.gov.uk/info/210568/environmental_health/12172/pollution/4	Completed 2008	Ongoing

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 2 sites during 2019. Table A.I in Appendix A shows the details of the sites. National monitoring results are available at **http://www.scottishairquality.co.uk/**

3.1.2 Non-Automatic Monitoring Sites

East Lothian Council undertook non- automatic (passive) monitoring of NO_2 at 25 sites during 2019, although 2 of these (T35 and T36) were only established in October 2019. Table A.2 in Appendix A shows the details of the sites.

Further details on bias adjustment for the diffusion tubes are included in Appendix B. Maps showing the location of the monitoring sites are provided in Appendix D.

3.2 Individual pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past 5 years with the air quality objective of 40µg/m^3.

For diffusion tubes, the full 2019 dataset of monthly mean values is provided in Appendix B. Figures 1, 2 and 3 below show the trends for diffusion tubes located within the AQMA on Musselburgh High Street, for tubes located elsewhere in Musselburgh and also throughout the county between 2015-2019.

There have been no exceedences of the Annual Mean NO_2 Objective recorded at any locations, including those locations within the AQMA since 2016. Details of ratified data for the automatic monitor for 2019 are provided in Appendix C.

It can be seen that there has been a general downward trend in annual mean NO_2 concentrations between 2015-2019 throughout the County.

Table A.4 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past 5 years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year. There were no exceedences of the hourly mean air quality objective in 2019.

