Annual Progress Report (APR)

2020 Air Quality Annual Progress Report (APR) for Moray Council

In fulfilment of Part IV of the
Environment Act 1995

Local Air Quality Management

July, 2020

Local Authority Officer	Mr Russell Anderson Principal Environmental Health Officer
Department	Environmental Health Section
Address	Moray Council Council Office High Street, Elgin IV30 1BX
Telephone	01343 563463 0300 1234561
E-mail	russell.anderson@moray.gov.uk environmentalhealth@moray.gov.uk
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Executive Summary: Air Quality in Our Area

The following Annual Progress Report (APR) was prepared and written by Stantec on behalf of Moray Council in accordance with Local Air Quality Management (LAQM) Technical Guidance.TG(16), published by DEFRA on behalf of the devolved administrations.

Air Quality in Moray

There are no existing significant air quality issues identified within the Moray Council administrative area. The Council has examined the 2019 air quality monitoring results in its area and concludes that no new Detailed Assessments area required of any pollutant.

Atmospheric nitrogen dioxide (NO_2) is currently the only pollutant of concern within the Moray Council area and is monitored in urban areas via a network of passive diffusion tubes. The measured 2019 annual mean concentrations of NO_2 within the Moray Council area remain well below the Air Quality Standards set by the Scottish Government and have done so for several years now. In summary, the following monitoring statistics are observed:

- A maximum measured annual mean NO_2 concentration of 22.7 µg/m^3 was monitored at West Park Court, Elgin (monitoring site DT1), well below the annual mean NO_2 Scottish Air Quality Standard of 40 µg/m^3. This was an increase of approximately 1.0 µg/m^3 as compared to 2018 monitoring results at the same site; the only site at which an increase was measured as compared to 2018. It was not possible to determine the reason for this slight increase; and
- Measured 2019 annual mean NO_2 concentrations show a decrease as compared to 2018 results at 12 out of the 13 monitoring locations for which both 2019 and 2018 monitoring data is available.

Three new emissions sources that have the potential to affect air quality (a poultry farm and two biomass installations) have been permitted within the Moray Council area in 2019. Other sources of emissions from industry and transport remain unchanged from those reported in the 2019 APR.

No new Air Quality Management Areas (AQMAs) have been declared in 2019, and no new Actions Plans or strategies have been developed.

Moray Council manages local air quality through local policies and plans and works to manage local air quality through a monitoring network within the Council area. Moray Council has also set a target of becoming carbon neutral by 2030 as part of their Climate Emergency Declaration, and it is anticipated that measures adopted as part of any associated strategies and / or plans would be likely to also provide an overall benefit for air quality.

Actions to Improve Air Quality

Although there are currently no designated AQMAs within the Moray Council area and thus, no specific planned actions to implement air quality improvement measures, Moray Council is addressing air quality through local policies and plans, and works to manage local air quality through a monitoring network within the Council area.

The Moray Council Active Travel Strategy 2016-2021 sets out how Moray Council will encourage more non-motorised travel within Moray through a series of programmes of direct measures and behaviour change programmes.

The Elgin Transport Strategy develops ways to help people become more active, walking and cycling more often and promotes more use of public transport.

The second Moray Local Transport Strategy sets out a framework for taking forward transport policy and infrastructure within Moray.

Local Priorities and Challenges

Moray Council has no specific priorities for the coming year for the improvement of air quality in its area, but will continue monitoring at the existing diffusion tube sites in the area to identify any future changes in pollution concentrations.

How to Get Involved

Members of the public 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 of car sharing schemes. Detailed information on local transport and links

to major travel means can be found at:
http://www.moray.gov.uk/moray_standard/page_1677.html

Also, to plan a public transport journey from door to door visit:
https://www.travelinescotland.com/ or call 0871 200 22 33 [1]

The Local Transport Strategy promotes sustainable forms of travel through activities and initiatives including developing new walking and cycling infrastructure, promoting public transport, car sharing, efficient driving techniques and the use of electric vehicles, though it is likely that this Strategy will be reviewed to take account of any guidance issued in respect of the Covid-19 pandemic. More information, including cycle routes and electric vehicle charging point locations within the Moray Council area, is available at: http://www.moray.gov.uk/moray_standard/page_57100.html

If you have any concerns or require further information on air quality, please contact Environmental Health or visit the Moray Council website at www.moray.gov.uk and search for “air quality”.

The previous LAQM reporting, including the 2019 APR, is available on the Moray Council website at: http://www.moray.gov.uk/moray_standard/page_1790.html

[1] Calls cost 12p per minute plus your phone company’s access charge.

Table of Contents

List of Tables

List of Figures

1. Local Air Quality Management

This report provides an overview of air quality in the Moray Council administrative area during 2019. 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) is summarises the work being undertaken by Moray Council to improve air quality and any progress that has been made towards improving air quality within its area. The relevant air quality objectives are presented in Table 1.1.

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

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
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.

Moray Council currently does not have any AQMAs within its area, and as a result no AQAP, Air Quality Strategy (AQS) or similar documentation is necessary.

2.2 Cleaner Air for Scotland

Cleaner Air for Scotland – The Road to a Healthier Future (CAFS) 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 Moray 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. Moray Council produced a Staff Travel Plan in 2009 which was then updated in 2012 appraising the existing conditions of accessibility to its offices and providing site specific recommendations on how sustainable accessibility might be improved upon (Ref- 1). The Moray Council Active Travel Strategy 2016-2021 highlighted the need for the Staff Travel Plan to be renewed. It should be noted that it is likely that transport-related plans and strategies may be reviewed to take account of any guidance issued in respect of the Covid-19 pandemic.

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. Moray Council produced a draft Climate Change Action Plan in 2011

(Ref- 2). Although not explicitly, the Council had introduced initiatives which would benefit air quality. For example, promoting low carbon vehicles and reducing emissions associated with staff travel and fleet journeys. All new diesel vehicles at that time were Euro V / 5 compliant. Also upgrading of the fleet was being considered to improve overall efficiencies in terms of fuel consumption, emissions and maintenance. Clearly, whilst these initiatives have a reducing effect on carbon and emissions, the impact on air quality would not be as significant.

Moray Council made a Climate Emergency Declaration on 26th June 2019, which included a target to become carbon neutral by 2030. As part of this declaration it was agreed to consider and approve a final climate change strategy and action plan within six months and to ensure that this plan be adopted and inform policy for all departments, however, as a result of Covid-19, further work on this has been delayed. It is anticipated that measures adopted as part of any approved climate change strategy and action plan developed in response to the Climate Emergency Declaration to achieve the target of carbon neutrality would be likely to also provide an overall benefit for air quality.

The commitment behind this document, and the initiatives included therein, has been revisited with the development of the North East Scotland Sustainable Energy Action Plan (SEAP) for Moray, Aberdeenshire, Aberdeen City and Angus Councils (Ref- 3).

A SEAP is a high level strategic document which covers all areas of sustainable energy across business and commercial, domestic and transport including certain aspects of land use and fuel supply. It provides a baseline for the area in terms of carbon emissions and provides an action plan to meet emission reduction targets whilst providing opportunities for sustainable economic growth.

In addition to the North East SEAP there is a Moray specific SEAP which covers the time-period 2015 to 2030. The target within this plan is for Moray to aim to achieve greenhouse gas (GHG) emission reductions of 35% by 2030 compared with the baseline year (2005). For this to be achieved the Council, public and private sector, energy utilities, transport organisations and the general public will need to take ambitious and meaningful action to reduce energy consumption and resource use and to use cleaner forms of energy to the extent possible.

2.2.3 Further Air Quality Actions

There are no additional actions geared specifically to improving air quality. Actions to promote low carbon futures (as part of the move towards the target of carbon neutrality by 2030, see Section 2.2.2) will, however, have a positive effect on reducing emissions of air pollutants across a variety of sources including through:

- Energy efficiency;
- Renewable electricity generation;
- Low-carbon heat;
- Transport; and
- Waste.

In particular, Moray Council is committed to a number of air quality relevant climate changing targets such as TMC005/7 (reducing staff travel), TMC006/11 (fleet emissions) and TMC003 (sustainable development and renewable energy), as outlined in the draft Climate Change Action Plan (Ref- 4).

Moray Local Development Plan

Moray Council adopted the Moray Local Development Plan 2015 in July 2015 (Ref-5). This plan provides a single forward planning document that presents a vision and spatial strategy for directing growth in Moray for the next 10-20 years and includes the following two policies that are relevant to air quality;

- Policy EP 8 'Pollution' aims to ensure that new developments do not create pollution which could adversely affect the environment or local amenity. It states that "*Planning applications for developments that may cause significant pollution in term of noise (including RAF aircraft noise), air, water and light emissions will be only approved where detailed assessments report on the levels, character and transmission of the potential pollution is provided by the applicant. The assessment should also demonstrate how the pollution can be appropriately mitigated.*"; and
- Policy EP 12 'Air Quality' aims to protect air quality and seeks to direct sensitive development away from areas of poor air quality and thereby protect human health and the natural environment. It states that "*Development*

proposals, which, individually or cumulatively, may adversely affect the air quality in an area to a level which could cause harm to human health and wellbeing or the natural environment must be accompanied by appropriate provisions (deemed satisfactory to the Council and Scottish Environment Protection Agency as appropriate) which demonstrate how such impacts will be mitigated.".

