2016 Air Quality Annual Progress Report for The Moray Council

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

June, 2016

AECOM

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Executive Summary

The following Annual Progress Report was prepared and written by AECOM on behalf of Moray Council in accordance with Local Air Quality Management (LAQM) Technical Guidance (TG) 2016, published by Defra on behalf of the devolved administrations.

Air Quality in The Moray Council Administrative Area

There are no existing significant air quality issues identified within the Moray Council administrative area. Atmospheric nitrogen dioxide (NO_2) is monitored throughout urban areas within the Moray Council area through a network of passive diffusion tubes. The average annual mean concentrations of NO_2 within the Moray Council area remain consistently below the Air Quality Standards set by the Scottish Government. A maximum annual mean NO_2 concentration of 25.3 µg/m^3 was monitored at Moss Street, Keith, well below the Scottish Air Quality Standard of 40 µg/m^3. Annual mean concentrations at 18 of 19 monitoring locations show a general decline in NO_2 concentration, with a fractional increase at the remaining monitoring location. NO_2 is currently the only pollutant of concern within the Moray Council area.

There are no new major emissions sources within the area and no Air Quality Management Areas (AQMA) were declared in the past year. The addition of three permitted biomass installations in 2015 and one further biomass installation in 2016 were reported to have no significant effect on the air quality within the Moray Council area.

Other sources of emissions from industry and transport remain unchanged from those reported in the 2015 Updating and Screening Assessment (Ref- 1).

Actions to Improve Air Quality

There are currently no designated AQMAs within the Moray Council area and thus, no planned actions to undertake specific air quality improvement activities.

However, The Local Transport Strategy (Ref- 2) states that schemes will have a *"positive impact, particularly in relation to factors such as accessibility, road safety,*

health, and promotion of a modal shift and associated activities such as walking and cycling."

The Moray Council have recently added a 4.5 mile cycle route between Lhanbryde and Elgin to their existing cycle network. The Annual Cycling Report published by Cycling Scotland (Ref- 3) reports that 55% of households in Moray have access to bicycles with 1.9% of the population choosing cycling as their main mode of transport, which is above the national average.

Local Priorities and Challenges

The Moray Council has no specific priorities for the coming year for the improvement of air quality in its area but will continue monitoring NO_2 levels.

How to Get Involved

You can contribute to improving local air quality by taking alternative modes of transport where possible, becoming part of a cycle to work scheme, walking short distances instead of driving and when driving is unavoidable taking part in car sharing schemes. Drivers are also advised to avoid unnecessary idling and to turn off vehicle engines when parked or stationary for long periods.

If you are interested in obtaining further information regarding air quality within your local area visit the Moray Council website at www.moray.gov.uk and search for "Air Quality".

The previous LAQM reporting, including the 2015 Updating and Screening Assessment (USA) is available on the Moray Council website at http://www.moray.gov.uk/moray_standard/page_1790.html

Table of Contents

List of Tables

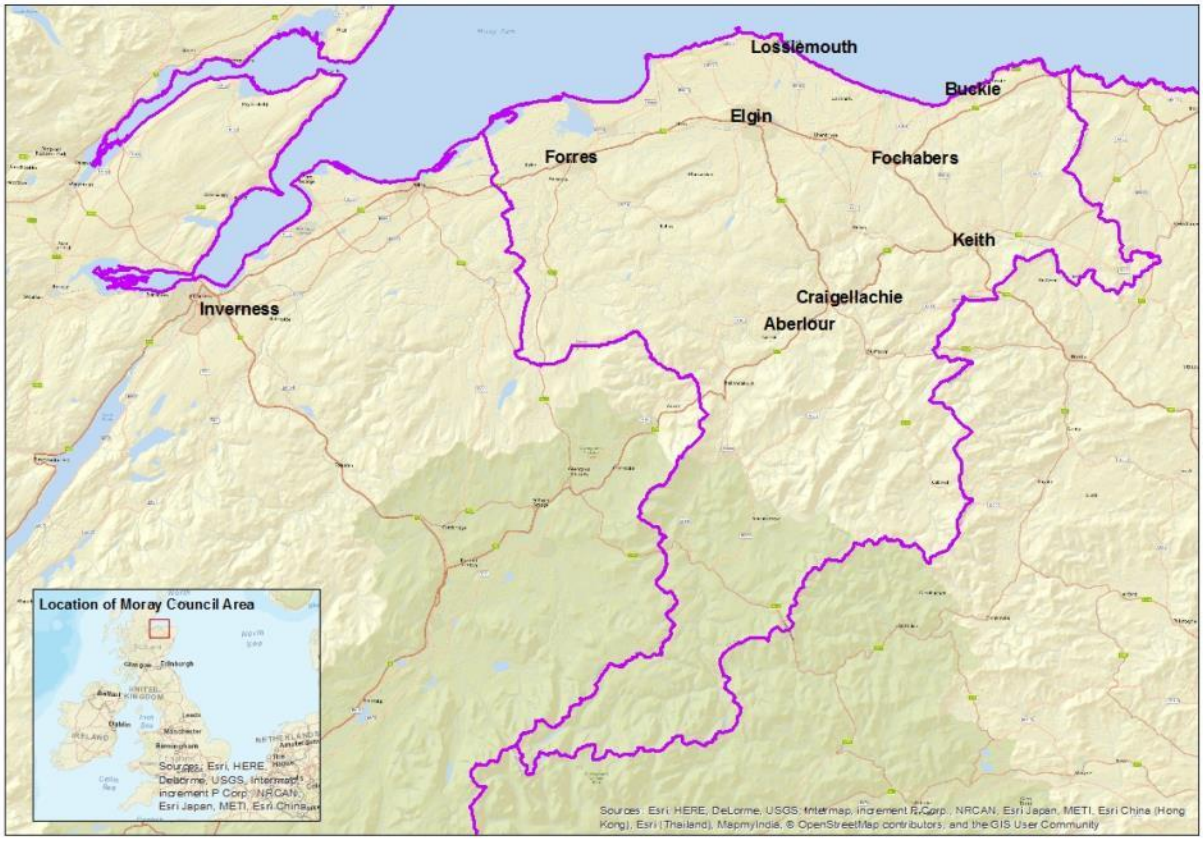
List of Figures

1. Description of Local Authority Area

The Moray Council area is located in the north-east of Scotland between the main cities of Inverness and Aberdeen. It is bordered by The Highland Council area to the west and by Aberdeenshire Council to the south and east. The northern border of the Moray Council area is the coastline of the Moray Firth.

The extent of the Moray Council administrative area is shown in Figure 1.1

Figure 1.1 Extent of Moray Council Administrative Area



Topographically, the area is dominated by the Glens of the Grampian Mountain Range including large areas of forest and moorland to the south. The northern area is relatively flat with large expanses of agricultural land and coastal grassland.

The population of the Moray Council area is approximately 95,510 (as of 2015) with the majority of residents living in the towns of Elgin, Forres, Fochabers, Keith, Buckie, Aberlour and Lossiemouth. The main industries are distilling, food processing and traditional farming, forestry and fishing. The former RAF base in Kinloss is now an army barracks with minimal flight movements while RAF Lossiemouth site is still operational as a Typhoon flight centre.

There is a mainline passenger rail route passing through the north of the area that runs between Inverness and Aberdeen and the main Trunk Roads are the A96, part of which forms the Fochabers and Mosstodloch bypass, which passes through Elgin, and the A95 which passes through Keith, Craigellachie and Aberlour.

1.1 Purpose of the Report

This report fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in Part IV of the Environment Act (1995), the Air Quality Strategy for England, Scotland, Wales and Northern Ireland 2007 and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where exceedences are considered likely, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) setting out the measures it intends to put in place in pursuit of the objectives.

The objective of this Annual Progress Report (APR) is to present new air quality monitoring data, and to identify any matters that have changed since the 2015 USA, and which may lead to risk of an air quality objective being exceeded.

2. Local Air Quality Management

This report provides an overview of air quality in the Moray Council administrative area during 2015. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995) and the relevant Policy and Technical Guidance documents.

The LAQM process places an obligation on all local authorities to regularly review and assess air quality in their areas, and to determine whether or not the air quality objectives are likely to be achieved. Where 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 Moray Council to improve air quality and any progress that has been made.

3. Actions to Improve Air Quality

3.1 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 local 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.

The Moray Council currently has not been required to declare any AQMA's within its area and as a result no AQAP, Air Quality Strategy (AQS) or similar documentation is necessary.

3.2 Progress and Impact of Measures to Address Air Quality in Moray Council

The signing of the Climate Change (Scotland) Bill in 2009 introduced an interim target of achieving a 42% reduction in Scottish carbon dioxide (CO_2) emissions by 2020 and a national target of 80% reduction in CO_2 emissions by 2050 (Ref- 4). As a Scottish local authority, Moray Council can contribute to achieving these targets by introducing schemes to further improve air quality within the Council's area.

Current air quality within the Moray Council area is considered to be good, with air pollutant concentrations well below the standard air quality objectives set by the Scottish Government (Table 3.1). As a result there have been no Council led schemes explicitly dedicated to improving local air quality. With not having to declare any AQMA's within its area, Moray Council has not had to publish an Air Quality Action Plan and has no planned actions designed explicitly to improve local air quality.

The Moray Council Local Transport Strategy (Ref- 2) highlights one Strategic Environmental Assessment (SEA) Objective in relation to air quality:

> *"To protect and enhance the quality of local air quality in Moray and to ensure that emissions are below National Air Quality Standards and thus air quality objectives are met."*

The Moray Council made a number of comments outlining how the Transport Strategy is designed to address this objective, stating:

- *"Whilst recognising the peripheral nature of Moray and the higher reliance on private car ownership, the Strategy highlights the importance of modal shift through a number of objectives, sub objectives and actions. These components/commitments of the Strategy will contribute to the government's target to reduce Greenhouse Gas emissions by 80% by 2050.";*
- *"The strategy includes commitments relative to rail freight and improved facilities at ports and harbours to reduce the level of road transport across the region."* ; and
- *"Further detailed assessment of individual schemes may be required where these involve significant new infrastructure or upgrades in close proximity to sensitive receptors."*

Table 3.1 -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

3.2.1 Summary of Previous Review and Assessments

Table 3.2 summarises the Air Quality Review and Assessment reports submitted by Moray Council since 2003. These reports are available on the Moray Council website at http://www.moray.gov.uk/moray_standard/page_1790.html.

Table 3.2 - Summary of Previous Air Quality Review and Assessment Reports 2003-2015

Report	Date Completed	Summary and Conclusions
Updating and Screening Assessment	April, 2015	No predicted exceedences of Air Quality Standard (Scotland) (AQS(S)) Objectives
Progress Report	April, 2014	No predicted exceedences of AQS(S) Objectives
Progress Report	May, 2013	No predicted exceedences of AQS(S) Objectives
Updating and Screening Assessment	April, 2012	No predicted exceedences of AQS(S) Objectives
Progress Report	June, 2011	No predicted exceedences of AQS(S) Objectives
Progress Report	May, 2010	No predicted exceedences of AQS(S) Objectives
Updating and Screening Assessment	May, 2009	No predicted exceedences of AQS(S) Objectives
Progress Report	April, 2008	No predicted exceedences of AQS(S) Objectives
Progress Report	May, 2007	No predicted exceedences of AQS(S) Objectives
Updating and Screening Assessment	June, 2006	No predicted exceedences of AQS(S) Objectives
Detailed Assessment of Road Traffic Particulate Emissions	August, 2005	Assessment of short-term monitoring data and modelled road traffic emissions concluded that it was unlikely that there would be an exceedance of the PM_{10} objectives
Progress Report	May, 2005	No predicted exceedences of AQS(S) Objectives
Air Quality Study in the Vicinity of RAF Kinloss and RAF Lossiemouth	November, 2004	No predicted exceedences of AQS(S) Objectives of Odour Threshold Values
Updating and Screening Assessment Supplementary Report	January, 2004	No further assessment of domestic fuel burning of quarried required. Relevant public exposure to PM_{10} identified at 2 road junctions
Updating and Screening Assessment	May, 2003	Additional information on domestic fuel burning and quarry emissions required. DMRB screening tool identified for reassessment of PM_{10} at 3 busy junctions.