Figure 1: Diffusion Tubes in Musselburgh within AQMA 2015-2019

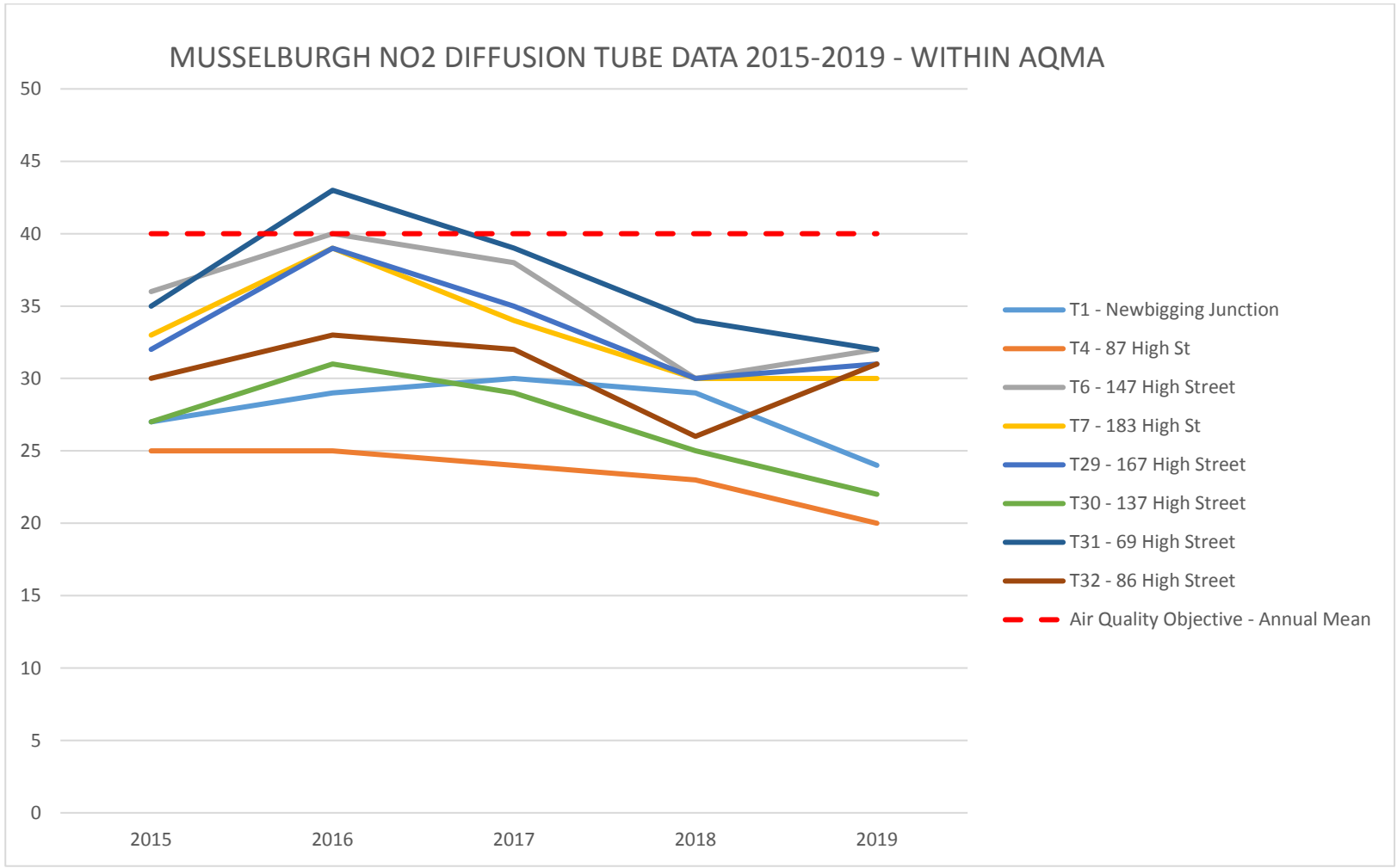


Figure 2: Diffusion Tubes in Musselburgh outside AQMA 2015-2019

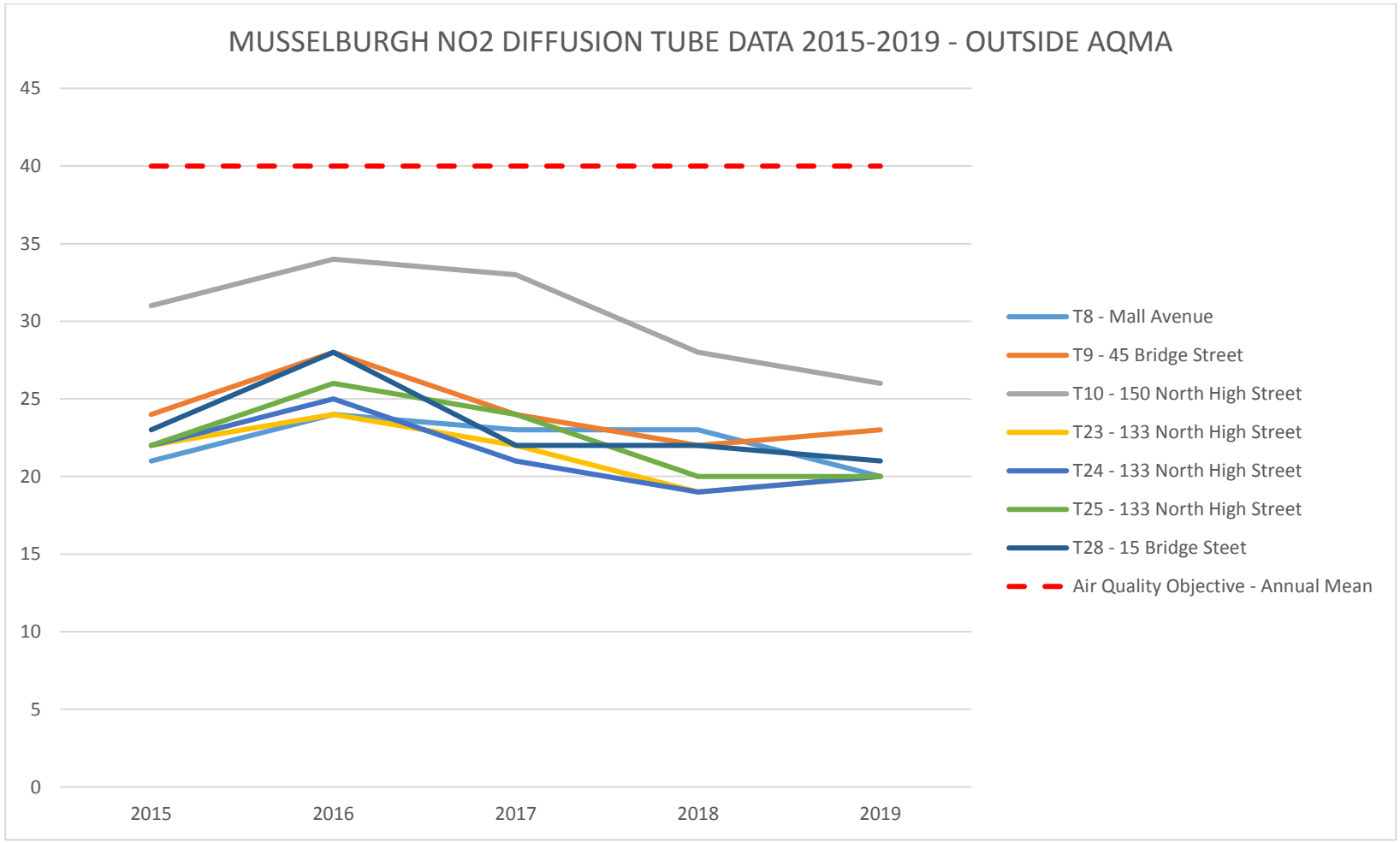
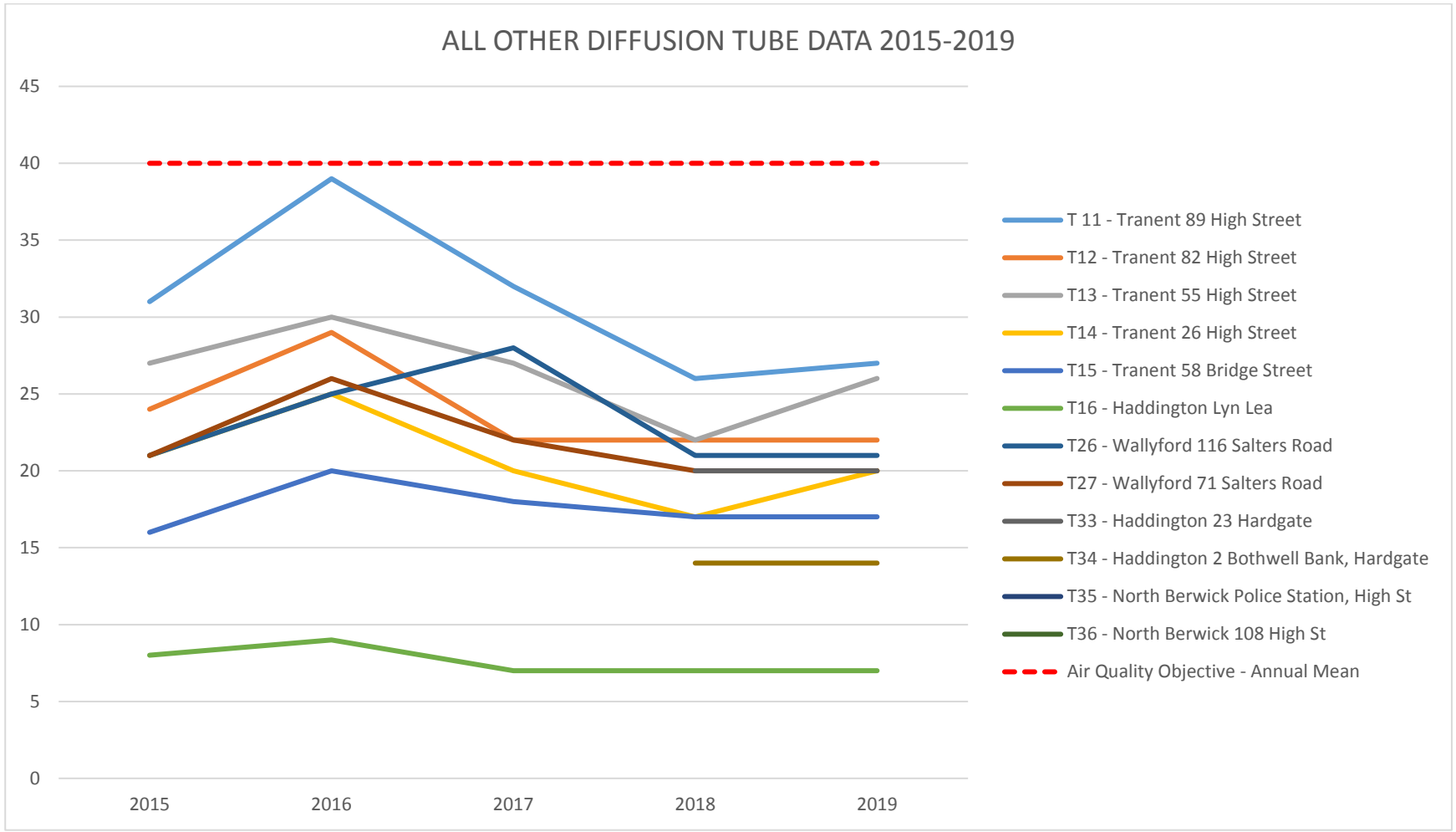


Figure 3: All other diffusion tubes 2015-2019



3.2.2 Particulate Matter (PM_{10})

Table A.5 in Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past 5 years with the air quality objective of 18µg/m^3.

Figure 4 below shows the trend for PM_{10} concentrations on Musselburgh North High Street between 2015-2019. It can be seen that there has been no increase in annual mean PM_{10} concentrations since 2015 and there have been no exceedences of the Air Quality Objective.

Figure 4: PM_{10} concentrations on Musselburgh North High Street 2015-2019

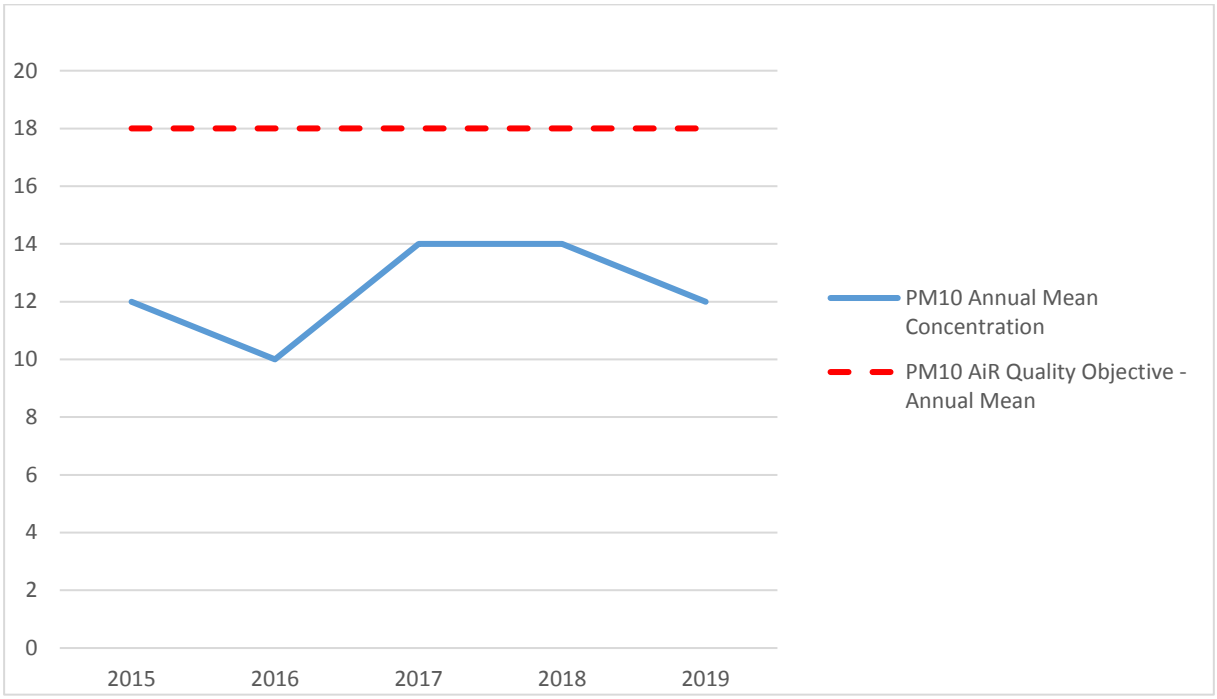


Table A.6 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past 5 years with the air quality objective of 50µg/m^3, not to be exceeded more than 7 times per year.

There was one exceedence of the daily mean concentration of 50ug/m^3 but this did not result in an exceedence of the Air Quality Objective as up to 7 exceedences are permitted per year.

3.2.3 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

3.2.4 Sulphur Dioxide (SO_2)

East Lothian Council do not currently monitor Sulphur dioxide (SO_2).

3.2.5 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 2019 Annual Progress Report.