Moray Council Active Travel Strategy

Moray Council adopted the Moray Council Active Travel Strategy 2016-2021 (Ref- 6) in 2017. This strategy sets out how Moray Council will encourage more non-motorised travel within Moray through a series of programmes of direct measures and behaviour change programmes. Delivery will be through the Council's own programme of promoting sustainable and active travel and cross departmental work with other areas of the Council in addition to the ongoing partnership approach with external funders, the community and other interested parties. Active travel includes all forms of non-motorised travel i.e. travel that encourages physical activity and so is beneficial to both health and the environment. Further details are available at: http://www.moray.gov.uk/downloads/file113437.pdf

The Active Travel Strategy objectives are:

1. Increase the number of active travel journeys made within Moray.
2. Increase the modal share of both walking and cycling journeys to work and school.
3. Contribute to a reduction in the number of motorised journeys made within Moray.
4. Create and maintain a comprehensive network of safe and user friendly infrastructure for active travel that meets people's needs.
5. Implement a programme of activities designed to encourage more people to travel actively more often.
6. Raise awareness of the active travel network and the benefits of travelling actively.

It should be noted that it is likely that transport-related plans and strategies may be reviewed to take account of any guidance issued in respect of the Covid-19 pandemic.

Elgin Transport Strategy

Moray Council adopted the Elgin Transport Strategy (Ref- 7) in August 2017 (details are available at: http://www.moray.gov.uk/moray_standard/page_109352.html). The strategy:

- Sets out proposals for improvements to the transport network across the city of the next 13 years including roads, junctions, crossings and cycle routes;
- Develops ways to help people become more active, walking and cycling more often and promotes more use of public transport; and
- Helps to shape the future development of Elgin by contributing to the next review of the Moray Local Development Plan.

Additionally, the Second Moray Local Transport Strategy (MLTS2) (Ref- 8) has been prepared in order to help plan for improved transport infrastructure and services within Moray. MLTS2 has been split into two parts. Part One provides information on the main strategy, outlines the key and secondary objectives together with action plans and information on committed schemes for each of the seven key topics covered including; Active Travel, Public Transport, Ports and Harbours, Roads, Freight Transport, Travel Behaviour and Traffic Management. Part Two summarises the background information, achievements to date, key issues, linkages with other National, Regional and Local policies guidance and also the relationships with other key agencies. Further details are available at:
http://www.moray.gov.uk/moray_standard/page_75724.html

It should be noted that it is likely that transport-related plans and strategies may be reviewed to take account of any guidance issued in respect of the Covid-19 pandemic.

2.3 Progress and Impact of Measures to address Air Quality in Moray Council

Current air quality within Moray Council is considered to be good, with measured concentrations of air pollutants being well below the air quality objectives set by the Scottish Government (see Table 1.1) As a result, there have been no Council-led

schemes explicitly dedicated to improving local air quality. With not having to declare any AQMAs within its area, Moray Council has not had to publish an AQAP and, therefore, has no planned actions designed explicitly to improve local air quality.

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

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

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Moray Council did not undertake any automatic (continuous) monitoring during 2019.

3.1.2 Non-Automatic Monitoring Sites

Moray Council undertook non-automatic (passive) monitoring of NO_2 at 19 sites during 2019. Table A.1 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Figure D.2 to Figure D.10. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.2 Individual pollutants

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

3.2.1 Nitrogen Dioxide (NO_2)

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

For diffusion tubes, the full 2019 dataset of monthly mean values is provided in Appendix B.

No automatic monitoring has been undertaken, and so it is not possible to directly compare the measured data to the 1-hour mean air quality objective. Instead, a proxy value of 60 µg/m^3 has been used to identify potential exceedances of the 1-hour mean objective, as analysis of long-term monitoring data suggests that if a measured annual mean NO_2 concentration is less than 60 µg/m^3 then the 1-hour mean NO_2 objective is likely to be achieved, in accordance with LAQM.TG(16) guidance (Ref- 9).

Measured 2019 concentrations at all 19 sites were well below the annual mean objective, the highest measures concentrations being 22.7 µg/m^3 at West Park Court,

Elgin (site DT1). As measured concentrations at all sites are substantially below 60 µg/m^3 it is reasonable to expect that no exceedances of the 1-hour mean objective have occurred at these sites in 2019 either.

Measured concentrations in 2019 were generally lower than measured concentrations in 2018, with decreases occuring at twelve out of thirteen sites for which monitoring data was available for both years. The largest measured decrease during this period (6.7 µg/m^3) occurred at 87 Moss Street, Keith (site DT15). An increase in measured concentrations (0.9 µg/m^3) was measured at one site only (site DT1, Park Court, Elgin).

Measured concentrations in recent years (2015 – 2019) display an overall trend of decreasing concentrations at seven out of thirteen sites for which data is available, with the largest decrease during this time period (4.6 µg/m^3) being measured at the Police Station in Rothes (site DT18). An overall trend of increasing concentrations during this time period was measured at three out of thirteen sites for which data is available, with the largest increase during this time period (2.4 µg/m^3) being measured at the junction of East Road and Maisondieu Road in Elgin (site DT2). An overall trend of stable concentrations (i.e. an overall change over the five year period of <0.5 µg/m^3) during this time period was measured at three out of thirteen sites for which data is available.

Diffusion tube monitoring did not follow the LAQM calendar of suggested exposure periods for 2019 (Ref- 10); being comprised of eleven periods of monitoring over a one year and five day time period (as opposed to the standard twelve periods). Data capture during this period was 82% for the majority of monitoring sites in 2019, except for sites DT11 (50A High Street, Fochabers) and DT22 (Bishopmill, Elgin) where data capture was 73%[2]. The 2019 results for sites DT11 and DT22 have, therefore, been annualised in accordance with LAQM.TG(16) (Ref- 9).

Several monitoring periods recorded values that were below the Limit of Detection (LoD, shown as <5 µg/m^3 in Table B.1 in Appendix B), notably: DT7 (Hay Street, Elgin), DT8 (Newmill Road, Elgin), DT9 (37 Sandy Road, Elgin), DT16 (1 Merryton Court, Lossiemouth) and DT18 (Police Station, Rothes). This is likely to be a result of diffusion tubes performing less well at lower concentrations. Therefore, where these

[2] The percentage valid data capture has been calculated on the basis on the percentage of monitoring 'periods' (as opposed to months) for which valid monitoring data was available, out of the total number (i.e. eleven) of monitoring 'periods' (as opposed to months) for which monitoring was undertaken.

low values were observed the concentration was assumed to be 5 µg/m^3, thus adopting a conservative approach with respect to annual mean concentrations. This is discussed in further detail in Appendix C.

Given that all concentrations measured by the deployed monitoring sites are well below the annual mean objective, and have been so for several years, it is not considered necessary to declare any AQMAs within Moray Council administrative area.

3.2.2 Particulate Matter (PM_{10})

Moray Council did not undertake monitoring of PM_{10} in 2019 and does not expect PM_{10} concentrations within Moray Council's administrative area to exceed the relevant objectives.

A review of PM_{10} data available from the 'Aberdeen' (UKA00399) urban background Automatic Urban and Rural Network (AURN) monitoring site indicates that the PM_{10} concentrations in the Moray Council administrative area are likely to be low. The measured 2019 annual mean PM_{10} concentration for the Aberdeen urban background station was 13.7 µg/m^3 [3] (Ref- 11); i.e. well below the annual mean objective. Given that this site is close to urban develoment the likelihood of concentrations differing markedly to these levels in the Moray Council administration area will be low.

3.2.3 Particulate Matter ($PM_{2.5}$)

Moray Council did not undertake monitoring of $PM_{2.5}$ in 2019 and has no current plans to do so in the immediate future. It is not anticipated that $PM_{2.5}$ concentrations within Moray Council's administrative area exceed the relevant objective.

A review of $PM_{2.5}$ data available from the 'Aberdeen' (UKA00399) urban background AURN monitoring site indicates that the $PM_{2.5}$ concentrations in the Moray Council administrative area are likely to be low. The measured 2019 annual mean $PM_{2.5}$ concentration for the Aberdeen urban background station was 7.3 µg/m^3 [4] (Ref- 11); i.e. well below the annual mean objective. Given that this site is close to urban develoment the likelihood of concentrations differing markedly to these levels in the Moray Council administration area will be low.

[3] With a percentage data capture of 92.9%.
[4] With a percentage data capture of 93.5%.

3.2.4 Sulphur Dioxide (SO_2)

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

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

There is no monitoring for carbon monoxide, lead or 1,3-butadiene within the Moray Council administrative area. It is not expected that existing emissions of carbon monoxide, lead or 1,3-butadiene within the area will cause exceedances of the relevant objectives.

4. New Local Developments

4.1 Road Traffic Sources

There have been no new planning applications for local developments of road traffic sources in 2019.

A review of traffic data was undertaken in order to establish if there were any significant changes to traffic flows since 2018 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 2019. Moray Council operates 14 traffic counters at locations within Elgin and their locations are shown in Figure D.11.

The 2015-2019 data are summarised in Table 4.1. The data shows increases in annual average daily traffic (AADT) at eight out of twelve traffic count locations operational during 2018 to 2019 and reductions at four locations. There are no sites with sufficient increases in traffic flow that would require a screening assessment to gauge the likely impact on air quality (Ref- 9).

The highest traffic flow in 2019 (20,510 AADT) was recorded on the A941 Bridge over Railway (Site 10), as was the case in 2018. The traffic flow here decreased by 9.8% between 2018 and 2019. The closest NO_2 monitoring sites are located at Main Street and Hay Street (DT5 and DT7) and provide an indication as to the air quality impact of these traffic flows. Measured annual mean concentrations of NO_2 in 2019 showed a slight decrease at both sites DT5 and DT7 (by 1.4 µg/m^3 and 1.6 µg/m^3 respectively) as compared to 2018 and were both well below the annual mean objective in 2019 (14.8 µg/m^3 and 9.8 µg/m^3 at DT5 and DT7 respectively); as such, this traffic volume is not considered to be a cause for concern in relation to air quality.

