



***Thanet District Council***  
***Annual Status Report 2022***

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# 2022 Air Quality Annual Status Report (ASR)

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

Date: June, 2022

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# Executive Summary: Air Quality in Our Area

## Air Quality in Thanet 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<sup>1,2</sup>.

The mortality burden of air pollution within the UK is equivalent to 28,000 to 36,000 deaths at typical ages<sup>3</sup>, with a total estimated healthcare cost to the NHS and social care of £157 million in 2017<sup>4</sup>.

Monitored annual mean NO<sub>2</sub> concentrations across Thanet District Council have largely shown a decrease compared to previous years. However, the decrease seen in annual mean NO<sub>2</sub> concentrations in 2021 is less significant than that in 2020. This may indicate a bounce back of traffic activities following impacts on movement as a result of COVID-19 measures. Despite this, monitoring locations within the existing declared AQMAs have shown annual mean NO<sub>2</sub> concentrations to be below the annual mean NO<sub>2</sub> AQS objective for more than three years at all monitoring sites and for more than four years at all except one. Defra's appraisal letter of last year's ASR suggested: *"The Council can now look to revoke the AQMA currently in place with concentrations of NO<sub>2</sub> seen to remain below the desired level applicable for revocation of an AQMA for a number of years."* Thus, the Council has decided to revoke the current Air Quality Management Area (AQMA) during the next year following a Detailed Modelling Assessment.

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<sup>1</sup> Public Health England. Air Quality: A Briefing for Directors of Public Health, 2017

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

<sup>3</sup> Defra. Air quality appraisal: damage cost guidance, July 2021

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

With regard to the 1-hour mean NO<sub>2</sub> AQS objective, whereby there should be no more than 18 hours where concentrations exceed 200µg/m<sup>3</sup>, both automatic monitoring locations continue to report no hourly concentrations greater than 200µg/m<sup>3</sup>.

For PM<sub>10</sub>, the reported annual mean concentration continues to be below the annual mean PM<sub>10</sub> AQS objective of 40µg/m<sup>3</sup> at both automatic monitoring stations (ZH4 at Boundary Road, Ramsgate and ZH5 at The Square, Birchington). Compared to previous years, the concentrations at both sites have decreased slightly. With regards to the 24-hour mean PM<sub>10</sub> AQS objective, whereby there should be no more than 35 24-hour periods where concentrations exceed 50µg/m<sup>3</sup>, the maximum number of 24-hour period means greater than 50µg/m<sup>3</sup> was one reported at ZH5 at The Square, Birchington.

Compliance of the annual mean NO<sub>2</sub> AQS objective has now been achieved for at least three years across all of the monitoring locations within the Thanet Urban AQMA and all bar one site for four years. As suggested in Defra's appraisal letter of last year's ASR, Thanet District Council has decided to revoke this AQMA during the next year following a detailed modelling assessment of the two original exceedance areas: The Square Birchington and High Street, St Lawrence Ramsgate.

## 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 Strategy<sup>5</sup> sets out the case for action, with goals to reduce exposure to harmful pollutants. The Road to Zero<sup>6</sup> 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 AQMAs are heavily influenced by transport emissions.

Thanet District Council has successfully progressed and implemented the following measures:

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<sup>5</sup> Defra. Clean Air Strategy, 2019

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

- Completion of the installation of rapid electric chargers for taxis and maintenance of electric charging points;
- Progressing the Taxi Licensing Policy, which is currently being updated. This will include incentives for ULEV and age restrictions of the existing fleet. For new licences, taxis must be Euro 6 vehicles, i.e. <7 years;
- Progressing the social media campaign on air quality;
- Developing Pollution Patrol school resource to educate children on air pollution and the impact on health;
- Improvement of KentAir Webpage.

The Thanet Local Plan was adopted on 9 July 2020, which includes Policy SE05 which focuses on Air Quality and SP14 and and SP05 which set the requirements for EV charging points in residential and commercial development. This encourages major developments to promote a shift to use sustainable low emission transport. All developments which either individually or cumulatively are likely to have a detrimental impact on air quality, will be required to submit an Air Quality and/or Emissions Mitigation Assessment.

Thanet District Council continues to uphold and work with the existing partnership with Kent County Council to engage in a joint approach to tackle air quality issues and the implementation of the Thanet Transport Strategy, and as part of the Kent and Medway Air Quality Partnership.

## Conclusions and Priorities

Monitoring data from 2021 has shown that there continue to be no exceedances of any AQS objectives, with annual mean NO<sub>2</sub> concentrations continuing to decrease. Road transport is the dominant source of pollution within Thanet's AQMA, and reducing road traffic emissions within the AQMA and across Thanet therefore continues to remain the key air quality priority. This will also contribute to reducing PM<sub>10</sub> and PM<sub>2.5</sub> concentrations across the district.

Considering no exceedances of the annual mean NO<sub>2</sub> AQS objective in 2021 monitoring data in conjunction with the suggestion in Defra's appraisal of last year's ASR, the Council has decided to revoke the Thanet Urban AQMA.

In addition to this, Thanet District Council's priorities for the coming year are as follows:

- Continue to progress on-street electric charging joint funding bid with KCC;
- Continue to progress the Taxi Licensing Policy;
- Continue to engage with land-use and transport planners to ensure the actions adhere to the Local Plan, and are supported by all parts of the authority;
- Continue to raise awareness of air quality issues within the District;
- Continue to work with Kent County Council to undertake identified feasibility studies of measures to tackle air pollution, to determine more robustly the effectiveness and cost of options;
- Encourage the public to use sustainable transportation, including public transport, car sharing, cycling, and walking; and
- Continue the partnership with Kent County Council to engage in a joint approach to tackle air quality issues and the implementation of the Thanet Transport Strategy.
- Adoption of the draft Thanet Council Net Zero Climate Change Strategy and related housing energy strategies.

## Local Engagement and How to get Involved

As the main source of air pollution within Thanet is road transport emissions, a way for the public to get involved with helping improving air quality in the District is to find alternatives to travelling by private vehicle. The following are suggested alternatives to private travel that would contribute to improving air quality within the District:

- Use public transport where available – this reduces the number of private vehicles in operation, which will in turn reduce congestion, both of which will help to reduce pollutant concentrations;
- Walk or cycle if your journey allows –choosing to walk or cycle for your journey will reduce the number of private vehicles on the roads, and there is the added benefit of keeping fit and healthy. In addition, many of the cycle routes and footpaths are off-road, meaning you will not be exposed to the higher concentrations that occur close to roads;
- Car/lift sharing – Where a number of individuals are making similar journeys, such as travelling to work or to school, car sharing reduces the number of vehicles on the road and therefore reduces congestion and overall emissions. Car sharing can be promoted via travel plans through the workplace and within schools; and



Alternatively, fuelled / more efficient vehicles – Fully electric, hybrid and more fuel-efficient cars are available and have different levels of benefits by reducing emissions. Locations of publicly available electric vehicle charging points in Thanet and nearby can be found on the [zap-map app](#).

## Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health Department of Thanet District Council with the support and agreement of the following officers and departments:

- Bureau Veritas UK
- Thanet District Council: TDC Environmental Health, TDC Licensing Team, TDC Planning Services, TDC Housing, TDC Climate Change Officer, TDC Parking, TDC Housing Strategy and KCC Highways.

This ASR has been approved by Penny Button, Director of Safer Neighbourhoods.



This ASR has not been signed off by a Director of Public Health.

If you have any comments on this ASR please send them to Amanda Berry at:

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# 1 Local Air Quality Management

This report provides an overview of air quality in Thanet District Council during 2022. 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 Thanet 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

AQMAs are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority should prepare an AQAP within 12 months setting out measures it intends to put in place in pursuit of compliance with the objectives.

A summary of AQMAs declared by Thanet District Council can be found in Table 2.1. The table presents a description of the single AQMA that is currently designated within the Thanet District. Appendix D: Maps of Monitoring Locations and AQMAs provides maps of AQMA and also the air quality monitoring locations in relation to the AQMA. The air quality objectives pertinent to the current AQMA designation are as follows:

- NO<sub>2</sub> annual mean.

Additional information on AQMAs declared by Thanet District Council can be found on Defra's [UK-Air](#) website.

As 2021 monitoring data continues to show that there are no exceedances of the annual mean NO<sub>2</sub> AQS objective, all monitoring locations within the AQMA have reported concentrations below the annual mean NO<sub>2</sub> AQS objective for three consecutive years. Considering the three years of reported compliance across the entire AQMA and four years across all except one site and a continued trend of decreasing NO<sub>2</sub> concentrations in last five years, we propose to revoke the Thanet Urban AQMA (see monitoring section).

**Table 2.1 – Declared Air Quality Management Areas**

AQMA Name	Date of Declaration	Pollutants and Air Quality Objectives	One Line Description	Is air quality in the AQMA influenced by roads controlled by National Highways?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Name and Date of AQAP Publication	Web Link to AQAP
Thanet Urban AQMA	17/11/2011	NO2 Annual Mean	An area encompassing a number of urban areas within Thanet	No	47µg/m <sup>3</sup>	30.8µg/m <sup>3</sup>	Air Quality Action Plan. Published 2013	<a href="#">Visit the AQAP for the Thanet Urban AQMA</a>

☒ **Thanet District Council confirm the information on UK-Air regarding their AQMA(s) is up to date.**

☒ **Thanet District Council confirm that all current AQAPs have been submitted to Defra.**

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

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

1. *"Robust and accurate QA/QC procedures were applied. Choice of bias adjustment factor was discussed, and an appropriate, local factor was calculated correctly from ZH4 which recorded good data capture.*
2. *Comments from last year's ASR have been mentioned and addressed. This is welcomed, and we encourage this to continue in future ASRs.*
3. *The report refers to the Public Health Outcomes Framework and the local indicator for PM<sub>2.5</sub> in the district, comparing it to the regional and national indicator values. There is also inclusion of PM<sub>2.5</sub> data calculated from PM<sub>10</sub> monitoring and reference to the defra background map predictions which provides a detailed picture of local conditions.*
4. *The Council can now look to revoke the AQMA currently in place with concentrations of NO<sub>2</sub> seen to remain below the desired level applicable for revocation of an AQMA for a number of years. The council have indicated via email (Received 23/7/21) that this will be progressed in 2021 due to strains placed on planning within the AQMA unnecessarily.*
5. *Due to the low concentrations recorded, particularly within the AQMA it may be worthwhile for the council to undertake a review of monitoring to help identify new local hot spots within the district.*
6. *Council have provided a clear map of the diffusion tube monitoring network; trends are displayed and discussed in the report, this is welcomed.*
7. *The Council could have provided further discussion of whether NO<sub>2</sub> decreases in the area seen in 2020 as a result of the Covid-19 pandemic fit the national trend of a 20% reduction.*
8. *Overall, the report is well structured, detailed and satisfies the criteria of relevant standards."*

Thanet District Council intends to maintain the standard of quality provided in previous years ASRs. As 2021 monitoring data continues to show that there are no exceedances of the



annual mean NO<sub>2</sub> AQS objective, the Council has decided to progress the revocation of the Thanet Urban AQMA following a Detailed modelling Assessment of the former exceedence areas.

The Council has expanded Thanet's diffusion tube monitoring network 2021 by deploying eight new monitoring locations to help identify any other potential air pollution hotspots. There are now a total of 39 diffusion tube monitoring sites across the district, inclusive of two triplicate co-locations.

The Council has reviewed and expanded Thanet's diffusion tube monitoring network 2021 by deploying eight new monitoring locations to help identify any other potential air pollution hotspots. There are now a total of 39 diffusion tube monitoring sites across the district, inclusive of two triplicate co-locations.

Thanet District Council has taken forward a number of direct measures during the current reporting year of 2021 in pursuit of improving local air quality, and this is not to stop following the revocation of the current AQMA. Details of all measures completed, in progress or planned are set out in Table 2.2. 18 measures are included within Table 2.2, with the type of measure and the progress Thanet District Council have made during the reporting year of 2021 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2.

More detail on these measures can be found in their respective Action Plans. Key completed measures are:

- Completion of the installation of rapid electric chargers for taxis and maintenance of electric charging points;
- Progressing the Taxi Licensing Policy, which is currently being updated. This will include incentives for ULEV and age restrictions of the existing fleet. For new licences, taxis must be Euro 6 vehicles, i.e. <7 years;
- Progressing the social media campaign on air quality;
- Assisting Kent and Medway Air Quality Partnership funding the development Pollution Patrol school resource to educate children on air pollution and the impact on health;
- Improvement of KentAir Webpage.

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

- Continue to progress on-street electric charging joint funding bid with KCC;
- Continue to progress the Taxi Licensing Policy;

- To progress formal revocation of the Thanet Urban AQMA;
- Continue to engage with land-use and transport planners to ensure the actions adhere to the Local Plan, and are supported by all parts of the authority;
- Continue to raise awareness of air quality issues within the District;
- Continue to work with Kent County Council to undertake identified feasibility studies of measures to tackle air pollution, to determine more robustly the effectiveness and cost of options;
- Encourage the public to use sustainable transportation, including public transport, car sharing, cycling, and walking;
- Continue the partnership with Kent County Council to engage in a joint approach to tackle air quality issues and the implementation of the Thanet Transport Strategy; and
- To progress KMAQP proposal for Air Pollution Training for healthcare professionals- to raise awareness and increase the confidence and skills of health care professionals to address air pollution in their day-to-day practice.
- Seek formal adoption of the Council's Net Zero Strategy and associated energy efficient Housing Strategies.

Thanet District Council worked to implement these measures in partnership with the following stakeholders during 2021:

- Kent County Council
- Kent and Medway Air Quality Partnership (K&MAQP)

The principal challenges and barriers to implementation of measures that Thanet District Council anticipates facing is that the Action Plan is out of date, however the Council is seeking to revoke the AQMA after multiple years of reported compliance.

