



2020 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 2020

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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^{1,2}.

The annual health cost to society of the impacts of particulate matter alone in the UK is estimated to be around £16 billion³.

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.

Current trends indicate that the levels of these pollutants have fallen over the last 5 years, but health related objectives are still 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>.

The Kirklees AQMA's are;

- Bradley, Huddersfield
- Scouthill, Dewsbury
- Birchencliffe, Huddersfield
- Birkenshaw, Bradford

¹ Environmental equity, air quality, socioeconomic status and respiratory health, 2010

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

³ Defra. Abatement cost guidance for valuing changes in air quality, May 2013

- Eastborough, Dewsbury
- Edgerton, Huddersfield
- Liversedge / Heckmondwike
- Huddersfield Town Centre
- Outlane, Huddersfield
- Thornton Lodge, Huddersfield

Current 5 year trends for NO₂ indicate 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 the five years it has been observed that NO₂ concentration have fallen by 13% across this district and this has been slightly higher within the AQMA's at 15-19%. Notwithstanding this, concentrations in some areas still exceed AQO which indicates further work is 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 2019 in pursuit of improving local air quality.

NO₂ concentrations have fallen by between 15-19% within the AQMA's over the last 5 years, which is above the district average of 13% and a testament to the success of delivery of the previous plan and current schemes within the new plan. The falling trends are also reflected year on year, with reductions between 2018 to 2019 of 8% in the AQMA's and districtwide fall of 6%.

As such, the council, saw compliance in 7 of the 10 Kirklees AQMA's are revoking AQMA 2 in Scouthill.

In 2019 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 completed measures in 2019 were:

- Adopted a new Air Quality Strategy & 5 Year Action Plan.

In winter 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.

- Created and Recruited to a new Air Quality Delivery Team

In order to deliver this new Action Plan, Kirklees Council identified the need for resource support in order to achieve the aims of the plan. As such, the council has created a delivery team of project officers to support partners in their commitments and deliver a program of works contained within the Action Plan.

- Declared a Climate Emergency

In January 2019, Kirklees Council declared a Climate Emergency and has begun working on a plan to deliver Carbon reductions across the district. Kirklees recognise the important link of Climate Emergency and Air Quality to bring about environmental improvements. Therefore, Air Quality leads sit on the Climate Emergency Board with the aim to achieve a plan that will have positive impact on both the Climate and Air Quality.

- Completed Review of WYLES on behalf of the region

With 2019, a West Yorkshire Low Emissions Officer appointed to evaluate the progress of the West Yorkshire Low Emission Strategy (WYLES). In 2019, a review within each Authority was undertaken and reported to regional forums. Following on from the review, actions were identified, and a delivery plan was constructed to update the WYLES to ensure it continues to deliver emissions reductions. During 2020/21, officers will be working on a regional basis to deliver the WYLES action plan.

- Procurement of an 3rd party operator to deliver the West Yorkshire OLEV Electric Vehicle Taxi Scheme.
- Purchased Sensors Technology to assess validity

In 2019, Kirklees Council identified a monitoring gap within the authority's capabilities, centring around PM monitoring. Therefore, Kirklees Council has invested in 5 Zephyr Sensors to evaluate their effectiveness within the field. Upon completion for this piece of work, 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.

Conclusions and Priorities

From analysis of 2019 Air Quality data Kirklees Council reports that only 3 current AQMA's had exceedances of the Annual NO₂ Air Quality Objectives (AQO) (Huddersfield Town Centre, Eastborough and Outlane). The remaining 7 AQMA's were compliant for NO₂ in 2019, though these results may be due to favourable conditions within 2019. As such, the council proposes to continue to monitor within these areas and deliver Action plans during 2020.

In addition to the AQMA's, 1 singular passive monitoring location exceeded the Annual NO₂ AQO and another area has seen increases resulting to concentrations close to the AQO. These areas are in Mirfield and Milnsbridge. It has been noted that these are singular passive sites and observations show 17% (Mirfield) and 83% (Milnsbridge) increases respectively from previous years. Due to this large increase, which is opposite to the rest of the trends districtwide, it is proposed to increase monitoring in these areas to understand the exceedances and confirm whether the results were outliers.

Kirklees Council has taken forward several measures during the current reporting year of 2019 in pursuit of improving local air quality.

Moving forward into 2020, the council's priorities for air quality are listed below;

- Deliver Kirklees Air Quality Budget Projects;
 - GLOSA Traffic Light Project
 - Birkenshaw Roundabout Scheme
 - Zephyr Sensor Technology
 - Eastborough Green Screen
- Feed into the Climate Emergency Plan
- Installation of Electric Vehicle Infrastructure including 17 chargers as part of the OLEV Taxi Scheme
- Delivery of a Report on Electric Vehicle Infrastructure needs within the region
- Install further monitoring into Mirfield and Milnsbridge
- Work to deliver WYLES Action Plan
- Monitor the impact of COVID19

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 pollution@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://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 2019 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 | Link |
| 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 | 38 | µg/m3 | Air Quality Action Plan for Kirklees Council Version 1.4 | Sep-19 | https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx |

| | | | | | | | | | | | | |
|---|----------------------|-------------------------|------------------|---|-----|----------------|-----------------|---------|-----------------|--|--------|---|
| AQMA 2 Scouthill TO BE REVOKE D | Declared 27/02/09 | PM10 24 Hour Mean | Dewsbury | Now revoked, the designat ed area incorpora ted part of Huddersf ield Road (A644) in Scouthill | NO | 43 Da ys | Exceedan ces | N/ A | Exceedan ces | Air Qualit y Actio n Plan for Kirkle es Coun cil Versi on 1.4 | Sep-19 | https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx |
| AQMA 3 Ainley Top | Declared 01/11/17 | NO2 Annual Mean | Huddersf ield | The designat ed area incorpora tes Halifax Road (A629), Lindley Moor Road Bradley Road (A643), Warren House Lane and Stirling Wood Close, which is in close proximity to the Ainley | YES | 44 | µg/m3 | 36 | µg/m3 | Air Qualit y Actio n Plan for Kirkle es Coun cil Versi on 1.4 | Sep-19 | https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx |

| | | | | | | | | | | | | |
|-------------------|-------------------|-----------------|----------|--|-----|----|-------|----|-------|--|--------|---|
| | | | | Top Roundabout at Birchcliffe | | | | | | | | |
| 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, Swincliffe Crescent, Milford Grove, Tetley Drive and Manor Park Gardens, which is in close | YES | 45 | µg/m3 | 37 | µg/m3 | Air Quality Action Plan for Kirklees Council Version 1.4 | Sep-19 | https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx |

| | | | | | | | | | | | | |
|--------------------|-------------------|-----------------|----------|---|----|----|-------|----|-------|--|--------|---|
| | | | | 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 | 56 | µg/m3 | Air Quality Action Plan for Kirklees Council Version 1.4 | Sep-19 | https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx |

| | | | | | | | | | | | | |
|-------------------|-------------------|-----------------|--------------|---|----|----|-------|----|-------|--|--------|---|
| | | | | y 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 | 43 | µg/m3 | Air Quality Action Plan for Kirklees Council Version 1.4 | Sep-19 | https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx |
| AQMA 7 Liversedge | Declared 01/11/17 | NO2 Annual Mean | Liversedge | The designated area incorporates Huddersfield Road (A62), Bradford | NO | 45 | µg/m3 | 45 | µg/m3 | Air Quality Action Plan for Kirklees Council | Sep-19 | https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx |

| | | | | | | | | | | | | |
|----------------|-------------------|-----------------|--------------|---|-----|----|-------|----|-------|--|--------|---|
| | | | | Road (A638), Wakefield Road (A638), Wormald Street and Well Street, which is in Liversedge | | | | | | cil Versi on 1.4 | | |
| AQMA 8 Outlane | Declared 01/11/17 | NO2 Annual Mean | Huddersfield | The designated area incorporates New Hey Road and Roundings Road, which is in close proximity to the M62 at Outlane | YES | 54 | µg/m3 | 41 | µg/m3 | Air Quality Action Plan for Kirklees Council Version 1.4 | Sep-19 | https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx |

| | | | | | | | | | | | | |
|------------------------------------|----------------------|-----------------------|--------------|--|----|----|-------|----|-------|--|--------|---|
| 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 | 46 | µg/m3 | Air Quality Action Plan for Kirklees Council Version 1.4 | Sep-19 | https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx |
| AQMA 10 Thornton Lodge | Declared 06/06/19 | NO2 Annual Mean | Huddersfield | The designated area incorporates Manchester Road | NO | 47 | µg/m3 | 43 | µg/m3 | Air Quality Action Plan for Kirklees Council Version 1.4 | Sep-19 | https://www.kirklees.gov.uk/beta/crime-and-safety/air-pollution.aspx |

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. Trends are clearly presented in graph form and the discussion of the trends is excellent. A robust comparison with air quality objectives is provided.*
- 2. Actions taken in 2018 to address air quality are discussed in good detail.*
- 3. Maps are provided, however it is considered that these are not comprehensive and in many cases lack clarity. For example, in D2, there is no map illustrating Tube 47, an exceedance in AQMA 8 (Outlane). In D3, the map of Outlane does not label monitoring sites. Where monitoring sites are labelled it can be difficult to distinguish the marker from the background mapping (eg D.2.9, D.2.10) and no key is provided. For maximum clarity it is recommended that uncomplicated base mapping such as that used in D.3.10 is used throughout, and AQMAs and labelled monitoring sites are both displayed on the same map, with a key, so that monitoring sites can quickly and easily be associated with the AQMAs they are within.*
- 4. QA/QC is considered to be robust. Distance correction calculations should be shown in Appendix C to identify how these have been derived*
- 5. 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.*

6. *Exceedances have been identified that are outside of AQMAs, according to Tables A.1 and A.2 at 10 monitoring sites (8 if two are erroneously stated to be outside AQMA10 as discussed above). Should these exceedances continue in 2020, discussion is expected as to whether these sites need including within an AQMA.*
7. *It would be useful if Section 2.3 could make reference to the Public Health Outcomes Framework, and the local indicator for PM_{2.5} in the district. The Council may wish to consider comparing the 'D01 - Fraction of mortality attributable to particulate air pollution indicator' value for Kirklees to nearby LAs and National indicator values. This can be found in the link below. <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data>.*
8. *The Council is in the process of writing a new AQAP and this is expected to be in place by the 2020 ASR. This is welcomed as the current AQAP is out of date.*
9. *Overall the report is highly detailed, satisfies the criteria of relevant standards, and is a good source for members of the Public to find out about air quality in their area. The Council should continue their good work and submit an Annual Status Report in 2020.*

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 of the council's website;

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

Key completed measures completed in 2019 were;

- Adopted a new Air Quality Strategy & 5 Year Action Plan.

In winter 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.

- Created and Recruited to a new Air Quality Delivery Team

In order to deliver this new Action Plan, Kirklees Council identified the need for resource support in order to achieve the aims of the plan. As such, the council has created a delivery team of project officers to support partners in their commitments and deliver a program of works contained within the Action Plan.

- Declared a Climate Emergency

In January 2019, Kirklees Council declared a Climate Emergency and has begun working on a plan to deliver Carbon reductions across the district. Kirklees recognise the important link of Climate Emergency and Air Quality to bring about environmental improvements. Therefore, Air Quality leads sit on the Climate Emergency Board with the aim to achieve a plan that will have positive impact on both the Climate and Air Quality.

- Completed Review of WYLES on behalf of the region

With 2019, a West Yorkshire Low Emissions Officer appointed to evaluate the progress of the West Yorkshire Low Emission Strategy (WYLES). In 2019, a review within each Authority was undertaken and reported to regional forums. Following on from the review, actions were identified, and a delivery plan was constructed to update the WYLES to ensure it continues to deliver emissions reductions. During 2020/21, officers will be working on a regional basis to deliver the WYLES action plan.

- Purchased Sensors Technology to assess validity

In 2019, Kirklees Council identified a monitoring gap within the authority's capabilities, centring around PM monitoring. Therefore, Kirklees Council has invested in 5 Zephyr Sensors to evaluate their effectiveness within the field.

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

- Deliver Kirklees Air Quality Budget Projects;
 - GLOSA Traffic Light Project
3rd 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)
- Feed into the Climate Emergency Plan
- Install further monitoring into Mirfield and Milnsbridge
Monitoring to be installed to understand sudden increase in NO₂ concentrations within the locality
- Work to deliver WYLES Action Plan
- Monitor the impact of COVID19, including lockdown and recovery
 - Feed into local recovery plans

Kirklees Council's priorities for the coming year are;

- Monitor the impact of COVID19, including lockdown and recovery
Use of sensor technology and current monitoring equipment has been deployed at strategic location across the district and weekly analysis of data allows for greater understanding of impact from lockdown and where significant negative impact is felt as the area recovers. This approach will allow the authority to identify and target sectors / policy to have a sustainable recovery and inform future improvement projects.
- 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 NO₂ concentrations within these areas to be parable to the older 2 AQMA's.
- Install monitoring in Milnsbridge & Mirfield
It is a priority that Kirklees understand the reason for increase within these localities to allow for quick remediation if the results were not an outlier.

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; https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/WYLES-strategy.pdf</p> |

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| | | | | | | | <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 & 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> |

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| | | | | | | | <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> |

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| | 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 |

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| | | | | | | | 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. |

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| | | | | | | | 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 |

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| | | | | | | | +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 |

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| | | | | | | | +Section 106 contributions | | | | aforementioned document. The planning guidance is available at; https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/WYLES-air-quality-and-emissions-planning-technical-guide.pdf 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; https://www.kirklees.gov.uk/beta/crime-and-safety/pdf/WYLES-procurement-guide.pdf |
| 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 |

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| | | | | | | | 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 |

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| | | | | | | | 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 |

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| | | | | | | | <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> |

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| | | | | | | | <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> |

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| | | | | | | | <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 http://observatory.kirklees.gov.uk/jsna/airquality |
| 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 |

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| 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> |

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| | | | | | | | 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 |

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| | (limiting the available options by emission output) | | | | | | aim is to contribute to; +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's Measurables; + Number of ULEV Car Leases | | | | 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 | Kirklees Council Targets; +Reduce number of grey fleet miles for the council year on year. Baseline year is year prior to introduction of telematics system +Contribute to increase in the number of short journeys using public transport + Reduce grey fleet mileage+ Increase ULEV Council Fleet Mileage year on year from baseline year 2020 Kirklees Council Measurables; + Number of | NO2 & PM | Active Trial | Ongoing within the district | 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 |

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| | | | | | | | 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 |

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| 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 |

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| | | | | | | | | | | | 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. |

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| | | | | | | | 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> |

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| 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 |

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| | | | | | | | | | | | 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 |

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| | | | | | | | | | | | 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 |

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| | 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. |

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| | 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. |

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| | 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 |

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| | | | | | | | 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 | TBC | Kirklees Environmental Health | Local Transport Plan | <p>Kirklees Council Targets;</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 Measurable:</p> <p>+ 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;</p> <p>+ Each council ward to have an even spread of charging network per head of population</p> <p>+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 |

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| | | | | | | | <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 & 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> |

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| | | | | | | | 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 |

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| | | | | | | | <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 | <p>Kirklees Environmental Health & Public Health</p> | <p>Local Transport Plan</p> | <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.</p> <p>The plan for this project is to conduct research into the demand for ULEVS within the district to better inform delivery of infrastructure.</p> <p>This is a future project currently going through project planning phase.</p> |

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| 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. |
| 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 | 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 |

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| | | | | | | | Measurable; + Average road speed +AM/PM Queue times | | | | 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 rationalise 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 efficiency in combustion engine process Kirklees Council Measurable; + Average road speed +AM/PM Queue times | NO2 & PM | complete | 2019 | Stage 2 of a multi stage Air Quality UTMC improvement project. Stage 3 contained within P.9 and awaiting funding |
| 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 | NO2 & PM | Active | 2021 | The project is a highways improvement scheme within the AQMA and is currently at outline Business Case Stage |

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| | | | | | | | road + Redistribution of vehicles on network Kirklees Council Measurable; + Average road speed +AM/PM Queue times | | | | |
| 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 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 | 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 |

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| 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 Kirklees Council Measurable; + Daily Exceedances of PM10 | 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. |
| 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 | NO2 & PM | complete | 2019 | The project is a Network Rail improvement scheme within the AQMA and is at delivery stage |

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| | | | | | | | passengers using Ravensthorpe Station + Number of services stopping at Ravensthorpe Station | | | | |
| 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 proximity to residential properties 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 a future project currently going through project planning phase |
| AQMA2.6 | Trial of Smart UTMC Technology systems within | 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 | NO2 & PM | Active | 2022 | The project is a Traffic Light improvement scheme within the AQMA and is a future project currently going |

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| | relevant AQMA's | | | | | | + Reduced stop / start driving style + Increased efficiency in combustion engine process Kirklees Council Measurable; + Average road speed +AM/PM Queue times | | | | 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; + 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 | NO2 & PM | Active | 2021 | The project is a cycling / highways improvement scheme within the AQMA and is currently at Business Case Stage |

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| | | | | | | | and 2030 Improvement in facilities across the district for cycling and clear links between all towns within the district Kirklees Council Measurable; + Construction of new Cycling Infrastructure within the district | | | | |
| 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 | 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 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; + Average road speed +AM/PM Queue times | 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 |

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| 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 Kirklees Council Measurable; + Number of passengers using service | NO2 & PM | Active | Ongoing | |
| 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 | 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 |

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| | | | | | | | efficiency in combustion engine process Kirklees Council Measurable; + Average road speed +AM/PM Queue times | | | | |
| 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 +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 |
| 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 | 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 |

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| | | | | | | | Kirklees Council Measurable; + Average road speed +AM/PM Queue times | | | | |
| 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 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 |

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| AQMA6.3 | 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 |
| 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 Managements 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 |

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| 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; +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 |

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| 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 | NO2 & PM | Active | 2022 | The project is a highways improvement scheme within the AQMA and is currently at Business Case Stage |

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| | | | | | | | vehicles on network Kirklees Council Measurable; + Average road speed +AM/PM Queue times | | | | |
| 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 2018 baseline and 2030 +Increase walking travel mode by 20% between 2018 baseline and 2030 Improvement in facilities across the district for | NO2 & PM | Concept | TBC | |

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| | | | | | | | 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 Town Centre Master Plan | Policy Guidance and Development Control | Air Quality Planning and Policy Guidance | 2020 | Kirklees Environmental Health / Development Control | Council Budget | Kirklees Council Targets; +Inclusion of Air Quality within the Town Centre Master Plan Document Contribute towards targets for planning; + Number of E.V chargers installed within new | NO2 & PM | Active | 2021 | |

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| | | | | | | | 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 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; | NO2 & PM | Active | 2021 | Stage 2 of a multi stage Air Quality UTMC improvement project. Stage 3 contained within P.9 and awaiting funding |

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| | | | | | | | + Average road speed +AM/PM Queue times | | | | |
| AQMA10.3 | 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 |
| 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_{2.5} – 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_{2.5} (particulate matter with an aerodynamic diameter of 2.5µm or less). There is clear evidence that PM_{2.5} has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases.