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

4.1 Summary of Monitoring Undertaken

Monitoring is carried out for NO_2 within the Moray Council area. During 2015, NO_2 was monitored at 19 locations using a network of passive diffusion tubes. The Moray Council does not undertake monitoring for other atmospheric pollutants within the administrative area.

4.1.1 Automatic Monitoring Sites

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

There are no automatic monitoring sites operated by Moray Council.

4.1.2 Non-Automatic Monitoring Sites

The Moray Council undertook non-automatic monitoring of NO_2 at 19 locations during 2015 using passive diffusion tubes. Figure 4.1 shows the locations of all the sites, whilst Table A.1 (Appendix A) provides further details of the monitoring locations. Maps showing the detailed locations of the monitoring sites are provided in Figures D.1-D.6 (Appendix D). The sites are classified as a mixture of kerbside, roadside and urban background sites.

The tubes are provided and analysed by Aberdeen Scientific Services Laboratory (ASSL) using 20% TEA in Acetone and are changed on a monthly basis by Moray Council personnel.

There was 100% data capture from 17 of the 19 locations and the others were above 90%. However, several monitoring periods recorded values that were below the Limit of Detection (LoD, shown as <5 $\mu g/m^3$ in Table B.1 (Appendix B). Therefore, after consultation with the LAQM helpdesk it was decided the seasonal adjustment procedure is considered to be an appropriate means of achieving a high level of confidence in the annual mean concentrations.

Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for diffusion tubes are included in Appendix C: Supporting Technical Information / Air Quality Monitoring Data QA/QC.

Figure 4.1 Map of Non-Automatic Monitoring Sites

4.2 Individual Pollutants

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

4.2.1 Nitrogen Dioxide (NO_2)

Table A.2 (Appendix A) compares the ratified and adjusted monitored NO_2 annual mean concentrations for the past 6 years with the air quality objective of 40µg/m^3.

For diffusion tubes, the full 2015 dataset of monthly mean values is provided in Table B.1 (Appendix B).

A trend graph is shown in Figure A.1 in (Appendix A), which illustrates the general downward trend in annual mean NO_2 concentrations across the diffusion tube network. The concentration of NO_2 has decreased at 18 of 19 sites between 2010 and 2015. However, there was a small overall increase at Wittet Drive, Elgin (DT10). The maximum annual mean in 2015 was 25.3 µg/m^3 in Moss Street, Keith. The annual mean remains well below the objective of 40 µg/m^3 at all monitoring locations. NO_2 concentrations are all well below the objectives, therefore there is no need to proceed to a Detailed Assessment.

4.2.2 Particulate Matter (PM_{10})

The Moray Council does not undertake monitoring for PM_{10} and does not expect PM_{10} concentrations to exceed air quality objectives. A review of background PM_{10} data available for the Moray Council administrative area from the Scottish Air Quality Archive (www.scottishairquality.co.uk/data) returned a maximum PM_{10} concentration of 13.1 µg/m^3 for 2015 located in an area of agriculture. The average PM_{10} concentration across the Council area was 8.4 µg/m^3. These concentrations are below the standards set out in the AQS(S) Table 3.1 (page 6)

4.2.3 Particulate Matter ($PM_{2.5}$)

There is no monitoring undertaken by Moray Council for $PM_{2.5}$.

As detailed in Policy Guidance LAQM.PG16 (Chapter 7), local authorities are expected to work towards reducing emissions and/or concentrations of $PM_{2.5}$ (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that $PM_{2.5}$ has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

The main sources of anthropogenic $PM_{2.5}$ in the region are road traffic emissions (comprising engine exhaust, road and tyre/brake abrasion), although there are a number of construction and mineral extraction and industrial processes at sites.

Annual average background pollutant concentration estimates have been sourced from Defra's 2011 based background maps for 2015 (Ref- 5) for $PM_{2.5}$ over the study area. The value for estimated background pollutant concentrations do not use Scotland specific data to estimate future atmospheric pollutant background concentrations, instead using data sources UK wide, and thus predicted background concentrations may not be as accurate as those sourced for NO_2 and PM_{10}.

The average modelled background concentration of $PM_{2.5}$ for the Moray Council area is 5.7 µg/m^3, with a maximum concentration of 8.0 µg/m^3 predicted over an agricultural area to the northeast of the village of Mosstodloch, which is below the $PM_{2.5}$ target value of 12 µg/m^3 to be achieved by 2020.

The Scottish Govermment aims to establish a $PM_{2.5}$ monitoring network as part of the Cleaner Air for Scotland Strategy (Ref- 6). The Moray Council has no plans in place to install any such monitoring over the coming year.

4.2.4 Sulphur Dioxide (SO_2)

Sulphur dioxide is not monitored within the Moray Council area. It is not expected that existing SO_2 emissions will cause SO_2 objectives to be exceeded.

4.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

There is no monitoring for carbon monoxide, lead or 1,3-Butadiene within the Moray Council area. It is not expected that existing emissions of carbon monoxide, lead or 1,3-Butadiene will exceed AQS(S) objectives.

5. New Local Developments

Planning consents were granted for three developments concerning biomass plants within the Moray Council territory in 2015 and one additional permit was granted in 2016. These developments were Blervie House, Rafford; Bruntlands Farm, Alves and Aberlour Primary School, Aberlour in 2015 and Blairs Home Farm, Forres in 2016. These developments each required an Air Quality Assessment. The reports concluded there will be no significant impact as a result of each biomass installation.

No other planning applications were received during 2015 which required an air quality assessment.

The draft masterplan of a new residential development to be located around the southern edge of Elgin has recently been approved by the elected members of Moray Council. The development is set to comprise 2,500 houses, two primary schools, a sports centre, a range of retail and community facilities and a cemetery. This development, portioned into three smaller towns, is to be built over the next thirty years. A development of this magnitude has the potential to impact local air quality. Planning applications are currently in preparation for the initial permissions in relation to the development. The Moray Council has confirmed that air quality assessments will be included in future applications related to this development.

5.1 Road Traffic Sources

A review of traffic data was undertaken in order to establish if there were any significant changes to traffic flow since 2014 that could impact on air quality.

The Moray Council Transportation Section was consulted to obtain automatic traffic count information for Council operated sites in and around Elgin for 2015. The Moray Council operates 13 traffic counters at locations within Elgin and a map showing these count locations is shown in Figure E.1 (Appendix E).

The data returned for 2012-2015 are summarised in Table 5.1 and shows increases in the annual average daily traffic at 8 of 11 traffic count locations operational during 2015 and reductions at 3 locations. There are no sites however with significantly increased traffic flow that would require a screening assessment.

Table 5.1 - Summary of Council Operated Traffic Counts Elgin 2012-2015

ID	Description	Annual Average Daily Traffic (AADT)				% Change 2014-2015
		2012	2013	2014	2015	
1	Linkwood Road	8,600	8,946	8,257	9,325	+ 12.9
2	Maisondieu Road	7,938	8,016	7,975	8,386	+ 5.2
3	Newmill Road	-	-	-	-	-
4	Reiket Lane	7,377	7,885	8,011	8,799	+ 9.8
5	Thornhill Road	5,787	6,833	6,866	6,851	- 0.2
6	Wittet Drive	3,593	3,712	3,772	3,941	+ 4.5
7	A941 Hay Street	12,998	12,741	13,100	13,271	+ 1.3
8	A941 North Street	15,307	-	-	-	-
9	A941 Main Street	10,718	10,680	10,824	10,652	- 1.6
10	A941 Bridge over Railway	20,252	19,348	19,852	19,203	- 3.3
11	Edgar Road	8,220	8,901	9,140	9,758	+ 6.8
12	Thornhill Road Shops	3,061	3,245	3,373	3,615	+ 7.2
13	Glenmoray Drive	4340	5,163	4,644	4,856	+ 4.6

Monitoring locations 1 and 4 show increases in traffic flow of 12.9% and 9.8% respectively from 2014 to 2015. This is a large increase in traffic but on comparison with adjusted annual NO_2 concentrations from DT5, located close to the area of increased traffic flow, the concentrations are well below the AQS(S) objectives, resulting in no unacceptably high exposure to the local area. The increase in the flow of traffic along these link roads is likely due to the completion of a series of housing developments on the eastern edge of Elgin, whereby the roads affected provide a direct route to a large retail park, Elgin Railway Station and supermarkets. Consideration will be made to include NO_2 monitoring in the area of this development in the future years.

Previously two traffic monitors at A941 North Street and Newmill Road were removed due to a bridge replacement and flood alleviation works. These monitors have now been reinstated since the completion of the scheme.

Transport Scotland was consulted in order to obtain automatic traffic count data for 2015 for the main routes through the Moray Council area, the trunk roads A95 and A96, and the data for 2012-15 is summarised in Table 5.2. A map showing the count locations is shown in Figure E.2 (Appendix E).

Table 5.2 - Summary of Trunk Road Traffic Count Data for A95 & A96 2012-2015

Counter ID	Description	Annual Average Daily Traffic (AADT)				% Change 2014-2015
		2012	2013	2014	2015	
JTC08238	A98 Fochabers	No Data	6,528	No Data	6,861	-
ATCNE014	A96 Forres to Elgin	11,054	11,309	No Data	No Data	-
ATCNE006	A96 Elgin to Lhanbryde	16,211	16,408	15,657	15,987	+ 2.1
ATCNE003	A95 Dowans Brae	2,773	2,757	2,732	2,793	+ 2.2
ATC02040	A96 Elgin Town Centre	16,525	17,271	16,414	16,772	+ 2.2
ATC02038	A96 Forres	11,376	11,641	No Data	No Data	-
ATC02037	A96 Mosstodloch	1,436	14,016	No Data	No Data	-
ATC02036	A96 North of Keith	6,341	6,287	6,886	7,203	+ 4.6
ATC02028	A95 West of Keith	1,794	2,005	1,626	No Data	-
ATC00022	A96 Elgin - East Road	21,981	22,853	22,685	No Data	-
1ATC00021	A96 Elgin - Alexandra Road	21,290	22,789	20,744	No Data	-
ATC00020	A96 Elgin - High Street West	12,849	13,454	12,703	13,161	+ 3.6
ATC00019	A96 Elgin - West Road	14,791	13,494	15,871	16,413	+ 3.4
126400	A96 Forres (aka Brodie) (Core 744)	9,881	10,714	10,244	10,717	+ 3.5
126401	A96 Brodie (WiM)	9,856	10,694	10,354	10,651	+ 4.0
109502	A95 Ballindalloch (Core 905)	2,096	2,197	No Data	1,770	-

The annual average daily traffic (AADT) flows have increased on all of the 8 road links with measurable changes to traffic flow between 2014 and 2015. A maximum increase in traffic flow of 4.6% in 2014 flows was identified on the A96 north of Keith. As NO_2 concentrations in the area are well below the AQS(S) objectives it is not expected that there will be any exceedences of the AQS(S) objectives at nearby receptors due to changes in traffic flow on these trunk roads.

The planning application for the proposed new Western Link Road (WLR), the purpose of which was to relieve congestion on existing roads and cater for additional traffic related to existing and planned developments in Elgin, was refused by the Planning and Regulatory Services Committee on November 2014. The decision was based on the grounds that the application was contrary to different local planning policies related to noise mitigation, road and pedestrian safety, integration to the

current landscape and demonstration to conserve natural and built environment. None of these policies are considered to be directly relevant to local air quality.

Following this decision and to seek direction from the Council on the scheme, officers submitted a report to the Economic Development and Infrastructure Services Committee on 25th November 2014. This Committee decided the WLR should remain a strategic project and recommended that this decision should be confirmed by The Moray Council. On 17th December 2014, the Moray Council agreed with this recommendation and instructed officers to proceed with a revised planning application which addresses the above points and to continue progressing all other work relating to the WLR in accordance with previous instructions.

