Crawley Borough Council

2025 Air Quality Annual Status Report (ASR)

In fulfilment of Part IV of the Environment Act 1995 Local Air Quality Management, as amended by the Environment Act 2021

Date: June 2025

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Report Reference Number	2025 Crawley ASR
Date	June 2025

Local Responsibilities and Commitment

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

Environmental Health - Community Services

Economic Regeneration Manager - Planning and Economic Development

Planning Policy and Development Control - Planning and Economic Development

Sustainability Team - Planning and Economic Development

Fleet Manager – Amenity Services

Decarbonisation Manager -- Crawley Homes

Sussex-air Quality partnership

West Sussex County Council's (WSCC) Highways, Transport and Planning

This ASR has been approved by:

This ASR will be approved by Cllr Nick Hilton (Portfolio holder for Environment, Sustainability and Climate Change) and signed off by the Dan Carberry (Public Protection and Enforcement Manager) and the Director for West Sussex Public Health.

If you have any comments on this ASR please send them to Environmental Services at:

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Executive Summary: Air Quality in Our Area

Air Quality in Crawley

Breathing in polluted air affects our health and costs the NHS and our society billions of pounds each year. Air pollution is recognised as a contributing factor in the onset of heart disease and cancer and can cause a range of health impacts, including effects on lung function, exacerbation of asthma, increases in hospital admissions and mortality.

Air pollution particularly affects the most vulnerable in society, children, the elderly, and those with existing heart and lung conditions. Low-income communities are also disproportionately impacted by poor air quality, exacerbating health and social inequalities.

Table ES 1 provides a brief explanation of the key pollutants relevant to Local Air Quality Management and the kind of activities they might arise from.

Table ES 1 - Description of Key Pollutants

Pollutant	Description
Nitrogen Dioxide (NO_2)	Nitrogen dioxide is a gas which is generally emitted from high-temperature combustion processes such as road transport or energy generation.
Sulphur Dioxide (SO_2)	Sulphur dioxide (SO_2) is a corrosive gas which is predominantly produced from the combustion of coal or crude oil.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Particulate matter is everything in the air that is not a gas. Particles can come from natural sources such as pollen, as well as human made sources such as smoke from fires, emissions from industry and dust from tyres and brakes. PM_{10} refers to particles under 10 micrometres. Fine particulate matter or $PM_{2.5}$ are particles under 2.5 micrometres.

Air Quality in Crawley is mainly good, with the exception of a small number of locations alongside busy roads where pollution levels are elevated due to road traffic emissions. To address these pollution hotspots, the council declared an air quality management area (AQMA) for high levels of vehicle pollution at the Hazelwick junction and Three Bridges areas of Crawley. An air quality action plan (AQAP) was published setting out how the

Council will work with its partners to tackle pollution and target measures to improve air quality in this area. These measures are updated regularly, and a summary given in Table 2.2 of this report.

Road traffic is the main source of (nitrogen dioxide) pollution in Crawley, and our network of monitoring sites measures concentrations alongside roads as well as at background locations and areas of specific interest (such as Gatwick airport), to give a broad picture of pollution levels across the borough.

Since Covid, pollution concentrations have consistently fallen across the borough at roadside and background locations, as well as within the AQMA and at residential locations within 1000m of the airport, with no exceedances of the national air quality limits for NO_2 being recorded for the last three years (although levels at one or two sites within the AQMA have been high/borderline to the 40ug/m^3 limit value).

The measured results for NO_2 are set out in tables A.4 and B.1 of this report and show that national air quality objectives were met at all of Crawley's monitoring sites in 2024. There were no exceedances of the annual mean or hourly air quality objective for nitrogen dioxide in 2024, and the long-term (5yr) trend is downward for annual mean NO_2 concentrations at all sites across the network. The trend reflects the pattern seen regionally and nationally as policy controls and cleaner engine technology help drive a reduction in emissions.

Continuous monitoring of particulate pollution (PM_{10} and $PM_{2.5}$) from sites in Crawley (CA2, RG3 and LGW3) showed there were no exceedances of the annual mean and 24-hour objectives for PM_{10} in 2024 and annual mean $PM_{2.5}$ was well below the 2020 objective of 20ug/m^3, as well as the 2040 target value of 10ug/m^3.