Kirklees Council is taking the following measures to address PM_{2.5}:

- Included PM_{2.5} 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_{2.5} as part of local plan works.
- PM_{2.5} 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_{2.5} within the district.
- 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

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

3.1 Summary of Monitoring Undertaken

3.1.1 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 2018.

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. Unfortunately there is no real-time data for 2019.

In addition to our real-time monitors, Kirklees Council has purchased 5 Zephyr sensors to provide real-time data. This data has been captured since April 2020 and will be reported in the ASR 2021.

Notwithstanding this, during the down period for the real-time monitors, passive monitoring was installed at these locations to ensure we still have an understanding of the conditions in these areas while the works are undertaken

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.

3.1.2 Non-Automatic Monitoring Sites

Kirklees Council undertook non- automatic (passive) monitoring of NO₂ at 87 sites during 2019. 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.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for bias⁴, “annualisation” (where the data capture falls below 75%), and distance correction⁵. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A.3 in Appendix A compares the ratified and adjusted monitored NO₂ annual mean concentrations for the past 5 years with the air quality objective of 40µg/m³. 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. Unfortunately there is no real-time data for 2019.

In addition to our real-time monitors, Kirklees Council has purchased 5 Zephyr sensors to provide real-time data. This data has been captured since April 2020 and will be reported in the ASR 2021.

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 2019 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 2019, only 5 diffusion tube monitoring locations within the Kirklees district exceeded the Annual NO₂ AQO after bias adjustment, annualization and distance correction. None of the observed concentrations at these 5 locations were above the 60µg/m³ threshold to indicate exceedance of hourly NO₂ AQO.

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

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

The 4 of the five monitoring locations were contained within existing AQMA's;

- 2 monitoring sites within the Eastborough AQMA (AQMA5)
- 1 Monitoring location within the Outlane AQMA (AQMA8)
- 1 Monitoring location within the Huddersfield Town Centre AQMA (AQMA9)

Therefore, the remaining 6 AQMA's had no exceedances of long term or short term objectives within 2020;

- AQMA1 Bradley
- AQMA3 Ainley Top
- AQMA4 Birkenshaw
- AQMA6 Edgerton
- AQMA7 Liversedge
- AQMA10 Thornton Lodge

Figure A.1 in Appendix A shows concentration trends over the last 8 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 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, it is noted that between 2012 and 2013 concentrations over the whole district fell by roughly 10% and within AQMA's this was higher at between 14-19%. In 2014 a slight reduction was noted overall and within the new AQMA by 3%, but within the existing AQMA's there was a slight increase in concentration of 3%. Since that time concentration levels have stagnated within the AQMA's 1 and 2, until 2017 when we have noted a fall, of which the fall has continued in 2018 and 2019. In 2015 and 2016 Trends within the new AQMA's and at other non AQMA monitoring locations saw slightly increases by 2-5% each year respectively until 2017, when levels fell by 6-8%, which is in line with what has been observed within the other AQMA's. The concentrations have continued to fall in 2018 & 2019. Over the 8 year period, as shown in Table A.2b in Appendix A, there has been a 22% reduction across the district and between 26-33% within AQMA's.

Though it must be noted this reduction slowed over the last 5 years with a districtwide reduction of 13% and 15-19% within AQMA's.

As such, 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 did not see significant increases in concentration, one of which has resulted in an exceedance of the Annual NO₂ AQO. These areas are Mirfield and Milnsbridge.

Mirfield has seen a 17% increase in concentrations at a singular kerbside monitoring location. Figure A.3 and Table A.2c in Appendix A shows that concentrations within Mirfield have stagnated around the AQO over the last 7 years, but has been significantly below when distance calculations were applied. The increase of 9µg/m³ in 2019, while not resulting in an exceedance of the AQO, does result in receptors within the vicinity being close to the objective. Therefore, in order to understand the local issues here, it is proposed to increase monitoring in this area to understand the increases and confirm whether the result is an outlier.

Milnsbridge has seen a 83% increase in concentrations at a singular Roadside monitoring location. Figure A.3 and Table A.2c in Appendix A shows that concentrations within Milnsbridge have stagnated around the AQO over the last 7 years apart from 2017 when there was a 15% reduction observed. It is also noted that concentrations have always been between 10-15µg/m³ under the AQO at the monitoring location. The increase of 24µg/m³ in 2019, resulted in an exceedance of the AQO, but such an increase suggests that this result may be an outlier. Therefore, in order to understand the local issues here, it is proposed to increase monitoring in this area to understand the increases and confirm whether the result is an outlier.

3.2.2 Particulate Matter (PM_{2.5})

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. Unfortunately there is no real-time data for 2019.

In addition to our real-time monitors, Kirklees Council has purchased 5 Zephyr sensors to provide real-time data. This data has been captured since April 2020 and will be reported in the ASR 2021.

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) ⁽¹⁾ | Distance to kerb of nearest road (m) ⁽²⁾ | Inlet Height (m) |
|------------|------------------|-----------|-------------------------|--------------------------|------------------------------------|----------|-------------------------------|--|---|------------------|
| Roadside 3 | RS3 - Bradley | Roadside | 417255 | 420761 | NO ₂ ; PM ₁₀ | YES | Chemiluminescent; Met-One BAM | 3 | 3 | 1.5 |
| Roadside 6 | RS6 - Ainley Top | Roadside | 411739 | 419007 | NO ₂ ; PM ₁₀ | 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) ⁽¹⁾ | Distance to kerb of nearest road (m) ⁽²⁾ | Tube collocated with a Continuous Analyser? | Height (m) |
|---------|--------------------------------|--------------|-------------------------|--------------------------|----------------------|----------|--|---|---|------------|
| K1 | Dewsbury Bus Station | Other | 424506 | 421535 | NO ₂ | NO | N | 0.8 | NO | 2 |
| K2 | Bus Station - Huddersfield | Other | 414214 | 416504 | NO ₂ | YES | N | 4.1 | NO | 2 |
| K3 | Edgerton Road | Roadside | 413504 | 417439 | NO ₂ | YES | Y (2.0) | 2.4 | NO | 2 |
| K4 | Princess Street, Batley | Roadside | 424464 | 424395 | NO ₂ | NO | Y (4.3) | 1.8 | NO | 2 |
| K5 | Huddersfield Road Ravensthorpe | Roadside | 422443 | 420380 | NO ₂ | NO | Y (1.6) | 1.9 | NO | 2 |
| K6 | Leeds Road - Cooper Bridge | Roadside | 417872 | 421050 | NO ₂ | YES | Y (5.2) | 6 | NO | 2 |
| K7 | Westgate Huddersfield | Urban Centre | 414434 | 416744 | NO ₂ | YES | Y (0.5) | 0.5 | NO | 2 |
| K8 | Bradford Road Fartown 1 | Roadside | 414496 | 417795 | NO ₂ | NO | Y (2.5) | 2.5 | NO | 2 |
| K9 | Bradley Road | Kerbside | 417280 | 420482 | NO ₂ | NO | Y (13.4) | 0.7 | NO | 2 |
| K10 | Leeds Road Bradley 1 | Roadside | 417227 | 420337 | NO ₂ | NO | Y (3.2) | 2 | NO | 2 |
| K11 | Chapel Hill Huddersfield | Roadside | 414389 | 416262 | NO ₂ | YES | Y (0.1) | 5.5 | NO | 2 |
| K12 | Leeds Road Bradley 2 | Roadside | 417335 | 420412 | NO ₂ | NO | Y (3.7) | 1.8 | NO | 2 |
| K13 | Whitehall Road East | Roadside | 420377 | 427871 | NO ₂ | YES | Y (2.1) | 2.6 | NO | 2 |

| | | | | | | | | | | |
|-----|----------------------------------|------------------|--------|--------|-----------------|-----|----------|-----|-----|---|
| K14 | Oastler Avenue | Urban Background | 413669 | 416463 | NO ₂ | NO | N | 1.7 | NO | 2 |
| K15 | Ainley Top 1 | Other | 420441 | 427353 | NO ₂ | YES | N | 3 | YES | 2 |
| K16 | Ainley Top 2 | Other | 420441 | 427353 | NO ₂ | YES | N | 3 | YES | 2 |
| K17 | Ainley Top 3 | Other | 420441 | 427353 | NO ₂ | YES | N | 3 | YES | 2 |
| K18 | Huddersfield Road Birstall | Roadside | 422686 | 426229 | NO ₂ | NO | Y (4.2) | 1.9 | NO | 2 |
| K19 | Huddersfield Road Scouthil | Roadside | 423563 | 421014 | NO ₂ | NO | Y (6.5) | 2.7 | NO | 2 |
| K20 | Rockley Street Dewsbury | Roadside | 424853 | 421828 | NO ₂ | YES | Y (9.5) | 1.5 | NO | 2 |
| K21 | Castlegate Huddersfield | Roadside | 414149 | 416686 | NO ₂ | YES | Y (6.9) | 2.1 | NO | 2 |
| K22 | Leeds Road Bradley 3 | Roadside | 417418 | 420479 | NO ₂ | YES | Y (3.2) | 1.5 | NO | 2 |
| K23 | Leeds Road Mirfield 2 | Roadside | 418483 | 420978 | NO ₂ | NO | Y (14.1) | 1.6 | NO | 2 |
| K24 | Lindley Moor Road | Roadside | 409941 | 418471 | NO ₂ | NO | Y (15.4) | 2 | NO | 2 |
| K25 | Leeds Road - RS3 - 1 | Other | 423185 | 420612 | NO ₂ | NO | N | 6 | YES | 2 |
| K26 | Leeds Road - RS3 - 2 | Other | 423185 | 420612 | NO ₂ | NO | N | 6 | YES | 2 |
| K27 | Leeds Road - RS3 - 3 | Other | 423185 | 420612 | NO ₂ | NO | N | 6 | YES | 2 |
| K28 | Ring Road Huddersfield | Roadside | 414745 | 416710 | NO ₂ | YES | Y (0.1) | 3.3 | NO | 2 |
| K31 | Blacker Road 1 | Roadside | 413400 | 417495 | NO ₂ | YES | Y (8.3) | 2.7 | NO | 2 |
| K32 | Blacker Road 2 | Roadside | 413513 | 417481 | NO ₂ | YES | Y (5.0) | 2.6 | NO | 2 |
| K33 | Wakefield Rd / Huddersfield Road | Roadside | 420727 | 423668 | NO ₂ | YES | Y (4.3) | 2.4 | NO | 2 |
| K34 | Frost Hill Liversedge | Roadside | 420845 | 423770 | NO ₂ | YES | Y (0.3) | 1.9 | NO | 2 |

| | | | | | | | | | | |
|-----|--|----------|--------|--------|-----------------|-----|----------|------|----|---|
| K35 | Leeds Road Liversedge | Roadside | 420853 | 423866 | NO ₂ | YES | Y (9.4) | 1.9 | NO | 2 |
| K36 | Huddersfield Road Mirfield 1 | Kerbside | 420304 | 419766 | NO ₂ | NO | Y (2.9) | 0.9 | NO | 2 |
| K37 | Bradford Road, Birkenshaw | Roadside | 420356 | 427810 | NO ₂ | YES | Y (2.5) | 2.2 | NO | 2 |
| K38 | Whitehall Road West | Roadside | 420222 | 427764 | NO ₂ | YES | Y (18.3) | 1 | NO | 2 |
| K39 | Bradford Road, Batley | Roadside | 424526 | 424326 | NO ₂ | NO | Y (1.7) | 2.1 | NO | 2 |
| K40 | Leeds Road Dewsbury | Roadside | 424871 | 421921 | NO ₂ | YES | Y (1.2) | 1.6 | NO | 2 |
| K41 | Chain Bar Roundabout | Roadside | 418285 | 426630 | NO ₂ | NO | Y (12.5) | 3.4 | NO | 2 |
| K42 | Leeds Road Dewsbury - 2 | Roadside | 424969 | 422002 | NO ₂ | YES | Y (5.6) | 1.9 | NO | 2 |
| K43 | John Street Dewsbury | Roadside | 425083 | 422022 | NO ₂ | YES | Y (6.0) | 1.9 | NO | 2 |
| K44 | Calmswood Road Eastborough | Roadside | 425179 | 422114 | NO ₂ | NO | Y (-7.2) | 1.7 | NO | 2 |
| K45 | Bradford Road Fartown 2 | Roadside | 414480 | 417720 | NO ₂ | NO | Y (0.5) | 7.2 | NO | 2 |
| K46 | Willow Lane East Fartown | Roadside | 414546 | 417759 | NO ₂ | NO | Y (0) | 2.2 | NO | 2 |
| K47 | Roundings Road Outlane | Other | 407942 | 417261 | NO ₂ | YES | Y (0) | 14.4 | NO | 2 |
| K48 | Flush Liversedge | Roadside | 421039 | 423673 | NO ₂ | YES | Y (0) | 2.6 | NO | 2 |
| K49 | Manchester Road Thornton Lodge 2 | Roadside | 413659 | 416182 | NO ₂ | NO | Y (3.5) | 3.7 | NO | 2 |
| K50 | Manchester Road Thornton Lodge 1 | Roadside | 413414 | 415981 | NO ₂ | NO | Y (1.6) | 2.5 | NO | 2 |
| K51 | High Street Heckmondwike | Roadside | 421904 | 423580 | NO ₂ | YES | Y (4.9) | 1 | NO | 2 |

| | | | | | | | | | | |
|-----|---|----------|--------|--------|-----------------|-----|----------|-----|----|---|
| K52 | Penistone Road Waterloo | Roadside | 417627 | 416472 | NO ₂ | NO | Y (7.8) | 2.4 | NO | 2 |
| K53 | Yates Lane Milnsbridge | Roadside | 411564 | 415902 | NO ₂ | NO | Y (1.6) | 1.7 | NO | 2 |
| K54 | Wakefield Road Dewsbury | Roadside | 425196 | 421566 | NO ₂ | YES | Y (2.7) | 3.2 | NO | 2 |
| K55 | Huddersfield Road Holmfirth | Roadside | 414187 | 408264 | NO ₂ | NO | Y (3.2) | 1.7 | NO | 2 |
| K56 | Wakefield Road Huddersfield | Roadside | 415009 | 416420 | NO ₂ | YES | N | 2.8 | NO | 2 |
| K57 | Cambridge Road 1 | Roadside | 414291 | 417281 | NO ₂ | YES | N | 2.2 | NO | 2 |
| K58 | Cambridge Road 2 | Roadside | 414350 | 417270 | NO ₂ | YES | N | 2.6 | NO | 2 |
| K61 | Bradford Road - Birkenshaw | Roadside | 420422 | 427349 | NO ₂ | YES | Y(12.1) | 2.1 | NO | 2 |
| K62 | Manor Park Gardens - Birkenshaw | Roadside | 420472 | 427360 | NO ₂ | YES | Y(9.2) | 1.2 | NO | 2 |
| K63 | White Hall Road West 1 - Birkenshaw | Roadside | 419866 | 427561 | NO ₂ | NO | Y(7.0) | 2.9 | NO | 2 |
| K64 | Whitehall Road West 2 - Birkenshaw | Other | 419914 | 427588 | NO ₂ | NO | N | 0.1 | NO | 2 |
| K65 | Whitehall Road West 3 - Birkenshaw | Roadside | 419981 | 427623 | NO ₂ | NO | N | 3 | NO | 2 |
| K66 | Milford Grove - Birkenshaw | Other | 420349 | 427434 | NO ₂ | YES | N | 1.3 | NO | 2 |
| K67 | Moor Lane 1 - Birkenshaw | Roadside | 421132 | 427273 | NO ₂ | NO | N | 1.7 | NO | 2 |
| K68 | Grange Road Batley lamp post 10 | Roadside | 421128 | 427298 | NO ₂ | NO | N | 0.9 | NO | 2 |

| | | | | | | | | | | |
|-----|--|----------|--------|--------|-----------------|-----|----------|------|-----|---|
| K69 | Bradford Road - Cleckheaton - Airstation | Roadside | 418237 | 426555 | NO ₂ | NO | N | 1 | NO | 2 |
| K70 | Huddersfield Road - Scouthill - Airstation | Roadside | 423236 | 420752 | NO ₂ | YES | Y(6.6) | 3.2 | NO | 2 |
| K71 | Lindley Moor Road 2 | Roadside | 411007 | 419190 | NO ₂ | NO | Y (10.1) | 3.5 | YES | 2 |
| K72 | Lindley Moor Road 3 | Roadside | 410227 | 418653 | NO ₂ | NO | Y(6.6) | 2.4 | NO | 2 |
| K73 | Lindley Moor Road 4 | Roadside | 410080 | 418568 | NO ₂ | NO | N | 1.8 | NO | 2 |
| K74 | Lindley Moor Road 5 | Roadside | 410095 | 418559 | NO ₂ | NO | Y(1.7) | 3.4 | NO | 2 |
| K75 | Blackmoorfoot Road - Thornton Lodge | Roadside | 413153 | 415894 | NO ₂ | NO | Y(2.7) | 1.5 | NO | 2 |
| K76 | Manchester Road - Thornton Lodge 3 | Roadside | 413198 | 415957 | NO ₂ | NO | Y(5.0) | 1.3 | NO | 2 |
| K77 | Manchester Road - Thornton Lodge 4 | Roadside | 413455 | 416013 | NO ₂ | NO | Y(1.2) | 2.2 | NO | 2 |
| K78 | Thornton Lodge Road - Thornton Lodge | Roadside | 413464 | 415983 | NO ₂ | NO | N | 2 | NO | 2 |
| K79 | Gelderd Road, Birstall, | Roadside | 423903 | 427756 | NO ₂ | NO | N | 3 | NO | 2 |
| K80 | Grange Road Batley lamp post 22 | Roadside | 425566 | 423696 | NO ₂ | NO | Y(5.8) | 4 | NO | 2 |
| K81 | Gelderd Road, Hawthorne House | Roadside | 422991 | 426992 | NO ₂ | NO | N | 1.75 | NO | 2 |
| K82 | Grange Moor | Roadside | 422036 | 415941 | NO ₂ | NO | Y(1.73) | 1.5 | NO | 2 |

| | | | | | | | | | | |
|-----|---|----------|--------|--------|-----------------|----|----------|------|----|---|
| K83 | Flockton | Roadside | 424203 | 414975 | NO ₂ | NO | Y(3.22) | 1.41 | NO | 2 |
| K84 | Denby Dale | Roadside | 422923 | 408553 | NO ₂ | NO | Y(2.34) | 1.77 | NO | 2 |
| K85 | Shepley | Roadside | 419380 | 409777 | NO ₂ | NO | N | 1.5 | NO | 2 |
| K86 | Kings Mill Lane | Roadside | 415164 | 416323 | NO ₂ | NO | Y (4.71) | 4.71 | NO | 2 |
| K87 | Mill St West Dewsbury lamp post 9 | Roadside | 424409 | 421271 | NO ₂ | NO | Y(2.36) | 2.85 | 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 NO₂ Monitoring Results