Table 2.2 – 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	Thanet Air Quality and Planning Technical Guidance 2016	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2015	2016	Local Authority Environmental Health, Local Authority Planning Dept.	Developer Contributions	No	Not Funded	-	Completed	-	-	Ongoing planning policy	All development in urban AQMA >10units is required to have EV charge points and major dev required to carry out Damage Costs Calc.
2	Kent and Medway Energy and Low Emissions Strategy	Policy Guidance and Development Control	Low Emissions Strategy	2020	2023	Kent County Council	-	No	Not Funded	-	Implementation	-	-	Implementation on-going	Kent and Medway Energy and Low Emission Strategy adopted and KCC travel plan monitoring officer appointed
3	Thanet District Council Local Plan Adopted July 2020	Policy Guidance and Development Control	Other policy	2020	2031	Local Authority Planning Department	Developer Contributions	No	Not Funded	-	Implementation	-	-	Implementation on-going	The LP contains many policies relevant to air quality improvements: In terms of the Local Plan Review was scheduled for Sept 22, however Cabinet agreed on 16th Jun 22 a new work programme which puts the first formal consultation (Reg 18) back to September 2023. This is because there is no DCO decision for Manston; the publication of the Levelling Up Bill (and other documents) and the implications for Local Plans; other emerging Government guidance (eg: BNG); and potential/likely changes to the Government's "standard method" for determining housing requirements (linked to new Census data).
4	Thanet Transport Strategy 2015 -2031	Policy Guidance and Development Control	Other policy	2020		Kent County Council Highways and Local Authority Strategic Planning Dept	-	No	Not Funded	-	Implementation	-	Inner Circuit Road, Thanet Parkway station	Implementation on-going	Although not yet formally adopted, KCC and TDC use to support adopted Local Plan.
5	Thanet Parkway Train Station	Promoting Travel Alternatives	Promote use of rail and inland waterways	2021	2023	KCC and TDC	DfT & KCC	No	Partially Funded	>£10 million	Implementation	-	-	Construction started March 2021	£12M Gov Funding & £6M KCC funding
6	Cycling and Walking audit to identify areas for improvement	Alternatives to private vehicle use	Promotion of cycling	2020	2021	Local Authority	DfT	No	Funded	£10k - £50k	Completed	0.01	Number of cyclists/walkers	Completed	Working with Sustrans to support development plans
7	Promotion of air quality issues,	Public Information	Via the Internet	2016		Local Authority	-	No	Not Funded	-	-	-	Number of press releases, reports on website	-	Social Media Campaigns ongoing during Clean Air Week. Website improvements and

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
	working with stakeholders														development of school resource: <a href="https://kentair.org.uk/">https://kentair.org.uk/</a> & <a href="https://pollutionpatrol.org.uk/">https://pollutionpatrol.org.uk/</a>
8	Updated Parking Policy draft	Traffic Management	Emission based parking or permit charges	2021	2022	Local Authority Parking Dept	-	No	Not Funded	-	Planning	-	-	Underway	-
9	Taxi Licensing Policy	Promoting Low Emission Transport	Taxi emission incentives	2020	2023	Local Authority Licensing Dept	-	-	-	-	Implementation	-	-	Underway	Promoting Euro 6 and incentivising ULEVs
10	ULEV funding application EV charging points for taxis	Promoting Low Emission Transport	Taxi emission incentives	2019	2022	Kent County Council and LA Environmental Health Dept	DfT	No	Funded	£10k - £50k	Completed	-	Number of chargers installed	Completed March 2021	2 x 2 rapid chargers in Market Street and Albion Road car parks
11	EV Points are maintained and available for the public	Promoting Low Emission Transport	Other	2013	-	Local Authority Parking Dept	-	-	-	-	-	-	Number of charges	Ongoing	Maintenance of EV point and back office
12	Kent Realising Electric Van Scheme	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	2021	-	Kent County Council	DfT	-	-	£1 million - £10 million	Implementation	-	-	Ongoing	Electric van trials for business
13	Climate Emergency - Strategic Action Plan - Sustainable Council Housing	Policy Guidance and Development Control	Other policy	2020	2025	Local Authority Strategic Housing	-	-	-	-	-	-	-	Awaiting formal adoption	Improved energy efficiency of Council Housing Stock
14	Tenant and Leaseholder Services: Our Journey to Net Zero	Other	Other	2020	2030	Local Authority Strategic Housing	-	-	-	-	-	-	-	Awaiting formal adoption	Improved energy efficiency of rental sector
15	Kent air website development	Public Information	Via the Internet	2021	2022	Kent & Medway Air Quality Monitoring Network	LAs, KCC & Medway UKHSA	No	-	£10k - £50k	Completed	-	-	Completed	<u>Improvements to <a href="https://kentair.org.uk/">https://kentair.org.uk/</a> website</u>
16	Social Media Campaign	Public Information	Via the Internet	2022	-	Local Authority Environmental Health, & K&MAQP	Defra and LA contributions	YES	Partially Funded	<£10k	On-going	-	-	On-going	Kent-Air reached over 155,000 social media users on various platforms with a good rate of engagement obviously plenty of negative comments about anti idling. It was a success to reach such a number of users without paying for any advertising of these posts and this was due to sharing through at least 6 partners' social media platforms.
17	Pollution Patrol School Resource	Public Information	Via other mechanisms	2022	-	Local Authority Environmental	Defra and LA contributions	YES	Partially Funded	<£10k	On-going	-	-	Implementation On-going	10 schools have signed up 2 across Kent; further school engagement

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
						Health, & K&MAQP									planned over coming year to promote Pollution Patrol resources in schools
18	TDC draft Net Zero Action Plan 2024 and draft Net Zero Strategy	Policy Guidance and Development Control	Low Emissions Strategy	2022		Local Authority Environmental Health, Local Authority Planning Dept.		No	Not Funded	-	Ongoing	-	-	Ongoing planning policy	The council is seeking formal adoption of the Council's Net Zero Strategy and associated energy efficient Housing Strategies.

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

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

No monitoring of PM<sub>2.5</sub> is currently conducted within Thanet, however the two automatic monitoring sites located at Ramsgate and Birchington monitor PM<sub>10</sub> concentrations. As per LAQM.TG(16) guidance, PM<sub>2.5</sub> concentrations can be estimated from monitored PM<sub>10</sub> concentrations. In order to do this, data from the Automatic Rural and Urban Network (AURN) monitoring station Chatham Roadside in Medway (~53km west of Birchington-on-Sea, and ~61km west of Ramsgate) has been used to calculate an estimated PM<sub>2.5</sub> concentration at both monitoring sites. The Chatham Roadside site was chosen due to it being the closest AURN site to the automatic monitoring sites within Thanet where both PM<sub>10</sub> and PM<sub>2.5</sub> are measured.

The methodology detailed within Box 7.7 of [LAQM.TG\(16\)](#) has been followed to calculate a locally derived PM<sub>2.5</sub> / PM<sub>10</sub> ratio of 0.702. Applied to the 2021 PM<sub>10</sub> annual mean concentrations of 21.1µg/m<sup>3</sup> and 22.3µg/m<sup>3</sup> at Birchington and Ramsgate respectively, this gives an estimated PM<sub>2.5</sub> annual mean of 14.8µg/m<sup>3</sup> and 15.6µg/m<sup>3</sup>. These estimated annual mean concentrations are below to the indicative stage II annual mean limit value for PM<sub>2.5</sub> (20µg/m<sup>3</sup>).

In addition to this, the current Defra 2021 [background maps](#) (based on 2018 monitored concentrations) for Thanet District Council estimates that all background concentrations of PM<sub>2.5</sub> are well below the indicative annual mean limit value for PM<sub>2.5</sub>. The maximum predicted concentration is 10.8µg/m<sup>3</sup> within the 1 x 1km grid square with the centroid grid reference of 638500, 165500 and includes the continuous monitoring station ZH4 in Boundary Road Ramsgate and parts of the A255. The background maps also provide a breakdown of sources. For this grid square, the majority of the PM<sub>2.5</sub> concentrations is estimated to arise from secondary PM<sub>2.5</sub> formation, which forms following chemical reactions of other gaseous atmospheric pollutants, such as nitrogen oxides (NO<sub>x</sub>), ammonia (NH<sub>3</sub>), and volatile organic compounds (VOCs). The other sector contributing to

the PM<sub>2.5</sub> concentrations are sea salt, calcium and iron rich dusts and regional primary PM and residual noncharacterised sources (residual is 1.0µg/m<sup>3</sup> )

The [Public Health Outcomes Framework](#) data tool compiled by Public Health England and The Department of Health has a number of public health indicators that are used focus public health action, identify areas of health inequality and concern and monitor the differences in health impacts across regions in the UK. This framework includes an indicator “D01- Fraction of Mortality Attributable to Particulate Air Pollution” which is calculated using background annual average PM<sub>2.5</sub> concentrations, modelled at a 1km<sup>2</sup> resolution based on measured concentrations from the AURN. As such, this quantifies the mortality burden of PM<sub>2.5</sub> within England on a county and local authority scale. The 2020 fraction of mortality attributable to PM<sub>2.5</sub> pollution across England is 5.6%, and the fraction within the Southeast region higher than this at 6.0%. The fraction reported within Thanet specifically is lower than the regional average, but above the national average, at 5.8%. The 2020 fraction of mortality has been used as opposed to the 2021 fraction as the data has not been made available at the time of writing.

Measures to improve air quality often have shared wins with other public health indicators, a good example being the encouragement of active travel and commuting leading to increased physical activity and increased wellbeing. Thanet District Council is part of the Kent Health and Wellbeing Board, bringing together County and District Councillors, senior officers from the NHS Area Team, Clinical Commissioning Groups, Social Care, the public, and members of the local Healthwatch. Together, this board produced the [Kent Joint Health and Wellbeing Strategy](#), setting out how the multidisciplinary teams can align their plans to improve public health and tackle key health issues.

Many of the measures employed by Thanet District Council aims to reduce vehicular travel frequency and time, such as the encouragement of active travel. NO<sub>x</sub> and PM<sub>2.5</sub> emissions arise from vehicular sources, and therefore although the measures pursued by Thanet District Council focus on reducing NO<sub>2</sub> concentrations many of these will also likely have a positive impact on reducing PM<sub>2.5</sub> concentrations.

Thanet District Council is part of the K&MAQP, which aims to deliver a consistent approach to tackling air pollution across the County, sharing knowledge and information between Kent County Council, district councils, health authorities, National Highways, the Environment Agency, Public Health England and various consultants and research partners. The K&MAQMN includes a number of sites monitoring pollution (including PM<sub>2.5</sub>) across the County. Data for the network is reported through a dedicated website, [KentAir](#).

Thanet District Council has been working with members of K&MAQP and KCC on the production of a Kent and Medway Energy and Low Emissions Strategy. The implementation plan 2020-2023 was adopted in October 2020 and updated in May 2021.

The planning regime is also important for reducing PM<sub>2.5</sub> concentrations. With the formal adoption of the Thanet Local Plan in 2020, the updated Air Quality Policy SE05 focuses on ensuring that all future developments produce an Air Quality and/or Emissions Mitigation Assessment to prevent the users and local area are not adversely impacted by air quality. This also promotes developments to encourage the use of sustainable and low emissions transport. The Thanet Transport Strategy is also included within the Local Plan and sets out improvements which will also benefit the reduction of PM<sub>2.5</sub> concentrations.

Thanet District Council does not have any smoke control areas; however it does provide guidance on "[Smoke and Bonfires](#)" in order to reduce air pollution arising from these. This includes guidelines for burning waste as part of a bonfire, the use of wood burners and stoves, information on the ban on the sale of wet wood and coal but also sets out how to make a nuisance complaint if required.



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

This section sets out the monitoring undertaken within 2021 by Thanet District Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2017 and 2021 to allow monitoring trends to be identified and discussed.

### 3.1 Summary of Monitoring Undertaken

#### 3.1.1 Automatic Monitoring Sites

Thanet District Council undertook automatic (continuous) monitoring at two sites during 2021. Table A.1 in Appendix A shows the details of the automatic monitoring sites. Appendix A presents automatic monitoring results for Thanet District Council with automatic monitoring results also available on the [KentAir website](#).

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

Thanet District Council undertook non- automatic (i.e. passive) monitoring of NO<sub>2</sub> at 39 sites during 2021 (inclusive of two triplicate co-location sites). 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 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. Diffusion tube monitoring results and locations are also available on the [KentAir website](#).

## 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 (NO<sub>2</sub>)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO<sub>2</sub> annual mean concentrations for the past five years with the air quality objective of 40µg/m<sup>3</sup>. 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 2021 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.

Table A.5 in Appendix A compares the ratified continuous monitored NO<sub>2</sub> hourly mean concentrations for the past five years with the air quality objective of 200µg/m<sup>3</sup>, not to be exceeded more than 18 times per year.

In regard to the automatic monitoring, both sites are reporting concentrations well below the annual mean NO<sub>2</sub> AQS objective of 40µg/m<sup>3</sup>, with Site ZH5 (The Square, Birchington) reporting the highest of the two at 24.7µg/m<sup>3</sup>. Annual mean NO<sub>2</sub> concentration at ZH4 have decreased from that reported in 2020, while the annual mean NO<sub>2</sub> concentration at ZH5 have increased slightly. In addition to this, both sites have reported no hour periods in 2021 where hourly mean concentrations were greater than 200µg/m<sup>3</sup>, therefore well below the 1-hour mean NO<sub>2</sub> AQS objective.

For diffusion tubes, all monitoring locations, both inside and outside the AQMA boundary, reported annual mean NO<sub>2</sub> concentrations well below the annual mean NO<sub>2</sub> AQS objective of 40µg/m<sup>3</sup>. The maximum reported annual mean concentration in 2021 was 30.8µg/m<sup>3</sup>, reported at the triplicate site TH70,71,72 (9 High Street, St Lawrence). Similarly to the automatic monitoring locations, most of the diffusion tube locations have shown a decrease in annual NO<sub>2</sub> concentrations compared to 2020. TH34, TH36 and TH78 have reported an increase of 1.8µg/m<sup>3</sup>, 1.5µg/m<sup>3</sup> and 3.3µg/m<sup>3</sup> respectively, however all of

these are still well below the AQS objective ( $21.4\mu\text{g}/\text{m}^3$ ,  $23.3\mu\text{g}/\text{m}^3$  and  $19.3\mu\text{g}/\text{m}^3$ ). The trends observed at all monitoring sites over the past five years indicate that annual mean  $\text{NO}_2$  concentrations have largely been decreasing year-on-year, especially in AQMA. Some sites show a relatively stable trend; however these are in areas where concentrations are reported to be very low.

As no diffusion tube sites reported an annual average concentration in excess of  $60\mu\text{g}/\text{m}^3$ , as per LAQM guidance there is no risk of there being more than 18 hours where hourly concentrations exceeded  $200\mu\text{g}/\text{m}^3$ .

As no site (diffusion tube or automatic) reported an annual average  $\text{NO}_2$  concentration of  $36\mu\text{g}/\text{m}^3$  or higher, fall-off with distance correction calculations have not been carried out.

### 3.2.2 Particulate Matter ( $\text{PM}_{10}$ )

Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored  $\text{PM}_{10}$  annual mean concentrations for the past five years with the air quality objective of  $40\mu\text{g}/\text{m}^3$ .

Table A.7 in Appendix A compares the ratified continuous monitored  $\text{PM}_{10}$  daily mean concentrations for the past five years with the air quality objective of  $50\mu\text{g}/\text{m}^3$ , not to be exceeded more than 35 times per year.

Automatic monitoring conducted within Thanet District Council at the two sites have reported annual mean  $\text{PM}_{10}$  concentrations well below the annual mean  $\text{PM}_{10}$  AQS objective of  $40\mu\text{g}/\text{m}^3$  –  $22.3\mu\text{g}/\text{m}^3$  and  $21.1\mu\text{g}/\text{m}^3$  respectively. The annual mean concentration at both sites have decreased compared to 2020 by around  $2\mu\text{g}/\text{m}^3$ .

