



2021 Air Quality Annual Status Report (ASR)

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

Date: August 2021

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Executive Summary: Air Quality in Our Area

Air Quality in Hart District 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, the elderly, and those with existing heart and lung conditions. There is also often a strong correlation with equalities issues because areas with poor air quality are also often less affluent areas^{1,2}.

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages³, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017⁴.

Air Quality Management Areas (AQMAs) can be declared when there is an exceedance or likely to be an exceedance of an air quality objective. Hart District Council does not currently have any AQMAs.

Hart District Council measures nitrogen dioxide (NO₂) at 13 locations within the district using passive diffusion tubes. All annual average NO₂ concentrations measured during 2020 were below the 40 µg.m⁻³ annual air quality objective. Measured annual mean NO₂ concentrations in the district have generally declined over the last five years.

A review of planning applications, the local road network and industrial processes in the district has not identified any new major sources of emissions in 2020.

¹ Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

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

³ Defra. Air quality appraisal: damage cost guidance, July 2020

⁴ Public Health England. Estimation of costs to the NHS and social care due to the health impacts of air pollution: summary report, May 2018

Actions to Improve Air Quality

Whilst air quality has improved significantly in recent decades and will continue to improve due to national policy decisions, there are some areas where local action is needed to improve air quality further.

The 2019 Clean Air Strategy⁵ sets out the case for action, with goals even more ambitious than EU requirements to reduce exposure to harmful pollutants. The Road to Zero⁶ sets out the approach to reduce exhaust emissions from road transport through a number of mechanisms; this is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations heavily influenced by transport emissions.

Hart District Council have undertaken several measures to help improve air quality in the district by:

- Promoting the uptake of low and zero emission vehicles, including installation of a new electric vehicle charging point.
- Protecting air quality through their planning processes, new local plan and Local Transport Plans and strategies.
- Declaring a climate emergency to address the causes and impacts of the climate crisis threatening the environment, this includes pledging to make the district carbon neutral by 2040, whilst bringing forward the current 2040 target to 2035, for areas under direct control of Hart District Council

Impacts of COVID-19 on Air Quality within Hart District Council

The COVID-19 pandemic brought about a downturn in vehicles in Hart District Council. In 2020, there was a reduction of NO₂ concentrations between 25% and 35% at kerbside diffusion tube monitoring sites and a reduction of NO₂ concentrations between 23% and 36% at roadside diffusion tube monitoring sites in comparison to 2019.

⁵ Defra. Clean Air Strategy, 2019

⁶ DfT. The Road to Zero: Next steps towards cleaner road transport and delivering our Industrial Strategy, July 2018

Conclusions and Priorities

The NO₂ concentrations measured in Hart District Council were below the Air Quality Objective (AQO) at all measurement sites. A review of 2020 planning applications identified no new developments that are likely to have significant adverse impacts on air quality.

Hart District Council will continue to monitor NO₂ using a network of passive diffusion tubes and continue to encourage the uptake of low emission transport and protect air quality through the local planning process.

Local Engagement and How to get Involved

A key source of localised air pollution is road traffic. The public can help improve air quality within Hart District Council by:

- Using your car less and use public transport instead if you can
- Walk or cycle (which is good for your health too)
- Car share if possible
- Use a low emission vehicle such as an electric or hybrid car
- Avoid driving during congested peak traffic periods

DEFRA have published their Clean Air Strategy 2019 document highlighting sources of air pollution and the best approach to reducing emissions. For more information please visit https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/770715/clean-air-strategy-2019.pdf

Public Health England have published an air pollution guidance document (available at <https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution>). This guidance focuses on the health impacts and cost that air pollution can impose on the population, highlighting the financial and social need to reduce air pollution.

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1 Local Air Quality Management

This report provides an overview of air quality in Hart District 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 Hart District Council to improve air quality and any progress that has been made.

The statutory air quality objectives applicable to LAQM in England are presented in Table E.1.

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 should prepare an Air Quality Action Plan (AQAP) within 12 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

Hart District Council currently does not have any AQMAs. For reference, a map of Hart District Council's monitoring locations is presented in Appendix D.

2.2 Progress and Impact of Measures to address Air Quality in Hart District Council

Defra's appraisal of last year's ASR concluded that the passive monitoring results continue to demonstrate that Hart District Council is compliant with national air quality objectives. Hart District Council were commended on their intention to adhere with good practice and continually reviewing their monitoring locations to ensure the identification of any hotspot areas. The commentary also stated that additional discussion on the Public Health Outcomes Framework (PHOF) would be welcomed and more explanation on how the [Hart Local Plan](#) is anticipated to impact air quality.

Hart District 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 2.1. Five measures are included within Table 2.1, with the type of measure and the progress Hart District Council have made during the reporting year of 2020 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.1.

More detail on these measures can be found in their respective Action Plans, as highlighted in Table 2.1. Key completed measure includes:

- Installation of an electric vehicle charging points

Hart District Council expects the following measures to be completed over the course of the next few reporting years:

- Transition Hart District Council fleet vehicles to ultra-low / low emission vehicles – to introduce zero emission vehicles to Hart District Council fleet. This measure will look at both associated carbon emission savings and air pollution improvements.
- Offsetting Project - Planting wild gardens, urban trees, living walls in car parks and green/living roofs to further reduce air pollution and carbon reduction throughout Hart.
- Encourage modal shift to more sustainable transport options - Develop [Hart's Green Grid Strategy](#) including first stages of implementation to encourage better sustainable transport links between settlements and public transport hubs.

Hart District Council's priorities for the coming year are:

- Continuing passive monitoring throughout the council and compliance with the air quality levels
- Implementing the [Climate Change Action Plan](#)

Air Quality Management and Climate Change

In April 2021, Hart District Council declared a Climate Emergency, committing to becoming a carbon neutral authority by 2035 (brought forward from 2040) and a carbon neutral district by 2040.

Hart District Council's [Climate Change Action Plan](#), sets out the start of the roadmap and also considers the co-benefits of tackling climate change, such as air pollution from transport.

The action plan includes a range of measures aimed at increasing sustainability including improving air quality through policy and operational measures (see Table 2.1 for more information). Further information is available at <https://www.hart.gov.uk/climate-change-0>.

Furthermore, Hart District Council support and encourage a modal shift towards more sustainable forms of transport such as walking, cycling and public transport, as well as the use of ultra-low and low emission vehicles and the [Government's commitment to zero emission vehicles](#).

The principal challenges and barriers to implementation that Hart District Council anticipates are delays due to the COVID-19 pandemic.

Hart District Council anticipates that the measures stated above and in Table 2.1 will contribute to continued compliance with the national air quality objectives.

How Hart District Council's planning policy will benefit air pollution

Hart District Council adopted the [Hart Local Plan \(Strategy and Sites\) 2032](#) on 30 April 2020. There are no AQMAs in the district for the adopted Hart Local Plan 2032 to take account of. The Hart Local Plan 2032 was prepared in accordance with national planning policy and guidance and includes policy NBE11 Pollution. The policy complies with and contributes towards European Union (EU) limit values and national objectives for pollutants and the cumulative impacts on air quality from individual sites in local areas (in accordance with National Planning Policy Framework (NPPF) paragraph 181⁷, and National Planning Policy Guidance (NPPG) paragraph 002 Reference ID: 32-002-20191101⁸). Policy NBE11 Pollution contained in the Hart Local Plan 2032 reads as follows:

Policy NBE11 Pollution

Development will be supported provided:

- a) it does not give rise to, or would be subject to, unacceptable levels of pollution (including cumulative effects); and*
- b) it is satisfactorily demonstrated that any adverse impacts of pollution, either arising from the proposed development or impacting on proposed sensitive development or the natural environment will be adequately mitigated or otherwise minimised to an acceptable level.*

Where development is proposed on or near a site that may be impacted by, or may give rise to, pollution, such a proposal must be accompanied by an assessment that investigates the risks associated with the site and the possible impacts on the development, its future users and the natural and built environment. The assessment shall propose adequate mitigation or remediation when required to achieve a safe

⁷ <https://www.gov.uk/government/publications/national-planning-policy-framework--2>

⁸ <https://www.gov.uk/guidance/air-quality--3>

and acceptable development. Impacts on air quality should be considered in combination with other relevant plans or projects.

The Hart Local Plan 2032 also contains Policy INF3 Transport which requires developments that would generate a significant transport impact to incorporate measures to reduce the need to travel by car and promote sustainable forms of travel, for example through travel plans. For more on travel plans see Hampshire County Council (HCC) website at <https://www.hants.gov.uk/transport/developers/travelplans>

Additionally, to support the Hart Local Plan, the [Habitat Regulation Assessment](#) (HRA) was prepared. The objective of the HRA is to identify any areas of the Hart Local Plan that are likely to have a significant effect on Natura 2000 or European Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar Sites and it devises appropriate mitigation strategies where such effects are identified. Much of Hart lies within five kilometres of the Thames Basin Heaths Special Protection Area (TBHSPA) and it is therefore relevant to consider these issues.

The HRA confirms that the recreational impacts of proposed development on European sites can be avoided or mitigated. It also confirms that air quality is not likely to cause a significant effect on the SPA. Increased nitrogen deposition has the potential to result in earth land habitat change and loss of species diversity which could adversely affect the TBHSPA. The Council is committed to working with partners to monitor roadside air quality that may affect the Thames Basin Heaths SPA.

Developer contributions towards transport improvements including sustainable transport

The Council secures developer contributions for transport improvements on behalf of Hampshire County Council (see Hart's Community Infrastructure Policy and [Hampshire County Council's Transport Contributions Policy](#)). These contributions go towards the implementation of the [North Hampshire Transport Strategy](#), [Fleet Town Access Plan](#) and other schemes for which there is an up to date evidence base. These include measures to promote sustainable transport or alleviate traffic congestion. Hampshire County Council control the spending of transport contributions.

Community Infrastructure Levy

The Council has decided to introduce a [Community Infrastructure Levy](#) (CIL) in Hart following the adoption of the Hart Local Plan 2032. CIL funds can potentially be used to

improve sustainable transport in the area helping achieve air quality objectives. CIL is expected to be implemented during 2022/23.

Local Transport Plans and strategies

The following documents are prepared by Hampshire County Council and aim to promote sustainable travel and reduce congestion:

- [Hampshire Local Transport Plan 2011-2031](#)
- [Hampshire Local Transport Plan – Part B Three Year Implementation Strategy 2014-2017](#)
- [Hart District Transport Statement, 2013](#)
- [Hart Transport Statement Live Scheme List, December 2013](#)
- [Walking Strategy, 2016](#)
- [Cycling Strategy, 2015](#)
- [Fleet Town Access Plan 2011-2031](#)

Table 2.1 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Classification	Year Measure Introduced	Estimated / Actual Completion Year	Organisations Involved	Funding Source	Defra AQ Grant Funding	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
1	Planning policies and Local Transport Plans in place to help protect air quality.	Policy Guidance and Development Control	Other policy	Local Plan Policy NBE1 Pollution adopted April 2020 Hampshire Local Transport Plan 2011-2031 adopted 2011	Policy already in place	Local Authority	Local Authority					Not quantifiable	Number of planning applications where air quality has been screened/assessed		
2	Installation of an electric vehicle charging point	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging		August 2016	Local Authority	Local Authority				August 2016	Not quantifiable	Use of the charging point	Implementation on-going	
3	Hart's Green Grid - Encourage modal shift to more sustainable transport options	Promoting Travel Alternatives	Promotion of cycling and walking / Public transport improvements-interchanges stations and services	2021	2021 / 2022	Local Authority			Initial consultation already funded)		On-going	Not quantifiable		The results of the January 2021 workshop and the survey will inform the Green Grid strategy . We will publish the draft strategy and undertake additional consultation (likely to be Autumn/Winter 2021)	https://www.hart.gov.uk/harts-green-grid Also an objective under Hart Councils Climate Action Plan 2020 - 2023
4	Offsetting projects	Other - Planting wild gardens, urban trees, living walls in car parks, green/living roofs	Other	2020	Oct 2020	Local Authority			Staff costs		Ongoing			Creation of plan showing cost, air pollution and carbon reduction, submitted for consideration as a pilot project once suitable site found	Objective under Hart Councils Climate Action Plan 2020 - 2023
5	Transition Hart DC fleet vehicles to ultra-low / low emission vehicles	Vehicle Fleet Efficiency	Fleet efficiency and recognition schemes	2020		Local Authority					Ongoing	Not quantifiable		Produce a costed proposal covering investment need of both infrastructure and vehicles to introduce zero emission vehicles to HDC fleet. Looking at both associated carbon emission saving and air pollution improvements	Objective under Hart Councils Climate Action Plan 2020 - 2023

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.