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2019 (%) ⁽²⁾ | NO ₂ Annual Mean Concentration (µg/m ³) ^{(3) (4)} | | | | |
|------------|-------------------------|--------------------------|--------------|-----------------|---|--|---|-------|-------|-------|-------|
| | | | | | | | 2015 | 2016 | 2017 | 2018 | 2019 |
| Roadside 3 | 417255 | 420761 | Roadside | Automatic | 0 | 0 | 39.80 | N/A | N/A | N/A | N/A |
| Roadside 6 | 411739 | 419007 | Roadside | Automatic | 0 | 0 | 44.40 | N/A | N/A | N/A | N/A |
| K1 | 424506 | 421535 | Other | Diffusion Tube | 100 | 100 | 45.34 | 47.42 | 42.50 | 41.13 | 41.00 |
| K2 | 414214 | 416504 | Other | Diffusion Tube | 100 | 100 | 46.74 | 41.58 | 42.25 | 39.27 | 38.53 |
| K3 | 413504 | 417439 | Roadside | Diffusion Tube | 92 | 92 | 53.70 | 41.43 | 61.63 | 51.92 | 42.69 |
| K4 | 424464 | 424395 | Roadside | Diffusion Tube | 100 | 100 | 35.16 | 32.68 | 25.20 | 28.47 | 27.00 |
| K5 | 422443 | 420380 | Roadside | Diffusion Tube | 92 | 92 | 41.50 | 35.60 | 35.88 | 35.49 | 36.15 |
| K6 | 417872 | 421050 | Roadside | Diffusion Tube | 92 | 92 | 38.94 | 40.46 | 42.56 | 36.33 | 37.89 |
| K7 | 414434 | 416744 | Urban Centre | Diffusion Tube | 92 | 92 | 44.81 | 38.78 | 35.38 | 38.55 | 40.80 |
| K8 | 414496 | 417795 | Roadside | Diffusion Tube | 100 | 100 | 38.30 | 33.33 | 35.50 | 36.08 | 36.00 |
| K9 | 417280 | 420482 | Kerbside | Diffusion Tube | 92 | 92 | 39.21 | 36.63 | 35.34 | 27.47 | 34.40 |
| K10 | 417227 | 420337 | Roadside | Diffusion Tube | 100 | 100 | 42.11 | 43.73 | 37.31 | 39.27 | 34.47 |
| K11 | 414389 | 416262 | Roadside | Diffusion Tube | 67 | 67 | 42.40 | 37.79 | 36.50 | 39.60 | 34.96 |
| K12 | 417335 | 420412 | Roadside | Diffusion Tube | 92 | 92 | 42.57 | 43.40 | 37.44 | 38.80 | 27.35 |
| K13 | 420377 | 427871 | Roadside | Diffusion Tube | 100 | 100 | 40.38 | 36.20 | 36.13 | 33.89 | 31.40 |

| | | | | | | | | | | | |
|-----|--------|--------|------------------|----------------|-----|-----|-------|-------|-------|-------|-------|
| K14 | 413669 | 416463 | Urban Background | Diffusion Tube | 100 | 100 | 16.34 | 20.96 | 21.13 | 16.22 | 17.73 |
| K15 | 420441 | 427353 | Other | Diffusion Tube | 83 | 83 | 38.47 | N/A | 34.50 | 37.24 | 37.84 |
| K16 | 420441 | 427353 | Other | Diffusion Tube | 92 | 92 | 40.09 | N/A | 49.13 | 37.31 | 35.42 |
| K17 | 420441 | 427353 | Other | Diffusion Tube | 92 | 92 | 38.51 | N/A | 37.16 | 38.47 | 36.22 |
| K18 | 422686 | 426229 | Roadside | Diffusion Tube | 100 | 100 | 45.40 | 41.00 | 37.81 | 37.93 | 36.80 |
| K19 | 423563 | 421014 | Roadside | Diffusion Tube | 83 | 83 | 39.84 | 45.20 | 33.00 | 38.80 | 31.60 |
| K20 | 424853 | 421828 | Roadside | Diffusion Tube | 75 | 75 | 40.68 | 36.20 | 35.69 | 33.96 | 28.44 |
| K21 | 414149 | 416686 | Roadside | Diffusion Tube | 100 | 100 | 44.92 | 45.05 | 40.13 | 42.53 | 34.73 |
| K22 | 417418 | 420479 | Roadside | Diffusion Tube | 100 | 100 | 43.36 | 43.88 | 41.39 | 40.60 | 33.40 |
| K23 | 418483 | 420978 | Roadside | Diffusion Tube | 92 | 92 | 42.63 | 40.00 | 40.19 | 38.47 | 35.35 |
| K24 | 409941 | 418471 | Roadside | Diffusion Tube | 100 | 100 | 50.48 | 49.01 | 50.18 | 40.00 | 34.13 |
| K25 | 423185 | 420612 | Other | Diffusion Tube | 100 | 100 | 20.39 | N/A | 28.03 | 28.47 | 27.33 |
| K26 | 423185 | 420612 | Other | Diffusion Tube | 100 | 100 | 20.61 | N/A | 24.67 | 31.40 | 26.87 |
| K27 | 423185 | 420612 | Other | Diffusion Tube | 100 | 100 | 19.97 | N/A | 26.58 | 31.47 | 27.93 |
| K28 | 414745 | 416710 | Roadside | Diffusion Tube | 100 | 100 | 54.68 | 53.13 | 55.94 | 43.20 | 46.40 |
| K31 | 413400 | 417495 | Roadside | Diffusion Tube | 100 | 100 | 34.96 | 41.75 | 32.13 | 33.76 | 30.47 |
| K32 | 413513 | 417481 | Roadside | Diffusion Tube | 42 | 42 | 47.42 | 45.38 | 44.19 | 45.87 | 35.49 |
| K33 | 420727 | 423668 | Roadside | Diffusion Tube | 92 | 92 | 33.75 | 54.80 | 42.67 | 34.27 | 31.13 |

| | | | | | | | | | | | |
|-----|--------|--------|----------|----------------|-----|-----|---------------------|---------------------|--------------|--------------|--------------|
| K34 | 420845 | 423770 | Roadside | Diffusion Tube | 100 | 100 | 33.21 | 54.20 | 39.50 | 38.40 | 33.60 |
| K35 | 420853 | 423866 | Roadside | Diffusion Tube | 100 | 100 | 38.86 | <u>72.40</u> | 46.19 | 44.40 | 45.33 |
| K36 | 420304 | 419766 | Kerbside | Diffusion Tube | 67 | 67 | 42.49 | 38.80 | 42.23 | 42.18 | 49.40 |
| K37 | 420356 | 427810 | Roadside | Diffusion Tube | 100 | 100 | 36.36 | 30.00 | 36.06 | 33.07 | 31.20 |
| K38 | 420222 | 427764 | Roadside | Diffusion Tube | 100 | 100 | 38.66 | 36.00 | 36.13 | 37.80 | 37.07 |
| K39 | 424526 | 424326 | Roadside | Diffusion Tube | 100 | 100 | 40.40 | 39.30 | 36.41 | 30.47 | 31.07 |
| K40 | 424871 | 421921 | Roadside | Diffusion Tube | 100 | 100 | <u>60.39</u> | 54.40 | 53.44 | 52.40 | 55.80 |
| K41 | 418285 | 426630 | Roadside | Diffusion Tube | 100 | 100 | 45.25 | 43.50 | 39.83 | 36.40 | 34.00 |
| K42 | 424969 | 422002 | Roadside | Diffusion Tube | 100 | 100 | 42.99 | 43.60 | 45.94 | 39.60 | 35.13 |
| K43 | 425083 | 422022 | Roadside | Diffusion Tube | 100 | 100 | 43.97 | 43.00 | 38.59 | 42.93 | 37.20 |
| K44 | 425179 | 422114 | Roadside | Diffusion Tube | 100 | 100 | 36.68 | 32.20 | 34.44 | 35.07 | 30.80 |
| K45 | 414480 | 417720 | Roadside | Diffusion Tube | 67 | 67 | 37.45 | 36.70 | 35.69 | 36.26 | 36.44 |
| K46 | 414546 | 417759 | Roadside | Diffusion Tube | 100 | 100 | 37.87 | 39.53 | 37.13 | 37.04 | 34.80 |
| K47 | 407942 | 417261 | Other | Diffusion Tube | 100 | 100 | 54.16 | 35.52 | 44.06 | 44.93 | 40.53 |
| K48 | 421039 | 423673 | Roadside | Diffusion Tube | 100 | 100 | 43.82 | <u>64.68</u> | 47.31 | 36.13 | 36.07 |
| K49 | 413659 | 416182 | Roadside | Diffusion Tube | 83 | 83 | 42.71 | 37.19 | 38.00 | 38.07 | 33.12 |
| K50 | 413414 | 415981 | Roadside | Diffusion Tube | 33 | 33 | 45.49 | 42.08 | 39.19 | 45.27 | 38.19 |
| K51 | 421904 | 423580 | Roadside | Diffusion Tube | 100 | 100 | 40.04 | 55.40 | 36.00 | 38.87 | 34.47 |

| | | | | | | | | | | | |
|-----|--------|--------|----------|----------------|-----|-----|--------------|--------------|--------------|--------------|--------------|
| K52 | 417627 | 416472 | Roadside | Diffusion Tube | 100 | 100 | 36.23 | 36.47 | 34.64 | 34.20 | 30.67 |
| K53 | 411564 | 415902 | Roadside | Diffusion Tube | 42 | 42 | 35.07 | 33.50 | 28.31 | 29.40 | 53.69 |
| K54 | 425196 | 421566 | Roadside | Diffusion Tube | 92 | 92 | 39.60 | 39.00 | 35.00 | 33.87 | 32.07 |
| K55 | 414187 | 408264 | Roadside | Diffusion Tube | 75 | 75 | 39.05 | 33.50 | 31.88 | 34.18 | 29.87 |
| K56 | 415009 | 416420 | Roadside | Diffusion Tube | 100 | 100 | 39.93 | 40.00 | 39.56 | 39.47 | 34.87 |
| K57 | 414291 | 417281 | Roadside | Diffusion Tube | 75 | 75 | 41.56 | 46.86 | 27.19 | 29.68 | 22.22 |
| K58 | 414350 | 417270 | Roadside | Diffusion Tube | 75 | 75 | 32.35 | 30.36 | 41.71 | 44.88 | 39.64 |
| K61 | 420422 | 427349 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | 30.20 | 35.13 | 29.73 |
| K62 | 420472 | 427360 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | 28.09 | 31.60 | 26.40 |
| K63 | 419866 | 427561 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | 52.05 | 33.60 | 27.27 |
| K64 | 419914 | 427588 | Other | Diffusion Tube | 100 | 100 | N/A | N/A | 48.14 | 51.64 | 45.07 |
| K65 | 419981 | 427623 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | 29.40 | 44.27 | 41.13 |
| K66 | 420349 | 427434 | Other | Diffusion Tube | 100 | 100 | N/A | N/A | 29.05 | 26.67 | 24.80 |
| K67 | 421132 | 427273 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | 24.75 | 25.87 | 24.40 |
| K68 | 421128 | 427298 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | 28.95 | 27.27 | 23.60 |
| K69 | 418237 | 426555 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | 31.70 | 35.27 | 28.40 |
| K70 | 423236 | 420752 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | 38.86 | 37.02 | 31.80 |
| K71 | 411007 | 419190 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | 36.89 | 39.27 | 30.73 |

| | | | | | | | | | | | |
|-----|--------|--------|----------|----------------|-----|-----|-----|-----|-------|-------|-------------------|
| K72 | 410227 | 418653 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | 43.43 | 35.27 | 32.20 |
| K73 | 410080 | 418568 | Roadside | Diffusion Tube | 92 | 92 | N/A | N/A | 30.00 | 46.73 | 34.18 |
| K74 | 410095 | 418559 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | 29.44 | 30.53 | 23.67 |
| K75 | 413153 | 425894 | Roadside | Diffusion Tube | 17 | 17 | N/A | N/A | 32.25 | 37.78 | Insufficient Data |
| K76 | 413198 | 415957 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | 46.58 | 34.98 | 28.53 |
| K77 | 413455 | 416013 | Roadside | Diffusion Tube | 83 | 83 | N/A | N/A | 24.15 | 46.93 | 38.88 |
| K78 | 413464 | 415983 | Roadside | Diffusion Tube | 50 | 50 | N/A | N/A | N/A | 28.00 | 24.05 |
| K79 | 423903 | 427756 | Roadside | Diffusion Tube | 17 | 17 | N/A | N/A | N/A | 42.51 | Insufficient Data |
| K80 | 425566 | 423696 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | N/A | 43.34 | 24.40 |
| K81 | 422991 | 426992 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | N/A | 36.61 | 29.80 |
| K82 | 422036 | 415941 | Roadside | Diffusion Tube | 92 | 92 | N/A | N/A | N/A | 20.33 | 17.53 |
| K83 | 424203 | 414975 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | N/A | 29.43 | 24.67 |
| K84 | 422923 | 408553 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | N/A | 28.36 | 20.60 |
| K85 | 419380 | 409777 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | N/A | 23.87 | 21.13 |
| K86 | 415164 | 416323 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | N/A | 32.59 | 29.07 |
| K87 | 424409 | 421271 | Roadside | Diffusion Tube | 100 | 100 | N/A | N/A | N/A | 37.41 | 31.27 |

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 NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 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 NO₂ Concentrations

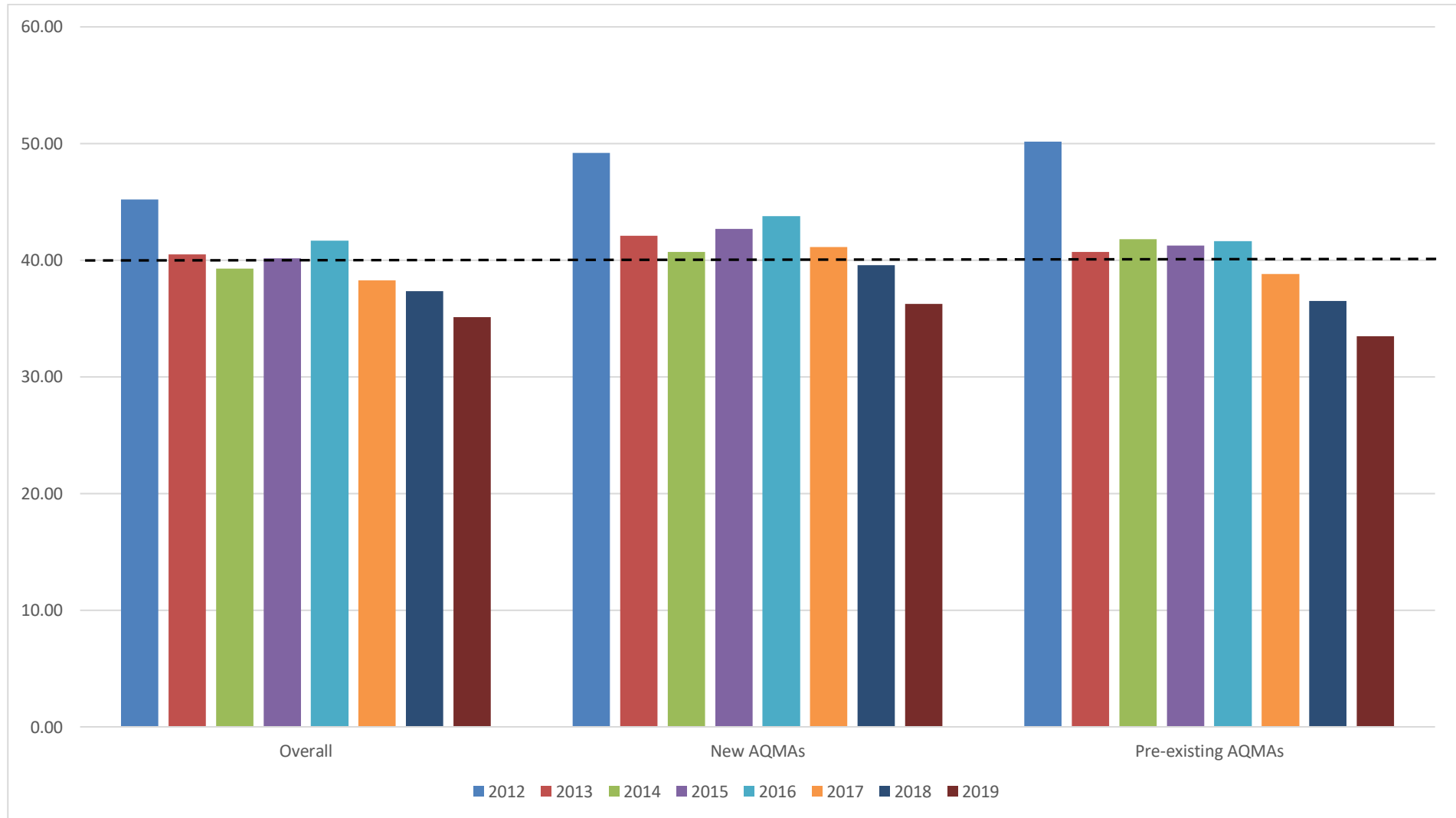
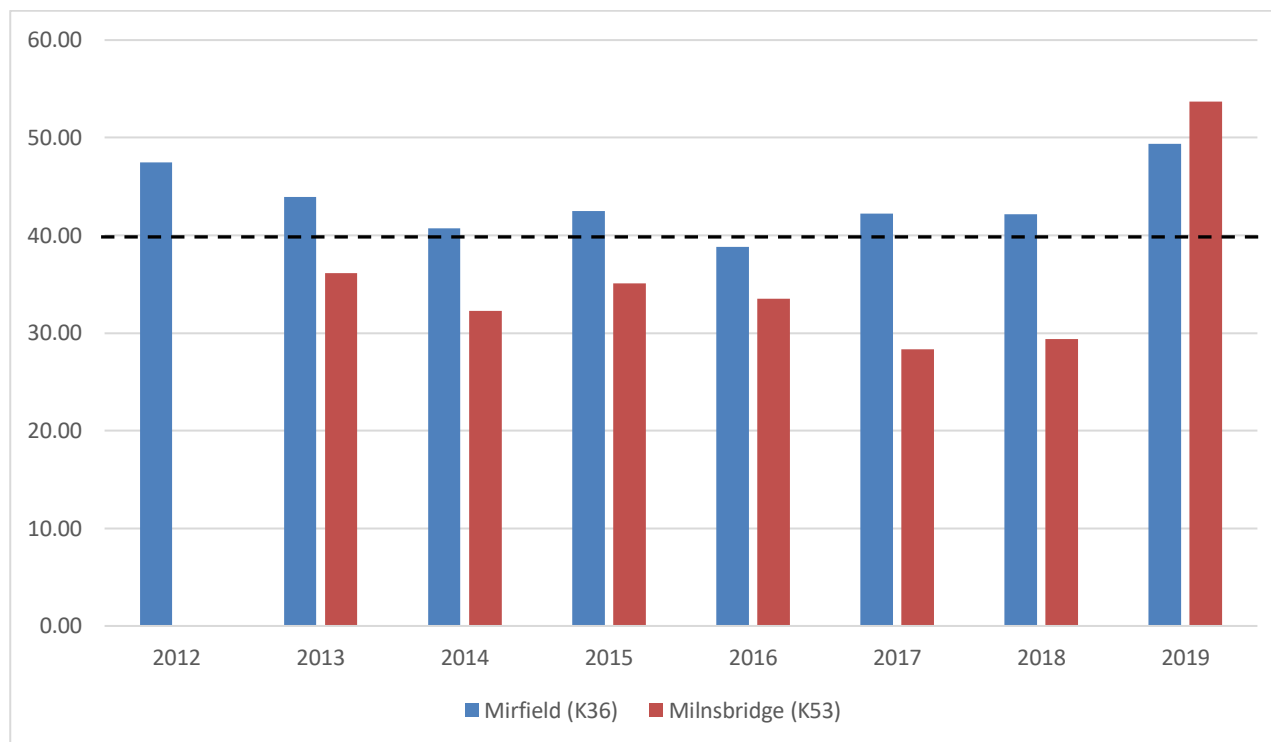