In addition, the total number of 24-hour average concentrations greater than  $50\mu\text{g}/\text{m}^3$  at ZH4 and ZH5 were zero and one respectively. This is well below the AQS objective of 35. The number of exceedances at both sites are also well below these in 2019 (where 13 and 10 were reported) and have dropped dramatically from previous years.

### 3.2.3 Particulate Matter ( $\text{PM}_{2.5}$ )

As detailed in Section 2.3,  $\text{PM}_{2.5}$  concentrations have been estimated from the monitored  $\text{PM}_{10}$  concentrations at ZH4 and ZH5, which should be carried out in the absence of  $\text{PM}_{2.5}$  monitoring – as per [LAQM.TG\(16\)](#). The estimated annual mean  $\text{PM}_{2.5}$  concentration in 2021 is  $15.6\mu\text{g}/\text{m}^3$  at ZH4, and  $14.8\mu\text{g}/\text{m}^3$  at ZH5, both below the indicative stage II annual mean limit value of  $20\mu\text{g}/\text{m}^3$  for  $\text{PM}_{2.5}$ .

The concentrations used to derive the  $PM_{2.5} / PM_{10}$  ratio, and to estimate an annual mean  $PM_{2.5}$  concentration, are presented in Table A.8.

## 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? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Inlet Height (m)
ZH4 Thanet Ramsgate	Boundary Road, Ramsgate	Roadside	638483	165430	NO <sub>2</sub> ; PM <sub>10</sub>	Yes - Thanet Urban AQMA	Chemiluminescent; beta attenuation	16	4	2
ZH5 Thanet Birchington	The Square, Birchington	Roadside	630284	169052	NO <sub>2</sub> ; PM <sub>10</sub>	Yes - Thanet Urban AQMA	Chemiluminescent; beta attenuation	4	3	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 – 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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
TH05	The Broadway Broadstairs	Kerbside	639019.78	167982.22	NO <sub>2</sub>	Yes - Thanet Urban AQMA	N	2.5	No	2.5
TH10	College Road Margate	Kerbside	635539.03	169839.9	NO <sub>2</sub>	Yes - Thanet Urban AQMA	0.0	2.0	No	2.5
TH13, TH46, TH47	Birchington Square 3	Kerbside	630253.51	169037.48	NO <sub>2</sub>	Yes - Thanet Urban AQMA	2.0	1.0	No	2.5
TH16	Earlsmede Crescent Cliffsend	Urban Background	634444.76	164416.06	NO <sub>2</sub>	Yes - Thanet Urban AQMA	3.0	N/A	No	2.5
TH26	King Street Ramsgate	Kerbside	638492.09	165409.59	NO <sub>2</sub>	Yes - Thanet Urban AQMA	0.0	3.0	No	2.5
TH27	Avebury Avenue Ramsgate	Urban Background	639097.49	165970.61	NO <sub>2</sub>	Yes - Thanet Urban AQMA	7.0	N/A	No	2.5
TH31	High Street Manston	Urban Background	634661.95	166025.93	NO <sub>2</sub>	No	9.0	N/A	No	2.5
TH32	Bell-Davies Drive Manston	Urban Background	632993.9	166428.26	NO <sub>2</sub>	No	10.0	N/A	No	2.5
TH33	Hill House Drive Minster	Urban Background	631160.64	165486.32	NO <sub>2</sub>	No	9.0	N/A	No	2.5
TH34	Westwood Rd, Broadstairs (Pizza Hut)	Roadside	636570.05	167894.04	NO <sub>2</sub>	Yes - Thanet Urban AQMA	N	14.0	No	2.5
TH36	Star Lane, Ramsgate Rd, Margate	Kerbside	636404.61	168227.37	NO <sub>2</sub>	Yes - Thanet Urban AQMA	0.0	2.0	No	2.5
TH37	Kentmere Ave Ramsgate 1	Suburban	635932.22	165333.16	NO <sub>2</sub>	Yes - Thanet Urban AQMA	10.0	N/A	Yes	2.5
TH48	Canterbury Rd, Birch (A28) (Yew Tree)	Kerbside	630438.3	169111.44	NO <sub>2</sub>	Yes - Thanet Urban AQMA	1.0	0.5	No	2.0
TH49	Canterbury Rd, Birch (A28) (Kent Gdns)	Roadside	630185.64	168982.63	NO <sub>2</sub>	Yes - Thanet Urban AQMA	3.0	3.5	No	2.5

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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
TH51, TH52, TH53	Boundary Rd, Ramsgate 3	Roadside	638472.3	165431.64	NO <sub>2</sub>	Yes - Thanet Urban AQMA	16.0	4.1	Yes	2.5
TH54, TH64, TH65	3 High Street, St Lawrence 3	Roadside	637134.55	165353.58	NO <sub>2</sub>	Yes - Thanet Urban AQMA	7.0	1.0	No	2.5
TH55	Coxes Lane (M'gate Rd) Ramsgate	Roadside	636814.56	167297.44	NO <sub>2</sub>	Yes - Thanet Urban AQMA	3.0	10.0	No	2.0
TH59	Church Street, St Peters	Kerbside	638220.02	168614.16	NO <sub>2</sub>	Yes - Thanet Urban AQMA	3.0	2.0	No	2.5
TH66	High Street, St Lawrence - Façade	Roadside	637111.95	165330.87	NO <sub>2</sub>	Yes - Thanet Urban AQMA	0.0	3.0	No	2.5
TH67, TH68, TH69	20 Hereson Rd, Ramsgate 3	Kerbside	638535.98	165464.88	NO <sub>2</sub>	Yes - Thanet Urban AQMA	0.0	1.0	No	2.5
TH70, TH71, TH72	9 High Street, St Lawrence 3	Roadside	637091.99	165339.87	NO <sub>2</sub>	Yes - Thanet Urban AQMA	0.0	1.0	No	2.5
TH76	Buenos Ayres Margate	Roadside	634752	170679	NO <sub>2</sub>	Yes - Thanet Urban AQMA	9.5	12.0	No	2.0
TH77	High Street, Minster	Kerbside	630972	164708	NO <sub>2</sub>	No	2.5	1.0	No	1.5
TH78	Manston Way Walk Wwx	Roadside	636014	167851	NO <sub>2</sub>	No	8.0	2.5	No	2.0
TH79	Sarre	Roadside	625641	165002	NO <sub>2</sub>	No	0.0	6.5	No	2.5
TH81	Margate Rd, Ramsgate (Winifred Ave)	Roadside	637097	166799	NO <sub>2</sub>	Yes - Thanet Urban AQMA	0.0	7.8	No	2.5
TH82	Westwood Rd, Broadstairs (St Georges)	Roadside	637271	167873	NO <sub>2</sub>	Yes - Thanet Urban AQMA	7.0	7.9	No	2.5
TH83	Ramsgate Rd, Margate (Nr Car Wash)	Roadside	635907	169266	NO <sub>2</sub>	Yes - Thanet Urban AQMA	0.0	9.5	No	2.5
TH84	Northdown Rd, Margate	Kerbside	635997	171095	NO <sub>2</sub>	Yes - Thanet Urban AQMA	0.0	6.0	No	3.0

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) <sup>(1)</sup>	Distance to kerb of nearest road (m) <sup>(2)</sup>	Tube Co-located with a Continuous Analyser?	Tube Height (m)
TH85	143 Boundary Rd, Ramsgate	Roadside	638026	165442	NO <sub>2</sub>	Yes - Thanet Urban AQMA	0.0	0.0	No	3.0
TH86	26 Margate Rd, Ramsgate	Roadside	637747	165713	NO <sub>2</sub>	Yes - Thanet Urban AQMA	2.0	1.5	No	3.0
TH88	Minnis Rd, Birchington	Kerbside	629531	169345	NO <sub>2</sub>	Yes - Thanet Urban AQMA	10.0	1.0	No	2.5
TH89	Tothill Minster	Kerbside	631057	165478	NO <sub>2</sub>	No	10.0	1.0	No	2.5
TH90	Meridian Cl, Ramsgate	Roadside	636109	165766	NO <sub>2</sub>	Yes - Thanet Urban AQMA	3.0	2.0	No	2.5
TH87	Marlowe Way (Schools)	Roadside	636198	166771	NO <sub>2</sub>	Yes - Thanet Urban AQMA	2.0	1.0	No	2.5
TH91	Shottendane Rd, Margate	Roadside	635029	169494	NO <sub>2</sub>	Yes - Thanet Urban AQMA	5.0	2.0	No	2.5
TH92	Canterbury Rd Westagte (Victoria Ave)	Roadside	632695	169877	NO <sub>2</sub>	Yes - Thanet Urban AQMA	5.0	2.0	No	2.5
TH93	Minster Rd, Westgate	Roadside	632563	169291	NO <sub>2</sub>	Yes - Thanet Urban AQMA	4.0	2.0	No	2.5
TH94	St Peters Park Rd (Sch)	Roadside	638922	168342	NO <sub>2</sub>	Yes - Thanet Urban AQMA	5.0	1.0	No	2.5

**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.3 – Annual Mean NO<sub>2</sub> Monitoring Results: Automatic Monitoring (µg/m<sup>3</sup>)**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2021 (%) <sup>(2)</sup>	2017	2018	2019	2020	2021
ZH4	638483	165430	Roadside	99.7%	99.7%	22.6	21.3	21.4	17.1	15.9
ZH5	630284	169052	Roadside	92.4	92.4	32.4	31.0	29.3	24.3	24.7

☐ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.

☒ Reported concentrations are those at the location of the monitoring site (annualised, as required), i.e. prior to any fall-off with distance correction.

**Notes:**

The annual mean concentrations are presented as µg/m<sup>3</sup>.

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

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%).

Table A.4 – Annual Mean NO<sub>2</sub> Monitoring Results: Non-Automatic Monitoring (µg/m<sup>3</sup>)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2021 (%) <sup>(2)</sup>	2017	2018	2019	2020	2021
TH05	639020	167982	Kerbside	100.0	100.0	28.6	28.5	27.8	25.1	23.3
TH10	635539	169840	Kerbside	100.0	100.0	31.0	32.3	30.7	28.2	24.5
TH13/46/47	630254	169037	Kerbside	100.0	100.0	<b>40.6</b>	37.3	35.9	31.7	30.3
TH16	630254	169037	Urban Background	100.0	100.0	16.4	14.4	14.9	13.9	12.8
TH26	630254	169037	Kerbside	92.3	92.3	33.0	32.4	30.5	25.3	25.6
TH27	634445	164416	Urban Background	75.0	75.0	16.4	14.2	15.1	13.8	12.0
TH31	638492	165410	Urban Background	100.0	100.0	15.8	12.2	12.2	11.3	11.6
TH32	639097	165971	Urban Background	100.0	100.0	16.7	14.0	14.2	13.0	12.2
TH33	634662	166026	Urban Background	100.0	100.0	16.1	15.0	14.6	12.5	12.6
TH34	632994	166428	Roadside	92.3	92.3	23.7	21.8	21.7	19.6	21.4
TH36	631161	165486	Kerbside	100.0	100.0	23.9	26.5	25.5	21.9	23.3
TH37	636570	167894	Suburban	100.0	100.0	16.1	14.4	16.3	14.5	12.3
TH48	636405	168227	Kerbside	100.0	100.0	27.9	29.9	25.5	23.4	21.5
TH49	635932	165333	Roadside	100.0	100.0	22.0	20.8	19.5	16.6	15.5
TH51/52/53	630438	169111	Roadside	100.0	100.0	21.4	20.2	19.3	17.0	16.3
TH54/64/65	630186	168983	Roadside	100.0	100.0	38.0	32.7	33.7	28.9	27.8
TH55	638472	165432	Roadside	92.3	92.3	27.0	22.7	23.6	21.1	21.3
TH59	638472	165432	Kerbside	90.4	90.4	31.9	28.9	28.3	25.3	22.8
TH66	638472	165432	Roadside	100.0	100.0	26.3	24.7	24.0	21.3	19.6
TH67/68/69	637135	165354	Kerbside	100.0	100.0	32.2	31.8	30.4	24.0	23.6
TH70/71/72	637135	165354	Roadside	100.0	100.0	<b>41.6</b>	38.6	37.6	30.7	30.8
TH76	637135	165354	Roadside	100.0	100.0	25.8	21.3	22.1	20.3	17.7
TH77	636815	167297	Kerbside	100.0	100.0	23.3	20.9	21.1	18.7	17.8
TH78	638220	168614	Roadside	92.3	92.3	19.9	16.9	16.8	16.0	19.3
TH79	637112	165331	Roadside	90.4	90.4	-	21.4	19.6	19.8	18.5
TH81	638536	165465	Roadside	92.3	92.3	-	21.2	19.1	17.9	17.0
TH82	638536	165465	Roadside	100.0	100.0	-	25.1	20.8	21.7	22.5
TH83	638536	165465	Roadside	100.0	100.0	-	19.4	17.2	15.7	15.0
TH84	637092	165340	Kerbside	90.4	90.4	-	19.1	22.1	20.7	17.6
TH85	637092	165340	Roadside	100.0	100.0	-	<b>41.8</b>	29.2	25.4	23.6

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2021 (%) <sup>(2)</sup>	2017	2018	2019	2020	2021
TH86	637092	165340	Roadside	65.4	65.4	-	36.7	23.4	20.9	21.0
TH88	634752	170679	Kerbside	75.1	50.0	-	-	-	-	12.3
TH89	630972	164708	Kerbside	74.7	50.0	-	-	-	-	19.3
TH90	636014	167851	Roadside	74.7	50.0	-	-	-	-	20.4
TH87	625641	165002	Roadside	92.3	92.3	-	-	-	-	13.9
TH91	637097	166799	Roadside	100.0	67.3	-	-	-	-	13.7
TH92	637271	167873	Roadside	100.0	67.3	-	-	-	-	14.5
TH93	635907	169266	Roadside	100.0	67.3	-	-	-	-	14.5
TH94	635997	171095	Roadside	100.0	42.3	-	-	-	-	21.5

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.

☒ Diffusion tube data has been bias adjusted.

☒ 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.

#### Notes:

The annual mean concentrations are presented as  $\mu\text{g}/\text{m}^3$ .

Exceedances of the NO<sub>2</sub> annual mean objective of  $40\mu\text{g}/\text{m}^3$  are shown in **bold**.

