



# 2021 Air Quality Annual Status Report (ASR)

Version 1.1

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

Date June 2021

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1.0	30/06/21	Initial Draft	A Jameson
1.1	30/07/21	Spelling, Grammar, Formatting Changes	S Berry & A Jameson

## Executive Summary: Air Quality in Our Area

### Air Quality in Kirklees Council

Air pollution is associated with a number of adverse health impacts. It is recognised as a contributing factor in the onset of heart disease and cancer. Additionally, air pollution particularly affects the most vulnerable in society: children and older people, and those with heart and lung conditions. There is also often a strong correlation with equalities issues, because areas with poor air quality are also often the less affluent areas<sup>1,2</sup>.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion<sup>3</sup>.

The air quality issues within Kirklees are focused around the road network connecting the towns, and traffic which passes between the West Yorkshire conurbation along the M62 and Greater Manchester.

Kirklees Council have conducted monitoring across the district where these primary roads are in close proximity to relevant human activity. To date Kirklees has identified 2 primary pollutants of concern. They are Nitrogen Dioxide and Particulate Matter.

Beginning March 2020, the UK saw a large number of measures implemented in response to the COVID19 pandemic, which has also impacted concentrations observed during the reporting year 2020. In 2020 concentrations have fallen by 10% more than what would be anticipated had the pandemic not occurred, with reduction of between 17-19% occurring and compliance across the district.

Trends prior to the COVID19 pandemic indicated that the levels of these pollutants have fallen over the previous 5-year period, but health related objectives were still being exceeded within the district.

Kirklees currently has 10 Air Quality Management Areas (AQMAs) within the district, of which the maps are available at <https://uk-air.defra.gov.uk/aqma/list> and orders are available from the Council's website at <https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx>.

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<sup>1</sup> Environmental equity, air quality, socioeconomic status and respiratory health, 2010

<sup>2</sup> Air quality and social deprivation in the UK: an environmental inequalities analysis, 2006

<sup>3</sup> Defra. Abatement cost guidance for valuing changes in air quality, May 2013

The Kirklees AQMA's are;

- Bradley, Huddersfield
- Scouthill, Dewsbury
- Birchencliffe, Huddersfield
- Birkenshaw, Bradford
- Eastborough, Dewsbury
- Edgerton, Huddersfield
- Liversedge / Heckmondwike
- Huddersfield Town Centre
- Outlane, Huddersfield
- Thornton Lodge, Huddersfield

Prior to the COVID19 pandemic, 5-year trends for NO<sub>2</sub> indicated that the levels fell significantly between 2012 & 2013 within the Kirklees District and stagnated between 2014 to 2016, but since 2016 there has been a gradual fall year on year. Over that five-year period it had been observed that NO<sub>2</sub> concentration have fallen by 13% across the district and that falling concentration trends were slightly higher within the AQMA's at 15-19%. Notwithstanding this, concentrations in some areas were still exceed AQO which indicated further works were required in addition to improvements in vehicle engine technology and fleet turnover in order to bring about compliance.

In 2019, Kirklees Council adopted a new Air Quality strategy and 5-year Action Plan focusing on both districtwide measures and also specific to AQMA's.

Kirklees Council is a Metropolitan authority and controls all local authority duties. As part of the LAQM process and more specifically delivery of the action plan, Kirklees Council work in partnership with the West Yorkshire Combined Authority (WYCA) and the other 4 West Yorkshire Authorities on a regional project basis and at a local level works with Highways England, Environment Agency and key anchor institutions such as The NHS Trusts, Huddersfield University and Kirklees Neighbourhood Housing, which was key in the construction of the action plan and will continue to be key to deliver the actions.

Actions to Improve Air Quality Kirklees Council has taken forward a number of measures during the current reporting year of 2020 in pursuit of improving local air quality.

Prior to the pandemic, NO<sub>2</sub> concentrations had fallen by between 15-19% within the AQMA's over the previous 5-year period, which is above the district average of 13% and a testament to the successful delivery of the previous plan and current schemes within the new plan.

In 2020 the council continued to acknowledge the importance of Air Quality improvements within the district, which was demonstrated during the pandemic through strategic resource management that assisted the council to deal with the pandemic whilst also delivering on the 5-year action plan.

In addition to above, the council also acknowledged the important links between Climate Change, the council's Climate Emergency and the cross-cutting nature of the workstreams. As such Kirklees Council created an Air Quality, Energy & Climate Change team to deliver on these priority agenda's and also increased resource availability in order to achieve the council's ambition.

Whilst the council saw compliance in 10 of the 10 Kirklees AQMA's, the impact of COVID19 measures and uncertainties surrounding recovery roadmaps mean that decisions on compliance are limited. Notwithstanding this, Kirklees Council currently have permission from previous ASR submissions to revoke AQMA 2 in Scouthill and will be doing so.

In 2020 Kirklees Council continued to work undertake partnership working, both local and regionally to bring about reductions and the Air Quality team have taken the lead on delivery of Electric Vehicle Charging Infrastructure within the district. The key measures in 2020 were:

- Allocated £400k capital budget to 4 Air Quality Projects
  - Intelligent Traffic Light System
    - £250k project to procure a smart traffic light system which will improve Air Quality by using smart technology to inform green light allocation or road users

- Eastborough Green Screen (Delayed due to Pandemic)

£50k project to install Green Screen adjacent to ring road to shield school facilities from roadside emissions.
- Birkenshaw Roundabout Scheme

£40k project to install a skirt around the roundabout to improve flow and reduce stop-starts, whilst also installing Green Infrastructure to maximise improvement
- Increase monitoring tools Available to council (Diffusion Tubes / Sensors)

£60k to purchase sensors and further diffusion tubes to understand current concentrations within the council district.
- Receipt of £1m capital Public E.V Charging scheme & £1m towards electrification of council's own fleet

In January 2019, Kirklees Council declared a Climate Emergency and as part of that, allocated £2m for Electric vehicle schemes. This capital budget is split into 2 elements, one million for the council's own and the other million for a strategic public charge network
- Development of update to West Yorkshire Low Emission Strategy (WYLES) document

With 2019, a West Yorkshire Low Emissions Officer appointed to evaluate the progress of the WYLES. In 2020 the officers worked on a regional basis to create and deliver a WYLES action plan. Final WYLES update Document due 2021
- Purchased Multiple Emission Sensor Technology to evaluate accuracy and effectiveness

In 2020, Kirklees Council had receipt of 5 Zephyr Sensors in April. These were deployed at strategic location / as part of to evaluate their effectiveness within the field. Upon completion for this piece of work, the authority deployed the monitors tactically and undertook evaluation. The conclusion of which means the council are looking to further deploy this technology in relevant areas.

## Conclusions and Priorities

From analysis of 2020 Air Quality data Kirklees Council reports that there have been no exceedances of the Annual NO<sub>2</sub> Air Quality Objectives (AQO), the Hourly NO<sub>2</sub> AQO nor has the PM<sub>2.5</sub> AQO's been exceeded.

The impact of the COVID19 pandemic has had a visible impact on concentrations at monitoring sites, where data is available. The difference between 2019 & 2020 show that concentrations fell between 17 – 19% during 2020. Using NO<sub>2</sub> as an indicator, it is estimated that mandatory lockdowns in response to the pandemic resulted in a 10% greater reductions than would be anticipated for 2020, had the pandemic not occurred.

Whilst this is positive in the short term, the trends discussed above does demonstrate the importance of sustainable roadmaps to recovery and the need for smarter ways of working to avoid increases in concentrations, in the event society returns to a pre-pandemic model.

As such, Kirklees are treating improvements observed in 2020 with caution. We will continue to deliver improvement projects in line with previous conclusions from ASR 2019 that states *“the reductions have not been sufficient to bring about wholesale compliance and there are still a number of areas across the district which do not meet the AQO. This indicates that further measures are needed to ensure this downward trend is not an outlier and it must also be noted that the assumptions around the turnover in fleet bringing about required reductions should be treated with caution.”*

Kirklees Council has taken forward several measures during the current reporting year of 2020 in pursuit of improving local air quality. Kirklees Council's priorities for the coming year are;

Directorate Priority;

- Improve Air Quality around Schools/Town Centres/AQMAs and increase knowledge about air quality and links with public health/active travel.

Other Air Quality Team Priorities

- Continue to monitor the impact of COVID19, including lockdown and recovery
- Delivery of E.V Projects
- Finish Delivery of the Air Quality Capital Budgetary Projects

The 4 projects are targeted at AQMA's within the district that have recently been declared. The aim is to increase the reduction of NO<sub>2</sub> concentrations within these areas to be parable to the older 2 AQMA's.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, Kirklees Council anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of the councils current 9 AQMA's.

## Local Engagement and How to get Involved

If you wish to get information for air quality, please use the following websites:

<http://www.kirklees.gov.uk/community/noisePollution/pollution.aspx>

<https://uk-air.defra.gov.uk/>

or contact the council on [air.quality@kirklees.gov.uk](mailto:air.quality@kirklees.gov.uk)



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## 1 Local Air Quality Management

This report provides an overview of air quality in Kirklees Council during 2020. 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 Status Report (ASR) is an annual requirement showing the strategies employed by Kirklees Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England can be found in Table E.1 in Appendix E.

## 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 12-18 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by Kirklees Council can be found in Table 2.1.

Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at;

[https://uk-air.defra.gov.uk/aqma/local-authorities?la\\_id=140](https://uk-air.defra.gov.uk/aqma/local-authorities?la_id=140)

<https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx>

Alternatively, see Appendix D: Map(s) of Monitoring Locations and AQMAs, which provides for a map of air quality monitoring locations in relation to the AQMA(s).

With reference to the 2020 ASR Kirklees Council conclusion, which have been accepted by government;

- We are in the process of amending AQMA 1.
- We are in the process of revoking AQMA 2.

Maps for amendments, revocations and new AQMAs are available in Appendix E:  
Map(s)

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	City / Town	One Line Description	Is air quality in the AQMA influenced by roads controlled by Highways England?	Level of Exceedance (maximum monitored/modelled concentration at a location of relevant exposure)				Action Plan		
						At Declaration		Now		Name	Date of Publication	
AQMA 1 Bradley TO BE AMMENDED	Declared 17/10/08	NO2 Annual Mean	Huddersfield	The designated area incorporates the Leeds Road (A62) - Bradley Road (A6107) junction	NO	73	µg/m3	26	µg/m3	Air Quality Action Plan for Kirklees Council Version 1.4	Sep-19	<a href="https://www.kirklees.gov.uk/transport-and-safety/">https://www.kirklees.gov.uk/transport-and-safety/</a>
AQMA 2 Scouthill TO BE REVOKED	Declared 27/02/09	PM10 24 Hour Mean	Dewsbury	Now revoked, the designated area incorporated part of Huddersfield Road (A644) in Scouthill	NO	43 Days	Exceedances	N/A	Exceedances	Air Quality Action Plan for Kirklees Council Version 1.4	Sep-19	<a href="https://www.kirklees.gov.uk/transport-and-safety/">https://www.kirklees.gov.uk/transport-and-safety/</a>

AQMA 3 Ainley Top	Declared 01/11/17	NO2 Annual Mean	Huddersfield	The designated area incorporates Halifax Road (A629), Lindley Moor Road Bradley Road (A643), Warren House Lane and Stirling Wood Close, which is in close proximity to the Ainley Top Roundabout at Birchenccliffe	YES	44	µg/m3	36	µg/m3	Air Quality Action Plan for Kirklees Council Version 1.4	Sep-19	<a href="https://www.kirklees.gov.uk/transport-and-safety/">https://www.kirklees.gov.uk/transport-and-safety/</a>
AQMA 4 Birkenshaw	Declared 01/11/17	NO2 Annual Mean	Bradford	The designated area incorporates Bradford Road (A651), Whitehall Road East (A58), Carlton Court, Grove Terrace,	YES	45	µg/m3	21	µg/m3	Air Quality Action Plan for Kirklees Council Version 1.4	Sep-19	<a href="https://www.kirklees.gov.uk/transport-and-safety/">https://www.kirklees.gov.uk/transport-and-safety/</a>

				Swincliffe Crescent, Milford Grove, Tetley Drive and Manor Park Gardens, which is in close proximity to the M62 and A651- A58 Roundabout at Birkenshaw								
AQMA 5 Eastborough	Declared 01/11/17	NO2 Annual Mean	Dewsbury	The designated area incorporates Leeds Road (A653), Dewsbury Ring Road (A638), Wakefield Road (A638), Highgate Road, Highgate Terrace, Bank Street and Old Bank Road, which is in close proximity to Dewsbury	NO	60	µg/m3	42	µg/m3	Air Quality Action Plan for Kirklees Council Version 1.4	Sep-19	<a href="https://www.kirklees.gov.uk/air-quality-and-safety/">https://www.kirklees.gov.uk/air-quality-and-safety/</a>



				Town Centre								
AQMA 6 Edgerton	Declared 01/11/17	NO2 Annual Mean	Huddersfield	The designated area incorporates Edgerton Road (A629) and Blacker Road, which is in close proximity to Huddersfield Town Centre	NO	54	µg/m3	36	µg/m3	Air Quality Action Plan for Kirklees Council Version 1.4	Sep-19	<a href="https://www.kirklees.gov.uk/air-quality-and-safety/">https://www.kirklees.gov.uk/air-quality-and-safety/</a>
AQMA 7 Liversedge	Declared 01/11/17	NO2 Annual Mean	Liversedge	The designated area incorporates Huddersfield Road (A62), Bradford Road (A638), Wakefield Road (A638), Wormald Street and Well Street,	NO	45	µg/m3	39	µg/m3	Air Quality Action Plan for Kirklees Council Version 1.4	Sep-19	<a href="https://www.kirklees.gov.uk/air-quality-and-safety/">https://www.kirklees.gov.uk/air-quality-and-safety/</a>

				which is in Liversedge								
AQMA 8 Outlane	Declared 01/11/17	NO2 Annual Mean	Huddersfield	The designated area incorporates New Hey Road and Round Ings Road, which is in close proximity to the M62 at Outlane	YES	54	µg/m3	32	µg/m3	Air Quality Action Plan for Kirklees Council Version 1.4	Sep-19	<a href="https://www.kirklees.gov.uk/transport-and-safety/">https://www.kirklees.gov.uk/transport-and-safety/</a>
AQMA 9 Huddersfield Town Centre	Declared 01/11/17	NO2 Annual Mean	Huddersfield	The designated area incorporates Roads bordering and within the Huddersfield Ring Road	NO	55	µg/m3	33	µg/m3	Air Quality Action Plan for Kirklees Council Version 1.4	Sep-19	<a href="https://www.kirklees.gov.uk/transport-and-safety/">https://www.kirklees.gov.uk/transport-and-safety/</a>

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AQMA 10 Thornton Lodge	Declared 06/06/19	NO2 Annual Mean	Huddersfield	The designated area incorporates Manchester Road	NO	47	µg/m3	38	µg/m3	Air Quality Action Plan for Kirklees Council Version 1.4	Sep-19	<a href="https://www.kirklees.gov.uk/air-quality-and-safety/">https://www.kirklees.gov.uk/air-quality-and-safety/</a>
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Kirklees Council confirm the information on UK-Air regarding their AQMA(s) is up to date

## 2.2 Progress and Impact of Measures to address Air Quality in Kirklees Council

Defra's appraisal of last year's ASR concluded;

*There is detailed discussion of the measures taken during 2018 to tackle air quality. Priorities for the next reporting year are clearly outlined. It is noted that the Air Quality Action Plan for the AQMA are out of date (more than 5 years old) and that plans are in place to update this, the new AQAP being out for public consultation and expected to be in place by the 2020 ASR.*

*On the basis of the evidence provided by the local authority the conclusions reached are acceptable for all sources and pollutants. Following the completion of this report, Kirklees Council should submit an Annual Status Report in 2020.*

### Commentary

*The report is well structured, detailed, and provides the information specified in the Guidance. The following comments are designed to help inform future reports.*

- 1. Robust and accurate QA/QC procedures were applied. Calculations for bias adjustment, annualisation and distance-correction factors were outlined in detail.*
- 2. The Council has included discussion and review of its AQMAs and monitoring strategy, informed due to the extensive monitoring network and also the additional tubes in place to provide data. This demonstrates the Council's proactive and dedicated approach to improving air quality across the area.*
- 3. Most comments from last year's ASR have been mentioned and addressed. This is welcomed, and we encourage this to continue in future ASRs.*
- 4. The need for an updated AQAP was mentioned in last year's ASR appraisal, and this has been adopted. We welcome the council adopting a new AQAP.*
- 5. The following comment made in the previous appraisal has not been addressed*  
*'In Table A.2, the column 'In AQMA?' should be checked – in particular, Tubes 50, 76-78 appear to be within the new AQMA10 Thornton Lodge by reference to the maps but these are showing at 'NO' in this column.'*

*Further to this there are only 83 diffusion tube locations, however in section 3.1.2 87 are reported – sites K29, K30, K59, K60 are no longer in this list of sites being monitored. This issue was also noted in the previous appraisal.*

6. *The Public Health Outcomes Frameworks was not mentioned. The Council can consider referring specifically to indicator D01, which is the fraction of mortality attributable to particulate air pollution in future.*
7. *Council have updated and provided clear map of the diffusion tube monitoring network; trends are displayed and discussed in the report, this is welcomed.*
8. *Overall the report is detailed, concise and satisfies the criteria of relevant standards. The Council should continue their good and thorough work.*

In 2019 Kirklees Council adopted a new Air Quality Strategy and submitted a new 5-year Action Plan for the district to government. This action plan has been accepted 12 February 2020, though actions contained within the new plan were worked on within 2019. As such, this section reports on the new 5-year action plan and priorities for the 2020

Kirklees Council has taken forward a number of direct measures during the current reporting year of 2020 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2.

More detail on these measures can be found in their respective Action Plans, namely The Air Quality Action Plan for Kirklees Council Version 1.4, which is available on the council's website;

<https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx>

Key completed measures completed in 2020 were;

- Receipt of £400k capital budget to 4 Air Quality Projects which are to be delivered 2020/21 fiscal year, with estimated spend profile below;
  - Intelligent Traffic Light System

£250k project to procure a smart traffic light system which will improve Air Quality by using smart technology to inform green light allocation or road users

- Eastborough Green Screen

£50k project to install Green Screen adjacent to ring road to shield school facilities from roadside emissions.

- Birkenshaw Roundabout Scheme

£40k project to install a skirt around the roundabout to improve flow and reduce stop-starts, whilst also installing Green Infrastructure to maximise improvement

- Purchase of more monitoring tools (Diffusion Tubes / Sensors)

£60k to purchase sensors and further diffusion tubes to understand current concentrations within the council district.

- Receipt of £1m capital Public E.V Charging scheme & £1m towards electrification of council's own fleet

In January 2019, Kirklees Council declared a Climate Emergency and as part of that, allocated £2m for Electric vehicle schemes. This capital budget is split into 2 elements, one million for the council's own and the other million for a strategic public charge network

- Development of update to WYLES document

With 2019, a West Yorkshire Low Emissions Officer appointed to evaluate the progress of the West Yorkshire Low Emission Strategy (WYLES). In 2020 the officers worked on a regional basis to create and deliver a WYLES action plan. Final WYLES update Document due 2021

- Purchased Sensors Technology to assess validity

In 2020, Kirklees Council had receipt of 5 Zephyr Sensors in April. These were deployed at strategic location / as part of to evaluate their effectiveness within the field. Upon completion for this piece of work,

the authority deployed the monitors tactically and undertook evaluation. The conclusion of which means the council are looking to further deploy this technology in relevant areas.

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

- Development Stage;
  - Create a School Engagement Program
  - Create Anti-idling solution / campaign
  - Create On-street Charging Solution
  - Create Public facing platform / Comm Strategy
  - Developing / restarting Working Groups with key stakeholders (such as Public Health, Active Travel, Anchor Institutions & Councillor Engagement)
- Procurement Stage;
  - £1m Public Strategic E.V Charging Infrastructure project
  - E.V Salary Sacrifice Scheme
  - Expand Green Parking Permit
- Deliver Stage;
  - Intelligent Traffic Light System  
3<sup>rd</sup> phase of use of UTC/UTMC to deliver Air Quality improvements. This phase is to explore the use of Smart Technology Solutions within the market to build on successes of Split Cycle Offset Optimisation Technique (SCOOT) and the Virtual Emission Monitor (VEM).
  - Birkenshaw Roundabout Scheme  
Redesign of Birkenshaw Roundabout to improve traffic flows, reducing stop starts and improve visual amenity with green infrastructure
  - Zephyr Sensor Technology

Complete assessment of the validity of sensor technology. Then the authority plans to deploy the monitors tactically to evaluate projects, localities previously not assessed for PM and to evaluate impact from large changes to road network.

- Eastborough Green Screen

Install a Green Screen at Eastborough on the boundary of the School to contain road emissions from ring road

- Complete delivery of OLEV funded West Yorkshire Strategic Rapid Charger network for Taxi's and General public (17 Chargers within Kirklees)
- Complete updated WYLES document

Kirklees Council's priorities for the coming year are;

Directorate Priority;

- Improve Air Quality around Schools/Town Centres/AQMAs and increase knowledge about air quality and links with public health/active travel.

Other Air Quality team Priorities

- Continue to monitor the impact of COVID19, including lockdown and recovery
- Delivery of E.V Projects
- Finish Delivery of the Air Quality Capital Budgetary Projects

The 4 projects are targeted at AQMA's within the district that have recently been declared. The aim is to increase the reduction of NO<sub>2</sub> concentrations within these areas to be parable to the older 2 AQMA's.

Whilst the measures stated above and in Table 2.2 will help to contribute towards compliance, Kirklees Council anticipates that further additional measures not yet prescribed will be required in subsequent years to achieve compliance and enable the revocation of the councils current 9 AQMA's.



Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure	EU Category	EU Classification	Date Measure Introduced	Organisations involved	Funding Source	Key Performance Indicator	Reduction in Pollutant / Emission from Measure	Progress to Date	Estimated / Actual Completion Date	Comments / Barriers to implementation
G.1	Adoption of the West Yorkshire Low Emissions Strategy (WYLES)	Policy Guidance and Development Control	Low Emissions Strategy	2015	Kirklees Environmental Health	Air Quality Grant	<p>Kirklees Council Target; +Conclusions of WYLES benchmarking project demonstrating full compliance with WYLES Objectives</p> <p>Kirklees Council Target; Delivery of key WYLES objectives; Obj 2. Age of vehicles in bus fleet measured by; +Change in bus fleet composition towards newer Euro Cat Vehicles</p> <p>Obj 3. Electric Vehicle Uptake Measured by increase in the; +Number of newly registered E.V vehicles within Kirklees +Number of E.V's using charging Infrastructure +Number of Green Parking Permits issues within district</p> <p>Obj 4. ECO-Stars Freight Recognition Scheme Measured by increase in; +Number of operators signed up within the district +Number of fleet vehicles included</p>	NO2 & PM	complete	Ongoing	<p>Currently adopted within the authority and integrated into Kirklees Council policy and work instructions. This is a 10 year policy document, of which we are in year 4. Further plans outlined in action G.22 for a review of the documents and how they are used. Funding received from Air Quality Grant. Available at; <a href="https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/WYLES-strategy.pdf">https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/WYLES-strategy.pdf</a></p>

							<p>in the scheme +Number of Operators improving their ECO-Star scores after re-visits</p> <p>Obj 6. Taxi Fleet Improvements measured by; +increase in the number of licensed Hybrid / ULEV vehicles +reduction in the age of the vehicles licensed +reduction in number of diesel vehicles licensed</p>				
G.2	Kirklees Council - workplace Active travel	Promoting travel alternatives	Workplace Travel Planning	2018	Public Health	Council Budget	<p>West Yorkshire Target: +Sustainable travel mode increase from 36% in 2011 to 42% by 2026</p> <p>Kirklees Council Targets; +Increase cycling travel mode by 300% between 2018 baseline and 2030 +Increase walking travel mode by 20% between 2018 baseline and 2030</p> <p>Kirklees Council Measurable; +Number of employees using sustainable travel modes to commute to work.</p>	NO2 & PM	Active	2030	<p>Previously implemented in 2009. Frequency of review and the actual plans are currently under review to ensure they remain relevant and include changes in technology &amp; behaviour since previous iteration. Upon conclusion of the review, conclusions to be implemented and comms plan devised to promote actions within the plans. Once new plans have been adopted, ongoing regular review and promotion will be required to ensure this action is still relevant. Data for evaluation for this measure to be collected from Employee Travel Survey Results</p>
G.3	Kirklees Sustainable Travel to School Strategy	Promoting travel alternatives	School Travel Plans	2020	Public Health / Economy and Infrastructure	Council Budget	<p>West Yorkshire Target: +Sustainable travel mode increase from 36% in 2011 to 42% by 2026 Kirklees Council</p>	NO2 and PM	Active	Ongoing within schools	<p>Previously implemented in 2005. Committee set up to review the policy, construction process, pre-existing documents and implementation to</p>

							<p>Targets; +Increase cycling travel mode by 300% between 2018 baseline and 2030 +Increase walking travel mode by 20% between 2018 baseline and 2030</p> <p>Kirklees Council Measurable; +Number of employees using sustainable travel modes to commute to work.</p>				<p>reflect changes school operations, in technology and behaviour. Upon conclusion of the review, conclusions to be implemented and comms plan devised to promote actions within the plans. Currently under review. Once new plans have been adopted, ongoing regular review and promotion will be required to ensure this action is still relevant</p>
G.4	Bike-ability training provided to school children	Promoting travel alternatives	Promotion of cycling	2010	Kirklees Public Health	Council Budget	<p>Kirklees Council Targets; +Increase cycling travel mode by 300% between 2018 baseline and 2030</p> <p>Kirklees Council Measurable; + Number of children participating in scheme</p>	NO2 & PM	Active	Ongoing	<p>This scheme is an ongoing project to provide access and training to children on the use of cycling with the long term goals to promote cycling as a leisure activity and also a mode of transport</p> <p>on hold due to COVID-19</p>
G.5	City Cycle Grant	Promoting travel alternatives	Promotion of cycling	2016	Kirklees Public Health	Grant	<p>Kirklees Council Targets; + Continued use of the scheme, measured by grant uptake +Contributes to the wider target to increase cycling travel mode by 300% between 2018 baseline and 2030</p> <p>Kirklees Council Measurable; + Number of grant applications</p>	NO2 & PM	Active	Ongoing within the district	<p>This scheme is an ongoing project to provide assistance to funding purchases with the long term goals to promote cycling as a leisure activity and also a mode of transport</p>
G.6	Green Parking Permit allowing free parking for ULEV	Promoting Low Emission Transport	Priority parking for LEV's	2008	Kirklees Economy and Infrastructure	Council Budget	<p>Kirklees Council Targets; +Contributes to wider target to increase in percentage of ULEV registered</p>	NO2 & PM	Proposed	2019	<p>Currently this scheme is available for Kirklees residents and workers. This action is designed to reduce the cost of Electric</p>

	Vehicles within Council owned car parks.						vehicles within the district year on year in line with national average. + Contributes to wider target to meet the projected IMF target of 30% of registered cars within the district to be ULEV by 2027 + Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets.  Kirklees Measurable; + Number of ULEV vehicles registered within Kirklees District				Vehicles ownership and to increase the uptake of electric vehicle ownership within the domestic market. Looking to adopt 2020
G.7	Service level agreements across West Yorkshire for ULEV Parking permits to allow free parking across the region	Promoting Low Emission Transport	Priority parking for LEV's	2019	Kirklees Environmental Health	Estimated to be Council Budgets	Kirklees Council Targets; +Contributes to wider target to increase in percentage of ULEV registered vehicles within the district year on year in line with national average. + Contributes to wider target to meet the projected IMF target of 30% of registered cars within the district to be ULEV by 2027 + Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets.  Kirklees Measurable; + Number of	NO2 & PM	Concept	Ongoing within the district	Currently scheme G.6 is available for Kirklees residents and workers. This project is to expand on the Kirklees Scheme to improve viability for users who move across district boundaries within West Yorkshire. This action is designed to reduce the cost of Electric Vehicles ownership and to increase the uptake of electric vehicle ownership within the domestic market. Builds on the success of our own permitting system and to further promote ULEVs

							ULEV vehicles registered within Kirklees District				
G.8	City Car Club ran within Kirklees district	Alternatives to private vehicle use	Car Clubs	2009	Kirklees Economy and Resilience	3rd Party Business	Kirklees Council Measurables; + Number of members within the scheme + Number of car trips for Kirklees based cars	NO2 & PM	Active	Ongoing	City Car Club is currently available to local residents to use. The scheme reduces vehicle ownership while also providing access to a vehicle when required. Comms required to local residents
G.9	Finance & Promote Car Sharing Website	Promoting Travel Alternatives	Other	2007	Kirklees Economy and Infrastructure	Local Transport Plan	Kirklees Council Targets; + Increased membership on scheme + Increase number of car shares on system  Kirklees Council Measurables; + Number of members on the website + Number of users car sharing	NO2 & PM	Active	2019	Comms required around website Lessons learned study needed?
G.10	E.V Fleet Feasibility Study for council fleet	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2019	Kirklees Operational Service	Council Budget	Kirklees Council Targets; +Contributes to wider target to increase in percentage of ULEV registered vehicles within the district year on year in line with national average. + Contributes to wider target to meet the projected IMF target of 30% of registered cars within the district to be ULEV by 2027 + Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets. + Implementation	NO2 & PM	complete	Ongoing	Internal document, which will steer internal fleet purchasing options and help introduction of charging facilities at council depots. Delivery targets to be determined from outcome of survey. Prior to this study, 27 vehicles were identified to be converted to E.V and should be converted by 2021.