Hay Street (A941) (Site 7) saw the largest percentage increase from 2018 (20.3%, 2,082 AADT). The closest NO_2 monitoring site is located at Hay Street (DT7) and measured an annual mean concentration in 2019 that is well below the objective (9.8 µg/m^3). Furthermore, measured concentrations at this site 2019 showed a slight decrease (of 1.6 µg/m^3) as compared to 2018. As such, the increase in traffic at this count location is not considered to be a cause for concern.

Traffic count data for 2019 for the main routes through the Moray Council area, the trunk roads A95 and A96 and the A98, have been obtained from Traffic Scotland.

The data for 2015 – 2019 is summarised in Table 4.2, with a map of the locations provided in Figure D.12 and Figure D.13.

The traffic data indicates that traffic flows have generally decreased along this road network in the past year, with all except one count point for which data for 2019 and 2018 are available recording a decrease in AADT in 2019 as compared to 2018. The largest recorded decrease (-17%, 2,227 AADT) was at Forres (A96) (site 3, ATC02038).

The only recorded increase in 2019 (+2%) was at Mosstodloch Bypass Middle (A96) (site 11, ATC00028). The actual increase in the number of vehicles at this point is quite small (365 AADT) and total vehicle flows along this road remain relatively low (18,144). As such, this increase is not considered to be a cause for concern.

The only monitoring site that has measured an increase in measured NO_2 concentrations in 2019 as compared to 2018 (of 1.0 µg/m^3), as well as measuring the highest concentration in 2019 (22.7 µg/m^3) is located at West Park Court, Elgin (DT1) along the same stretch of road that count point 6 (High Street West (A96), Elgin, ATC00020). However, this count point has measured a decrease in traffic flows of 7% (1,063 AADT) during this period, thus indicating that this increase has not occurred as a result of changes to the volumes of traffic along the A96.

It should be noted that data was not available for eight of the 17 sites in 2019, including two sites that measured an increase in traffic flows between 2017 and 2018; site 2 (A96 Brodie, 126401) which measured an increase of 7% (630 AADT) in 2018, and site 10 (A96 Elgin to Lhanbryde, ATCNE006) which measured an increase of 24% (3,455 AADT) in 2018. As such, it is recommended that further consideration should be given to potential further increases in traffic flows at these sites in the 2021 APR.

The largest decrease in annual mean NO_2 concentrations in 2019 as compared to 2018 (of 6.7 µg/m^3), was measured at DT15 (87 Moss Street, Keith). None of the traffic count data presented in either Table 4.1 or Table 4.2 are particularly representative of this site, and so it is not possible to determine whether this decrease occurred as a result if decreasing traffic flows. The closest traffic count point to DT15 is site 15 (A95 West of Keith, ATC02028), which measured a decrease during this period of 5% (97 AADT).

Moray Council recognises the value in continuing to track this data across the region in order to respond to potential air quality concerns.

Table 4.1 – Summary of Council Operated Traffic Counts Elgin 2015 – 2019

ID	Description	Annual Average Daily Traffic					% change 2017-2018	% change 2018-2019
		2015	2016	2017	2018	2019		
1	Linkwood Road	9,235	9,666	9,390	9,361	9,598	-0.3	+2.5
2	Maisondieu Road	8,386	8,208	7,997	7,839	8,442	-2.0	+7.7
3	Newmill Road	-	11,054	10,840	11,182	11,351	+3.2	+1.5
4	Reiket Lane	8,799	9,524	9,345	9,652	9,636	+3.3	-0.2
5	Thornhill Drive	6,851	6,586	7,225	7,399	6,831	+2.4	-7.7
6	Wittet Drive	3,941	4,127	3,886	3,849	4,165	-0.1	+8.2
7	A941 Hay Street	13,271	13,522	13,736	10,254[a]	12,336	-25.3	+20.3
8	A941 North Street	-	15,190	15,739	15,211	14,537	-3.4	-4.4
9	A941 Main Street	10,652	11,273	11,548	10,701	11,190	-7.3	+4.6
10	A941 Bridge over Railway	19,203	21,365	21,725	19,596	20,510	-9.8	+4.7
11	Edgar Road	9,758	9,284	-	-	9,736	-	-
12	Thornhill Road Shops	3,615	3,773	4,033	4,203	4,070	+4.2	-3.2
13	Glenmoray Drive	4,856	5,173	4,963	5,022	5,107	+1.2	+1.7
14	The Wards	-	-	-	-	7,097	-	-

[a] New traffic lights installation plus counter failure led to large data gaps in 2018.

Table 4.2 – Summary of Trunk Road Traffic Count Data for A95 & A96 2015 – 2019

ID	Counter ID	Location	Annual Average Daily Traffic (AADT)						% Change 2017 – 2018	% Change 2018 – 2019
			2015	2016	2017	2018	2019	2019 days captured		
1	126400	A96 Forres (aka Brodie)(Core 744)	10,634	10,991	11,319	11,202	No Data	-	-1%	-
2	126401	A96 Brodie (WiM)	9,567	9,008	9,528	10,158	No Data	-	+7%	-
3	ATC02038	A96 Forres	No Data	12,958	12,036	12,784	10,557	42	+6%	-17%
4	ATCNE014	A96 Forres to Elgin	No Data	13,189	12,463	12,395	No Data	-	-1%	-
5	ATC00019	A96 Elgin – West Road	16,382	16,401	17,231	17,038	16,804	266	-1%	-1%
6	ATC00020	A96 Elgin – High Street West	13,192	13,153	13,742	14,271	13,208	111	+4%	-7%
7	ATC00021	A96 Elgin – Alexandra Road	21,562	21,111	21,779	20,854	20,527	110	-4%	-2%
8	ATC02040	A96 Elgin Town Centre	16,732	16,403	17,452	17,895	15,872	50	+3%	-11%
9	ATC00022	A96 Elgin – East Road	23,222	22,669	23,026	22,680	19,479	314	-2%	-14%

10	ATCNE006	A96 Elgin to Lhanbryde	17,473	16,883	14,393	17,848	No Data	-	+24%	-
11	ATC00028	A96 Mosstodloch Bypass Middle	17,104	14,767	17,558	17,779	18,144	148	+1%	+2%
12	126400	A96 Forres (aka Brodie)(Core 744)	10,634	10,991	11,319	11,202	No Data	-	-1%	-
13	JTC08238	A98 Fochabers	6,864	7,000	7,456	7,330	No Data	-	-2%	-
14	ATC02036	A96 North of Keith	7,256	4,456	3,780	2,782	No Data	-	-26%	-
15	ATC02028	A95 West of Keith	No Data	No Data	1,940	1,938	1,841	220	0%	-5%
16	ATCNE003	A95 Dowans Brae	2,733	3,070	3,313	3,241	No Data	-	-2%	-
17	109502	A95 Ballindalloch (Core 905)	1,688	2,377	2,451	2,329	No Data	-	-5%	-

4.2 Other Transport Sources

There have been no new planning applications for local developments of other (i.e. non-road) transport sources in 2019.

4.3 Industrial Sources

One new industrial source of emissions (a poultry farm) was permitted within the Moray Council administrative area in 2019. Information on this installation is provided in Table 4.4.

Table 4.3 – New Industrial Sources in the Moray Council Administrative Area in 2019

Application Reference	Address	Description	Status	Air Quality Assessment Outcome
19/00271/APP	Lower Mill of Tynet Farm, Tynet, Buckie, Moray, AB56 5HJ	Erect agricultural poultry building.	Permitted	Not undertaken

4.4 Commercial and Domestic Sources

Two new commercial / domestic sources of emissions (biomass installations) were permitted within the Moray Council administrative area in 2019. Information on these installations is provided in Table 4.4.

Table 4.4 – New Biomass Installations in the Moray Council Administrative Area in 2019

Application Reference	Address	Description	Status	Air Quality Assessment Outcome
18/01360/APP	Parklands Nursing Home, High Street, Buckie, Moray, AB56 4AD	Retrospective planning application for a building (biopod) to house a biomass boiler pellet storage area and flue to serve Parklands and Burnbank Care Home with renewable energy.	Permitted	Not undertaken

Application Reference	Address	Description	Status	Air Quality Assessment Outcome
19/00957/LAW	Barmuckity Farm, Elgin, Moray, IV30 8QW	Retrospective submission to erect a 150 Kw biomass, 5.5 m high flue and wood chip store.	Permitted	Not undertaken

4.5 New Developments with Fugitive or Uncontrolled Sources

There have been no new planning applications for new local developments with fugitive of uncontrolled sources in 2019.

5. Planning Applications

At the date of report writing, there are no known planning applications currently under consideration for new developments which may affect air quality within the Moray Council administrative area.

6. Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

The results of the NO_2 monitoring across the Moray Council administrative area during 2019 confirm that there are no know exceedances of the NO_2 objectives. Analysis of measured NO_2 concentrations between 2015 and 2019 show that NO_2 concentrations at most sites are either stable or follow a general downward trend (in particular during the period 2018 to 2019 the observable trend is largely of reducing concentrations), remaining well below the annual mean objective. The review of new monitoring data for 2019 confirms that Moray Council does not need to proceed to a Detailed Assessment.

6.2 Conclusions relating to New Local Developments

Three new sources of pollutants have been permitted during the period 2018 to 2019 (a poultry farm and two biomass installations). It is considered to be unlikely that these new sources have the potential to result in any new exceedances of the air quality objectives within the Moray Council administrative area.

6.3 Proposed Actions

Monitoring data for 2019 does not identify any exceedances of the objectives for NO_2 within Moray Council administrative area, nor are any exceedances of the objectives for other pollutants expected to occur within this area either. Furthermore, measured concentrations of NO_2 have generally decreased since 2018. This indicates that there is no need for additional air quality monitoring, changes to the existing monitoring programme or the addition of further measures, plans or actions to manage air quality within the Moray Council administrative area.