At a meeting of the Moray Council on 30 March 2016 the funding for the WLR was removed from the Capital Plan, thereby cancelling the project. The WLR was a key element in improving the road network within Elgin and therefore a report was submitted to a meeting of Moray Council on 7 June 2016 confirming that with its removal a new transport strategy for Elgin is needed.

No other new or significantly changed roads were identified that would entail further assessment.

5.1.1 Narrow Congested Streets with Residential Properties Close to the Kerb

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

5.1.2 Busy Streets Where People May Spend 1-Hour or More Close to Traffic

There are no new/newly identified busy streets where people may spend 1 hour or more close to traffic.

5.1.3 Roads with a High Flow of Buses and/or Heavy Goods Vehicles (HGV's)

There are no new/newly identified roads with high flows of buses/heavy duty vehicles (HDV's).

5.1.4 Junctions

There are no new/newly identified busy junctions/busy roads.

5.1.5 New Roads Constructed or Proposed

There are no new/newly proposed roads since the last round of Review and Assessment.

5.1.6 Roads with Significantly Changed Traffic Flows

There are no new/newly identified roads with significantly changed traffic flows.

5.1.7 Bus or Coach Stations

There are no relevant bus stations that require Detailed Assessment.

5.2 Other Transport Sources

5.2.1 Airports

The RAF airbase at Kinloss closed in 2011 and is now used as an Army barracks. The Lossiemouth base remains operational. While the Ministry of Defence retains the right to reopen the Kinloss base in the future, a previous study of local air quality in the vicinity of each base while they were both operational (Ref- 7) showed that there was no risk of exceedance of air quality objectives. However, as the assessment was undertaken several years ago, in the event that the base is proposed to reopen then the potential local air quality effects may be reassessed.

There are no other airports in the local authority area requiring further assessment. The nearest commercial airport is Inverness Airport located within the Highland Council area, which is located 28 km to the east of the boundary of the Moray Council administrative area. Inverness Airport is further than 1 km from any relevant public exposure within the Moray Council area and therefore requires no further assessment.

5.2.2 Railways (Diesel and Steam Trains)

There have been no significant changes to rail movement within the Moray Council administrative area since the last Updating and Screening Assessment. The Moray Council confirms that there are no locations where diesel or steam trains are regularly stationary for periods of 15 minutes or more, with potential for relevant exposure within 15 m. There are no locations with a large number of movements of diesel locomotives, and potential long-term relevant exposure within 30 m.

5.2.3 Ports (Shipping)

The Moray Council has previously reviewed emissions from shipping and has a responsibility for six harbours within the Council area, namely Buckie, Burghead, Cullen, Findochty, Hopeman and Portknockie. Lossiemouth also has an operational harbour and there is a small harbour, pier and ship building yard at Findhorn.

The types of vessels using the harbours are mainly small fishing vessels and recreational boats. It is concluded that no further assessment of these ports is required. The Moray Council confirms that there are no ports or shipping that meet the specified criteria within the Moray area.

5.3 Industrial Sources

Both the Scottish Environment Protection Agency (SEPA) and the Moray Council Planning Department were consulted to confirm the presence of new and existing industrial sources of atmospheric pollutants within the Moray Council administrative area.

The Council provide an online database for information, whilst SEPA records for 2015 were still being checked at the time of writing and will be published in October. SEPA were, therefore, unable to confirm definitely that there had been no changes, although there had been no permits applied for regarding increasing emissions from the existing industrial units.

5.3.1 Industrial Installations (New or Proposed)

There were no planning applications for industrial installations during 2015 which required an air quality assessment.

5.3.2 Industrial Installations (Existing with Increased Emissions or New Relevant Exposure)

There were no existing industrial installations within the Moray Council area which had applied for a permit for increasing emissions or new relevant exposure during 2015.

5.3.3 Industrial Installations (New or Significantly Changed)

There were no new industrial installations within the Moray Council area during 2015 and no industrial installations with significantly changed emissions during 2015.

5.3.4 Major Fuel (Petrol) Storage Depots

There are no major fuel (petrol) storage depots within the Moray Council area.

5.3.5 Petrol Stations

There are no new petrol stations with annual throughput of over 2,000m^3 of petrol.

5.3.6 Poultry Farms

There have been no newly permitted poultry farms in the Moray Council area since the last Updating and Screening Assessment. There have been no significant changes at the two SEPA regulated poultry farms within the Moray Council area since the last Updating and Screening Assessment. It is therefore concluded that no further assessment is necessary.

5.4 Commercial and Domestic Sources

The Environmental Services Department within the Moray Council has an established team of personnel who undertake the air quality impact screening assessments of all proposed installations in accordance with the Environmental Protection UK guidance (Ref- 8) and ensure installations are compliant with the Clean Air Act 1993 and the LAQM air quality objectives before granting permission.

Where the screening assessment approach does not indicate compliance, or the proposed scheme is a complex one, Moray Council requires an Air Quality Assessment to be submitted by the applicant as part of the planning process.

5.4.1 Biomass Combustion – Individual Installations

After the rise in the number of planning applications for biomass installations within The Moray Council administrative area in 2014 only three planning applications for biomass installations or associated storage buildings were permitted by the Council in 2015. One such application was also submitted at the beginning of 2016, and has been included here for completeness. Details of these developments are shown in Table 5.3.

Air Quality Assessments were submitted by the applicants for each of the biomass combustion installations. These reports indicate that during operation the new biomass installations will have no significant effect on the local air quality.

Table 5.3 - Details of Permitted Biomass Installations

ID	Application Number	Description	OS Grid Reference		Status
			Easting	Northing	
1	15/00008/APP	Erect a Biomass plant building and a separate wood chip store building at Blervie House, Rafford, Forres.	306940	855536	Permitted
2	15/01159/APP	Conversion of steading buildings to workshop facility office and biomass boiler and form new site access at Bruntlands Farm, Alves, Elgin.	313627	864402	Permitted
3	15/01666/APP	Install new biomass boiler system within existing boiler house at Aberlour Primary School Mary Avenue, Aberlour.	326561	842780	Permitted
4	15/02186/APP	Erect a biomass plant at Blairs Home Farm, Forres.	302810	855167	Permitted

5.4.2 Biomass Combustion – Combined Impacts

To date there are a total of 33 permitted wood burning biomass installations within the Moray Council area. While these have all been assessed for potential air quality impacts as individual installations, the potential combined impact of clusters of installations should be assessed for PM_{10} in accordance with TG(16) (Ref- 9). The biomass installations with their geographical location are summarised in Table F.1 and shown on the map in Figure F.1 (both items shown in Appendix F).

The 2015 Moray Council Updating and Screening Assessment concluded that the installations are spread widely across the Council area, mostly in rural locations, and do not cluster in a 500 x 500 m^2 area. The addition of the newly permitted biomass installations does not cause a significant increase in clustering; therefore no further Detailed Assessment is required.

5.4.3 Domestic Solid-Fuel Burning

Previous reports concluded that there were no areas of domestic solid-fuel burning with a density of greater than 100 houses in a 500 x 500m area. There are no new areas of significant domestic fuel use and it is therefore not necessary to undertake further assessment.

5.4.4 Combined Heat and Power Plants (CHP)

There have been no new CHP's within The Moray Council area since the 2015 Updating and Screening Assessment.

5.5 New Developments with Fugitive or Uncontrolled Sources

There are no other potential sources of fugitive emissions or uncontrolled particulate matter that have not been previously assessed within the Moray Council area.

6. Planning Applications

There are currently no planning applications which have been approved requiring an air quality assessment other than the previously mentioned installations in Table 5.3 (page 20).

There are currently no known planning applications for new developments under consideration which may affect air quality within the Moray Council area. Masterplans for the large new development to the south of Elgin have not yet been submitted to Moray Council but will be accompanied with associated air quality assessments.

7. Conclusions and Proposed Actions

7.1 Conclusions from New Monitoring Data

The results of the NO_2 monitoring across the Moray Council area during 2015 confirm that there are no known exceedences of the AQS(S) objectives for this pollutant. Analysis of NO_2 concentrations between 2010 and 2015 show NO_2 concentrations following a general downward trend. The review of new monitoring data available for 2015 confirms that the Moray Council does not need to proceed to a Detailed Assessment.

7.2 Conclusions relating to New Local Developments

In regards to new local developments only previously mentioned biomass installations required Air Quality Assessments. The conclusions of these assessments allowed Moray Council's Planning Department to grant permits for the developments to proceed. These new developments are not likely to introduce new exceedences of the AQS(S) objectives within the Moray Council area.

7.3 Proposed Actions

Monitoring data from 2015 does not identify any exceedences of the AQS(S) objectives for NO_2. This indicates there is no need for additional air quality monitoring or changes to the existing monitoring programme within the Moray Council area.

The current NO_2 monitoring and traffic flow monitoring is planned to continue through 2016. The results of these activities will be included in the next Air Quality Progress Report in 2017.

Appendix A: Monitoring Results

Table A.1 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Location	Site Type	Grid Reference Coordinates		Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?
				X	Y					
DT1	Elgin 1	Lamp Post West Park Court – Elgin	Kerbside	321105	862669	NO_2	N	<5	1	N
DT2	Elgin 2	Junction East & Maisondieu Road – Elgin	Kerbside	322348	862745	NO_2	N	<2	1	N
DT3	Elgin 3	99-101 Maisondieu Road - Elgin	Roadside	322302	862727	NO_2	N	<5	2	N
DT4	Elgin 4	26-28 Priory Place – Elgin	Urban Background	322249	862630	NO_2	N	<5	N/A	N
DT5	Elgin 5	Main Street New Elgin	Kerbside	322233	861869	NO_2	N	<5	1	N
DT6	Elgin 6	Queen Street Roundabout – Elgin	Kerbside	322029	862832	NO_2	N	<5	1	N
DT7	Elgin 7	Hay Street – Elgin	Roadside	321615	862307	NO_2	N	<5	1	N
DT8	Elgin 8	Newmill Road – Elgin	Roadside	322492	863309	NO_2	N	<5	2	N

Site ID	Site Name	Location	Site Type	Grid Reference Coordinates		Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) [1]	Distance to kerb of nearest road (m) [2]	Tube collocated with a Continuous Analyser?
				X	Y					
DT9	Elgin 9	37 Sandy Road – Elgin	Kerbside	321775	861115	NO_2	N	5	2	N
DT10	Elgin 10	47 Wittet Drive – Elgin	Kerbside	320641	862291	NO_2	N	5	1	N
DT11	Fochabers 1	50A High Street – Fochabers	Kerbside	334634	858726	NO_2	N	<2	2	N
DT12	Fochabers 2	Sunndach George Street – Fochabers	Kerbside	334423	858663	NO_2	N	<2	2	N
DT13	Forres	Tolbooth, High Street – Forres	Urban Background	303726	858931	NO_2	N	<2	N/A	N
DT14	Keith 1	106 Moss Street – Keith	Roadside	343323	850458	NO_2	N	<5	2	N
DT15	Keith 2	87 Moss Street – Keith	Kerbside	343329	850415	NO_2	N	<5	2	N
DT16	Lossie 1	1 Merryton Court – Lossiemouth	Kerbside	322463	870293	NO_2	N	<5	2	N
DT17	Lossie 2	7 James Street – Lossiemouth	Urban Background	323515	870931	NO_2	N	<2	N/A	N

Site ID	Site Name	Location	Site Type	Grid Reference Coordinates		Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube collocated with a Continuous Analyser?
				X	Y					
DT18	Rothes 1	New Street – Rothes	Kerbside	327756	849658	NO_2	N	<2	1	N
DT19	Rothes 2	New Street - Rothes	Roadside	327740	849239	NO_2	N	<5	2	N

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

(2) N/A if not applicable.