							of further recommendation from study upon completion  Kirklees Council Measurables; + Minimum of 27 diesel vehicles to be replaced by 2021 +Number of E.V vehicles within the council fleet				
G.11	Conversion of applicable council fleet to electric vehicles	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2019	Kirklees Operational Service	Council Budget	Kirklees Council Targets; +Contributes to wider target to increase in percentage of ULEV registered vehicles within the district year on year in line with national average. + Contributes to wider target to meet the projected IMF target of 30% of registered cars within the district to be ULEV by 2027 + Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets. + Implementation of further recommendation from study upon completion Kirklees Council Measurables; + Initial replacement of 27 diesel vehicles with E.V's by 2021	NO2 & PM	ongoing	Ongoing within the district	Delivery targets to be determined from outcome of survey outlined in measure G.10  Prior to the study outlined in G.10, 27 vehicles were identified to be converted to E.V and should be converted by 2021. 2018/19 3 EV Vans purchased 2018-21 Transport Capital budget has a commitment to purchase of 24 EV Vehicles.
G.12	Kirklees Bike to Work Scheme	Promoting Travel Alternatives	Promotion of cycling	2009	Kirklees Public Health	Council Budget	Kirklees Council Targets; + Continued use of the scheme, measured by grant uptake	NO2 & PM	Active	2019	This scheme is an ongoing project to provide assistance to funding purchases with the long term goals to promote

							+Contributes to the wider target to increase cycling travel mode by 300% between 2018 baseline and 2030  Kirklees Council Measurable; + Number of grant applications				cycling as a leisure activity and also a mode of transport.  Grant accessed to purchase 3 push bikes for staff Active travel in Kirklees Council. The grant continues to be promoted by West Yorkshire Combined Authority to workplaces in the Kirklees district. Due to COVID-19, system has yet be developed to make the bikes available to Kirklees Council staff
G.13	Update Kirklees Air Quality Strategy	Policy Guidance and Development Control	Other Policy	2018	Kirklees Environmental Health	Council Budget	Kirklees Council Measurable; + Adoption of new 5 year Action Plan	NO2 & PM	complete	Ongoing process	Kirklees Council originally adopted an Air Quality Strategy in 2006. This document has been updated to reflect technology, policy and scientific changes in the Air Quality Sector. This document is in conjunction with the action plan and reviewed periodically in line with Action Plan review process.
G.14	Assess planning applications in accordance with procedures in the WYLES Planning Guidance Document and require the relevant mitigation included on development	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2015	Kirklees Planning & Environmental Health	Council Budget	Kirklees Council Targets; +Assess all planning applications in accordance with WYLES Planning Guidance Document + Require developers to integrate air quality mitigation into developments according to size of building project  Kirklees Council Measurables; + Number of E.V chargers installed within new developments	NO2 & PM	Active	Ongoing	The Planning Guidance document is a key document contained within G.1. This document is currently used to assess all planning applications and integrated into Local Plan policy documents As such all planning applications will be assessed against the West Yorkshire Low Emission Strategy Planning Technical Guidance Document and mitigation requirements for each application will be determined according to criteria outlined within the

							+Section 106 contributions				aforementioned document. The planning guidance is available at; <a href="https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/WYLES-air-quality-and-emissions-planning-technical-guide.pdf">https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/WYLES-air-quality-and-emissions-planning-technical-guide.pdf</a> Currently reviewing the document
G.15	Create a Green Procurement Toolkit	Policy Guidance and Development Control	Sustainable Procurement Guidance	2019	Kirklees Procurement	Estimated to be Council Budgets	Kirklees Council Targets; + Integrate Air Quality as a consideration on all procurement exercises across Council + Creation of a Green Procurement Toolkit + Once created, number of procurement exercises assessed against the green procurement toolkit	NO2 & PM	Proposed	Ongoing within the district	The Green Procurement Toolkit is a key outcome from action G.1. A pre-requisite Procurement Guidance document was included part of the West Yorkshire Low Emission Strategy and is to be used to facilitate the creation of a toolkit that ensures a number of environmental impact is a key consideration in procurement exercises. WYLES contains green procurement. Does Kirklees want to develop its own and enhance CSR? is there a better way of assessing? WYLES Procurement Guidance Document is available at; <a href="https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/WYLES-procurement-guide.pdf">https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/WYLES-procurement-guide.pdf</a>
G.16	Subsidised Bus/Rail Card for Kirklees Council Staff	Promoting Travel Alternatives	Workplace Travel Planning	Pre 2006	Kirklees Operational Services	West Yorkshire Combined Authority Travel Plan Network	Kirklees Council Targets; + Increase in the number of short journeys using public transport + Reduction in number of low mileage journeys for grey & council fleet	NO2 & PM	Active	Ongoing within the Authority	The passes are made available in accordance with Council Travel plans, action G.2 and because the council is a member of the travel plan network available to businesses in the West Yorkshire



							Kirklees Council Measurable; + Number of Bus/Rail Card applications + Number of bookings of the company railcards + Number of trips taken in grey fleet or fleet vehicles that are 1mile or less				Region (see action G.43). As part of the travel plan network, discounted Bus/Rail Cards are available for Kirklees Council employees to purchase. The council also have company rail cards, allowing officers to use public transport in their duties as a council officer. This mode of transport is preferred for low millage trips or town centre meetings and is a primary tool to reduce the councils fleet emissions.
G.17	Kirklees Policy on Employee Transport (Employee Handbook)	Policy Guidance and Development Control	Other policy	2015	Kirklees Operational Services	Council Budget	+ Contribute to increase in the number of short journeys using public transport + Contribute to the reduction in number of low mileage journeys for grey & council fleet + Reduce grey fleet mileage + Increase ULEV Council Fleet Mileage year on year from baseline year 2020  Kirklees Council Measurables; +Number of grey fleet miles +Number of Fleet vehicle miles + Number of trips taken using bus/rail cards	NO2 & PM	Active	Ongoing Process as funding becomes available	This is the primary policy document to control employee travel both as part of their commute or within their working capacity. The document outlines best practice for travel options within the work place and also promotes alternative commute options in accordance with council travel plans, action G.2. As such, the document recommendations continue to be relevant and in accordance with the council's ambitions to reduce emissions. Advice contained within the document is to be integrated into a Comms Plan
G.18	Retro-fitting Applicable vehicles within the Bus Fleet with Emissions Abatement Equipment	Vehicle Fleet Efficiency	Vehicle Retrofitting programmes	2013 & 2018	West Yorkshire Combined Authority & Kirklees	Clean Bus Technology Fund	West Yorkshire Target; + 300 Buses Retrofitted with Exhaust abatement technology by Dec 2019	NO2 & PM	Active	2020	Bus fleets within the district are key for model shift and vehicle number controls at the AM and PM peaks. As such it is important that the bus fleet remains a transport

							Kirklees Council Measurables; +Number of buses Retro-fitted				option available to the public, but also does incorporate relevant technology to ensure lowest emissions possible. The Clean Bus Technology Fund provides financial incentive to private bus operators to continue to improve their own fleet. Therefore, the council will continue to seek funding within this sector to assist with a full conversion of all Euro V & Euro IV buses within the Kirklees district. Previously, through partnership working with West Yorkshire, we have achieved the following; 2013 - £1m CBTF retrofit of 119 School Buses. School buses were retrofitted in 2014/15 and branding added to sides of the buses to promote pollution reduction. 2018 - £4.1m CBTF plan to retrofit 300 Buses within WY.
G.19	Electric Vehicle Strategy	Policy Guidance and Development Control	Other policy	2019	Kirklees Environmental Health	Local Transport Plan	Kirklees Council Target; + Creation of an Electric Vehicle Strategy for the District by Dec 2020 +Contributes to wider target to increase in percentage of ULEV registered vehicles within the district year on year inline with national average. + Contributes to wider target to meet the projected IMF target of 30% of	NO2 & PM	Active	Ongoing within the district	Currently Kirklees Council have undertaken a number of E.V charging projects to install chargers and also run a green parking permit to reduce the cost of E.V ownership. The strategy is to be created to determine the infrastructure needs within the Kirklees District and to outline an approach to facilitate the move from the combustion engine towards Electric vehicle in both the

							<p>registered cars within the district to be ULEV by 2027</p> <p>+ Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets.</p> <p>Kirklees Council Measurable;</p> <p>+ Creation and adoption of Electric Vehicle Charging Strategy</p>				domestic and commercial sectors within the district
G.20	West Yorkshire ECO-Stars Scheme	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2016	Kirklees Environmental Health	Local Transport Plan	<p>Kirklees Council Targets;</p> <p>+ Year 2 target to get 30 new member for the West Yorkshire Scheme</p> <p>+ Year 2 target to re-assess 50% of year 1 members (25 re-assessments)</p> <p>Kirklees Council Measurables;</p> <p>+Number of operators signed up within the district</p> <p>+Number of fleet vehicles included in the scheme</p> <p>+Number of Operators improving their ECO-Star scores after re-visits</p>	NO2 & PM	Active	2020	<p>The West Yorkshire ECO-Stars Scheme is in its second year, providing free advice to Kirklees businesses on how to reduce cost, with the by-product of reducing emissions. This project is funded by the LTP and will the scheme will remain available to businesses while funding is available Current Status; Year 1 - 51 members Year 2 – Success of the scheme to be reviewed to assist with determining viability for Year 3 of Scheme</p> <p>Need to review outputs to understand benefits</p>
G.21	West Yorkshire Electric Vehicle Taxi Scheme	Promoting Low Emission Transport	Taxi emission incentives	2018	West Yorkshire Combined	OLEV Taxi Grant	<p>Kirklees Council Target;</p> <p>+Contributes to wider target to increase in percentage of ULEV registered vehicles within the district year on year in line with national average.</p> <p>+ Contributes to wider target to meet the</p>	NO2 & PM	Active	2021	<p>Currently Kirklees Council have undertaken a number of E.V charging projects to install chargers and also run a green parking permit to reduce the cost of E.V ownership. This project contributes towards the council's ambition towards Electric vehicle</p>

							<p>projected IMF target of 30% of registered cars within the district to be ULEV by 2027</p> <p>+ Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets.</p> <p>+ Implementation of further recommendation from study upon completion+increase in the number of licensed Hybrid / ULEV vehicles+reduction in the age of the vehicles licensed</p> <p>+reduction in number of diesel vehicles licensed+</p> <p>increase E.V Taxi charger network usage year on year</p> <p>Kirklees Council Measurables;</p> <p>+Installation of 17 Rapid Chargers within Kirklees District by March 2020</p> <p>+ Number of licensed Hybrid / ULEV vehicles</p> <p>+Number of vehicles 8 years or older</p>				<p>adoption in both the domestic and commercial sectors within the district</p> <p>Estimated installation of 34 Rapid Charging Bays within Kirklees. 17 Taxi Bays and 17 Public Bays</p>
G.22	West Yorkshire Low Emission Strategy Officer	Other	Other	2019	Kirklees Environmental Health	Air Quality Grant	<p>Kirklees Council Target;</p> <p>+Conclusions of WYLES benchmarking project demonstrating full compliance with WYLES Objectives</p> <p>Kirklees Council Target;</p>	NO2 & PM	Active	2019	<p>Further plans outlined in action G.22 for a review of the documents and how they are used. Funding received from Air Quality Grant.</p>

							<p>Delivery of key WYLES objectives;                  Obj 2. Age of vehicles in bus fleet                  Measured by;                  +Change in bus fleet composition towards newer Euro Cat Vehicles                  Obj 3. Electric Vehicle Uptake                  Measured by increase in the;                  +Number of newly registered E.V vehicles within Kirklees                  +Number of E.V's using charging Infrastructure                  +Number of Green Parking Permits issues within district                  Obj 4. ECO-Stars Freight Recognition Scheme                  Measured by increase in;                  +Number of operators signed up within the district                  +Number of fleet vehicles included in the scheme                  +Number of Operators improving their ECO-Star scores after re-visits                  Obj 6. Taxi Fleet Improvements                  Measured by;                  +increase in the number of licensed Hybrid / ULEV vehicles+reduction in the age of the vehicles                  licensed+reduction in number of diesel vehicles licensed</p>				
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G.23	Joint Strategic Assessment for Air Quality	Policy Guidance and Development Control	Other policy	2018	Kirklees Public Health	Council Budget	Kirklees Council Target; +Continued partnership working between Public Health and Environmental Health + Contribute to the delivery of work streams outlined in KJSA  Kirklees Council Measurables; + Adoption of the Strategy	NO2 & PM	complete	2031	Currently the strategy adopted within the authority and integrated into Kirklees Council policy and work instructions. This is a 10 year policy document, of which we are in year 4. Available at <a href="http://observatory.kirklees.gov.uk/jsna/airquality">http://observatory.kirklees.gov.uk/jsna/airquality</a>
G.24	Corporate Carbon Reduction Targets	Other	Other	2020-2021	Kirklees Economy and Infrastructure	Council Budget	Kirklees Council Target; + Reduction of 15,214t CO2 by 2021  Kirklees Council Measurables; + Tonnes of CO2 reduction per year	Primary Target: CO2	Active	2021	Kirklees Council has declared a Climate Emergency and in the process of constructing an action plan to achieve CO2 reduction goals. Prior to this Kirklees Council has been working towards CO2 targets outlined in target column. This is an ongoing process with aim of constant reduction, targets of which are subject to change as a result of Climate Emergency Board decisions.  2010 target of 40% reduction due to be reported on for 18/19 in 20 - sign off and publicity on hold due to CV19. Next reporting will be for net zero target. Air Quality and Carbon reduction have the shared aim of reducing emissions and Kirklees Council are committed to partnership working to reduce both pollutants rather than individual focus

G.25	West Yorkshire Energy Accelerator Project	other	other	TBC	Kirklees Economy and Infrastructure		West Yorkshire Target; + Estimated 590kt CO2 reduction focusing on high emission industrial sector  Kirklees Council Measurables; + Tonnes of CO2 reduction per year	Secondary reductions in NO2 & PM	Active	Once adopted, use of the SPD would be an ongoing activity	<p>Kirklees Council has declared a Climate Emergency and in the process of constructing an action plan to achieve CO2 reduction goals. This project will contribute towards achieving the targets set out in the Climate Emergency process. The project also has the potential to reduce industrial emissions covered in the Air Quality Objectives. Air Quality and Carbon reduction have the shared aim of reducing emissions and Kirklees Council are committed to partnership working to reduce both pollutants rather than individual focus.</p> <p>Currently a mechanism project which is at business case stage considering various options where funding could be spent. Has funding from the European Investment Bank - conditions attached and study funding can be redacted. Indicators will be sought upon selection of project identified in feasibility study</p>
G.26	Air Quality to be included in a relevant Supplementary Planning Guidance Document	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2020	Kirklees Planning & Environmental Health	Council Budget	Kirklees Council Targets; + Assess all planning applications in accordance with WYLES Planning Guidance Document + Require developers to	Primary Target: CO2 Secondary reductions in NO2 & PMNO2 & PM	Active	2021	<p>Once the Local Plan is accepted. Kirklees Council planning department to create SPD's. Environmental Health and Planning to work collaboratively to include a robust air quality section which</p>

							integrate air quality mitigation into developments according to size of building project  Kirklees Council Measurables; + Number of E.V chargers installed within new developments +Section 106 contributions				integrates the aims, process and mitigation options outlined in the WYLES Planning Guidance Document.
G.27	Trialling Hybrid and E.V Bin Wagon	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2020	Kirklees Commercial, Regulatory & Operational Services	Council Budget	Kirklees Council Target; + Determine the savings / issues around ULEV Bin Wagons +Promote findings within industry  Kirklees Council Measurables; + Report on trial impacts	NO2	In Waiting list for Bin Wagon	2019	Kirklees Council are currently on a waiting list to borrow a Dennis Eagle Electric Vehicle Bin Wagon and once acquired, will undertake assessment on real world bin routes to determine viability. Upon completion of the study, a report will be constructed and shared with other within the industry.
G.28	Feasibility Study on use of E.V Mobile Maintenance Equipment	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2019	Kirklees Commercial, Regulatory & Operational Services	Council Budget	Kirklees Council Target; + Determine cost savings of E.V M.M.E + Replace appropriate M.M.E with E.V equivalent +Promote findings within industry  Kirklees Council Measurables; + Construction of a report outlining viability of E.V M.M.E's + Number of M.M.E's replaced with E.V alternatives.	NO2 & PM	Active	Ongoing activity once implement	Internal document, which will steer purchasing options and help introduction of E.V M.M.E's. Delivery targets to be determined from outcome of survey.
G.29	Feasibility of delivery of Council Officer Car Lease Scheme and delivery	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2020	Kirklees Commercial, Regulatory & Operational Services	Estimated to be Council Budgets	Kirklees Council Target; + Determine the viability of a Council Officer Lease Scheme with built in ULEV promotionScheme	NO2 & PM	Proposed	2019	Collaborative working between Transport services and Environmental Health to determine viability of providing low emission transport to



	(limiting the available options by emission output)						<p>aim is to contribute to;</p> <p>+Contributes to wider target to increase in percentage of ULEV registered vehicles within the district year on year in line with national average.</p> <p>+ Contributes to wider target to meet the projected IMF target of 30% of registered cars within the district to be ULEV by 2027</p> <p>+ Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets.</p> <p>Kirklees Council's Measurables;</p> <p>+ Number of ULEV Car Leases</p>				employees within the local authority
G.30	Grey Fleet Telematics Trial	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2018	Kirklees Commercial, Regulatory & Operational Services	Council Budget	<p>Kirklees Council Targets;</p> <p>+Reduce number of grey fleet miles for the council year on year. Baseline year is year prior to introduction of telematics system</p> <p>+Contribute to increase in the number of short journeys using public transport</p> <p>+ Reduce grey fleet mileage+</p> <p>Increase ULEV Council Fleet Mileage year on year from baseline year 2020</p> <p>Kirklees Council Measurables;</p> <p>+ Number of</p>	NO2 & PM	Active Trial	Ongoing within the district	<p>Currently trialling a dongle that plugs into the vehicle cigarette lighter port and track via GPS and reports to an app. Initially used to data gather and support future projects to reduce grey millage fleet miles. Analysis of the data will allow the authority to identify short journeys and potentially promote use of public transport</p>

							vehicle miles + Number of grey mile trips + Number of service car trips				
G.31	Master naught Telematics System	Vehicle Fleet Efficiency	Other	2017	Kirklees Commercial, Regulatory & Operational Services	Council Budget	Kirklees Council Targets; +Reduction in number of Driver accidents year on year +Reduction in number of speeding / unsafe driving reports year on year +Identify appropriate targeted driver training for safe and eco driving  Kirklees Council Measurables; + Number of speeding exceedances +Number of heavy breaking events	NO2 & PM	Active	2019	Use of the Master naught data allows the Authority to promotes better driving and has already shown a reduction in fleet miles and fuel consumption. Further use of the telematics system can be used for identifying training needs. As such, use of the telematics system is an ongoing process within the lifespan of this action plan.
G.32	Pool Bike Feasibility Study	Promoting Travel Alternatives	Promotion of cycling	2019	Kirklees Public Health	Council Budget	Kirklees Council Targets; +Assess pool bike usage +Determine barriers of pool bike system +Promote pool bikes + Contributes to the reduction in number of low mileage journeys for grey & council fleet +Contributes to the wider target to increase cycling travel mode by 300% between 2018 baseline and 2030  Kirklees Council Measurables; + Number of pool bike bookings +Number of miles undertaken on pool bike	NO2 & PM	Active	2019	Kirklees Council public health have set up a pilot project of pool bikes to promote model shift option for shorter journeys. Exploring the viability of pool bike usage as part of a council fleet  Kirklees Active Travel Staff Group established prior to COVID-19 to develop feasibility of pool bike implementation. Public Health engaged with third sector provider to explore options for establishing a pool bike library/ bike loan library, bike training and bike maintenance service for Kirklees Council and extend to other anchor organisations /businesses

G.33	Robust Travel Survey to determine better travel plans internally	Other	Other	2019	Kirklees Public Health	Council Budget	Kirklees Council Targets; + Increase the number of completed travel surveys year on year +Collect relevant data to assists with decision making process  Kirklees Council Measurables; + Number of Travel Survey responses + Yearly report on results of travel survey	NO2 & PM	Active	2021	Kirklees Council Internal travel survey for all council employees to help better inform further decision making and influence future projects
G.34	Installation of pollution sensor technology within our AQMA's in conjunction with recognised monitoring to demonstrate validity of new devices	Traffic Management	Other	2019	Kirklees Council UTC & Environmental Health	Council Budget	Kirklees Council Targets; + Create a report analysing the validity of sensor technology +Analyse cost effectiveness of sensors when measured against existing monitoring tools +Improve accuracy of current AQ monitoring network  Kirklees Council Measurables; + Report outlining the issues relating to Sensor Technology	NO2 & PM	Active	2024	This study will be used as part of a rationalisation project to provide the most accurate, cost effective monitoring network to assist the council to safeguard residents and the environment
G.35	Engagement within the district with regional plans on alternative Low Emission Fuel Sources	Promoting Low Emission Plant	Other measure for low emission fuels for stationary and mobile sources	2020	Kirklees Environmental Health	Council Budget	West Yorkshire Target; + Contribute towards regional low emission fuel source projects currently in development	NO2 & PM	Active	Ongoing	Ongoing regional work exploring introduction of low emission fuel sources into West Yorkshire This is a future project currently going through project planning phase  Kirklees are engaged fully with WYCA LCR Energy Strategy and delivery plan Regional engagement

											thorough WY Green Economy Officers Group WY Carbon Reduction Pathways Project - pathways to net zero target.
G.36	Review how Environmental Health delivers regulatory requirements of the Clean Air Act	Policy Guidance and Development Control	Other policy	2020	Kirklees Environmental Health	Council Budget	Kirklees Council Targets; + Reduce number of burning / smoking chimney complaints+Increased business engagement +Integrate new Clean Air Act into Kirklees Council work procedures  Kirklees Council Measurables; + Number of complaints Smoking Chimney Complaints to Environmental Health	NO2 & PM	Proposed	2030	Kirklees District is currently a smoke control area and investigates complaints & enforces where required.The process will be reviewed to put the council in a good position for future changes to solid fuel legislation. This process is an ongoing iterative process and planned changes to the Clean Air Act will need to be included into future working practices. As such, completion of this action is reliant on the adoption of the new Clean Air Act, which currently does not have a deadline date.
G.37	Implementation of the Medium Combustion Plant Directive through the planning process	Promoting Low Emission Plant	Other measure for low emission fuels for stationary and mobile sources	2018	Kirklees Environmental Health / Environment Agency	Environment Agency / Council budgets	Kirklees Council Target; + All plant meeting directive to be registered with relevant authority + Signpost relevant businesses of directive at development control stage  Kirklees Council Measurables; + Number of permits issued within the district	PM	Active	2020	Kirklees Council to work with Environment Agency to discharge requirements of the Medium Combustion Plan Directive staggered process
G.38	Zoning project to identify errant PPC businesses	Other	Other	2019	Kirklees Environmental Health	Council Budget	Kirklees Council Targets; + Permit all relevant businesses in accordance with the PPC	NO2 & PM	Proposed	Active	Kirklees Council routinely inspects businesses requiring permits as prescribed in the Pollution Prevention and Control Regulations.

							Regulations. Kirklees Council Measurables; + Number of errant PPC businesses identified + Number of areas assessed				This measure is a piece of work that aims to identify businesses that require permits, but currently do not possess one.
G39	Kirklees Walking and Cycling Strategic Framework	Promoting Travel Alternatives	Promotion of walking	2030	Public Health	Council Budget	West Yorkshire Target: +Sustainable travel mode increase from 36% in 2011 to 42% by 2026  Kirklees Council Targets; +Increase cycling travel mode by 300% between 2018 baseline and 2030 +Increase walking travel mode by 20% between 2018 baseline and 2030 + Increase in number of coaches, leaders & volunteers + Improvement in communication with public.  Kirklees Council Measurables; +Creation of a policy document around Walking and Cycling	NO2 & PM	Proposed	Ongoing	<p>This is a policy document to outline the council's ambition to promote walking and cycling and also contain a number of measures to assist in achieving the aim. This policy document is currently under construction and once completed will be the primary policy framework for delivering walking and cycling.</p> <p>Therefore, upon adoption, use of this document will be an ongoing process.</p> <p>Public Health working with internal and external stakeholders to develop place based walking and cycling behaviour change interventions in formal and informal settings. Actions and outcomes will need to be reviewed in the context of COVID-19</p>
G.40	Kirklees Neighbourhood Housing Solid Fuel Policy	Policy Guidance and Development Control	Other policy	2018	Kirklees Neighbourhood Housing	KnH Budget	Kirklees Council Targets; + Prohibit installation of solid fuel stoves +Educate residents on the policy  Kirklees Council Measurables; +Number of Solid Fuel Stoves within KnH properties	NO2 & PM	Active	Ongoing	<p>Policy prohibits installation of solid fuel stoves.</p> <p>Chimneys are blocked up when gas fires are removed in order to prevent solid fuel use. Completion date has been set as ongoing because of the continuous nature of the action.</p>