Currently, there is not any monitoring of PM_{2.5} completed within Hart District Council, nor PM₁₀ monitoring. As recommended, in the absence of PM_{2.5} monitoring and where a local authority does not undertake PM₁₀ monitoring, the current Defra background mapping resource should be used to provide maximum background annual mean PM_{2.5} concentrations. The current Defra 2020 background maps⁹ for Hart District Council (2018 based) show that all background concentrations of PM_{2.5} are below the annual mean Air Quality objective for PM_{2.5}. The highest concentration is predicted to be 10.3 µg/m³ within the 1 x 1km grid square with the centroid grid reference of 484500, 160500. This is an area in Blackwater that encompasses a stretch of the A30 and B3272. The Blackwater train station is in this location but is mainly comprised of residential and commercial properties.

The Public Health Outcomes Framework (PHOF) is a Public Health England data tool that has been designed to aid in improving the nation's health and improve the health of the poorest communities faster. For more information please visit

<https://fingertips.phe.org.uk/profile/public-health-outcomes-framework>.

The PHOF indicator for the fraction of deaths attributable to PM_{2.5} in Hart was 4.8% during 2019 (latest available data), which is below the regional average of 5.2% and national average of 5.1% for 2019. Figure G. 1 **Hart DC's PM_{2.5} indicator data for period 2010 to 2019** provides a figure illustrating Hart DC's PM_{2.5} indicator data for 2010 to 2019 with surrounding districts in South East England and England, which shows an overall decreasing trend in Hart District Council.

⁹ <https://uk-air.defra.gov.uk/data/laqm-background-maps?year=2018>

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

- Hart District Council is committed to promoting the uptake of low and zero emission vehicles. Hart's first Electric Vehicle (EV) charging point was installed in Church Road, Fleet, in August 2016. The Council entered a 15-year lease agreement on six car park spaces with private investment company Engenie for the installation and maintenance of two double electric vehicle charging points. The chargers will be high power (rapid) units which can fully charge a vehicle in under thirty minutes. Use of the chargers will be monitored to determine when future investment EV chargers in other parts of the district would be appropriate.
- Transition Hart District Council fleet vehicles to ultra-low / low emission vehicles
- Additionally, in 2020 Hart District Council adopted its [Vision to 2040](#). This Vision includes the ambition to create routes between all settlements to encourage walking, cycling and other forms of sustainable healthy transport. As well as connecting communities together, there is an opportunity to connect people to existing green spaces and other key destinations. These links and green spaces collectively will become [Hart's Green Grid](#).

Smoke Control Areas and Guidance on Domestic Fires and Wood Burning

Although there are no smoke control areas in Hart District Council, the council do encourage appropriate conditions are met when using open fires and wood-burning appliances. Open fires and wood-burning appliances can be a source of air pollution. The public can help reduce poor air quality when using these appliances by:

- Regularly maintaining and servicing your stove
- Regularly sweep chimneys
- Burn seasoned wood (including Ready to Burn)
- Not burning treated waste wood or household rubbish
- Consider purchasing a stove that has been approved for use in smoke control areas by Defra or Ecodesign Ready stove
- Check whether you live in a Smoke Controlled Area

More information (including Smoke Control Areas legislation) can be found at the following links:

- [DEFRA Open fires and wood burning stoves \(A practical guide\)](#)
- <https://woodsurre.co.uk/are-you-ready-to-burn/>
- <https://smokecontrol.defra.gov.uk/fuels.php>
- <https://smokecontrol.defra.gov.uk/appliances.php>
- <https://burnright.co.uk/>

Domestic Heating and Air Pollution

Heating systems for homes and other buildings can be a source of air pollution, for example the combustion of fuels (e.g. coal, gas or wood) result in emissions of pollutants to air. The emissions to air from domestic heating can be reduced by:

- Insulating your home efficiently and be energy efficient
- Use electric heating powered by non-combustion forms of renewable energy

More information on this and links to other resources are available at

<http://www.hart.gov.uk/pollution-nuisance> and <https://uk-air.defra.gov.uk/>.

Environmental Permitting Regulations (EPR)

Local Authorities administer some of the EPR permit types whilst others, such as waste carrier licenses, are issued by the Environment Agency. More information on the issuing body is available by clicking on the Environment Agency link for [environmental permitting information](#).

Industrial processes that pollute the atmosphere are controlled by the Council or the Environment Agency. Here you can find a [register of processes authorised by the Council](#) which is kept by the Environmental Health Department. You can also view the register at the Council Offices at Civic Offices, Harlington Way, Fleet during normal office hours (currently 09:00-16:00).

You must have an environmental permit if you operate a regulated facility in England or Wales. You can find out more and [apply for a permit](#) on GOV.UK's website. You can also [tell us about a change in your existing circumstances](#).

For more information on Hart District Council's EPR processes, including air quality, contaminated land and noise, please visit [Hart District Council's Environment](#) page.

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

This section sets out the monitoring undertaken within 2020 by Hart District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2016 and 2020 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

During 2020 Hart District Council measured NO₂ concentrations within the district at 13 diffusion tube sites.

Local authorities in England are not required to report on Benzene, 1,3-Butadiene, Carbon Monoxide and Lead, unless there is a significant local source that needs to be assessed. Hart District Council confirm that no emission sources have been identified that indicate a requirement for any monitoring of these pollutants at this time.

Hart District Council do not currently conduct monitoring of sulphur dioxide (SO₂), particulate matter (PM₁₀) or particulate matter 2.5 (PM_{2.5}) as assessment of local sources has not identified any risk of exceeding the air quality objectives for these pollutants.

3.1.1 Automatic Monitoring Sites

Hart District Council do not currently conduct continuous automatic monitoring within the district. Continuous monitoring was previously conducted in Blackwater; monitoring at this site was discontinued in March 2014 with a withdrawal of county funding.

3.1.2 Non-Automatic Monitoring Sites

Hart District Council undertook non-automatic (i.e. passive) monitoring of NO₂ at 13 sites during 2020. Table A. 2 in Appendix A presents the details of the non-automatic sites.

Maps showing the location of the monitoring sites are provided in Figure D. 2 – Diffusion tube location – The Phoenix, H Wintney (HW2). 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 bias, annualisation (where the annual mean data capture is below 75% and greater than 25%), and distance correction. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO₂)

Table A. 2 in Appendix A compares the adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 µg.m⁻³. Note that the concentration data presented represents the concentration at the location of the monitoring site, following the application of bias adjustment and annualisation, as required (i.e. the values are exclusive of any consideration to fall-off with distance adjustment).

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

No exceedances of the 40 µg.m⁻³ NO₂ annual mean objective have been reported during the last five years. A chart showing the trends at each measurement site over the last five years is presented in Figure A. 1. Generally, the concentrations of NO₂ have reduced at all sites over the last five years.

The annual mean NO₂ concentrations did not exceed 60 µg.m⁻³ at any monitoring locations, which indicates that an exceedance of the 1-hour mean objective (200 µg.m⁻³) is unlikely at these sites.

4. Planning Applications

A review of 2020 planning applications identified no new or proposed developments where air quality was considered likely to be a concern by Hart District Council.

Details of the 2020 planning applications are provided in Table 4. 1.

Table 4. 1- Hart District Council Planning Applications

ADDRESS	PROPOSAL	DATEDECISS	DECSN
Wychwood Carp Farm Farnham Road Odiham Hook RG29 1HS	Construction of three single storey buildings to accommodate 30 business units for light industrial uses (Land Use Class B1(c)) with associated internal roads, 33 car parking spaces, cycle storage and landscaping works.	22-Jan-20	PER
26 Albert Street Fleet Hampshire GU51 3RL	Redevelopment of 26-28 Albert Street to provide a four-storey building comprising 31 flats (18 x one bedroom, 12 x 2 bedroom, and 1 x three bedroom) with associated car parking, refuse and bicycle storage and landscaping.	14-Feb-20	NFA
Land At Kennels Lane Kennels Lane Farnborough Hampshire	Retention of car park accessible via Bramshot Lane, including proposed installation of cycle stands, fencing and all other ancillary and enabling works (Part retrospective application)	30-Mar-20	PER
Land To The Rear Of 140-148 Fleet Road Fleet Road Fleet GU51 4BE	Construction of three storey building comprising 14 flats, with associated access, parking, cycle store and landscaping.	30-Apr-20	REF
Fleetwood Lodge Reading Road North Fleet GU51 4AN	Demolition of Existing Care Home and erection of a new 60 Bed Care Home.	10-Jun-20	PER
68 Albany Road Fleet Hampshire GU51 3PT	Outline application for the redevelopment of the existing site to incorporate new access road from Albany Road and provision of 10 dwellings as well as the retention of no.68 Albany Road with access and siting for consideration (landscaping, scale and app)	12-Jun-20	FDO
Land North Of Netherhouse Copse Hitches Lane Fleet Hampshire	Reserved matters application seeking the approval of appearance, landscaping, layout and scale of 77 residential dwellings and the appearance, layout and scale of car barns and garages to serve plots 1-6, 15-18, 20 and 23 pursuant to 16/01651/OUT	05-Aug-20	PER

Land North of Netherhouse Copse Hitches Lane Fleet Hampshire	Reserved matters application seeking the approval of appearance, layout and scale of 23no residential dwellings pursuant to outline application 16/01651/OUT	05-Aug-20	PER
Land North of Netherhouse Copse Hitches Lane Fleet Hampshire	Reserved matters application seeking the approval of appearance, landscaping, layout and scale of 7 residential dwellings pursuant to 16/01651/OUT.	05-Aug-20	PER
Rally Field Wellington Country Park Odiham Road Riseley Reading	Change of use of agricultural land to a dog day care facility (Land use Class Sui-Generis), construction of building, provision of parking, access and fencing.	03-Sep-20	PER
Hartland Park Bramshot Lane Fleet Hampshire	Application for approval of reserved matters relating to 132 dwellings (Phase 2) with associated works pursuant to approval of outline permission via Hybrid Planning Application 17/00471/OUT	26-Nov-20	PER
Land on The West Sides Of Alton Road Odiham Hook Hampshire	Erection of 60 bed care home and 30 dwellings (10 x 2 bed houses, 9 x 3 bed houses, 7 x 4+ bed houses and 4 x 2 bed flats) with associated parking and pedestrian and vehicular access	26-Nov-20	REF
Pioneer House Unit 2 Fleetwood Park Barley Way Fleet	Create two additional floors of development creating 25 new flats (19 no. 1-bed flats and 6 no. 2-bed flats) (net increase in 18 units) including external alterations	26-Nov-20	REF

Land North Of Netherhouse Copse Hitches Lane Fleet Hampshire	Reserved matters application for approval of appearance, landscaping, layout and scale of approved Suitable Alternative Natural Greenspace (SANG) pursuant to outline planning permission (ref: 16/01651/OUT) for up to 423 residential dwellings and a community facility. Associated vehicular, pedestrian access.	01-Dec-20	PER
Guidion House Rye Close Fleet GU51 2UY	Demolition of an existing office building and erection of new industrial units for flexible uses falling within Research and Development (Use Class E(g)(ii)), light industry (Use Class E(g)(iii)), general industry (Use Class B2) and storage and distribute.	18-Dec-20	PER
Bramshot Farm Country Park Bramshot Lane Fleet GU51 2RU	Creation of wetland and alterations to existing footpaths to enhance visitor facilities in the Suitable Alternative Natural Greenspace (SANG).	21-Dec-20	PER
Land Adjacent To Roughs Cottage Bartley Heath North Warnborough Hook	Rural housing exception scheme for 12 affordable dwellings (four 1 bed units, five 2 bed units, three 3 bed units)	21-Dec-20	PER
Land South Of Eversley Road And East Of Marsh Lane Marsh Lane Eversley Hook Hampshire	Change of use from agricultural land to deliver 16.0 hectares of public open space and habitat land with associated landscaping including a circular walkway, hedge planting and boundary works, new access works, cycle and car parking, height restrictor bar	31-Mar-21	REF