Table A.2 – Annual Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2015 (%) [2]	NO_2 Annual Mean Concentration (µg/m^3) [3]					
					2010	2011	2012	2013	2014	2015
DT1	Kerbside	Diffusion Tube	N/A	100	28.3	26.2	23.5	23.8	20.9	22.3
DT2	Kerbside	Diffusion Tube	N/A	100	27.3	25.6	26.2	22.9	19.5	19.8
DT3	Roadside	Diffusion Tube	N/A	100	16.4	12.8	14.1	13.6	14.4	12.8
DT4	Urban Background	Diffusion Tube	N/A	91	10.7	9.8	9.7	8.9	8.6	7.9
DT5	Kerbside	Diffusion Tube	N/A	100	20.6	19.3	18.2	16.8	15.6	15.6
DT6	Kerbside	Diffusion Tube	N/A	100	20.1	17.9	18.5	17.1	14.9	15.8
DT7	Roadside	Diffusion Tube	N/A	100	26.0	22.7	11.5	10.3	9.3	8.2
DT8	Roadside	Diffusion Tube	N/A	100	16.5	16.4	14.9	13.8	12.8	14.1
DT9	Kerbside	Diffusion Tube	N/A	100	-	-	-	7.8	6.7	6.7
DT10	Kerbside	Diffusion Tube	N/A	100	-	-	-	12.7	12.3	13.3
DT11	Kerbside	Diffusion Tube	N/A	91	37.3	30.7	12.2	11.3	10.4	10.1
DT12	Kerbside	Diffusion Tube	N/A	27	6.6	5.2	4.7	4.7	4.4	4.9
DT13	Urban Background	Diffusion Tube	N/A	100	16.3	15.8	14.1	12.7	11.8	13.0
DT14	Roadside	Diffusion Tube	N/A	100	30.4	30.6	28.8	25.8	23.8	25.3

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) [1]	Valid Data Capture 2015 (%) [2]	NO_2 Annual Mean Concentration (µg/m^3) [3]					
					2010	2011	2012	2013	2014	2015
DT15	Kerbside	Diffusion Tube	N/A	100	27.1	22.4	22.8	23.1	20.9	21.3
DT16	Kerbside	Diffusion Tube	N/A	73	7.3	6.4	6.2	5.4	4.8	5.2
DT17	Urban Background	Diffusion Tube	N/A	73	8.7	6.9	6.1	5.3	4.8	5.6
DT18	Kerbside	Diffusion Tube	N/A	100	18.3	19.8	18.5	16.5	15.3	17.1
DT19	Roadside	Diffusion Tube	N/A	100	25.2	20.0	18.9	18.0	16.3	17.5

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

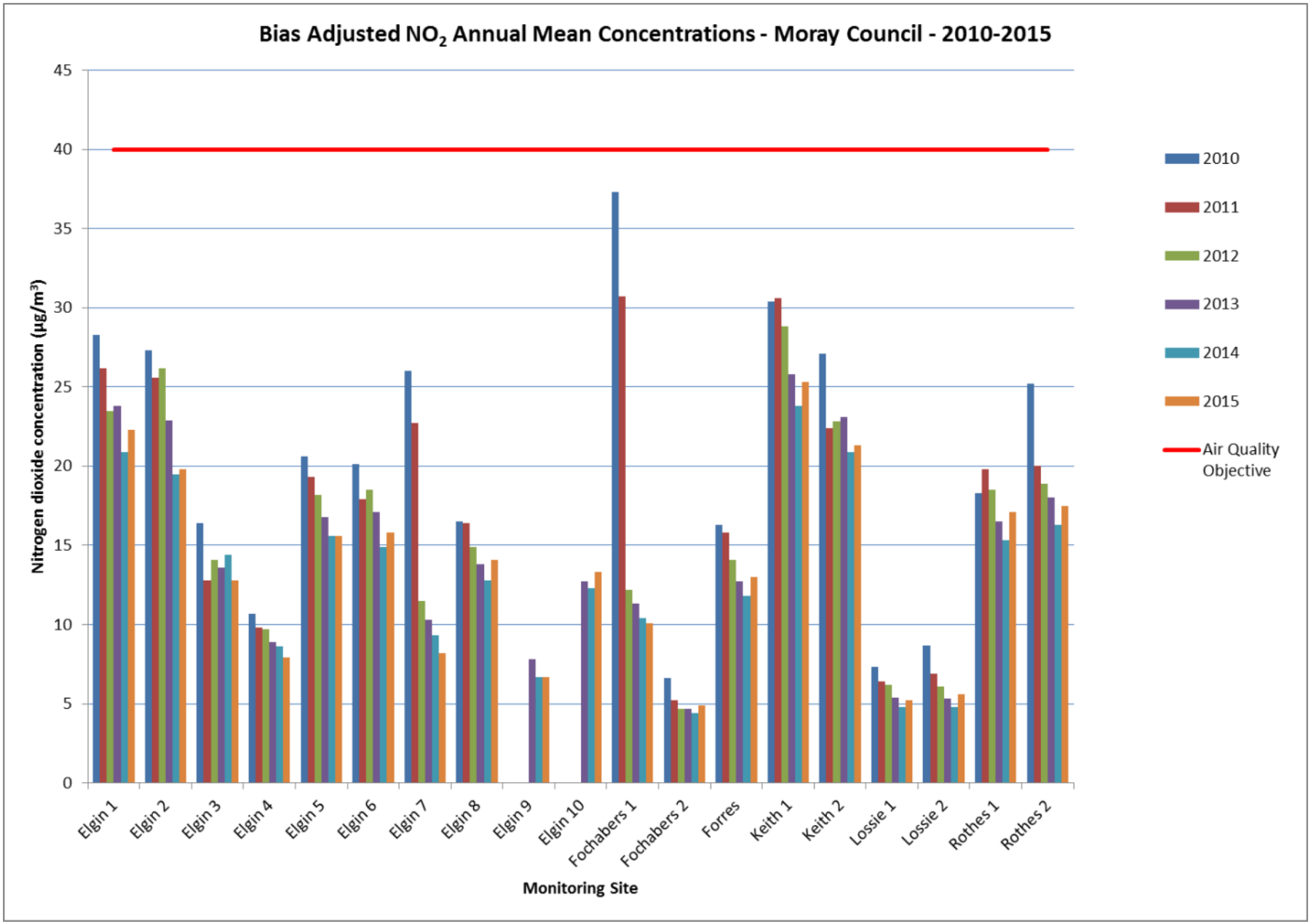
NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedence of the NO_2 1-hour mean objective are shown in **bold and underlined.**

(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 diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG(16) if valid data capture for the full calendar year is less than 75%. See Appendix C for detail.

Figure A.1 - Trends in Annual Mean Nitrogen dioxide Concentrations Measured at Diffusion Tube Monitoring Sites



Appendix B: Full Monthly Diffusion Tube Results for 2015

Table B.1- NO_2 Monthly Diffusion Tube Results for 2015

Site ID	NO_2 Mean Concentrations ($\mu g/m^3$)												
	13/01/2015 – 12/02/2015	12/02/2015 – 10/03/2015	10/03/2015 – 15/04/2015	15/04/2015 – 28/05/2015	28/05/2015 – 25/06/2015	25/06/2015 – 04/08/2015	04/08/2015 – 08/09/2015	08/09/2015 – 14/10/2015	14/10/2015 – 17/11/2015	17/11/2015 – 16/12/2015	16/12/2015 – 05/02/2015	Annual Mean	
												Raw Data	Bias Adjusted (1)
DT1	29	22	28	24	30	22	24	31	32	30	31	27.5	22.3
DT2	30	18	12	27	30	24	25	33	16	28	26	24.5	19.8
DT3	13	8	26	13	13	10	9	14	29	22	17	15.8	12.8
DT4	12	8	10	9	8	5	7	11	14	13	Lost	9.7	7.9
DT5	22	15	19	16	16	15	16	20	25	24	24	19.3	15.6
DT6	22	14	21	16	17	14	16	22	26	22	24	19.5	15.8
DT7	10	8	10	11	10	8	9	11	12	11	11	10.1	8.2
DT8	22	19	16	12	12	9	13	20	24	23	21	17.4	14.1
DT9	8	7	8	7	8	5	7	9	12	9	11	8.3	6.7
DT10	18	14	15	13	13	12	12	20	22	21	21	16.5	13.3
DT11	12	10	14	13	13	11	11	16	13	12	Lost	12.5	10.1
DT12	<5	<5	<5	<5	<5	<5	<5	6	6	<5	7	6.33	4.9

Site ID	NO_2 Mean Concentrations ($\mu g/m^3$)												
	13/01/2015 – 12/02/2015	12/02/2015 – 10/03/2015	10/03/2015 – 15/04/2015	15/04/2015 – 28/05/2015	28/05/2015 – 25/06/2015	25/06/2015 – 04/08/2015	04/08/2015 – 08/09/2015	08/09/2015 – 14/10/2015	14/10/2015 – 17/11/2015	17/11/2015 – 16/12/2015	16/12/2015 – 05/02/2015	Annual Mean	
												Raw Data	Bias Adjusted (1)
DT13	23	14	14	13	12	11	13	18	20	19	20	16.1	13.0
DT14	38	26	23	26	26	26	30	40	39	42	27	31.2	25.3
DT15	22	18	32	20	26	25	26	36	25	24	35	26.3	21.3
DT16	7	6	7	<5	5	<5	<5	7	8	8	10	6.46	5.2
DT17	8	6	7	6	<5	<5	<5	7	9	8	11	6.87	5.6
DT18	26	22	23	18	17	15	18	22	23	25	23	21.1	17.1
DT19	23	19	24	21	18	17	22	25	23	25	21	21.6	17.5

(1) See Appendix C for details on bias adjustment

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

The 2015 raw monthly average NO_2 diffusion tube results are summarised in Table B1 (Appendix B).

Factor from Local Co-location Studies

There is no co-location study within The Moray Council area.

Annualisation of Diffusion Tube Data

There was 100% data capture from 17 of the 19 locations and the others were above 90%. However, several monitoring periods recorded values that were below the Limit of Detection (LoD, shown as <5 $\mu g/m^3$ in Table B.1 (Appendix B,). Therefore, after consultation with the LAQM helpdesk it was decided the seasonal adjustment procedure was considered to be an appropriate means of achieving a high level of confidence in the annual mean concentrations.

The Moray Council does not operate any automatic nitrogen dioxide monitoring equipment within the Council area. Measurements of nitrogen dioxide concentration from automatic monitors are required in order to annualise diffusion tube data.

The LAQM.TG(16) (Ref- 9) states that data from two to four automatic monitoring stations is required for diffusion tube annualisation. However, the automatic monitor must also be representative of the environment in which the locations to be annualised are situated. The closest Automatic Urban and Rural Network (AURN) automatic monitors are situated in Fort William and Aberdeen. However, the automatic monitor operates in the westerly situation of Fort William an environmental situation dissimilar to that of Moray in terms of wind trajectory and overall climate. Three automatic monitoring stations operate within Aberdeen; of which one is an urban background site the other two are located in urban centres near heavily used roads. As a result data from only one AURN automatic monitoring station was used in the annualisation process.

Diffusion Tube Adjustment Factors

The tubes are provided and analysed by Aberdeen Scientific Services Laboratory (ASSL) using 20% TEA in Acetone and are changed on a monthly basis by Moray Council personnel.

Therefore, the national bias adjustment factor spreadsheet version 03/16 (Ref- 10) was used to determine the national bias adjustment factor for diffusion tubes analysed by ASSL during 2015. The factor was 0.81.

QA/QC of Diffusion Tube Monitoring

The NO_2 diffusion tubes used by Moray Council were prepared and analysed by the ASSL. The laboratory is United Kingdom Accreditation Service (UKAS) accredited and has good performance in both the LGC Standards Proficiency Testing Scheme (AIR NO_2 PT formerly WASP) and National Physical Laboratory (NPL) QA schemes.

The laboratory demonstrated satisfactory performance in the past five rounds, returning acceptable Z-Scores.

A summary is shown in Table C.1 (Ref- 11).