G.41	West Yorkshire Travel Plan Network	Policy Guidance and Development Control	Other policy	2016	West Yorkshire Combined Authority	West Yorkshire Combined Authority Budget	West Yorkshire Targets; +Sustainable travel mode increase from 36% in 2011 to 42% by 2026 +Increase number of local businesses registered as members  Kirklees Council Measurables; + Number of Kirklees businesses that are members of the Travel Plan Network	NO2 & PM	Active	Ongoing review process of strategy as funding becomes available	West Yorkshire Travel Plan network visit local businesses and assist with improving employee travel option and promote modal shift. Revisits and frequent promotions to members of the network once assessment has been conducted. AQMA areas are a priority for business engagement. Completion date has been set as ongoing because of the continuous nature of the action. This project is a continuous, though subject to funding requirements.
G.42	Development of a Comms Strategy to promote air quality, modal shift and successful emission reduction projects	Public Information	Other	2019	Kirklees Environmental Health Kirklees Communications and Marketing	Estimated to be Council Budgets	Kirklees Council Targets; +Creation of a Comms Strategy for AQ, incorporating joint messages for Green Streets, Public Health, Carbon Reduction and other linked work streams  Kirklees Council Measurables; +Strategy document outlining plans to promote Air Quality +Number of promotion activities	NO2 & PM	on hold	Ongoing	Once the strategy is developed, further targets can be formulated to measure the success of promoting air quality within the district. More costly methods of promotion may not be viable at time on inception, but can be considered as funding becomes available.
G.43	Collaborative working with NHS Trusts within District	Other	Other	2019	Kirklees Environmental Health NHS Trusts	Council Budget	Kirklees Council Targets; + Set up liaison program with NHS Trusts + Increase number of linked work streams with NHS Trusts	NO2 & PM	Active	Ongoing	Kirklees Council has 2 NHS Trust, Mid Yorkshire and Huddersfield Calderdale Trust. As a key partner in the district the council will work with them to promote / deliver low emission projects and policy Require a continued

											engagement programme
G.44	Collaborative working with University of Huddersfield	Other	Other	2019	Kirklees Environmental Health University of Huddersfield	Council Budget	Kirklees Council Targets; + Increase number of linked work streams with Huddersfield University	NO2 & PM	Active	Ongoing	Kirklees Council has already begun to develop a number of projects with the university. As a key partner in the district the council will continue to work with them to promote / deliver low emission projects and policy Require a continued engagement programme
G.45	Collaborative working with Commercial Bus Companies within the district	Other	Other	2019	Kirklees Environmental Health WYCA Local Bus Companies	Council Budget	Kirklees Council Targets; + Set up liaison program with Bus Companies + Increase number of linked work streams with Bus Companies	NO2 & PM	Active	Ongoing	Kirklees Council has already begun to develop a number of projects with the bus partners and the combined authority. As a key partner in the district the council will continue to work with them to promote / deliver low emission projects and policy Require a continued engagement programme
G.46	Collaborative working with Highways England	Other	Other	2019	Kirklees Environmental Health Highways England	Council Budget	Kirklees Council Targets; + Set up liaison program with Highways England + Increase number of linked work streams with Highways England	NO2 & PM	Active	Ongoing	As a key partner in the district the council will work with them to promote / deliver low emission projects and policy Require a continued engagement programme
G.47	De-centralised Energy Use	policy Guidance and Development Control	Other policy	TBC	Kirklees Economy and Infrastructure	Source of funding to be confirmed	Kirklees Council Targets; +Contribute towards targets set by Climate Emergency Work Group  Kirklees Council Measurables; + CO2 reductions	NO2 & PM	Active	TBC	The plan for this project is to undertake studies into future energy needs and how decentralised energy supply will impact on emissions.  This is a principle as opposed to a project, eg HEAT Network is one project, longer term we need to move to local energy

											sources rather than on the grid and another could be new housing developments getting their energy from ground source heat pumps. Working with planners to include details in their SPD.
G.48	Smart Systems to manage energy use within Local Authority Buildings	Promoting Low Emission Plant	Public Procurement of stationary combustion sources	TBC	Kirklees Economy and Infrastructure	Source of funding to be confirmed	Kirklees Council Targets; +Contribute towards targets set by Climate Emergency Work Group Kirklees Council Measurable; + CO2 Reductions	Primary Target: CO2	Active	TBC	The plan for this project is to integrate smart technology into council buildings to reduce energy usage. This is a future project currently going through project planning phase.  Have Building Energy Management systems in all corporate buildings - needs funding for someone to manage - should be self financing.
G.49	Study the impact of Green Infrastructure	Other	Other	TBC	Kirklees Environmental Health	Local Transport Plan	Kirklees Council Target; +To assess the validity of the use of vegetation as a mitigation solution +To determine the best vegetation to reduce air pollution +To assess cost effectiveness of Green Infrastructure +Promote findings within industry  Kirklees Council Measurables; + Report determining the impact of Green Infrastructure	Primary Target: CO2	Active	TBC	Planning Stage begun in 2020 to work in partnership with West Yorkshir. The plan for this project is to undertake a study looking into different vegetation and the impact of green screening along roadsides. This project includes analysing the viability of Moss Trees. This is a future project currently going through project planning phase
G.50	Generate a pollutions based calculation similar to that currently	Other	Other	TBC	Kirklees Economy and Infrastructure	Source of funding to be confirmed	Kirklees Council Target; + Aim to create a simple calculation which will allow the organisation to determine	NO2 & PM	Proposed	TBC	The plan for this project is to create an easier process for calculating emission impacts from projects and schemes. WYCA carbon impact



	used in carbon reduction calculations						theoretical NO2 / PM10 concentration , which in turn allows firms to set targets similar to Carbon system  Kirklees Council Measureable; + Creation of an easier system for calculating emission impact				methodology is being developed - should standardise the calculation for transport schemes. Aim for compatible methodology to be used or all emissions.
G.51	Research gathering to inform development of neighbourhood plans as part of Local Plan integration	Other	Other	TBC	Kirklees Planning	Source of funding to be confirmed	Kirklees Council Targets; + Collected dataset of a quality that allows informed development control decisions to be made.  Kirklees Council Measurable; + Report containing data to inform neighbourhood plans	NO2 & PM	Proposed	TBC	The plan for this project is to collect data that can be used to inform the development of the Council's neighbourhood plans This is a future project currently going through project planning phase
G.52	Development Clusters Research and Solution Systems	Other	Other	TBC	Kirklees Planning	Source of funding to be confirmed	Kirklees Council Targets; + To collect a dataset of a quality that allows informed development control decisions to be made.  Kirklees Council Measureable; + Report containing quality dataset	NO2 & PM	Proposed	TBC	The plan for this project is to collect data that can be used to inform the development of the Council's Development Clusters This is a future project currently going through project planning phase.  Require Environmental Health to propose schemes/clusters so they can be evaluated and an SPD drawn up to enable the funding to be drawn from the planning process
G.53	Feasibility Study of current Traffic Model and identify	Traffic Management	Other	TBC	Kirklees Economy and Infrastructure	Source of funding to be confirmed	Kirklees Council Targets; + Use outcomes from feasibility study to identify other highways	NO2 & PM	Proposed	TBC	The plan for this project is to review the traffic model, validate and make improvements where required.

	further highways improvement projects						improvement projects within the district.  Kirklees Council Measurable; + Report outlining the validity and potential improvements to current traffic model				This is a future project currently going through project planning phase.  Linked to developing a forward plan of schemes. Intention to form part of Kirklees transport strategy
G.54	Voluntary Clean Air Zone Feasibility Study	Policy Guidance and Development Control	Low Emissions Strategy	TBC	Kirklees Environmental Health	Source of funding to be confirmed	Kirklees Council Targets; + Full cost analysis measured against impact of implementing non-charging clean air zone.  Kirklees Council Measurable; + Report outlining viability of non-charging clean air zone.	NO2 & PM	Proposed	TBC	The plan for this project is to undertake a feasibility assessment to determine the costs and impacts of both a Chargeable and Non-Charging Clean Air Zone. This is a future project currently going through project planning phase
G.55	Study into the impact of topography onto clean bus technology	Traffic management	Other	TBC	Kirklees Environmental Health	Source of funding to be confirmed	Kirklees Council Targets; + Determine the best bus technology to utilise within the district + Promote findings within industry  Kirklees Council Measurable; + Report demonstrating the most appropriate bus technology to deliver a cost effective low emission service within a district with hilly topography	NO2 & PM	Proposed	TBC	The plan for this project is to undertake a research project that looks into the impact topography on ULEV Bus Technology. This is a future project currently going through project planning phase
G.56	Project to engage with public on solid fuel regarding compliance into UK	Public Information	Other	TBC	Kirklees Environmental Health	Source of funding to be confirmed	Kirklees Council Targets; + Reduce number of burning / smoking chimney complaints + Increased business	NO2 & PM	Proposed	TBC	The plan for this project is to devise and run a comms project for both the domestic and commercial sector to promote clean air and smokeless solid fuel practices.

	Clean Air Strategy						engagement +Reduction in particulate associated with solid fuel  Kirklees Council Measurable; + Number of smoking chimney complaints				This is a future project currently going through project planning phase
G.57	Feasibility study into changing internal governance and decision making to further incorporate air quality	Policy Guidance and Development Control	Other	TBC	Kirklees Environmental Health	Source of funding to be confirmed	Kirklees Council Targets; + Use outcomes from feasibility study to identify policy to integrate AQ within.  Kirklees Council Measurable: + Report outlining the validity and potential improvements to current policy to incorporate AQ in decision making	NO2 & PM	Proposed	TBC	The plan for this project is to undertake an assessment of council working practices and identify areas where improvement could reduce emissions and benefit air quality. This is a future project currently going through project planning phase
G.58	Feasibility Study into On street electric vehicle charging solutions	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	TBC	Environmental Health	Source of funding to be confirmed	Kirklees Council Targets; +Contributes to wider target to increase in percentage of ULEV registered vehicles within the district year on year in line with national average. + Contributes to wider target to meet the projected IMF target of 30% of registered cars within the district to be ULEV by 2027 + Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets.  Kirklees Council Measurable; + Report outlining	NO2 & PM	Active	TBC	The plan for this project is to undertake an assessment of current E.V infrastructure and devise a funding plan for delivery for future infrastructure. This is a future project currently going through project planning phase

							the viable solutions to provide charging to properties without off-street parking				
G.59	Creation of a delivery plan for Kirklees EV Charging	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2020	Kirklees Environmental Health	Local Transport Plan	<p>Kirklees Council Targets;          +Contributes to wider target to increase in percentage of ULEV registered vehicles within the district year on year in line with national average.          + Contributes to wider target to meet the projected IMF target of 30% of registered cars within the district to be ULEV by 2027          + Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets.</p> <p>Kirklees Council Measurable:          + Report outlining the a delivery plan to providing charging network across the district to meet future needs</p>	NO2 & PM	Active	2021	The plan for this project is to undertake an assessment of current E.V infrastructure and devise a funding plan for delivery for future infrastructure. This is a future project currently going through project planning phase
G.60	Provision of EV Charging in all communities of Kirklees	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	TBC	Kirklees Environmental Health	Council Budget	<p>Kirklees Council Targets;          + Each council ward to have an even spread of charging network per head of population          +Contributes to wider target to increase in percentage of ULEV registered vehicles within the district year on year in line with</p>	NO2 & PM	Active	2021	The plan for this project is to provide charging to each council ward to meet ULEV demands. This is a future project currently going through project planning phase - have £1m allocated as part of Climate Emergency

							<p>national average.                  + Contributes to wider target to meet the projected IMF target of 30% of registered cars within the district to be ULEV by 2027                  + Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets.</p> <p>Kirklees Council Measurable;                  + Number of chargers in each ward</p>				
G.61	<p>Improvements to the Cycling Network, linking all the Kirklees Towns and with neighbouring districts</p>	<p>Transport Planning and Infrastructure</p>	<p>Cycle network</p>	<p>TBC</p>	<p>Kirklees Economy and Infrastructure</p>	<p>Source of funding to be confirmed</p>	<p>West Yorkshire Target: Contribute to;                  + Sustainable travel mode increase from 36% in 2011 to 42% by 2026</p> <p>Kirklees Council Targets;                  + Improve pre-existing walking / cycling facilities within district                  + Connect local towns and neighbouring districts with improved cycling and walking facilities                  + Increase cycling travel mode by 300% between 2018 baseline and 2030                  + Increase walking travel mode by 20% between 2018 baseline and 2030                  + Improvement in facilities across the district for cycling and clear</p>	<p>NO2 &amp; PM</p>	<p>Proposed</p>	<p>TBC</p>	<p>The plan for this project is to maintain the current cycling infrastructure and identify where there are gaps between cycle only routes between the major Kirklees towns. Where towns are not connected, this project aim is to connect them with cycle only infrastructure. This is a future project currently going through project planning phase</p>

							links between all towns within the district.  Kirklees Council Measurable; +Number of towns connected by cycle network				
G.62	Use of Technology and publicity to incentivise and increase Active travel during commute and business activities	Public Information	Other	TBC	Kirklees Public Health Environmental Health Transport University of Huddersfield	Source of funding to be confirmed	Kirklees Council Targets; +Development of an App to collect data and recommend appropriate methods of transport Contribute towards; +Increase cycling travel mode by 300% between 2018 baseline and 2030 +Increase walking travel mode by 20% between 2018 baseline and 2030.  West Yorkshire Target: +Sustainable travel mode increase from 36% in 2011 to 42% by 2026.  Kirklees Council Measurables; +Creation of an App promoting model shift +Number of journeys made by walking / cycling	NO2 & PM	Proposed	TBC	The plan for this project is to work with Huddersfield University and a 3rd party company to develop an app that monitors travel and recommend mode of transport. This is a future project currently going through project planning phase. Partnership with Huddersfield University.  The bid was never submitted to develop this app. A business partner was needed - couldn't get one in time.
G.63	Project to promote and incentivise working at home to reduce commuter miles	Promoting Travel Alternatives	Encourage / Facilitate home-working	TBC	Kirklees Council Environmental Health	Source of funding to be confirmed	West Yorkshire Target: +Sustainable travel mode increase from 36% in 2011 to 42% by 2026  Kirklees Council Targets; +Alter modern way of working and reduction in	NO2 & PM	Proposed	TBC	The plan for this project is to run a comm project to promote working from home, both within the council and for 3rd party companies. This is a future project currently going through project planning phase. Project would

							<p>commuter miles                      +Support business to operate in a modern way                      +Promote best practice currently being adopted within Kirklees Council</p> <p>Kirklees Council Measurable;                      + Number of walking / cycling trips</p>				<p>promote to companies the benefits of working from home, with the added benefit of emissions reduction.</p>
G.64	<p>E.V research project to identify appropriate demographics and locations within the district.</p>	Promoting Low Emission Transport	Promoting Low Emission Transport	TBC	Kirklees Environmental Health & Public Health	Local Transport Plan	<p>Kirklees Council Targets;                      + Report outlining the best focus for council delivery plan to providing charging network across the district to meet future needs                      +Contributes to wider target to increase in percentage of ULEV registered vehicles within the district year on year in line with national average.                      + Contributes to wider target to meet the projected IMF target of 30% of registered cars within the district to be ULEV by 2027                      + Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets.</p> <p>Kirklees Council Measurable;                      +Report outlining demand for ULEV within the district</p>	NO2 & PM	Active	2021	<p>The piece of work would involve engaging with the community and looking at purchasing trends to identify the E.V market better and would be used to help inform E.V strategy and infrastructure projects.                      The plan for this project is to conduct research into the demand for ULEVS within the district to better inform delivery of infrastructure.                      This is a future project currently going through project planning phase.</p>

G.65	Feasibility study into the integration of National and Local UTMC	Traffic Management	UTC, Congestion management, traffic reduction	TBC	Kirklees UTMC & Highways England	Source of funding to be confirmed	Kirklees Council Targets; + Linked UTMC system between HE and Kirklees Council systems +Improved Journey Times +Improved Road user experience  Kirklees Council Measurable; +Report outlining requirements to integrate HE UTMC and Kirklees UTMC	NO2 & PM	Proposed	TBC	Project will look at the feasibility of integrating local and national UTMC, which would allow for whole network reactivity during traffic events. This is a future project currently going through project planning phase
G.66	Feasibility study into the use of anti-idling measures as a control on emissions, giving focus to areas of poor air quality	Traffic Management	Other	TBC	Environmental Health	Council Budget	Kirklees Council Target; +To assess the validity of the use of anti-idling as a mitigation solution +To determine the best / appropriate locations for anti-idling +To assess cost effectiveness of anti-idling enforcement +Creation of a report determining the impact of anti-idling +Promote findings within industry  Kirklees Council Measurable; + Report outlining feasibility of anti-idling measures within the district	NO2 & PM	Active	2021	Following updates to the legislation from the Environment Bill to undertake feasibility study into the introduction of anti-idling, prioritising areas where there is evidence, through monitoring, there are air quality problems.
G.67	E.V Salary Sacrifice Scheme	Promoting Low Emission Transport	Other	2020	Environmental Health	Council Budget	Kirklees Council Targets; +Contributes to wider target to increase in percentage of ULEV registered vehicles within the district year on year in line with national average. + Contributes to wider target to meet the	NO2 & PM	Active	2021	Provide affordable E.V's to council staff to benefit grey fleet and domestic traffic



							<p>projected IMF target of 30% of registered cars within the district to be ULEV by 2027                  + Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets.</p> <p>Kirklees Measurable;                  + Number of ULEV vehicles registered within Kirklees District                  +Reduce Council's Grey Fleet Emissions</p>				
G.68	£1million E.V Infrastructure Project	Transport Planning and Infrastructure	Other	2020	Environmental Health	Council Budget	<p>Kirklees Council Targets;                  + Each council ward to have an even spread of charging network per head of population                  +Contributes to wider target to increase in percentage of ULEV registered vehicles within the district year on year in line with national average.                  + Contributes to wider target to meet the projected IMF target of 30% of registered cars within the district to be ULEV by 2027                  + Contributes to wider target for 100% car sales to be ULEV's within by 2040 in line with national government targets.</p> <p>Kirklees Council</p>	NO2 & PM	Active	2022	Install E.V charging infrastructure at strategic locations to promote uptake of E.V

							Measurable; + Number of chargers in each ward				
AQMA1.1	Install Split Cycle Offset Optimisation technique (SCOOT) Traffic Management System within AQMA 1	Traffic Management	UTC, Congestion management, traffic reduction	2013	Kirklees Highways UTC	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Complete	2013	Reduction of pollutants in AQMA 1 of 12ug/m3 and given rise to further works to improve the system. This was stage 1 of a multi stage improvement project with the aim to reduce emissions through the use of technology to improve flow at junctions. Other stages of the project are discussed in actions AQMA.1.3 and P.9
AQMA1.2	Feasibility Study to Alter SCOOT to incorporate actual Air Quality pollution levels	Traffic Management	UTC, Congestion management, traffic reduction	2017	Kirklees Highways UTC	Council Budget	Kirklees Council Targets; + Report outlining impact of integrating monitors into UTMC system. Looking at cost, flowtimes and pollutant reduction +Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Complete	2017	This project was a pre-requisite for the development of project AQMA.1.3 and resulted in collaborative working with our business partners to develop a virtual emissions model to improve UTMC.
AQMA1.3	Kirklees "Virtual Emissions Monitoring Project" to rationale SCOOT system	Traffic Management	UTC, Congestion management, traffic reduction	2018	Kirklees Highways UTC / 3rd Party Partner	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased	NO2 & PM	complete	2019	Stage 2 of a multi stage Air Quality UTMC improvement project. Stage 3 contained within P.9 and awaiting funding

							efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times				
AQMA1.4	Cooper Bridge Road Improvements Project	Traffic Management	Other	2021	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Increased capacity on the road + Redistribution of vehicles on network  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2021	The project is a highways improvement scheme within the AQMA and is currently at outline Business Case Stage
AQMA1.5	Resource Smart Corridor	Traffic Management	UTC, Congestion management, traffic reduction	2020	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Increased capacity on the road + Redistribution of vehicles on network  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2021	The project is a highways improvement scheme within the AQMA and is currently at Business Case Stage
AQMA1.6	Kirklees Northern Orbital Route	Traffic Management	UTC, Congestion management, traffic reduction	No date set	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Increased capacity on the road + Redistribution of	NO2 & PM	Concept	TBC	The project is a highways improvement scheme within the AQMA and is a future project currently going through project planning phase

							vehicles on network + Bypass current road network and remove traffic from close proximity to residential properties  Kirklees Council Measurable; + Average road speed +AM/PM Queue times				
AQMA1.7	Trial of Smart UTMC Technology systems within relevant AQMA's	Traffic Management	UTC, Congestion management, traffic reduction	2021	Kirklees Environmental Health / UTC	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2022	The project is a Traffic Light improvement scheme within the AQMA and is a future project currently going through project planning phase
AQMA2.1	A640 Road improvements (Mirfield to Dewsbury)	Traffic Management	UTC, Congestion management, traffic reduction	Estimated >2021	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Increased capacity on the road + Redistribution of vehicles on network Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Concept	TBC	The project is a highways improvement scheme within the AQMA and is at very early stages. Pre outline business case stage
AQMA2.2	Program of Deep Cleaning to Paths and Road within the AQMA	Traffic Management	UTC, Congestion management, traffic reduction	2014	Kirklees Environmental Health	Council Budget	Kirklees Council Target; + Keep exceedance of daily PM10 below daily AQO	Short Term PM10 Exceedances	Active	Ongoing	AQMA now compliant after this measure was put into place. Number of exceedance days fell from 36 to 6.

							Kirklees Council Measurable; + Daily Exceedances of PM10				
AQMA2.3	Extension of Ravensthorpe Train Station	Alternatives to private vehicle use	Other	2018	West Yorkshire Combined Authority	Central Transport Fund	West Yorkshire Targets; + Increased services to train station + Increase in patronage  Kirklees Council Measurable; + Number of passengers using Ravensthorpe Station + Number of services stopping at Ravensthorpe Station	NO2 & PM	complete	2019	The project is a Network Rail improvement scheme within the AQMA and is at delivery stage
AQMA2.4	Kirklees "Virtual Emissions Monitoring Project" to rationalise SCOOT system	Traffic Management	UTC, Congestion management, traffic reduction	Estimated 2020	Kirklees Highways UTC / 3rd Party Partner	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed + AM/PM Queue times	NO2 & PM	Active	2021	Stage 2 of a multi stage Air Quality UTMC improvement project. Stage 3 contained within P.9 and awaiting funding
AQMA2.5	Kirklees Northern Orbital Route	Traffic Management	UTC, Congestion management, traffic reduction	No date set	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Increased capacity on the road + Redistribution of vehicles on network + Bypass current road network and remove traffic from close	NO2 & PM	Concept	TBC	The project is a highways improvement scheme within the AQMA and is a future project currently going through project planning phase

							proximity to residential properties  Kirklees Council Measurable; + Average road speed +AM/PM Queue times				
AQMA2.6	Trial of Smart UTM Technology systems within relevant AQMA's	Traffic Management	UTC, Congestion management, traffic reduction	2021	Kirklees Environmental Health / UTC	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2022	The project is a Traffic Light improvement scheme within the AQMA and is a future project currently going through project planning phase
AQMA3.1	A629 Road improvements as part of Halifax to Huddersfield Road Scheme	Traffic Management	UTC, Congestion management, traffic reduction	2020	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Increased capacity on the road + Redistribution of vehicles on network  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2021	The project is a highways improvement scheme within the AQMA and is currently at Business Case Stage
AQMA3.2	Assessment of Cycling Infrastructure between Ainley Top and Huddersfield Town Centre	Promoting Travel Alternatives	Promotion of cycling	2020	Kirklees Economy and Infrastructure	Central Transport Fund	West Yorkshire Target: Contribute to; +Sustainable travel mode increase from 36% in 2011 to 42% by 2026  Kirklees Council Targets; Contribute to;	NO2 & PM	Active	2021	The project is a cycling / highways improvement scheme within the AQMA and is currently at Business Case Stage

							<p>+ Connect local towns and neighbouring districts with improved cycling and walking facilities</p> <p>+Increase cycling travel mode by 300% between 2018 baseline and 2030</p> <p>+Increase walking travel mode by 20% between 2018 baseline and 2030</p> <p>Improvement in facilities across the district for cycling and clear links between all towns within the district</p> <p>Kirklees Council Measurable;</p> <p>+ Construction of new Cycling Infrastructure within the district</p>				
AQMA3.3	Feasibility into the development of System Activated Planned Cycles	Promoting Travel Alternatives	Promotion of cycling	No set date	Kirklees UTC	Estimated to be Council Budgets	<p>West Yorkshire Target:</p> <p>Contribute to;</p> <p>+Sustainable travel mode increase from 36% in 2011 to 42% by 2026</p> <p>Kirklees Council Targets;</p> <p>Contribute to;</p> <p>+ Connect local towns and neighbouring districts with improved cycling and walking facilities</p> <p>+Increase cycling travel mode by 300% between 2018 baseline and 2030</p> <p>+Increase walking travel mode by 20% between 2018 baseline and 2030</p>	NO2 & PM	Concept	TBC	The project is a UTMC improvement scheme within the AQMA and is a future project currently going through project planning phase

							Improvement in facilities across the district for cycling and clear links between all towns within the district  Kirklees Council Measurable; + Average road speed +AM/PM Queue times				
AQMA4.1	Study into the impact of speed control along the national highway as an emissions reduction tool.	Transport Planning and Infrastructure	Other	2020	Environmental Health / Highways England	Council Budget	Kirklees Council Targets: +Work with Highways England to implement the recommendations of the study  Kirklees Council Measurable; +Creation of a document that determines the impact of speed reduction on the motorway and best method to deliver emissions reduction	NO2 & PM	Active	2020	Study into the impact of speed control along the national highway as an emissions reduction tool.  This is a future project currently going through project planning phase
AQMA 4.2	Trial of NOx absorbent material integrated into roundabout design	Traffic Management	UTC, Congestion management, traffic reduction	2020	Environmental Health	Council Budget	Kirklees Council Target: +Installation off material on roundabout  Kirklees Council Measurable; +NO2 Concentrations adjacent to roundabout	NO2 & PM	Active	2020/21	The project is to redesign Whitehall Road East / West roundabout install green infrastructure where applicable into highway design to bring about NO2 concentrations
AQMA5.1	Free City Bus for Dewsbury Town Centre	Alternatives to private vehicle use	Other	2006	Kirklees Economy and Infrastructure	Council Budget	West Yorkshire Target: +Sustainable travel mode increase from 36% in 2011 to 42% by 2026  Kirklees Council Targets; +Increase bus patronage	NO2 & PM	Active	Ongoing	



							Kirklees Council Measurable; + Number of passengers using service				
AQMA5.2	A640 Road improvements (Mirfield to Dewsbury)	Traffic Management	UTC, Congestion management, traffic reduction	Estimated >2021	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Concept	TBC	The project is a highways improvement scheme within the AQMA and is at very early stages. Pre outline business case stage
AQMA5.4	Install Split Cycle Offset Optimisation technique (SCOOT) Traffic Management System	Traffic Management	UTC, Congestion management, traffic reduction	2019	Kirklees Highways UTC	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Complete	2021	This is stage 1 of a multi stage improvement project with the aim to reduce emissions through the use of technology to improve flow at junctions. Other stages of the project are discussed in actions AQMA.5.5 and P.9
AQMA5.5	Kirklees "Virtual Emissions Monitoring Project" to rationalise SCOOT system	Traffic Management	UTC, Congestion management, traffic reduction	Estimated 2020	Kirklees Highways UTC / 3rd Party Partner	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed	NO2 & PM	Active	2021	Stage 2 of a multi stage Air Quality UTMC improvement project. Stage 3 contained within P.9 and awaiting funding

							+AM/PM Queue times				
AQMA5.6	Trial of Smart UTMC Technology systems within relevant AQMA's	Traffic Management	UTC, Congestion management, traffic reduction	2021	Kirklees Environmental Health / UTC	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2022	The project is a Traffic Light improvement scheme within the AQMA and is a future project currently going through project planning phase
AQMA 5.7	Installation of Green Screen at Eastborough J&I School	Other	Other	2020	Kirklees Environmental Health	Council Budget	Kirklees Council Target; +Install a screen to block diffusion of pollutants from ring road  Kirklees Council Measurable; +Concentrations within the playground	NO2 & PM	Active	2020/21	The design of the Green Screen is to improve visual amenity and also provide a barrier between the school playground and the ring road.
AQMA6.1	A629 Road improvements as part of Halifax to Huddersfield Road Scheme	Traffic Management	UTC, Congestion management, traffic reduction	2020	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Increased capacity on the road + Redistribution of vehicles on network  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2021	The project is a highways improvement scheme within the AQMA and is currently at Business Case Stage
AQMA6.2	Install Split Cycle Offset Optimisation technique (SCOOT)	Traffic Management	UTC, Congestion management, traffic reduction	2019	Kirklees Highways UTC	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow	NO2 & PM	Complete	2021	This is stage 1 of a multi stage improvement project with the aim to reduce emissions through the use of

	Traffic Management System						+ Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times				technology to improve flow at junctions. Other stages of the project are discussed in actions AQMA.5.5 and P.9
AQMA6.3	Kirklees "Virtual Emissions Monitoring Project" to rationalise SCOOT system	Traffic Management	UTC, Congestion management, traffic reduction	Estimated 2020	Kirklees Highways UTC / 3rd Party Partner	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2021	Stage 2 of a multi stage Air Quality UTMC improvement project. Stage 3 contained within P.9 and awaiting funding
AQMA6.4	Trial of Smart UTMC Technology systems within relevant AQMA's	Traffic Management	UTC, Congestion management, traffic reduction	2021	Kirklees Environmental Health / UTC	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2022	The project is a Traffic Light improvement scheme within the AQMA and is a future project currently going through project planning phase
AQMA7.1	Install Split Cycle Offset Optimisation technique (SCOOT) Traffic Management System	Traffic Management	UTC, Congestion management, traffic reduction	2019	Kirklees Highways UTC	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased	NO2 & PM	Complete	2021	This is stage 1 of a multi stage improvement project with the aim to reduce emissions through the use of technology to improve flow at junctions. Other

							efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times				stages of the project are discussed in actions AQMA.5.5 and P.9
AQMA7.2	Kirklees "Virtual Emissions Monitoring Project" to rationale SCOOT system	Traffic Management	UTC, Congestion management, traffic reduction	Estimated 2020	Kirklees Highways UTC / 3rd Party Partner	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2021	Stage 2 of a multi stage Air Quality UTMC improvement project. Stage 3 contained within P.9 and awaiting funding
AQMA7.3	Trial of Smart UTMC Technology systems within relevant AQMA's	Traffic Management	UTC, Congestion management, traffic reduction	2021	Kirklees Environmental Health / UTC	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2022	The project is a Traffic Light improvement scheme within the AQMA and is a future project currently going through project planning phase
AQMA8.1	Study into the impact of speed control along the national highway as an emissions reduction tool.	Transport Planning and Infrastructure	Other	2020	Environmental Health / Highways England	Council Budget	Kirklees Council Targets: +Work with Highways England to implement the recommendations of the study  Kirklees Council Measurable;	NO2 & PM	Active	2020	Study into the impact of speed control along the national highway as an emissions reduction tool.  This is a future project currently going through project planning phase

							+Creation of a document that determines the impact of speed reduction on the motorway and best method to deliver emissions reduction				
AQMA9.1	Free City Bus for Dewsbury Town Centre	Alternatives to private vehicle use	Other	2006	Kirklees Economy and Infrastructure	Council Budget	West Yorkshire Target: +Sustainable travel mode increase from 36% in 2011 to 42% by 2026  Kirklees Council Targets; +Increase bus patronage  Kirklees Council Measurable; + Number of passengers using service	NO2 & PM	Active	Ongoing	
AQMA9.2	Huddersfield Heat Network Scheme	Other	Other	2020	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Target; +Contribute towards targets set by Climate Emergency Work Group  Kirklees Council Measurables; +Number of boilers removed + CO2 reductions	NO2 & PM	Active	2022	Currently at Business Case Stage
AQMA9.3	Resource Smart Corridor	Traffic Management	UTC, Congestion management, traffic reduction	2020	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Increased capacity on the road + Redistribution of vehicles on network  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2021	The project is a highways improvement scheme within the AQMA and is currently at Business Case Stage