Appendix A: Monitoring Results

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

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) ⁽¹⁾	Distance to kerb of nearest road (m) ⁽²⁾	Tube Co-located with a Continuous Analyser?	Tube Height (m)
OD1	Clover Leaf, Odiham	Roadside	473651	151085	NO ₂	No	50 m	4 m	NO	1.5 – 2.0
HW2	The Phoenix, Hartley, Wintney	Kerbside	475884	155818	NO ₂	No	30 m	2 m	NO	1.5 – 2.0
HO2	Dorchester Arms, Hook	Kerbside	471382	153407	NO ₂	No	16 m	2 m	NO	1.5 – 2.0
M3EH	Elvetham Heath, Fleet	Kerbside	480290	155899	NO ₂	No	10 m	15 m (M3)	NO	1.5 – 2.0
M31	M3 Northbound	Roadside	479920	156030	NO ₂	No	100 m	2 m	NO	1.5 – 2.0
BL1	Vicarage Road, Blackwater	Kerbside	485114	159809	NO ₂	No	3 m	3 m	NO	1.5 – 2.0
BL (AQ 1)	Blackwater (AQM 1)	Roadside	485251	159813	NO ₂	No	22 m	4 m	NO	1.5 – 2.0
BL (AQ 2)	Blackwater (AQM 2)	Roadside	485251	159813	NO ₂	No	22 m	4 m	NO	1.5 – 2.0
HS1	High Street, Fleet	Roadside	480592	153870	NO ₂	No	22 m	2 m	NO	1.5 – 2.0
HO3	Hook	Kerbside	472469	154254	NO ₂	No	6 m	1.5 m	NO	2
HW3	Hartley Wintney	Roadside	476684	156850	NO ₂	No	16 m	1 m	NO	2
FL3	Fleet	Roadside	481161	154632	NO ₂	No	22 m	1 m	NO	2
YA2	Yateley	Roadside	481723	161015	NO ₂	No	5 m	1.5 m	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. 2 – Annual Mean NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2020 (%) ⁽²⁾	2016	2017	2018	2019	2020
OD1	473651	151085	Roadside	92%	92%	16.9	15.8	16.9	16.1	11.0
HW2	475884	155818	Kerbside	92%	92%	31	31.9	31.1	28.4	18.4
HO2	471382	153407	Kerbside	100%	100%	32.1	31.9	32.1	26.5	19.9
M3EH	480290	155899	Kerbside	100%	100%	21.4	21.3	23.2	20.8	14.3
M31	479920	156030	Roadside	100%	100%	24.9	26	28	25.7	16.3
BL1	485114	159809	Kerbside	100%	100%	31	30.9	30	28.1	19.9
BL (AQ 1)	485251	159813	Roadside	100%	100%	27	27.7	27.9	23.6	16.2
BL (AQ 2)	485251	159813	Roadside	92%	92%	27	26.9	27.1	21.4	16.6
HS1	480592	153870	Roadside	100%	100%	25.3	25.6	27.3	24.8	16.1
HO3	472469	154254	Roadside	100%	100%	<u>N/A</u>	<u>N/A</u>	30.1	29	19.8
HW3	476684	156850	Roadside	100%	100%	<u>N/A</u>	<u>N/A</u>	26	24.3	15.5
FL3	481161	154632	Roadside	83%	83%	<u>N/A</u>	<u>N/A</u>	30.3	27.5	17.8
YA2	481723	161015	Roadside	100%	100%	<u>N/A</u>	<u>N/A</u>	27.9	28.5	18.7

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16 (confirm by selecting in box).

☒ Diffusion tube data has been bias adjusted (confirm by selecting in box).

☒ 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 correction (confirm by selecting in box).

Notes:

The annual mean concentrations are presented as µg/m³.

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

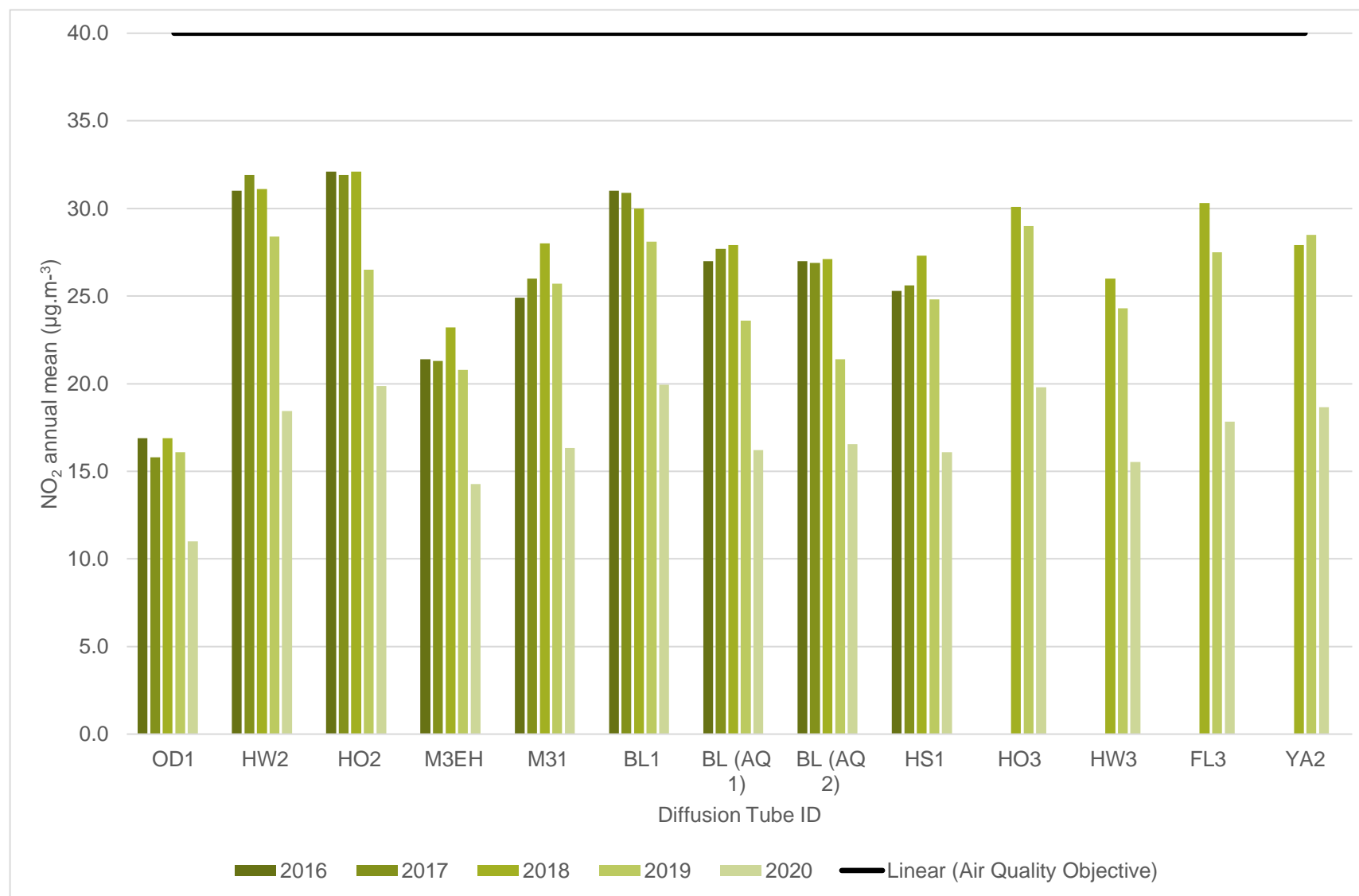
NO₂ annual means exceeding 60µg/m³, indicating a potential exceedance of the NO₂ 1-hour mean objective are shown in **bold and underlined**.

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

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

(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%).

Figure A. 1 – Trends in Annual Mean NO₂ Concentrations

Appendix B: Full Monthly Diffusion Tube Results for 2020

Table B.1 – NO₂ 2020 Diffusion Tube Results (µg/m³)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Easting)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.81)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
OD1	473651	151085	20.94	8.81	13.88		10.4	11.0	8.3	15.3	13.9	12.8	20.5	16.0	13.6	11.0	N/A	
HW2	475884	155818	30.72	27.56		15.83	14.5	17.1	20.2	23.9	23.8	22.5	31.5	27.1	22.8	18.4	13.7	
HO2	471382	153407	39.32	28.02	24.58	17.36	15.8	19.3	21.5	25.4	23.8	24.7	30.1	24.7	24.5	19.9	15.6	
M3EH	480290	155899	21.94	16.75	19.72	17.69	16.6	12.8	14.9	19.1	17.1	15.3	21.8	19.3	17.6	14.3	14.1	
M31	479920	156030	29.69	25.71	19.85	13.52	11.9	17.2	18.2	23.3	18.4	19.6	24.4	21.3	20.2	16.3	N/A	
BL1	485114	159809	38.92	24.26	26.69	22.64	18.4	18.9	17.1	25.1	26.0	19.3	33.6	30.1	24.6	19.9	18.9	
BL (AQ 1)	485251	159813	23.88	23.01	24.33	18.8	15.6	13.6	15.4	20.5	21.2	19.5	24.4	23.0	20.0	16.2	15.2	
BL (AQ 2)	485251	159813	23.64	21.49	22.1	19.35	15.6		15.3	20.0	21.5	19.2	26.2	21.4	20.4	16.6	15.3	
HS1	480592	153870	28.31	16.18	21.88	20.58	16.1	15.1	14.6	21.8	19.9	18.0	25.8	22.4	19.8	16.1	13.0	
HO3	472469	154254	30.82	24.74	25.31	21.57	20.9	19.7	20.9	25.6	25.2	23.6	30.5	24.9	24.4	19.8	16.8	
HW3	476684	156850	27.6	16.44	18.03	15.76	13.7	16.5	14.8	21.5	20.2	19.9	26.5	22.5	19.2	15.5	13.1	
FL3	481161	154632	25.24	18.87	22.44	20.54	18.3			24.4	22.3	19.5	26.8	24.4	22.0	17.8	13.7	
YA2	481723	161015	31.39	23.25	23.25	19.67	17.9	18.1	19.8	24.6	22.2	22.0	31.2	27.8	23.0	18.7	15.9	

☒ All erroneous data has been removed from the NO₂ diffusion tube dataset presented in Table B.1 (confirm by selecting in box).

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16 (confirm by selecting in box).

☐ Local bias adjustment factor used (confirm by selecting in box).

- ☒ National bias adjustment factor used (confirm by selecting in box).
- ☐ Where applicable, data has been distance corrected for relevant exposure in the final column (confirm by selecting in box).
- ☒ Hart District Council confirm that all 2020 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System (confirm by selecting in box).

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**.

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within Hart District Council During 2020

Hart District Council has not identified any new sources relating to air quality within the reporting year of 2020.

Additional Air Quality Works Undertaken by Hart District Council During 2020

Hart District Council has not completed any additional works within the reporting year of 2020.

QA/QC of Diffusion Tube Monitoring

Hart District Council's non automatic monitoring has been completed in adherence with the 2020 Diffusion Tube Monitoring Calendar¹⁰.

Bias adjustment factory and laboratory QA/QC

The diffusion tubes deployed by Hart District Council are supplied and analysed by Gradko using a preparation mixture of 20% triethanolamine (TEA) in water. The bias adjustment factor of 0.81 reported in the national database of 18 different co-location studies¹¹, conducted using diffusion tubes prepared and analysed by Gradko during 2020, has been used to adjust the diffusion tube results.

¹⁰ <https://laqm.defra.gov.uk/assets/2020laqmcalendar1.pdf>

¹¹ National Diffusion Tube Bias Adjustment Factor Spreadsheet Version 03/21 (available from <https://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html>)

Figure C. 1 The diffusion tube national adjustment factor spreadsheet (Version 03/21)

National Diffusion Tube Bias Adjustment Factor Spreadsheet								Spreadsheet Version Number: 03/21					
Follow the steps below in the correct order to show the results of relevant co-location studies										This spreadsheet will be updated at the end of June 2021 LAQM Helpdesk Website			
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods													
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet													
This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.													
The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.								Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.					
Step 1:		Step 2:		Step 3:		Step 4:							
Select the Laboratory that Analyses Your Tubes from the Drop-Down List		Select a Preparation Method from the Drop-Down List		Select a Year from the Drop-Down List		Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor ² shown in blue at the foot of the final column.							
If a laboratory is not shown, we have no data for this laboratory.		If a preparation method is not shown, we have no data for this method at this laboratory.		If a year is not shown, we have no data.		If you have your own co-location study then see footnote ¹ . If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953							
Analysed By ¹		Method <small>To update your selection, change (All) from the pop-up list</small>		Year <small>To update your selection, change (All)</small>		Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m ³)	Automatic Monitor Mean Conc. (Cm) (µg/m ³)	Bias (B)	Tube Precision ¹	Bias Adjustment Factor (A) (Cm/Dm)
Gradko		20% TEA in water		2020		R	Gedling Borough Council	10	31	25	24.1%	G	0.81
Gradko		20% TEA in water		2020		R	SOUTHAMPTON CITY COUNCIL	12	37	27	37.1%	G	0.73
Gradko		20% TEA in water		2020		R	Fareham Borough Council	10	25	14	77.4%	G	0.56
Gradko		20% TEA in water		2020		R	Fareham Borough Council	12	30	22	35.1%	G	0.74
Gradko		20% TEA in water		2020		R	Fareham Borough Council	10	22	17	26.5%	G	0.79
Gradko		20% TEA in water		2020		R	SOUTHAMPTON CITY COUNCIL	11	32	31	4.9%	G	0.95
Gradko		20% TEA in water		2020		KS	Marglebone Road Intercomparison	12	57	43	33.3%	G	0.75
Gradko		20% TEA in water		2020		R	Bath & North East Somerset	11	32	29	13.0%	G	0.89
Gradko		20% TEA in water		2020		R	Gateshead Council	12	22	17	28.1%	G	0.78
Gradko		20% TEA in water		2020		R	Gateshead Council	12	23	21	11.6%	G	0.90
Gradko		20% TEA in water		2020		R	Gateshead Council	10	26	25	6.5%	G	0.94
Gradko		20% TEA in water		2020		R	Gateshead Council	12	28	21	30.5%	G	0.77
Gradko		20% TEA in water		2020		R	Gateshead Council	12	31	32	-3.4%	G	1.03
Gradko		20% TEA in water		2020		R	Luton Borough Council	9	38	28	33.8%	G	0.75
Gradko		20% TEA in water		2020		R	Nottingham City Council	12	31	34	-8.5%	G	1.09
Gradko		20% TEA in water		2020		R	Dudley MBC	13	33	28	19.3%	G	0.83
Gradko		20% TEA in water		2020		UB	Dudley MBC	13	23	14	61.2%	G	0.62
Gradko		20% TEA in water		2020		R	Dudley MBC	13	44	34	30.6%	G	0.77
Overall Factor ² (18 studies)												Use	0.81

Gradko have participated in HSL and LGC Standards AIR-PT scheme, which is a UKAS accredited, independent proficiency testing scheme comparing laboratories undertaking the analysis of air quality monitoring (<https://laqm.defra.gov.uk/diffusion-tubes/qa-qc-framework.html>).