NO<sub>2</sub> annual means exceeding  $60\mu\text{g}/\text{m}^3$ , indicating a potential exceedance of the NO<sub>2</sub> 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 NO<sub>2</sub> Concentrations Within the Thanet AQMA (1)

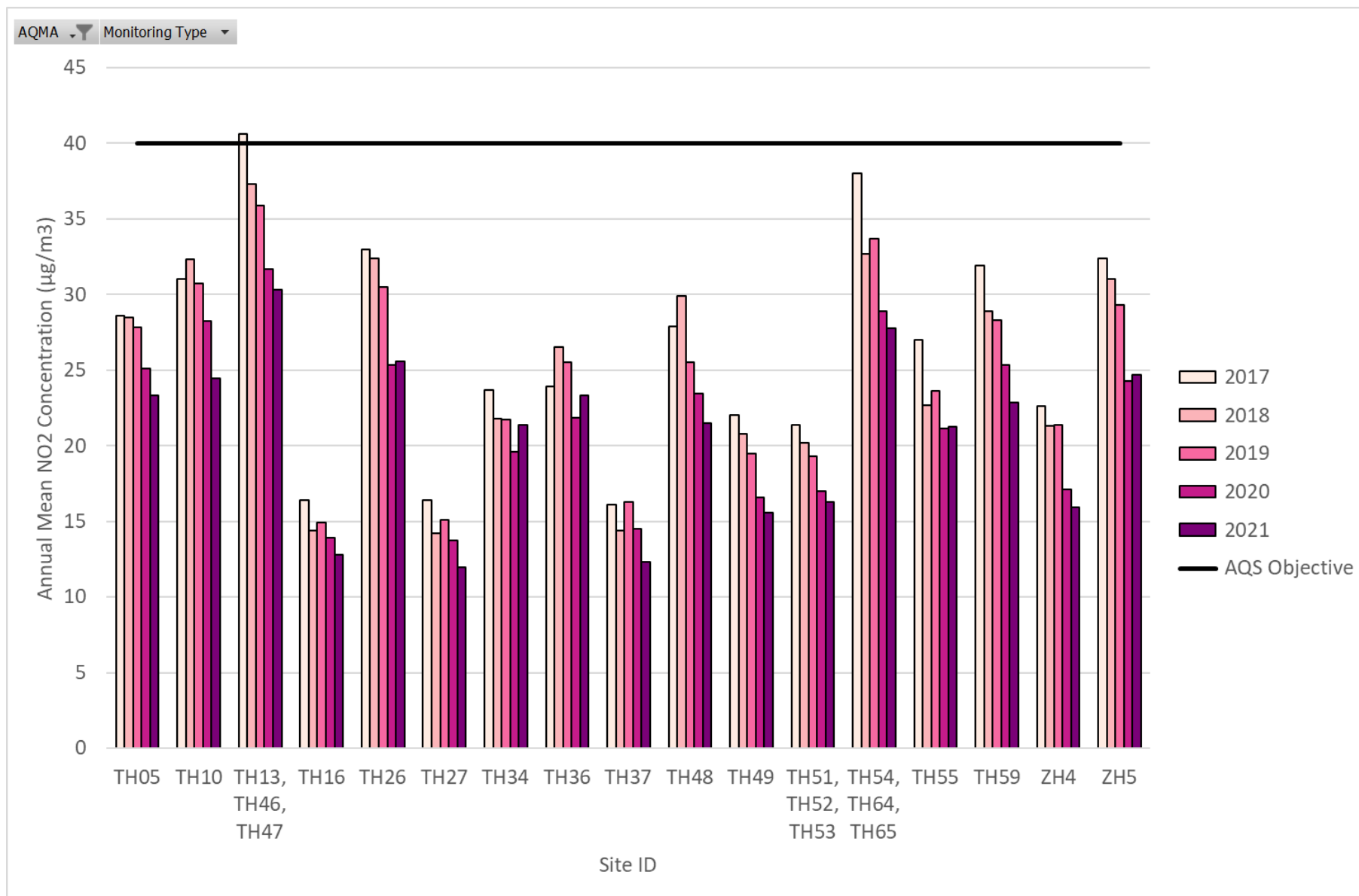
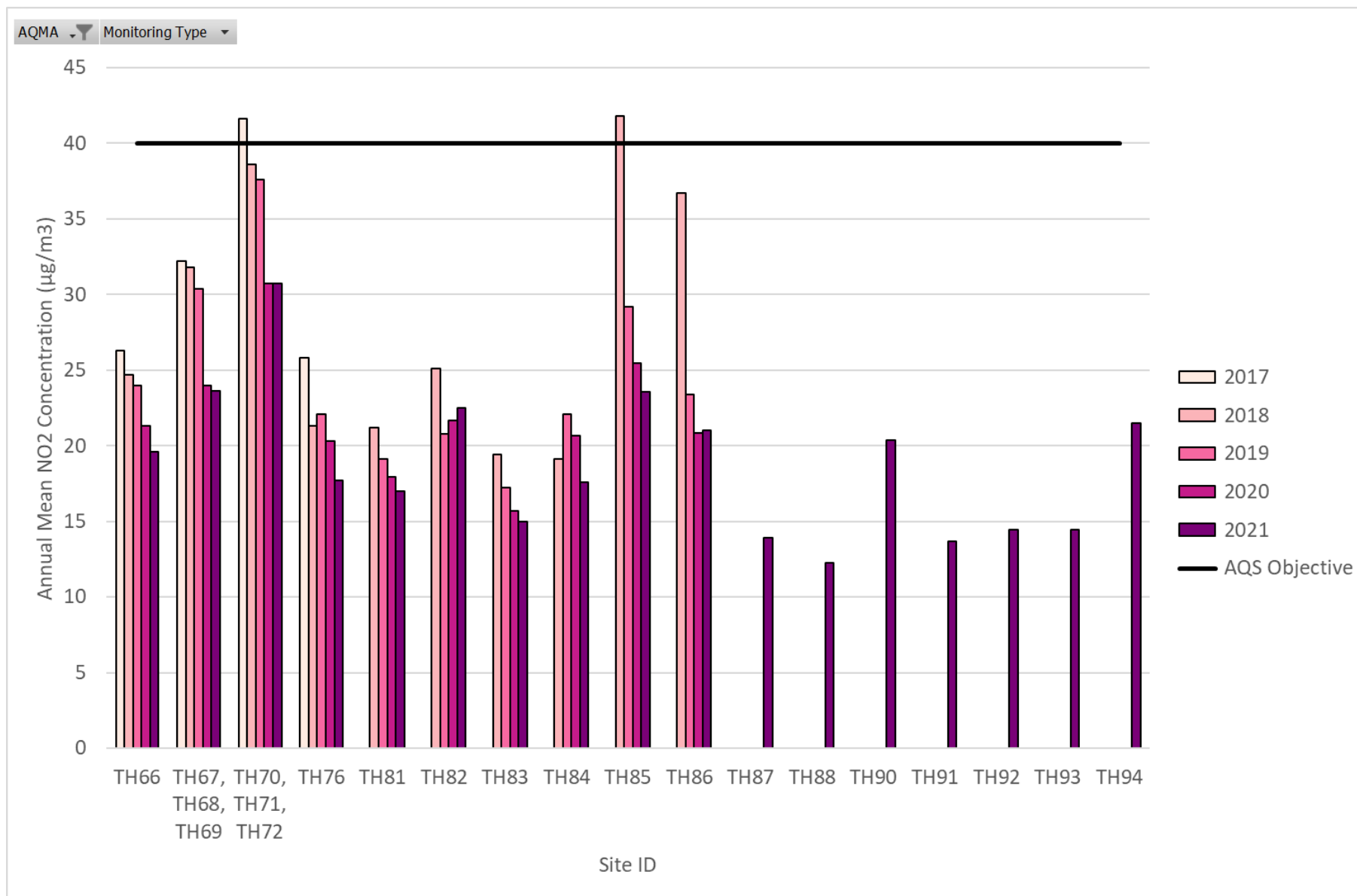
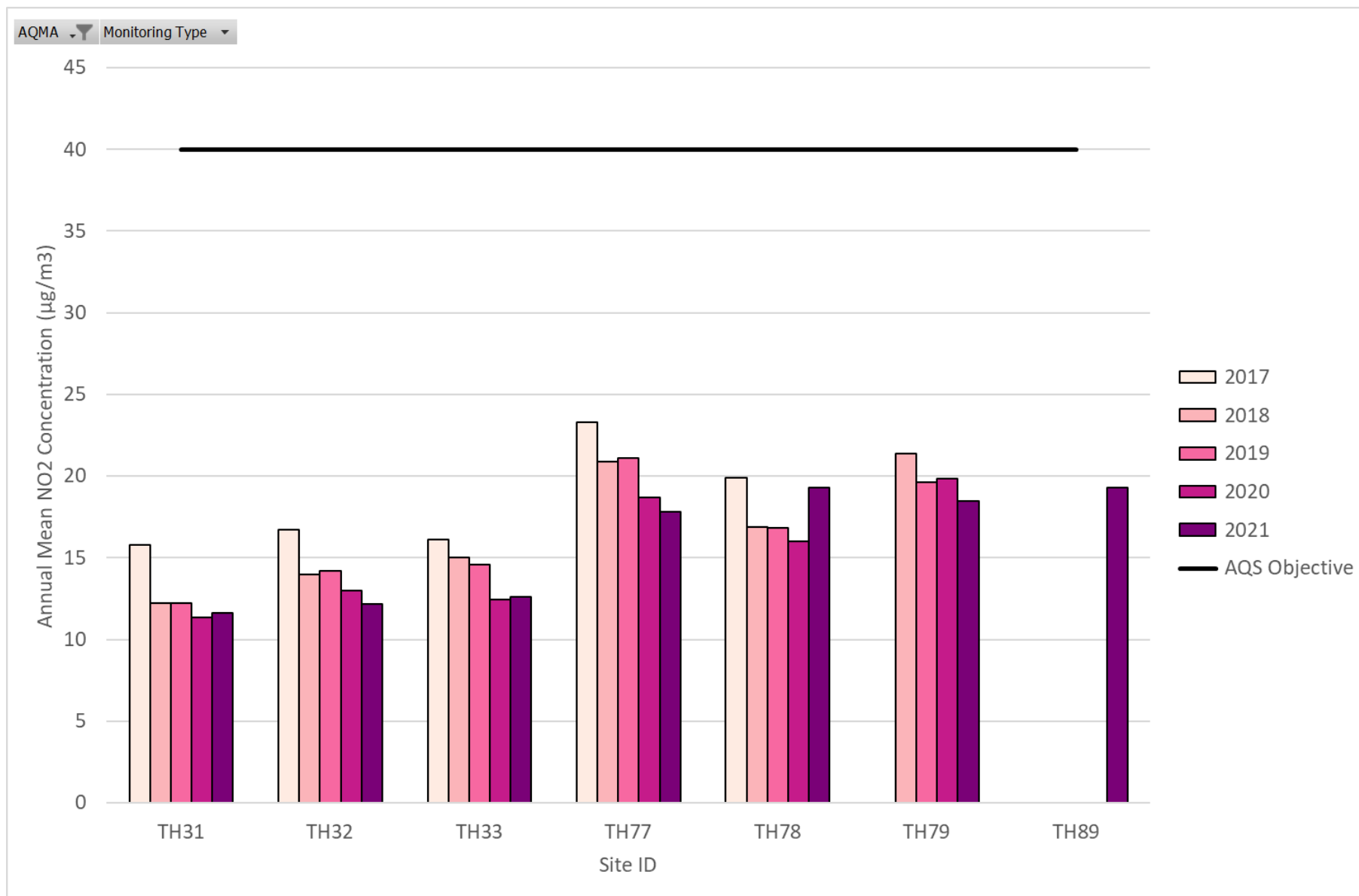


Figure A.2 – Trends in Annual Mean NO<sub>2</sub> Concentrations Within the Thanet AQMA (2)



**Figure A.3 – Trends in Annual Mean NO<sub>2</sub> Concentrations Outside the Thanet AQMA**



**Table A.5 – 1-Hour Mean NO<sub>2</sub> Monitoring Results, Number of 1-Hour Means > 200µg/m<sup>3</sup>**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2021 (%) <sup>(2)</sup>	2017	2018	2019	2020	2021
ZH4	638483	165430	Roadside	100.0	100.0	0	0	0	0	0
ZH5	630284	169052	Roadside	92.4	92.4	0	0	0	0	0

**Notes:**

Results are presented as the number of 1-hour periods where concentrations greater than 200µg/m<sup>3</sup> have been recorded.

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

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

(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%).

**Table A.6 – Annual Mean PM<sub>10</sub> Monitoring Results (µg/m<sup>3</sup>)**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2021 (%) <sup>(2)</sup>	2017	2018	2019	2020	2021
ZH4	638483	165430	Roadside	96.6	96.6	24.8	24.6	22.6	24.5	22.3
ZH5	630284	169052	Roadside	91.0	91.0	23.2	25.2	23.9	23.0	21.1

☐ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16.**

**Notes:**

The annual mean concentrations are presented as µg/m<sup>3</sup>.

Exceedances of the PM<sub>10</sub> annual mean objective of 40µg/m<sup>3</sup> are shown in **bold**.