Figure A.2 – Percentage improvement changes in Annual Mean NO₂ Concentrations



Table A.2b – Percentage reduction of Mean Annual NO₂ concentrations over 8 & 5 Years

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

Figure A.3 – Trends in Annual NO₂ Concentrations for Mirfield and MilnsbridgeTable A.2c – Percentage reduction / increase of Mean Annual NO₂ concentrations for Mirfield & Milnsbridge over 8 year period

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

Notes:

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

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

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type | Monitoring Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2019 (%) ⁽²⁾ | NO ₂ 1-Hour Means > 200µg/m ³ ⁽³⁾ | | | | |
|------------|-------------------------|--------------------------|-----------|-----------------|---|--|--|------------|------------|------------|------------|
| | | | | | | | 2015 | 2016 | 2017 | 2018 | 2019 |
| Roadside 3 | 417255 | 420761 | Roadside | Automatic | 0 | 0 | N/A | N/A | N/A | N/A | N/A |
| Roadside 6 | 411739 | 419007 | Roadside | Automatic | 0 | 0 | N/A | N/A | N/A | N/A | N/A |

Notes:

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

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

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

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

Table A.6 – PM_{2.5} Monitoring Results

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | Site Type | Valid Data Capture for Monitoring Period (%) ⁽¹⁾ | Valid Data Capture 2019 (%) ⁽²⁾ | PM _{2.5} Annual Mean Concentration (µg/m ³) ⁽³⁾ | | | | |
|------------|-------------------------|--------------------------|-----------|---|--|---|------|------|------|------|
| | | | | | | 2015 | 2016 | 2017 | 2018 | 2019 |
| Roadside 3 | 417255 | 420761 | Roadside | 0 | 0 | N/A | N/A | N/A | N/A | N/A |
| Roadside 6 | 411739 | 419007 | Roadside | 0 | 0 | N/A | N/A | N/A | N/A | N/A |

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 2019

Table B.1 - NO₂ Monthly Diffusion Tube Results - 2019

| Site ID | X OS Grid Ref (Easting) | Y OS Grid Ref (Northing) | NO ₂ Mean Concentrations (µg/m ³) | | | | | | | | | | | | Annual Mean | | |
|---------|-------------------------|--------------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|---|---|
| | | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Raw Data | Bias Adjusted (0.8) and Annualised ⁽¹⁾ | Distance Corrected to Nearest Exposure ⁽²⁾ |
| | | | | | | | | | | | | | | | | | |
| K1 | 424506 | 421535 | 57.00 | 55.00 | 58.00 | 57.00 | 44.00 | 44.00 | 54.00 | 54.00 | 40.00 | 47.00 | 57.00 | 48.00 | 51.25 | 41.00 | N/A |
| K2 | 414214 | 416504 | 63.00 | 64.00 | 50.00 | 45.00 | 47.00 | 39.00 | 42.00 | 42.00 | 39.00 | 46.00 | 66.00 | 35.00 | 48.17 | 38.53 | N/A |
| K3 | 413504 | 417439 | 44.00 | 61.00 | 65.00 | 51.00 | 48.00 | 46.00 | 49.00 | 49.00 | 67.00 | 49.00 | | 58.00 | 53.36 | 42.69 | 38.5 |
| K4 | 424464 | 424395 | 47.00 | 45.00 | 35.00 | 37.00 | 28.00 | 30.00 | 31.00 | 31.00 | 17.00 | 31.00 | 38.00 | 35.00 | 33.75 | 27.00 | 24.3 |
| K5 | 422443 | 420380 | 46.00 | 55.00 | 50.00 | 49.00 | 40.00 | 36.00 | 41.00 | 41.00 | 40.00 | 74.00 | 25.00 | | 45.18 | 36.15 | 33.8 |
| K6 | 417872 | 421050 | 52.00 | 54.00 | 47.00 | 54.00 | 47.00 | 41.00 | 40.00 | 40.00 | | 63.00 | 48.00 | 35.00 | 47.36 | 37.89 | 33.4 |
| K7 | 414434 | 416744 | 43.00 | 50.00 | 21.00 | 55.00 | | 87.00 | 46.00 | 46.00 | 81.00 | 42.00 | 52.00 | 38.00 | 51.00 | 40.80 | 38.4 |
| K8 | 414496 | 417795 | 60.00 | 53.00 | 53.00 | 41.00 | 44.00 | 37.00 | 44.00 | 44.00 | 42.00 | 43.00 | 47.00 | 32.00 | 45.00 | 36.00 | 33.3 |
| K9 | 417280 | 420482 | 45.00 | 47.00 | 49.00 | 54.00 | 43.00 | 38.00 | 41.00 | 41.00 | 34.00 | 37.00 | 44.00 | | 43.00 | 34.40 | 24.2 |
| K10 | 417227 | 420337 | 53.00 | 54.00 | 46.00 | 42.00 | 47.00 | 37.00 | 38.00 | 38.00 | 28.00 | 39.00 | 58.00 | 37.00 | 43.08 | 34.47 | 30.4 |
| K11 | 414389 | 416262 | 68.00 | | 51.00 | 53.00 | 40.00 | | | | 38.00 | 44.00 | 38.00 | 36.00 | 46.00 | 34.96 | 34.9 |
| K12 | 417335 | 420412 | 57.00 | 44.00 | 35.00 | 37.00 | 33.00 | 24.00 | 25.00 | 25.00 | 20.00 | 32.00 | 44.00 | | 34.18 | 27.35 | 24.5 |
| K13 | 420377 | 427871 | 51.00 | 50.00 | 35.00 | 43.00 | 39.00 | 34.00 | 36.00 | 36.00 | 29.00 | 39.00 | 36.00 | 43.00 | 39.25 | 31.40 | 30.0 |
| K14 | 413669 | 416463 | 27.00 | 26.00 | 52.00 | 26.00 | 17.00 | 11.00 | 14.00 | 14.00 | 12.00 | 21.00 | 26.00 | 20.00 | 22.17 | 17.73 | N/A |

| | | | | | | | | | | | | | | | | | |
|-----|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------------|
| K15 | 420441 | 427353 | 51.00 | 52.00 | 54.00 | 48.00 | 43.00 | 44.00 | 46.00 | 46.00 | 51.00 | | | 38.00 | 47.30 | 37.84 | N/A |
| K16 | 420441 | 427353 | 53.00 | 50.00 | 51.00 | 44.00 | 25.00 | 29.00 | 46.00 | 46.00 | | 80.00 | 27.00 | 36.00 | 44.27 | 35.42 | N/A |
| K17 | 420441 | 427353 | 57.00 | 50.00 | 50.00 | 47.00 | 46.00 | 31.00 | 50.00 | 50.00 | 38.00 | 42.00 | | 37.00 | 45.27 | 36.22 | N/A |
| K18 | 422686 | 426229 | 41.00 | 59.00 | 44.00 | 48.00 | 40.00 | 43.00 | 45.00 | 45.00 | 28.00 | 66.00 | 52.00 | 41.00 | 46.00 | 36.80 | 31.4 |
| K19 | 423563 | 421014 | 43.00 | 55.00 | 46.00 | 52.00 | 43.00 | 27.00 | | | 24.00 | 39.00 | 34.00 | 32.00 | 39.50 | 31.60 | 28.0 |
| K20 | 424853 | 421828 | | | | 46.00 | 39.00 | 24.00 | 21.00 | 21.00 | 48.00 | 37.00 | 46.00 | 38.00 | 35.56 | 28.44 | 25.8 |
| K21 | 414149 | 416686 | 59.00 | 37.00 | 49.00 | 60.00 | 60.00 | 52.00 | 24.00 | 24.00 | 33.00 | 48.00 | 45.00 | 30.00 | 43.42 | 34.73 | 30.1 |
| K22 | 417418 | 420479 | 50.00 | 63.00 | 47.00 | 56.00 | 28.00 | 24.00 | 41.00 | 41.00 | 39.00 | 43.00 | 35.00 | 34.00 | 41.75 | 33.40 | 29.1 |
| K23 | 418483 | 420978 | 59.00 | 61.00 | | 53.00 | 42.00 | 38.00 | 39.00 | 39.00 | 33.00 | 44.00 | 43.00 | 35.00 | 44.18 | 35.35 | 24.5 |
| K24 | 409941 | 418471 | 55.00 | 44.00 | 50.00 | 43.00 | 45.00 | 47.00 | 39.00 | 39.00 | 39.00 | 37.00 | 43.00 | 31.00 | 42.67 | 34.13 | 24.8 |
| K25 | 423185 | 420612 | 49.00 | 48.00 | 28.00 | 49.00 | 32.00 | 36.00 | 28.00 | 28.00 | 28.00 | 28.00 | 31.00 | 25.00 | 34.17 | 27.33 | N/A |
| K26 | 423185 | 420612 | 47.00 | 49.00 | 28.00 | 45.00 | 34.00 | 28.00 | 27.00 | 27.00 | 25.00 | 36.00 | 27.00 | 30.00 | 33.58 | 26.87 | N/A |
| K27 | 423185 | 420612 | 50.00 | 47.00 | 32.00 | 44.00 | 32.00 | 34.00 | 28.00 | 28.00 | 25.00 | 34.00 | 33.00 | 32.00 | 34.92 | 27.93 | N/A |
| K28 | 414745 | 416710 | 60.00 | 78.00 | 65.00 | 52.00 | 37.00 | 54.00 | 49.00 | 49.00 | 118.00 | 37.00 | 49.00 | 48.00 | 58.00 | 46.40 | 46.2 |
| K31 | 413400 | 417495 | 47.00 | 44.00 | 38.00 | 46.00 | 37.00 | 36.00 | 34.00 | 34.00 | 47.00 | 28.00 | 38.00 | 28.00 | 38.08 | 30.47 | 24.8 |
| K32 | 413513 | 417481 | 44.00 | 42.00 | 57.00 | 50.00 | 43.00 | | | | | | | | 47.20 | 35.49 | 29.9 |
| K33 | 420727 | 423668 | 50.00 | 52.00 | 42.00 | 49.00 | 34.00 | 32.00 | 31.00 | 31.00 | 19.00 | 37.00 | 51.00 | | 38.91 | 31.13 | 27.4 |
| K34 | 420845 | 423770 | 45.00 | 56.00 | 41.00 | 54.00 | 40.00 | 35.00 | 40.00 | 40.00 | 33.00 | 40.00 | 48.00 | 32.00 | 42.00 | 33.60 | 33.0 |
| K35 | 420853 | 423866 | 51.00 | 67.00 | 56.00 | 70.00 | 57.00 | 56.00 | 64.00 | 64.00 | 48.00 | 56.00 | 46.00 | 45.00 | 56.67 | 45.33 | 33.4 |
| K36 | 420304 | 419766 | 117.00 | 77.00 | 90.00 | 90.00 | 43.00 | | | | 37.00 | | 52.00 | 31.00 | 67.13 | 49.40 | 39.2 |
| K37 | 420356 | 427810 | 54.00 | 44.00 | 43.00 | 48.00 | 35.00 | 32.00 | 33.00 | 33.00 | 29.00 | 41.00 | 40.00 | 36.00 | 39.00 | 31.20 | 29.5 |
| K38 | 420222 | 427764 | 52.00 | 53.00 | 44.00 | 54.00 | 50.00 | 45.00 | 47.00 | 47.00 | 42.00 | 36.00 | 46.00 | 40.00 | 46.33 | 37.07 | 28.1 |
| K39 | 424526 | 424326 | 57.00 | 53.00 | 43.00 | 50.00 | 41.00 | 31.00 | 25.00 | 25.00 | 31.00 | 30.00 | 46.00 | 34.00 | 38.83 | 31.07 | 29.1 |
| K40 | 424871 | 421921 | 68.00 | 81.00 | 69.00 | 69.00 | 86.00 | 60.00 | 77.00 | 77.00 | 68.00 | 74.00 | 50.00 | 58.00 | 69.75 | 55.80 | 50.8 |
| K41 | 418285 | 426630 | 50.00 | 64.00 | 55.00 | 35.00 | 39.00 | 36.00 | 38.00 | 38.00 | 35.00 | 41.00 | 42.00 | 37.00 | 42.50 | 34.00 | 28.7 |
| K42 | 424969 | 422002 | 49.00 | 65.00 | 43.00 | 49.00 | 47.00 | 31.00 | 43.00 | 43.00 | 42.00 | 45.00 | 34.00 | 36.00 | 43.92 | 35.13 | 28.7 |

| | | | | | | | | | | | | | | | | | |
|-----|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------------|
| K43 | 425083 | 422022 | 59.00 | 67.00 | 39.00 | 54.00 | 49.00 | 33.00 | 39.00 | 39.00 | 54.00 | 42.00 | 38.00 | 45.00 | 46.50 | 37.20 | 30.7 |
| K44 | 425179 | 422114 | 54.00 | 52.00 | 40.00 | 37.00 | 37.00 | 29.00 | 26.00 | 26.00 | 38.00 | 41.00 | 41.00 | 41.00 | 38.50 | 30.80 | 47.1 |
| K45 | 414480 | 417720 | | | | 52.00 | 48.00 | 29.00 | 38.00 | 38.00 | | 46.00 | 62.00 | 34.00 | 43.38 | 36.44 | 36.1 |
| K46 | 414546 | 417759 | 61.00 | 57.00 | 43.00 | 41.00 | 39.00 | 28.00 | 42.00 | 42.00 | 44.00 | 38.00 | 55.00 | 32.00 | 43.50 | 34.80 | 34.8 |
| K47 | 407942 | 417261 | 66.00 | 63.00 | 52.00 | 27.00 | 49.00 | 43.00 | 51.00 | 51.00 | 45.00 | 47.00 | 52.00 | 62.00 | 50.67 | 40.53 | 40.5 |
| K48 | 421039 | 423673 | 71.00 | 3.00 | 42.00 | 55.00 | 50.00 | 37.00 | 44.00 | 44.00 | 43.00 | 50.00 | 56.00 | 46.00 | 45.08 | 36.07 | 36.1 |
| K49 | 413659 | 416182 | 54.00 | 56.00 | 45.00 | 55.00 | 34.00 | 36.00 | 24.00 | 24.00 | | | 51.00 | 35.00 | 41.40 | 33.12 | 29.8 |
| K50 | 413414 | 415981 | 47.00 | 71.00 | | 62.00 | 37.00 | | | | | | | | 54.25 | 38.19 | 35.4 |
| K51 | 421904 | 423580 | 60.00 | 45.00 | 53.00 | 53.00 | 36.00 | 38.00 | 40.00 | 40.00 | 23.00 | 26.00 | 66.00 | 37.00 | 43.08 | 34.47 | 28.3 |
| K52 | 417627 | 416472 | 49.00 | 43.00 | 45.00 | 54.00 | 31.00 | 40.00 | 28.00 | 28.00 | 29.00 | 41.00 | 42.00 | 30.00 | 38.33 | 30.67 | 24.5 |
| K53 | 411564 | 415902 | 48.00 | | | 47.00 | | 55.00 | | | 51.00 | | | 128.00 | 65.80 | 53.69 | 47.4 |
| K54 | 425196 | 421566 | 46.00 | 45.00 | | 50.00 | 33.00 | 38.00 | 36.00 | 36.00 | 44.00 | 39.00 | 41.00 | 33.00 | 40.09 | 32.07 | 29.8 |
| K55 | 414187 | 408264 | 56.00 | 46.00 | 47.00 | 38.00 | 29.00 | 34.00 | 28.00 | 28.00 | | | | 30.00 | 37.33 | 29.87 | 25.1 |
| K56 | 415009 | 416420 | 59.00 | 58.00 | 47.00 | 51.00 | 31.00 | 39.00 | 32.00 | 32.00 | 35.00 | 53.00 | 47.00 | 39.00 | 43.58 | 34.87 | N/A |
| K57 | 414291 | 417281 | 38.00 | 42.00 | 26.00 | 33.00 | 24.00 | 23.00 | | | 20.00 | | 18.00 | 26.00 | 27.78 | 22.22 | N/A |
| K58 | 414350 | 417270 | 74.00 | 73.00 | 59.00 | | | | 40.00 | 40.00 | 29.00 | 41.00 | 56.00 | 34.00 | 49.56 | 39.64 | N/A |
| K61 | 420422 | 427349 | 51.00 | 47.00 | 43.00 | 35.00 | 39.00 | 29.00 | 39.00 | 39.00 | 32.00 | 38.00 | 36.00 | 18.00 | 37.17 | 29.73 | 20.7 |
| K62 | 420472 | 427360 | 49.00 | 45.00 | 44.00 | 30.00 | 30.00 | 22.00 | 36.00 | 36.00 | 15.00 | 30.00 | 34.00 | 25.00 | 33.00 | 26.40 | 24.4 |
| K63 | 419866 | 427561 | 45.00 | 46.00 | 38.00 | 53.00 | 30.00 | 26.00 | 25.00 | 25.00 | 27.00 | 33.00 | 40.00 | 21.00 | 34.08 | 27.27 | 25.7 |
| K64 | 419914 | 427588 | 74.00 | 80.00 | 63.00 | 66.00 | 51.00 | 45.00 | 49.00 | 49.00 | 45.00 | 52.00 | 55.00 | 47.00 | 56.33 | 45.07 | N/A |
| K65 | 419981 | 427623 | 63.00 | 81.00 | 69.00 | 42.00 | 51.00 | 32.00 | 51.00 | 51.00 | 42.00 | 52.00 | 47.00 | 36.00 | 51.42 | 41.13 | N/A |
| K66 | 420349 | 427434 | 52.00 | 48.00 | 32.00 | 31.00 | 23.00 | 26.00 | 22.00 | 22.00 | 20.00 | 27.00 | 42.00 | 27.00 | 31.00 | 24.80 | N/A |
| K67 | 421132 | 427273 | 44.00 | 42.00 | 34.00 | 33.00 | 27.00 | 23.00 | 21.00 | 21.00 | 19.00 | 31.00 | 35.00 | 36.00 | 30.50 | 24.40 | N/A |
| K68 | 421128 | 427298 | 50.00 | 39.00 | 29.00 | 35.00 | 27.00 | 24.00 | 21.00 | 21.00 | 24.00 | 29.00 | 30.00 | 25.00 | 29.50 | 23.60 | N/A |
| K69 | 418237 | 426555 | 56.00 | 44.00 | 44.00 | 36.00 | 30.00 | 26.00 | 29.00 | 29.00 | 26.00 | 34.00 | 46.00 | 26.00 | 35.50 | 28.40 | N/A |
| K70 | 423236 | 420752 | 52.00 | 57.00 | 35.00 | 46.00 | 36.00 | 36.00 | 33.00 | 33.00 | 34.00 | 39.00 | 47.00 | 29.00 | 39.75 | 31.80 | 27.3 |