However, in order to ensure that air quality remains acceptable, the current NO_2 and traffic flow monitoring, particularly in Elgin, is planned to continue through to 2020, with the results of these activities being included in the 2021 APR.

Appendix A: Monitoring Results

Table A.1 – 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?	Site Height (m)
DT1	Elgin 1	Kerbside	321107	862668	NO_2	N	<5	1	N	3
DT2	Elgin 2	Kerbside	322348	862745	NO_2	N	<2	1	N	3
DT5	Elgin 5	Kerbside	322233	861869	NO_2	N	<5	1	N	3
DT6	Elgin 6	Kerbside	322029	862832	NO_2	N	<5	1	N	3
DT7	Elgin 7	Roadside	321615	862307	NO_2	N	<5	1	N	3
DT8	Elgin 8	Roadside	322492	863309	NO_2	N	<5	2	N	3
DT9	Elgin 9	Kerbside	321775	861115	NO_2	N	5	2	N	3
DT10	Elgin 10	Kerbside	320641	862291	NO_2	N	5	1	N	3
DT11	Fochabers 1	Kerbside	334634	858726	NO_2	N	<2	2	N	3
DT13	Forres	Urban Background	303726	858931	NO_2	N	<2	n/a	N	3
DT15	Keith 2	Kerbside	343329	850415	NO_2	N	<5	2	N	3
DT16	Lossie 1	Kerbside	322463	870293	NO_2	N	<5	2	N	3
DT18	Rothes 1	Kerbside	327756	849658	NO_2	N	<2	1	N	3
DT20	Elgin 12	Roadside	322328	861206	NO_2	N	<22 (3)	6	N	3
DT21	Elgin 13	Roadside	323557	862356	NO_2	N	<18 (3)	3	N	3
DT22	Elgin 11	Roadside	321463	863794	NO_2	N	<21	5	N	3
DT23	Buckie 1	Roadside	342562	865535	NO_2	N	0 (4)	5	N	3
DT24	Keith 3	Roadside	342592	850894	NO_2	N	0 (4)	6	N	3
DT25	Aberlour 1	Roadside	326571	842899	NO_2	N	<3	4	N	3

(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) The closest relevant exposure is the opposite side of the nearest road than the monitoring site. The distance measured is from the monitoring site to the closest part of the nearest relevant exposure.

(4) Whilst the monitoring site is not located at relevant exposure, the closest relevant exposure is set back from the adjacent road by the same distance.

Table A.2 – Annual Mean NO_2 Monitoring Results

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1), (2)	Valid Data Capture 2019 (%) (2), (3)	NO_2 Annual Mean Concentration (µg/m^3) (3)				
					2015	2016	2017	2018	2019
DT1	Kerbside	Diffusion Tube	81.8	81.8	22.3	22.9	20.7	21.7	22.7
DT2	Kerbside	Diffusion Tube	81.8	81.8	19.8	23.3	23.0	24.4	22.2
DT5	Kerbside	Diffusion Tube	81.8	81.8	15.6	17.9	15.7	16.2	14.8
DT6	Kerbside	Diffusion Tube	81.8	81.8	15.8	17.5	15.7	17.2	16.0
DT7	Roadside	Diffusion Tube	81.8	81.8	8.2	10.0	9.9	11.4	9.8
DT8	Roadside	Diffusion Tube	81.8	81.8	14.1	14.3	13.5	13.4	11.3
DT9	Kerbside	Diffusion Tube	81.8	81.8	6.7	7.9	6.9	7.6	7.3
DT10	Kerbside	Diffusion Tube	81.8	81.8	13.3	15.1	13.0	13.6	12.7
DT11	Kerbside	Diffusion Tube	72.7	72.7	10.1	11.6	9.9	11.0	8.5
DT13	Urban Background	Diffusion Tube	81.8	81.8	13.0	13.9	12.7	12.4	10.9
DT15	Kerbside	Diffusion Tube	81.8	81.8	21.3	25.7	21.3	24.2	17.6
DT16	Kerbside	Diffusion Tube	81.8	81.8	5.2	5.9	5.1	5.9	5.4
DT18	Kerbside	Diffusion Tube	81.8	81.8	17.1	16.8	14.6	14.0	12.5
DT20	Roadside	Diffusion Tube	81.8	81.8	-	-	-	-	11.4
DT21	Roadside	Diffusion Tube	81.8	81.8	-	-	-	-	10.1
DT22	Roadside	Diffusion Tube	72.7	72.7	-	-	-	-	18.1
DT23	Roadside	Diffusion Tube	81.8	81.8	-	-	-	-	9.5
DT24	Roadside	Diffusion Tube	81.8	81.8	-	-	-	-	18.7
DT25	Roadside	Diffusion Tube	81.8	81.8	-	-	-	-	13.1

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) Only eleven periods of monitoring were undertaken in 2019, which did not match the LAQM diffusion tube calendar (Ref- 10). The percentage valid data capture has been calculated on the basis on the percentage of monitoring 'periods' (as opposed to months) for which valid monitoring data was available, out of the total number (i.e. eleven) of monitoring 'periods' (as opposed to months) for which monitoring was undertaken.

(3) 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%).

(4) 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 details.

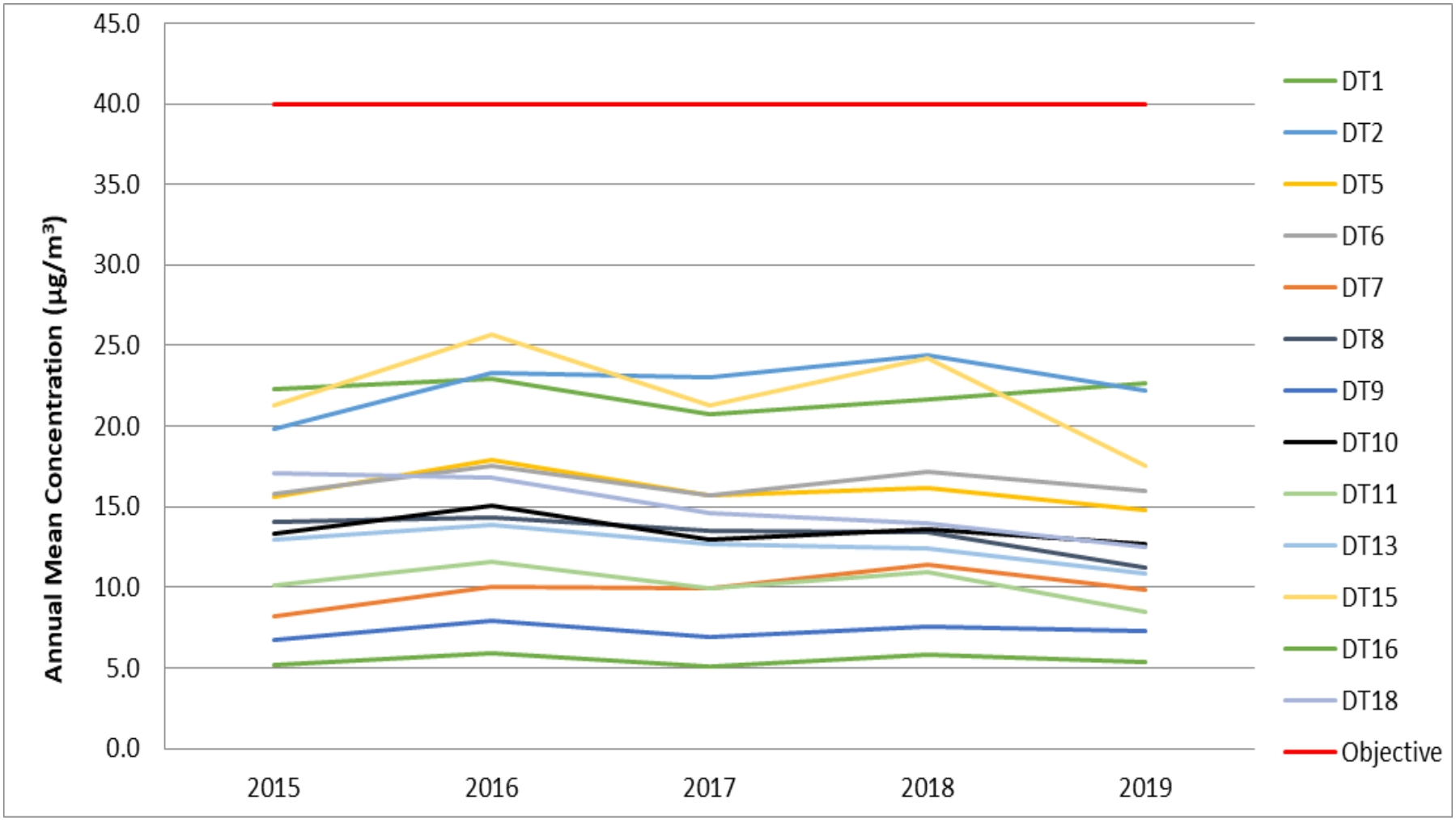

Figure A.1 Trends in Annual Mean Nitrogen Dioxide Concentrations Measured at Diffusion Tube Sites in Moray Council Administrative Area (2015 – 2019)
(the red line represents the annual mean nitrogen dioxide objective)