Table C. 1 - Aberdeen Scientific Services Laboratory Results in LGC Standards Proficiency Testing Scheme

	AIR NO_2 PT Round Conducted During			
ASSL	**Tube 1**	**Tube 2**	**Tube 3**	**Tube 4**
February 2015	-0.28	0.07	-0.60	-0.64
May 2015	-0.92	-0.14	-0.14	-0.72
October 2015	-0.26	-0.19	-0.82	-0.21
February 2016	0.42	0.27	0.59	0.34
May 2016	-1.32	-0.57	-0.34	-0.44

The general classification of a Z-Score is:

$Z < \pm 2$	Satisfactory
$Z > \pm 2$ and $< \pm 3$	Warning
$Z > \pm 3$	Unsatisfactory

The results of the NPL Intercomparison Study for 2015 are shown in the table below. The overall survey had good precision and data capture with a bias correction factor of 0.84.

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements

Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 μgm^{-3}	Tube 2 μgm^{-3}	Tube 3 μgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean
1	07/01/2015	04/02/2015	88.3	88.8	92.0	90	2.0	2	5.0
2	04/02/2015	04/03/2015	104.1	102.3	102.6	103	1.0	1	2.4
3	04/03/2015	01/04/2015	95.7	96.9	96.2	96	0.6	1	1.5
4	01/04/2015	29/04/2015	109.1	107.3	106.4	108	1.4	1	3.4
5	29/04/2015	27/05/2015	105.0	106.3	103.7	105	1.3	1	3.2
6	27/05/2015	01/07/2015	99.2	101.9	100.0	100	1.4	1	3.4
7	01/07/2015	29/07/2015	100.6	102.9	104.6	103	2.0	2	5.0
8	29/07/2015	26/08/2015	97.7	98.3	96.9	98	0.7	1	1.7
9	26/08/2015	30/09/2015	89.0	88.5	90.1	89	0.8	1	2.0
10	30/09/2015	28/10/2015	85.7	83.6	81.0	83	2.4	3	5.8
11	28/10/2015	02/12/2015	90.8	91.4	88.9	90	1.3	1	3.2
12	02/12/2015	06/01/2016	91.4	89.9	93.3	92	1.7	2	4.2
13									

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

Automatic Method		Data Quality Check	
Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
82.2417	96.504277	Good	Good
77.8136	96.281145	Good	Good
73.4299	97.657122	Good	Good
78.9353	94.161398	Good	Good
73	95.574563	Good	Good
88	97.530497	Good	Good
97	96.392711	Good	Good
79	93.975456	Good	Good
84	97.709015	Good	Good
72	97.619933	Good	Good
84.7054	97.61763	Good	Good
82.5876	97.261905	Good	Good
Overall survey -->		Good precision	Good Overall

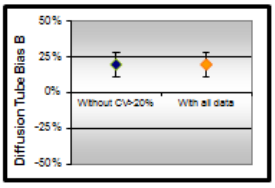
(Check average CV & DC from Accuracy calculations)

Site Name/ ID: Marylebone Road

Precision 12 out of 12 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval)
without periods with CV larger than 20%
Bias calculated using 12 periods of data
Bias factor A 0.84 (0.79 - 0.9)
Bias B 19% (11% - 27%)
Diffusion Tubes Mean: 96 μgm^{-3}
Mean CV (Precision): 1
Automatic Mean: 81 μgm^{-3}
Data Capture for periods used: 97%
Adjusted Tubes Mean: 81 (76 - 87) μgm^{-3}

Accuracy (with 95% confidence interval)
WITH ALL DATA
Bias calculated using 12 periods of data
Bias factor A 0.84 (0.79 - 0.9)
Bias B 19% (11% - 27%)
Diffusion Tubes Mean: 96 μgm^{-3}
Mean CV (Precision): 1
Automatic Mean: 81 μgm^{-3}
Data Capture for periods used: 97%
Adjusted Tubes Mean: 81 (76 - 87) μgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

If you have any enquiries about this spreadsheet please contact the LAQM Helpdesk at: LAQMHelpdesk@uk.bureauveritas.com