| | | | | | | | | | | | | | | | | | |
|-----|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|------|
| K71 | 411007 | 419190 | 58.00 | 49.00 | 39.00 | 43.00 | 47.00 | 32.00 | 32.00 | 32.00 | 22.00 | 36.00 | 50.00 | 21.00 | 38.42 | 30.73 | 26.3 |
| K72 | 410227 | 418653 | 57.00 | 43.00 | 41.00 | 32.00 | 50.00 | 41.00 | 39.00 | 39.00 | 40.00 | 37.00 | 40.00 | 24.00 | 40.25 | 32.20 | 26.5 |
| K73 | 410080 | 418568 | 58.00 | 48.00 | | 39.00 | 55.00 | 41.00 | 42.00 | 42.00 | 45.00 | 34.00 | 44.00 | 22.00 | 42.73 | 34.18 | N/A |
| K74 | 410095 | 418559 | 29.00 | 33.00 | 33.00 | 26.00 | 31.00 | 28.00 | 26.00 | 26.00 | 30.00 | 29.00 | 46.00 | 18.00 | 29.58 | 23.67 | 22.7 |
| K75 | 413153 | 425894 | 40.00 | 48.00 | | | | | | | | | | | 44.00 | Insufficient Data | N/A |
| K76 | 413198 | 415957 | 52.00 | 61.00 | 39.00 | 38.00 | 27.00 | 25.00 | 26.00 | 26.00 | 31.00 | 35.00 | 46.00 | 22.00 | 35.67 | 28.53 | 24.1 |
| K77 | 413455 | 416013 | 67.00 | | 46.00 | 48.00 | 53.00 | 35.00 | 47.00 | 47.00 | 41.00 | 59.00 | | 43.00 | 48.60 | 38.88 | 36.1 |
| K78 | 413464 | 415983 | 41.00 | 32.00 | 24.00 | 38.00 | 27.00 | | | | | | 43.00 | | 34.17 | 24.05 | N/A |
| K79 | 423903 | 427756 | 54.00 | 51.00 | | | | | | | | | | | 52.50 | Insufficient Data | N/A |
| K80 | 425566 | 423696 | 39.00 | 46.00 | 31.00 | 33.00 | 30.00 | 32.00 | 16.00 | 16.00 | 30.00 | 31.00 | 35.00 | 27.00 | 30.50 | 24.40 | 22.4 |
| K81 | 422991 | 426992 | 44.00 | 50.00 | 36.00 | 47.00 | 36.00 | 35.00 | 35.00 | 35.00 | 11.00 | 33.00 | 51.00 | 34.00 | 37.25 | 29.80 | N/A |
| K82 | 422036 | 415941 | 33.00 | 28.00 | 23.00 | 19.00 | 15.00 | 20.00 | 19.00 | 19.00 | | 24.00 | 26.00 | 15.00 | 21.91 | 17.53 | 16.2 |
| K83 | 424203 | 414975 | 41.00 | 39.00 | 31.00 | 41.00 | 27.00 | 26.00 | 31.00 | 31.00 | 8.00 | 34.00 | 36.00 | 25.00 | 30.83 | 24.67 | 15.5 |
| K84 | 422923 | 408553 | 37.00 | 30.00 | 26.00 | 36.00 | 26.00 | 19.00 | 15.00 | 15.00 | 12.00 | 32.00 | 39.00 | 22.00 | 25.75 | 20.60 | 18.4 |
| K85 | 419380 | 409777 | 32.00 | 33.00 | 26.00 | 34.00 | 20.00 | 23.00 | 23.00 | 23.00 | 21.00 | 27.00 | 36.00 | 19.00 | 26.42 | 21.13 | N/A |
| K86 | 415164 | 416323 | 55.00 | 41.00 | 35.00 | 44.00 | 32.00 | 36.00 | 30.00 | 30.00 | 37.00 | 34.00 | 41.00 | 21.00 | 36.33 | 29.07 | 25.4 |
| K87 | 424409 | 421271 | 52.00 | 52.00 | 41.00 | 48.00 | 28.00 | 31.00 | 38.00 | 38.00 | 31.00 | 35.00 | 48.00 | 27.00 | 39.08 | 31.27 | 29.9 |

- 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 NO₂ annual mean objective of 40µg/m³ are shown in **bold**.

NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 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 0.8

C.1.3 Discussion of Choice of Factor to Use

In 2019, 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 2018, Kirklees Council annualised data against 3 AURN Monitoring locations, Leeds Central, Bradford Mayo 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 |
|-----|--------|--------------------|-----------------------|-------------------|-----------|-----------|
| K11 | 36.80 | 0.98 | 0.95 | 0.93 | 0.95 | 34.96 |
| K32 | 37.76 | 0.92 | 0.93 | 0.98 | 0.94 | 35.49 |
| K36 | 53.70 | 0.90 | 0.94 | 0.93 | 0.92 | 49.40 |
| K45 | 34.70 | 1.13 | 0.98 | 1.04 | 1.05 | 36.44 |
| K50 | 43.40 | 0.85 | 0.86 | 0.93 | 0.88 | 38.19 |
| K53 | 52.64 | 1.06 | 1.00 | 0.99 | 1.02 | 53.69 |
| K78 | 27.33 | 0.87 | 0.88 | 0.91 | 0.88 | 24.05 |

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.2 Roadside 3 – Hunsworth Lane Details

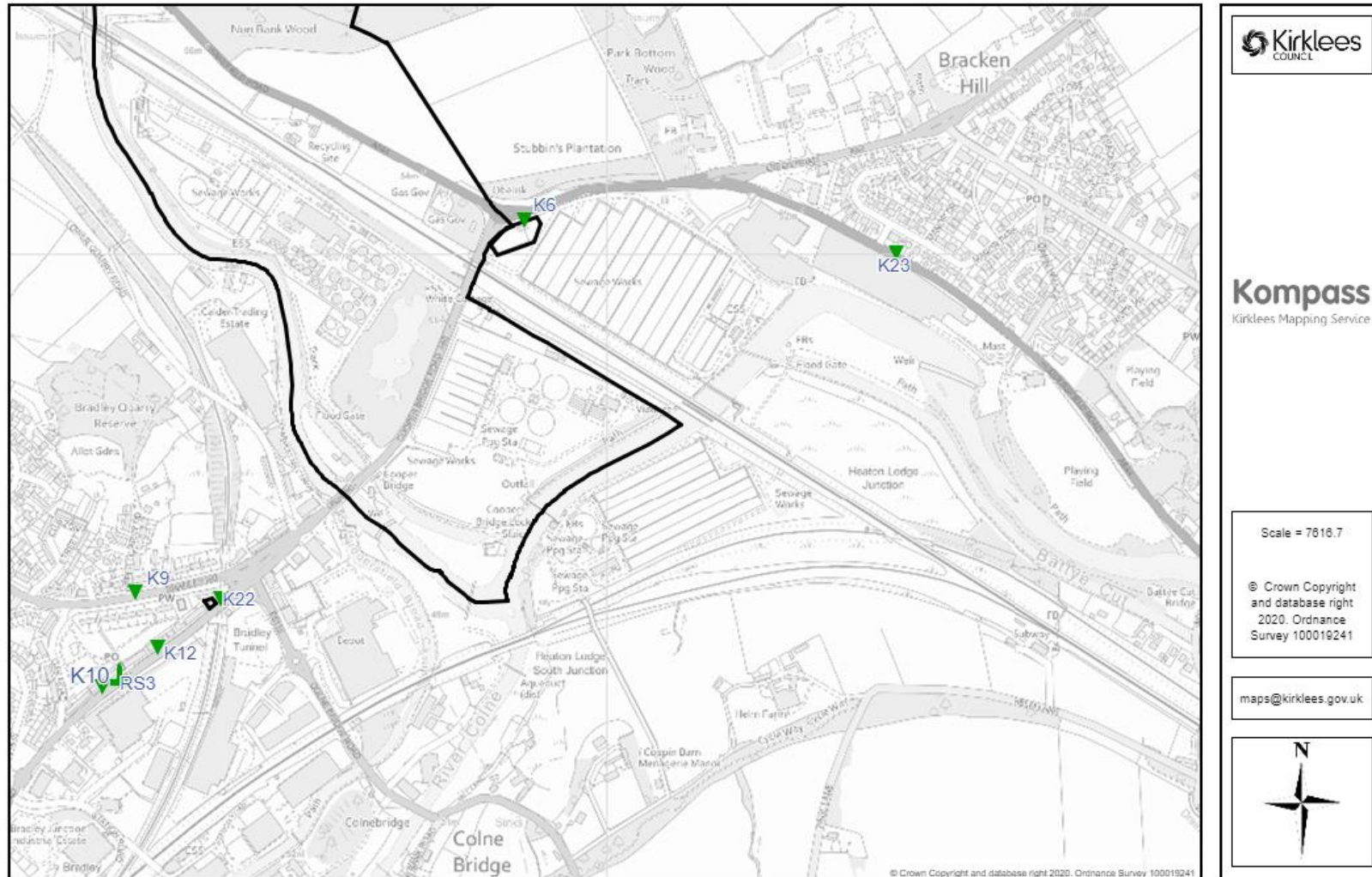
| Station | Roadside 3 – Hunsworth Lane |
|---------------------------|---|
| Analyser Model | Horiba: APNA-360CE, MET-One BAM |
| Logging system | Each analyser has a data distribution board and communicates directly via modem for data download twice per day |
| Calibration Gas | NO, |
| Routine Calibration | 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.3 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)



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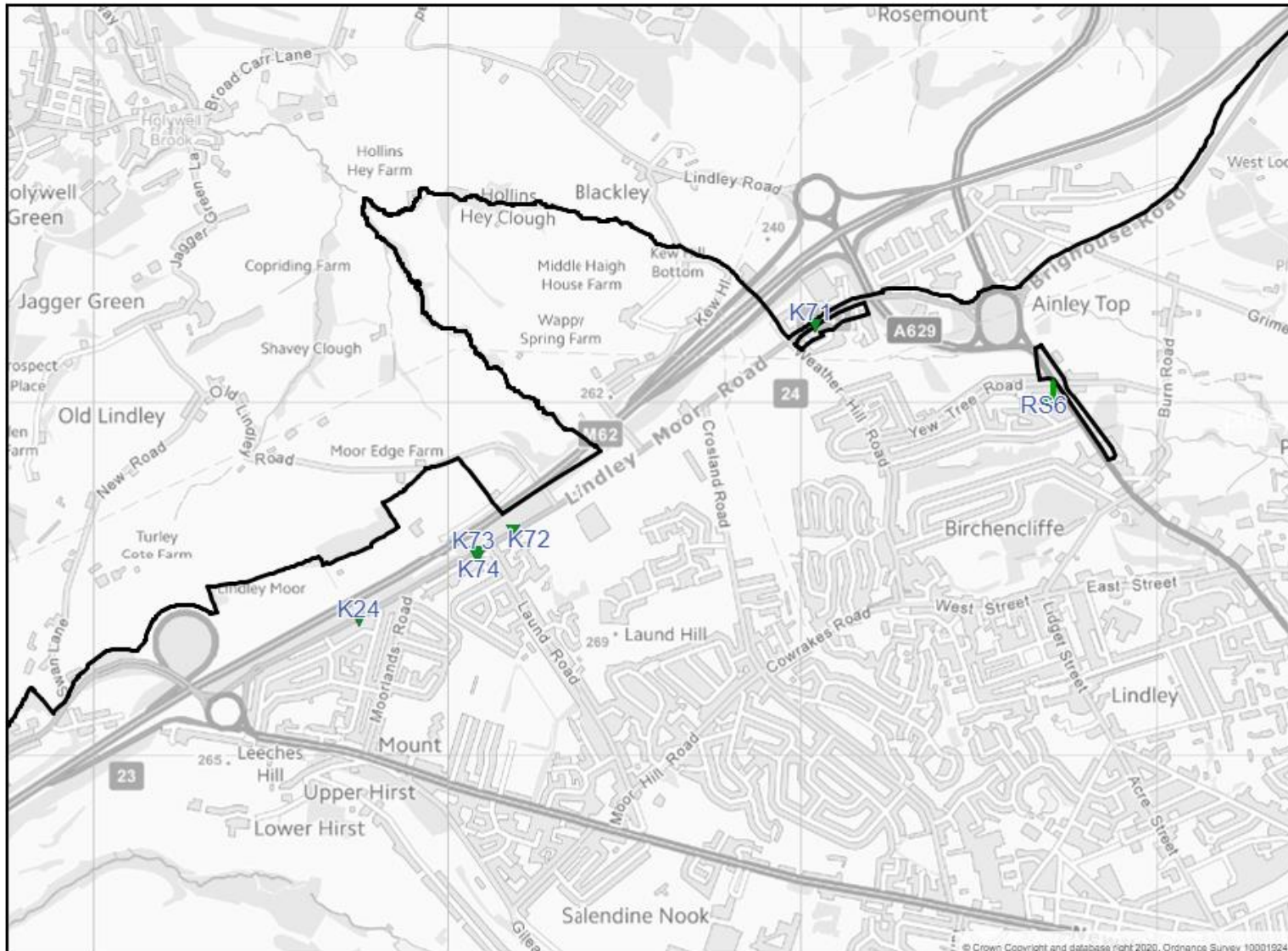
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Map D.2 Air Quality Management Area 3 Ainley Top





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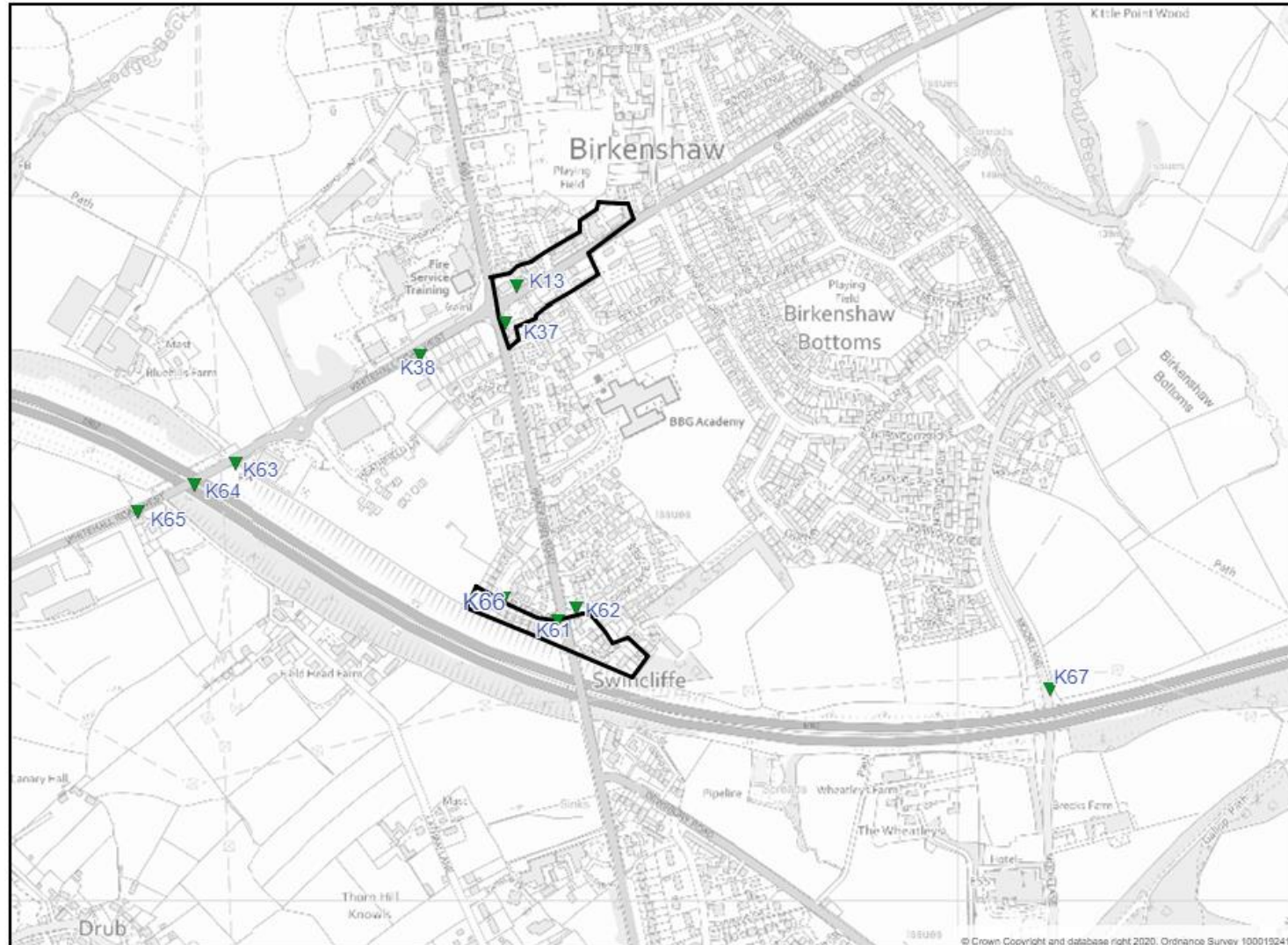
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Map D.3 Air Quality Management Area 4 Birkenshaw