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 2019 Annual Progress Report.

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:** new or significantly changed installations with no previous air quality assessment.
- Major fuel storage depots storing petrol.
- Petrol stations.
- Poultry farms.

since the 2019 Annual Progress Report. However, East Lothian Council are aware of the possible introduction of new sensitive receptors in a proposed housing development that is in close proximity to an existing Industrial Source that could result in exceedances of the Nitrogen dioxide 1-Hour Mean Air Quality Objective in part of the proposed development site. This is discussed further in Section 5.

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 2019 Annual Progress Report.

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 2019 Annual Progress Report.

5. Planning Applications

Planning Permission in Principal 18/00937/PPM was granted consent in December 2019 for a proposed residential development comprising in excess of 600 residential units in Tranent. The proposed site is in close proximity to an existing Research Facility that incorporates an incinerator and 7 diesel generators. The main purpose of 5 1MW generators on the site is to provide back-up power to the site and participate in both TRIAD avoidance and capacity market schemes to provide power to the National Grid. These generators operate less than 500 hours per annum and are therefore not subject to the Emission Limit Values of the Medium Combustion Pant Directive and The Pollution Prevention and Control (Scotland) Amendment Regulations 2017 (Ref 22). Accordingly, East Lothian Council requested an Air Quality Impact Assessment be provided. The Air Quality Report (Ref 23) concluded that part of the site would result in exceedence of the Nitrogen dioxide 1-hour mean Air Quality Objective. Condition 6 of Planning Permission requires that no residential units shall be erected within the yellow shaded area shown in Drawing No. CAR85-902 and titled Air Quality Mitigation Area dated 01.04.2019 unless and until such times as an updated Air Quality Assessment, that demonstrates all statutory Air Quality Objectives are being, and will continue to be met, has been submitted to, and approved in writing by, the Planning Authority.

In October 2019 Planning Permission 18/00485/PPM was granted for a proposed mixed use development at Old Craighall including 1500 homes.
An Air Quality Assessment by Resource and Environmental Consultants (REC) (Ref 21) was submitted in support of the application. It was concluded that the development, including in conjunction with other committed developments in the Musselburgh cluster, would not have a significant impact upon local air quality, in particular on the Musselburgh High Street Air Quality Management Area. No exceedances of Air Quality Objectives are predicted to arise when the development becomes operational in 2024.

6. Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

Monitoring for the 12-month period from 01/01/19 to 31/12/19 indicates that there were no exceedences of any AQO's in East Lothian in 2019. Concentrations of Nitrogen dioxide within the AQMA are significantly below the Annual Mean Air Quality Objective of 40ug/m^3, with a maximum annual mean level of 32ug/m^3 recorded at two locations at T6 - 147 High Street and T31 - 69 High Street, Musselburgh.

6.2 Conclusions relating to New Local Developments

As discussed in Section 5 above, Medium Combustion Plant used to provide back-up power to industrial/commercial sites that participate in TRIAD avoidance and/or capacity market schemes have significant potential to impact upon air quality, in particular the Nitrogen dioxide 1-hour mean Air Quality Objective. These plant generally operate for less than 500 hours per annum and, as such, are exempt from any requirement to comply with Emission Limit Values. It is the opinion of East Lothian Council that additional controls are required by the Scottish Government to regulate these Short Term Operating Reserve (STOR) plant in order to minimise their impacts upon Air Quality and existing or proposed sensitive receptors. Furthermore, any controls would need to consider the impacts of sites comprising individual units as well as sites where multiple units are installed as the cumulative impact of a number of plant on a single site can be significant.

6.3 Proposed Actions

This Report and monitoring results from 2019 confirms there were no exceedence's of any AQO during 2019 with the last exceedance being recorded in 2016.
East Lothian Council will carry out a Detailed Assessment of Air Quality in Musselburgh and the results will be available late summer 2020. If the Detailed Assessment concludes future exceedance's of the AQO will be unlikely then East Lothian Council will revoke the AQMA in 2020/21.

East Lothian Council shall continue to implement measures outlined within the AQAP and also develop and publish policies that supplement CAFS throughout 2020 and beyond and will report progress in the Annual Progress Report due in June 2021.

Appendix A: Monitoring Results

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 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	340738	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
T33	Haddington – 23 Hardgate	Roadside	351693	673998	NO_2	N	Y (5m)	2m	N
T34	Haddington – 2 Bothwell Bank, Hardgate	Roadside	351702	674034	NO_2	N	Y (5m)	2m	N
T35	North Berwick – Police Station High St	Roadside	355339	685307	NO_2	N	Y (5m)	2m	N
T36	North Berwick – 108 High Street	Roadside	355186	685277	NO_2	N	Y (5m)	2m	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.

(3) New monitoring tubes in North Berwick from October 2019 HAVE BEEN Annualised

Table A.3 – Annual Mean NO_2 Monitoring Results 2015 – 2019

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 Annual Mean Concentration (µg/m^3)				
					2015(3)	2016(3)	2017(3)	2018(3)	2019(3)
NO_x	Roadside	Automatic	96.08	96.08	22	25	23	20	20
T1	Roadside	Passive Diffusion Tube	100	100	27	29	30	29	24
T4	Roadside	Passive Diffusion Tube	100	100	25	25	24	23	20
T6	Roadside	Passive Diffusion Tube	92	92	36	**40**	38	30	32
T7	Roadside	Passive Diffusion Tube	100	100	33	39	34	30	30
T8	Roadside	Passive Diffusion Tube	100	100	21	24	23	23	20
T9	Roadside	Passive Diffusion Tube	100	100	24	28	24	22	23
T10	Roadside	Passive Diffusion Tube	100	100	31	34	33	28	26
T11	Roadside	Passive Diffusion Tube	100	100	31	39	32	26	27
T12	Roadside	Passive Diffusion Tube	92	92	24	29	22	22	22
T13	Roadside	Passive Diffusion Tube	92	92	27	30	27	22	26
T14	Roadside	Passive Diffusion Tube	92	92	21	25	20	17	20
T15	Roadside	Passive Diffusion Tube	100	100	16	20	18	17	17
T16	Urban	Passive Diffusion Tube	100	100	8	9	7	7	7
T23	Roadside	Passive Diffusion Tube	100	100	22	24	22	19	20
T24	Roadside	Passive Diffusion Tube	100	100	22	25	21	19	20
T25	Roadside	Passive Diffusion Tube	100	100	22	26	24	20	20
T26	Roadside	Passive Diffusion Tube	100	100	21	25	28	21	21
T27	Roadside	Passive Diffusion Tube	100	100	21	26	22	20	20
T28	Roadside	Passive Diffusion Tube	100	100	23	28	22	22	21
T29	Roadside	Passive Diffusion Tube	100	100	32	39	35	30	31
T30	Roadside	Passive Diffusion Tube	100	100	27	31	29	25	22
T31	Roadside	Passive Diffusion Tube	92	92	35	**43**	39	34	32
T32	Roadside	Passive Diffusion Tube	100	100	30	33	32	26	31
T33	Roadside	Passive Diffusion Tube	100	100	-	-	-	20(4)	20
T34	Roadside	Passive Diffusion Tube	100	100	-	-	-	14(4)	14
T35	Roadside	Passive Diffusion Tube	25	25	-	-	-	-	12(4)
T36	Roadside	Passive Diffusion Tube	25	25	-	-	-	-	8(4)

Notes: Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in bold.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined.**

(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) Means for ALL diffusion tubes have been corrected for bias.

(4) Means have been "annualised" as per Box 7.10 of LAQM.TG(16) as valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Table A.4 – 1-Hour Mean NO_2 Monitoring Results 2015 - 2019

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	NO_2 1-Hour Means > 200µg/m^3 (3)				
					2015	2016	2017	2018	2019
NO_X	Roadside	Automatic	96.08	96.08	0 (75)	0	0	0	0

Notes: Exceedances of the NO_2 1-hour mean objective (200µg/m^3 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 PM_{10} Monitoring Results 2015 – 2019

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	PM_{10} Annual Mean Concentration (µg/m^3)				
				2015	2016	2017	2018	2019
PM_{10}	Roadside	85.19	85.19	12	10	14	14	12

Notes: Exceedances of the PM_{10} annual mean objective of 18µg/m^3 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) All means have been "annualised" as per LAQM.TG(16), valid data capture for the full calendar year is less than 75%. See Appendix C for details.