Because the primary source of pollution in Crawley is from road vehicle emissions, it is important to understand traffic growth patterns in the area. Having a clear picture of the trend in traffic flow and fleet mix helps the Council target air quality improvement measures more effectively. This is particularly important within the AQMA where NO_2 levels are highest. The recent update to the AQAP looked in detail at traffic in the AQMA and modelled pollution levels along the major roads.

Despite traffic continuing to rise across West Sussex, traffic volumes in Crawley dipped in 2024. However, nationally and regionally, there is evidence that traffic levels are gradually rising again post Covid. Figures released by the Department for Transport (DfT) showed

that traffic levels in England were 1.6% higher in 2024 than 2023 but still remain below pre-pandemic 2019 levels.

Many of the solutions for tackling transport related air quality fall outside the powers of the Council to implement. The Council therefore works closely with its highways authority at West Sussex County Council (WSCC) on many of its action plan measures, such as those in the Crawley Growth Programme (CGP) and Local Cycling and Walking Infrastructure Plan (LCWIP) which are aimed at encouraging active travel and improving air quality.

The Council also works with its partners in neighbouring districts, the Sussex-air partnership, Environment Agency and other departments within the council including Planning, Economic Development, Decarbonisation Team and the Sustainability Team, who are involved in developing many of the action plan measures.

The continuing improvement in air quality in our area is a welcome indication that the pollutants of primary concern (NO_2, PM_{10} and $PM_{2.5}$) are now responding to the combined effects of cleaner engine technologies and targeted local measures. However, whilst national policy and local action are bringing about measurable change, the scale of development coming forward over the next 10-15 years if the Gatwick expansion is approved, and residential and commercial development continues to increase, means that sustained improvement is not guaranteed. The council is not therefore considering revoking the AQMA until further evidence of reduced NO_2 concentrations exists to support the decision.

Actions to Improve Air Quality

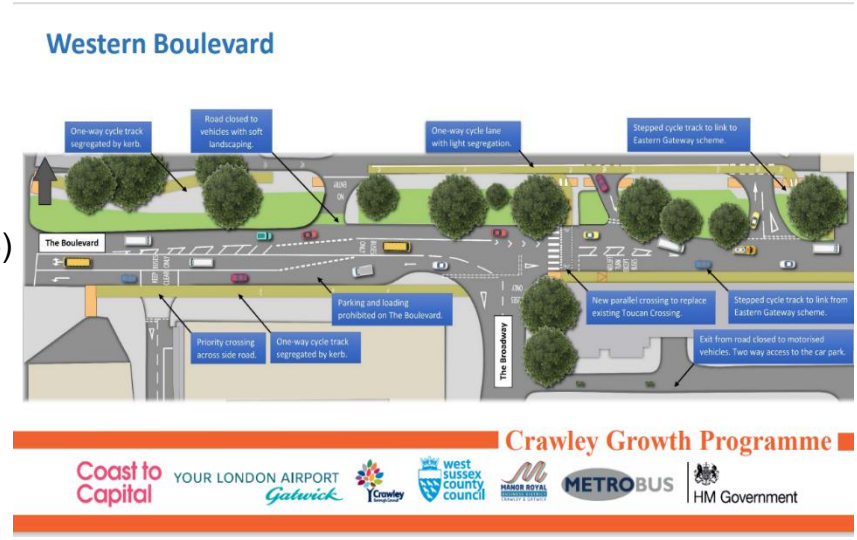
Whilst air quality has improved significantly in recent decades, there are some areas where local action is needed to protect people and the environment from the effects of air pollution.

Crawley Borough Council works collaboratively with other departments in the council and with our partners across the County to improve air quality and health. Through the local planning process there is ongoing implementation of the Sussex Air Quality and Emissions Mitigation Guidance to secure air quality mitigation from developers based on the damage costs from additional traffic emissions associated with new development. The council also works closely with WSCC Highways to improve active travel options and sustainable infrastructure projects within the borough.