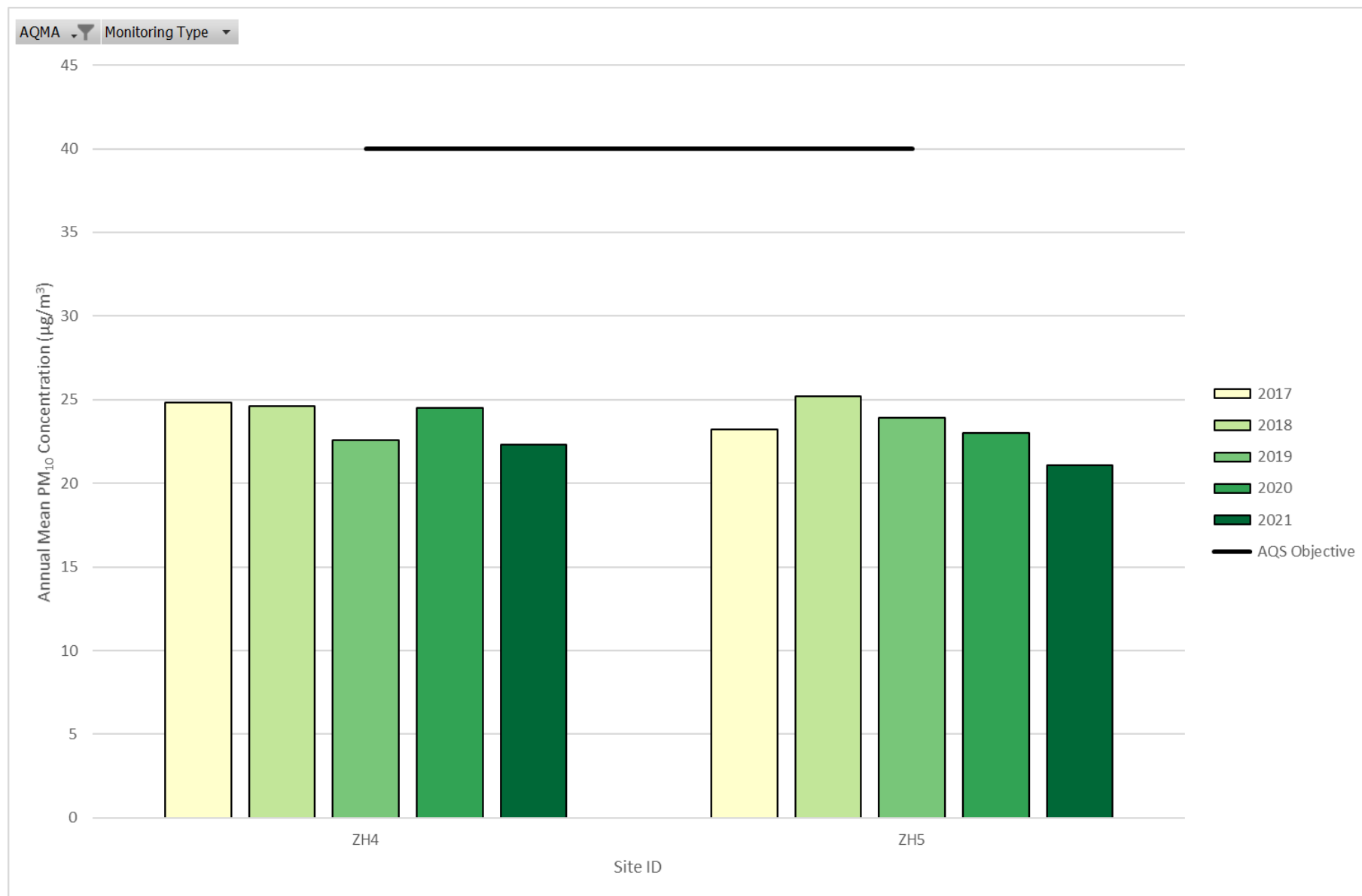
All means have been “annualised” as per LAQM.TG16 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(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.4 – Trends in Annual Mean PM<sub>10</sub> Concentrations**



**Table A.7 – 24-Hour Mean PM<sub>10</sub> Monitoring Results, Number of PM<sub>10</sub> 24-Hour Means > 50µg/m<sup>3</sup>**

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) <sup>(1)</sup>	Valid Data Capture 2021 (%) <sup>(2)</sup>	2017	2018	2019	2020	2021
ZH4	638483	165430	Roadside	96.6	96.6	13	11	3 (29.3)	13	0
ZH5	630284	169052	Roadside	91.0	91.0	9	10	14	10	1

**Notes:**

Results are presented as the number of 24-hour periods where daily mean concentrations greater than 50µg/m<sup>3</sup> have been recorded.

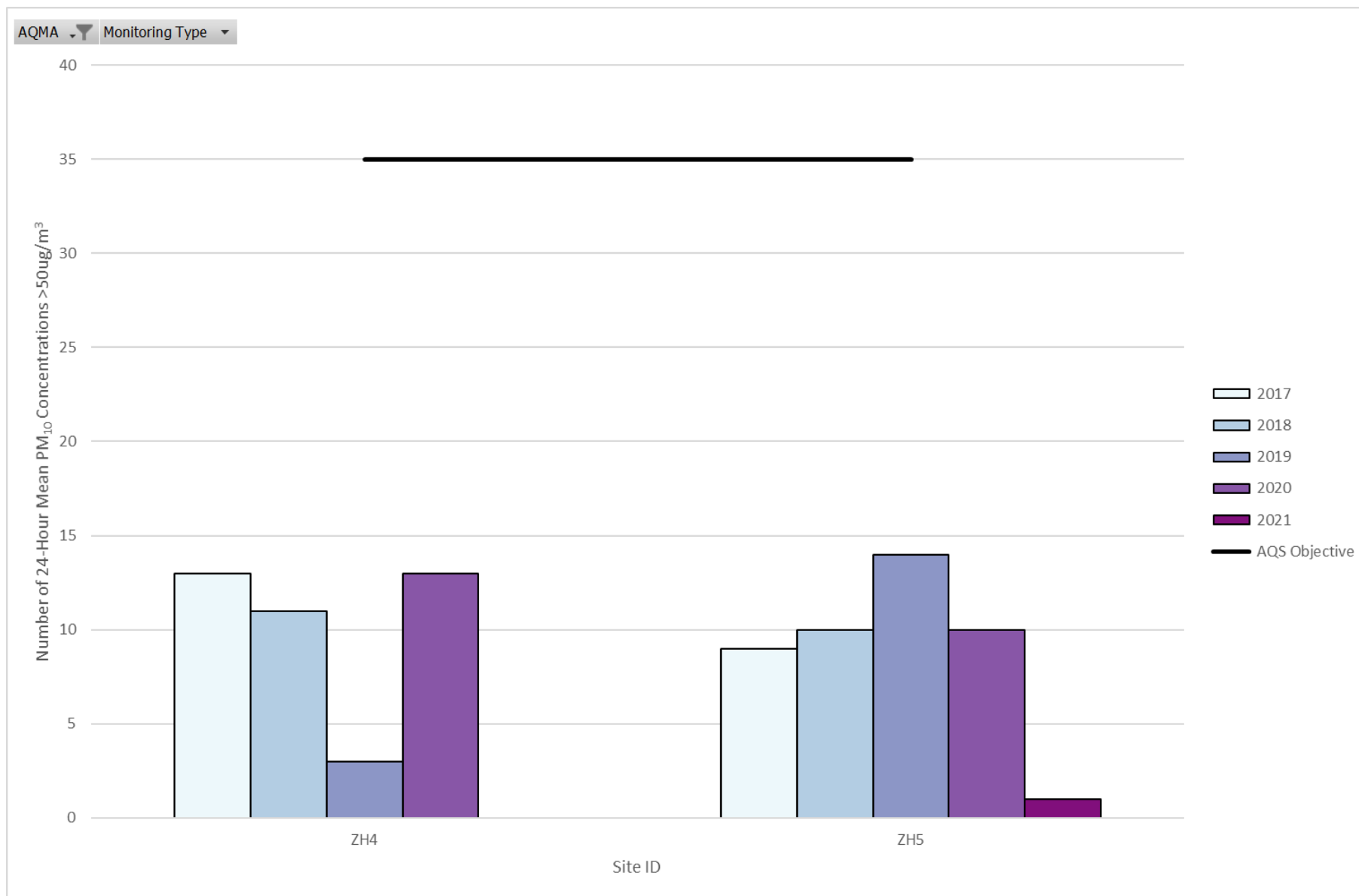
Exceedances of the PM<sub>10</sub> 24-hour mean objective (50µg/m<sup>3</sup> not to be exceeded more than 35 times/year) are shown in **bold**.

If the period of valid data is less than 85%, the 90.4th percentile of 24-hour means is provided in brackets.

(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.5 – Trends in Number of 24-Hour Mean PM<sub>10</sub> Results > 50µg/m<sup>3</sup>**



**Table A.8 – Estimated Annual Mean PM<sub>2.5</sub> Monitoring Results (µg/m<sup>3</sup>)**

Site ID	Site Type	PM <sub>10</sub> Valid Data Capture 2020 at (%)	PM <sub>2.5</sub> Valid Data Capture (%)	2021 PM <sub>10</sub> Annual Mean Concentration	2021 PM <sub>2.5</sub> Annual Mean Concentration	2021 PM <sub>2.5</sub> Annual Mean Concentration (Estimated) – Conversion Ratio 0.702
ZH4	Roadside	96.6	-	22.3	-	15.6
ZH5	Roadside	91.0	-	21.1	-	14.8
CHAT (Chatham Roadside)	Roadside	96.8	95.1	17.5	12.3	-

## Appendix B: Full Monthly Diffusion Tube Results for 2021

Table B.1 – NO<sub>2</sub> 2021 Diffusion Tube Results (µg/m<sup>3</sup>)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northin g)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
TH05	639020	167982	39.1	31.3	30.5	28.0	25.7	26.5	28.0	18.4	35.6	32.8	28.6	34.2	29.9	23.3	-	
TH10	635539	169840	40.6	43.4	33.4	19.5	17.4	35.1	33.5	25.8	38.7	33.9	30.5	24.8	31.4	24.5	-	
TH13	630254	169037	49.5	40.2	38.0	28.5	41.1	40.8	37.0	23.7	46.6	43.8	41.5	34.6	-	-	-	Triplicate Site with TH13, TH46 and TH47 - Annual data provided for TH47 only
TH46	630254	169037	48.1	41.2	35.1	30.3	44.0	40.5	36.1	29.2	46.1	44.7	43.1	35.3	-	-	-	Triplicate Site with TH13, TH46 and TH47 - Annual data provided for TH47 only
TH47	630254	169037	48.9	39.2	39.3	27.1	44.6	36.7	36.1	31.2	37.7	42.6	40.7	36.3	38.9	30.3	-	Triplicate Site with TH13, TH46 and TH47 - Annual data provided for TH47 only
TH16	634445	164416	28.3	22.9	16.5	12.1	13.3	18.6	13.5	7.3	10.5	15.9	21.1	16.3	16.4	12.8	-	
TH26	638492	165410	40.0	33.0	32.7	23.1	33.9	38.3	31.5	25.3		35.5	34.7	33.0	32.8	25.6	-	
TH27	639097	165971	26.9				13.5	17.1	10.9	6.9	13.5	15.6	18.7	15.2	15.4	12.0	-	
TH31	634662	166026	26.9	21.2	16.3	11.5	9.8	15.9	10.4	7.0	15.2	13.0	16.8	14.7	14.9	11.6	-	
TH32	632994	166428	26.2	23.2	16.9	9.9	14.2	13.7	11.9	7.2	17.2	16.4	16.3	14.5	15.6	12.2	-	
TH33	631161	165486	24.6	26.6	17.8	14.4	14.1	14.6	13.2	4.8	17.0	14.5	17.0	15.7	16.2	12.6	-	
TH34	636570	167894	34.5	27.9		19.3	23.7	31.1	19.1	14.2	28.8	24.8	29.5	48.4	27.4	21.4	-	
TH36	636405	168227	39.1	30.6	35.3	30.6	31.7	21.3	25.4	17.6	35.1	30.7	29.5	31.8	29.9	23.3	-	
TH37	635932	165333	25.1	23.3	17.9	12.2	15.7	15.1	12.8	8.9	6.6	15.2	19.2	17.8	15.8	12.3	-	
TH48	630438	169111	38.4	32.6	31.8	27.8	27.9	25.9	25.5	19.2	33.4	26.5	28.9	12.9	27.6	21.5	-	
TH49	630186	168983	29.3	27.9	19.9	15.4	19.1	19.2	17.4	12.8	20.0	18.1	21.0	19.0	19.9	15.5	-	
TH51	638472	165432	27.7	26.2	21.0	14.7	16.4	24.5	18.9	13.0	22.4	24.3	25.0	19.7	-	-	-	Triplicate Site with TH51, TH52 and TH53 - Annual data provided for TH53 only
TH52	638472	165432	22.2	26.0	19.6	12.5	11.1	22.8	18.6	8.8	23.5	24.0	26.6	26.6	-	-	-	Triplicate Site with TH51, TH52 and TH53 - Annual data provided for TH53 only
TH53	638472	165432	27.3	26.3	20.8	13.9	20.7	22.5	17.0	8.8	20.8	23.3	22.7	31.3	20.9	16.3	-	Triplicate Site with TH51, TH52 and TH53 - Annual data provided for TH53 only
TH54	637135	165354	48.6	37.5	41.4	31.0	30.7	35.9	22.5	15.9	37.0	40.1	47.8	49.6	-	-	-	Triplicate Site with TH54, TH64 and TH65 - Annual data provided for TH65 only
TH64	637135	165354	46.2	32.9	38.1	28.0	37.5	33.7	21.8	24.5	33.5	43.3	43.0	28.2	-	-	-	Triplicate Site with TH54, TH64 and TH65 - Annual data provided for TH65 only
TH65	637135	165354	41.9	36.2	42.0	31.5	40.5	35.8	21.8	27.3	26.3	43.4	46.7	39.7	35.6	27.8	-	Triplicate Site with TH54, TH64 and TH65 - Annual data provided for TH65 only
TH55	636815	167297	29.0	29.0	21.6	19.9		34.3	20.0	14.0	29.2	26.9	28.1	48.1	27.3	21.3	-	
TH59	638220	168614	36.4	31.2	26.6	21.2	29.8	20.8	29.8	24.4	30.8		36.1	34.8	29.3	22.8	-	
TH66	637112	165331	33.0	30.4	28.5	22.8	25.6	21.1	14.0	16.1	25.8	26.2	28.6	29.4	25.1	19.6	-	
TH67	638536	165465	34.7	32.8	30.0	32.7	27.7	37.5	33.9	25.7	24.2	29.6	31.5	25.0	-	-	-	Triplicate Site with TH67, TH68 and TH69 - Annual data provided for TH69 only
TH68	638536	165465	33.0	33.2	27.9	31.4	37.6	38.3	27.2	31.4	25.5	35.2	30.8	24.9	-	-	-	Triplicate Site with TH67, TH68 and TH69 - Annual data provided for TH69 only
TH69	638536	165465	33.0	32.5	30.5	36.8	30.6	19.5	27.0	16.8	23.9	33.5	36.6	28.8	30.3	23.6	-	Triplicate Site with TH67, TH68 and TH69 - Annual data provided for TH69 only
TH70	637092	165340	49.5	36.8	43.9	41.4	41.5	45.6	24.1	32.1	48.4	44.9	47.5	24.7	-	-	-	Triplicate Site with TH70, TH71 and TH72 - Annual data provided for TH72 only
TH71	637092	165340	48.2	37.2	45.2	42.3	41.3	45.1	24.9	31.9		43.6	48.7	28.2	-	-	-	Triplicate Site with TH70, TH71 and TH72 - Annual data provided for TH72 only
TH72	637092	165340	47.3	38.0	42.5	44.1	42.1	45.5	24.9	31.2	35.3	44.1	48.8	16.8	39.4	30.8	-	Triplicate Site with TH70, TH71 and TH72 - Annual data provided for TH72 only
TH76	634752	170679	37.0	28.1	23.8	18.7	21.1	19.4	18.5	13.4	26.1	21.8	26.9	17.2	22.7	17.7	-	
TH77	630972	164708	33.6	22.3	26.1	18.1	21.0	22.7	20.0	13.4	21.3	25.8	28.0	21.7	22.8	17.8	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northin g)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.78)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
TH78	636014	167851	25.4	33.4		23.9	27.4	35.1	18.4	11.6	25.3	17.8	16.4	37.0	24.7	19.3	-	
TH79	625641	165002	32.3	27.2	26.2		24.1	17.3	21.0	18.3	19.9	25.7	27.7	21.0	23.7	18.5	-	
TH81	637097	166799	27.9	22.0	15.3	11.4		19.5	19.4	14.5	25.0	22.9	23.8	37.9	21.8	17.0	-	
TH82	637271	167873	29.9	29.7	22.9	13.5	23.1	32.2	30.6	23.1	38.3	35.6	29.3	38.2	28.9	22.5	-	
TH83	635907	169266	26.7	27.5	19.8	18.2	19.0	15.9	14.9	12.2	23.1	18.1	19.1	16.1	19.2	15.0	-	
TH84	635997	171095	33.1	26.0	25.0	15.9	22.9	16.0	17.8	13.4	27.2	24.5	26.1		22.5	17.6	-	
TH85	638026	165442	40.9	29.8	30.8	24.0	30.1	29.1	24.4	18.9	32.7	34.7	35.0	32.4	30.2	23.6	-	
TH86	637747	165713	36.0	30.5	25.2			25.1	19.6	17.7			29.4	35.7	27.4	21.0	-	
TH88	629531	169345					16.2	13.1	11.7	8.2			19.1	17.6	14.3	12.3	-	
TH89	631057	165478					24.7	26.7			26.3	25.4	27.1	24.1	25.7	19.3	-	
TH90	636109	165766						12.2	17.8	11.8	28.7		28.0	45.3	24.0	20.4	-	
TH87	636198	166771	31.7	27.1	18.1	15.2	11.7		13.0	9.0	18.7	16.2	17.6	18.2	17.9	13.9	-	
TH91	635029	169494					17.2	15.1	13.7	11.8	22.3	15.1	19.1	16.1	16.5	13.7	-	
TH92	632695	169877					17.6	17.5	17.1	12.0	20.7	15.5	20.9	16.6	17.2	14.5	-	
TH93	632563	169291					15.6	24.0	14.2	9.1	20.7	16.2	19.4	18.8	17.3	14.5	-	
TH94	638922	168342								22.1	36.1	27.9	30.9	18.6	27.1	21.5	-	

☒ All erroneous data has been removed from the NO<sub>2</sub> diffusion tube dataset presented in Table B.1.