Table A.6 – 24-Hour Mean PM_{10} Monitoring Results 2015 – 2019

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2019 (%) (2)	PM_{10} 24-Hour Means > 50µg/m^3 (3)				
				2015	2016	2017	2018	2019
PM_{10}	Roadside	85.19	85.19	1	0	0	1	1

Notes: Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 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 98.1st percentile of 24-hour means is provided in brackets.

Appendix B: Full Monthly Diffusion Tube Results for 2019

Site ID	Location	01/01/19 - 31/12/19												AVERAGE	Data Capture %	BIAS ADJUSTED (0.9 local)
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
1	Musselburgh – Newbigging Junction	32	46	28	28	19	20	17	24	25	25	32	29	27	100	24
4	Musselburgh - 87 High St	28	28	24	16	18	15	17	17	31	24	26	26	23	100	20
6	Musselburgh – 147 High Street	37	66	36	41	38	M	32	26	32	26	35	27	36	92	32
7	Musselburgh – 183 High St	33	38	29	41	39	31	30	30	26	27	43	31	33	100	30
8	Musselburgh - Mall Av	31	32	21	24	19	15	17	12	20	22	28	26	22	100	20
9	Musselburgh – 45 Bridge Street	22	48	19	35	26	21	18	15	21	26	31	24	26	100	23
10	Musselburgh – 150 North High St	33	34	32	27	22	24	23	28	27	26	39	30	29	100	26
11	Tranent – 89 High St	39	37	26	35	31	26	23	23	30	25	41	26	30	100	27
12	Tranent – 82 High St	23	19	24	33	34	M	16	20	23	20	39	23	25	92	22
13	Tranent – 55 High Street	32	55	22	29	23	M	21	22	24	M	32	25	29	92	26
14	Tranent – 26 High St	18	21	18	37	19	M	18	14	20	28	34	16	22	92	20
15	Tranent – 58 Bridge St	24	21	14	18	18	15	15	14	19	18	24	20	18	100	17
16	Haddington - Lyn Lea	12	9	6	8	7	4	4	4	8	8	14	8	8	100	7
23	Musselburgh - 133 N High St	26	26	20	25	22	18	19	15	17	18	35	20	22	100	20
24	Musselburgh - 133 N High St	23	45	17	12	22	18	16	15	19	21	37	21	22	100	20
25	Musselburgh - 133 N High St	27	29	20	26	22	18	17	16	19	22	35	21	23	100	20
26	Wallyford - 116 Salters Rd	28	18	23	27	22	22	24	15	21	26	31	22	23	100	21
27	Wallyford - 71 Salters Rd	29	26	20	29	16	16	21	17	23	25	29	22	23	100	20
*28	Musselburgh - 15 Bridge Street	26	28	19	32	25	17	18	16	23	23	35	18	23	100	21
*29	Musselburgh - 167 High Street	38	31	36	43	41	34	36	29	32	33	39	27	35	100	31
*30	Musselburgh - 137 High Street	32	24	24	30	24	23	22	19	20	26	28	25	25	100	22
*31	Musselburgh - 69 High Street	36	43	35	42	41	36	M	31	28	38	38	29	36	92	32
*32	Musselburgh - 86 High Street	37	38	28	32	28	20	21	41	30	51	40	47	34	100	31
33	Haddington - 23 Hardgate	26	26	21	17	19	15	15	20	19	16	7	20	22	100	20
34	Musselburgh - 2 Bothwell Bank, Hardgate	22	32	13	19	13	11	10	10	13	13	20	16	15	100	14
35	North Berwick - Police Station High Street										13	18	17	13	25	12
36	North Berwick - 108 High Street										9	15	11	9	25	8

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 22.3 μg/m^3. The average for the continuous analyser was 20 μg/m^3. This provided a diffusion tube bias adjustment factor of 0.9.

Method	Average for period (μg/m^3)
Analyser	20.0
Tubes	22.3
BIAS ADJUSTMENT	**0.9**

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

Air Pollution Report

1st January to 31st December 2019

Air Quality in Scotland

East Lothian Musselburgh N High St (Site ID: MUSS)

These data have been fully ratified

Only relevant statistics for LAQM are presented in the table. Cells with - indicate no data available or calculated.

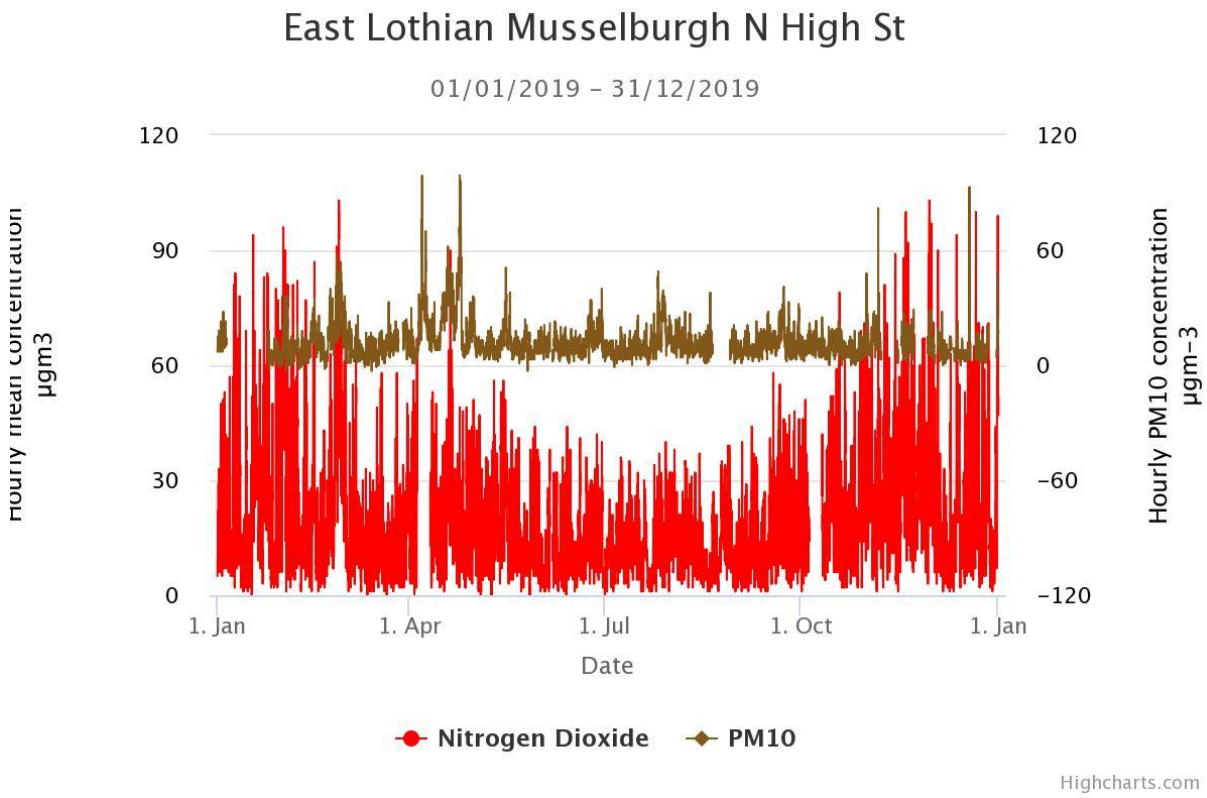
Pollutant	NO µg/m³	NO_2 µg/m³	NO_x as NO_2 µg/m³	PM_{10} µg/m³
Number Days Low	-	355	-	303
Number Days Moderate	-	0	-	1
Number Days High	-	0	-	0
Number Days Very High	-	0	-	0
Max Daily Mean	60	62	147	69
Annual Max	182	103	366	99
Annual Mean	11	20	37	12
98th Percentile of daily mean	-	-	-	34
90th Percentile of daily mean	-	-	-	19
99.8th Percentile of hourly mean	-	90	-	-
98th Percentile of hourly mean	57	67	151	38
95th Percentile of hourly mean	35	54	104	29
50th Percentile of hourly mean	6	16	26	9
% Annual data capture	**96.08%**	**96.08%**	**96.08%**	**85.19%**

Instruments: PM_{10}: BAM Gravimetric Equivalent (correction applied)

All gaseous pollutant mass units are at 20°C and 1013mb. Particulate matter concentrations are reported at ambient temperature and pressure. NO_X mass units are NO_X as NO_2 µg m-3

Note: For a strict comparison against the objectives there must be a data capture of 85% or greater throughout the calendar year.