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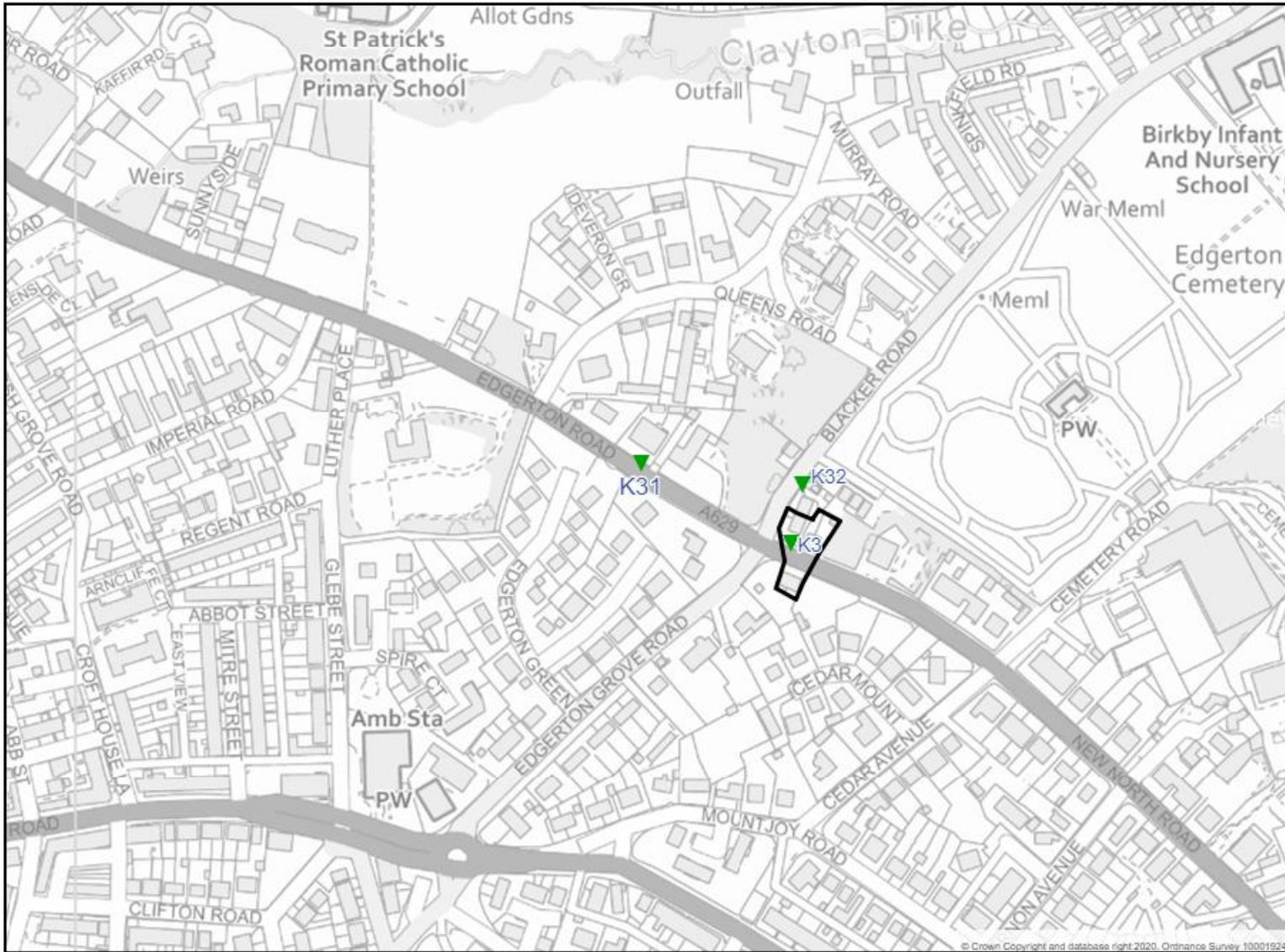
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Map D.5 Air Quality Management Area 6 Edgerton





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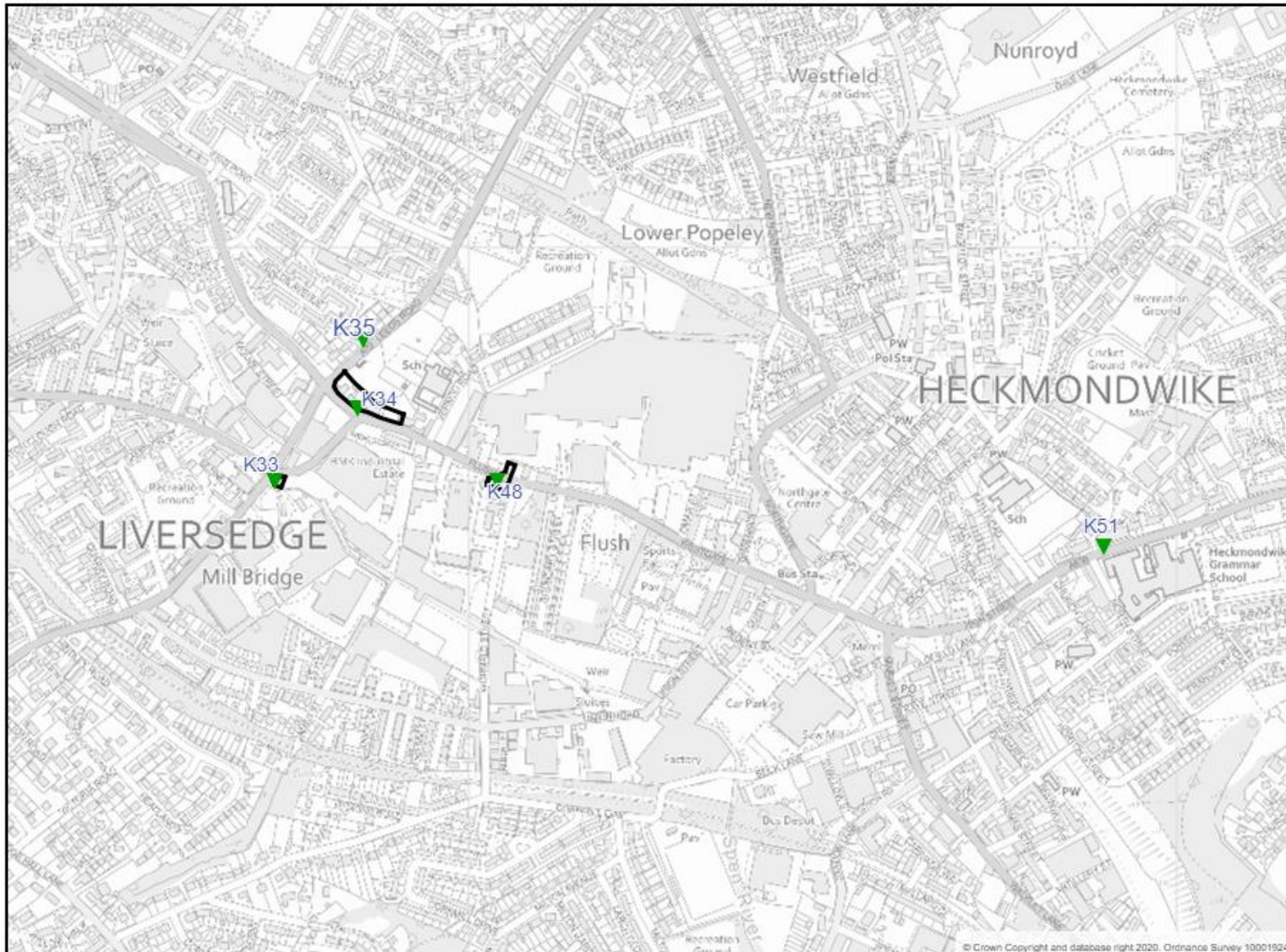
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Map D.6 Air Quality Management Area 7 Liversedge





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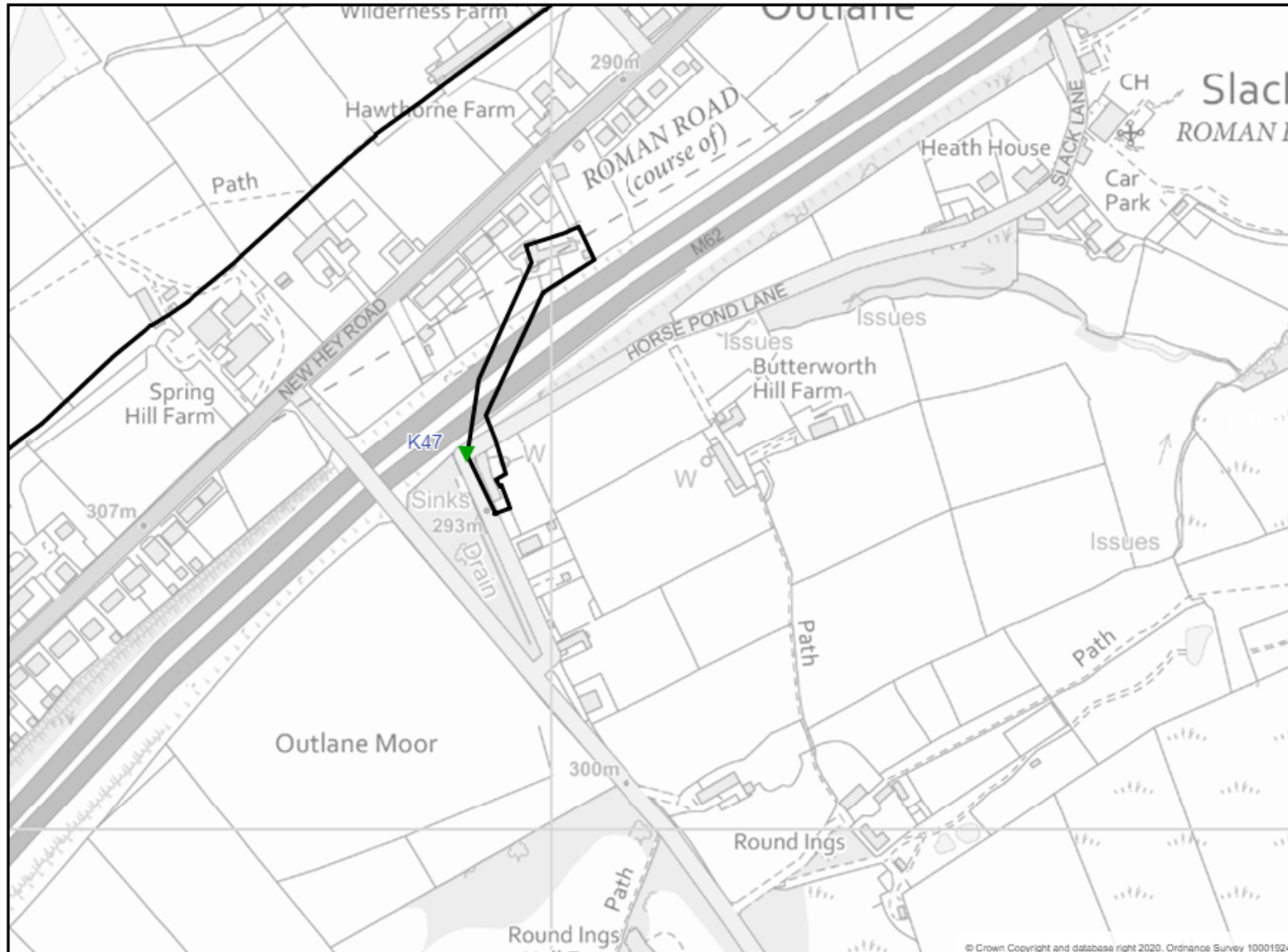
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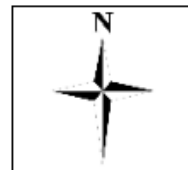
Map D.7 Air Quality Management Area 8 Outlane



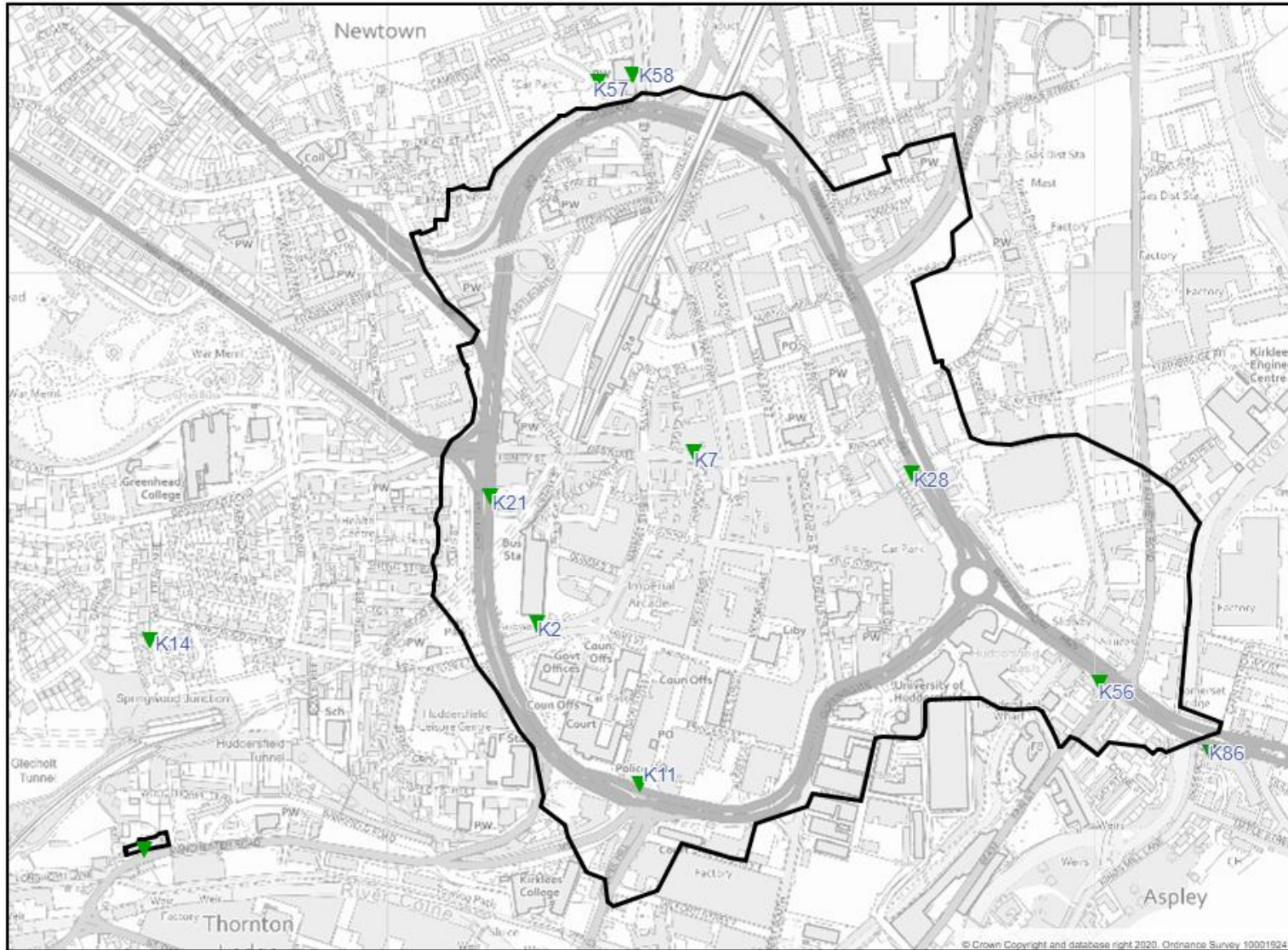
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Map D.8 Air Quality Management Area 9 Huddersfield Town Centre



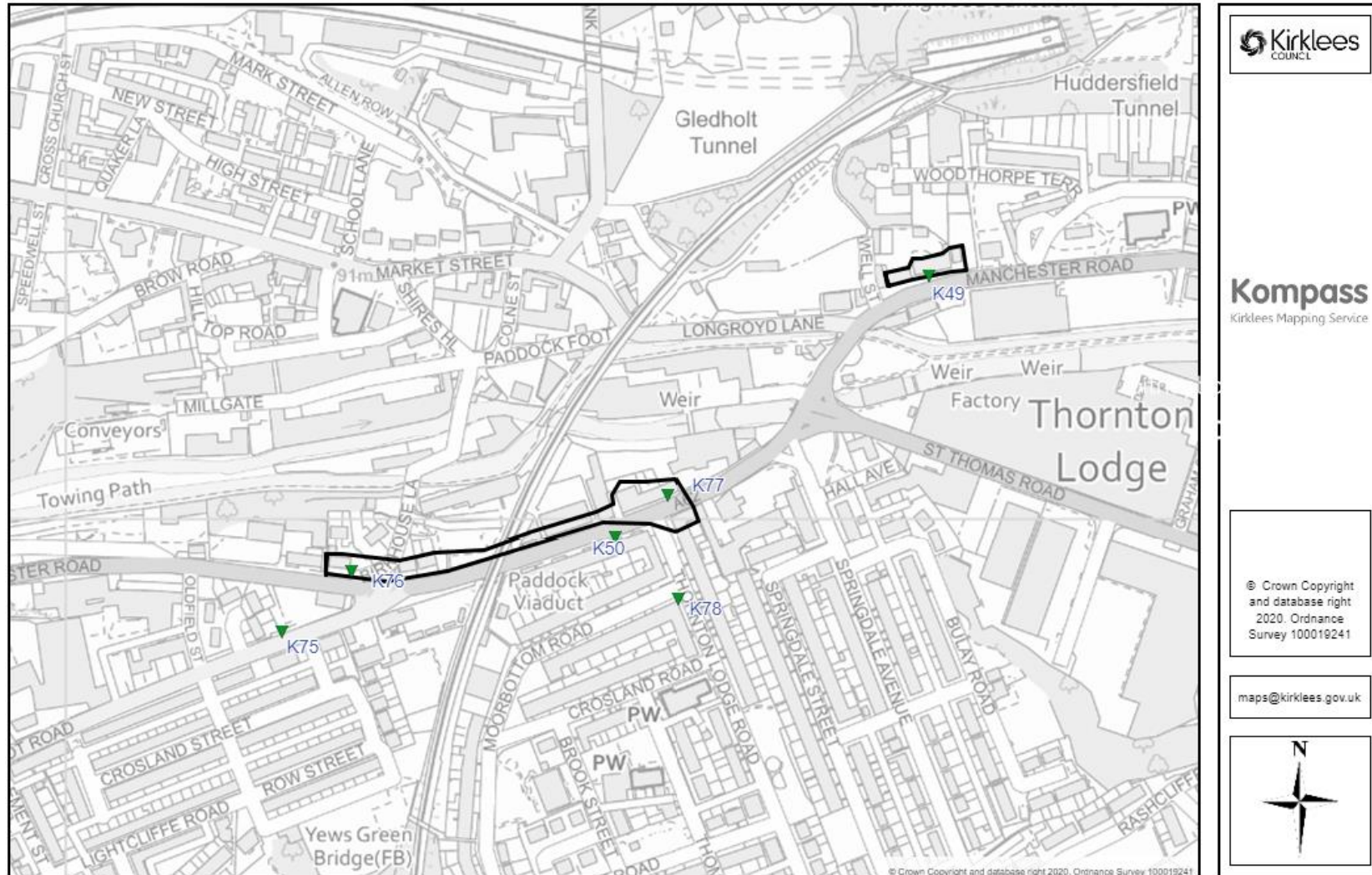
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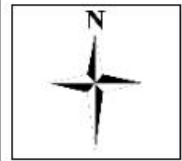
Map D.9 Air Quality Management Area 10 Thornton Lodge