In the 2020 AIR-PT results, Gradko scored 75% in AIR-PT AR036 (January to February 2020)12. No results were reported for AIR-PT AR037 (May – June 2020) and AIR-PT AR039 (July – August 2020), however AIR-PT AR040 (September – October 2020) scored 75%. The percentage score reflects the results deemed to be satisfactory based upon the z-score of $< \pm 2$.

Diffusion Tube Annualisation

All diffusion tube monitoring locations within Hart District Council recorded data capture above 75%, therefore it was not required to annualise any monitoring data.

¹² Available at <https://laqm.defra.gov.uk/assets/laqmno2performancedatauptooctober2020v1.pdf>

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2021 ASR have been corrected for bias using an adjustment factor. Bias represents the overall tendency of the diffusion tubes to under or over-read relative to the reference chemiluminescence analyser. LAQM.TG16 provides guidance with regard to the application of a bias adjustment factor to correct diffusion tube monitoring. Triplicate co-location studies can be used to determine a local bias factor based on the comparison of diffusion tube results with data taken from NO_x/NO₂ continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Hart District Council have applied a national bias adjustment factor of 0.81 to the 2020 monitoring data. A summary of bias adjustment factors used by Hart District Council over the past five years is presented in Table C.1. A national bias adjustment factor was used for the 2021 ASR as no automatic monitoring is carried out within Hart District Council to generate a local bias factor.

Diffusion tube precision was assessed during 2020 at the Blackwater site where duplicate tubes (BLAQ1 and BLAQ2) were sited. The calculated tube precision is presented in Figure C. 2. All months in 2020, were classified as having good precision except June as the duplicate tube result was erroneous.

Figure C. 2 - Precision of duplicate tubes

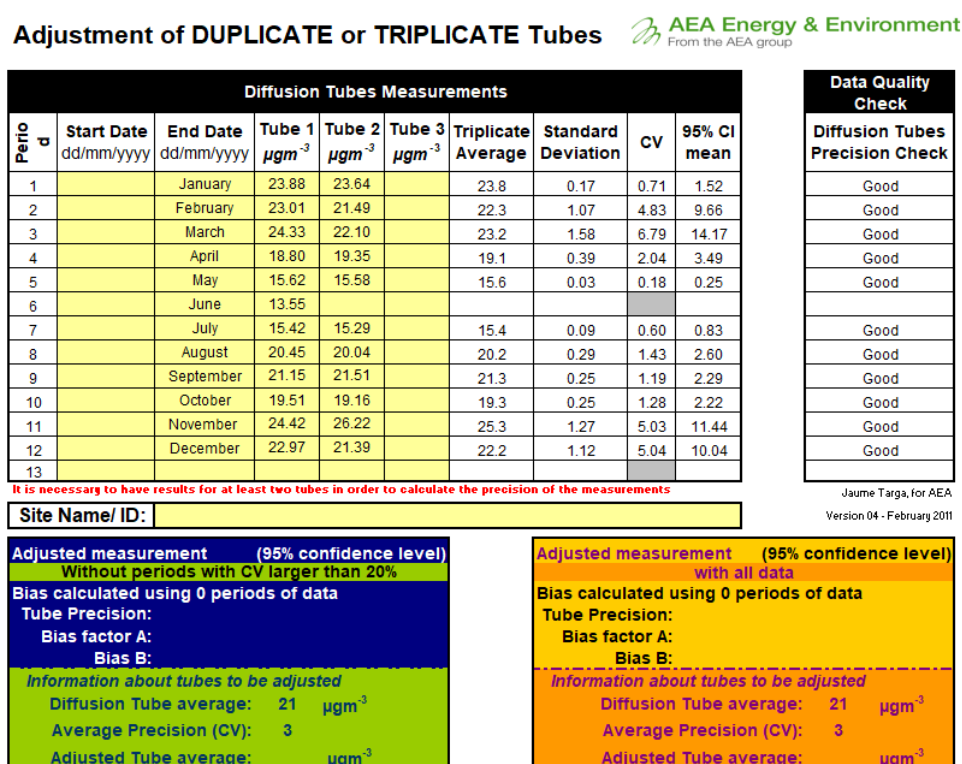


Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2020	National	03/21	0.81
2019	National	03/20	0.93
2018	National	03/19	0.93
2017	National	03/18	0.89
2016	National	06/17	0.92

NO₂ Fall-off with Distance from the Road

Wherever possible, local authorities should ensure that monitoring locations are representative of exposure. However, where this is not possible, the NO₂ concentration at the nearest location relevant for exposure should be estimated using the Diffusion Tube Data Processing Tool/NO₂ fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO₂ concentrations corrected for distance are presented in Table B.1.

Table C.2 – NO₂ Fall off With Distance Calculations (concentrations presented in µg/m³)

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Background Concentration	Monitored Concentration (Annualised and Bias Adjusted)	Concentration Predicted at Receptor	Comments
OD1	4.0		9.6	11.0	-	
HW2	2.0	32.0	11.1	18.4	13.7	Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.
HO2	2.0	18.0	11.5	19.9	15.6	
M3EH	15.0	25.0	13.4	14.3	14.1	Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution. Warning: your monitor is more than 10m further from the kerb than your receptor - treat result with caution.
M31	2.0		10.7	16.3	-	
BL1	3.0	6.0	14.2	19.9	18.9	

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Background Concentration	Monitored Concentration (Annualised and Bias Adjusted)	Concentration Predicted at Receptor	Comments
BL (AQ 1)	4.0	26.0	14.2	16.2	15.2	Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.
BL (AQ 2)	4.0	26.0	14.2	16.6	15.3	Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.
HS1	2.0	24.0	10.8	16.1	13.0	Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.
HO3	1.5	7.5	11.3	19.8	16.8	
HW3	1.0	17.0	11.2	15.5	13.1	

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Background Concentration	Monitored Concentration (Annualised and Bias Adjusted)	Concentration Predicted at Receptor	Comments
FL3	1.0	23.0	11.3	17.8	13.7	Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution.
YA2	1.5	6.5	10.2	18.7	15.9	

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

Figure D.1 – Diffusion tube location – Clover Leaf, Odiham (OD1)

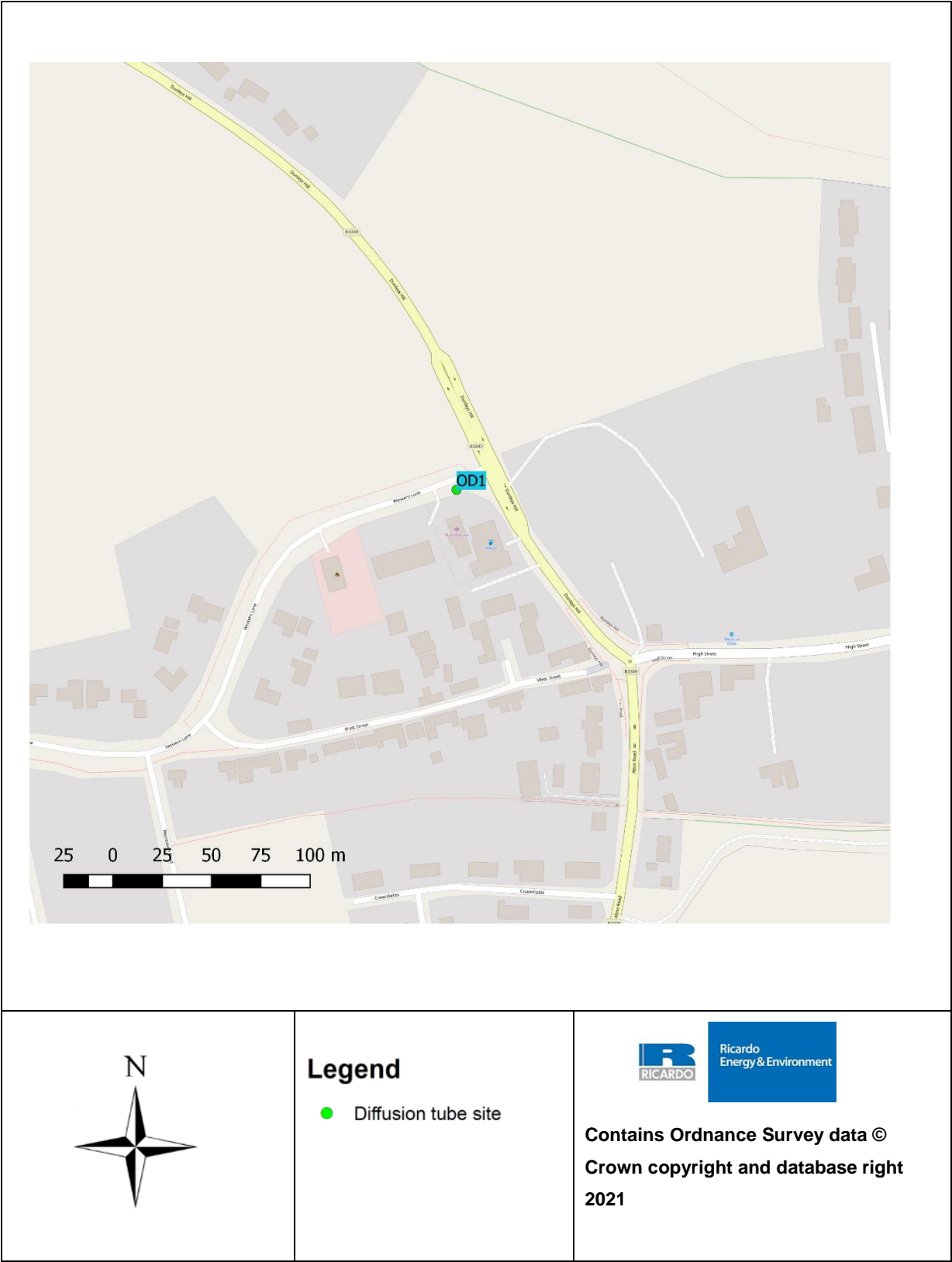


Figure D. 2 – Diffusion tube location – The Phoenix, H Wintney (HW2)