Pollutant	Air Quality Standards (Scotland) Regulations 2010	Exceedances	Days
PM10 particulate matter (Hourly measured)	daily mean > 50 microgrammes per metre cubed	1	1
PM10 particulate matter (Hourly measured)	Annual mean > 18 microgrammes per metre cubed	0	-
Nitrogen dioxide	Hourly Mean > 200 microgrammes per metre cubed	0	0
Nitrogen dioxide	Annual Mean > 40 microgrammes per metre cubed	0	-


East Lothian Musselburgh N High St
01/01/2019 - 31/12/2019
Hourly mean concentration µgm3
Hourly PM10 concentration µgm-3
120
90
60
30
0
120
60
0
-60
-120
1. Jan
1. Apr
1. Jul
1. Oct
1. Jan
Date
Nitrogen Dioxide
PM10
Highcharts.com

NO_2 Monitoring Data

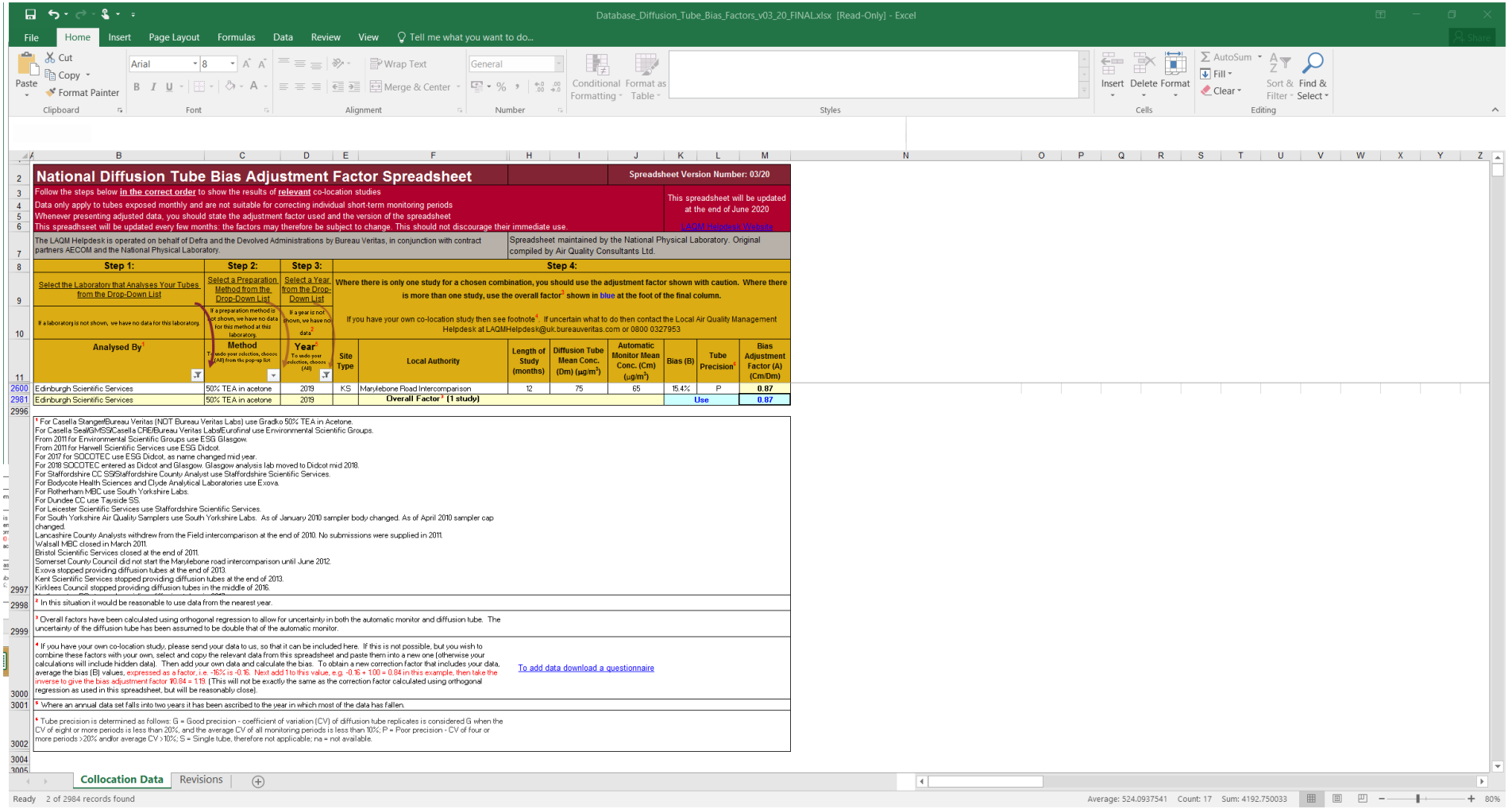
- No distance corrections have been carried out per LAQM (TG)(16) for NO_2 diffusion tubes for 2019 monitoring results as no measured results were obtained in excess of the Annual Mean Air Quality Objective of 40ug/m^3 or within 10% of the Annual Mean, i.e. above 36ug/m^3.

- NO_2 tubes T35 and T36 have been Annualised per method described in LAQM (TG)(16) as only 3 months of data was available for both tubes for 2019.

Start	End	B1	T35	T36	B1 when T35 is available	B1 when T36 is available
09/01/19	06/02/19	12				
06/02/19	06/03/19	9				
06/03/19	04/04/19	6				
04/04/19	01/05/19	8				
01/05/19	05/06/19	7				
05/06/19	10/07/19	4				
10/07/19	08/08/19	4				
08/08/19	04/09/19	4				
04/09/19	02/10/19	8				
02/10/19	06/11/19	8	13	9	8	8
06/11/19	04/12/19	14	18	15	14	14
04/12/19	08/01/20	8	17	11	8	8
AVERAGE		**8**	**16.0**	**11.7**	**10**	**10**

- The Annual mean (Am) of B1 is 8.0. The Period meam (Pm) of B1 when T35 and T36 were available was 10.0. The Ratio (R) of the annual mean to the period mean (Am/Pm) is 0.8. As this is the only background measurement then the annualisation factor is 0.8. The Period means of T35 and T36 were 16.0 for T35 and 11.7 for T36. If we multiply the measured period means of T33 and T34 by the annualisation factor we get an estimate of the annual means for 2019 as follows: **T35 = 16.0 X 0.8 = 12.8** and **T36 = 11.7 x 0.8 = 9.4**.

- The Diffusion Tubes were analysed by Edinburgh Scientific Services. The method used during the analysis is 50% TEA in acetone. An example of diffusion tube report is provided below.
- 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 22.3 $\mu g/m^3$. The average for the continuous analyser was 20 $\mu g/m^3$. This provided a diffusion tube bias adjustment factor of 0.9. The National Bias Adjustment for Edinburgh Scientific Services, the laboratory who carried out the analysis of the diffusion tubes throughout East Lothian, was a 0.87 as obtained from the National Diffusion Tube Bias Adjustment Factor Spreadsheet and highlighted below. The use of the National Bias Adjustment Figure as opposed to the Locally derived Bias Adjustment Figure would have resulted in NO CHANGE to the reported and bias adjusted results.



Database_Diffusion_Tube_Bias_Factors_v03_20_FINAL.xlsx [Read-Only] - Excel

File Home Insert Page Layout Formulas Data Review View Tell me what you want to do...

National Diffusion Tube Bias Adjustment Factor Spreadsheet

Spreadsheet Version Number: 03/20

Follow the steps below in the correct order to show the results of relevant co-location studies

Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods

Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet

This spreadhseet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of June 2020

LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.

Step 1: Select the Laboratory that Analyses Your Tubes from the Drop-Down List

If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List

If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List

If a year is not shown, we have no data[3]

Step 4: Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[2] shown in blue at the foot of the final column.