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Map D.10 Air Quality Monitoring in Batley





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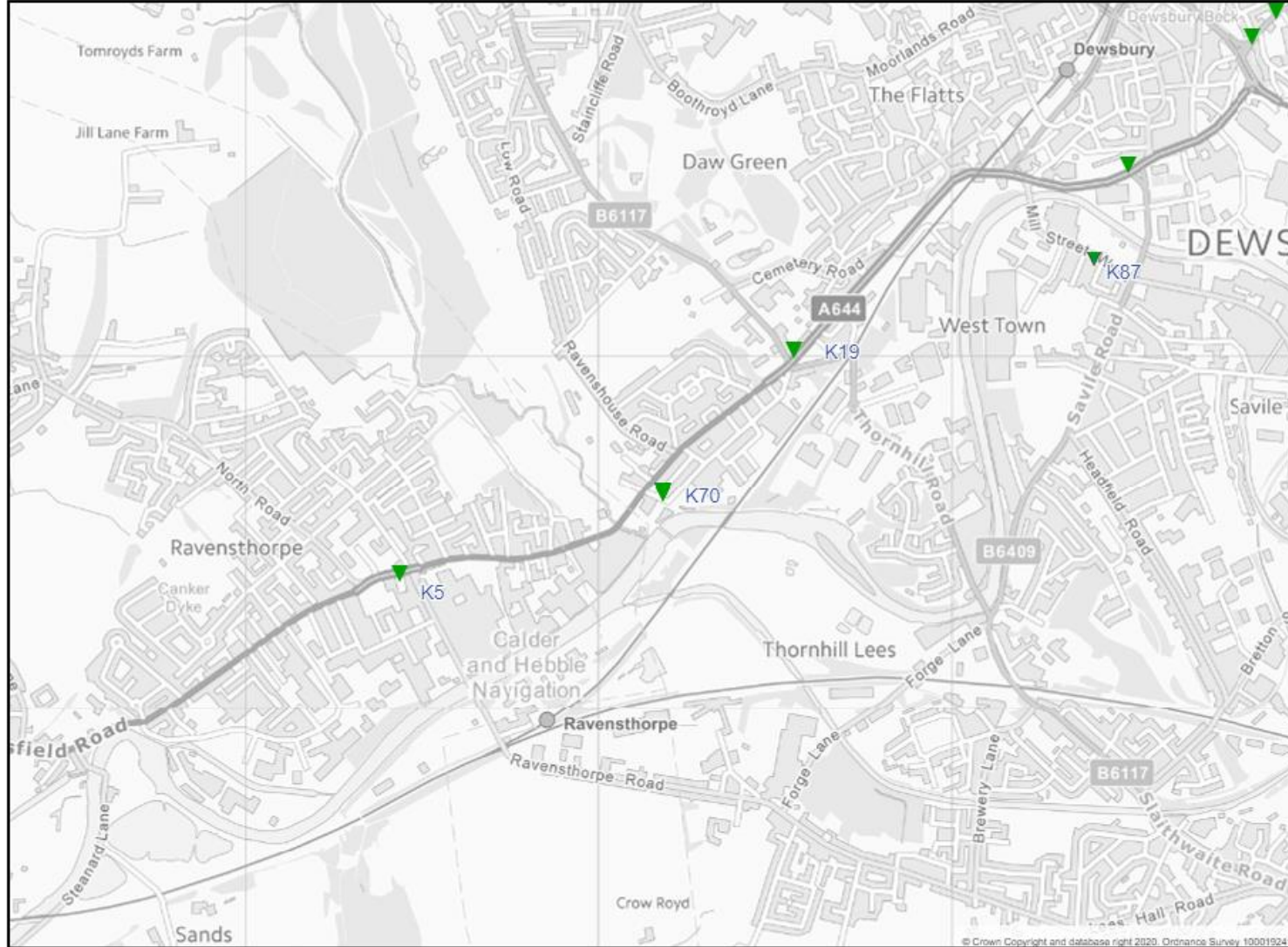
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Map D.11 Air Quality Monitoring in Ravensthorpe / Scouthill (Previously AQMA 2)





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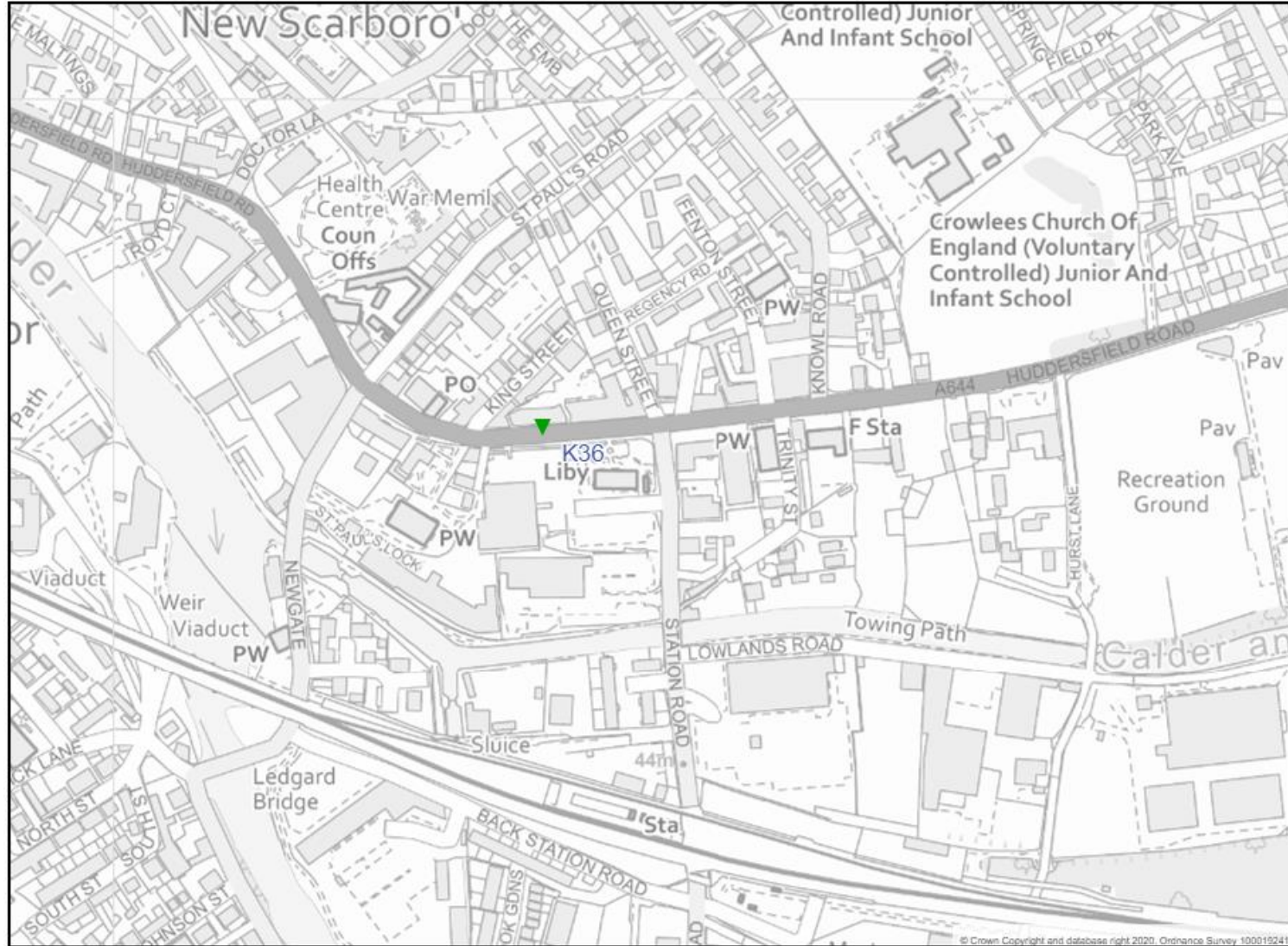
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Map D.12 Air Quality Monitoring in Mirfield





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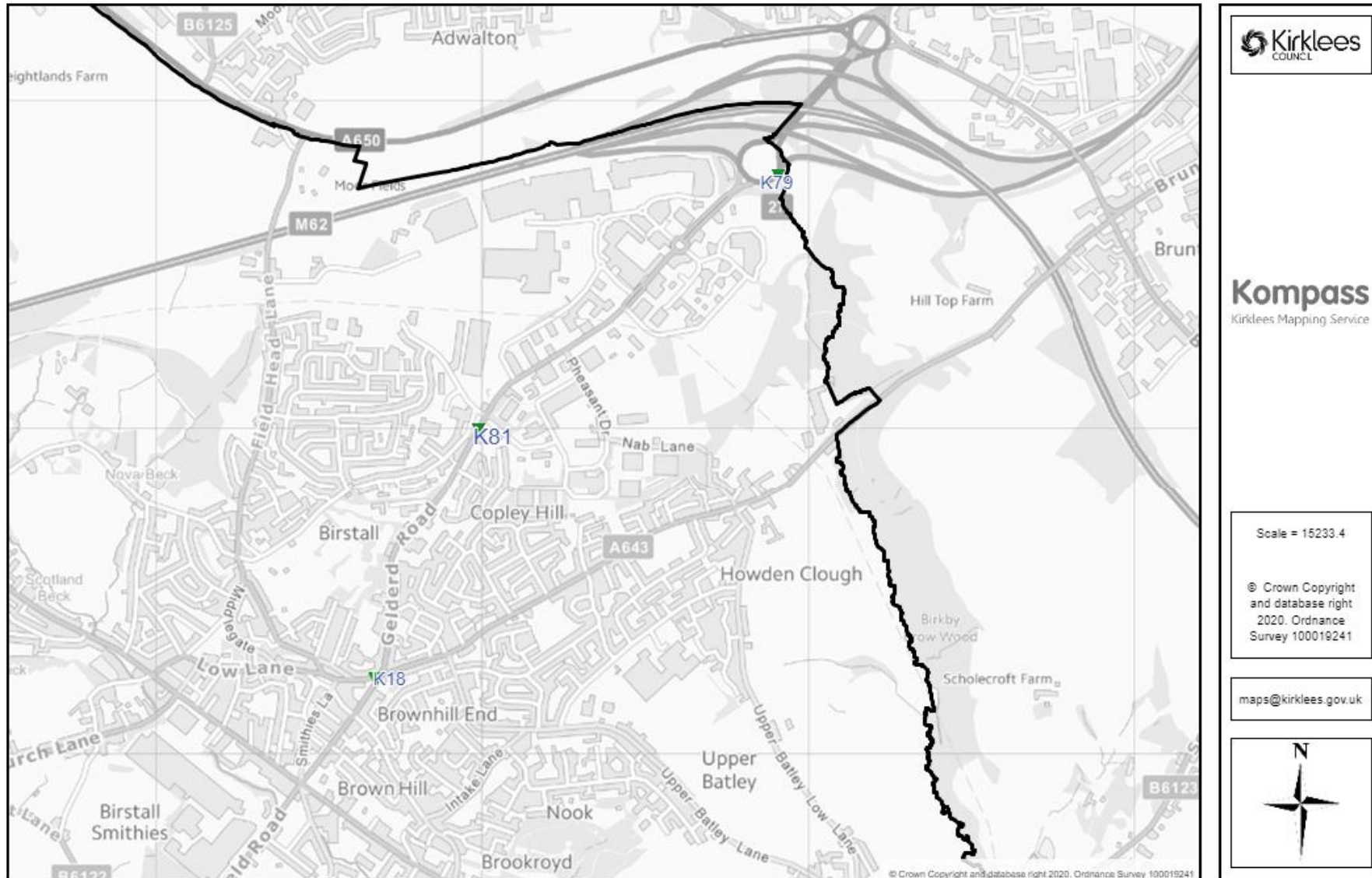
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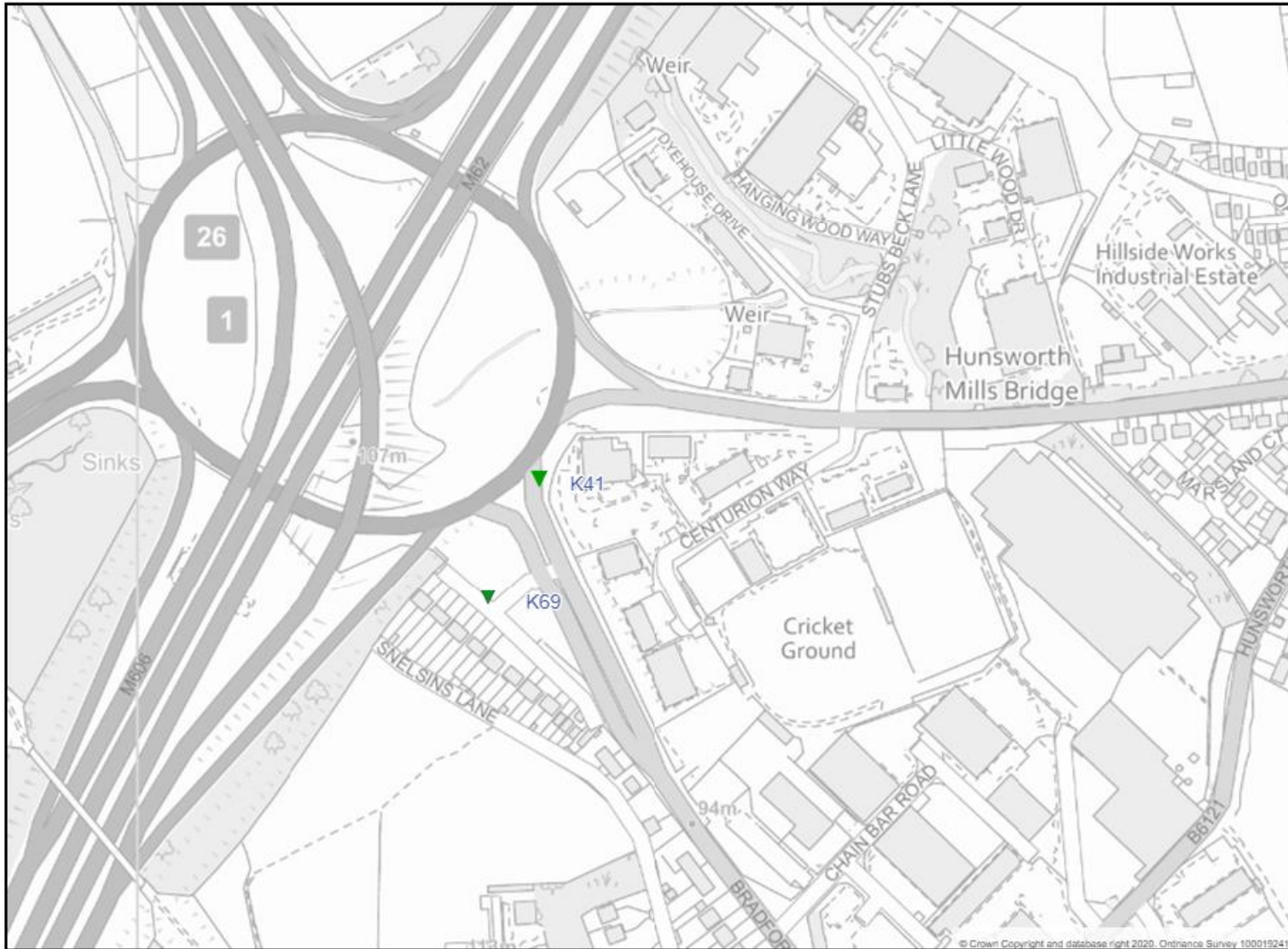
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Map D.13 Air Quality Monitoring in Birstall