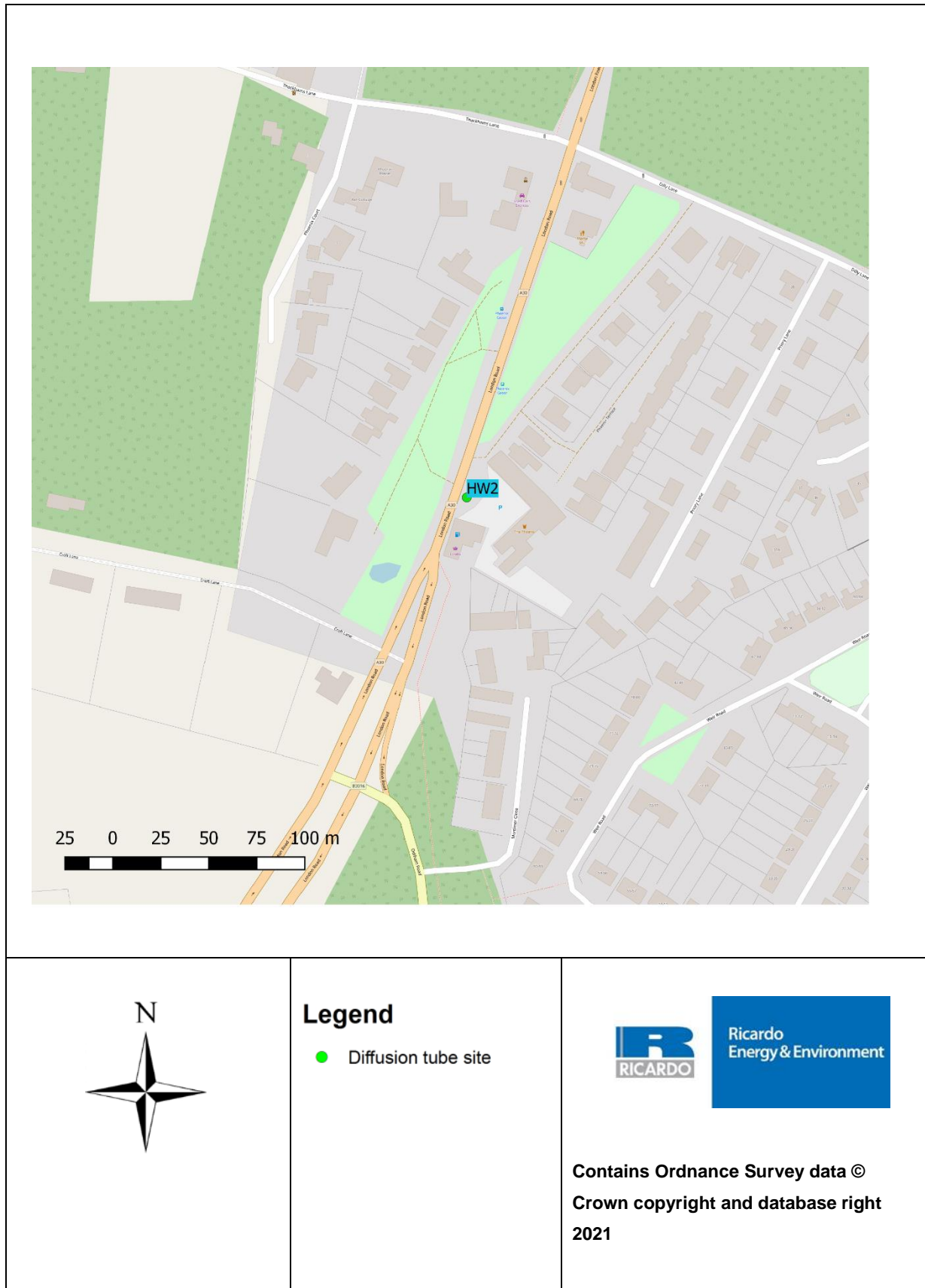


Figure D. 3 – Diffusion tube location – Dorchester Arms, Hook (HO2)

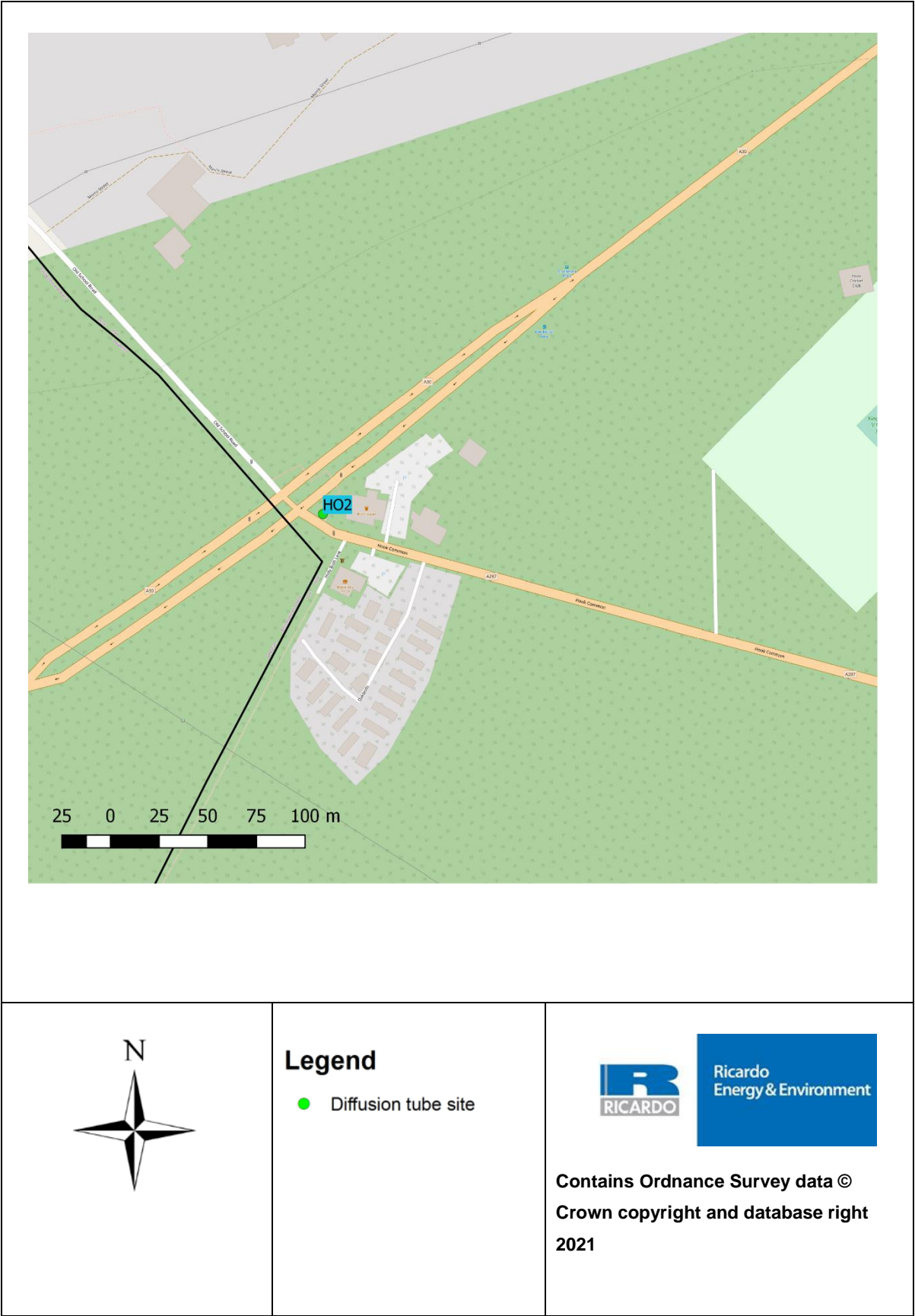


Figure D. 4 – Diffusion tube location – Elvetham Heath, Fleet (M3EH)

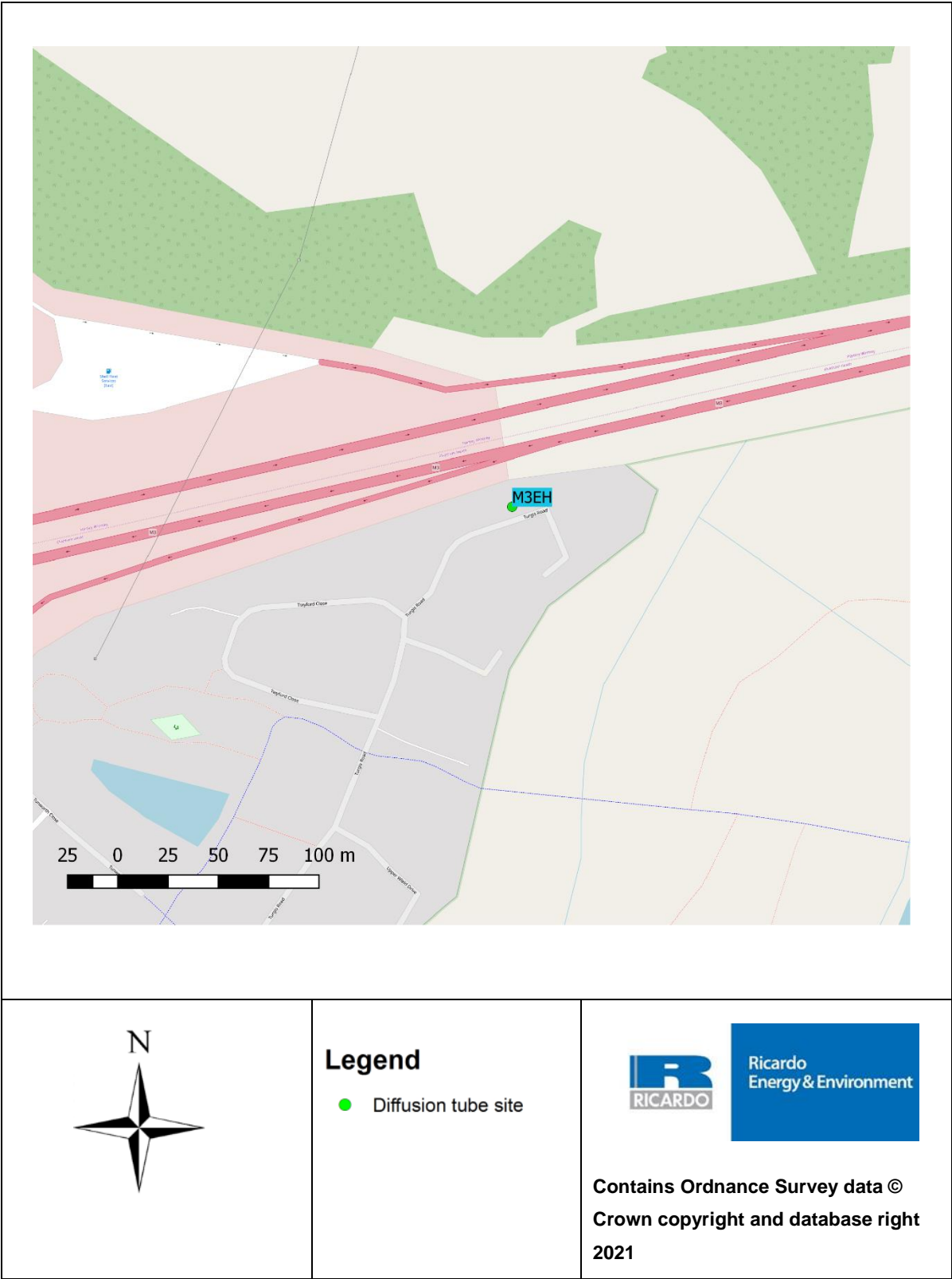


Figure D. 5 – Diffusion tube location – M3 Northbound (M31)

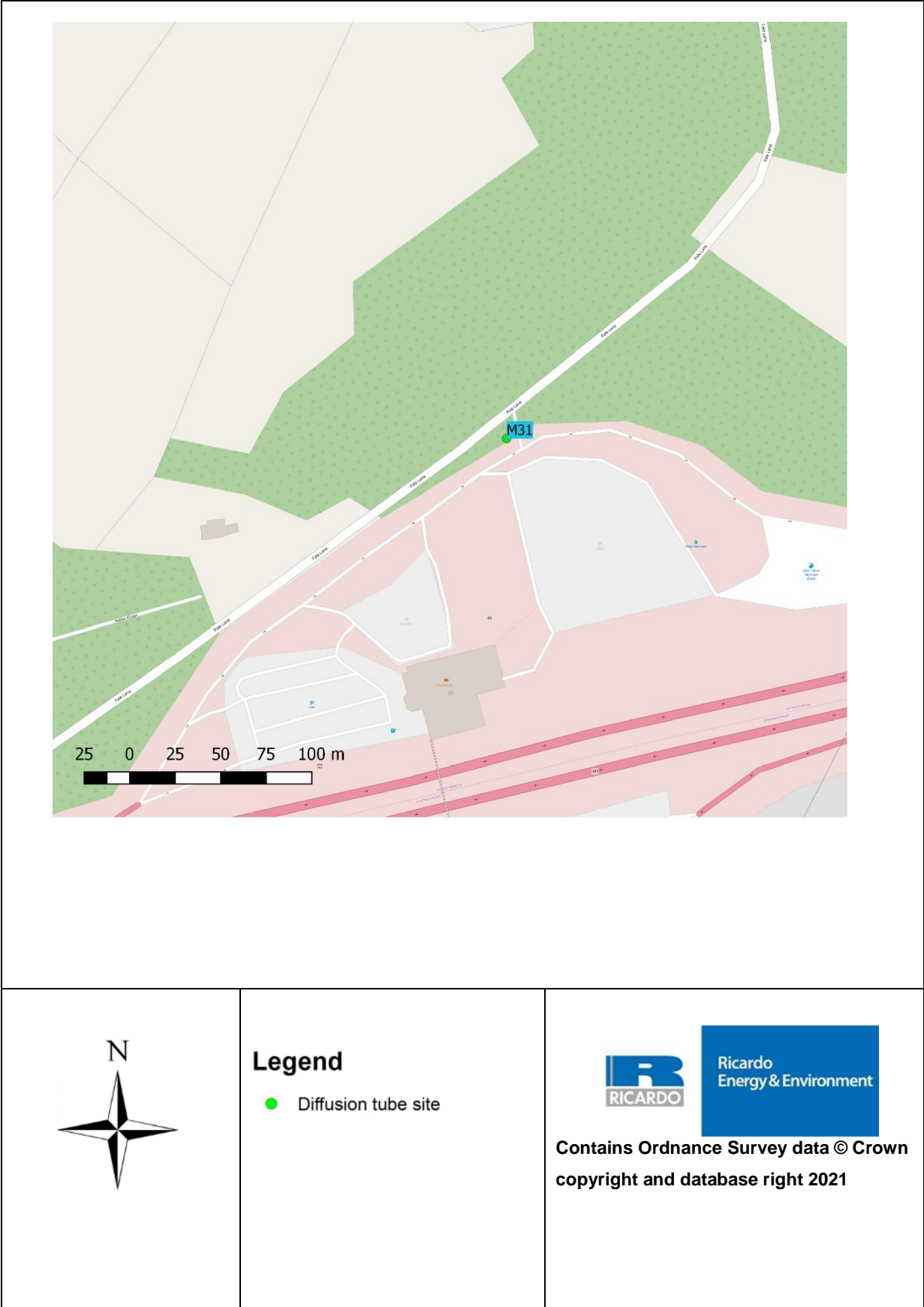


Figure D. 6 – Diffusion tube location – Vicarage Road, Blackwater (BL1)