Appendix B: Full Diffusion Tube Results for 2019 by Monitoring Period

Table B.1 – NO_2 Diffusion Tube Results for 2019 by Monitoring Period

Site ID	NO_2 Mean Concentrations (µg/m^3)												
	09/01/19 – 07/02/19	07/02/19 – 20/03/19 (1)	20/03/19 – 14/05/19 (1)	14/05/19 – 12/06/19	12/06/19 – 10/07/19	10/07/19 – 08/08/19	08/08/19 – 12/09/19	12/09/19 – 15/10/19	15/10/19 – 14/11/19	14/11/19 – 18/12/19	18/12/19 – 14/01/20	Annual Mean	
												Raw Data (2)	Bias Adjusted (3) & Annualised
DT1	40	-	-	23	20	27	21	24	32	34	31	28.0	22.7
DT2	35	-	-	31	23	26	20	24	29	33	26	27.4	22.2
DT5	27	-	-	15	11	14	12	15	24	24	22	18.2	14.8
DT6	25	-	-	17	11	14	12	17	24	35	23	19.8	16.0
DT7	16	-	-	<5	9	12	9	11	16	18	13	12.1	9.8
DT8	24	-	-	10	7	9	12	13	<5	23	22	13.9	11.3
DT9	13	-	-	7	<5	7	6	7	12	14	10	9.0	7.3
DT10	23	-	-	13	9	12	12	12	18	22	20	15.7	12.7
DT11	13	-	-	13	8	no data	7	10	13	14	10	11.0	8.5
DT13	22	-	-	10	8	9	8	12	18	21	13	13.4	10.9
DT15	31	-	-	21	14	19	18	20	25	24	23	21.7	17.6
DT16	10	-	-	<5	<5	<5	<5	<5	7	10	8	6.7	5.4
DT18	25	-	-	18	11	<5	14	14	19	22	11	15.4	12.5
DT20	21			16	9	13	8	11	16	20	13	14.1	11.4

Site ID	NO_2 Mean Concentrations (µg/m^3)												
	09/01/19 – 07/02/19	07/02/19 – 20/03/19 (1)	20/03/19 – 14/05/19 (1)	14/05/19 – 12/06/19	12/06/19 – 10/07/19	10/07/19 – 08/08/19	08/08/19 – 12/09/19	12/09/19 – 15/10/19	15/10/19 – 14/11/19	14/11/19 – 18/12/19	18/12/19 – 14/01/20	Annual Mean	
												Raw Data (2)	Bias Adjusted (3) & Annualised
DT21	19	-	-	13	7	9	7	11	14	18	14	12.4	10.1
DT22	33	-	-	no data	11	17	21	18	27	30	31	23.5	18.1
DT23	17	-	-	11	6	10	9	10	12	16	14	11.7	9.5
DT24	32	-	-	23	15	23	18	21	29	25	22	23.1	18.7
DT25	24	-	-	16	11	13	13	14	20	21	14	16.2	13.1

(1) Data for these monitoring periods have been discounted as the monitoring periods substantially exceed the monitoring duration (four to five weeks) recommended by LAQM.TG(16).

(2) Annual mean has been calculated using a simple average (as all monitoring periods considered do not substantially exceed the monitoring duration recommended by LAQM.TG(16)).

(3) See Appendix C for details on bias adjustment

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

Diffusion Tube Monitoring Quality Assurance (QA) / Quality Control (QC)

The NO_2 diffusion tubes used by Moray Council were prepared and analysed by the Aberdeen Scientific Services Laboratory (ASSL), 20% TEA in Water method. The laboratory is United Kingdom Accreditation Service (UKAS) accredited and has good recent performance in both the LGC Standards Proficiency Testing Scheme (AIR NO_2 PT formerly WASP) and National Physical Laboratory (NPL) QA schemes, and during 2019 four rounds were conducted, for three of these rounds 100% of samples were determined to have been satisfactory and for one of these rounds 75% were determined to have been satisfactory (Ref- 12, Ref- 13).

Low Limit of Detection

There is no reference to any specific low limit of detection in LAQM.TG(16) or guidance offered on this subject by the LAQM helpdesk. The only issue perhaps is that diffusion tubes perform less well at low concentrations and that data should therefore be removed from the analysis and an alternative method applied such as using a background site to estimate an alternative concentration for those questionable periods. However, the very low monthly values recorded in 2019 in the Moray data are in most cases consistent with that particular location (year on year) which suggests that tubes are in fact observing as might be expected.

Diffusion Tube Bias Adjustment Factor

Moray Council does not operate an automatic analyser, and therefore no co-location study is carried out. As such, it is not possible to calculate a local bias adjustment factor. As such, the national diffusion tube bias adjustment factor has been used to adjust the diffusion tube measurements.

The national diffusion tube bias adjustment factor spreadsheet version 03/20 was used to calculate the national bias adjustment factor applied to the Moray NO_2 diffusion tube data (Ref- 14). The factor was based on six studies (ASSL, 20% TEA in water), all of which had good precision. The calculated national diffusion tube bias adjustment factor for 2019 is 0.81. This factor has been applied to all 2019 diffusion tube data.

Annualisation of Diffusion Tube Data

Where there were less than nine periods of valid monitoring the diffusion tube results were ‘annualised’ following the methodology outlined in LAQM.TG(16) (Ref- 9). Annualisation was carried out for two sites; DT11 (Fochabers 1) and DT22 (Elgin 11). Continuous monitoring data from the Aberdeen, Fort William and Dundee automatic urban and rural monitoring network (AURN) sites were used. Details of the annualization calculations are provided in Table C.1 and Table C.2 below.

Table C.1 – Diffusion Tube Annualisation; DT11 (Fochabers 1)

Monitoring Period	AURN Site (B1) (1), (2)	AURN Site (B2) (1), (3)	AURN Site (B3) (1), (4)	DT11 (Fochabers 1)			
				DT11	B1 when DT11 is Available	B2 when DT11 is Available	B2 when DT11 is Available
09/01/19 – 07/02/19	30.8	12.8	20.4	13	30.8	12.8	20.4
07/02/19 – 20/03/19	19.3	8.0	10.4	-	-	-	-
20/03/19 – 14/05/19	13.5	7.7	9.6	-	-	-	-
14/05/19 – 12/06/19	10.2	5.6	7.6	13	10.2	5.6	7.6
12/06/19 – 10/07/19	10.3	5.1	6.5	8	10.3	5.1	6.5
10/07/19 – 08/08/19	12.2	4.7	6.8	-	-	-	-
08/08/19 – 12/09/19	14.0	5.2	7.1	7	14.0	5.2	7.1
12/09/19 – 15/10/19	14.5	8.4	8.8	10	14.5	8.4	8.8
15/10/19 – 14/11/19	18.6	9.9	13.1	13	18.6	9.9	13.1
14/11/19 – 18/12/19	20.9	11.4	15.2	14	20.9	11.4	15.2
18/12/19 – 13/01/20	20.5	7.2	14.2	10	20.5	7.2	14.2
Average:	*16.8*	*7.8*	*10.9*	*11.0*	*17.5*	*8.2*	*11.6*
Ratios: (5)					*0.96*	*0.95*	*0.94*
Average Ratios: (5)							*0.95*

(1) Assumes that changeover occurs at midday.

(2) Aberdeen automatic monitoring site.

(3) Fort William automatic monitoring site.

(4) Dundee automatic monitoring site.

(5) Based on unrounded numbers.

Table C.2 – Diffusion Tube Annualisation; DT22 (Elgin 11)

Monitoring Period	AURN Site (B1) (1), (2)	AURN Site (B2) (1), (3)	AURN Site (B3) (1), (4)	DT22 (Elgin 1)			
				DT22	B1 when DT22 is Available	B2 when DT22 is Available	B2 when DT22 is Available
09/01/19 – 07/02/19	30.8	12.8	20.4	33	30.8	12.8	20.4
07/02/19 – 20/03/19	19.3	8.0	10.4	-	-	-	-
20/03/19 – 14/05/19	13.5	7.7	9.6	-	-	-	-
14/05/19 – 12/06/19	10.2	5.6	7.6	-	-	-	-
12/06/19 – 10/07/19	10.3	5.1	6.5	11	10.3	5.1	6.5
10/07/19 – 08/08/19	12.2	4.7	6.8	17	12.2	4.7	6.8
08/08/19 – 12/09/19	14.0	5.2	7.1	21	14.0	5.2	7.1
12/09/19 – 15/10/19	14.5	8.4	8.8	18	14.5	8.4	8.8
15/10/19 – 14/11/19	18.6	9.9	13.1	27	18.6	9.9	13.1
14/11/19 – 18/12/19	20.9	11.4	15.2	30	20.9	11.4	15.2
18/12/19 – 13/01/20	20.5	7.2	14.2	31	20.5	7.2	14.2
Average:	*16.8*	*7.8*	*10.9*	*23.5*	*17.7*	*8.1*	*11.5*
Ratios: (5)					*0.95*	*0.97*	*0.95*
Average Ratios: (5)							*0.95*

(1) Assumes that changeover occurs at midday.

(2) Aberdeen automatic monitoring site.

(3) Fort William automatic monitoring site.

(4) Dundee automatic monitoring site.

(5) Based on unrounded numbers.

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 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
AQS	Air Quality Strategy
ASSL	Aberdeen Scientific Services Laboratory
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
CAFS	Cleaner Air for Scotland – The Road to a Healthier Future
Defra	Department for Environment, Food and Rural Affairs
GHG	Greenhouse gas
LAQM	Local Air Quality Management
LoD	Limit of Detection
MLTS2	The Second Moray Local Transport Strategy
NO_2	Nitrogen Dioxide
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
SEAP	Sustainable Energy Action Plan

SO_2	Sulphur Dioxide
TG	Technical Guidance
UKAS	United Kingdom Accreditation Service

References

Ref- 1 Staff Travel Plan Report: Moray Council – Area Offices (2009). Updated 18/05/2012

Ref- 2 Moray Council (2011) Draft Climate Change Action Plan (January 2011)

Ref- 3 Aberdeen City Council (2017). North East Scotland Sustainable Energy Action Plan (SEAP). Available at: https://www.aberdeencity.gov.uk/sites/default/files/2018-04/Screening%20Report%20-%20North%20East%20Scotland%20Sustainable%20Energy%20Action%20Plan.pdf

Ref- 4 Moray Council (2011) Draft Climate Change Action Plan (January 2011).