Appendix D: Nitrogen Dioxide Diffusion Tube Monitoring Locations

Figure D.1 Elgin NO_2 Monitoring Sites

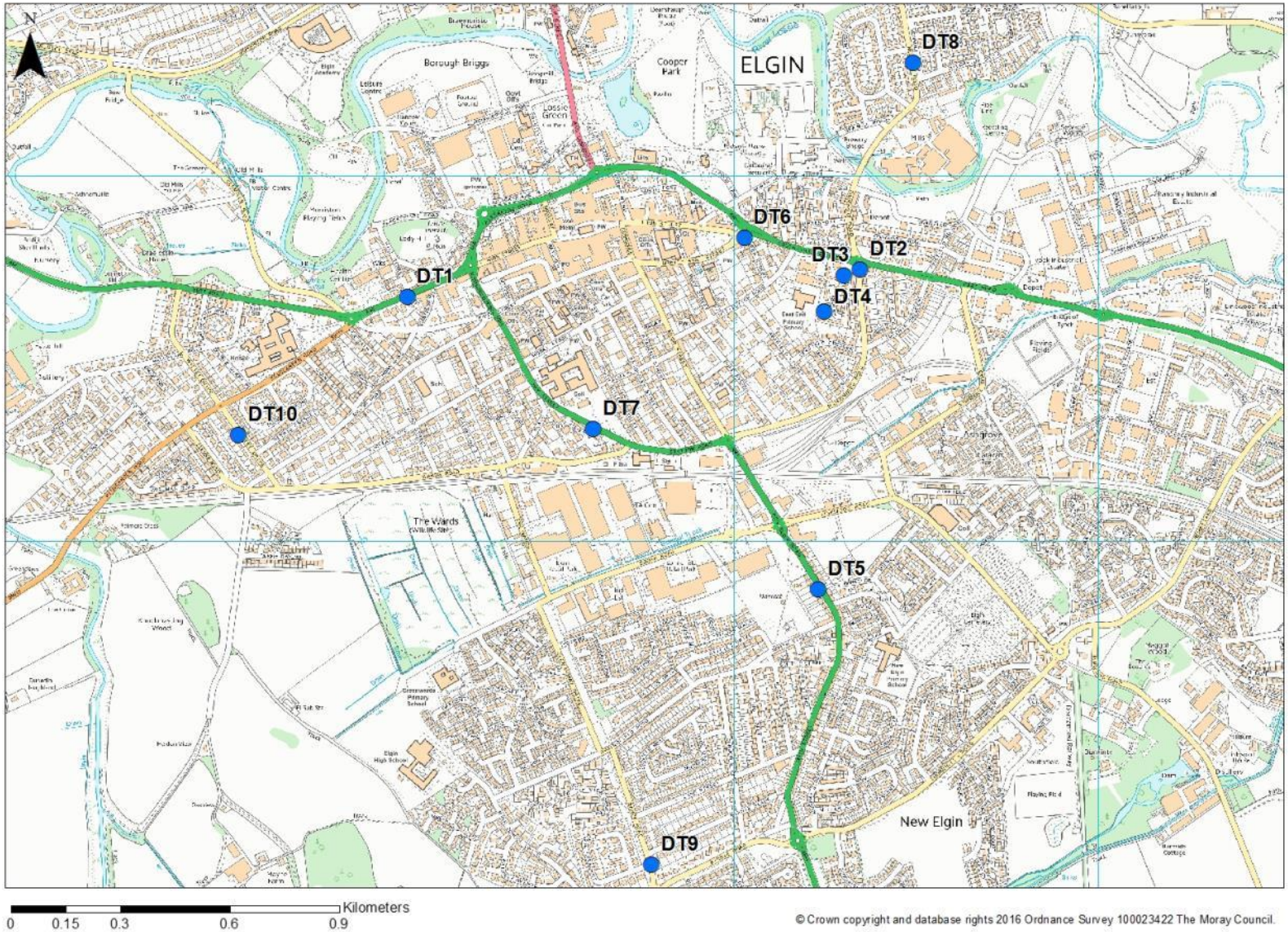


Figure D.2 Fochabers NO_2 Monitoring Sites

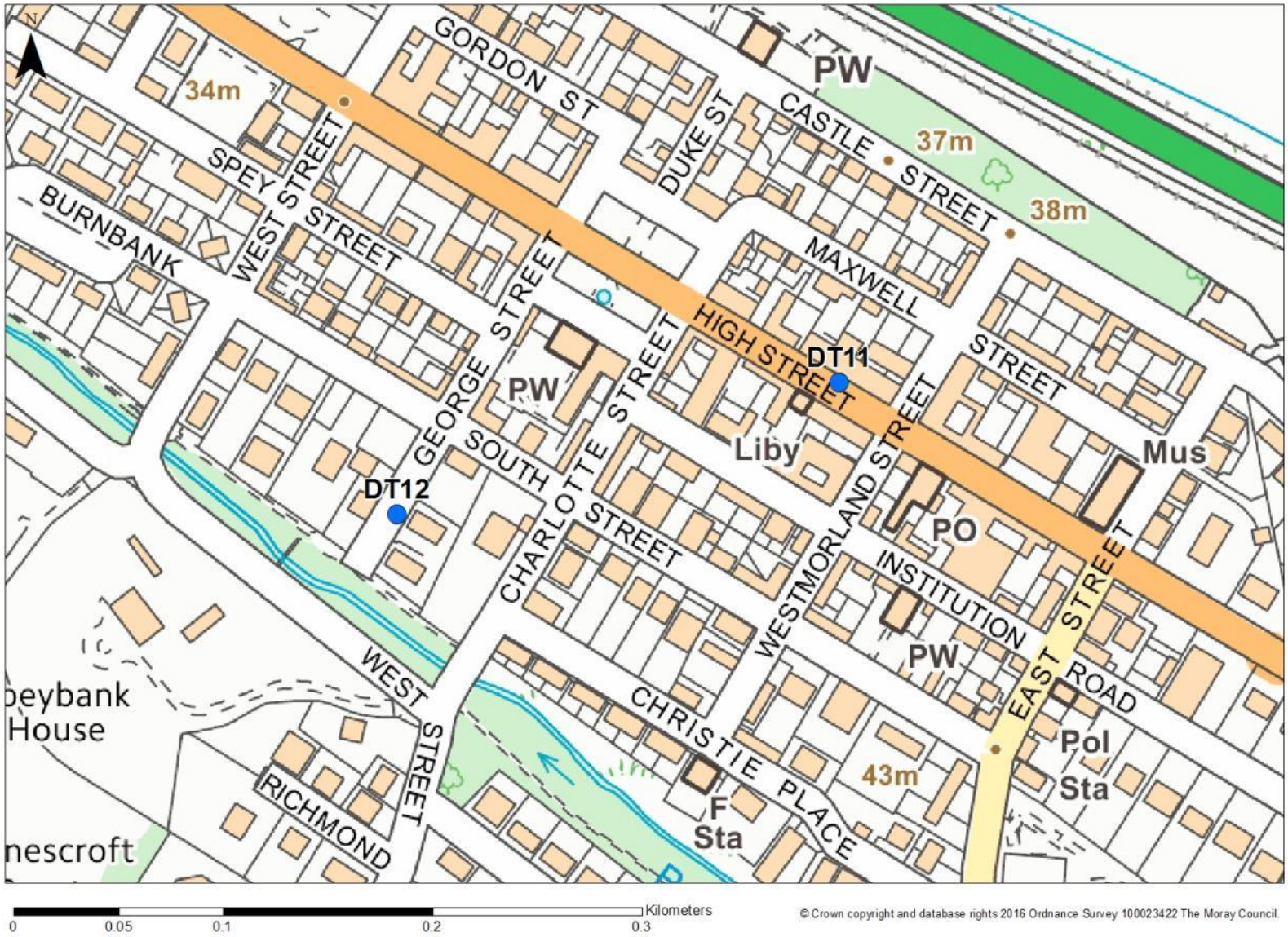


Figure D.3 Forres NO_2 Monitoring Sites

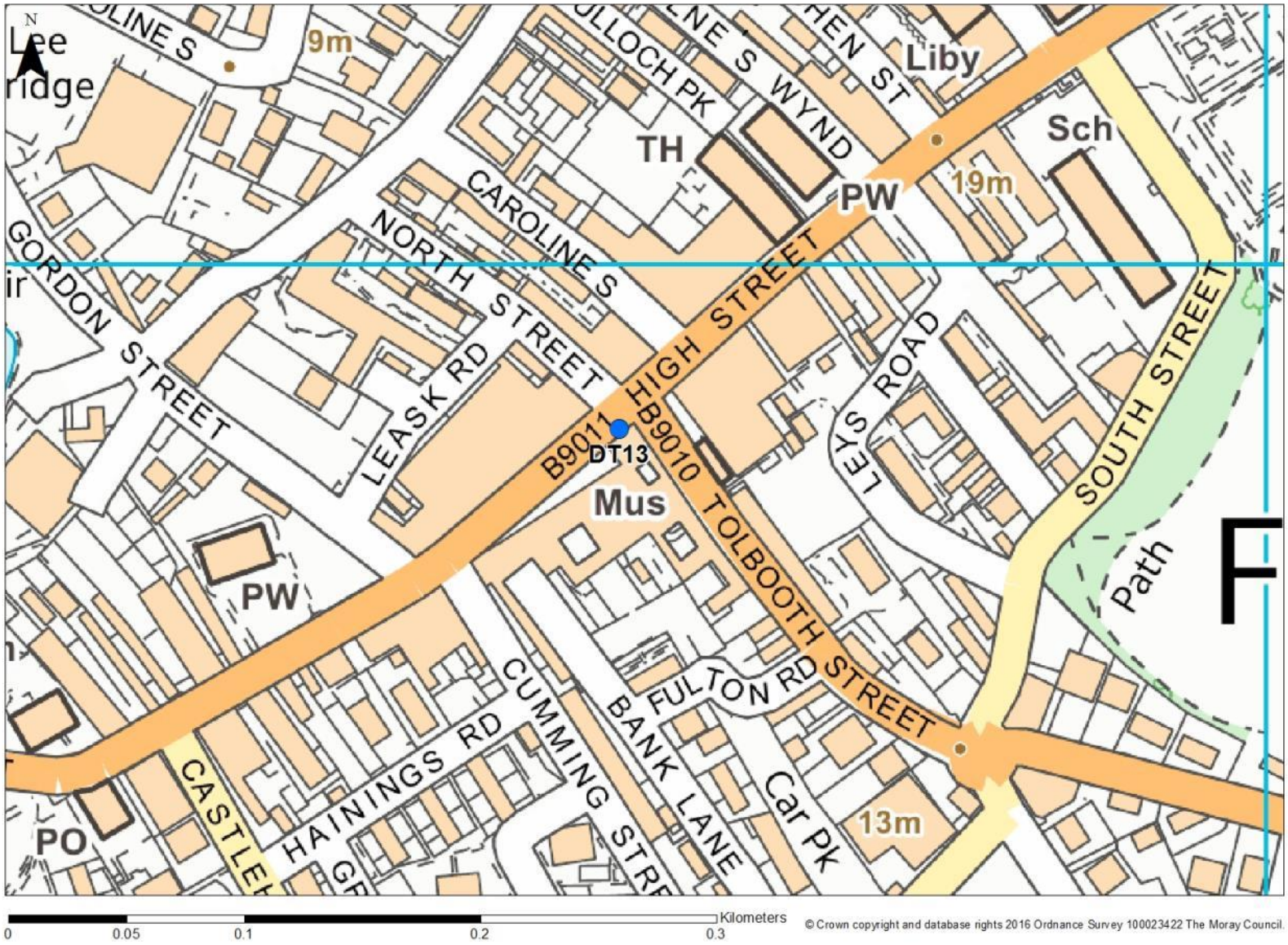


Figure D.4 Keith NO_2 Monitoring Sites

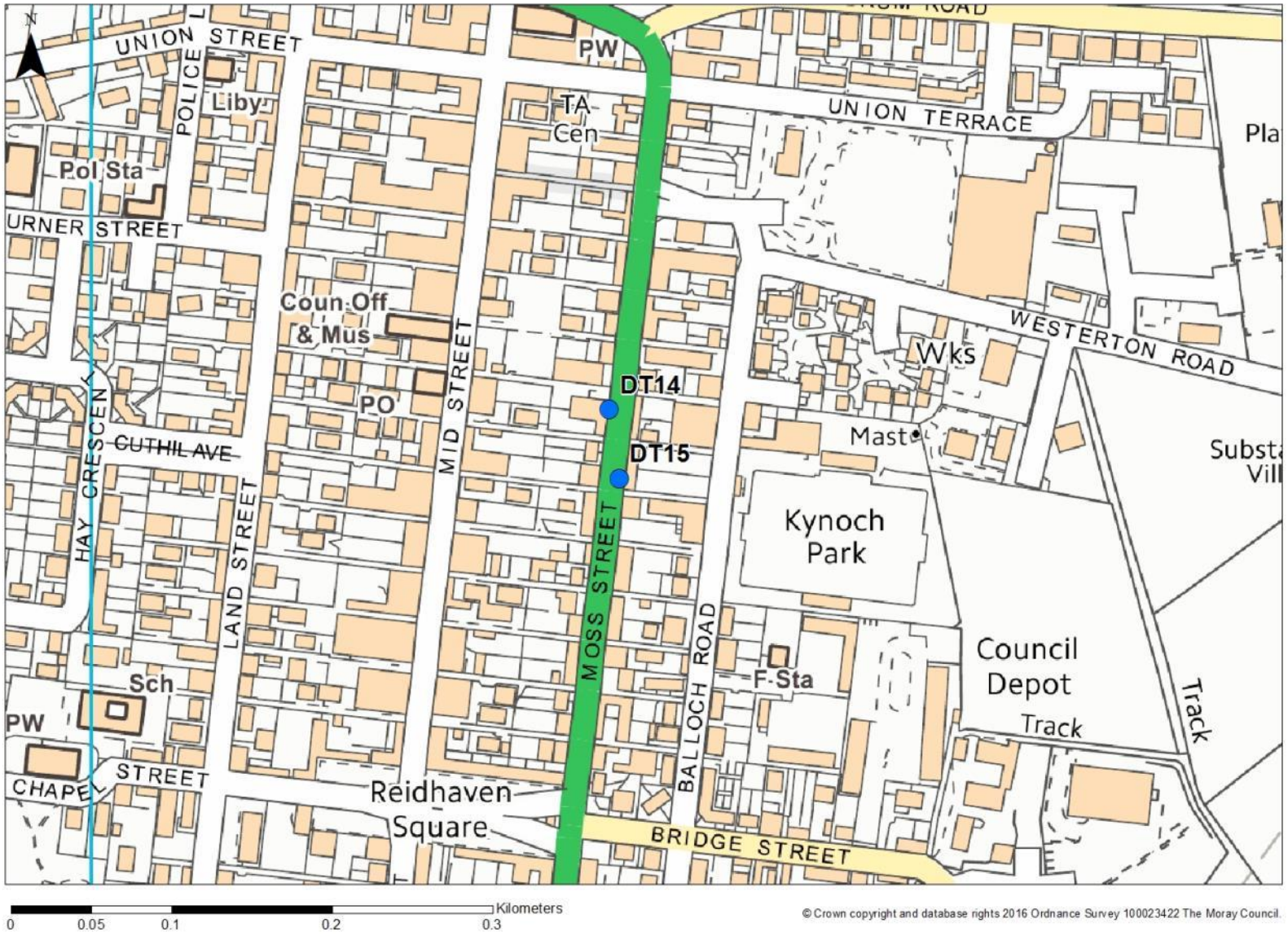


Figure D.5 Lossiemouth NO_2 Monitoring Sites

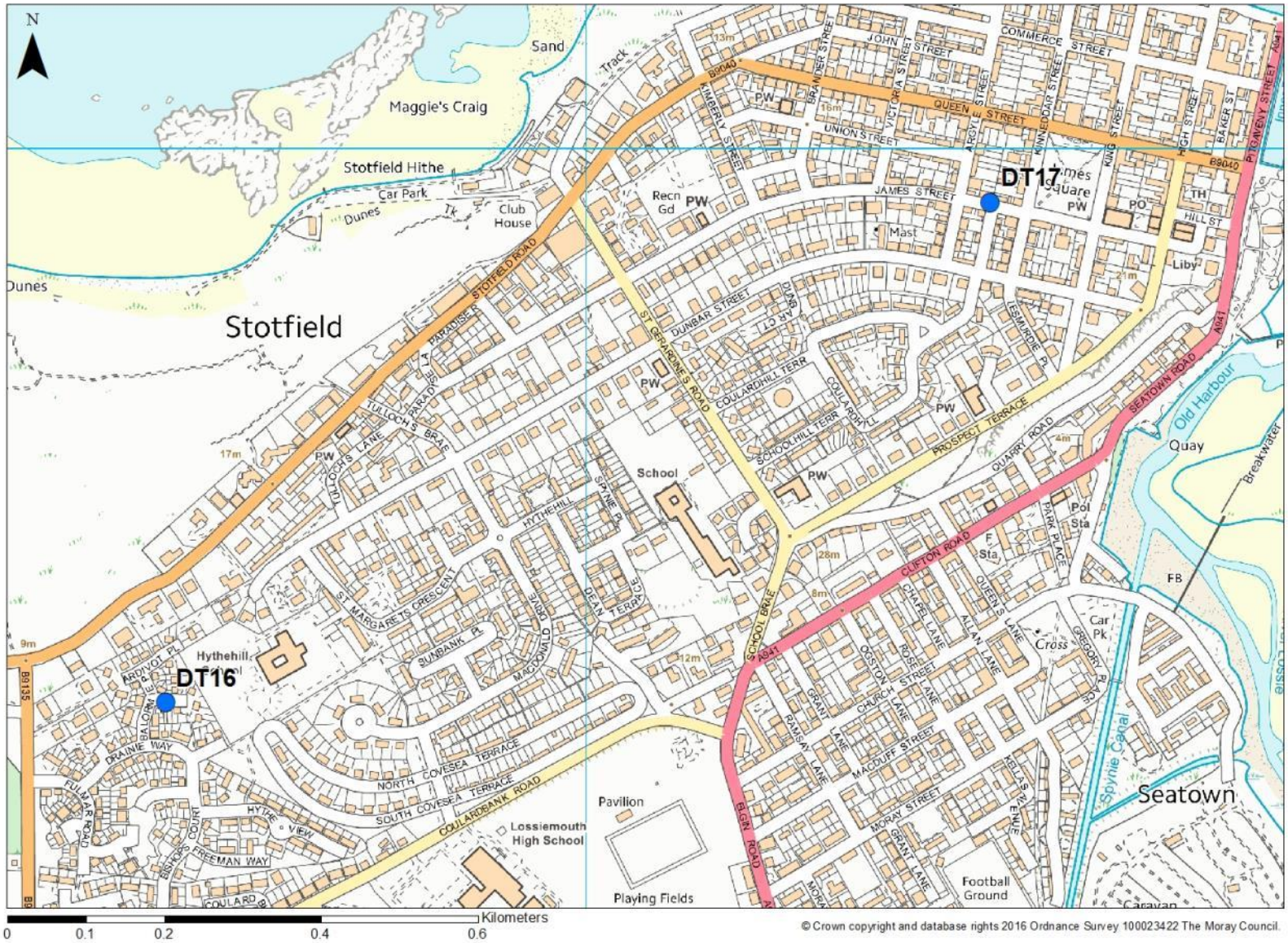
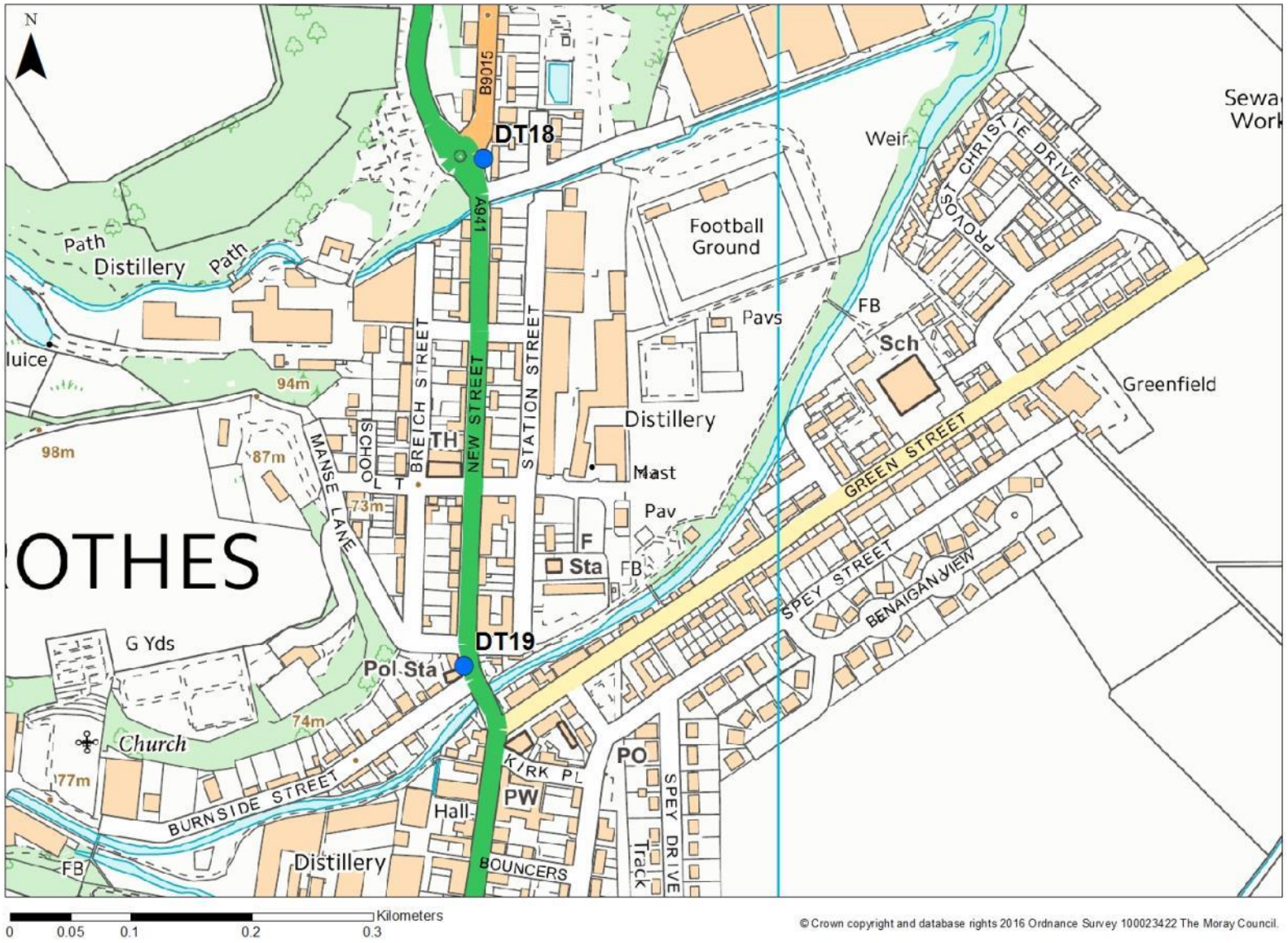