AQMA9.4	Huddersfield Southern Gateway Transport Scheme	Traffic Management	UTC, Congestion management, traffic reduction	2021	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Increased capacity on the road + Redistribution of vehicles on network  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2022	The project is a highways improvement scheme within the AQMA and is currently at Business Case Stage
AQMA9.5	Huddersfield Ring Road Junction Improvements	Traffic Management	UTC, Congestion management, traffic reduction	2021	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Increased capacity on the road + Redistribution of vehicles on network  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2023	The project is a highways improvement scheme within the AQMA and is currently at Business Case Stage
AQMA9.6	Feasibility Study in to Pedestrianizing Areas of Town Centre for Cycling Access	Promoting Travel Alternatives	Promotion of cycling	2021	Kirklees Economy and Infrastructure	Council Budget	West Yorkshire Target: Contribute to; +Sustainable travel mode increase from 36% in 2011 to 42% by 2026  Kirklees Council Targets; Contribute to; + Connect local towns and neighbouring districts with improved cycling and walking facilities +Increase cycling travel mode by 300% between	NO2 & PM	Concept	TBC	

							2018 baseline and 2030 +Increase walking travel mode by 20% between 2018 baseline and 2030 Improvement in facilities across the district for cycling and clear links between all towns within the district  Kirklees Council Measurable; + Creation of a document cost analysing benefits of pedestrianizing / cycling only in town centre areas				
AQMA9.7	Trans-Pennine Express Improvement Scheme	Alternatives to private vehicle use	Other	2022	Network Rail, West Yorkshire Combined Authority, Kirklees Council	Central Transport Fund	West Yorkshire Target: Contribute to; +Sustainable travel mode increase from 36% in 2011 to 42% by 2026  Kirklees Council Measurable; +Number of rail passengers	NO2 & PM	Active	2024	Currently at Business Case Stage
AQMA9.8	Kirklees "Virtual Emissions Monitoring Project" to rationale SCOOT system	Traffic Management	UTC, Congestion management, traffic reduction	Estimated 2020	Kirklees Highways UTC / 3rd Party Partner	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2021	Stage 2 of a multi stage Air Quality UTMC improvement project. Stage 3 contained within P.9 and awaiting funding
AQMA9.9	Input into the development of the	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2020	Kirklees Environmental Health /	Council Budget	Kirklees Council Targets; +Inclusion of Air Quality within the	NO2 & PM	Active	2021	

	Town Centre Master Plan				Development Control		Town Centre Master Plan Document  Contribute towards targets for planning; + Number of E.V chargers installed within new developments +Predicted monetary damage compared against mitigation spend / Section 106 contributions				
AQMA9.10	Trial of Smart UTMC Technology systems within relevant AQMA's	Traffic Management	UTC, Congestion management, traffic reduction	2021	Kirklees Environmental Health / UTC	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2022	The project is a Traffic Light improvement scheme within the AQMA and is a future project currently going through project planning phase
AQMA10.1	Huddersfield Southern Gateway Transport Scheme	Traffic Management	UTC, Congestion management, traffic reduction	2021	Kirklees Economy and Infrastructure	Central Transport Fund	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Increased capacity on the road + Redistribution of vehicles on network  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2022	The project is a highways improvement scheme within the AQMA and is currently at Business Case Stage
AQMA10.2	Kirklees "Virtual Emissions Monitoring Project" to	Traffic Management	UTC, Congestion management, traffic reduction	Estimated 2020	Kirklees Highways UTC / 3rd Party Partner	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased	NO2 & PM	Active	2021	Stage 2 of a multi stage Air Quality UTMC improvement project. Stage 3



	rationale SCOOT system						through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times				contained within P.9 and awaiting funding
AQMA10.3	Kirklees "Virtual Emissions Monitoring Project" to rationale SCOOT system	Traffic Management	UTC, Congestion management, traffic reduction	Estimated 2020	Kirklees Highways UTC / 3rd Party Partner	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2021	Stage 2 of a multi stage Air Quality UTMC improvement project. Stage 3 contained within P.9 and awaiting funding
AQMA10.4	Trial of Smart UTMC Technology systems within relevant AQMA's	Traffic Management	UTC, Congestion management, traffic reduction	2021	Kirklees Environmental Health / UTC	Council Budget	Kirklees Council Targets; + Reduction in queuing times and increased through flow + Reduced stop / start driving style + Increased efficiency in combustion engine process  Kirklees Council Measurable; + Average road speed +AM/PM Queue times	NO2 & PM	Active	2022	The project is a Traffic Light improvement scheme within the AQMA and is a future project currently going through project planning phase

## 2.3 PM<sub>2.5</sub> – Local Authority Approach to Reducing Emissions and/or Concentrations

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

With reference to the Public Health Outcomes Frameworks, specifically D1 - Fraction of mortality attributable to particulate air pollution. Kirklees Council rates in 2019 are estimated to be at 4.9% is below the England average of 5.1%, but above the regional average of 4.8%.

As such, Kirklees Council is taking the following measures to address PM<sub>2.5</sub>:

- Included PM<sub>2.5</sub> as key indicator for the Health and Wellbeing Board
- Collaborative working between Public Health, Environmental Health, Planning and Highways to conduct a 2015 baseline Air Quality Model for the whole Kirklees District for PM<sub>2.5</sub> as part of local plan works.
- PM<sub>2.5</sub> monitors have been installed at 2 locations within the district. Due to a database corruption the 2017, Kirklees had to undertake a data recovery exercise. The data that was recovered was of poor quality, attributable in part to the fact that officers were unable to conduct poll of data while the database was corrupted. During 2018 Kirklees Council modernised the data collection system to a web based collection system, which became active early 2019.
- Kirklees Council has purchased 5 sensors to increase monitoring capability of PM<sub>2.5</sub> within the district and intend to purchase further sensors
- Kirklees Council have built in sensor monitoring into major road scheme monitoring to allow for better evaluation
- Kirklees Council is a smoke control area and continues to enforce smoke control legislation within the district
- Kirklees Council plan to review current practices under smoke control in order to reflect changing guidance and new legislation, when produced

## Air Quality Monitoring Data and Comparison with Air Quality Objectives and National Compliance

### 2.4 Summary of Monitoring Undertaken

#### 2.4.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how it compares with objectives.

Kirklees Council undertook automatic (continuous) monitoring at 2 sites during 2020.

Due to the age of real-time monitors within the district, which resulted in major breakdowns and loss / corruption of data, Kirklees Council undertook the process of modernising the data collection system and equipment in order to prevent this occurring in the future. Conclusion of this process occurred in February 2020 and the real-time monitors have been capturing data since this date.

In addition to our real-time monitors, Kirklees Council has purchased 5 Zephyr sensors to provide real-time data. Upon completion of testing and understanding outputs the council will begin reporting the data in appropriate reports / medium.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on how the monitors are calibrated and how the data has been adjusted are included in Appendix C.

#### 2.4.2 Non-Automatic Monitoring Sites

Kirklees Council undertook non- automatic (passive) monitoring of NO<sub>2</sub> at 104 sites during 2020. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) for the diffusion tubes, including bias adjustments and any other adjustments applied (e.g. “annualisation” and/or distance correction), are included in Appendix C.

## 2.5 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias<sup>4</sup>, “annualisation” (where the data capture falls below 75%), and distance correction<sup>5</sup>. Further details on adjustments are provided in Appendix C.

### 2.5.1 Nitrogen Dioxide (NO<sub>2</sub>)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past 5 years with the air quality objective of 40µg/m<sup>3</sup>. Note that the concentration data presented in Table A.3 represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualization (Annualisation details contained with Appendix C), as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

Due to the age of real-time monitors within the district, which resulted in major breakdowns and loss / corruption of data, Kirklees Council undertook the process of modernising the data collection system and equipment in order to prevent this occurring in the future. Conclusion of this process occurred in February 2020 and the real-time monitors have been capturing data since this date.

In light of the lack of available data for the real-time monitors in 2019, diffusion tube data taken at and around these sites should be used to determine the conditions within the AQMA's.

For diffusion tubes, the full 2020 dataset of monthly mean values is provided in Appendix B. Note that the concentration data presented in Table B.1 includes distance corrected values, only where relevant.

In 2020, 0 Real-Time monitoring locations within the Kirklees district exceeded the Annual NO<sub>2</sub> AQO after annualization, nor was the hourly objective when compared against relevant percentiles.

In 2020, 0 diffusion tube monitoring locations within the Kirklees district exceeded the Annual NO<sub>2</sub> AQO after bias adjustment, annualization and distance correction.

Figure A.1 in Appendix A shows concentration trends over the last 9 years for diffusion tube locations. This is supported by Figure A.2 in Appendix A, which shows percentage change year on year for diffusion tube monitoring locations. The data has

<sup>4</sup> <https://laqm.defra.gov.uk/bias-adjustment-factors/bias-adjustment.html>

<sup>5</sup> Fall-off with distance correction criteria is provided in paragraph 7.77, LAQM.TG(16)

been divided into 3 areas, Average of all our diffusion tubes, Average of diffusion tubes within our new AQMAs and Average of diffusion tubes within our longstanding AQMAs.

In accordance with Figure A.2 and Table A.2b in Appendix A, it is noted over the last 5 years the general trend since 2016 is that of falling concentrations across the district in line with an average of 13% over the period 2015-2019, and within AQMA's this was higher at between 14-19%. Using the data, concentrations within Kirklees AQMA's and the district as a whole have fallen year on year 2-8% on average. Table A.2b best shows the potential impact of the Pandemic, where in a single year there have been concentration falls of 17% overall and 15-19% within AQMA's. Using the previous trends and 2020 data, it could be estimated that the Pandemic control measures have brought about >10% increase in the reduction in concentrations than what would be expected going on previous years trends. This 10% reduction also resulted in compliance across all AQMA's and district monitoring sites with both short term and long term AQO.

Whilst this is positive in the short term, the trends discussed above does demonstrate the importance of sustainable roadmaps to recovery and need for smarter ways of working to avoid increases in concentrations in the event society returns to a pre-pandemic model

As such, Kirklees are treating improvements observed in 2020 with caution and have / will continued to deliver improvement projects in line with previous conclusions that *“the reductions have not been sufficient to bring about wholesale compliance and there are still a number of areas across the district which do not meet the AQO. This indicates that further measures are needed to ensure this downward trend is not an outlier and it must also be noted that the assumptions around the turnover in fleet bringing about required reductions should be treated with caution.”*

In 2019, two areas of saw significant increases in concentration, one of which has resulted in an exceedance of the Annual NO<sub>2</sub> AQO. These areas were Mirfield and Milnsbridge and were highlighted in the 2020 ASR. In 2020, both areas saw significant falls in concentration and were in compliance with AQO

Mirfield saw a 52% fall in concentrations, which in contrast with district and AQMA observation in 2020, is 35% more of a reduction than the expected average.

Milnsbridge also had an above average fall of concentrations, seeing a 21% higher fall in concentrations than the average at 38% reduction.

Figure A.3 and Table A.2c in Appendix A shows the falls within Mirfield and Milnsbridge in 2020, but re-affirm that are prior to the Pandemic, concentrations within these areas had stagnated around the AQO over the previous 7 years, Therefore, there is a need to continue to work within these localities in order to understand the local issues here, and understand whether the results in 2019 were outliers and the elevated reductions against district averages re-enforced this, or whether other changes have resulted in issues which need to be addressed.

### 2.5.2 Particulate Matter (PM<sub>2.5</sub>)

Due to the age of real-time monitors within the district, which resulted in major breakdowns and loss / corruption of data, Kirklees Council undertook the process of modernising the data collection system and equipment in order to prevent this occurring in the future. Conclusion of this process occurred in February 2020 and the real-time monitors have been capturing data since this date.

It is difficult to comment on trends regarding PM<sub>2.5</sub> due to the lack of data previous to 2020. Nor can Kirklees comment on the impact of the Pandemic on PM<sub>2.5</sub> concentrations. As such, concentrations are in compliance with UK AQO's in 2020 and further observations are needed to understand whether the results are low as a result of the pandemic or reflective of previous years.

## Appendix A: Monitoring Results

Table A.1 - Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Inlet Height (m)
Roadside 3	RS3 - Bradley	Roadside	417255	420761	NO <sub>2</sub> ; PM <sub>10</sub>	YES	Chemiluminescent; Met-One BAM	3	3	1.5
Roadside 6	RS6 - Ainley Top	Roadside	411739	419007	NO <sub>2</sub> ; PM <sub>10</sub>	YES	Chemiluminescent; Met-One BAM	8	5	1.5

Notes:

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

(2) N/A if not applicable

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

Site ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA?	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube collocated with a Continuous Analyser?	Height (m)
K1	Dewsbury Bus Station	Other	424506	421535	NO <sub>2</sub>	NO	N	0.8	NO	2
K2	Bus Station - Huddersfield	Other	414214	416504	NO <sub>2</sub>	YES	N	4.1	NO	2
K3	Edgerton Road	Roadside	413504	417439	NO <sub>2</sub>	YES	Y (2.0)	2.4	NO	2
K4	Princess Street, Batley	Roadside	424464	424395	NO <sub>2</sub>	NO	Y (4.3)	1.8	NO	2
K5	Huddersfield Road Ravensthorpe	Roadside	422443	420380	NO <sub>2</sub>	NO	Y (1.6)	1.9	NO	2
K6	Leeds Road - Cooper Bridge	Roadside	417872	421050	NO <sub>2</sub>	YES	Y (5.2)	6	NO	2
K7	Westgate Huddersfield	Urban Centre	414434	416744	NO <sub>2</sub>	YES	Y (0.5)	0.5	NO	2
K8	Bradford Road Fartown 1	Roadside	414496	417795	NO <sub>2</sub>	NO	Y (2.5)	2.5	NO	2
K9	Bradley Road	Kerbside	417280	420482	NO <sub>2</sub>	NO	Y (13.4)	0.7	NO	2
K10	Leeds Road Bradley 1	Roadside	417227	420337	NO <sub>2</sub>	NO	Y (3.2)	2	NO	2
K11	Chapel Hill Huddersfield	Roadside	414389	416262	NO <sub>2</sub>	YES	Y (0.1)	5.5	NO	2
K12	Leeds Road Bradley 2	Roadside	417335	420412	NO <sub>2</sub>	NO	Y (3.7)	1.8	NO	2
K13	Whitehall Road East	Roadside	420377	427871	NO <sub>2</sub>	YES	Y (2.1)	2.6	NO	2



K14	Oastler Avenue	Urban Background	413669	416463	NO <sub>2</sub>	NO	N	1.7	NO	2
K15	Ainley Top 1	Other	420441	427353	NO <sub>2</sub>	YES	N	3	YES	2
K16	Ainley Top 2	Other	420441	427353	NO <sub>2</sub>	YES	N	3	YES	2
K17	Ainley Top 3	Other	420441	427353	NO <sub>2</sub>	YES	N	3	YES	2
K18	Huddersfield Road Birstall	Roadside	422686	426229	NO <sub>2</sub>	NO	Y (4.2)	1.9	NO	2
K19	Huddersfield Road Scouthil	Roadside	423563	421014	NO <sub>2</sub>	NO	Y (6.5)	2.7	NO	2
K20	Rockley Street Dewsbury	Roadside	424853	421828	NO <sub>2</sub>	YES	Y (9.5)	1.5	NO	2
K21	Castlegate Huddersfield	Roadside	414149	416686	NO <sub>2</sub>	YES	Y (6.9)	2.1	NO	2
K22	Leeds Road Bradley 3	Roadside	417418	420479	NO <sub>2</sub>	YES	Y (3.2)	1.5	NO	2
K23	Leeds Road Mirfield 2	Roadside	418483	420978	NO <sub>2</sub>	NO	Y (14.1)	1.6	NO	2
K24	Lindley Moor Road	Roadside	409941	418471	NO <sub>2</sub>	NO	Y (15.4)	2	NO	2
K25	Leeds Road - RS3 - 1	Other	423185	420612	NO <sub>2</sub>	NO	N	6	YES	2
K26	Leeds Road - RS3 - 2	Other	423185	420612	NO <sub>2</sub>	NO	N	6	YES	2
K27	Leeds Road - RS3 - 3	Other	423185	420612	NO <sub>2</sub>	NO	N	6	YES	2
K28	Ring Road Huddersfield	Roadside	414745	416710	NO <sub>2</sub>	YES	Y (0.1)	3.3	NO	2
K29	Dewsbury Bus Station 2	Other	424425	421499	NO <sub>2</sub>	NO	N	2.5	NO	2
K30	Dewsbury Bus Station 3	Other	424457	421510	NO <sub>2</sub>	NO	N	2.5	NO	2
K31	Blacker Road 1	Roadside	413400	417495	NO <sub>2</sub>	YES	Y (8.3)	2.7	NO	2
K32	Blacker Road 2	Roadside	413513	417481	NO <sub>2</sub>	YES	Y (5.0)	2.6	NO	2

K33	Wakefield Rd / Huddersfield Road	Roadside	420727	423668	NO <sub>2</sub>	YES	Y (4.3)	2.4	NO	2
K34	Frost Hill Liversedge	Roadside	420845	423770	NO <sub>2</sub>	YES	Y (0.3)	1.9	NO	2
K35	Leeds Road Liversedge	Roadside	420853	423866	NO <sub>2</sub>	YES	Y (9.4)	1.9	NO	2
K36	Huddersfield Road Mirfield 1	Kerbside	420304	419766	NO <sub>2</sub>	NO	Y (2.9)	0.9	NO	2
K37	Bradford Road, Birkenshaw	Roadside	420356	427810	NO <sub>2</sub>	YES	Y (2.5)	2.2	NO	2
K38	Whitehall Road West	Roadside	420222	427764	NO <sub>2</sub>	YES	Y (18.3)	1	NO	2
K39	Bradford Road, Batley	Roadside	424526	424326	NO <sub>2</sub>	NO	Y (1.7)	2.1	NO	2
K40	Leeds Road Dewsbury	Roadside	424871	421921	NO <sub>2</sub>	YES	Y (1.2)	1.6	NO	2
K41	Chain Bar Roundabout	Roadside	418285	426630	NO <sub>2</sub>	NO	Y (12.5)	3.4	NO	2
K42	Leeds Road Dewsbury - 2	Roadside	424969	422002	NO <sub>2</sub>	YES	Y (5.6)	1.9	NO	2
K43	John Street Dewsbury	Roadside	425083	422022	NO <sub>2</sub>	YES	Y (6.0)	1.9	NO	2
K44	Calmswood Road Eastborough	Roadside	425179	422114	NO <sub>2</sub>	NO	Y (-7.2)	1.7	NO	2
K45	Bradford Road Fartown 2	Roadside	414480	417720	NO <sub>2</sub>	NO	Y (0.5)	7.2	NO	2
K46	Willow Lane East Fartown	Roadside	414546	417759	NO <sub>2</sub>	NO	Y (0)	2.2	NO	2
K47	Roundings Road Outlane	Other	407942	417261	NO <sub>2</sub>	YES	Y (0)	14.4	NO	2
K48	Flush Liversedge	Roadside	421039	423673	NO <sub>2</sub>	YES	Y (0)	2.6	NO	2
K49	Manchester Road Thornton Lodge 2	Roadside	413659	416182	NO <sub>2</sub>	NO	Y (3.5)	3.7	YES	2

K50	Manchester Road Thornton Lodge 1	Roadside	413414	415981	NO <sub>2</sub>	NO	Y (1.6)	2.5	YES	2
K51	High Street Heckmondwike	Roadside	421904	423580	NO <sub>2</sub>	YES	Y (4.9)	1	NO	2
K52	Penistone Road Waterloo	Roadside	417627	416472	NO <sub>2</sub>	NO	Y (7.8)	2.4	NO	2
K53	Yates Lane Milnsbridge	Roadside	411564	415902	NO <sub>2</sub>	NO	Y ( 1.6)	1.7	NO	2
K54	Wakefield Road Dewsbury	Roadside	425196	421566	NO <sub>2</sub>	YES	Y (2.7)	3.2	NO	2
K55	Huddersfield Road Holmfirth	Roadside	414187	408264	NO <sub>2</sub>	NO	Y (3.2)	1.7	NO	2
K56	Wakefield Road Huddersfield	Roadside	415009	416420	NO <sub>2</sub>	YES	N	2.8	NO	2
K57	Cambridge Road 1	Roadside	414291	417281	NO <sub>2</sub>	YES	N	2.2	NO	2
K58	Cambridge Road 2	Roadside	414350	417270	NO <sub>2</sub>	YES	N	2.6	NO	2
K60	Huddersfield Road, Birstall Smithies	Roadside	422435	425889	NO <sub>2</sub>	NO	Y (7.5)	2.3	NO	2
K61	Bradford Road - Birkenshaw	Roadside	420422	427349	NO <sub>2</sub>	YES	Y(12.1)	2.1	NO	2
K62	Manor Park Gardens - Birkenshaw	Roadside	420472	427360	NO <sub>2</sub>	YES	Y(9.2)	1.2	NO	2
K63	White Hall Road West 1 - Birkenshaw	Roadside	419866	427561	NO <sub>2</sub>	NO	Y(7.0)	2.9	NO	2
K64	Whitehall Road West 2 - Birkenshaw	Other	419914	427588	NO <sub>2</sub>	NO	N	0.1	NO	2
K65	Whitehall Road West 3 - Birkenshaw	Roadside	419981	427623	NO <sub>2</sub>	NO	N	3	NO	2

K66	Milford Grove - Birkenshaw	Other	420349	427434	NO <sub>2</sub>	YES	N	1.3	NO	2
K67	Moor Lane 1 - Birkenshaw	Roadside	421132	427273	NO <sub>2</sub>	NO	N	1.7	NO	2
K68	Grange Road Batley lamp post 10	Roadside	421128	427298	NO <sub>2</sub>	NO	N	0.9	NO	2
K69	Bradford Road - Cleckheaton - Airstation	Roadside	418237	426555	NO <sub>2</sub>	NO	N	1	NO	2
K70	Huddersfield Road - Scouthill - Airstation	Roadside	423236	420752	NO <sub>2</sub>	YES	Y(6.6)	3.2	NO	2
K71	Lindley Moor Road 2	Roadside	411007	419190	NO <sub>2</sub>	NO	Y (10.1)	3.5	YES	2
K72	Lindley Moor Road 3	Roadside	410227	418653	NO <sub>2</sub>	NO	Y(6.6)	2.4	NO	2
K73	Lindley Moor Road 4	Roadside	410080	418568	NO <sub>2</sub>	NO	N	1.8	NO	2
K74	Lindley Moor Road 5	Roadside	410095	418559	NO <sub>2</sub>	NO	Y(1.7)	3.4	NO	2
K75	Blackmoorfoot Road - Thornton Lodge	Roadside	413153	415894	NO <sub>2</sub>	NO	Y(2.7)	1.5	NO	2
K76	Manchester Road - Thornton Lodge 3	Roadside	413198	415957	NO <sub>2</sub>	NO	Y(5.0)	1.3	NO	2
K77	Manchester Road - Thornton Lodge 4	Roadside	413455	416013	NO <sub>2</sub>	NO	Y(1.2)	2.2	NO	2
K78	Thornton Lodge Road - Thornton Lodge	Roadside	413464	415983	NO <sub>2</sub>	NO	N	2	NO	2
K79	Gelder Road, Birstall,	Roadside	423903	427756	NO <sub>2</sub>	NO	N	3	NO	2

K80	Grange Road Batley lamp post 22	Roadside	425566	423696	NO <sub>2</sub>	NO	Y(5.8)	4	NO	2
K81	Gelderd Road, Hawthorne House	Roadside	422991	426992	NO <sub>2</sub>	NO	N	1.75	NO	2
K82	Grange Moor	Roadside	422036	415941	NO <sub>2</sub>	NO	Y(1.73)	1.5	NO	2
K83	Flockton	Roadside	424203	414975	NO <sub>2</sub>	NO	Y(3.22)	1.41	NO	2
K84	Denby Dale	Roadside	422923	408553	NO <sub>2</sub>	NO	Y(2.34)	1.77	NO	2
K85	Shepley	Roadside	419380	409777	NO <sub>2</sub>	NO	N	1.5	NO	2
K86	Kings Mill Lane	Roadside	415164	416323	NO <sub>2</sub>	NO	Y (4.71)	4.71	NO	2
K87	Mill St West Dewsbury lamp post 9	Roadside	424409	421271	NO <sub>2</sub>	NO	Y(2.36)	2.85	NO	2
K88	Huddersfield Road, Birstall	Roadside	422403	425845	NO <sub>2</sub>	NO	N	2.5	NO	2
K89	Whitehall Road West, Hunsworth	Roadside	419362	427203	NO <sub>2</sub>	NO	N	1.67	NO	2
K90	Whitehall Road West, Hunsworth	Roadside	419262	427060	NO <sub>2</sub>	NO	N	1.8	NO	2
K91	Hunsworth Lane, Cleckheaton	Roadside	418636	426270	NO <sub>2</sub>	NO	Y (0)	2.67	NO	2
K92	Bradford Road, Cleckheaton	Roadside	418656	426078	NO <sub>2</sub>	NO	Y (3.91)	1.81	NO	2
K93	Wyke Lane, Oakenshaw	Roadside	417501	427801	NO <sub>2</sub>	NO	Y (-10)	23.65	NO	2
K94	Leeds Road, Shawcross	Roadside	426242	423106	NO <sub>2</sub>	NO	Y (2.05)	4.06	NO	2
K95	Owl Lane, Shawcross	Roadside	426312	422830	NO <sub>2</sub>	NO	N	1.5	NO	2
K96	Victoria Street, Holmfirth	Kerbside	414227	408161	NO <sub>2</sub>	NO	N	0.8	NO	2
K97	New Hey Road, Mount	Roadside	409762	418019	NO <sub>2</sub>	NO	Y (-7)	12	NO	2

K98	Huddersfield Road, Holmfirth	Roadside	414092	408133	NO <sub>2</sub>	NO	Y (0.84)	2.27	NO	2
K99	Towngate, Holmfirth	Kerbside	414250	408146	NO <sub>2</sub>	NO	N	0.5	NO	2
K100	Westbourne Road, Marsh	Roadside	412477	417290	NO <sub>2</sub>	NO	Y (5.5)	1.9	NO	2
K101	Trinity Street, Huddersfield	Roadside	413531	417137	NO <sub>2</sub>	NO	Y (4.85)	2.47	NO	2
K102	Stocks Bank Road, Mirfield	Roadside	418540	421188	NO <sub>2</sub>	NO	N	5	NO	2
K103	Stocks Bank Road, Mirfield	Roadside	419426	420293	NO <sub>2</sub>	NO	Y (1.0)	2.8	NO	2
K104	Bradley Road, Bradley	Roadside	415810	420554	NO <sub>2</sub>	NO	Y (12.3)	6.76	NO	2

**Notes:**

- (1) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).
- (2) N/A if not applicable.