☒ Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG16 .

☐ Local bias adjustment factor used.

☒ National bias adjustment factor used.

☐ Where applicable, data has been distance corrected for relevant exposure in the final column.

☒ Thanet District Council confirm that all 2021 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

#### Notes:

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

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

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 Thanet District Council During 2021

Several new developments have been progressed in 2021. All developments within the Thanet AQMA where there are more than 10 units with associated parking provisions are required to have EV charging points. Table C.1 details a list of planning applications which were commented on by the Environmental Health Department in terms of air quality. If it is a major development, then Thanet District Council are requesting that an Emissions Mitigation Assessment (EMA) is completed, and in some cases an Air Quality Assessment (AQA).

**Table C.1 – Planning Applications with Air Quality Conditions (2021)**

Reference	Location	Details	Status	Comments
OL/TH/20/1435	New Haine Road Ramsgate Kent	Hybrid application for outline permission (phase 2) for the erection of 54 commercial units (Use Class E(g)), with all matters reserved, except access and; full application (phase 1) for the erection of up to 132 commercial units (Use Class E(g)), and cafe (Use Class E(b)), within 1 2-storey building and 2 part 2-storey, part 3-storey buildings, with associated parking and landscaping, and vehicular access onto New Haine Road	Granted May 21	Emissions Mitigation and / or air quality assessment required and EV charge points as required by Local Plan Policy SE05.
OL/TH/20/1320	Land South of Manston Road, Adjacent To The Beacon (Former Car Storage Site) Manston Road Ramsgate, Kent.	Outline application for 48 dwellings including access with all other matters reserved	Granted	Emissions Mitigation and / or air quality assessment required and EV charge points as required by Local Plan Policy SE05..
OL/TH/20/0847	Land on the North West and South East Sides of	Outline application for the erection of up to 450 residential dwellings (including market and affordable housing), structural planting and	Allowed on appeal	Emissions Mitigation and / or air quality

Reference	Location	Details	Status	Comments
	Shottendane Road, Margate, Kent	landscaping, formal and informal public open space and children's play area, sustainable urban drainage, with vehicular access points, including associated ancillary works and operations, from Hartsdown Road, Shottendane Road and Manston Road including access		assessment required and EV charge points as required by Local Plan Policy SE05..
F/TH/20/0585	Fairfield Manor Fairfield Road, Broadstairs, Kent, CT10 2JY	Erection of 5 storey building consisting of 30No 1bed and 22No 2bed retirement flats with associated communal facilities, creation of new access onto Fairfield Rd, parking and landscaping following demolition of existing buildings		Emissions Mitigation and / or air quality assessment required and EV charge points as required by Local Plan Policy SE05.
OL/TH/20/1088	Land Southwest of the Nightingales Ramsgate Road, Margate, Kent	Application submitted in hybrid form (part outline and part detailed) The outline element comprises an outline planning application (with all matters reserved except access) for upto a 66no. bed non-specialist care home and a 24no bed specialist facility (Use Class C2). The detailed element of the application is for the erection of a two-storey building comprising 12no. self-contained units of warden assisted accommodation (Use Class C3), with associated parking and access	Consented 18th June 2021	Emissions Mitigation and / or air quality assessment required and EV charge points as required by Local Plan Policy SE05.
OL/TH/19/1162	Land Southeast of Melbourne Avenue, Ramsgate, Kent, CT12 6FJ	Outline application for the erection of 55No. dwellings including access and layout	Consented Dec 21	Emissions Mitigation and / or air quality assessment required and EV charge points as required by Local Plan Policy SE05. Emissions Mitigation and / or air quality assessment required and EV charge points as required by



Reference	Location	Details	Status	Comments
				Local Plan Policy SE05.
OL/TH/18/1488	Land on The West Side of Tothill Street Minster Ramsgate, Kent	Outline application for the erection of up to 214no. dwellings, cemetery expansion, and associated access, with all other matters reserved	Consented Sept 21	Emissions Mitigation and / or air quality assessment required and EV charge points as required by Local Plan Policy SE05.

## Additional Air Quality Works Undertaken by Thanet District Council During 2021

Thanet District Council has not completed any additional works within the reporting year of 2021.

## QA/QC of Diffusion Tube Monitoring

Thanet District Council's diffusion tubes in 2021 were supplied and analysed by SOCOTEC Didcot, using the 50% Triethanolamine (TEA) in acetone preparation method. SOCOTEC's laboratory is UKAS accredited, participating in the [AIR-PT Scheme](#) (a continuation of the Workplace Analysis Scheme for Proficiency (WASP)) for NO<sub>2</sub> tube analysis and the Annual Field Inter-Comparison Exercise. These provide strict performance criteria for participating laboratories to meet, thereby ensuring NO<sub>2</sub> concentrations reported are of a high caliber. The lab follows the procedures set out in the Harmonisation Practical Guidance. In the latest available AIR-PT results, AIR PT AR042 (January – March 2021), SOCOTEC scored 100%. Results between April and December 2021 has not been released. The percentage score reflects the results deemed to be satisfactory based upon the z-score of  $< \pm 2$ .

20 out of 23 (87%) local authority co-location studies which use tubes supplied by SOCOTEC with the 50% TEA in acetone preparation method in 2021 were rated as 'good', as shown by the [precision summary results](#). This precision reflects the laboratory's performance and consistency in preparing and analysing the tubes, as well as the subsequent handling of the tubes in the field. Tubes are considered to have a "good"

precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more monitoring periods during a year is less than 20%.

Monitoring in 2021 had been completed in adherence with the [2021 Diffusion Tube Monitoring Calendar](#), whereby all changeovers were completed within  $\pm 2$  days of the specified date.

### Diffusion Tube Annualisation

All diffusion tube monitoring locations within Thanet District Council recorded data capture of 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

### Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2022 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<sub>x</sub>/NO<sub>2</sub> continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Thanet District Council have applied a national bias adjustment factor of 0.78 to the 2021 monitoring data. A summary of bias adjustment factors used by Thanet District Council over the past five years is presented in Table C.2.

A triplicate co-location study is carried out at the roadside automatic monitoring location ZH4, Boundary Road in Ramsgate, and has been established for a number of years. A local bias adjustment factor of 0.76 was calculated using the [Diffusion Tube Data Processing Tool](#). Details of this are shown in Table C.2. The diffusion tubes used in the co-location study had a “good overall precision”, and the automatic monitor had a “good overall data capture”.

The national factor for SOCOTEC Didcot 50% TEA in acetone, as presented in the [Diffusion Tube Bias Factors Spreadsheet](#) v03\_22, was 0.78 based on 23 studies.

The decision to use the national bias adjustment factor was based on the fact that the national factor was more conservative than the national factor. The local factor remains relatively in-line with the factors applied in previous years.

**Table C.2 – Bias Adjustment Factor**

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2021	National	03/22	0.78
2020	Local	-	0.82
2019	National	03/20	0.75
2018	National	06/19	0.76
2017	National	06/18	0.77

### NO<sub>2</sub> Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO<sub>2</sub> concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO<sub>2</sub> fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO<sub>2</sub> concentrations corrected for distance are presented in Table B.1.

No diffusion tube NO<sub>2</sub> monitoring locations within Thanet District Council required distance correction during 2021.

### QA/QC of Automatic Monitoring

The QA/QC procedures for the sites are those of the which incorporates procedures equivalent to those in the AURN, with the exception of the following:

- Calibration of NO<sub>x</sub> analysers with NO gas only (AURN also use NO<sub>2</sub>);
- Data checks are done once daily, and downloads are done twice daily (AURN are hourly); and
- Independent audits of the stations are undertaken annually (AURN are six monthly). Ricardo AEA ratify the data for both the AURN and K&MAQMN sites

The automatic monitoring data for 2021 at ZH5 Thanet Birchington Roadside is fully ratified, while the data for 2021 at ZH4 Thanet Ramsgate Roadside is fully ratified from January to September and is provisionally verified from October to December. Live and historic automatic monitoring data can be accessed via the [KentAir](#) website.

### **PM<sub>10</sub> and PM<sub>2.5</sub> Monitoring Adjustment**

The type of PM<sub>10</sub> monitor(s) utilised within Thanet District Council do not require the application of a correction factor.

### **Automatic Monitoring Annualisation**

All automatic monitoring locations within Thanet District Council recorded data capture of greater than 75% therefore it was not required to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

### **NO<sub>2</sub> Fall-off with Distance from the Road**

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO<sub>2</sub> concentration at the nearest location relevant for exposure has been estimated using the NO<sub>2</sub> fall-off with distance calculator available on the LAQM Support website. No automatic NO<sub>2</sub> monitoring locations within Thanet District Council required distance correction during 2021

**Table C.3 – Annualisation Summary (concentrations presented in  $\mu\text{g}/\text{m}^3$ )**

Site ID	Annualisation Factor AURN Canterbury	Annualisation Factor AURN Rochester Stoke	Annualisation Factor AURN Eastbourne	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
TH86	0.9821	0.9865	0.9778	0.9821	27.4	26.9	
TH88	1.0840	1.0875	1.1230	1.0982	14.3	15.7	
TH89	0.9537	0.9200	1.0130	0.9623	25.7	24.7	
TH90	1.0784	1.0932	1.0956	1.0891	24.0	26.1	
TH91	1.0396	1.0350	1.1127	1.0625	16.5	17.5	
TH92	1.0640	1.0457	1.1163	1.0753	17.2	18.5	
TH93	1.0640	1.0457	1.1163	1.0753	17.3	18.5	
TH94	0.9732	0.9832	1.0877	1.0147	27.1	27.5	

**Table C.4 – Local Bias Adjustment Calculation**

	Local Bias Adjustment Input 1
<b>Periods used to calculate bias</b>	9
<b>Bias Factor A</b>	0.76 (0.71 - 0.82)
<b>Bias Factor B</b>	31% (22% - 41%)
<b>Diffusion Tube Mean (<math>\mu\text{g}/\text{m}^3</math>)</b>	22.0
<b>Mean CV (Precision)</b>	5.6%
<b>Automatic Mean (<math>\mu\text{g}/\text{m}^3</math>)</b>	16.8
<b>Data Capture</b>	100%
<b>Adjusted Tube Mean (<math>\mu\text{g}/\text{m}^3</math>)</b>	17 (16 - 18)

**Notes:**

National bias adjustment factor has been used to bias adjust the 2021 diffusion tube results.