Ref- 5 Moray Council (2015). Moray Local Development Plan http://www.moray.gov.uk/moray_standard/page_51210.html

Ref- 6 Moray Council (2017). Moray Council Active Travel Strategy 2016-2021. http://www.moray.gov.uk/moray_standard/page_75724.html

Ref- 7 Moray Council (2017) Elgin Transport Strategy. http://www.moray.gov.uk/moray_standard/page_109352.html).

Ref- 8 Moray Council (2011). Second Moray Local Transport Strategy Part 1 and Part 2. http://www.moray.gov.uk/moray_standard/page_75724.html

Ref- 9 Department of the Environment, Food and Rural Affairs (DEFRA) in partnership with the Scottish Executive, The National Assembly for Wales and the Department of the Environment for Northern Ireland (2016). '*Local Air Quality Management Technical Guidance, LAQM.TG(16)*'. HMSO, London

Ref- 10 Ricardo Energy & Environment (2020) 'Air Quality in Scotland' http://www.scottishairquality.scot/laqm/tools

Ref- 11 UK AIR Information Resource (2020) https://uk-air.defra.gov.uk/interactive-map

Ref- 12 2017 – 2019 Summary of Precision Results for Nitrogen Dioxide Diffusion Tube Collocation Studies, by Laboratory (2020). https://laqm.defra.gov.uk/assets/Tube_Precision_version_03_20_Final_REDUCED_FINAL.pdf

Ref- 13 Summary of Laboratory Performance in AIR NO2 Proficiency Testing Scheme (January 2018 – November 2019). https://laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework.html

Ref- 14 Department of the Environment, Food and Rural Affairs (DEFRA) (2020) '*National Diffusion Tube Bias Adjustment Factor Spreadsheet'* Spreadsheet Version Number: 03/20 https://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html

Appendix D: Figures

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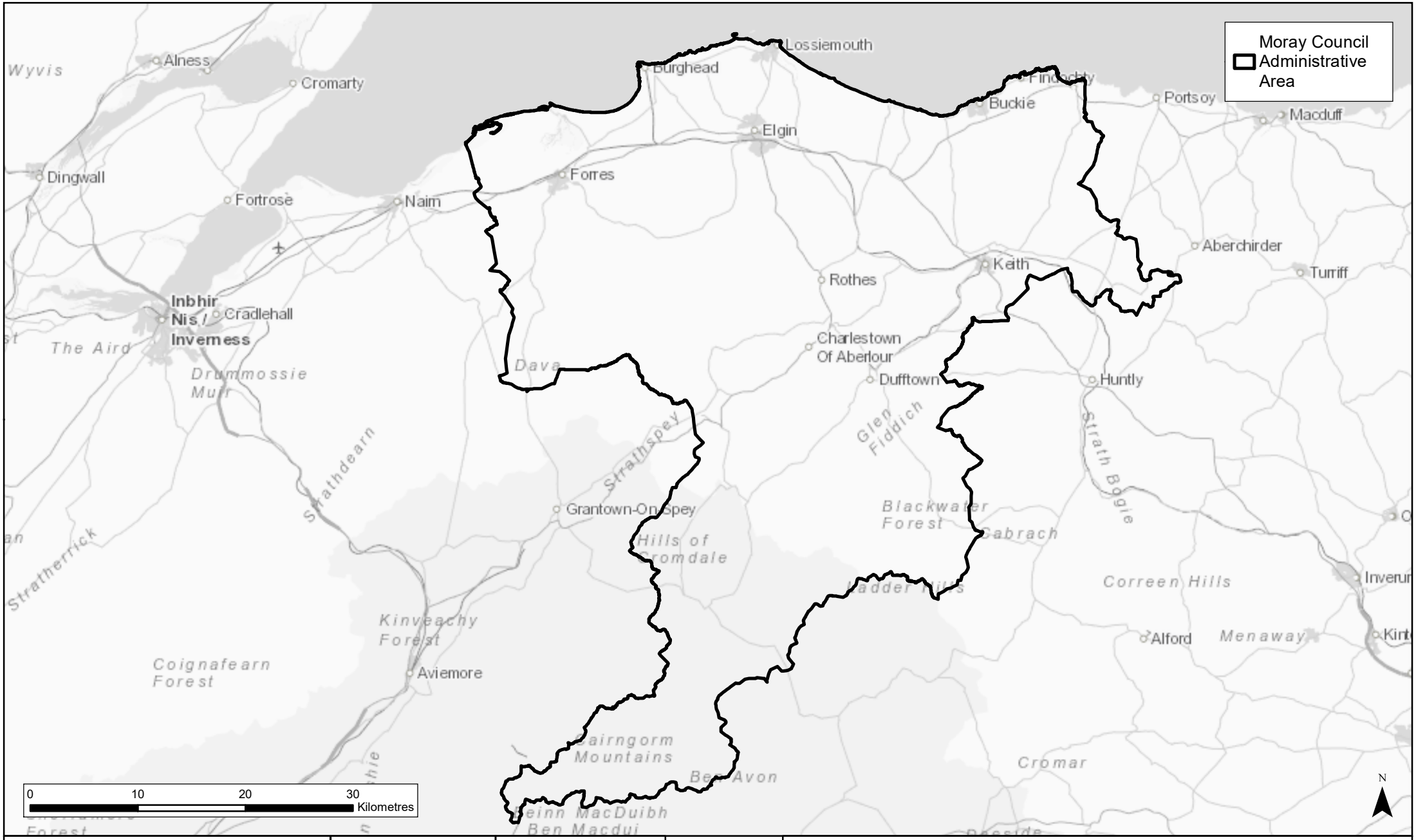

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2019 Air Quality Annual Progress Report (APR) for Moray Council

Extent of Moray Council Administrative Area

Fig. D.1 Rev A

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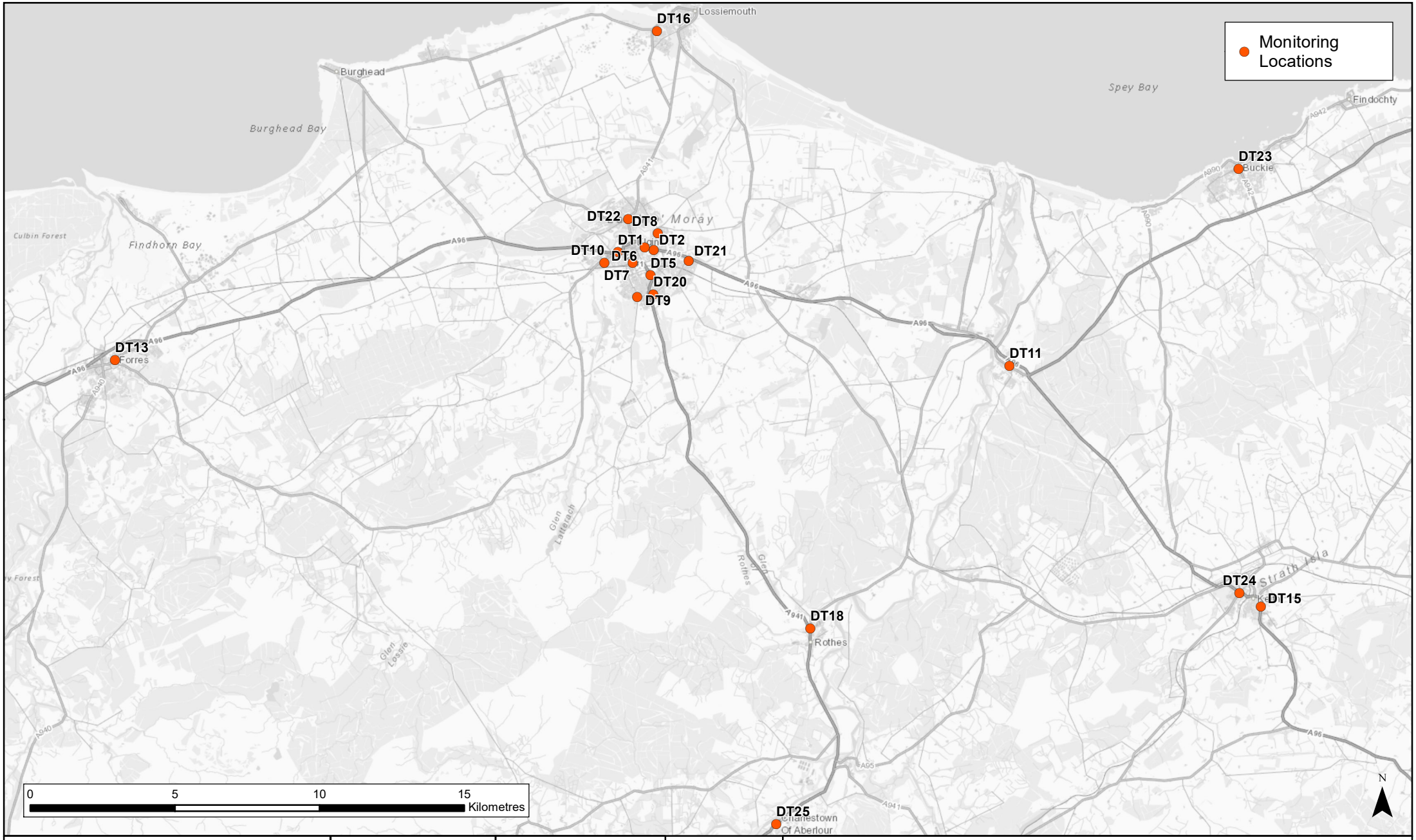