If you have your own co-location study then see footnote[1]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@uk.bureauveritas.com or 0800 0327953

	Analysed By[1]	Method (To undo your selection, choose (All) from the pop-up list)	Year[2] (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision[4]	Bias Adjustment Factor (A) (Cm/Dm)
2600	Edinburgh Scientific Services	50% TEA in acetone	2019	KS	Marylebone Road Intercomparison	12	75	65	15.4%	P	0.87
2981	Edinburgh Scientific Services	50% TEA in acetone	2019		Overall Factor[3] (1 study)				Use		0.87

[1] For Casella Stanger/Bureau Veritas (NOT Bureau Veritas Labs) use Gradko 50% TEA in Acetone.
For Casella Seal/GMSS/Casella CRE/Bureau Veritas Labs/Eurofins! use Environmental Scientific Groups.
From 2011 for Environmental Scientific Groups use ESG Glasgow.
From 2011 for Harwell Scientific Services use ESG Didcot.
For 2017 for SOCOTEC use ESG Didcot, as name changed mid year.
For 2018 SOCOTEC entered as Didcot and Glasgow. Glasgow analysis lab moved to Didcot mid 2018.
For Staffordshire CC SS/Staffordshire County Analyst use Staffordshire Scientific Services.
For Bodycote Health Sciences and Clyde Analytical Laboratories use Exova.
For Rotherham MBC use South Yorkshire Labs.
For Dundee CC use Tayside SS.
For Leicester Scientific Services use Staffordshire Scientific Services.
For South Yorkshire Air Quality Samplers use South Yorkshire Labs. As of January 2010 sampler body changed. As of April 2010 sampler cap changed.
Lancashire County Analysts withdrew from the Field intercomparison at the end of 2010. No submissions were supplied in 2011.
Walsall MBC closed in March 2011.
Bristol Scientific Services closed at the end of 2011.
Somerset County Council did not start the Marylebone road intercomparison until June 2012.
Exova stopped providing diffusion tubes at the end of 2013.
Kent Scientific Services stopped providing diffusion tubes at the end of 2013.
Kirklees Council stopped providing diffusion tubes in the middle of 2016.

[2] In this situation it would be reasonable to use data from the nearest year.

[3] Overall factors have been calculated using orthogonal regression to allow for uncertainty in both the automatic monitor and diffusion tube. The uncertainty of the diffusion tube has been assumed to be double that of the automatic monitor.

[1] If you have your own co-location study, please send your data to us, so that it can be included here. If this is not possible, but you wish to combine these factors with your own, select and copy the relevant data from this spreadsheet and paste them into a new one (otherwise your calculations will include hidden data). Then add your own data and calculate the bias. To obtain a new correction factor that includes your data, average the bias (B) values, expressed as a factor, i.e. -16% is -0.16. Next add 1 to this value, e.g. -0.16 + 1.00 = 0.84 in this example, then take the inverse to give the bias adjustment factor 1/0.84 = 1.19. (This will not be exactly the same as the correction factor calculated using orthogonal regression as used in this spreadsheet, but will be reasonably close).

To add data download a questionnaire

[3] Where an annual data set falls into two years it has been ascribed to the year in which most of the data has fallen.

[4] Tube precision is determined as follows: G = Good precision - coefficient of variation (CV) of diffusion tube replicates is considered G when the CV of eight or more periods is less than 20%, and the average CV of all monitoring periods is less than 10%; P = Poor precision - CV of four or more periods >20% and/or average CV >10%; S = Single tube, therefore not applicable; na = not available.