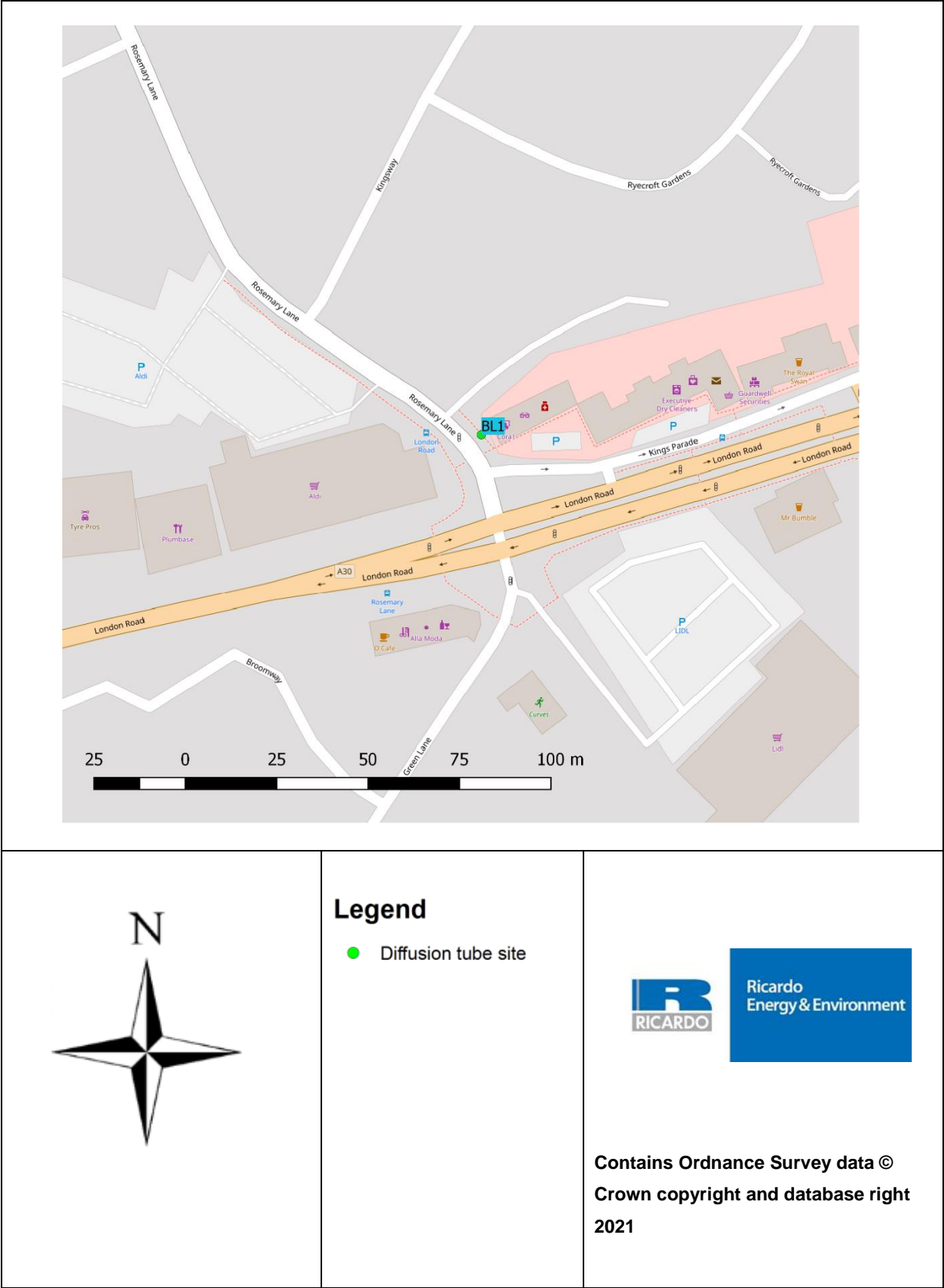


Figure D. 7 – Diffusion tube location – Blackwater (AQ 1) and (AQ2)

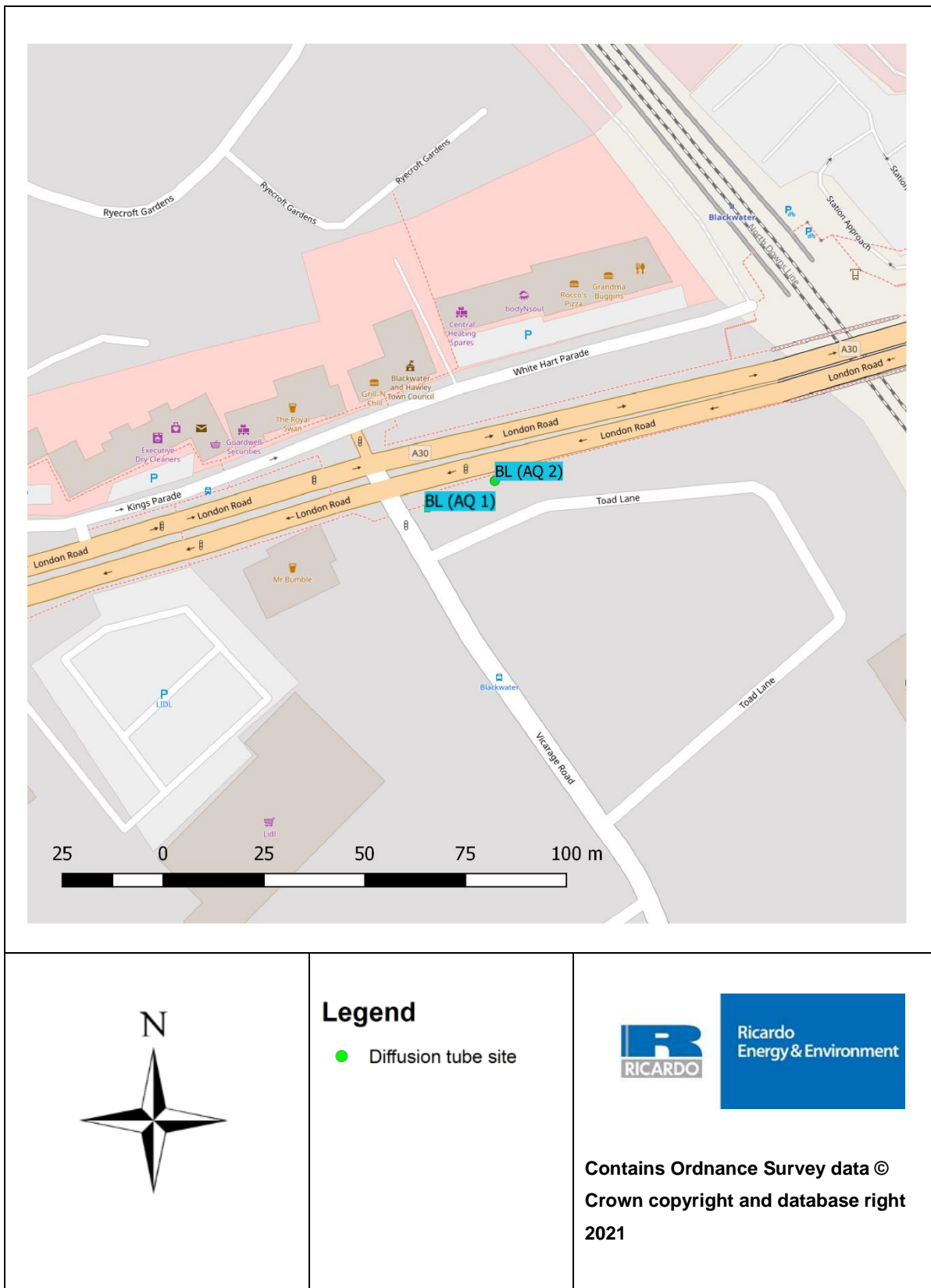


Figure D. 8 – Diffusion tube location – High Street, Fleet (HS1)

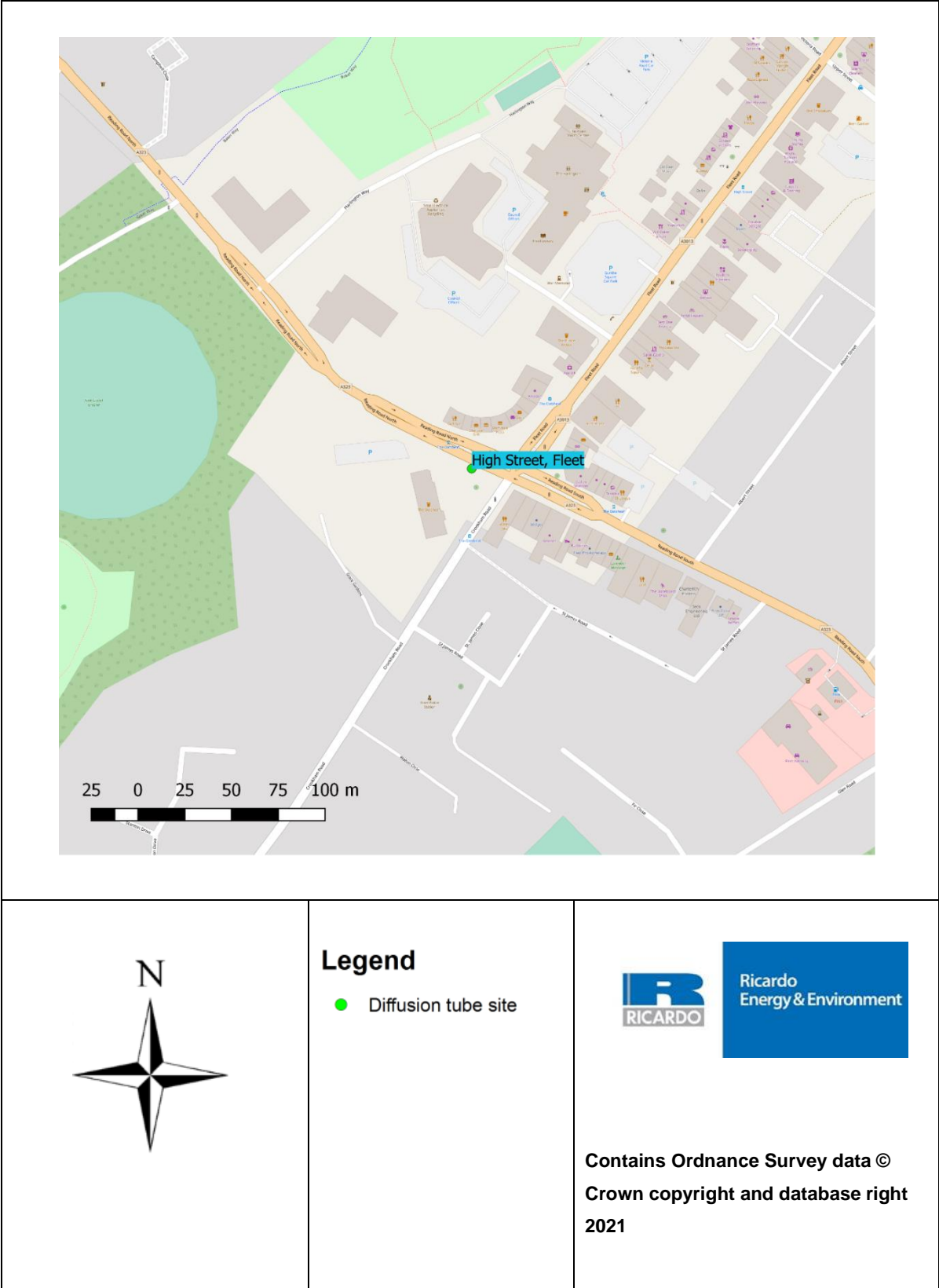


Figure D. 9 – Diffusion tube location – Hook (HO3)