Figure D.6 Rothes NO_2 Monitoring Sites



Appendix E: Traffic Monitoring Locations within Moray

Figure E.1 - Moray Council Traffic Monitoring Locations

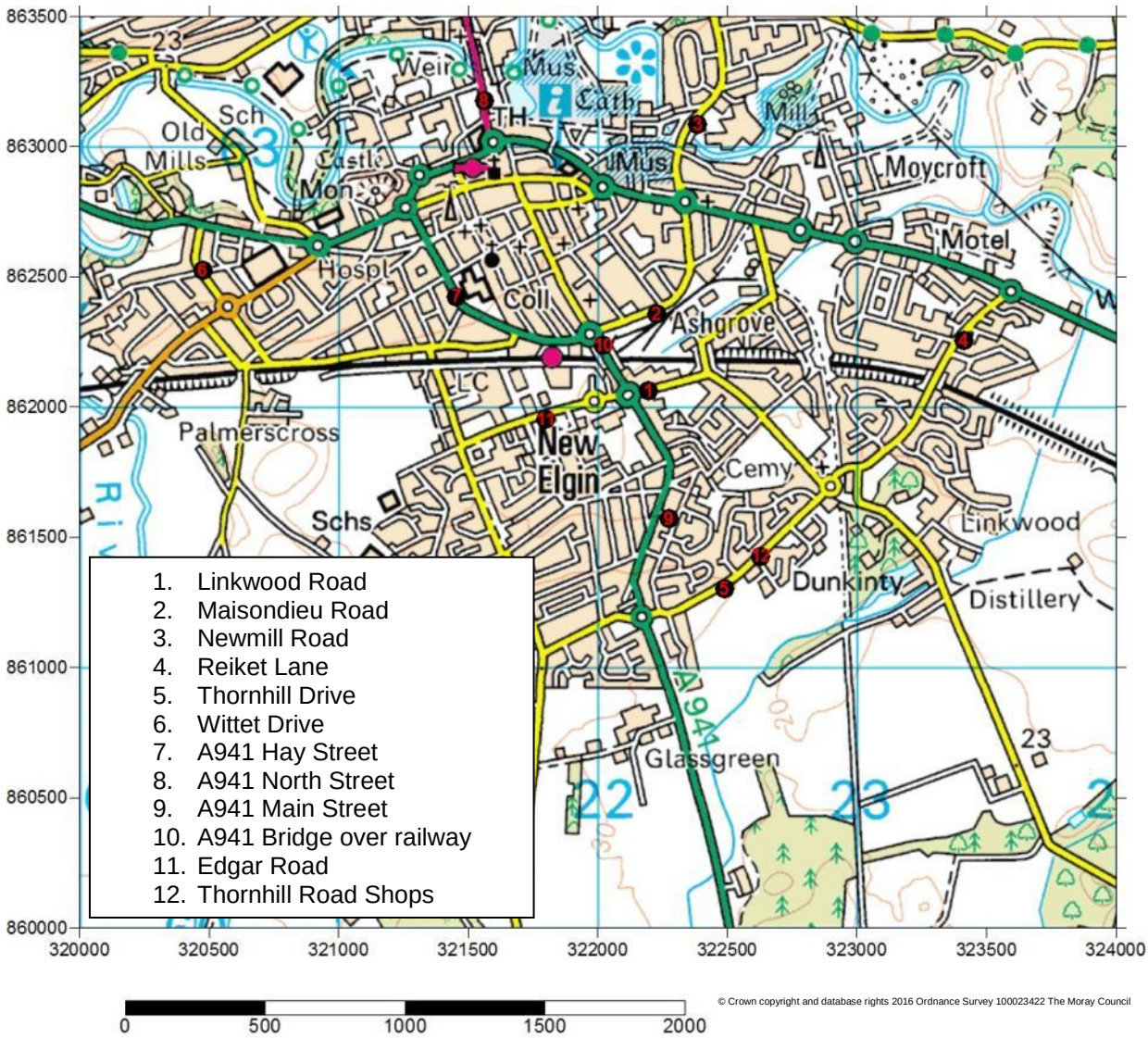
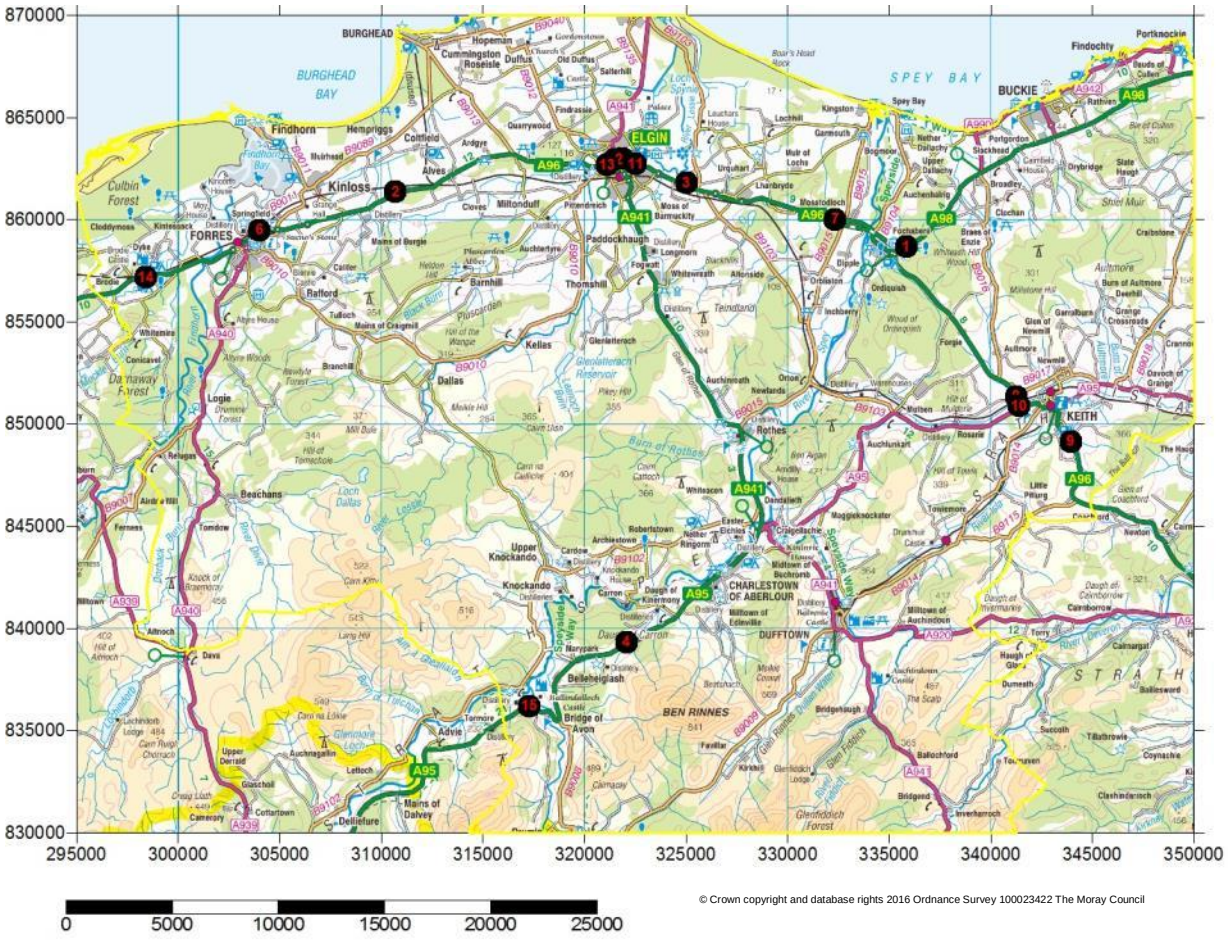


Figure E.2 - Transport Scotland Traffic Monitoring Locations



1. A98 Fochabers
2. A96 Forres to Elgin
3. A96 Elgin to Lhanbryde
4. A95 Dowans Brae
5. A96 Elgin Town Centre
6. A96 Forres
7. A96 Mosstodloch
8. A96 North of Keith
9. A95 West of Keith
10. A96 Elgin - East Road
11. A96 Elgin - Alexandra Road
12. A96 Elgin - High Street West
13. A96 Elgin - West Road
14. A96 Forres (aka Brodie) (Core 744)
15. A96 Brodie (WiM)
16. A95 Ballindalloch (Core 905)