Table A.3 – Annual Mean NO<sub>2</sub> Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2019 (%) <sup>(2)</sup>	NO <sub>2</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3) (4)</sup>				
							2016	2017	2018	2019	2020
Roadside 3	417255	420761	Roadside	Automatic	67	67	N/A	N/A	N/A	N/A	25.51
Roadside 6	411739	419007	Roadside	Automatic	46	46	N/A	N/A	N/A	N/A	36.21
K1	424506	421535	Other	Diffusion Tube	83	83	<b>47.42</b>	<b>42.50</b>	<b>41.13</b>	<b>41.00</b>	<b>45.95</b>
K2	414214	416504	Other	Diffusion Tube	83	83	41.58	42.25	39.27	38.53	34.16
K3	413504	417439	Roadside	Diffusion Tube	83	83	<b>41.43</b>	<b>61.63</b>	<b>51.92</b>	<b>42.69</b>	36.27
K4	424464	424395	Roadside	Diffusion Tube	75	75	32.68	25.20	28.47	27.00	24.24
K5	422443	420380	Roadside	Diffusion Tube	42	42	35.60	35.88	35.49	36.15	27.04
K6	417872	421050	Roadside	Diffusion Tube	83	83	<b>40.46</b>	<b>42.56</b>	36.33	37.89	27.03
K7	414434	416744	Urban Centre	Diffusion Tube	83	83	38.78	35.38	38.55	<b>40.80</b>	28.91
K8	414496	417795	Roadside	Diffusion Tube	83	83	33.33	35.50	36.08	36.00	30.52
K9	417280	420482	Kerbside	Diffusion Tube	75	75	36.63	35.34	27.47	34.40	28.31
K10	417227	420337	Roadside	Diffusion Tube	83	83	<b>43.73</b>	37.31	39.27	34.47	28.81
K11	414389	416262	Roadside	Diffusion Tube	42	42	37.79	36.50	39.60	34.96	31.75
K12	417335	420412	Roadside	Diffusion Tube	75	75	<b>43.40</b>	37.44	38.80	27.35	29.37
K13	420377	427871	Roadside	Diffusion Tube	83	83	36.20	36.13	33.89	31.40	23.02

K14	413669	416463	Urban Background	Diffusion Tube	83	83	20.96	21.13	16.22	17.73	13.90
K15	420441	427353	Other	Diffusion Tube	67	67	N/A	34.50	37.24	37.84	30.39
K16	420441	427353	Other	Diffusion Tube	75	75	N/A	<b>49.13</b>	37.31	35.42	29.05
K17	420441	427353	Other	Diffusion Tube	67	67	N/A	37.16	38.47	36.22	30.77
K18	422686	426229	Roadside	Diffusion Tube	83	83	<b>41.00</b>	37.81	37.93	36.80	32.22
K19	423563	421014	Roadside	Diffusion Tube	83	83	<b>45.20</b>	33.00	38.80	31.60	29.61
K20	424853	421828	Roadside	Diffusion Tube	83	83	36.20	35.69	33.96	28.44	29.52
K21	414149	416686	Roadside	Diffusion Tube	83	83	<b>45.05</b>	<b>40.13</b>	<b>42.53</b>	34.73	33.43
K22	417418	420479	Roadside	Diffusion Tube	83	83	<b>43.88</b>	<b>41.39</b>	<b>40.60</b>	33.40	22.66
K23	418483	420978	Roadside	Diffusion Tube	75	75	<b>40.00</b>	<b>40.19</b>	38.47	35.35	31.69
K24	409941	418471	Roadside	Diffusion Tube	83	83	<b>49.01</b>	<b>50.18</b>	<b>40.00</b>	34.13	27.54
K25	423185	420612	Other	Diffusion Tube	83	83	N/A	28.03	28.47	27.33	22.28
K26	423185	420612	Other	Diffusion Tube	83	83	N/A	24.67	31.40	26.87	22.74
K27	423185	420612	Other	Diffusion Tube	75	75	N/A	26.58	31.47	27.93	22.79
K28	414745	416710	Roadside	Diffusion Tube	83	83	<b>53.13</b>	<b>55.94</b>	<b>43.20</b>	<b>46.40</b>	37.59
K29	424425	421499	Other	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	28.03
K30	424457	421510	Other	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	29.42
K31	413400	417495	Roadside	Diffusion Tube	75	75	<b>41.75</b>	32.13	33.76	30.47	17.07



K32	413513	417481	Roadside	Diffusion Tube	25	25	<b>45.38</b>	<b>44.19</b>	<b>45.87</b>	35.49	31.65
K33	420727	423668	Roadside	Diffusion Tube	83	83	<b>54.80</b>	<b>42.67</b>	34.27	31.13	26.78
K34	420845	423770	Roadside	Diffusion Tube	83	83	<b>54.20</b>	39.50	38.40	33.60	29.91
K35	420853	423866	Roadside	Diffusion Tube	50	50	<b>72.40</b>	<b>46.19</b>	<b>44.40</b>	<b>45.33</b>	39.73
K36	420304	419766	Kerbside	Diffusion Tube	50	50	38.80	<b>42.23</b>	<b>42.18</b>	<b>49.40</b>	23.47
K37	420356	427810	Roadside	Diffusion Tube	83	83	30.00	36.06	33.07	31.20	21.31
K38	420222	427764	Roadside	Diffusion Tube	83	83	36.00	36.13	37.80	37.07	27.34
K39	424526	424326	Roadside	Diffusion Tube	83	83	39.30	36.41	30.47	31.07	26.68
K40	424871	421921	Roadside	Diffusion Tube	83	83	<b>54.40</b>	<b>53.44</b>	<b>52.40</b>	<b>55.80</b>	<b>42.13</b>
K41	418285	426630	Roadside	Diffusion Tube	83	83	<b>43.50</b>	39.83	36.40	34.00	26.68
K42	424969	422002	Roadside	Diffusion Tube	83	83	<b>43.60</b>	<b>45.94</b>	39.60	35.13	34.67
K43	425083	422022	Roadside	Diffusion Tube	83	83	<b>43.00</b>	38.59	<b>42.93</b>	37.20	33.06
K44	425179	422114	Roadside	Diffusion Tube	83	83	32.20	34.44	35.07	30.80	24.91
K45	414480	417720	Roadside	Diffusion Tube	42	42	36.70	35.69	36.26	36.44	26.31
K46	414546	417759	Roadside	Diffusion Tube	75	75	39.53	37.13	37.04	34.80	29.19
K47	407942	417261	Other	Diffusion Tube	83	83	35.52	<b>44.06</b>	<b>44.93</b>	<b>40.53</b>	31.96
K48	421039	423673	Roadside	Diffusion Tube	83	83	<b>64.68</b>	<b>47.31</b>	36.13	36.07	38.10
K49	413659	416182	Roadside	Diffusion Tube	83	83	37.19	38.00	38.07	33.12	33.07

K50	413414	415981	Roadside	Diffusion Tube	58	58	<b>42.08</b>	39.19	<b>45.27</b>	38.19	38.04
K51	421904	423580	Roadside	Diffusion Tube	75	75	<b>55.40</b>	36.00	38.87	34.47	28.60
K52	417627	416472	Roadside	Diffusion Tube	75	75	36.47	34.64	34.20	30.67	20.87
K53	411564	415902	Roadside	Diffusion Tube	83	83	33.50	28.31	29.40	<b>53.69</b>	24.62
K54	425196	421566	Roadside	Diffusion Tube	83	83	39.00	35.00	33.87	32.07	29.36
K55	414187	408264	Roadside	Diffusion Tube	83	83	33.50	31.88	34.18	29.87	23.82
K56	415009	416420	Roadside	Diffusion Tube	83	83	<b>40.00</b>	39.56	39.47	34.87	30.31
K57	414291	417281	Roadside	Diffusion Tube	83	83	<b>46.86</b>	27.19	29.68	22.22	18.49
K58	414350	417270	Roadside	Diffusion Tube	75	75	30.36	<b>41.71</b>	<b>44.88</b>	39.64	34.92
K60	422435	425889	Roadside	Diffusion Tube	50	50	N/A	N/A	N/A	N/A	25.70
K61	420422	427349	Roadside	Diffusion Tube	83	83	N/A	30.20	35.13	29.73	23.22
K62	420472	427360	Roadside	Diffusion Tube	83	83	N/A	28.09	31.60	26.40	22.09
K63	419866	427561	Roadside	Diffusion Tube	83	83	N/A	<b>52.05</b>	33.60	27.27	24.26
K64	419914	427588	Other	Diffusion Tube	83	83	N/A	<b>48.14</b>	<b>51.64</b>	<b>45.07</b>	36.47
K65	419981	427623	Roadside	Diffusion Tube	83	83	N/A	29.40	<b>44.27</b>	<b>41.13</b>	28.41
K66	420349	427434	Other	Diffusion Tube	83	83	N/A	29.05	26.67	24.80	19.78
K67	421132	427273	Roadside	Diffusion Tube	83	83	N/A	24.75	25.87	24.40	18.75
K68	421128	427298	Roadside	Diffusion Tube	83	83	N/A	28.95	27.27	23.60	20.10

K69	418237	426555	Roadside	Diffusion Tube	83	83	N/A	31.70	35.27	28.40	21.13
K70	423236	420752	Roadside	Diffusion Tube	83	83	N/A	38.86	37.02	31.80	33.43
K71	411007	419190	Roadside	Diffusion Tube	83	83	N/A	36.89	39.27	30.73	22.62
K72	410227	418653	Roadside	Diffusion Tube	83	83	N/A	<b>43.43</b>	35.27	32.20	24.31
K73	410080	418568	Roadside	Diffusion Tube	83	83	N/A	30.00	<b>46.73</b>	34.18	19.43
K74	410095	418559	Roadside	Diffusion Tube	83	83	N/A	29.44	30.53	23.67	20.09
K75	413153	415894	Roadside	Diffusion Tube	75	75	N/A	32.25	37.78	Insufficient Data	25.47
K76	413198	415957	Roadside	Diffusion Tube	83	83	N/A	<b>46.58</b>	34.98	28.53	25.39
K77	413455	416013	Roadside	Diffusion Tube	83	83	N/A	24.15	<b>46.93</b>	38.88	33.21
K78	413464	415983	Roadside	Diffusion Tube	58	58	N/A	N/A	28.00	24.05	21.21
K79	423903	427756	Roadside	Diffusion Tube	42	42	N/A	N/A	<b>42.51</b>	Insufficient Data	34.59
K80	425566	423696	Roadside	Diffusion Tube	75	75	N/A	N/A	<b>43.34</b>	24.40	22.72
K81	422991	426992	Roadside	Diffusion Tube	75	75	N/A	N/A	36.61	29.80	28.41
K82	422036	415941	Roadside	Diffusion Tube	83	83	N/A	N/A	20.33	17.53	16.14
K83	424203	414975	Roadside	Diffusion Tube	83	83	N/A	N/A	29.43	24.67	18.87
K84	422923	408553	Roadside	Diffusion Tube	83	83	N/A	N/A	28.36	20.60	18.59
K85	419380	409777	Roadside	Diffusion Tube	83	83	N/A	N/A	23.87	21.13	16.29
K86	415164	416323	Roadside	Diffusion Tube	83	83	N/A	N/A	32.59	29.07	22.76

K87	424409	421271	Roadside	Diffusion Tube	75	75	N/A	N/A	37.41	31.27	29.35
K88	422403	425845	Roadside	Diffusion Tube	50	50	N/A	N/A	N/A	N/A	28.31
K89	419362	427203	Roadside	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	26.07
K90	419262	427060	Roadside	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	25.06
K91	418636	426270	Roadside	Diffusion Tube	0	0	N/A	N/A	N/A	N/A	N/A
K92	418656	426078	Roadside	Diffusion Tube	0	0	N/A	N/A	N/A	N/A	N/A
K93	417501	427801	Roadside	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	27.03
K94	426242	423106	Roadside	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	29.34
K95	426312	422830	Roadside	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	24.21
K96	414227	408161	Kerbside	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	19.36
K97	409762	418019	Roadside	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	16.05
K98	414092	408133	Roadside	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	22.62
K99	414250	408146	Kerbside	Diffusion Tube	50	50	N/A	N/A	N/A	N/A	20.9
K100	412477	417290	Roadside	Diffusion Tube	50	50	N/A	N/A	N/A	N/A	19.58
K101	413531	417137	Roadside	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	26.28
K102	418540	421188	Roadside	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	21.67
K103	419426	420293	Roadside	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	22.37
K104	415810	420554	Roadside	Diffusion Tube	58	58	N/A	N/A	N/A	N/A	20

- Diffusion tube data has been bias corrected
- Annualisation has been conducted where data capture is <75%
- Reported concentrations are those at the location of the monitoring site (bias adjusted and annualised, as required), i.e. prior to any fall-off with distance adjustment

**Notes:**

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

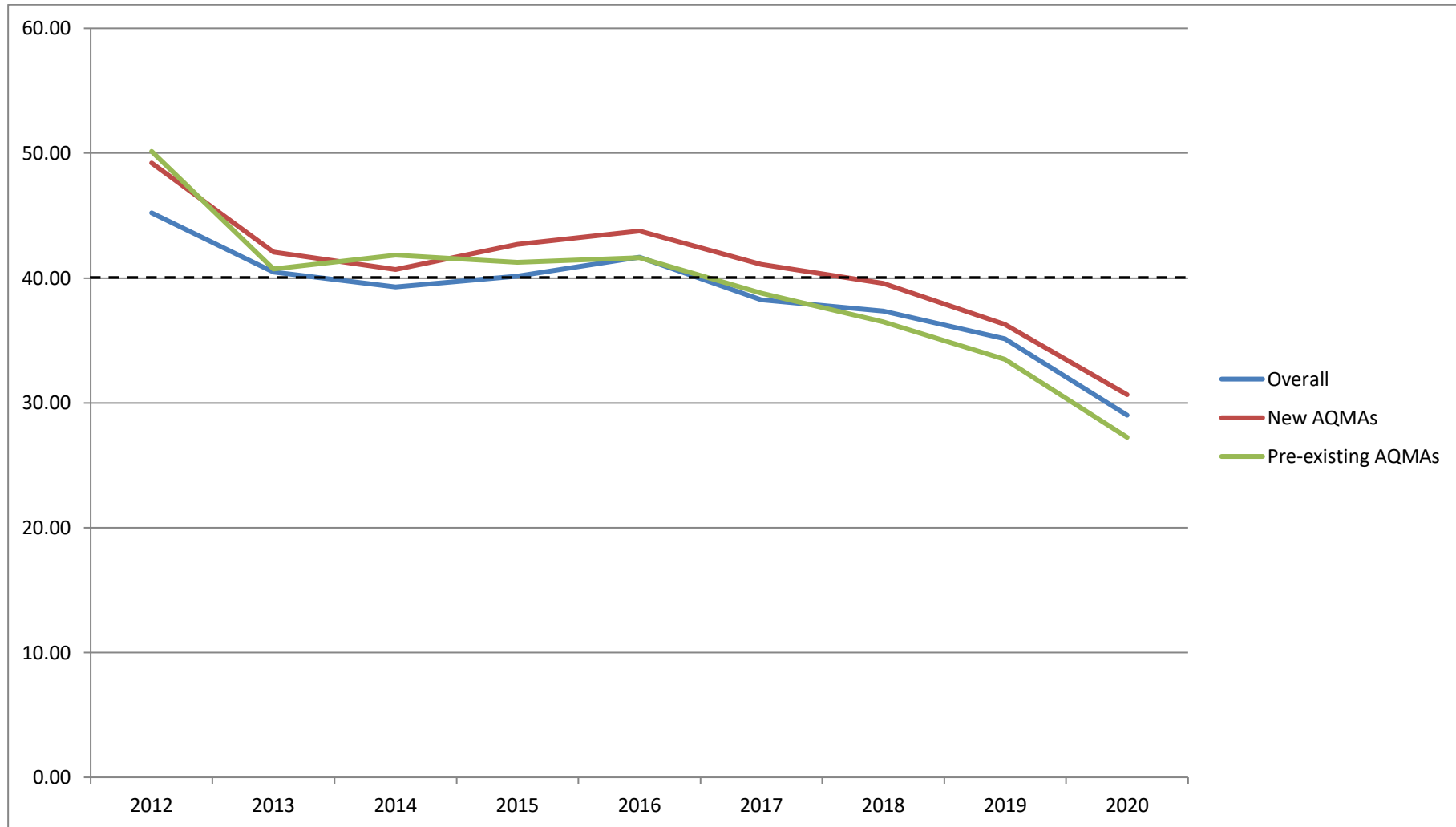
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(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%).

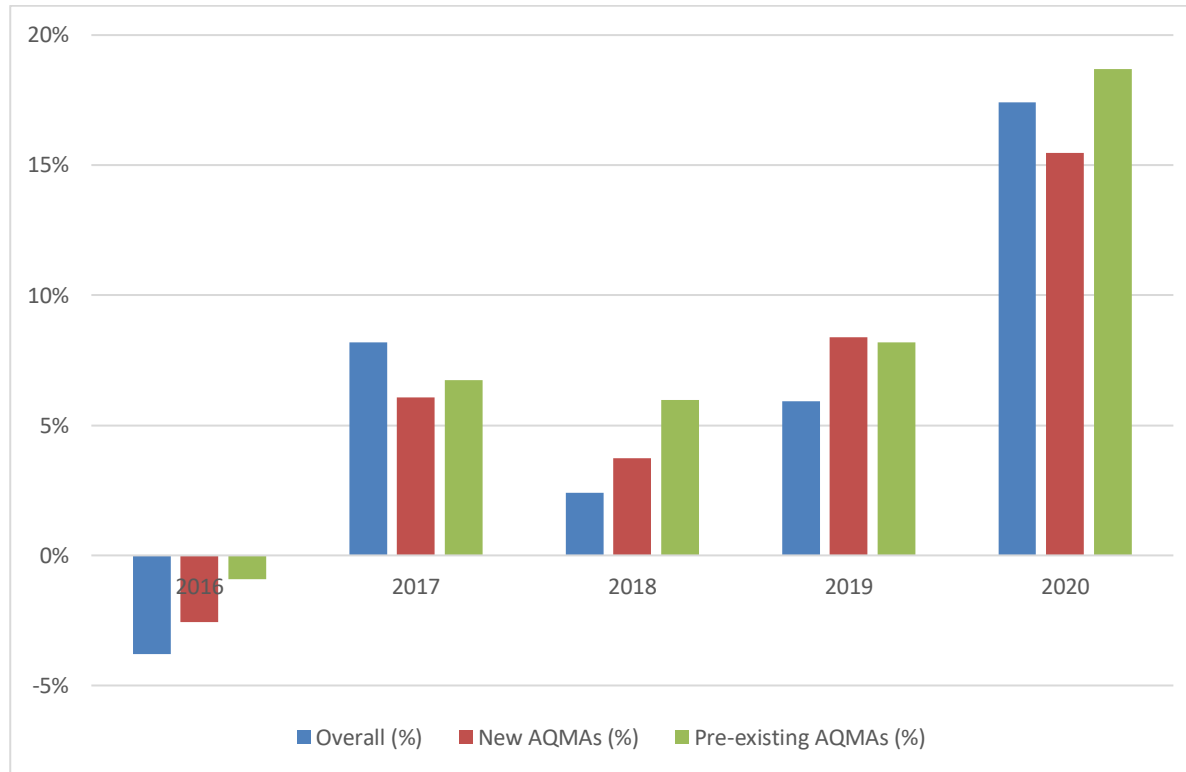
(3) Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(4) Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

Figure A.1 – Trends in Annual Mean NO<sub>2</sub> Concentrations

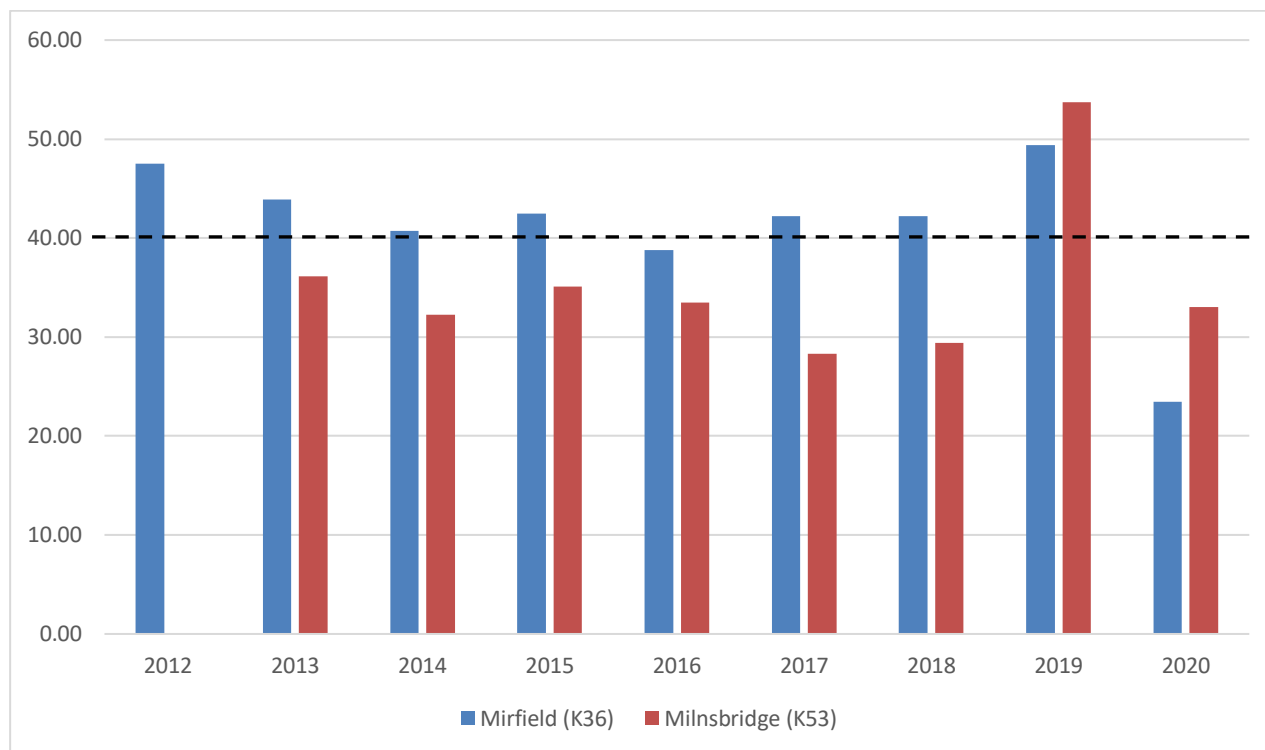


**Figure A.2 – Percentage improvement changes in Annual Mean NO<sub>2</sub> Concentrations**



**Table A.2b – Percentage reduction of Mean Annual NO<sub>2</sub> concentrations over 8 & 5 Years Prior to 2020 & 2020 in isolation**

	Over 8 years Pre 2020	Over 5 years Pre 2020	2020
Overall (%)	22%	13%	17%
New AQMAs (%)	26%	15%	15%
Pre-existing AQMAs (%)	33%	19%	19%

Figure A.3 – Trends in Annual NO<sub>2</sub> Concentrations for Mirfield and MilnsbridgeTable A.2c – Percentage reduction / increase of Mean Annual NO<sub>2</sub> concentrations for Mirfield & Milnsbridge over 9 year period

	2012	2013	2014	2015	2016	2017	2018	2019	2020
Mirfield (K36)	N/A	8%	7%	<b>-4%</b>	9%	-9%	0%	<b>-17%</b>	<b>52%</b>
Milnsbridge (K53)	N/A	N/A	11%	<b>-9%</b>	4%	15%	<b>-4%</b>	<b>-83%</b>	<b>38%</b>

**Notes:**

Increases in concentrations have been highlighted in **bold**.



Table A.4 – 1-Hour Mean NO<sub>2</sub> Monitoring Results

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2019 (%) <sup>(2)</sup>	NO <sub>2</sub> 1-Hour Means > 200µg/m <sup>3</sup> <sup>(3)</sup>				
							2016	2017	2018	2019	2020
Roadside 3	417255	420761	Roadside	Automatic	67	67	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	0 * <sup>3</sup> (89.23)
Roadside 6	411739	419007	Roadside	Automatic	46	46	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	<b>N/A</b>	0 * <sup>3</sup> (107.23)

**Notes:**

Exceedances of the NO<sub>2</sub> 1-hour mean objective (200µg/m<sup>3</sup> not to be exceeded more than 18 times/year) are shown in **bold**.

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

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

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

**Table A.6 – PM<sub>2.5</sub> Monitoring Results**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2019 (%) <sup>(2)</sup>	PM <sub>2.5</sub> Annual Mean Concentration (µg/m <sup>3</sup> ) <sup>(3)</sup>				
						2016	2017	2018	2019	2020
Roadside 3	417255	420761	Roadside	60	60	N/A	N/A	N/A	N/A	12.18
Roadside 6	411739	419007	Roadside	38	38	N/A	N/A	N/A	N/A	9.28

Annualisation has been conducted where data capture is <75%

**Notes:**

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

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

(3) All means have been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16, valid data capture for the full calendar year is less than 75%. See Appendix C for details.

## Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 - NO<sub>2</sub> Monthly Diffusion Tube Results - 2020

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	NO <sub>2</sub> Mean Concentrations (µg/m <sup>3</sup> )														
			Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
															Raw Data	Bias Adjusted (0.77) and Annualised <sup>(1)</sup>	Distance Corrected to Nearest Exposure <sup>(2)</sup>
K1	424506	421535	88.20	46.90	46.40		48.20	40.90	63.30	82.40	69.20	40.80		70.50	59.68	45.95	N/A
K2	414214	416504	51.60	34.60	25.60		28.40	32.40	35.40	78.70	39.60	61.30		56.00	44.36	34.16	
K3	413504	417439	42.40	35.70	21.00		55.90	21.10	71.60	71.70	65.30	32.20		54.10	47.10	36.27	
K4	424464	424395	31.90	20.50	21.80			19.40	33.10	53.70	33.40	22.70		46.80	31.48	24.24	
K5	422443	420380							30.90	48.80	34.40	18.90		46.60	35.92	27.04	
K6	417872	421050	31.80	16.90	22.80		29.40	33.10	41.50	56.60	44.60	19.20		55.10	35.10	27.03	
K7	414434	416744	31.10	25.70	22.50		30.20	29.00	38.00	72.80	30.30	50.60		45.20	37.54	28.91	
K8	414496	417795	53.30	31.30	27.10		38.20	11.50	66.30	42.80	34.80	39.90		51.20	39.64	30.52	
K9	417280	420482	35.80	16.20	16.10		47.10	12.50	66.90	66.70	42.80	26.80			36.77	28.31	
K10	417227	420337	33.10	22.90	20.70		42.00	12.60	67.10	63.90	32.20	24.90		54.80	37.42	28.81	
K11	414389	416262		37.50	29.20		27.40			68.10				46.40	41.72	31.75	
K12	417335	420412	44.00	37.50	21.30		40.70	12.60	64.50	60.00	38.30	24.40			38.14	29.37	
K13	420377	427871	34.40	16.90	20.90		29.70	23.90	30.00	45.60	31.50	27.50		38.60	29.90	23.02	
K14	413669	416463	32.30	12.60	12.50		10.50	9.30	14.60	23.90	12.60	27.10		25.10	18.05	13.90	

K15	420441	427353	41.20				29.60	30.00	39.80	56.40	53.60	19.40		40.20	38.78	30.39	
K16	420441	427353	38.40	30.40			30.00	33.50	36.80	54.60	54.40	14.80		46.60	37.72	29.05	
K17	420441	427353		38.70			30.30	34.50	38.70	60.40	51.60	20.30		31.00	38.19	30.77	
K18	422686	426229	39.10	37.70	32.70		41.50	27.80	45.00	63.20	45.50	26.50		59.50	41.85	32.22	
K19	423563	421014	43.20	30.40	30.80		37.20	25.20	39.70	52.70	49.90	28.80		46.60	38.45	29.61	
K20	424853	421828	52.10	32.60	32.10		30.50	24.40	42.10	50.90	40.50	27.00		51.20	38.34	29.52	
K21	414149	416686	57.30	43.80	31.30		12.90	29.00	43.20	64.40	35.60	59.20		57.50	43.42	33.43	
K22	417418	420479	51.00	27.00	23.70		20.50	16.40	24.00	42.00	30.90	18.90		39.90	29.43	22.66	
K23	418483	420978	51.40	41.00			33.30	1.50	41.10	68.60	48.80	30.00		54.70	41.16	31.69	
K24	409941	418471	44.00	38.80	26.00		30.20	28.40	37.20	56.50	54.10	15.80		26.60	35.76	27.54	
K25	423185	420612	19.90	17.40	19.30		35.10	8.00	54.10	43.00	31.60	17.50		43.40	28.93	22.28	
K26	423185	420612	33.80	24.60	16.80		31.40	7.50	50.20	44.60	25.10	19.60		41.70	29.53	22.74	
K27	423185	420612	33.50	21.60	19.20		32.10	7.40	50.50	46.90		18.50		36.70	29.60	22.79	
K28	414745	416710	48.90	41.00	36.00		46.40	35.50	43.30	85.10	36.70	60.80		54.50	48.82	37.59	
K29	424425	421499					27.80	18.00	35.10	51.20	37.80	21.80		47.40	34.16	28.03	
K30	424457	421510					34.10	21.40	38.50	51.30	35.90	23.70		46.10	35.86	29.42	
K31	413400	417495	26.30	17.20	18.10		34.40	9.50		2.40	40.50	18.60		32.50	22.17	17.07	
K32	413513	417481							42.80	37.80					40.30	31.65	
K33	420727	423668	40.70	26.70	32.40		28.20	25.10	37.90	52.50	33.80	25.00		45.50	34.78	26.78	
K34	420845	423770	26.50	27.30	46.30		47.10	22.20	50.60	53.60	36.30	28.40		50.10	38.84	29.91	
K35	420853	423866	51.50						55.10	83.10	47.70	33.80		57.70	54.82	39.73	
K36	420304	419766	47.10	10.20	33.30				39.60			21.60		47.00	33.13	23.47	
K37	420356	427810	24.40	21.70	18.60		20.10	21.90	27.70	43.80	32.60	25.00		41.00	27.68	21.31	
K38	420222	427764	39.10	32.40	24.30		35.60	29.50	38.30	59.10	32.50	22.60		41.70	35.51	27.34	
K39	424526	424326	37.70	27.80	26.40		35.90	17.40	39.30	51.20	35.30	24.30		51.20	34.65	26.68	
K40	424871	421921	60.50	40.40	54.90		53.40	36.70	67.20	77.50	56.20	33.10		67.20	54.71	42.13	39.6