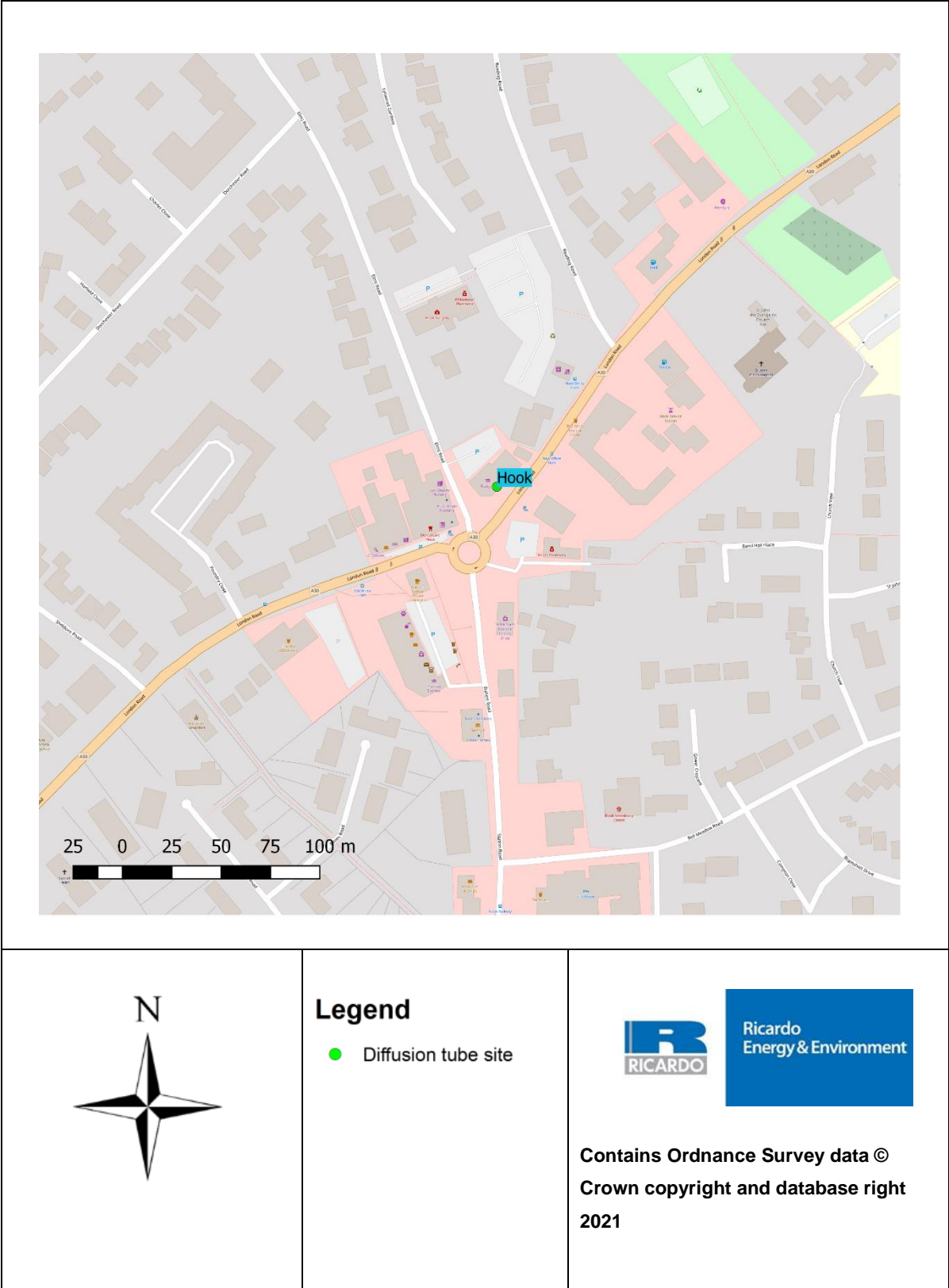


Figure D. 10 – Diffusion tube location – Hartley Wintney (HW3)



Figure D. 11 – Diffusion tube location – Fleet (FL3)

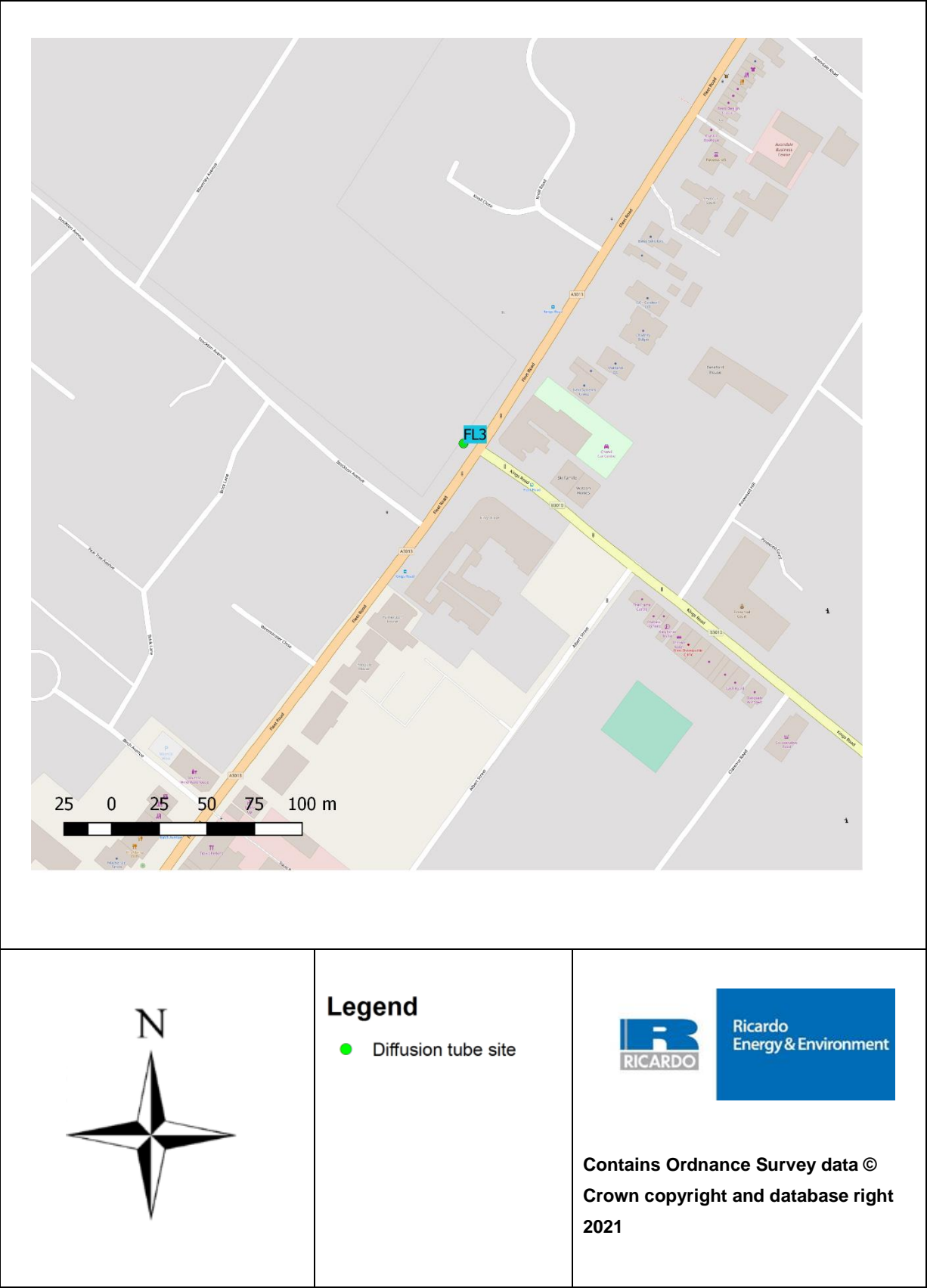


Figure D. 12 – Diffusion tube location – Yateley (YA2)

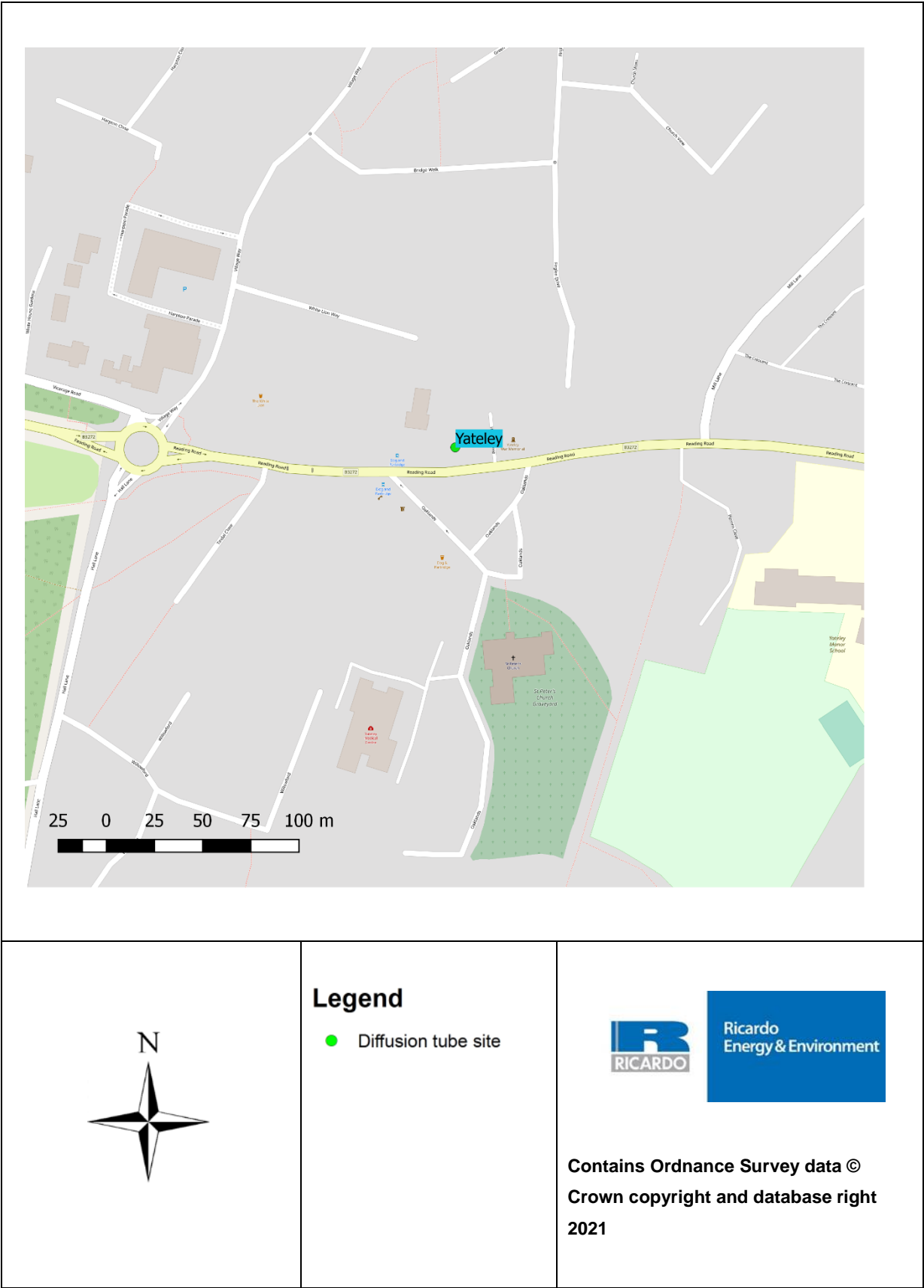
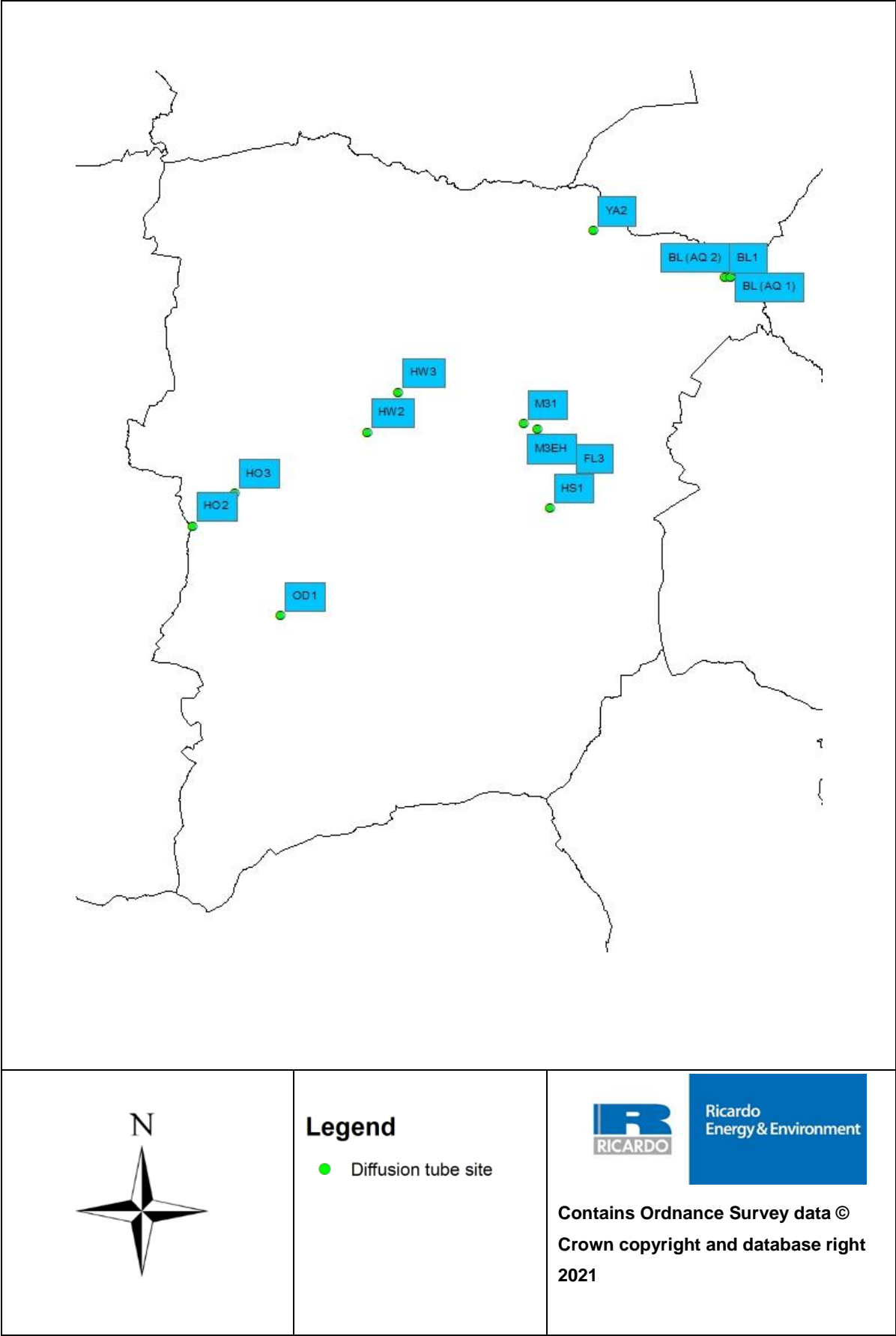