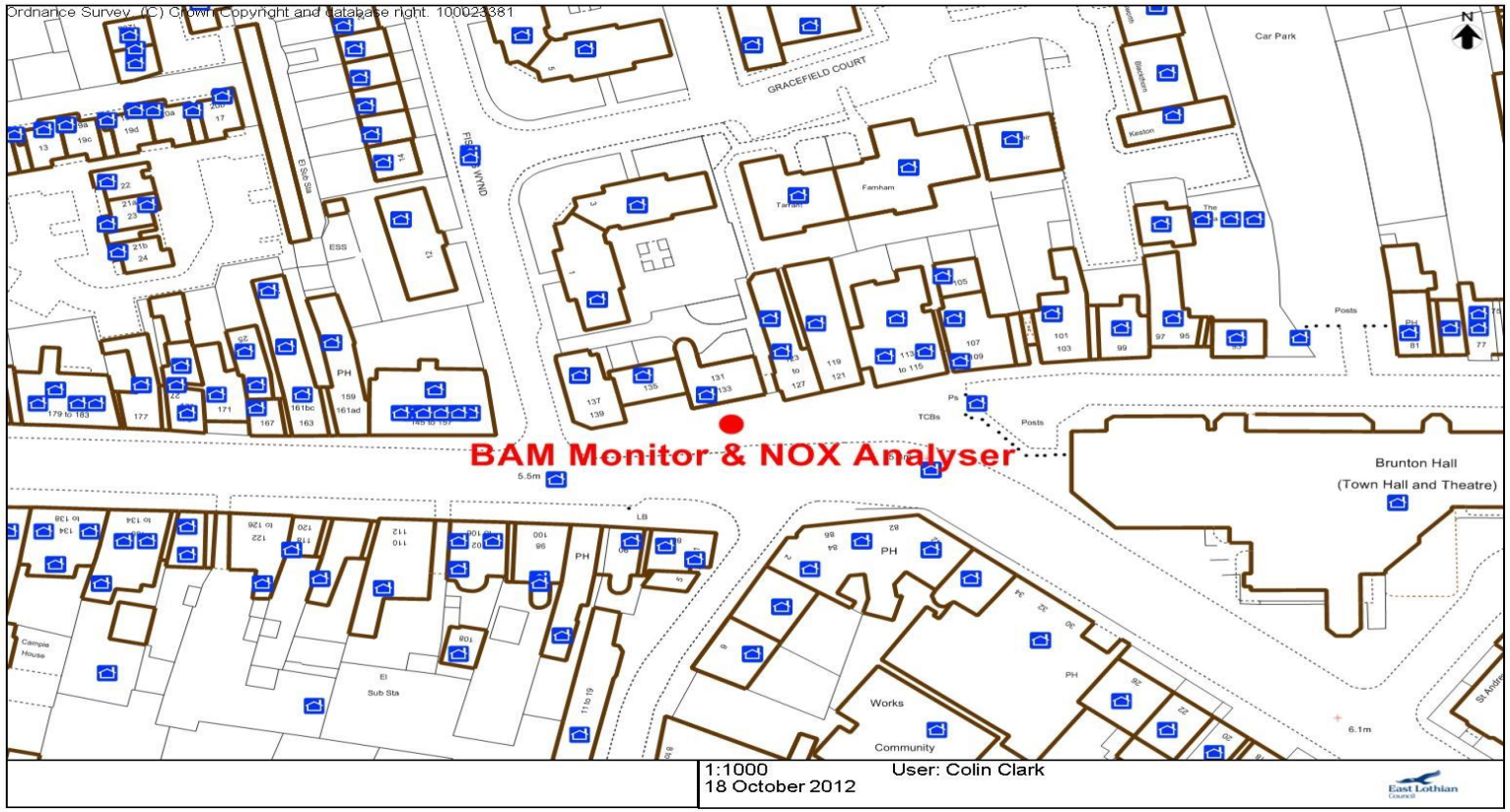
Collocation Data | Revisions

Ready 2 of 2984 records found

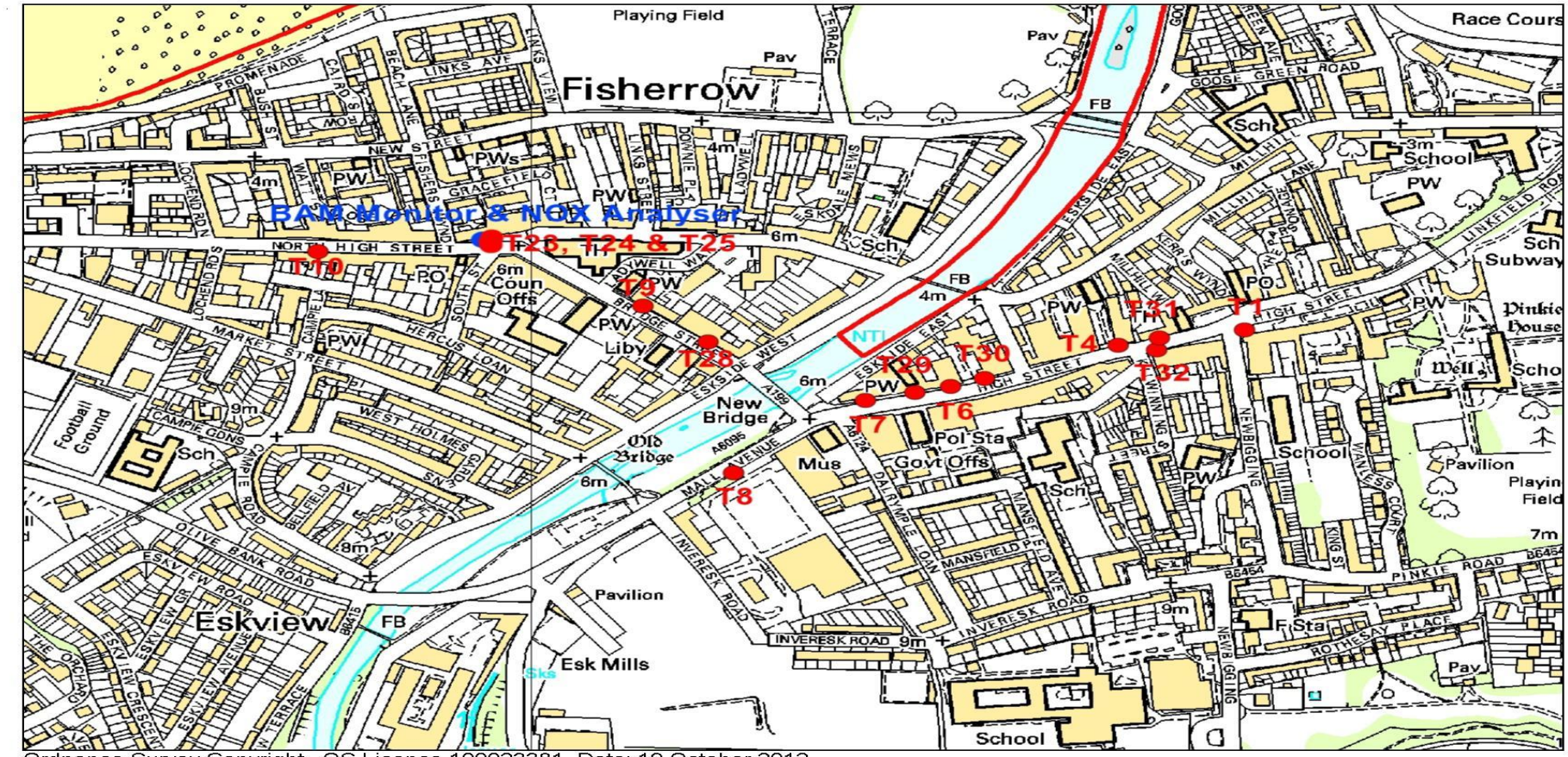
Average: 524.0937541 Count: 17 Sum: 4192.750033 80%