Map D.14 Air Quality Monitoring in Cleckheaton




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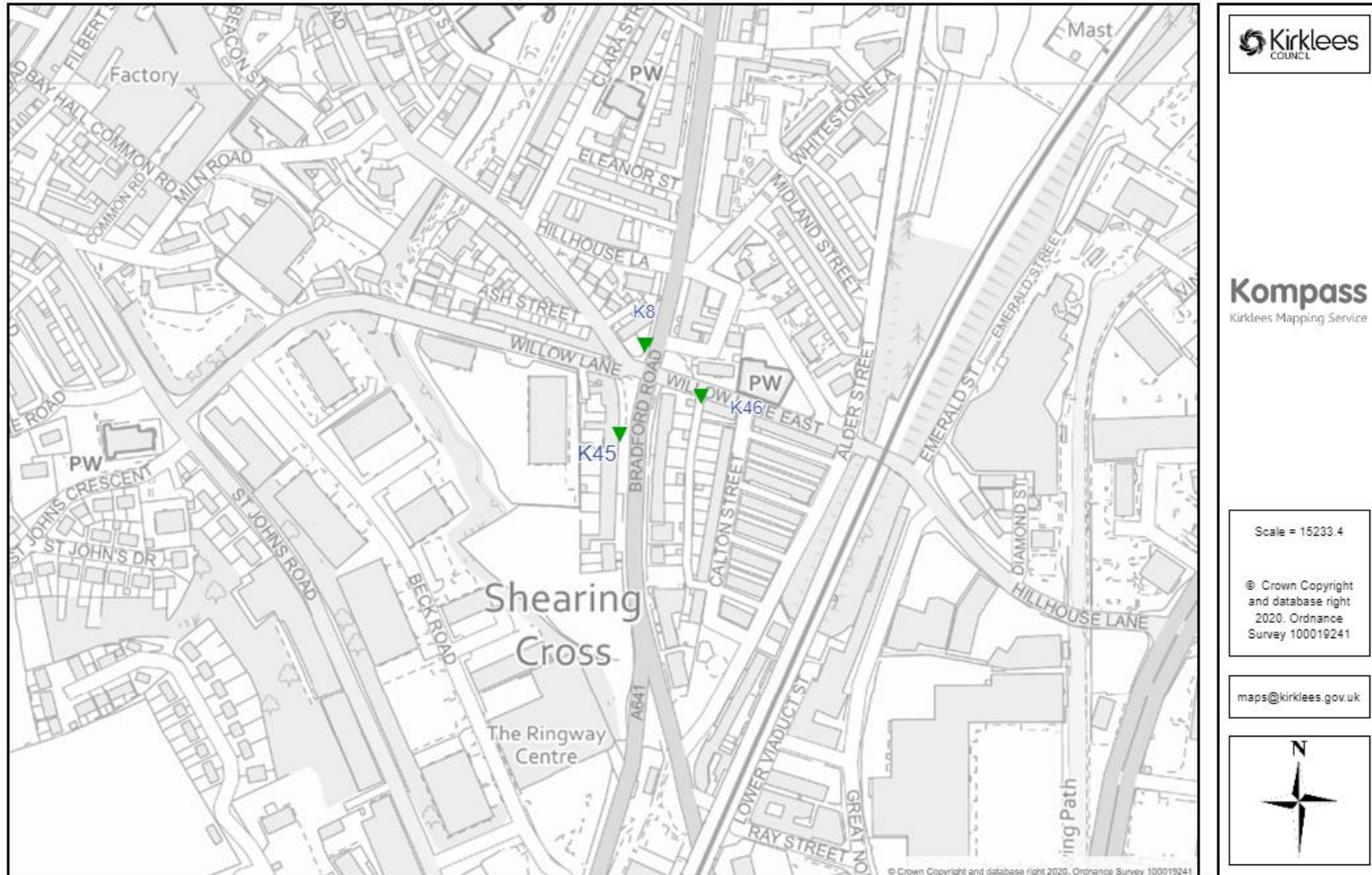
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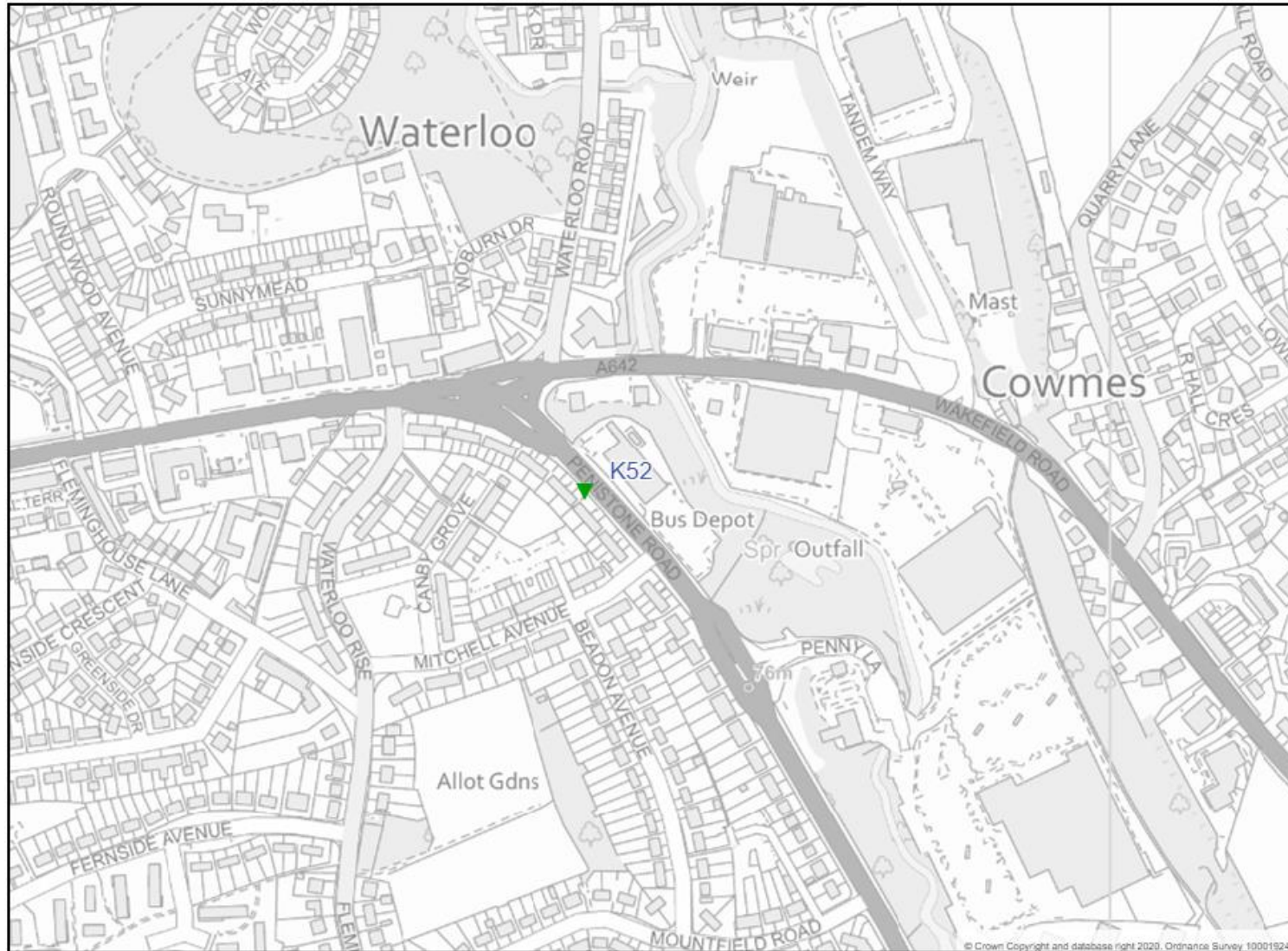
Map D.15 Air Quality Monitoring in Fartown




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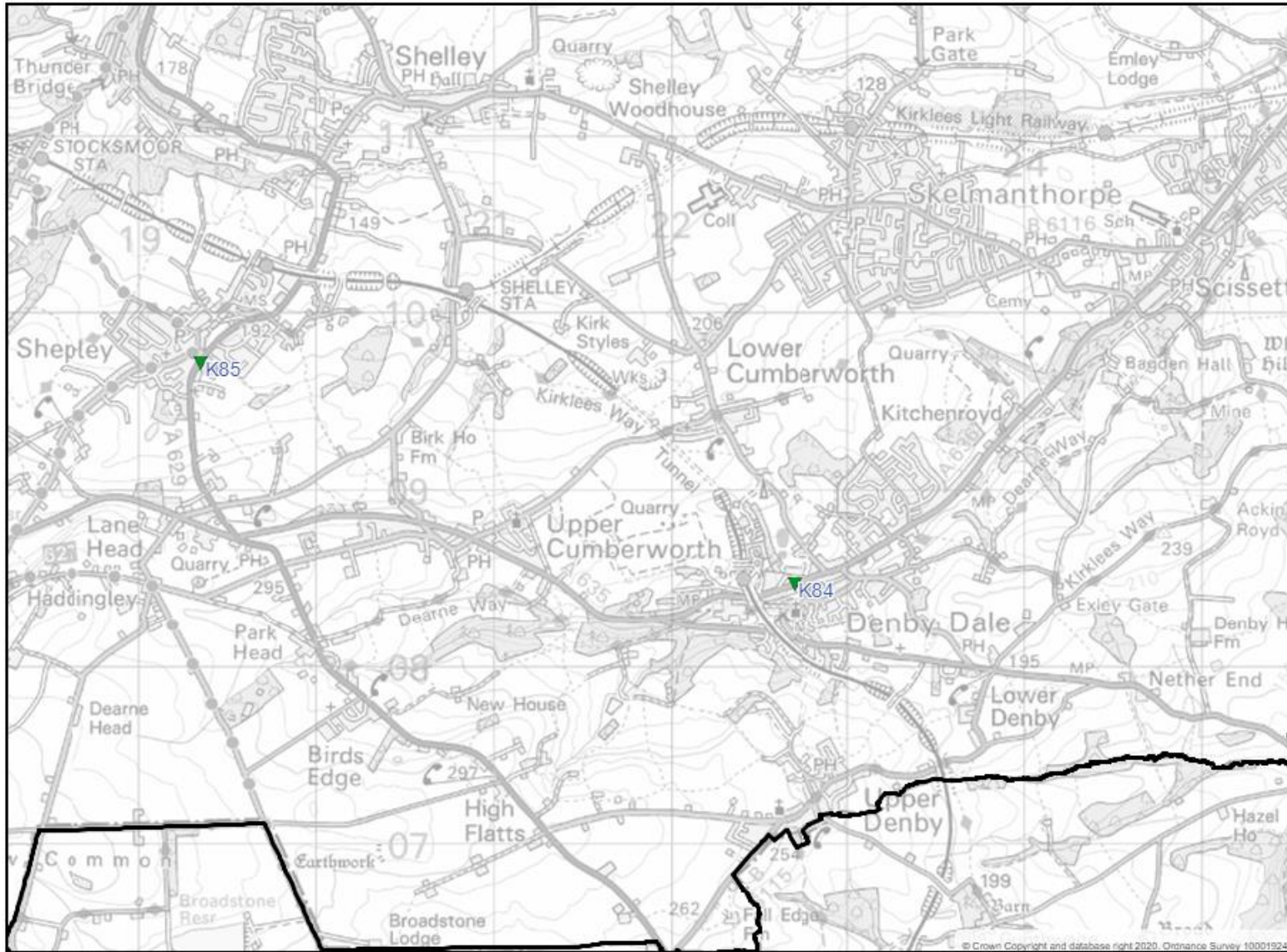
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Map D.19 Air Quality Monitoring in Shepley and Denby Dale

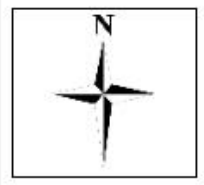


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Map D.20 Air Quality Monitoring in Holmfirth





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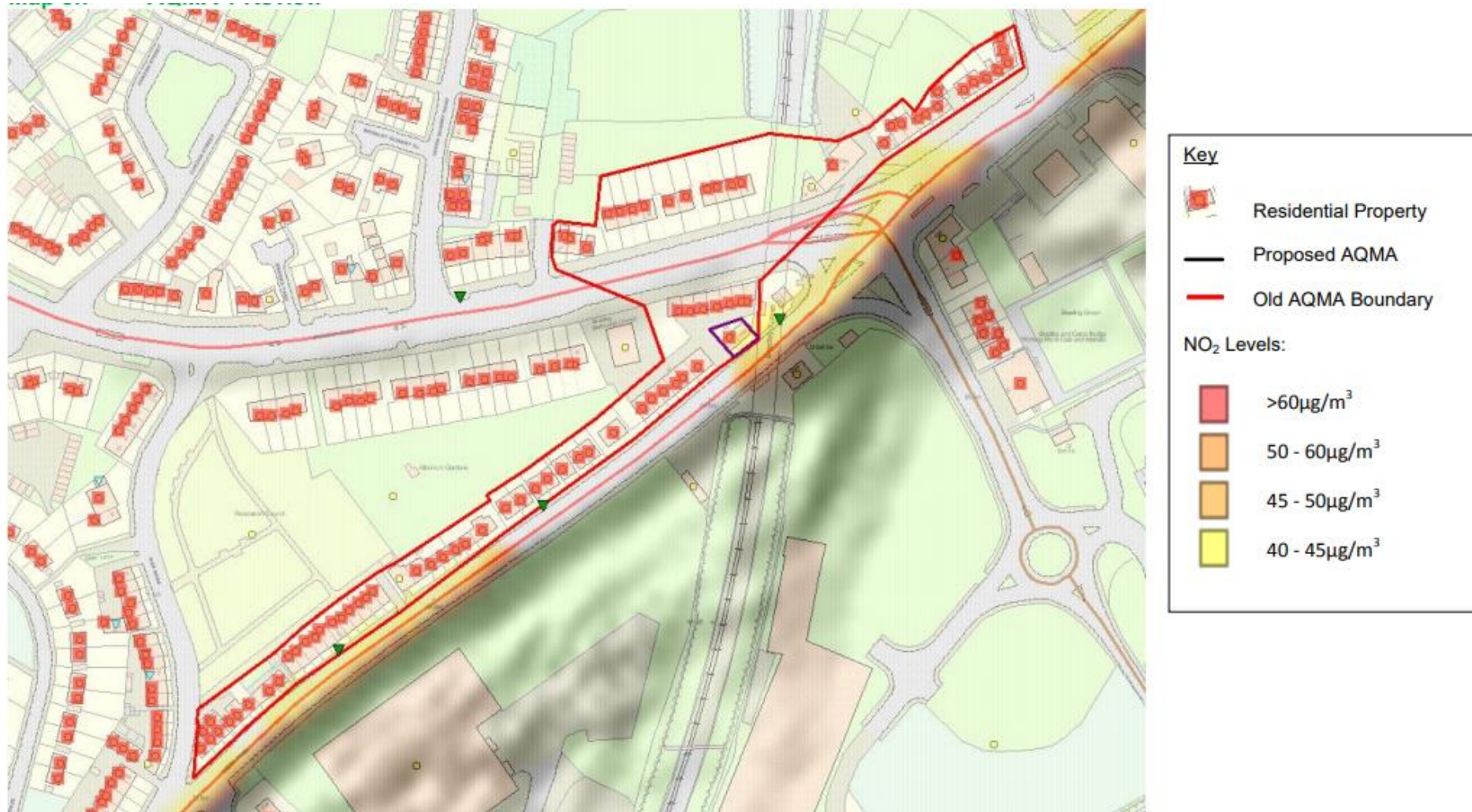
Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England

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

⁶ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

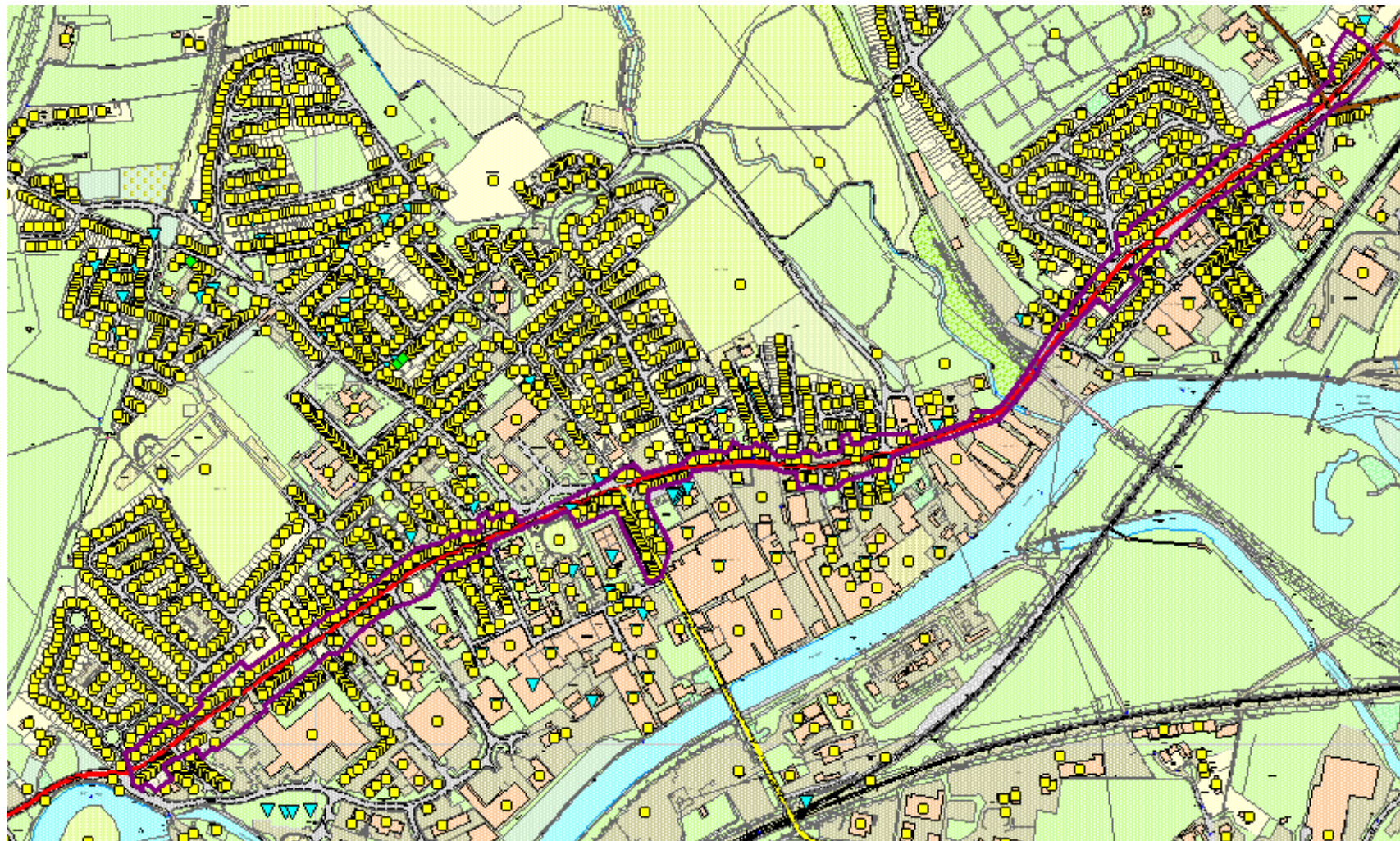
Map E.1 Amended AQMA 1 Part 1 (changes accepted in ASR 2016)



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



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



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 ₂ | Nitrogen Dioxide |
| NO _x | Nitrogen Oxides |
| PM ₁₀ | Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less |
| PM _{2.5} | Airborne particulate matter with an aerodynamic diameter of 2.5µm or less |

| | |
|-----------------|---------------------------------------|
| QA/QC | Quality Assurance and Quality Control |
| SO ₂ | Sulphur Dioxide |

References

Part IV Environment Act 1995. (c.25) London: HMSO

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