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2019 Air Quality Annual Progress Report (APR) for Moray Council

Non-Automatic Monitoring Locations

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2019 Air Quality Annual Progress Report (APR) for Moray Council

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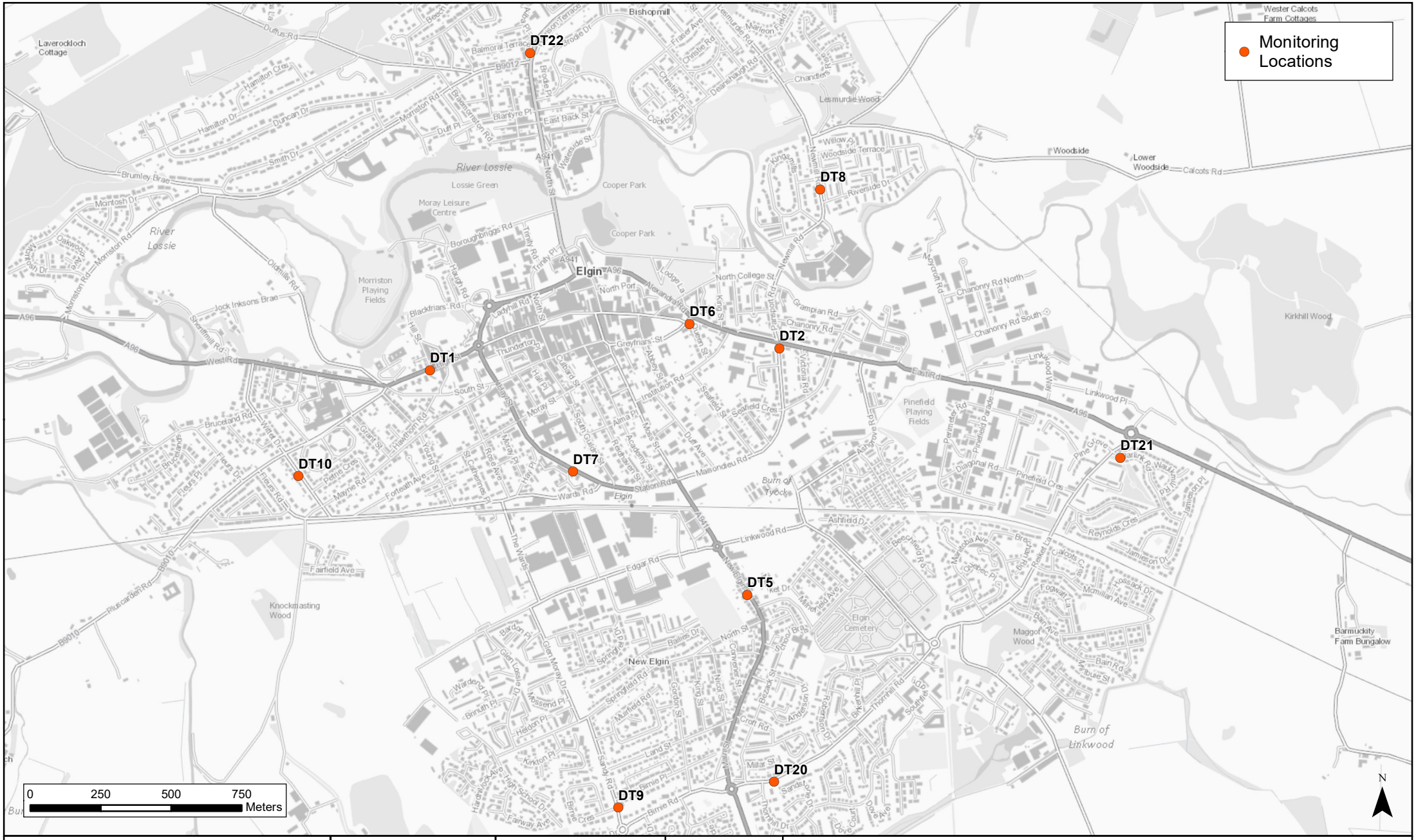
Fig. D.3 Rev A

Document Path: J:\43737 Moray Progress Reports\Air Quality\April 2020\ArcGIS\2020 Moray AQ Progress Report_D4 Elgin Monitoring Locations.mxd



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Moray Council

1:17,287 @ A4	
29/06/2020	
Drawn: NH	
Checked: KH	

2019 Air Quality Annual Progress Report (APR) for Moray Council

Elgin Non-Automatic Monitoring Locations

Fig. D.4 Rev A

Document Path: J:\43737 Moray Progress Reports\Air Quality\April 2020\ArcGIS\2020 Moray AQ Progress Report_D5 Lossiemouth Monitoring Locations.mxd

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29/06/2020
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Lossiemouth Non-Automatic Monitoring Locations

Fig. D.5 Rev A

Document Path: J:\43737 Moray Progress Reports\Air Quality\April 2020\ArcGIS\2020 Moray AQ Progress Report_D6 Fochabers Monitoring Locations.mxd

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Moray Council

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29/06/2020
Drawn: NH
Checked: KH

2019 Air Quality Annual Progress Report (APR) for Moray Council

Fochabers Non-Automatic Monitoring Locations

Fig. D.6 Rev A

Document Path: J:\43737 Moray Progress Reports\Air Quality\April 2020\ArcGIS\2020 Moray AQ Progress Report_D7 Buckie Monitoring Locations.mxd

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Moray Council

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29/06/2020
Drawn: NH
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2019 Air Quality Annual Progress Report (APR) for Moray Council

Buckie Non-Automatic Monitoring Locations

Fig. D.7 Rev A

Document Path: J:\43737 Moray Progress Reports\Air Quality\April 2020\ArcGIS\2020 Moray AQ Progress Report_D8 Keith Monitoring Locations.mxd

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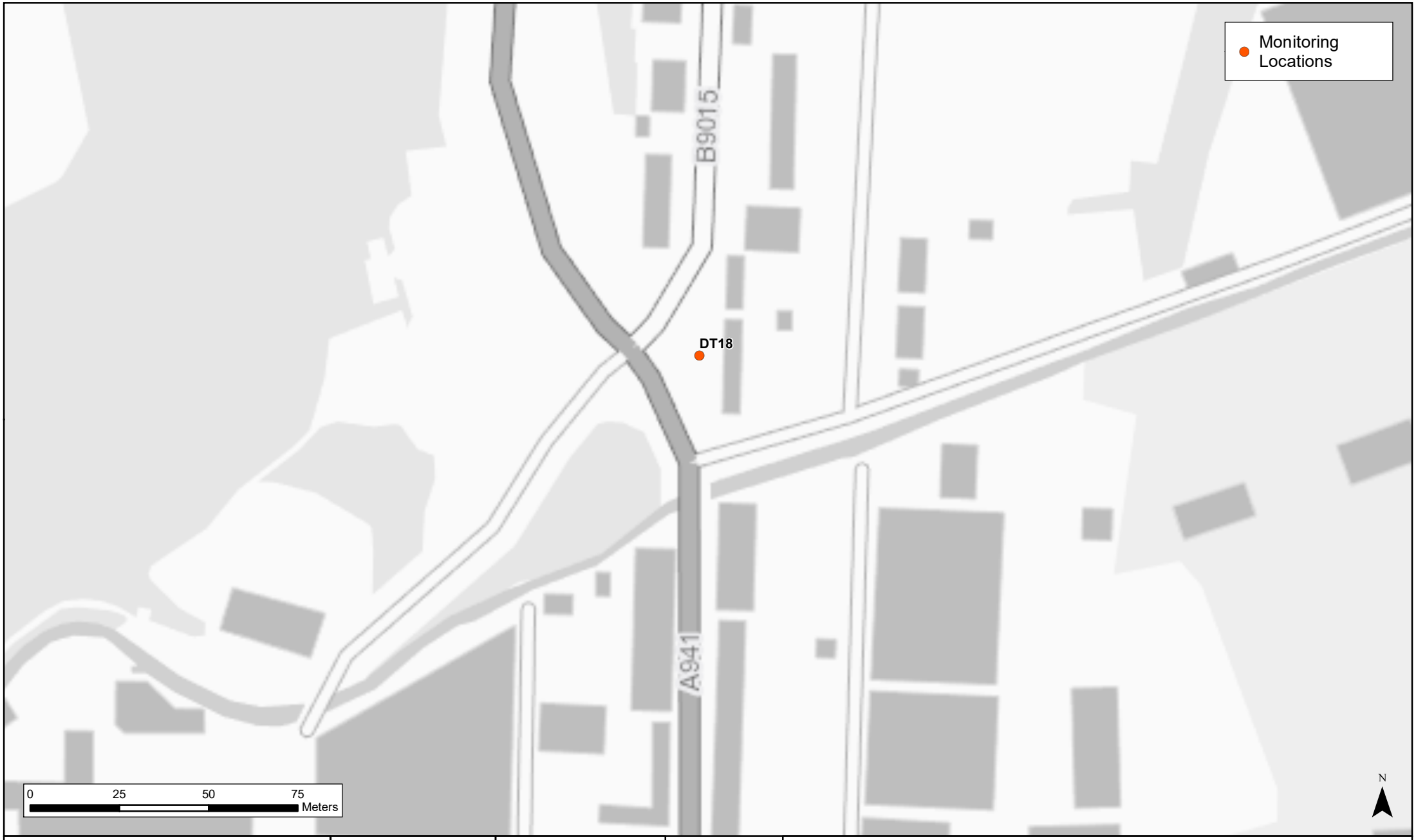
29/06/2020
Drawn: NH
Checked: KH