Figure D. 13 – Diffusion tube locations



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England¹³

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

¹³ The units are in microgrammes of pollutant per cubic metre of air (µg/m³).

Appendix F: Impact of COVID-19 upon LAQM

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

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

Despite the challenges that the pandemic has given rise to, the events of 2020 have also provided Local Authorities with an opportunity to quantify the air quality impacts associated with wide-scale and extreme intervention, most notably in relation to emissions of air pollutants arising from road traffic. The vast majority (>95%) of AQMAs declared within the UK are related to road traffic emissions, where attainment of the annual mean objective for nitrogen dioxide (NO₂) is considered unlikely. On 23rd March 2020, the UK Government released official guidance advising all members of public to stay at home, with work-related travel only permitted when absolutely necessary. During this initial national lockdown (and to a lesser extent other national and regional lockdowns that followed), marked reductions in vehicle traffic were observed; Department for Transport (DfT) data¹⁴ suggests reductions in vehicle traffic of up to 70% were experienced across the UK by mid-April, relative to pre COVID-19 levels.

This reduction in travel in turn gave rise to a change of air pollutant emissions associated with road traffic, i.e. nitrous oxides (NO_x), and exhaust and non-exhaust particulates (PM). The Air Quality Expert Group (AQEG)¹⁵ has estimated that during the initial lockdown period in 2020, within urbanised areas of the UK reductions in NO₂ annual mean concentrations were between 20 and 30% relative to pre-pandemic levels, which

¹⁴ Prime Minister's Office, COVID-19 briefing on the 31st of May 2020

¹⁵ Air Quality Expert Group, Estimation of changes in air pollution emissions, concentrations and exposure during the COVID-19 outbreak in the UK, June 2020

represents an absolute reduction of between 10 to 20µg/m³ if expressed relative to annual mean averages. During this period, changes in PM_{2.5} concentrations were less marked than those of NO₂. PM_{2.5} concentrations are affected by both local sources and the transport of pollution from wider regions, often from well beyond the UK. Through analysis of AURN monitoring data for 2018-2020, AQEG have detailed that PM_{2.5} concentrations during the initial lockdown period are of the order 2 to 5µg/m³ lower relative to those that would be expected under business-as-usual conditions.

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

Impacts of COVID-19 on Air Quality within Hart District Council

Hart District Council have no declared AQMAs, but the following changes in concentrations were exhibited in 2020:

- Reduction of NO₂ concentrations of between 25% and 35% were experienced at kerbside diffusion tube monitoring sites throughout Hart District Council in 2020 compared to 2019. This equated to an overall 30% average reduction in kerbside annual mean concentrations relative to 2019.
- Reduction of NO₂ concentrations of between 23% and 36% were experienced at roadside diffusion tube monitoring sites throughout Hart District Council in 2020 compared to 2019. This equated to an overall 33% average reduction in roadside annual mean concentrations relative to 2019.

Opportunities Presented by COVID-19 upon LAQM within Hart District Council

The restrictions imposed by COVID-19 allowed Hart District Council to implement a temporary closure of Hart's High Street (closing Fleet Road to through traffic between Victoria Road/Upper Street and Church Road). A section of the high street was closed to vehicles and pedestrianised for several months to allow for social distancing, support local businesses and enhance the visitor experience in the town centre. It was supported by Hampshire County Council, Fleet Town Council and Fleet BID.

This period of closure served as a trial to test the possibility of permanent pedestrianisation. The move to make a permanent closure to through traffic was put to full

council and was narrowly turned down after analysis of feedback from residents, retailers and businesses.

For more information please visit <https://www.hart.gov.uk/the-council/news/council-votes-keep-fleet-road-pedestrianisation-scheme>.

Challenges and Constraints Imposed by COVID-19 upon LAQM within Hart District Council

COVID-19 has had a massive impact on Hart District Council, particularly within Environmental Health. COVID-19 has been a long running service priority and demanded huge commitments from Environmental Health, Hart District Council's resources have been pushed to the limit.

The protection team is taking a lead role in COVID-19 enforcement and support of businesses. Despite the additional pressures presented to Hart District Council throughout 2020, the Environmental Health team have still been able to meet all existing statutory obligations, both within and out with air quality. Throughout 2020, Hart District Council continued to commit with diffusion tube collection and deployment to ensure high data capture and as accurate data as possible.

One challenge imposed by COVID-19 on LAQM data was (the impact as presented below is followed by a criteria as defined in Table F 1.):

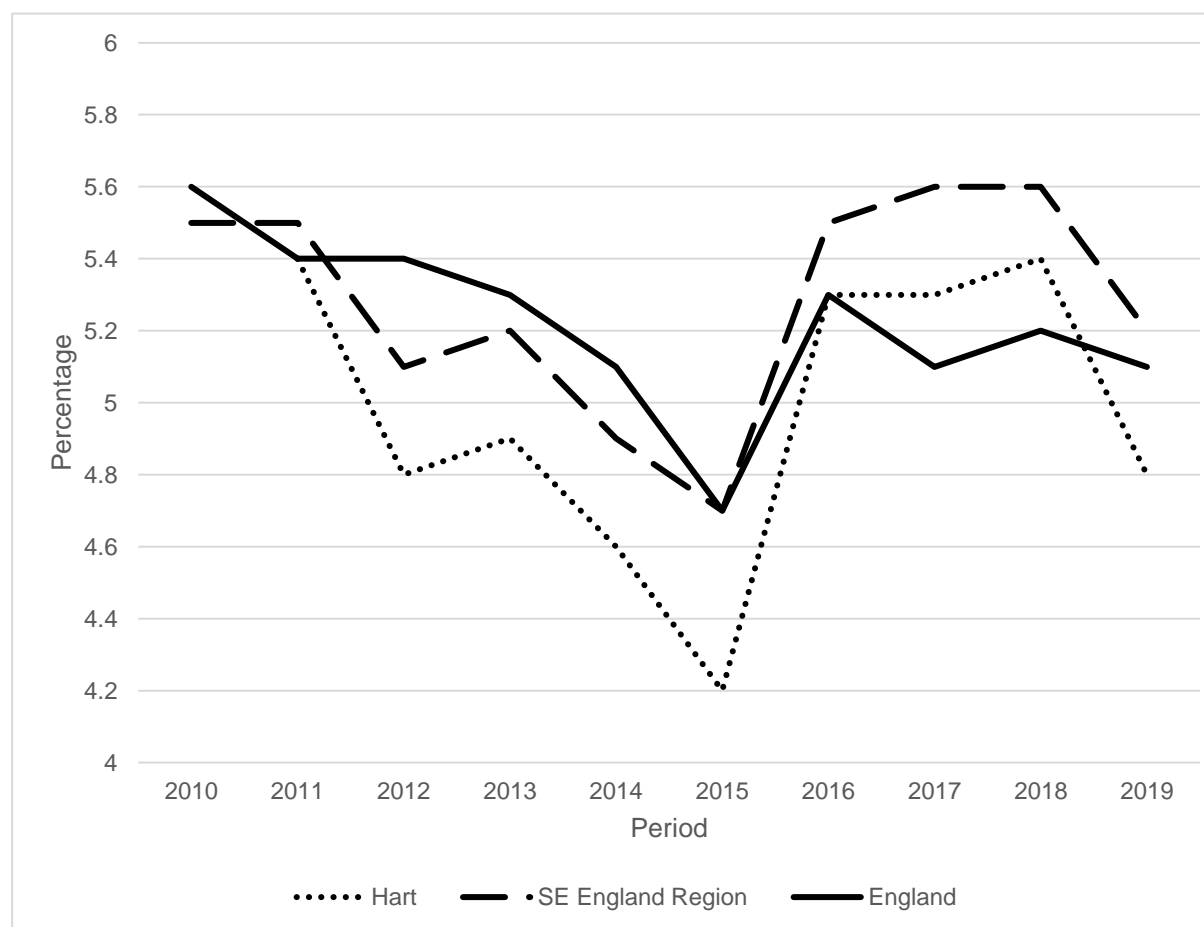
- As with previous years, a national bias adjustment factor has been utilised to adjust the diffusion tube results for 2020. Within 2019 there were 27 co-location studies that were utilised to calculate the bias factor for the laboratory and preparation method used. For 2020, this number has reduced to 18 studies. There is therefore the potential for there to be a greater degree of uncertainty associated with the resultant annual mean NO₂ concentrations in 2020 than in previous years. **Medium Impact**

Table F 1 – Impact Matrix

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

Appendix G: Public Health Outcomes Framework

Figure G. 1 Hart DC's PM_{2.5} indicator data for period 2010 to 2019¹⁶



¹⁶ Available at <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/4/gid/1000043/pat/6/par/E12000008/ati/101/are/E07000089/iid/30101/age/230/sex/4/cid/4>

Glossary of Terms

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	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 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

- Local Air Quality Management Technical Guidance LAQM.TG16. April 2021. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
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- Public Health England, Health Matters: air pollution Guidance, June 2021
- Hart Local Plan, Strategy and Sites 2032, April 2020, available at ; https://www.hart.gov.uk/sites/default/files/4_The_Council/Policies_and_published_documents/Planning_policy/Hart%20LPS%26S.pdf
- Hart District Council, 'Council votes to keep Fleet Road pedestrianisation scheme', available at <https://www.hart.gov.uk/the-council/news/council-votes-keep-fleet-road-pedestrianisation-scheme>
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