## Appendix D: Maps of Monitoring Locations and AQMAs

Figure D.1 – Map of Automatic Monitoring Sites

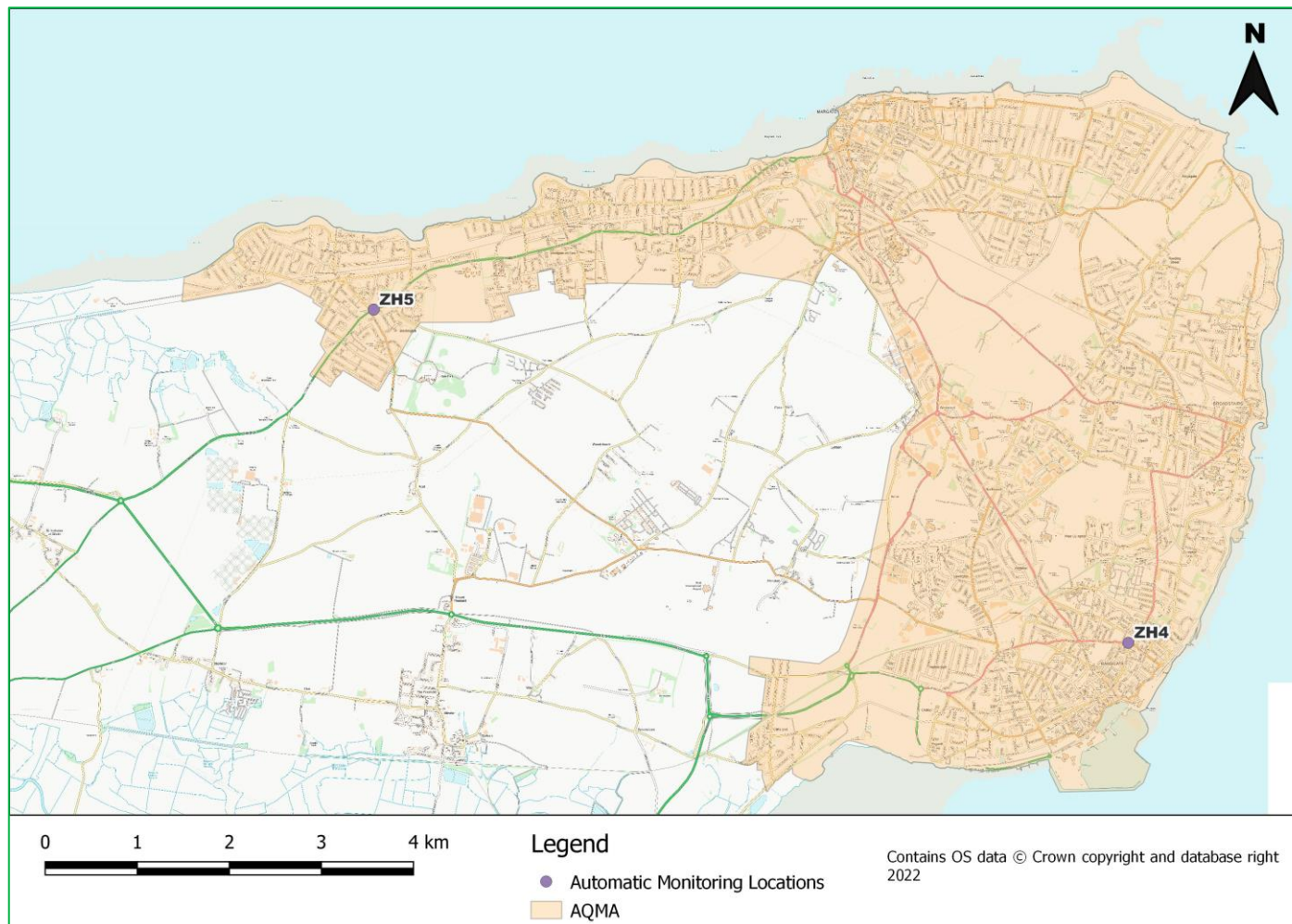




Figure D.2 – Map of Non-Automatic Monitoring Sites

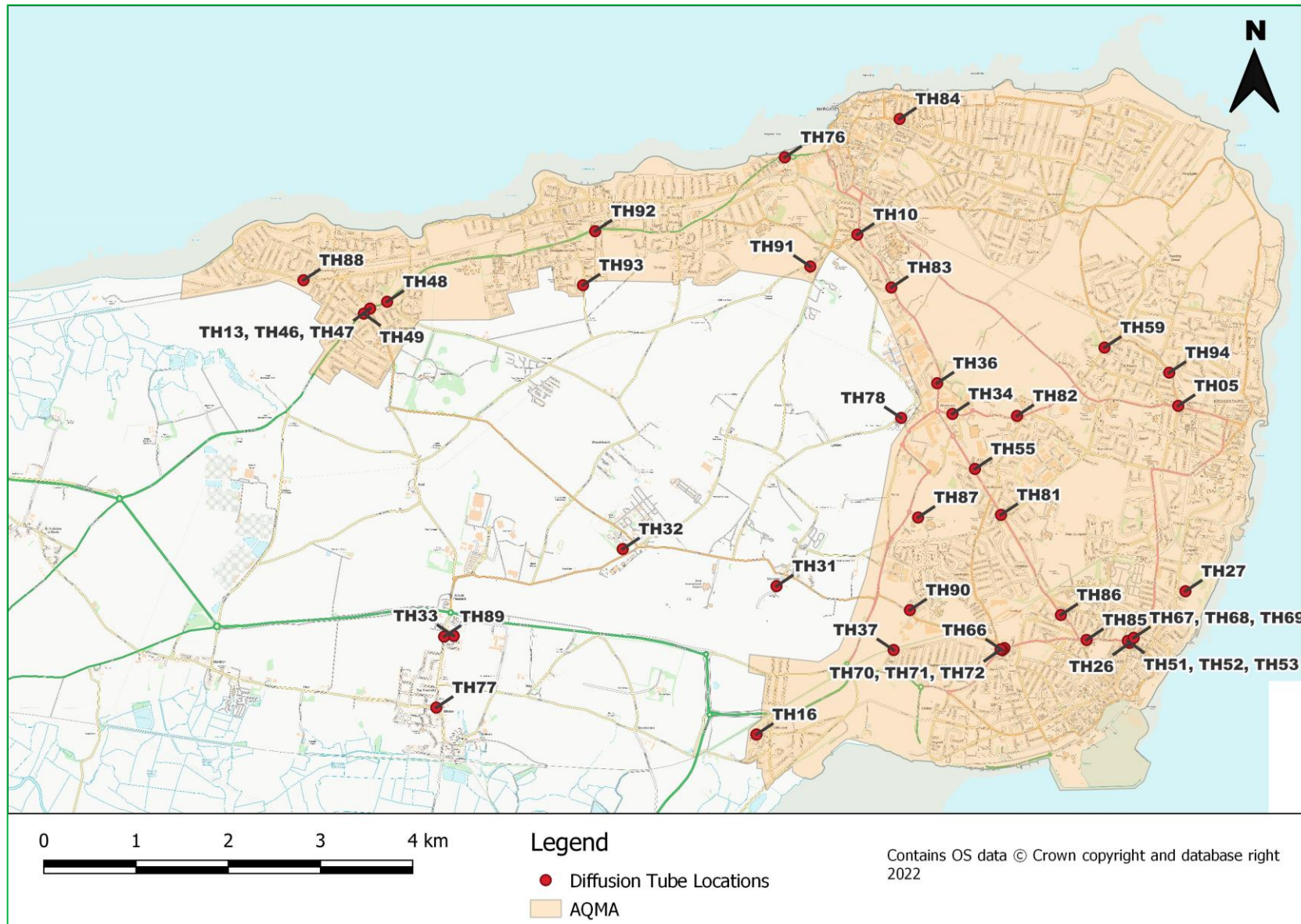




Figure D.3 – Monitoring Locations in Birchington



Figure D.4 – Monitoring Locations in Minster

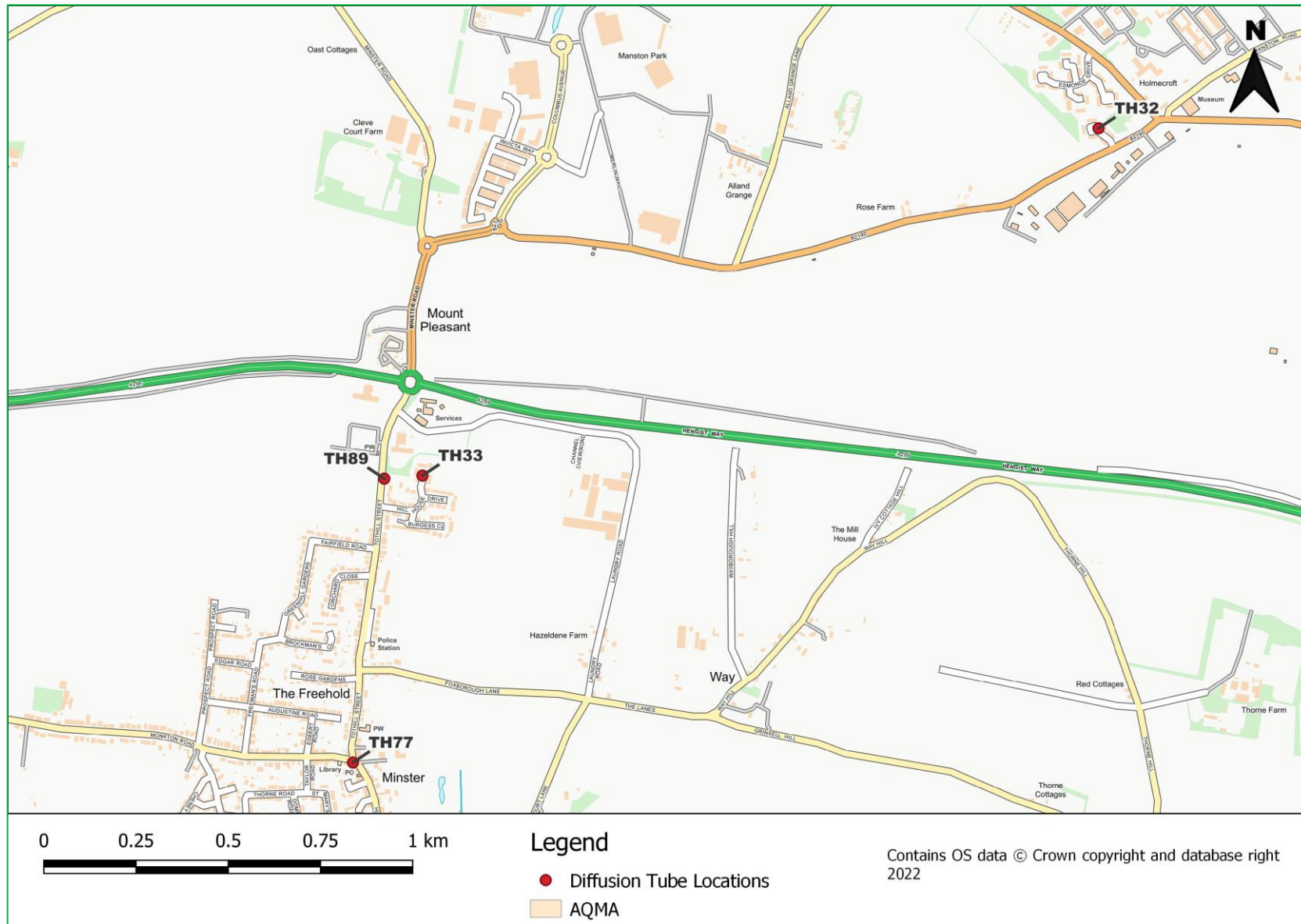




Figure D.5 – Monitoring Locations in Cliffsend, Ramsgate

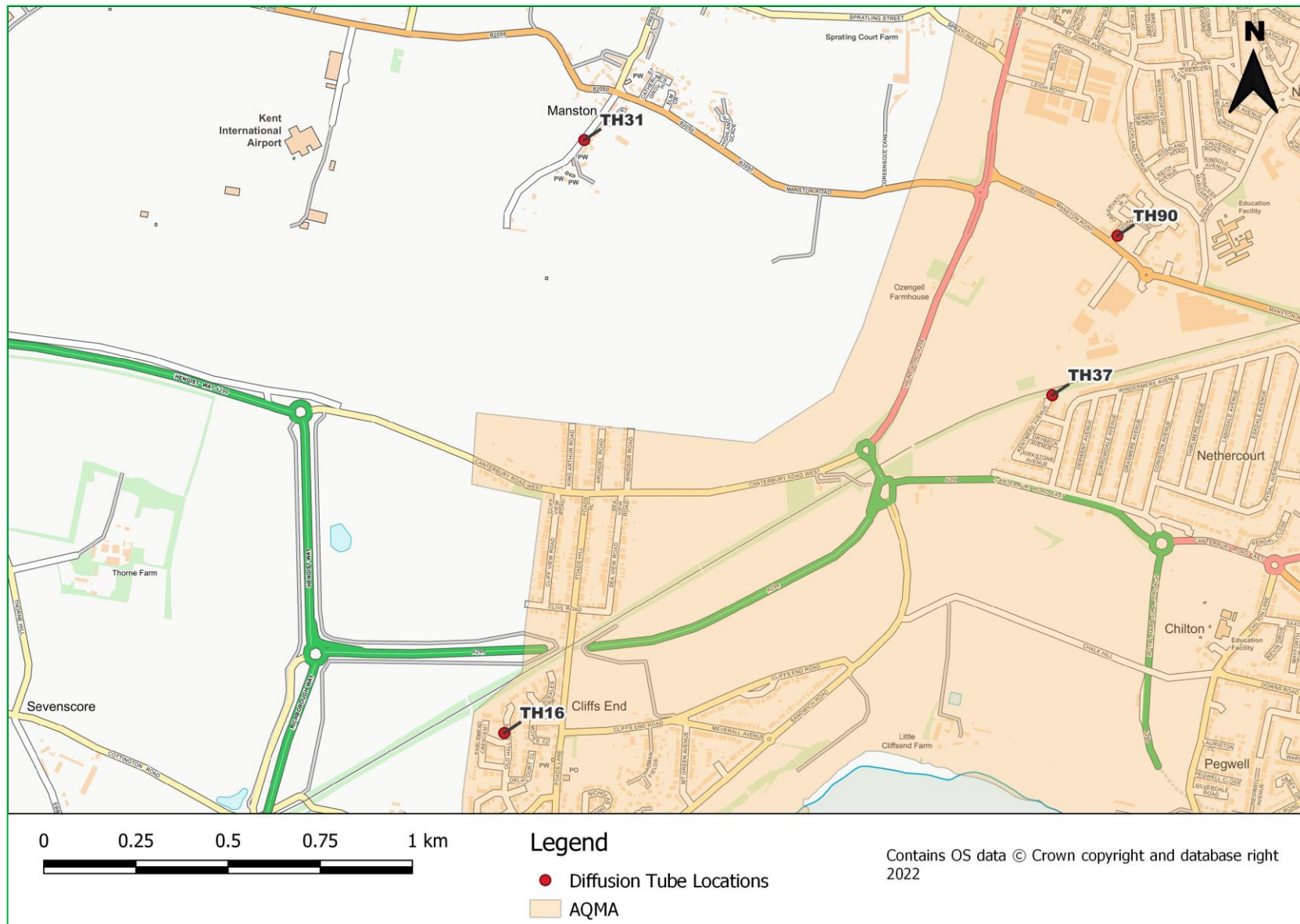


Figure D.6 – Monitoring Locations in Westwood

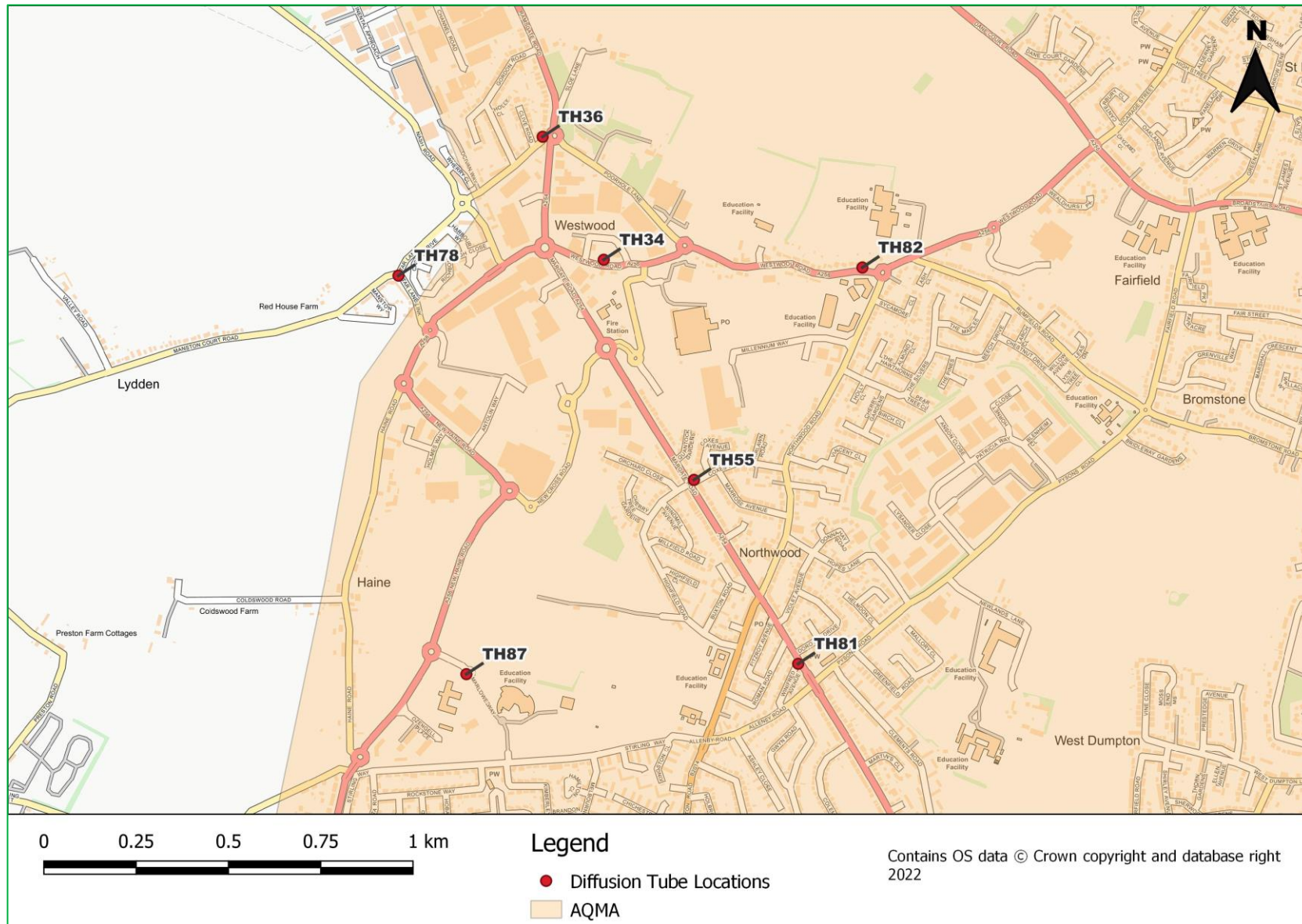




Figure D.7 – Monitoring Locations in St. Peters, Broadstairs

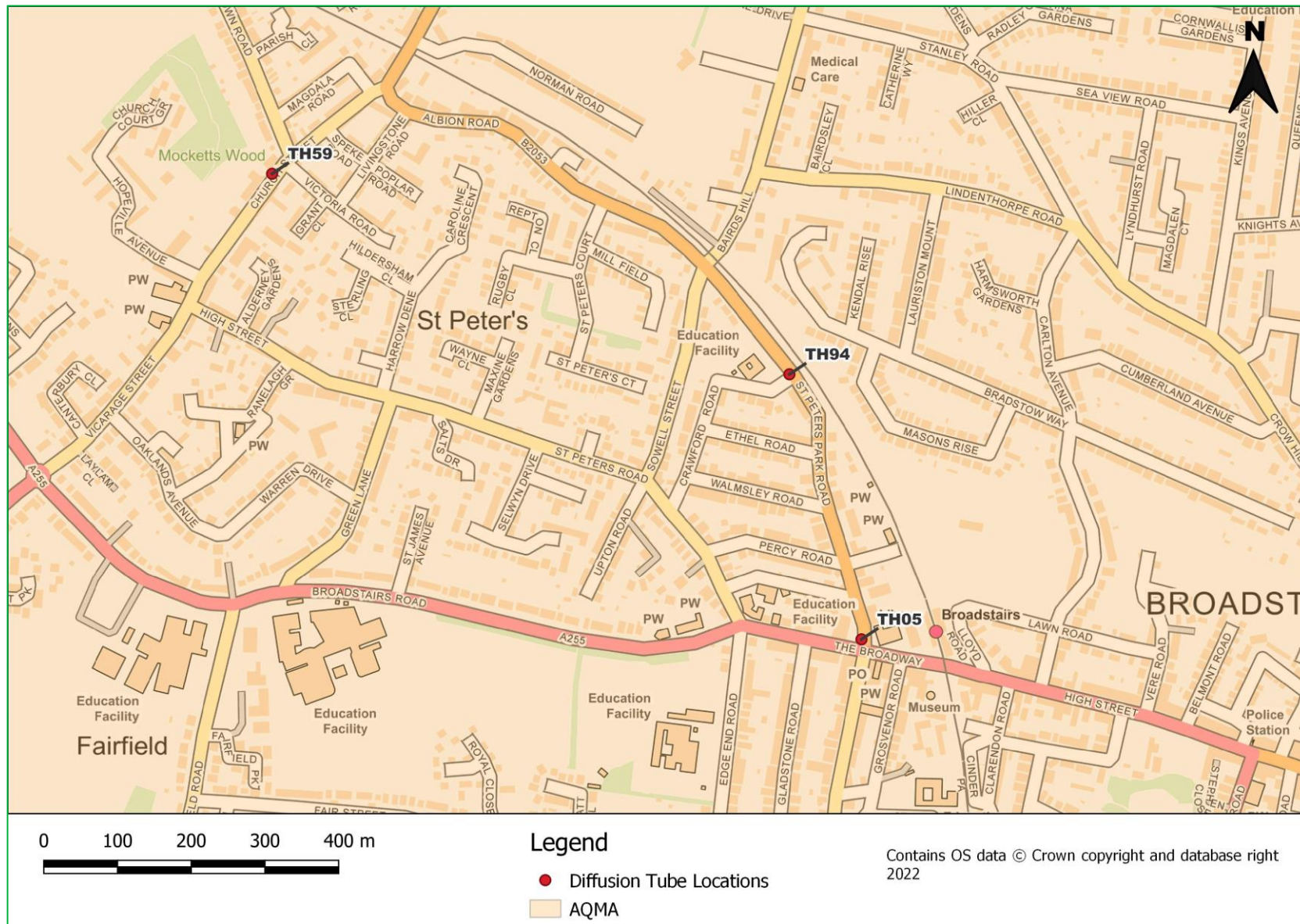


Figure D.8 – Monitoring Locations in Margate and Westgate-on-Sea





Figure D.9 – Monitoring Locations in Ramsgate

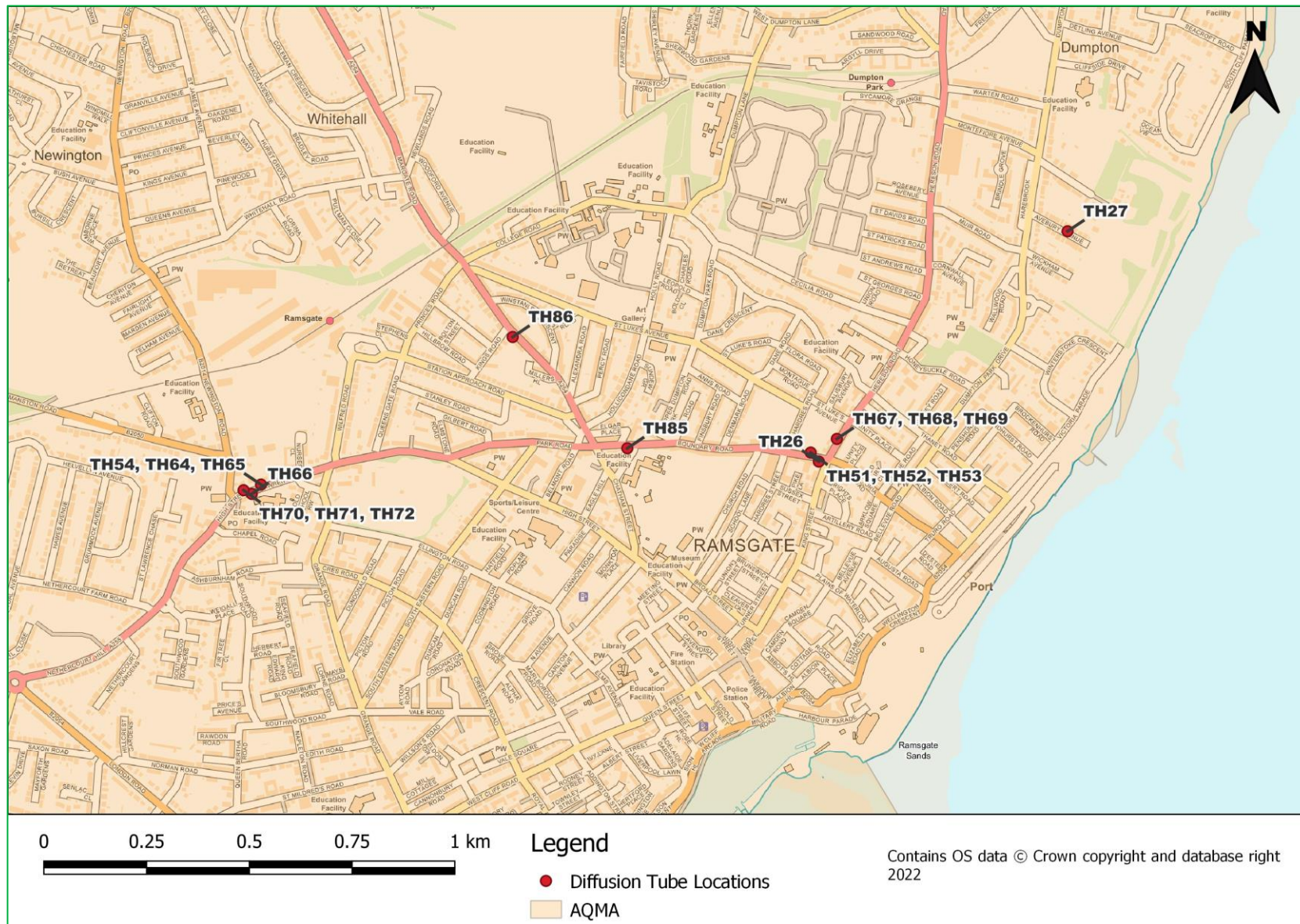
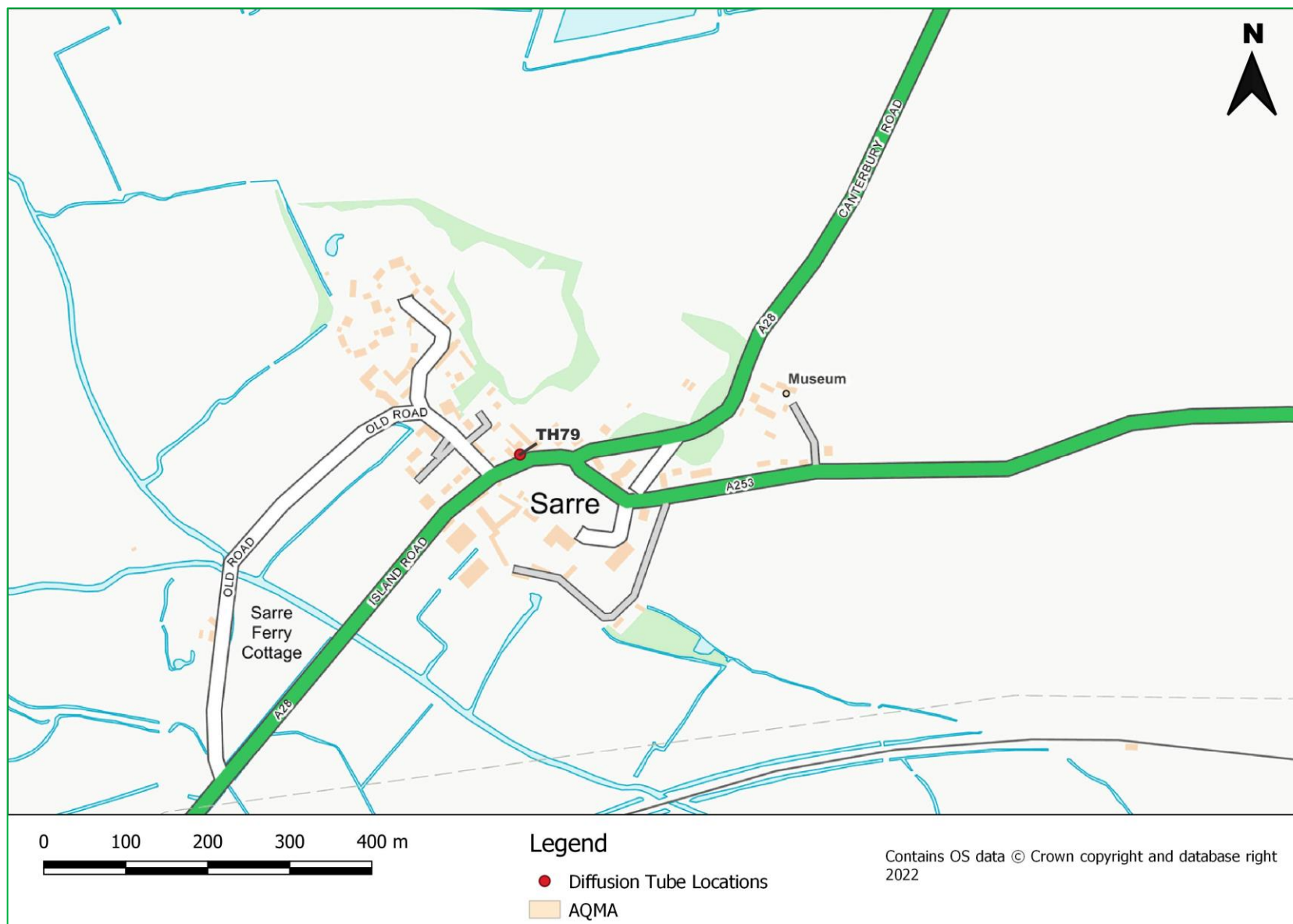


Figure D.10 – Monitoring Locations in Sarre





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

**Table E.1 – Air Quality Objectives in England<sup>7</sup>**

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

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<sup>7</sup> The units are in microgrammes of pollutant per cubic metre of air (µg/m<sup>3</sup>).

## 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
EU	European Union
LAQM	Local Air Quality Management
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
PM <sub>10</sub>	Airborne particulate matter with an aerodynamic diameter of 10µm or less
PM <sub>2.5</sub>	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO <sub>2</sub>	Sulphur Dioxide
TDC	Thanet District Council
K&MAQP	Kent and Medway Air Quality Partnership

## 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.
- Local Air Quality Management Policy Guidance LAQM.PG16. May 2016. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Air Quality Technical Planning Guidance 2016. Published by Thanet District Council
- Thanet District Council 2018 Updating and Screening Assessment.
- Thanet District Council Air Quality Action Plan 2013. Published by Thanet District Council.
- Thanet District Council Annual Status Report 2021. Published by Thanet District Council
- Thanet District Council Annual Status Report 2020. Published by Thanet District Council
- Thanet District Council Annual Status Report 2019. Published by Thanet District Council
- Thanet District Council Annual Status Report 2018. Published by Thanet District Council
- Thanet District Council Local Plan, 2020. Published by Thanet District Council
- National Diffusion Tube Bias Adjustment Factor Spreadsheet, version 03/22 V1 published in April 2022.