Appendix F: Details of Biomass Installations within the Moray Council Area

Figure F.1- Location Map of Biomass Installations in Moray

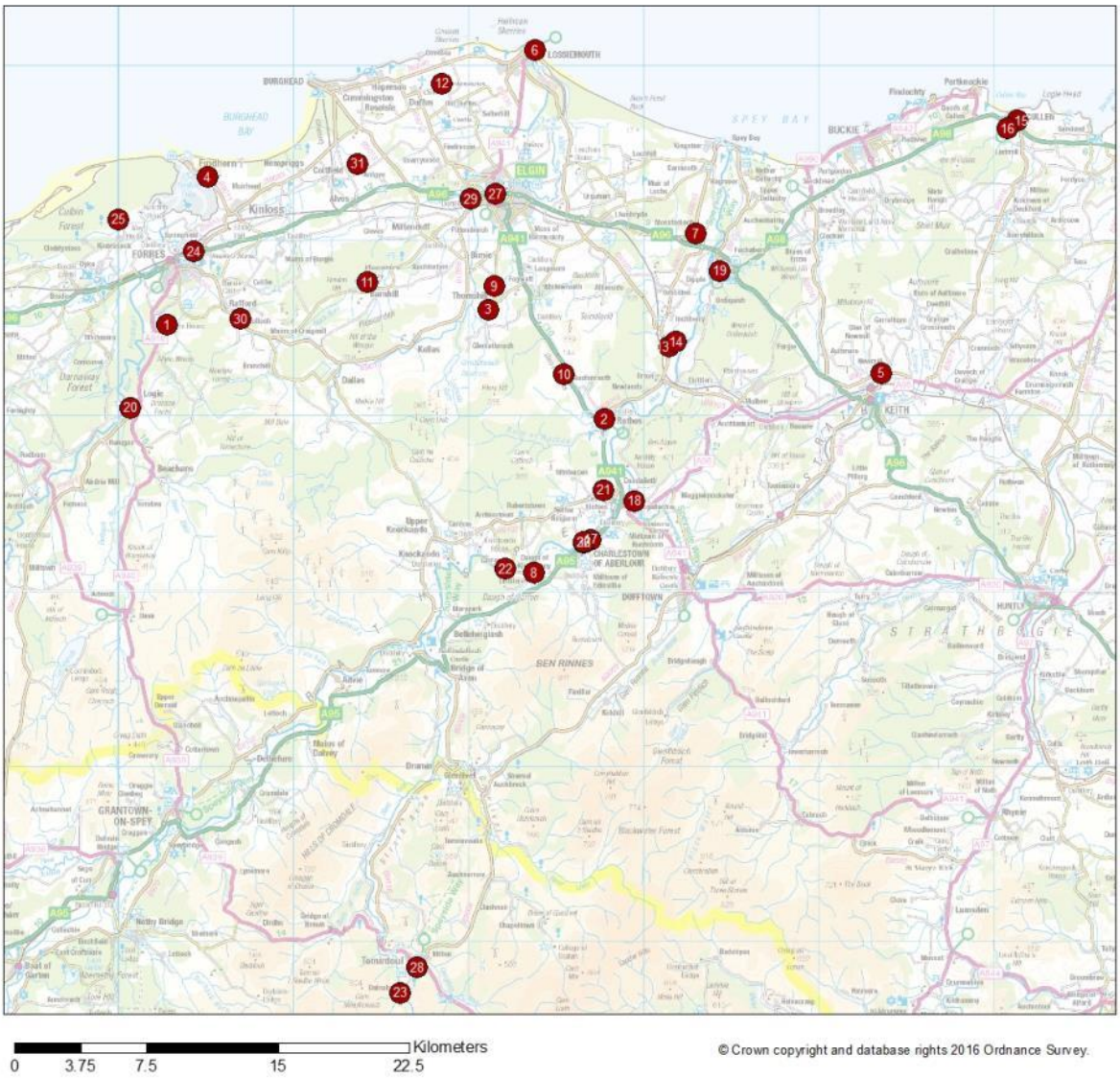


Table F.1 - Biomass Installations in the Moray Council Area

ID	Application	Description	Easting	Northing	Status
1	07/02684/FUL	Erect a combined heat and power biomass boiler building at Blairs Farm Steading Forres Moray IV36 2SH	302803	855196	Permitted
2	08/00577/FUL	Construct a 7.2MWe combined heat and power plant at Combination Of Rothes Distillers North Street Rothes Aberlour Moray AB38 7BW	327778	849808	Permitted
3	08/02135/FUL	Convert existing steadings to form 5 dwellings incorporating games room biomass boiler and biodisc treatment plant Easterton Farm Birnie Elgin Moray IV30 8SP	321110	856059	Permitted
4	09/02255/APP	Installation of a biomass (woodchip) boiler at The Park Findhorn Forres Moray	305084	863636	Permitted
5	10/00958/APP	Erect biomass boiler shed at Newmill Public Hall South Street Newmill Moray	343580	852448	Permitted
6	10/01903/APP	Proposed biomass heating system and external hopper and flue at Town Hall High Street Lossiemouth Moray IV31 6AA	323764	870894	Permitted
7	11/00173/APP	Erect boiler house and associated timber and biomass wood fuel storage facility and install 2.9mw wood fuel boiler for providing hot water for sawmill process at Mosstodloch Sawmill Garmouth Road Mosstodloch Fochabers Moray IV32 7LH	332975	860409	Permitted
8	11/01004/APP	Demolition of a redundant process building and tanks with construction of a new bioplant facility in their location at Dailuaine Distillery Carron Aberlour Moray AB38 7RE	323712	841027	Permitted
9	11/01383/APP	Construction of a new biomass plant within the existing site at Glenlossie and Mannochmore Distillery And Dark Grains Site Glenlossie Road Birnie Elgin Moray IV30 8SS	321458	857413	Permitted
10	11/01433/APP	Replace oil fired boiler with biomass heating system and solar panels with associated accumulator tank at Brylach Rothes Aberlour Moray AB38 7AQ	325431	852363	Permitted
11	11/01508/APP	Erect a 195kW biomass boiler installation including boiler house and wood chip store at Pluscarden Abbey Pluscarden Elgin Moray IV30 8UA	314200	857630	Permitted
12	11/01981/APP	Replacement of existing boiler with new biomass boiler and hopper feed system at Gordonstoun School Duffus Elgin Moray IV30 5RF	318440	868990	Permitted
13	11/02010/APP	Erection of biomass heating cabin serving Orton House and adjoining buildings at Orton House Orton Fochabers Moray IV32 7QE	331421	853941	Permitted
14	11/02011/APP	Erection of biomass heating cabin serving Mains Of Orton Orton Fochabers Moray IV32 7QE	331860	854237	Permitted
15	12/00193/APP	Erection of biomass heating cabin at Seafield Estate Office York Place Cullen Buckie Moray AB56 4UW	351296	866871	Permitted
16	12/00266/APP	Installation of biomass heating plant and ancillary wood chip store to serve Old Cullen House And The Stable Block Cullen Buckie Moray AB56 4XW	350736	866411	Permitted
17	12/00457/APP	Erection of biomass boiler room storage container and access road at Speyside High School Mary Avenue Aberlour Moray AB38 9QU	326973	842941	Permitted
18	12/01142/APP	External biomass boiler enclosure at Viewfield Heights Craigellachie Moray	329450	845152	Permitted
19	12/01282/APP	Create a biomass boiler and fuel silo house at Milnes High School West Street Fochabers Moray IV32 7DJ	334355	858291	Permitted
20	12/01395/APP	Siting a biomass boiler heat cabin at Logie Steading Logie Forres Moray IV36 2QN	300664	850475	Permitted

ID	Application	Description	Easting	Northing	Status
21	12/01490/APP	Biomass combined heat and power plant (located approximately 820 metres north of The Macallan Distillery) providing electricity to the grid and heat to The Macallan Distillery at site at Craigellachie Wood Craigellachie Moray	327717	845763	Permitted
22	12/02060/APP	Construction of new distillery with associate plant (including evaporator and bio plant buildings) and landscaping on site of former distillery at Imperial Distillery Carron Aberlour Moray AB38 7QP	322118	841262	Permitted
23	12/02082/APP	Erect outbuilding to house biomass boiler and woodchip storage at Delnabo House Tomintoul Ballindalloch Moray AB37 9HT	316059	817043	Permitted
24	13/00691/APP	Site a 160kw biomass boiler at Ramnee Hotel Victoria Road Forres Moray IV36 3BN	304319	859384	Permitted
25	13/01388/APP	Install two boiler biomass heating units at Wellhill Farm House Kintessack Forres Moray IV36 2TG	300023	861223	Permitted
26	13/01479/APP	Erection of biomass boiler container at Aberlour Primary School Mary Avenue Aberlour Moray AB38 9PN	326587	842773	Permitted
27	14/01006/APP	Demolish storage building and construct building to accommodate biomass boiler at Glenmoray Distillery Bruceland Road Elgin Moray IV30 1YE	321509	862682	Permitted
28	14/00362/APP	Erect biomass boiler house including the installation of biomass boiler and wood pellet storage internal refurbishments to the toilets and the erection of boundary fence and change of use of adjacent land to occasional overnight camping in association with the hostel at Tomintoul Youth Hostel Main Street Tomintoul Ballindalloch Moray AB37 9EX	317039	818474	Permitted
29	14/00072/APP	Installation of new Biomass system Heather Glen Guest House 1 North Guildry Street Elgin Moray IV30 1JR	320098	862383	Permitted
30	15/00008/APP	Erect a Biomass plant building and a separate wood chip store building at Blervie House, Rafford, Forres, Moray.	306940	855536	Permitted
31	15/01159/APP	Conversion of steading buildings to workshop facility office and biomass boiler and form new site access at Bruntlands Farm, Alves, Elgin, Moray.	313627	864402	Permitted
32	15/01666/APP	Install new biomass boiler system within existing boiler house at Aberlour Primary School Mary Avenue, Aberlour, Moray.	326561	842780	Permitted
33	15/02186/APP	Erect a bio mass plant at Blairs Home Farm, Forres, Moray.	302810	855167	Permitted

Glossary of Terms

Abbreviation	Description
AADT	Annual Average Daily Traffic
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 objective 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
AQS	Air Quality Strategy
AQS(S)	Air Quality Standards (Scotland)
APR	Air Quality Annual Progress Report
ASSL	Aberdeen Scientific Services Laboratory
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
CHP	Combined Heat and Power
CO_2	Carbon dioxide
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
HDV	Heavy Duty Vehicle
HGV	Heavy Goods Vehicle
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
NPL	National Physical Laboratory
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
SEA	Strategic Environmental Assessment
SEPA	Scottish Environment Protection Agency
SO_2	Sulphur Dioxide
UKAS	United Kingdom Accreditation Service
USA	Updating and Screening Assessment
WLR	Western Link Road

References

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Ref- 2 The Moray Council (2011); Environmental Report. Local Transport Strategy: Strategic Environmental Assessment (SEA) Statement.

Ref- 3 Cycling Scotland (2016); Annual Cycling Monitoring Report. Available at: http://www.cyclingscotland.org/policy/monitoring

Ref- 4 The Scottish Government (2009); Climate Change (Scotland) Act 2009.

Ref- 5 Department for Environment Food and Rural Affairs (2014); 2011 based Urban Background Maps, UK-AIR. [Accessed April 2016]. Available at: http://laqm.defra.gov.uk/review-and-assessment/tools/background-maps.html.

Ref- 6 The Scottish Government (2015); Cleaner Air for Scotland: The Road to a Healthier Future.

Ref- 7 BMT Cordah Ltd, (2004); Air Quality Study in the Vicinity of RAF Lossiemouth and RAF Kinloss, Report Ref: MOR_007.

Ref- 8 Environmental Protection UK (2009); Biomass and Air Quality Guidance for Scottish Local Authorities. Available at: www.environmental-protection.org.uk/biomass

Ref- 9 Department for Environment Food and Rural Affairs (2016a); Local Air Quality Management Technical Guidance 2016 LAQM.TG(16).

Ref- 10 Department for Environment Food and Rural Affairs (2016b); National Diffusion Tube Bias Adjustment Factor Spreadsheet version Number: 03/16. Available at: http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html

Ref- 11 Department for Environment Food and Rural Affairs (2016c); Summary of Laboratory Performance in AIR NO2 Proficiency Testing Scheme (April 2014 – February 2016). Available at: http://laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework.html