K41	418285	426630	34.20	27.10	18.00		29.10	32.10	34.10	53.30	39.60	28.10		50.90	34.65	26.68	
K42	424969	422002	36.70	39.30	39.20		40.40	<0.6	51.00	65.20	47.20	28.40		57.80	45.02	34.67	
K43	425083	422022	48.10	25.70	37.60		43.60	28.60	51.00	57.50	50.80	29.90		56.50	42.93	33.06	
K44	425179	422114	34.90	25.80	30.10		30.00	24.50	36.60	48.00	41.30	23.30		29.00	32.35	24.91	
K45	414480	417720	35.40	20.70				9.20	74.60			42.40			36.46	26.31	
K46	414546	417759	45.40	27.40	27.80		37.70	10.30	62.50	43.00	39.80	47.30			37.91	29.19	
K47	407942	417261	67.50	31.50	23.90		29.20	47.80	31.40	65.60	56.10	21.70		40.30	41.50	31.96	
K48	421039	423673	54.30	46.14	30.10		44.10	32.90	55.30	72.30	58.90	39.50		61.30	49.48	38.10	
K49	413659	416182	42.20	41.60	31.90		33.20	33.20	39.70	58.70	58.50	31.90		58.60	42.95	33.07	
K50	413414	415981					34.80	32.90	51.60	69.50	50.90	28.10		56.70	46.36	38.04	
K51	421904	423580	51.40	33.60	31.50		33.70	29.30	43.00	64.30	46.60	0.90			37.14	28.60	
K52	417627	416472	27.50	22.40	30.80		21.50	23.40	30.50	61.30	24.10	2.40			27.10	20.87	
K53	411564	415902	27.80	26.10	19.10		30.20	25.20	39.60	52.80	36.40	21.60		41.00	31.98	24.62	
K54	425196	421566	39.70	18.80	37.20		33.00	31.20	44.90	57.50	49.30	25.60		44.10	38.13	29.36	
K55	414187	408264	24.30	32.30	23.20		32.00	25.00	27.70	47.20	33.30	24.20		40.20	30.94	23.82	
K56	415009	416420	36.40	21.80	38.10		42.10	27.30	41.10	52.60	33.40	48.40		52.50	39.37	30.31	
K57	414291	417281	27.30	17.50	11.40		21.40	5.00	36.90	27.80	35.80	22.20		34.80	24.01	18.49	
K58	414350	417270	51.90	44.30			39.80	12.70	67.60	51.30	64.10	28.00		48.50	45.36	34.92	
K60	422435	425889						28.50	30.60	46.60	34.50	15.60		41.10	32.82	25.70	
K61	420422	427349	28.40	22.90	19.70		29.60	25.40	29.50	49.70	35.30	22.50		38.60	30.16	23.22	
K62	420472	427360	30.20	23.90	15.80		27.60	21.40	25.20	42.60	32.80	26.40		41.00	28.69	22.09	
K63	419866	427561	38.40	32.70	22.40		28.40	21.60	29.80	47.10	29.50	23.80		41.40	31.51	24.26	
K64	419914	427588	46.20	39.40	29.80		40.60	37.40	49.50	77.10	55.00	41.50		57.20	47.37	36.47	
K65	419981	427623	48.80	20.70	19.90		29.20	36.30	37.80	61.70	25.90	35.20		53.50	36.90	28.41	
K66	420349	427434	38.20	21.70	14.90		14.50	15.30	18.30	32.50	47.80	20.10		33.60	25.69	19.78	
K67	421132	427273	33.50	16.30	14.70		20.80	17.80	20.30	36.40	28.30	21.50		33.90	24.35	18.75	

K68	421128	427298	33.50	26.70	21.00		10.40	16.10	29.30	36.00	28.20	18.80		41.00	26.10	20.10	
K69	418237	426555	35.10	24.60	15.10		20.00	20.40	23.40	42.10	30.70	21.40		41.60	27.44	21.13	
K70	423236	420752	61.00	37.70	33.50		39.70	24.00	47.60	58.50	49.50	31.10		51.60	43.42	33.43	
K71	411007	419190	36.30	21.40	25.60		26.70	19.70	27.80	43.70	42.80	16.10		33.70	29.38	22.62	
K72	410227	418653	24.60	35.40	19.60		21.80	27.30	29.90	51.00	50.00	16.10		40.00	31.57	24.31	
K73	410080	418568	27.50	28.90	18.90		19.50	21.50	24.20	42.80	31.40	12.30		25.40	25.24	19.43	
K74	410095	418559	28.30	29.90	19.00		19.90	19.80	19.80	38.80	36.40	14.90		34.10	26.09	20.09	
K75	413153	415894		28.10	26.60		29.40	21.40	36.00	49.40	37.30	22.30		47.20	33.08	25.47	
K76	413198	415957	36.90	32.00	28.10		24.20	21.40	34.30	48.90	33.80	24.30		45.90	32.98	25.39	
K77	413455	416013	42.40	36.70	32.70		34.40	37.70	47.60	64.80	48.50	31.60		54.90	43.13	33.21	
K78	413464	415983					17.60	16.10	27.80	37.40	29.80	15.70		36.50	25.84	21.21	
K79	423903	427756							39.30	73.30	39.60	25.70		51.90	45.96	34.59	
K80	425566	423696	36.40	24.50			15.70	17.70	36.70	41.60	36.20	18.40		38.40	29.51	22.72	
K81	422991	426992	40.10	21.00			33.30	25.50	35.20	75.10	37.40	21.60		42.90	36.90	28.41	
K82	422036	415941	29.30	28.30	12.50		19.00	11.10	21.20	24.00	20.10	15.80		28.30	20.96	16.14	
K83	424203	414975	11.70	18.90	21.90		27.80	17.40	33.90	34.40	25.60	21.90		31.60	24.51	18.87	
K84	422923	408553	22.90	25.90	19.70		25.80	13.50	28.00	30.40	24.30	18.60		32.30	24.14	18.59	
K85	419380	409777	12	23.3	19.8		21.6	11.7	25	30.1	20.1	18.5		29.4	21.15	16.29	
K86	415164	416323	26.1	30.8	25.3		26.8	19.5	29.2	42.6	23.6	30.9		40.8	29.56	22.76	
K87	424409	421271	54.9		34.4		37.3	23.7	27.7	50.8	43.4	23.8		47.1	38.12	29.35	
K88	422403	425845						23.5	38.2	41.5	38.4	23.9		51.4	36.15	28.31	
K89	419362	427203					25.9	21.6	30.1	47.1	35.4	26.8		40.9	32.54	26.07	
K90	419262	427060					27.9	23.3	32	45.8	32.9	21.7		30.2	30.54	25.06	
K91	418636	426270													#DIV/0!	#DIV/0!	
K92	418656	426078													#DIV/0!	#DIV/0!	
K93	417501	427801					30.2	20	32.3	47.8	31.8	22.4		46.1	32.94	27.03	

K94	426242	423106					34.1	24.6	43.7	41.8	45.9	27.3		32.9	35.76	29.34	
K95	426312	422830					26.3	20.1	29.4	40.4	30.3	21.5		38.5	29.50	24.21	
K96	414227	408161					15.6	18.3	23.6	38.3	24.4	17.4		27.6	23.60	19.36	
K97	409762	418019					18	12.7	17.5	26.3	25.9	11.2		25.3	19.56	16.05	
K98	414092	408133					19.3	24.6	29.6	40.6	29.4	16.3		33.2	27.57	22.62	
K99	414250	408146					21.7	5.9	48.4		28.1	17.2		32.2	25.58	20.90	
K100	412477	417290					19.7	14.4		29	34.5	15.3		37	24.98	19.58	
K101	413531	417137					27.5	19.1	34.1	42.3	44.4	15.3		41.5	32.03	26.28	
K102	418540	421188					21.2	21.5	26.8	39.9	24.5	17.2		33.8	26.41	21.67	
K103	419426	420293					20.2	19.6	25.8	38.6	31.4	16		39.2	27.26	22.37	
K104	415810	420554					18.5	20.2	23.4	35.1	30.8	13		29.6	24.37	20.00	

- Local bias adjustment factor used
- National bias adjustment factor used
- Annualisation has been conducted where data capture is <75%
- Where applicable, data has been distance corrected for relevant exposure in the final column

**Notes:**

Exceedances of the NO<sub>2</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

NO<sub>2</sub> annual means exceeding 60µg/m<sup>3</sup>, indicating a potential exceedance of the NO<sub>2</sub> 1-hour mean objective are shown in **bold and underlined**.

- (1) See Appendix C for details on bias adjustment and annualisation.
- (2) Distance corrected to nearest relevant public exposure.

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

In 2019 Kirklees Council got their tubes from West Yorkshire Analytical Services. The tubes are prepared using 50% tea: 50% acetone mix.

### C.1.1 Factor from Local Co-location Studies

Kirklees Council currently have 2 Co-location studies conducted at our monitoring stations, but due to station failures, non of our studies had >75% and are therefore not valid.

### C.1.2 Diffusion Tube Bias Adjustment Factors

In addition to our own scheme, West Yorkshire Analytical Services participate in co-location studies and derive bias adjustment factors for their tubes. The bias adjustment factor for West Yorkshire Analytical Service is 0.77

### C.1.3 Discussion of Choice of Factor to Use

In 2020, Kirklees Council did not generate a bias adjustment factor from their own studies. Therefore, the national figure for West Yorkshire Analytical Service has been used

### C.1.4 Annualisation

In 2020, Kirklees Council annualised data for NO<sub>2</sub> against 3 AURN Monitoring locations, Leeds Central, Bradford Mayo and York Fishergate.

In 2020, Kirklees Council annualised data for PM<sub>2.5</sub> against 3 AURN Monitoring locations, Leeds Central, Sheffield Barnsley Road and York Fishergate.

Details below for Annualisation factors;

**Table C.1 Annualisation for Diffusion Tubes with <75% Data Capture**

	Actual	Ratio 1 (Leeds)	Ratio 2 (Bradford)	Ratio 3 (York)	Ave Ratio	Corrected
K5	27.66	1.01	0.96	0.96	0.98	27.04
K11	32.12	1.01	0.95	1.00	0.99	31.75
K15	29.86	1.06	0.98	1.01	1.02	30.39
K17	29.40	1.09	0.99	1.06	1.05	30.77
K29	26.30	1.14	0.96	1.10	1.07	28.03



K30	27.61	1.14	0.96	1.10	1.07	29.42
K32	31.03	1.07	0.98	1.01	1.02	31.65
K35	42.21	0.94	0.98	0.90	0.94	39.73
K36	25.51	0.87	1.03	0.87	0.92	23.47
K45	28.07	0.90	1.02	0.89	0.94	26.31
K50	35.70	1.14	0.96	1.10	1.07	38.04
K60	25.27	1.07	0.96	1.02	1.02	25.70
K78	19.90	1.14	0.96	1.10	1.07	21.21
K79	35.39	1.01	0.96	0.96	0.98	34.59
K88	27.84	1.07	0.96	1.02	1.02	28.31
K89	25.06	1.14	0.96	1.10	1.07	26.70
K90	23.52	1.14	0.96	1.10	1.07	25.06
K93	25.37	1.14	0.96	1.10	1.07	27.03
K94	27.53	1.14	0.96	1.10	1.07	29.34
K95	22.72	1.14	0.96	1.10	1.07	24.21
K96	18.17	1.14	0.96	1.10	1.07	19.36
K97	15.06	1.14	0.96	1.10	1.07	16.05
K98	21.23	1.14	0.96	1.10	1.07	22.62
K99	19.70	1.12	0.97	1.09	1.06	20.90
K100	19.24	1.10	0.91	1.05	1.02	19.58
K101	24.66	1.14	0.96	1.10	1.07	26.28
K102	20.34	1.14	0.96	1.10	1.07	21.67
K103	20.99	1.14	0.96	1.10	1.07	22.37
K104	18.77	1.14	0.96	1.10	1.07	20.00

**Table C.2 Annualisation for Real-Time Monitors with <75% Data Capture NO<sub>2</sub>**

	Actual	Ratio 1 (Leeds)	Ratio 2 (Bradford)	Ratio 3 (York)	Ave Ratio	Corrected
RS3 NO2	21.73	1.26	1.03	1.24	1.17	25.51
RS6 NO2	29.58	1.25	1.11	1.31	1.22	36.21

**Table C.3 Annualisation for Real-Time Monitors with <75% Data Capture PM<sub>2.5</sub>**

	Actual	Ratio 1 (Leeds)	Ratio 2 (Sheffield)	Ratio 3 (York)	Ave Ratio	Corrected
RS3 PM2.5	11.20	1.13	1.04	1.10	1.09	12.18
RS6 PM2.5	9.21	1.03	0.93	1.06	1.01	9.28

### C.3 QA/QC of Automatic Monitoring

Data ratification is carried out internally by one person (Principle Technical Officer) periodically, normally at monthly intervals. After ratification it is stored on an Excel files in the Kirklees air quality archive.

Data verification is carried out by two staff who have had their competency verified after internal training. Verification takes place twice per day on weekdays, and the of Friday p.m. to Monday a.m. on Monday morning.

**Table C.4 Roadside 3 – Hunsworth Lane Details**

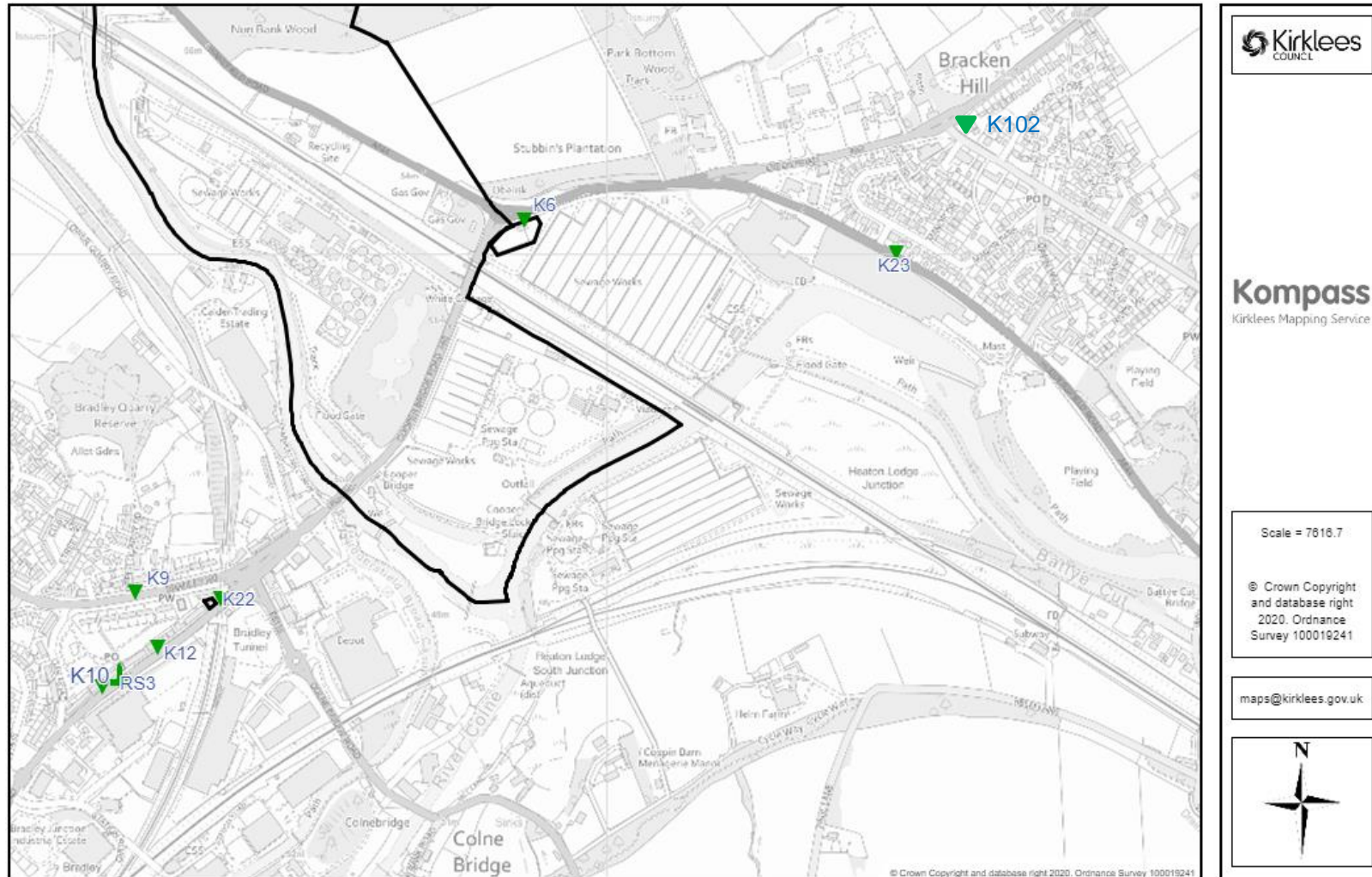
Station	Roadside 3 – Hunsworth Lane
Analyser Model	Horiba: APNA-360CE, MET-One BAM
Logging system	Each analyser has a data distribution board and communicates directly via modem for data download twice per day
Calibration Gas	NO,
Routine Calibration	Automatic calibration carried out every 72 hours
Daily zero and span Check	No
Air Conditioning	Yes
Service Contract	Horiba: 2 x 6 monthly service and breakdown/repair call out.

**Table C.5 Roadside 6– Ainley Top Details**

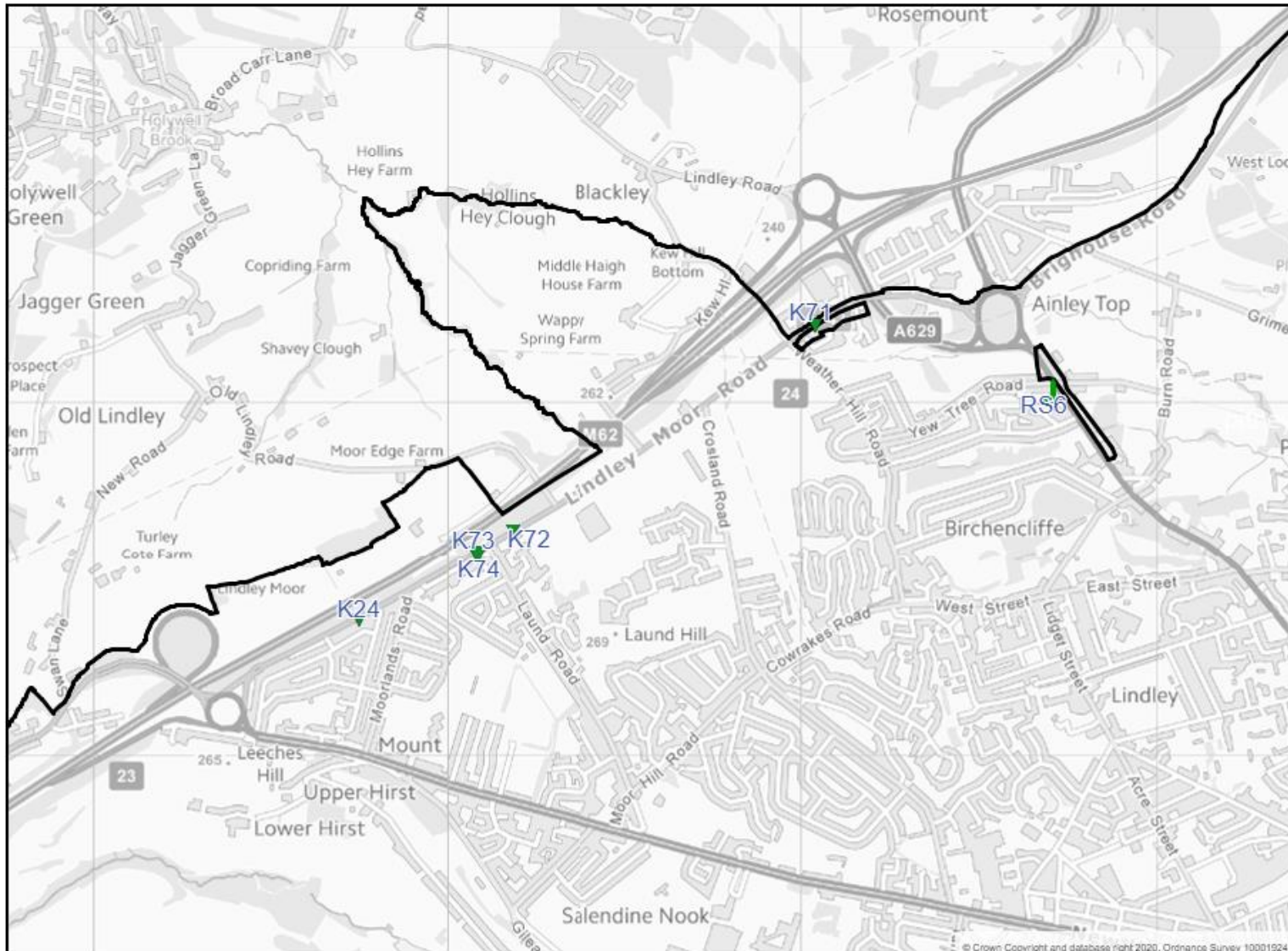
Station	Roadside 6 – Ainley Top
Analyser Model	Horiba: APNA-360CE, MET-One BAM
Logging system	Each analyser has a data distribution board and communicates directly via modem for data download twice per day
Calibration Gas	NO,
Routine Calibration	Automatic calibration carried out every 72 hours
Daily zero and span Check	No
Air Conditioning	Yes
Service Contract	Horiba: 2 x 6 monthly service and breakdown/repair call out.

## Appendix D: Map(s) of Monitoring Locations and AQMAs

### Map D.1 Air Quality Management Area 1 Bradley (Amended)



Map D.2 Air Quality Management Area 3 Ainley Top



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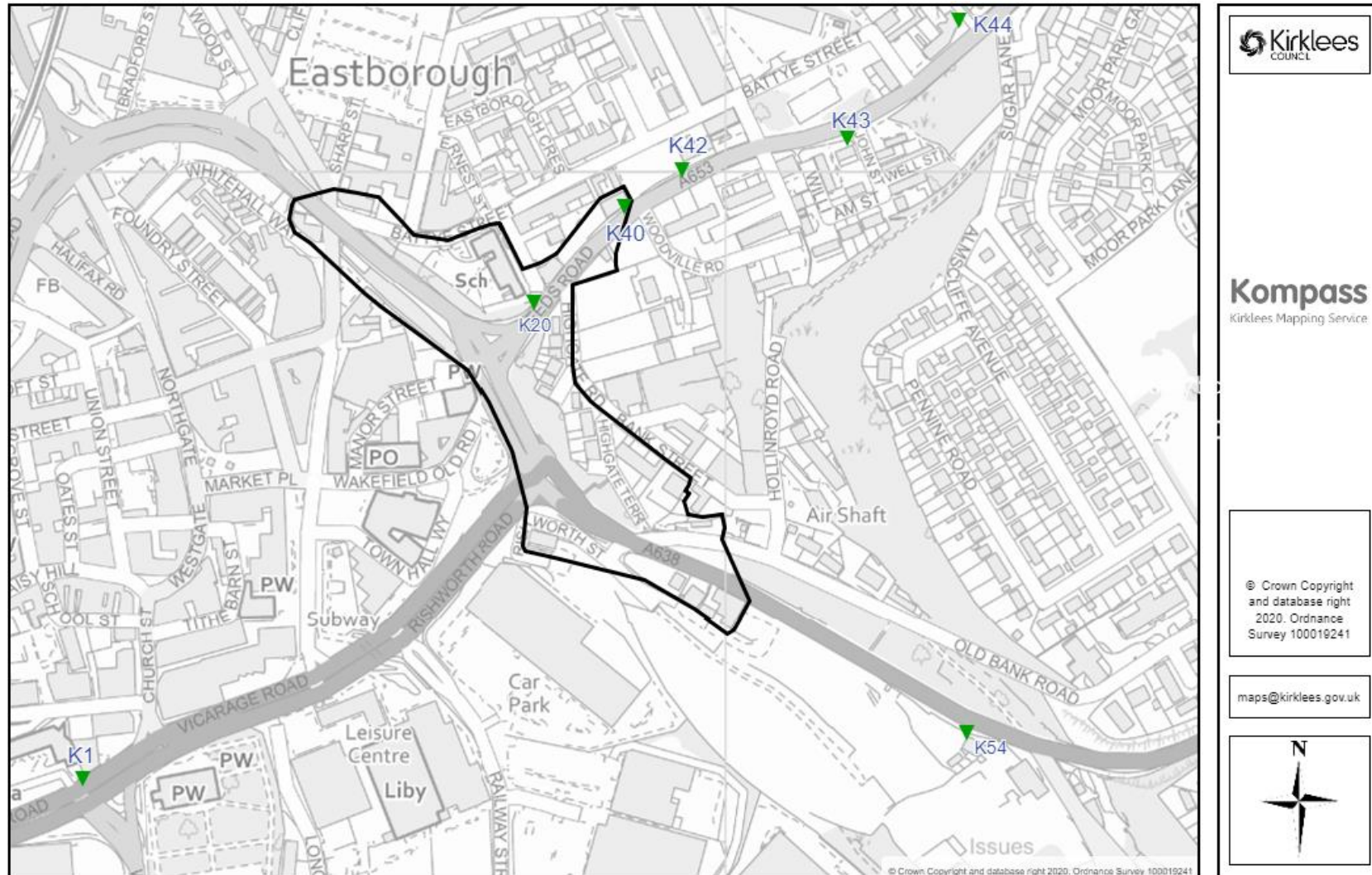
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Map D.4 Air Quality Management Area 5 Eastborough



  
Kirklees Council

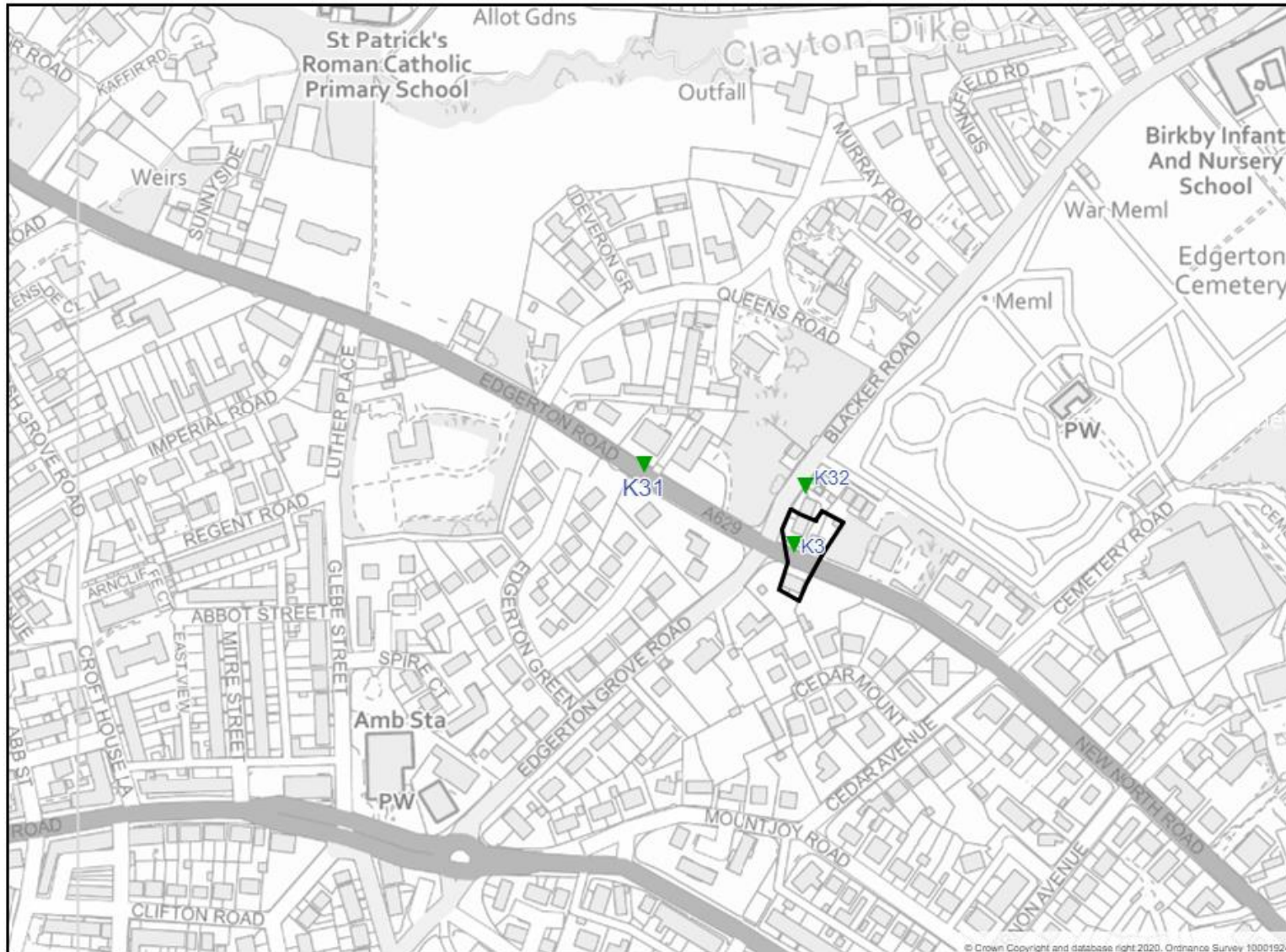
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Map D.5 Air Quality Management Area 6 Edgerton