Appendix D: Maps of monitoring locations

Map of Automatic Monitoring Site in Musselburgh

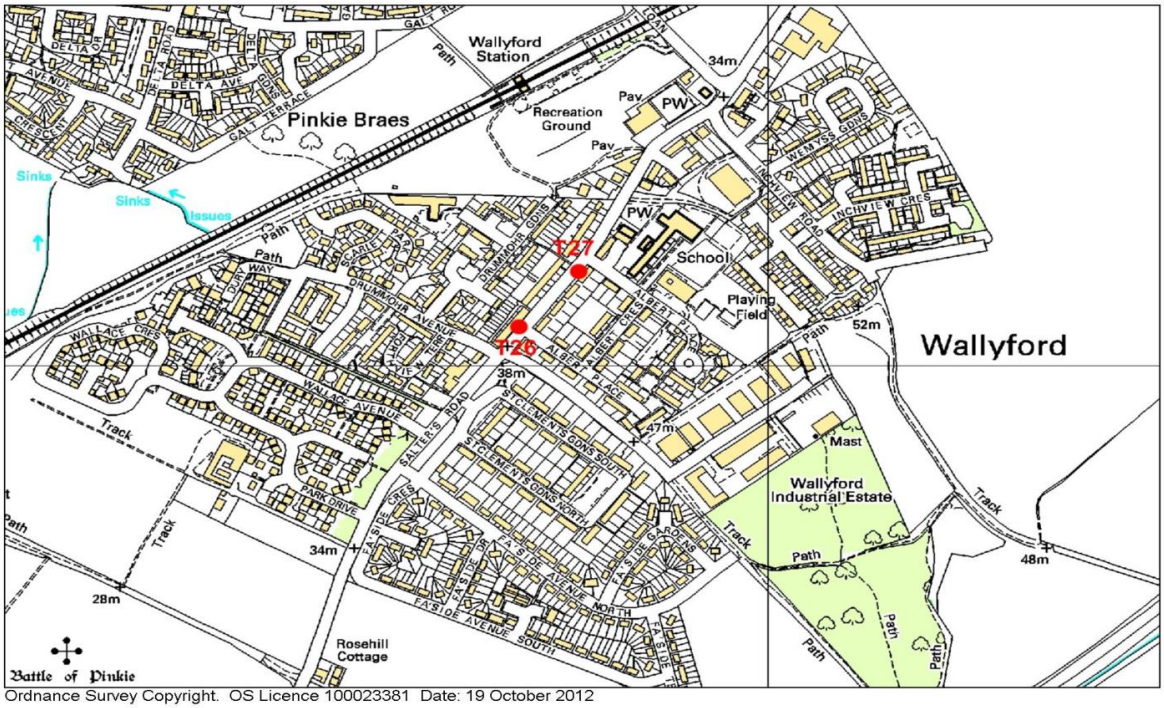


Map of Non-Automatic Monitoring Sites in Musselburgh



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

Map of Non-Automatic Monitoring Sites in Wallyford



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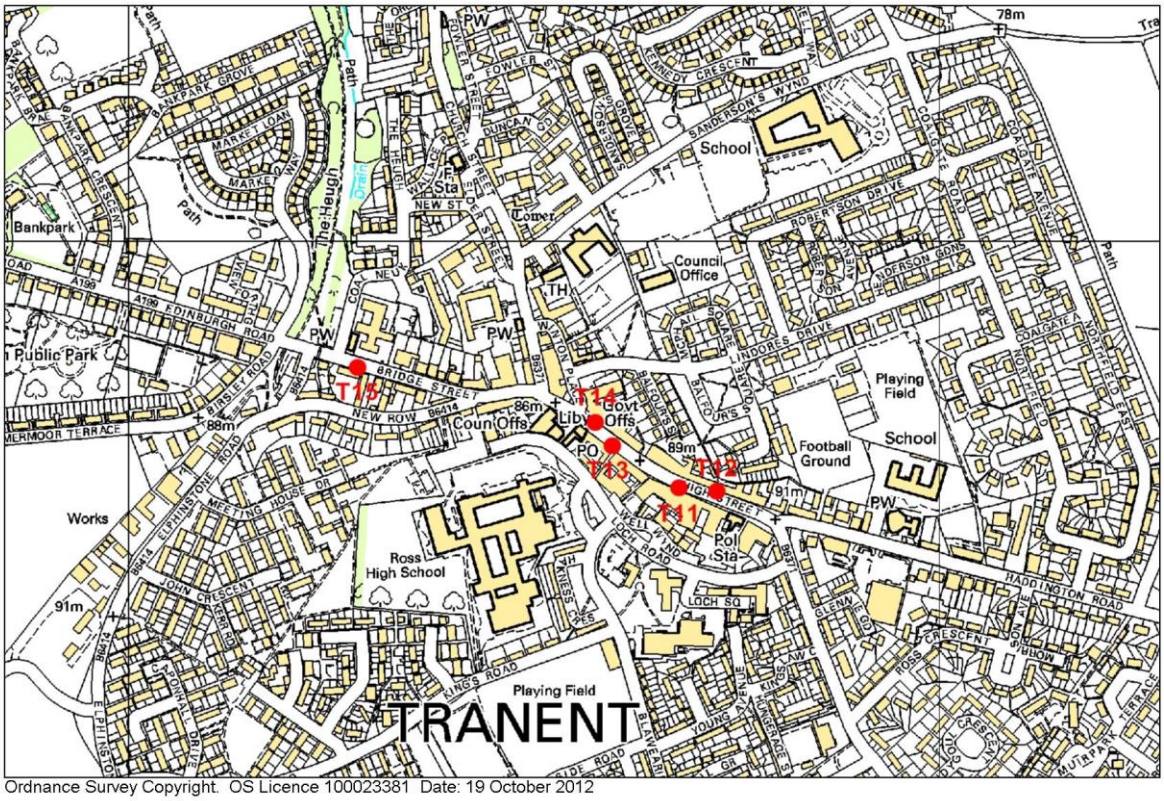
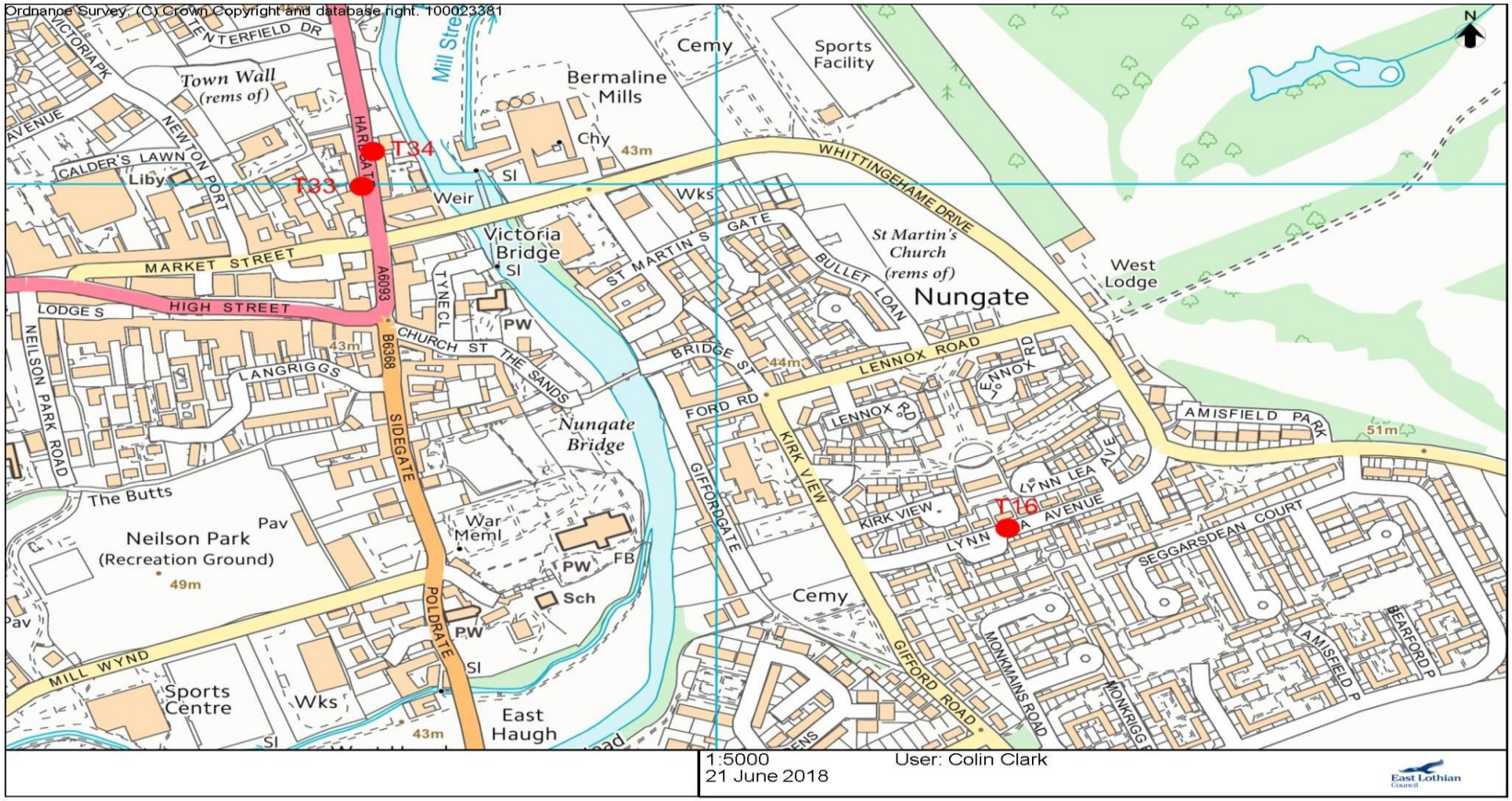
Map of Non-Automatic Monitoring Sites in Tranent

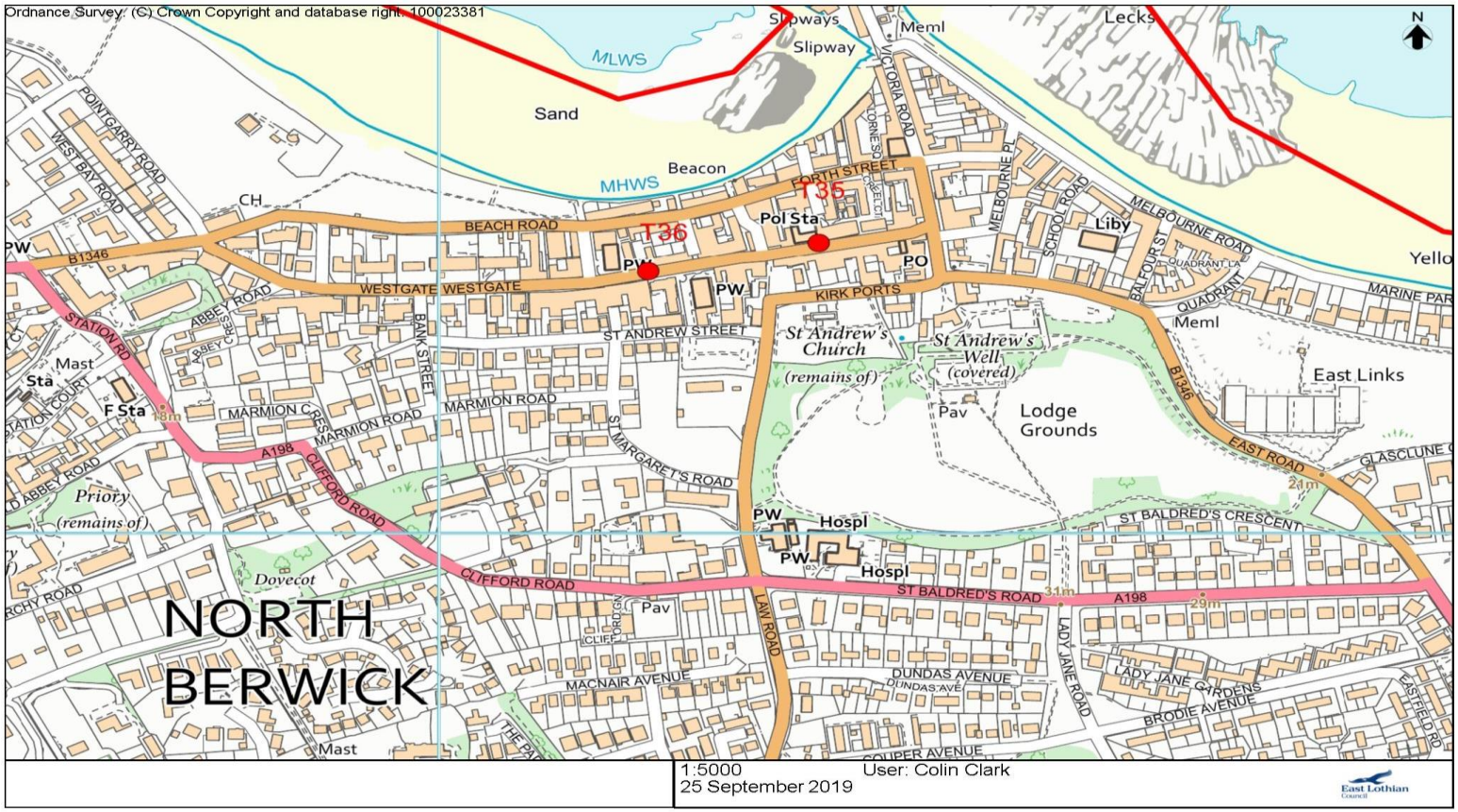


Ordnance Survey Copyright. OS Licence 100023381 Date: 19 October 2012

Map of Non-Automatic Monitoring Sites in Haddington



Map of Non-Automatic Monitoring Sites in North Berwick



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 **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 ***if additional monitoring confirms predicted exceedences in 2012.***
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.
6-3	**Annual Progress Report**	**June 2017**	**July 2017**	Exceedences of NO2 Annual Mean recorded at T6 and T31.

6-4	**Annual Progress Report**	**June 2018**	**June 2018**	No exceedences of any Air Quality Objectives
6-5	**Annual Progress Report**	**June 2019**	**June 2019**	No-exceedences of any Air Quality Objectives
6-6	**Annual Progress Report**	**June 2020**	**June 2020**	No exceedences of any Air Quality Objectives

Glossary of Terms

Please add a description of any abbreviation included in the APR – 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

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