2019 Air Quality Annual Progress Report (APR) for Moray Council

Keith Non-Automatic Monitoring Locations

Fig. D.8 Rev A

Document Path: J:\43737 Moray Progress Reports\Air Quality\April 2020\ArcGIS\2020 Moray AQ Progress Report_D9 Rothes Monitoring Locations.mxd



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29/06/2020
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Rothes Non-Automatic Monitoring Locations

Fig. D.9 Rev A

Document Path: J:\43737 Moray Progress Reports\Air Quality\April 2020\ArcGIS\2020 Moray AQ Progress Report_D10 CoA Monitoring Locations.mxd

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Moray Council

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29/06/2020
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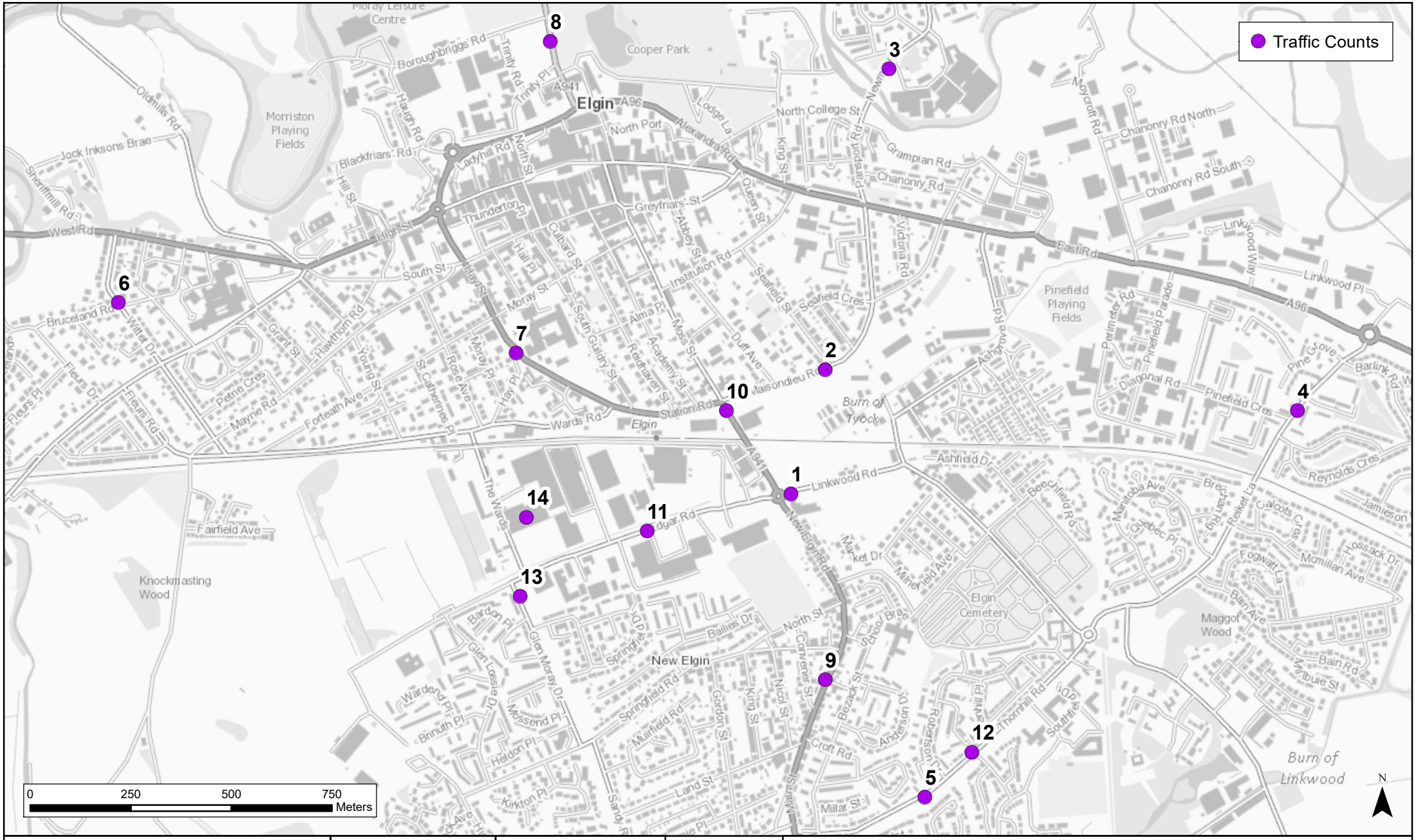
2019 Air Quality Annual Progress Report (APR) for Moray Council

Charlestown Of Aberlour Non-Automatic Monitoring Locations

Fig. D.10 Rev A

Document Path: J:\43737 Moray Progress Reports\Air Quality\April 2020\ArcGIS\2020 Moray AQ Progress Report_D11 Moray Council Traffic Monitoring Locations.mxd



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Moray Council

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29/06/2020	
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2019 Air Quality Annual Progress Report (APR) for Moray Council

Moray Council Traffic Monitoring Locations

Fig. D.11 Rev A

Document Path: J:\43737 Moray Progress Reports\Air Quality\April 2020\ArcGIS\2020 Moray AQ Progress Report_D12 Transport Scotland Traffic Monitoring Locations.mxd

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Moray Council

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29/06/2020	
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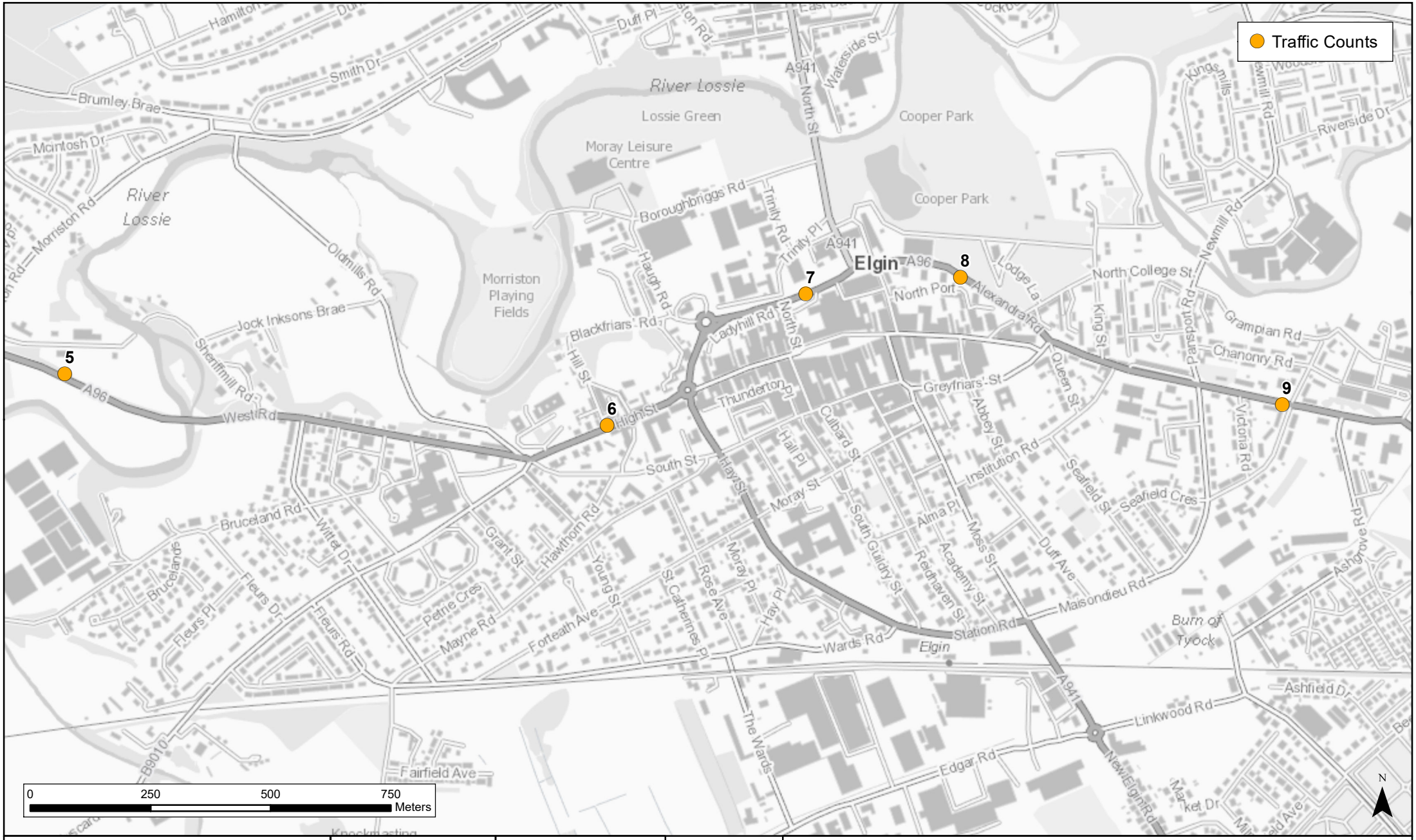
2019 Air Quality Annual Progress Report (APR) for Moray Council

Transport Scotland Monitoring Locations

Fig. D.12 Rev A

Document Path: J:\43737 Moray Progress Reports\Air Quality\April 2020\ArcGIS\2020 Moray AQ Progress Report_D13 Transport Scotland Elgin Monitoring Locations.mxd



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Moray Council

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29/06/2020	
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Transport Scotland Elgin Monitoring Locations

Fig. D.13 Rev A