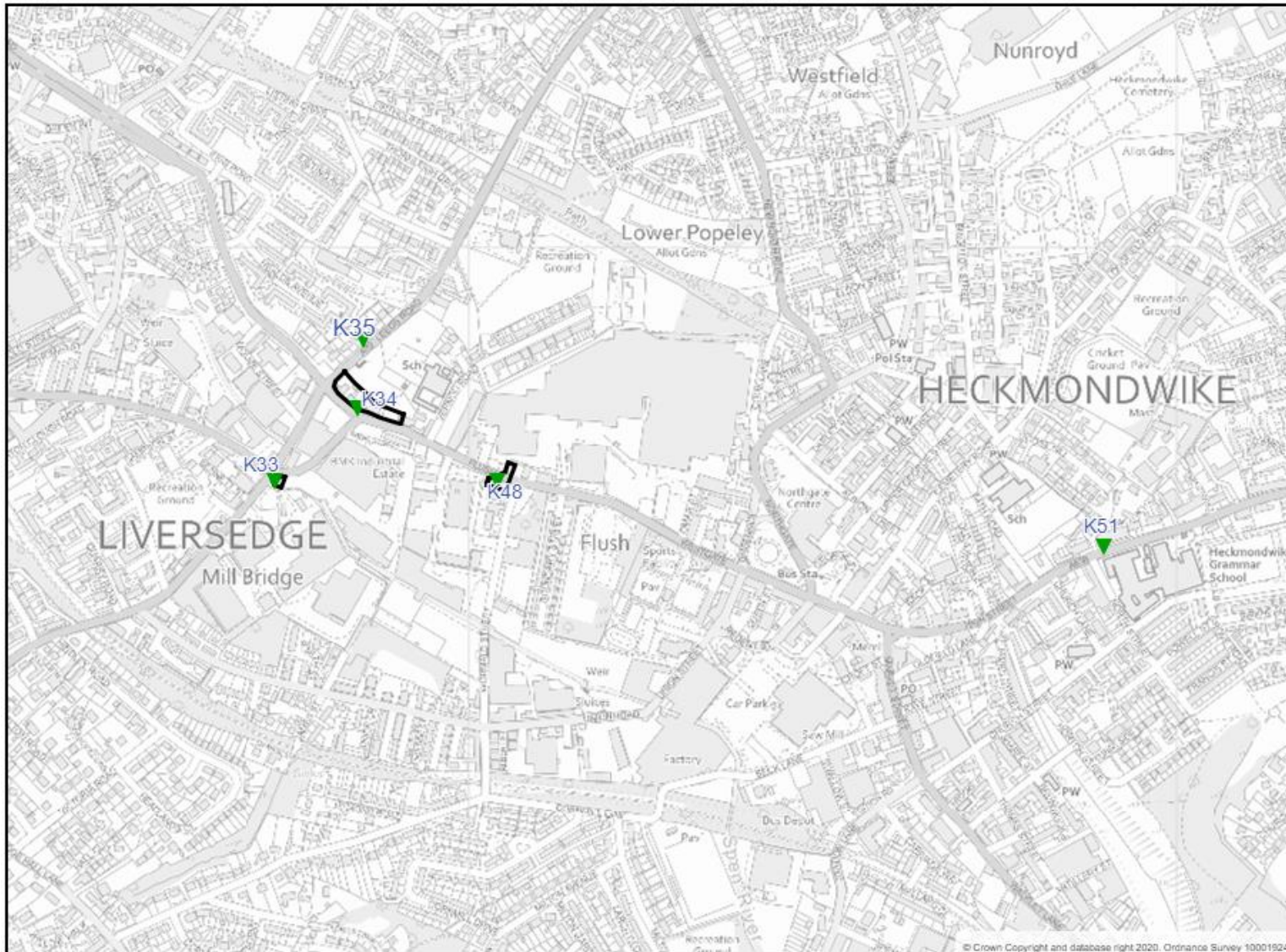
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Map D.6 Air Quality Management Area 7 Liversedge



  
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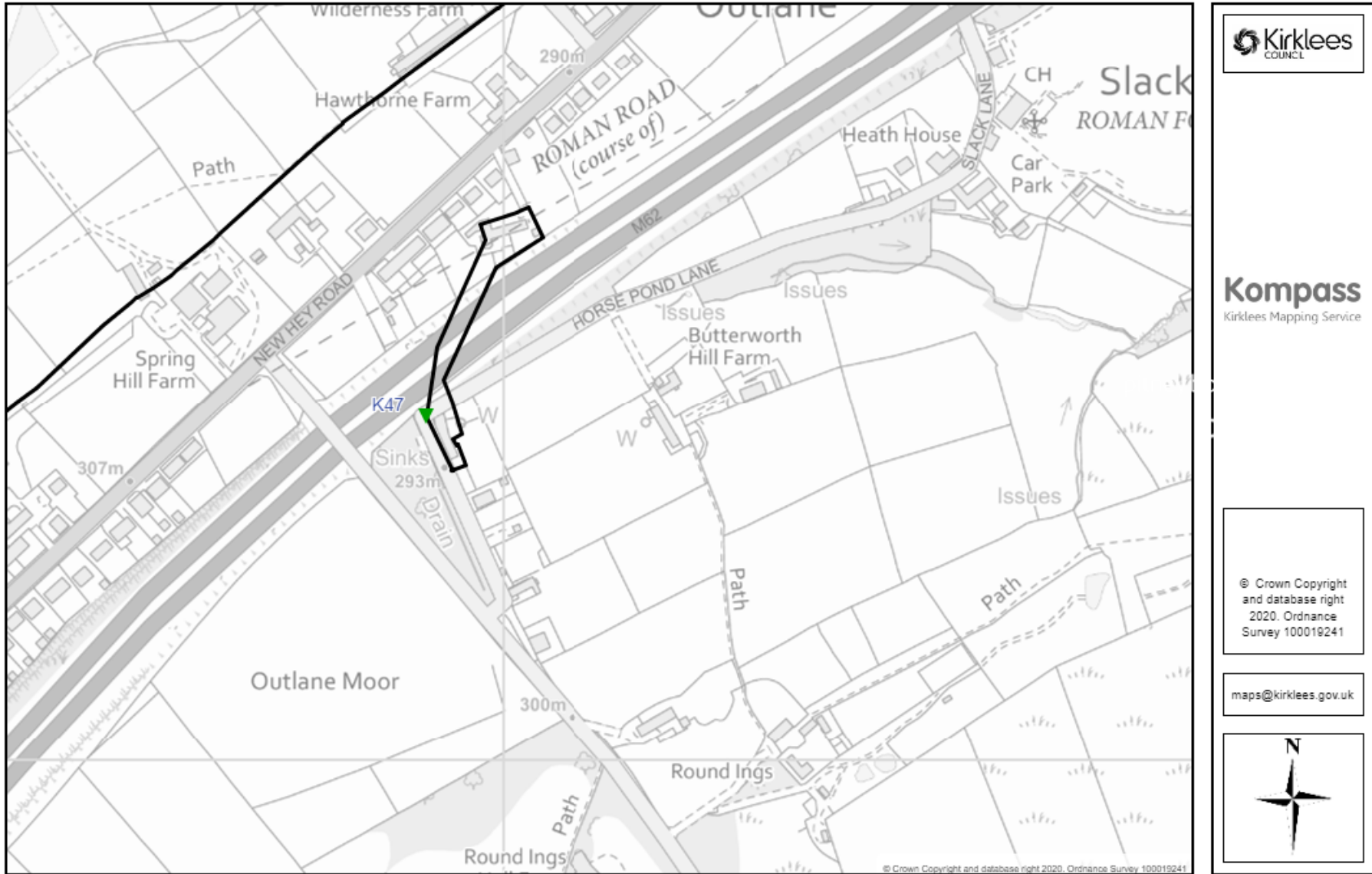
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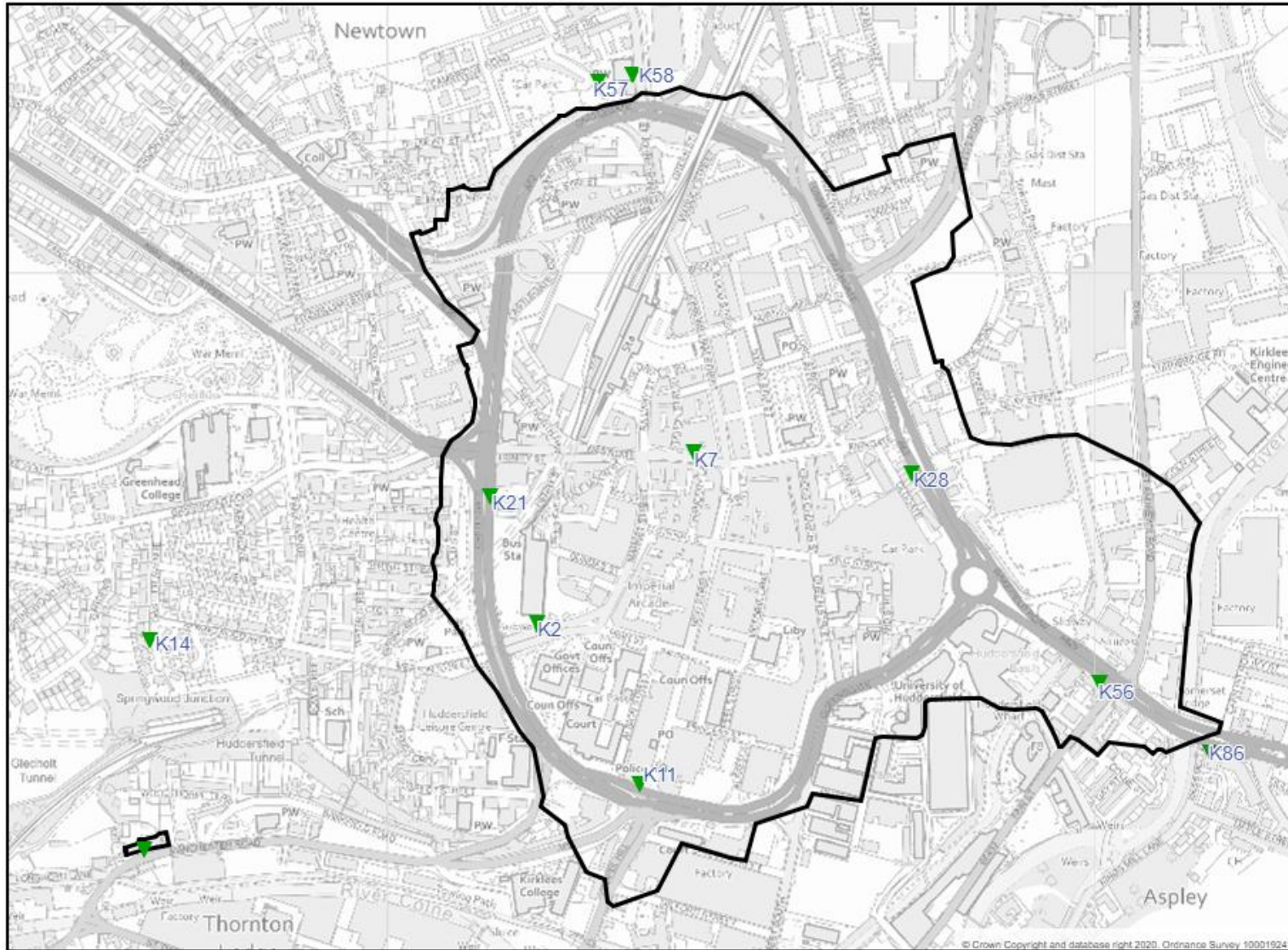




Map D.7 Air Quality Management Area 8 Outlane



Map D.8 Air Quality Management Area 9 Huddersfield Town Centre



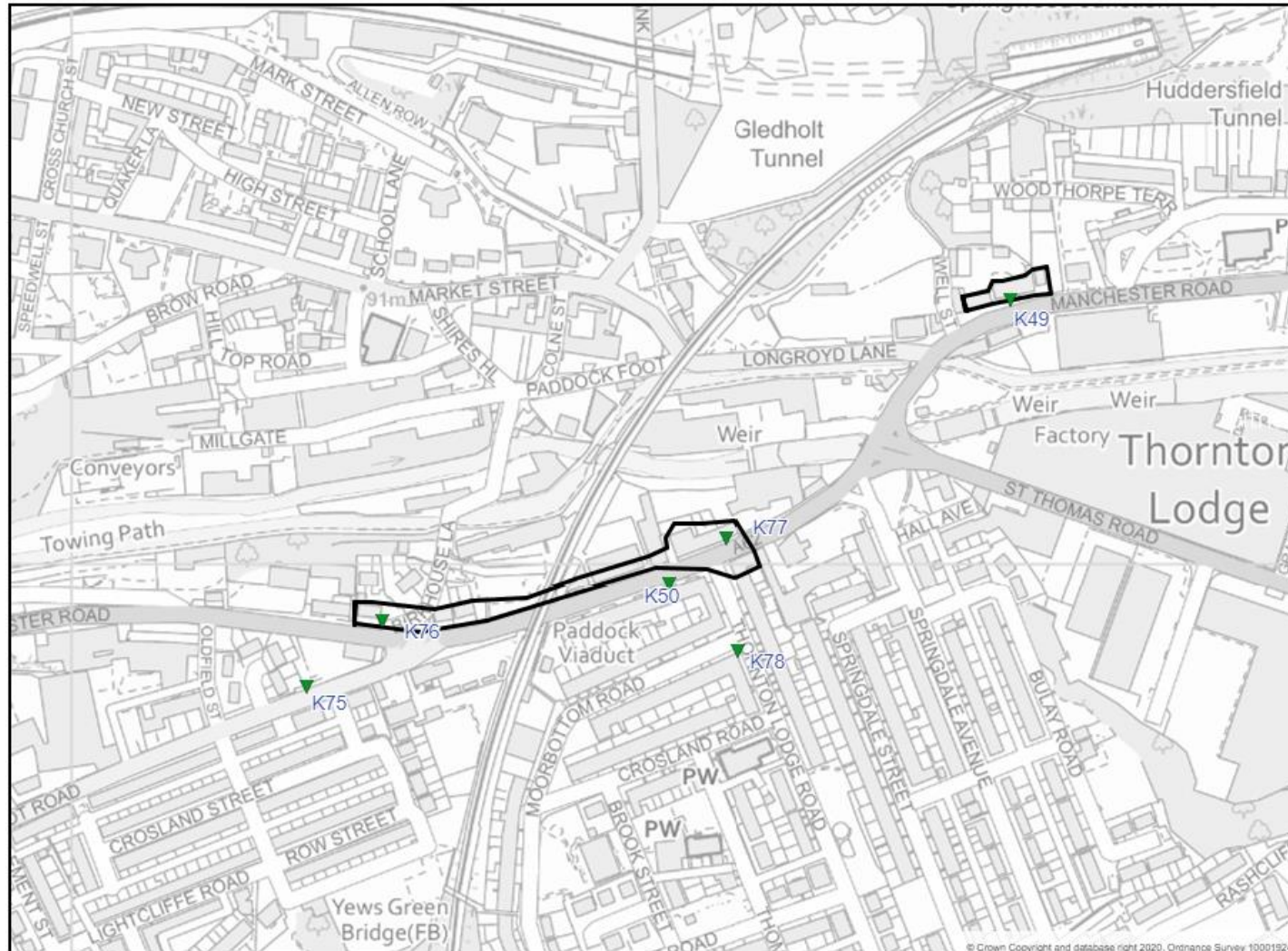
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Map D.9 Air Quality Management Area 10 Thornton Lodge




  
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Map D.10 Air Quality Monitoring in Batley



  
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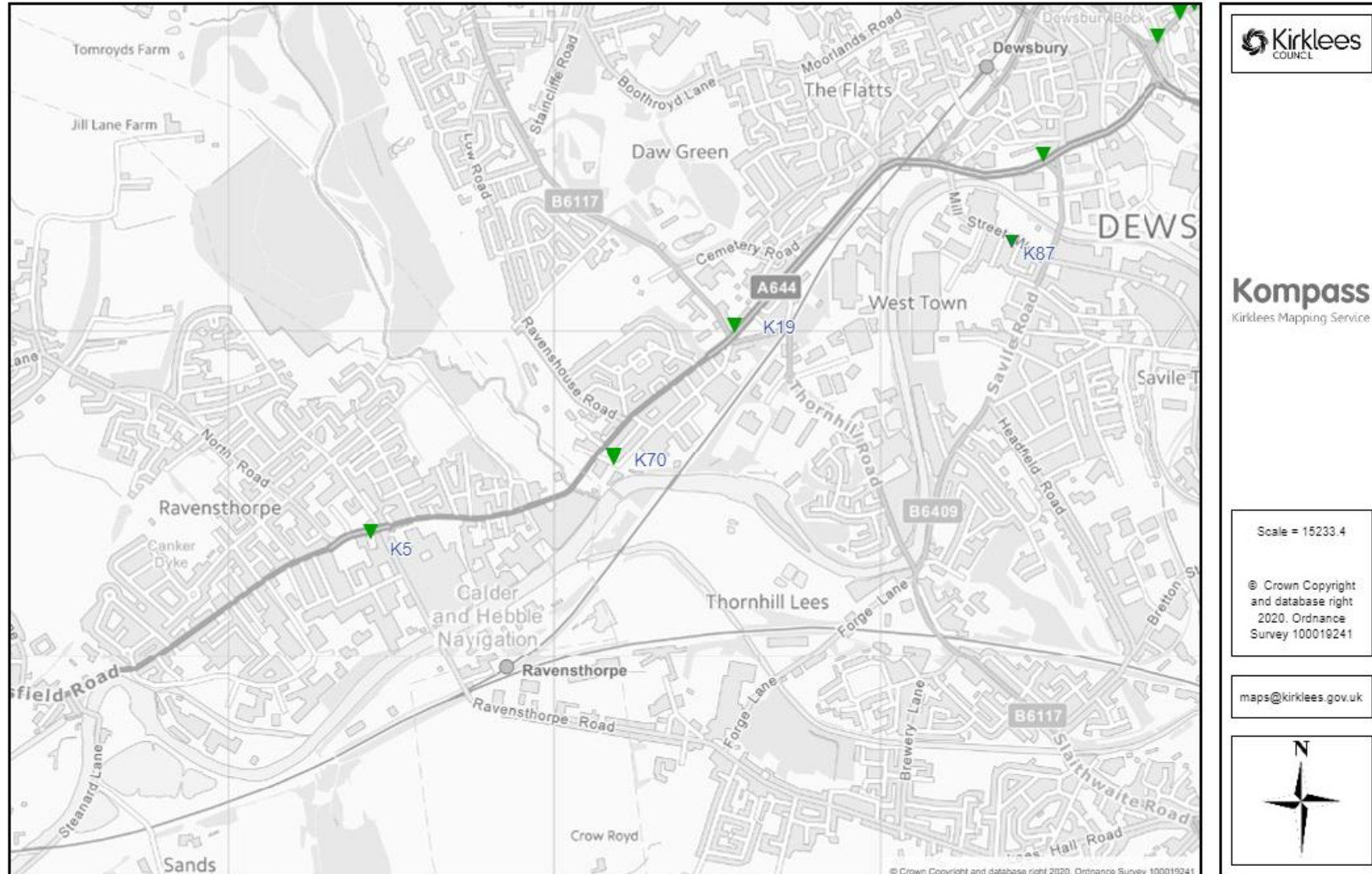
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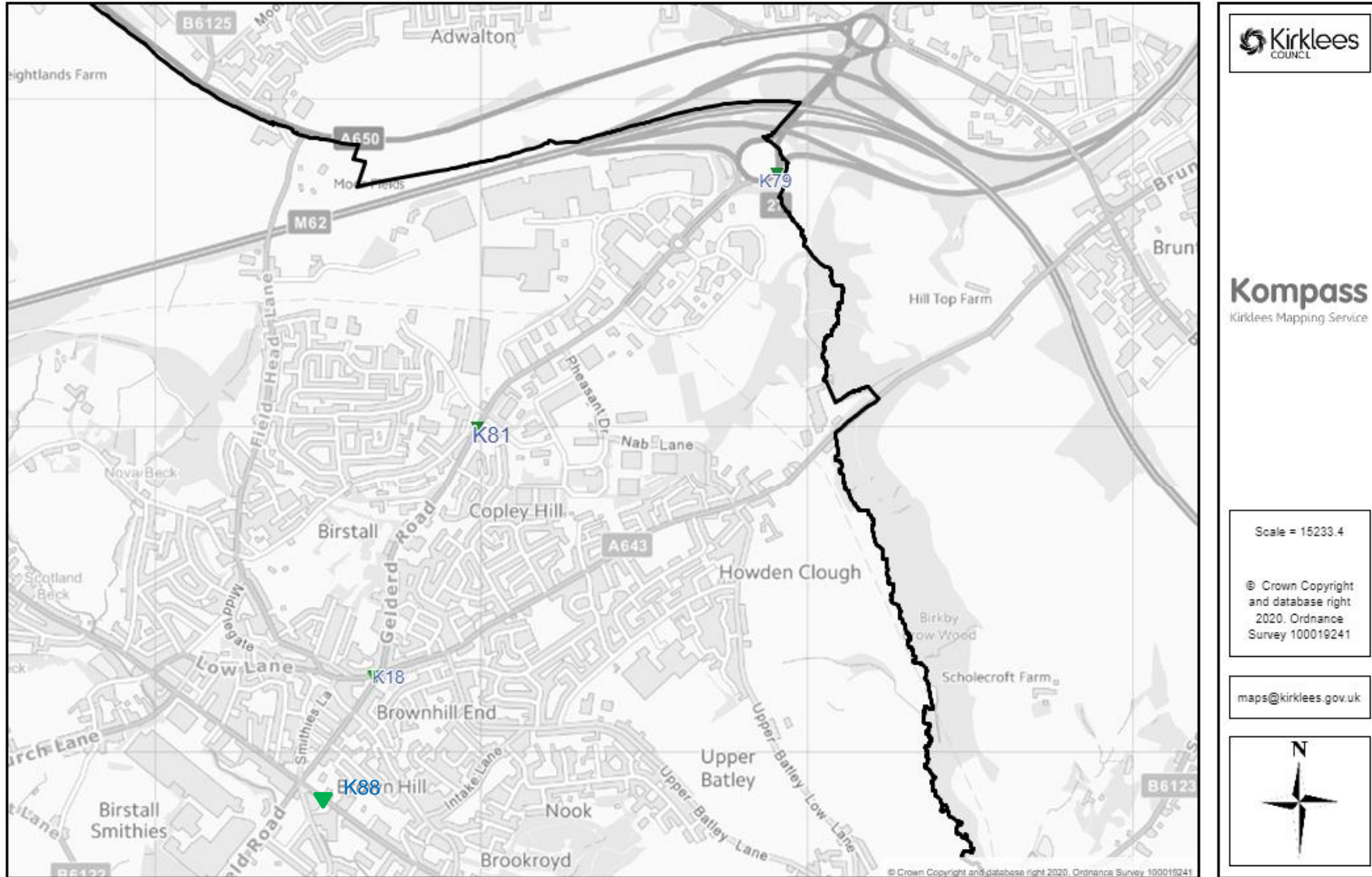
Map D.11 Air Quality Monitoring in Ravensthorpe / Scouthill (Previously AQMA 2)



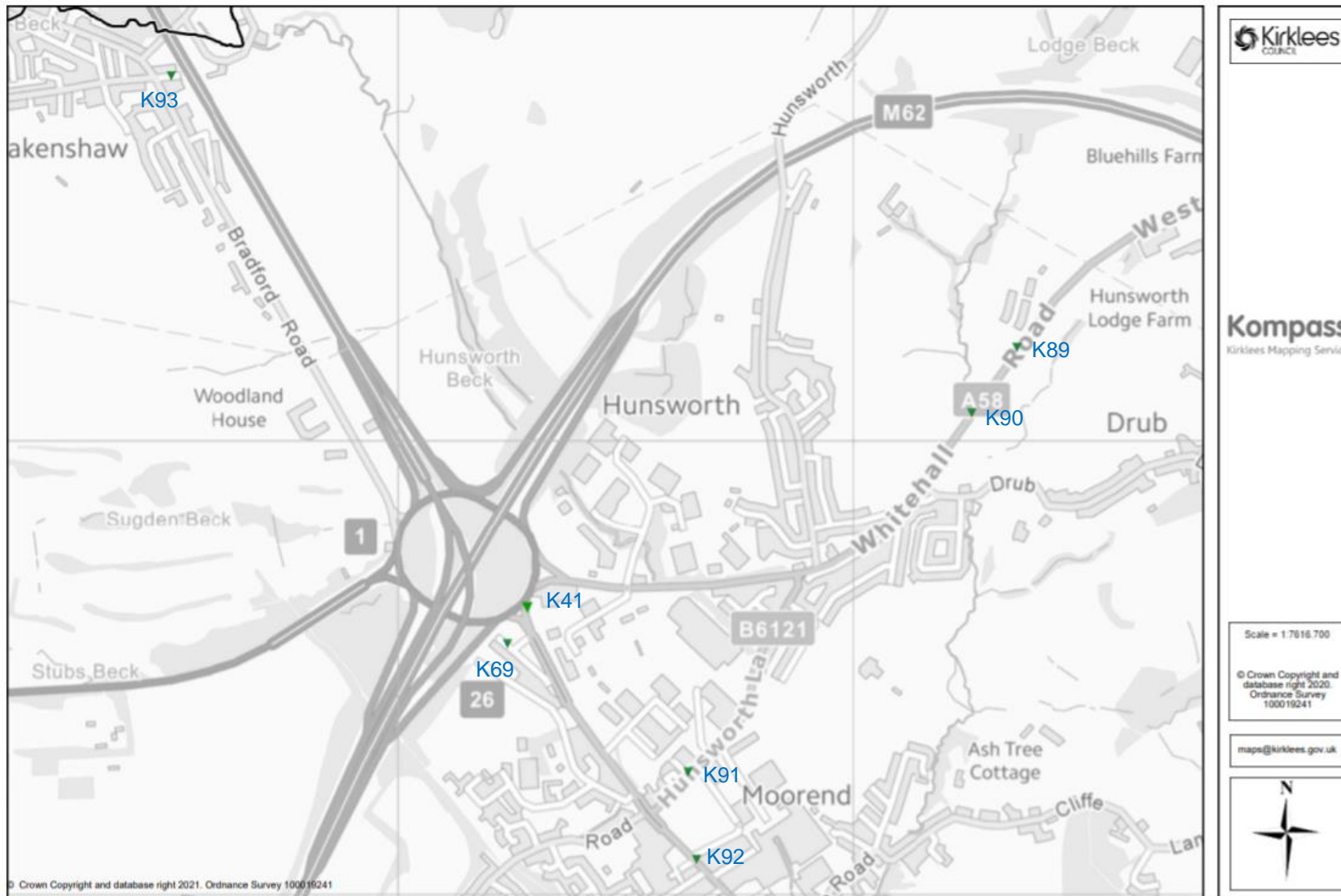
Map D.12 Air Quality Monitoring in Mirfield



Map D.13 Air Quality Monitoring in Birstall

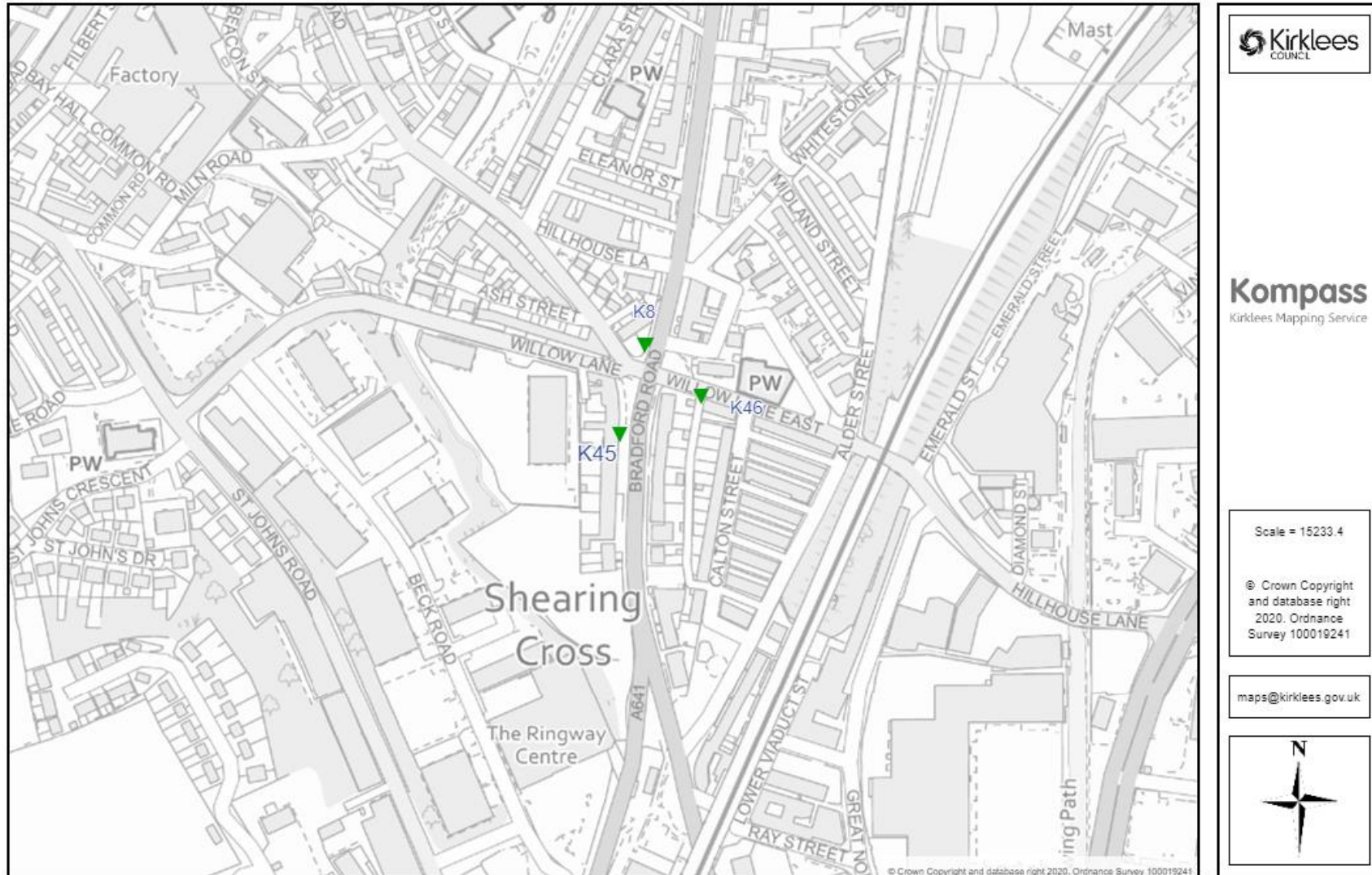


Map D.14 Air Quality Monitoring in Cleckheaton, Hunsworth & Oakenshaw

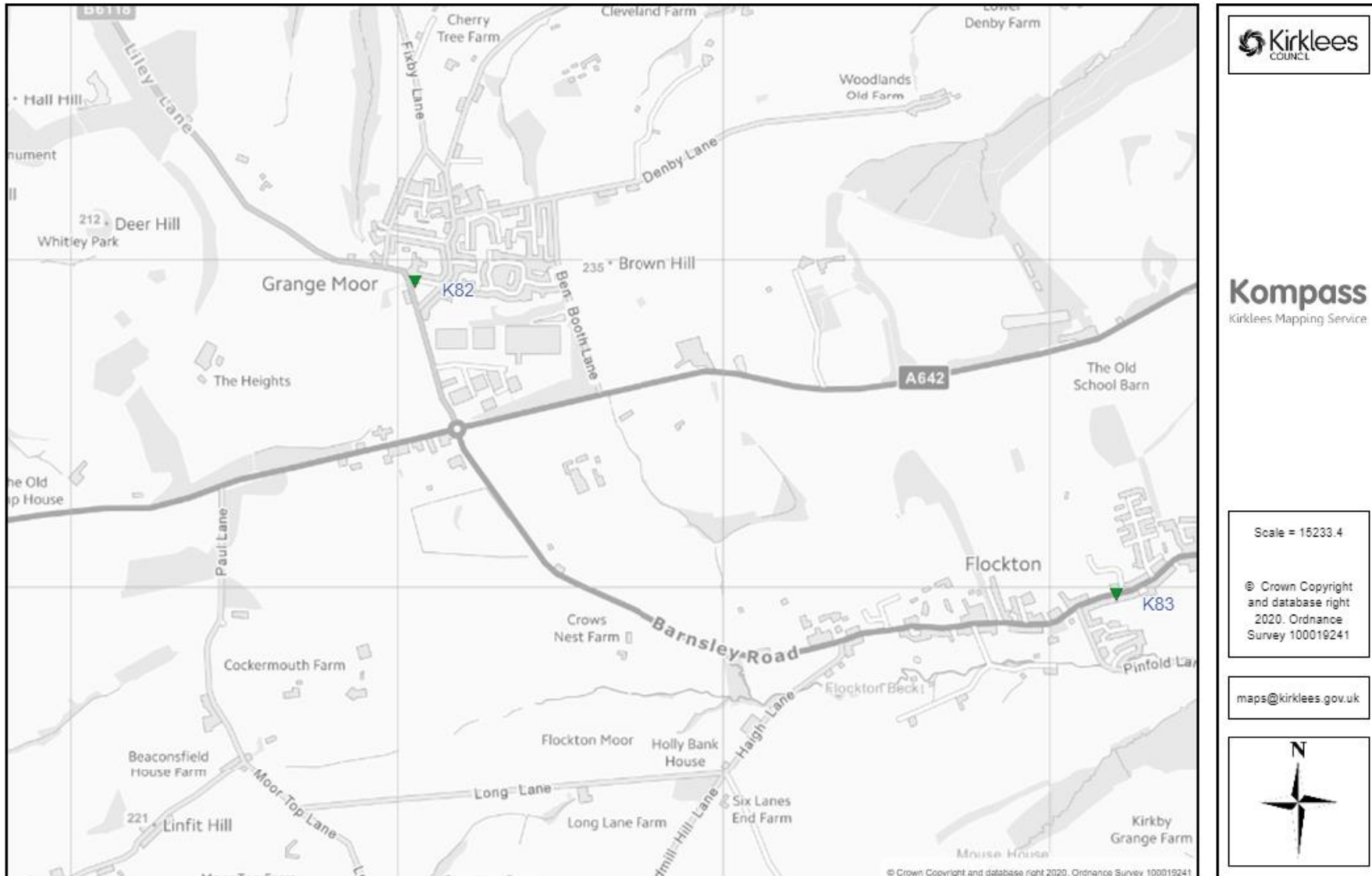




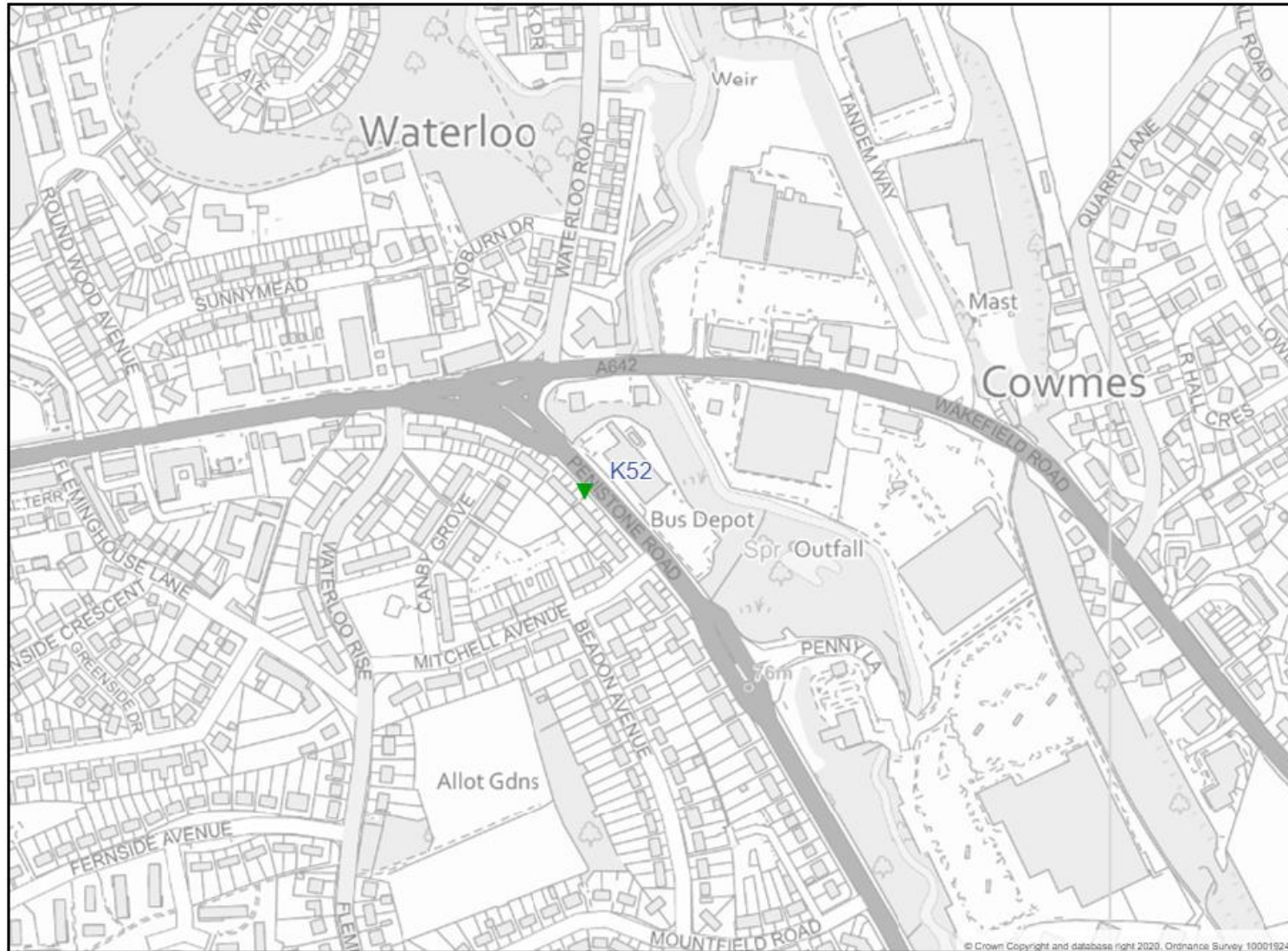
Map D.15 Air Quality Monitoring in Fartown




Map D.16 Air Quality Monitoring in Grange Moor and Flockton



Map D.17 Air Quality Monitoring in Waterloo




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Map D.18 Air Quality Monitoring in Milnsbridge




  
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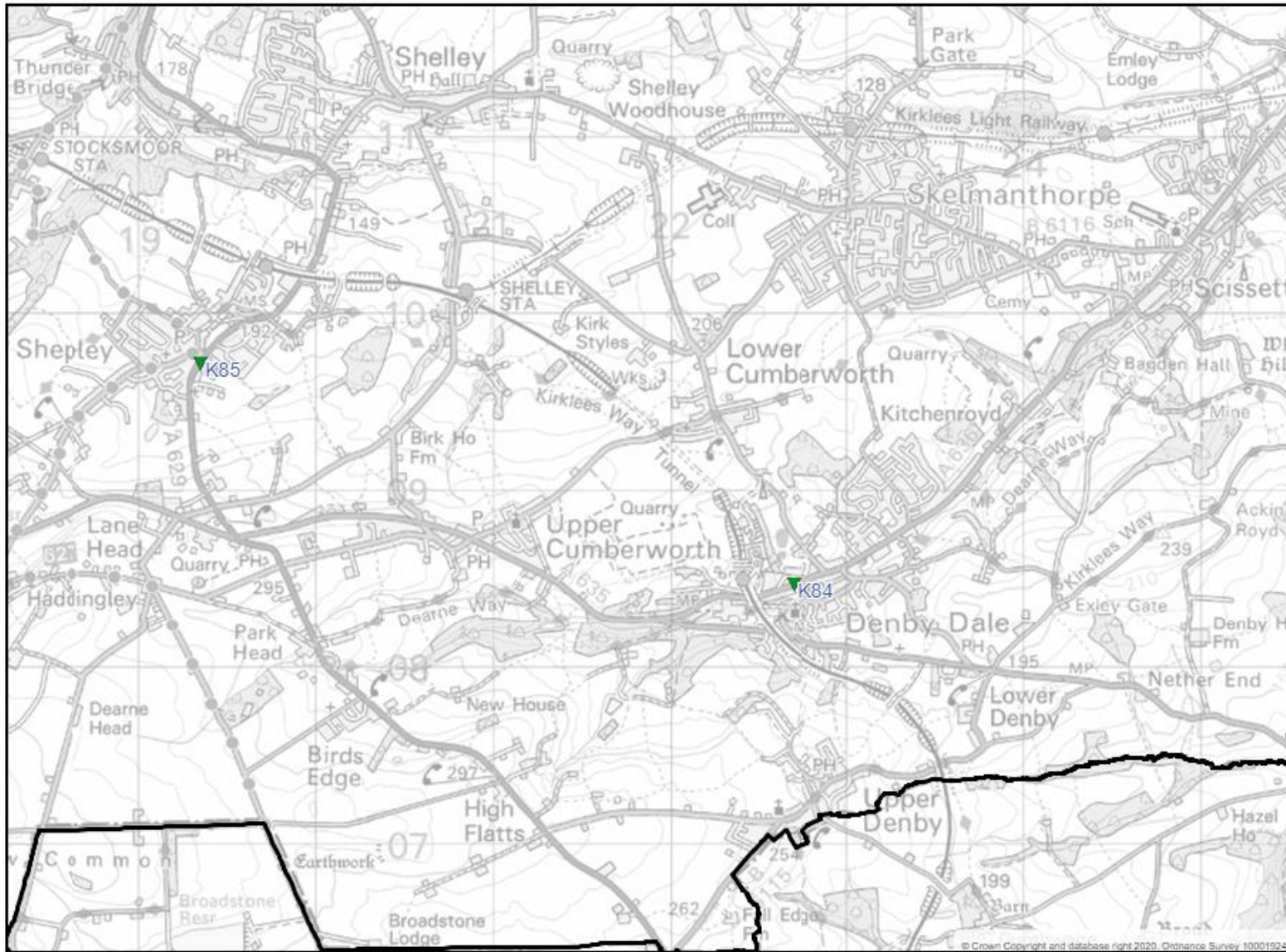
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Map D.19 Air Quality Monitoring in Shepley and Denby Dale

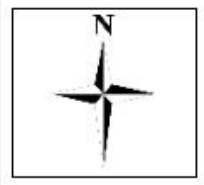


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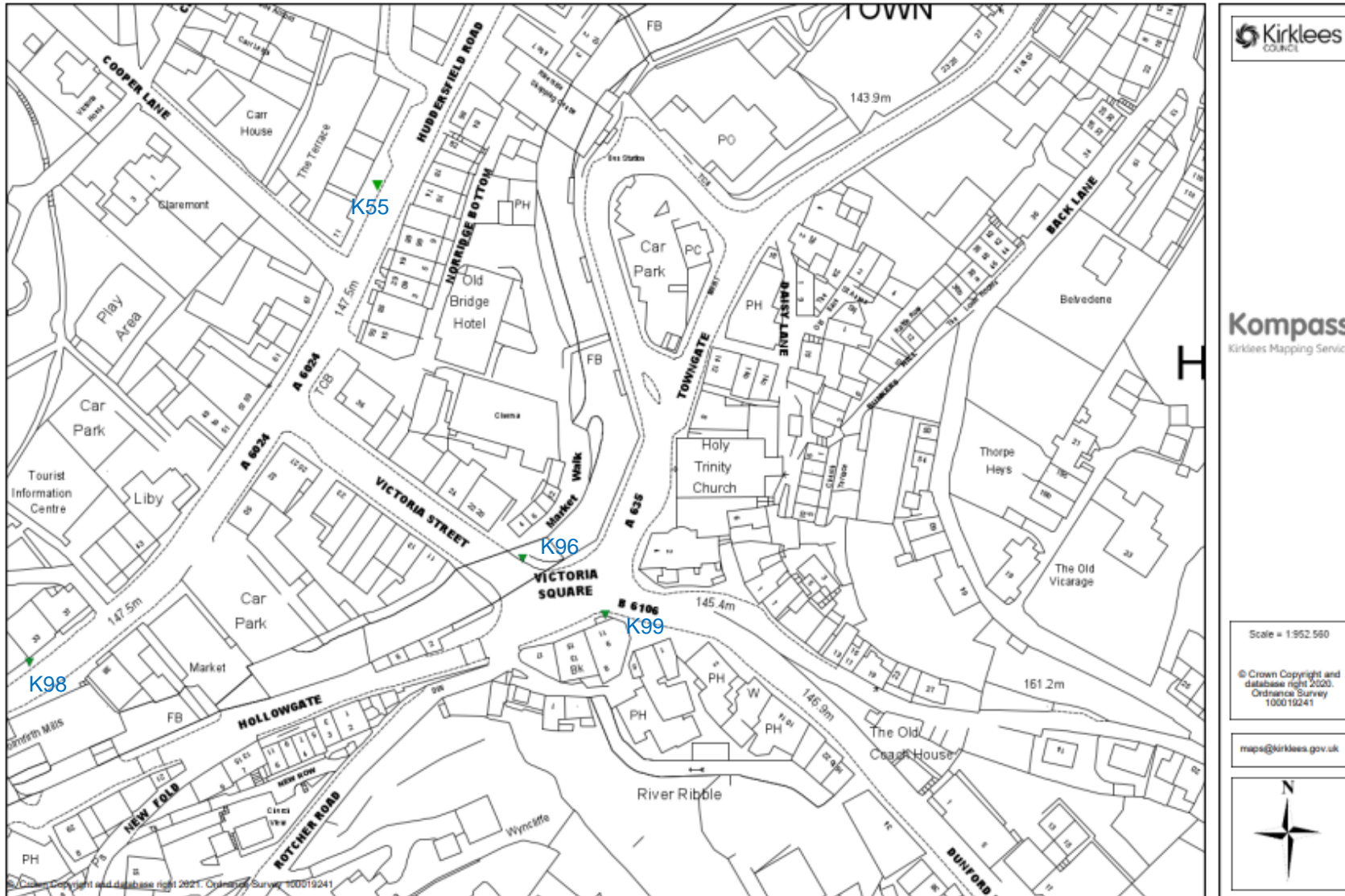
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Map D.20 Air Quality Monitoring in Holmfirth



Map D.21 Air Quality Monitoring in Shaw Cross



Map D.21 Air Quality Monitoring in Oakes & Marsh





Map D.22 Air Quality Monitoring in Bradley



## Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

Pollutant	Air Quality Objective <sup>6</sup>	
	Concentration	Measured as
Nitrogen Dioxide (NO <sub>2</sub> )	200 µg/m <sup>3</sup> not to be exceeded more than 18 times a year	1-hour mean
	40 µg/m <sup>3</sup>	Annual mean
Particulate Matter (PM <sub>10</sub> )	50 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	24-hour mean
	40 µg/m <sup>3</sup>	Annual mean
Sulphur Dioxide (SO <sub>2</sub> )	350 µg/m <sup>3</sup> , not to be exceeded more than 24 times a year	1-hour mean
	125 µg/m <sup>3</sup> , not to be exceeded more than 3 times a year	24-hour mean
	266 µg/m <sup>3</sup> , not to be exceeded more than 35 times a year	15-minute mean

<sup>6</sup> The units are in microgrammes of pollutant per cubic metre of air (µg/m<sup>3</sup>).

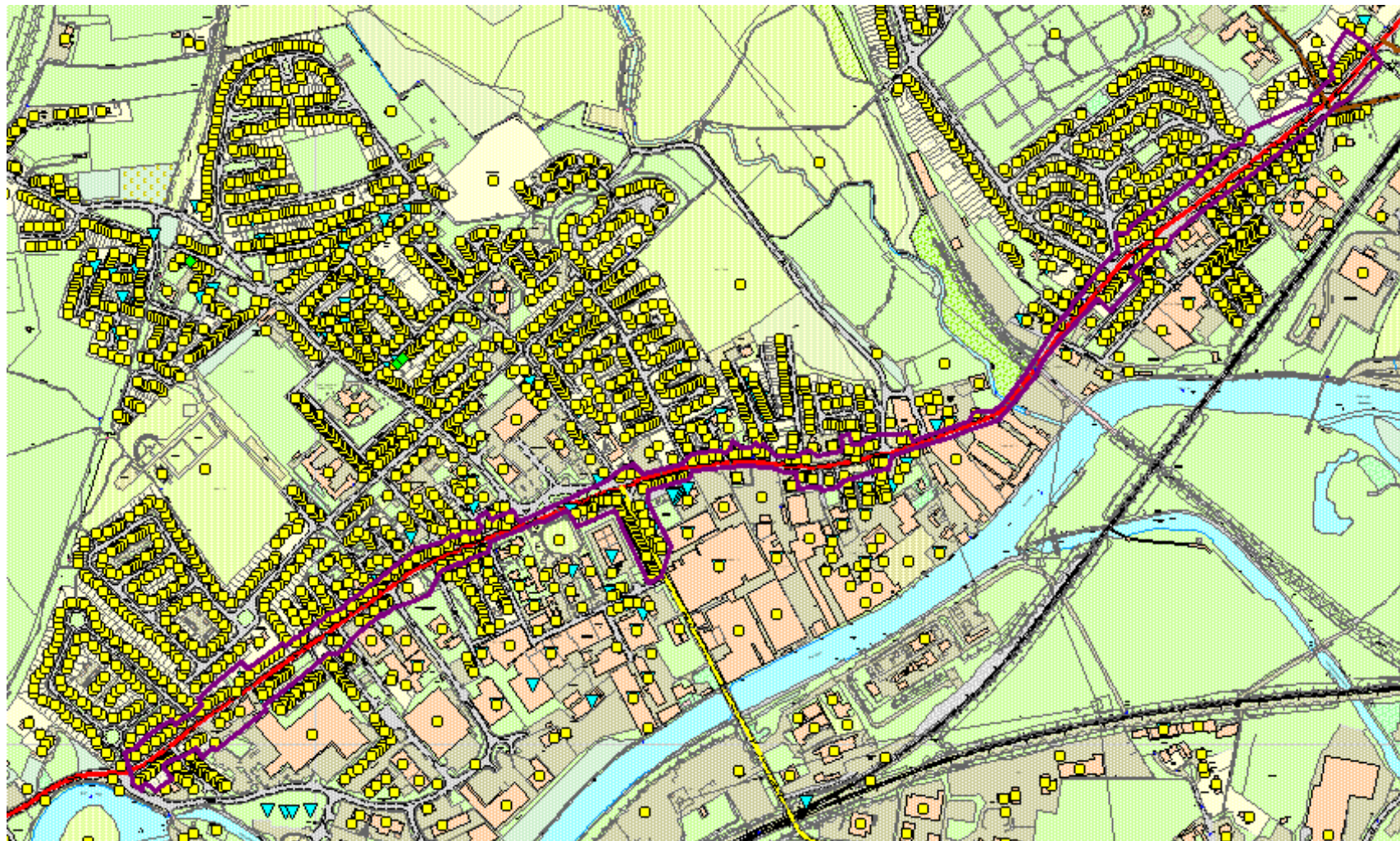
Map E.1 Amended AQMA 1 Part 1 (changes accepted in ASR 2016)



Map E.1 Amended AQMA 1 Part 2 (changes accepted in ASR 2016)



Map E.2 Amended Revoked AQMA2 (changes accepted in ASR 2016)



## Appendix F: Impact of COVID-19 upon LAQM

COVID-19 has had a significant impact on society. Inevitably, COVID-19 has also had an impact on the environment, with implications to air quality at local, regional and national scales.

COVID-19 has presented various challenges for Local Authorities with respect to undertaking their statutory LAQM duties in the 2021 reporting year. Recognising this, Defra provided various advice updates throughout 2020 to English authorities, particularly concerning the potential disruption to air quality monitoring programmes, implementation of Air Quality Action Plans (AQAPs) and LAQM statutory reporting requirements. Defra has also issued supplementary guidance for LAQM reporting in 2021 to assist local authorities in preparing their 2021 ASR. Where applicable, this advice has been followed.

Despite the challenges that the pandemic has given rise to, the events of 2020 have also provided Local Authorities with an opportunity to quantify the air quality impacts associated with wide-scale and extreme intervention, most notably in relation to emissions of air pollutants arising from road traffic. The vast majority (>95%) of AQMAs declared within the UK are related to road traffic emissions, where attainment of the annual mean objective for nitrogen dioxide (NO<sub>2</sub>) is considered unlikely. On 23rd March 2020, the UK Government released official guidance advising all members of public to stay at home, with work-related travel only permitted when absolutely necessary. During this initial national lockdown (and to a lesser extent other national and regional lockdowns that followed), marked reductions in vehicle traffic were observed; Department for Transport (DfT) data<sup>7</sup> suggests reductions in vehicle traffic of up to 70% were experienced across the UK by mid-April, relative to pre COVID-19 levels.

This reduction in travel in turn gave rise to a change of air pollutant emissions associated with road traffic, i.e. nitrous oxides (NO<sub>x</sub>), and exhaust and non-exhaust particulates (PM). The Air Quality Expert Group (AQEG)<sup>8</sup> has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO<sub>2</sub> annual mean concentrations were between 20 and 30% relative to pre-pandemic levels, which represents an absolute reduction of between 10 to 20µg/m<sup>3</sup> if expressed relative to annual mean averages. During this period, changes in PM<sub>2.5</sub> concentrations were less marked than those of NO<sub>2</sub>. PM<sub>2.5</sub> concentrations are affected by both local sources and the transport of pollution from wider regions, often from well beyond the UK. Through analysis of AURN monitoring data for 2018-2020, AQEG have detailed that PM<sub>2.5</sub> concentrations during the initial lockdown period are of the order 2 to 5µg/m<sup>3</sup> lower relative to those that would be expected under business-as-usual conditions.

As restrictions are gradually lifted, the challenge is to understand how these air quality improvements can benefit the long-term health of the population.

### Impacts of COVID-19 on Air Quality within Kirklees Council

The impact of the COVID19 pandemic has had a visible impact on concentrations at monitoring sites, where data is available. Real-time data during March – July 2020 lockdown showed reductions of 30%, though July / August concentration rose significantly and remained higher through subsequent measure, but still lower than would be expected pre-pandemic. The difference between 2019 & 2020 show that concentrations fell between 17 – 19% during 2020. Using NO<sub>2</sub> as an indicator, it is estimated that all mandatory lockdowns in response to the pandemic resulted in a 10% greater reductions than would be anticipated for 2020, had the pandemic not occurred.

### Opportunities Presented by COVID-19 upon LAQM within Kirklees Council

Kirklees Council installed a strategic sensor network across the district at key locations to understand impact of Pandemic, recovery maps and the impact of certain areas of society on pollution, such as buses commuters, schools and retail. Findings from these studies are aimed to allow targeting on specific sectors dependant on any outcomes identified.

<sup>7</sup> Prime Minister's Office, COVID-19 briefing on the 31<sup>st</sup> of May 2020

<sup>8</sup> Air Quality Expert Group, Estimation of changes in air pollution emissions, concentrations and exposure during the COVID-19 outbreak in the UK, June 2020

## Challenges and Constraints Imposed by COVID-19 upon LAQM within Kirklees Council

- £400k Capital plan delays occurred. Primary impact centred around accessibility to relevant sites for delivery and also staff availability to procure and deliver. Funding has been re-profiled into 2021/22 fiscal year and is at procurement stage for 3 of 4 of the projects. Eastborough Green Screen is delayed due to accessibility to schools and will be addressed in new school year. **Small Impact**
- Data capture for Real-time monitors impacted due to faults on station and availability of officers to undertake repair. Resulted in 60% data capture. **Small Impact**
- Delivery of installation of ULEV Taxi Scheme Rapid Chargers due to 3<sup>rd</sup> party contractor availability and site accessibility during lockdown periods.. **Small Impact**
- 

The impacts as presented above are aligned with the criteria as defined in Table F 1, with professional judgement considered as part of their application.

Table F 1 – Impact Matrix

Category	Impact Rating: None	Impact Rating: Small	Impact Rating: Medium	Impact Rating: Large
Automatic Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Automatic Monitoring – QA/QC Regime	Adherence to requirements as defined in LAQM.TG16	Routine calibrations taken place frequently but not to normal regime. Audits undertaken alongside service and maintenance programmes	Routine calibrations taken place infrequently and service and maintenance regimes adhered to. No audit achieved	Routine calibrations not undertaken within extended period (e.g. 3 to 4 months). Interruption to service and maintenance regime and no audit achieved
Passive Monitoring – Data Capture (%)	More than 75% data capture	50 to 75% data capture	25 to 50% data capture	Less than 25% data capture
Passive Monitoring – Bias Adjustment Factor	Bias adjustment undertaken as normal	<25% impact on normal number of available bias adjustment colocation studies (2020 vs 2019)	25-50% impact on normal number of available bias adjustment studies (2020 vs 2019)	>50% impact on normal number of available bias adjustment studies (2020 vs 2019) and/or applied bias adjustment factor studies not considered representative of local regime
Passive Monitoring – Adherence to Changeover Dates	Defra diffusion tube exposure calendar adhered to	Tubes left out for two exposure periods	Tubes left out for three exposure periods	Tubes left out for more than three exposure periods
Passive Monitoring – Storage of Tubes	Tubes stored in accordance with laboratory guidance and analysed promptly.	Tubes stored for longer than normal but adhering to laboratory guidance	Tubes unable to be stored according to be laboratory guidance but analysed prior to expiry date	Tubes stored for so long that they were unable to be analysed prior to expiry date. Data unable to be used
AQAP – Measure Implementation	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP
AQAP – New AQAP Development	Unaffected	Short delay (<6 months) in development of a new AQAP, but is on-going	Long delay (>6 months) in development of a new AQAP, but is on-going	No progression in development of a new AQAP



## Glossary of Terms

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

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the local authority 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
ASR	Air quality Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
EU	European Union
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less

QA/QC	Quality Assurance and Quality Control
SO <sub>2</sub>	Sulphur Dioxide

## References

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Local Air Quality Management Technical Guidance LAQM TG (16) DEFRA 2016

Air Quality (England) Regulations 2000. SI 2000/928, London: HMSO

Air Quality (England) (Amendment) Regulations 2002. SI 2002/3043, London: HMSO