The Council has taken forward a number of specific measures to target sources of pollution within the borough over the past reporting year. Further details are provided in Table 2.2.

Some of the key measures include:

Crawley Growth Programme



The Western Boulevard enhanced pedestrian, cycle and bus infrastructure project completed this year (Mar 2025) Scheme comprises widening Junctions for improved bus facilities and additional dedicated bus lane for right turn from The Boulevard. Two new segregated cycle lanes linking existing cycle lanes to the wider cycle network and upgraded pedestrian footways. The improved connectivity around the town helps promote active and sustainable travel, which benefits health, wellbeing and air quality.

Climate and Nature Emergency Declaration

In December 2024, the Council passed a new climate and nature emergency declaration to address and act upon climate change, the loss of nature and poor air quality.

Action to Zero is the Council's strategy for reducing its impact on the environment and helping Crawley to become a greener and cleaner place to live. This includes:

- Reducing the Council's direct emissions to net zero by 2030, and working with local community/business groups to reduce borough wide emissions to net zero by 2045
- Halting the loss of biodiversity by 2030 by ensuring all new developments increase biodiversity, implementing tree strategy and investing in parks and green spaces
- Improve air quality across the borough, through measures set out in the AQAP and implementation of a Clean Air Charter for Crawley.

Air Quality Awareness Raising and Community Engagement: School Streets Scheme at Ifield Mill School

The School Street TRO (Traffic Regulation Order) commenced in April 2025, prohibiting motor vehicles entering the road at drop-off and pick-up times, with exceptions for residents, emergency services etc.

The Council's engagement with the school and local community helped to promote the positive impacts of the scheme as well as ensuring residents understood the changes to accessibility. The Scheme will help to promote active travel, improve safety and reduce vehicle emissions.

The Air Quality team working with Sustrans colleagues and partners at Crawley Borough Council and The Mill School.

Crawley Staff Bike Loan and Cycle to Work Scheme

The council encourages active travel to work through its bike loan and cycle to work schemes.

cyclescheme.co.uk

Bike2Work Scheme
Tax Free Cycles

CBC's partnership with provider Cycle Scheme allows employees to loan bikes and equipment as a tax-free benefit to the Council whilst promoting healthier journeys to work and reducing emissions. The number of staff using the scheme is increasing year on year.

West Sussex Electric Vehicle Strategy - EV Charge Point Project

10-year programme to deliver electric vehicle charging network across the borough to encourage transition to EV vehicles and reduce vehicle emissions.

30% of CBC households have no access to off-road parking, causing a barrier to switch. The programme is therefore focusing on installing charge points to CBC owned publicly accessible locations (neighbourhood parades/ carparks) and on-street EV charging network in residential areas with limited off-road parking.

Decarbonisation Retrofit Programme to 59 Crawley Homes:

Successful completion in December 2024 of Wave 1 SHDF (Social Housing De-carbonisation Fund) works to fit external wall insulation, cavity wall insulation, loft insulation and new windows & doors. Wave 2 works commenced 2025 to install Loft and wall insulation at a further 408 Crawley Homes properties.

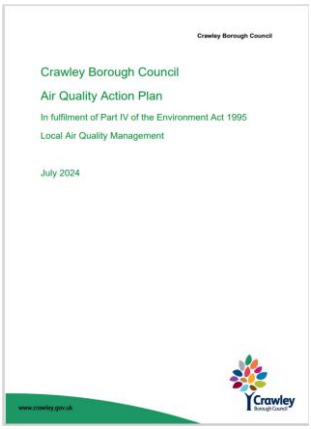
Solar PV Installation on Council Buildings and Crawley Homes

Ongoing Solar PV installation programme to Crawley Homes and Council owned buildings to improve energy efficiency and reduce emissions. 2025 Solar PV policy being developed

Completed (June 2025) solar carport installation at Crawley's K2 Leisure Centre car park using 1,002 photovoltaic solar panels. In the first month, the panels have generated the equivalent of planting 584 trees, saving 9.6 tonnes of CO2.

Air Quality Action Plan 2024-29

Crawley's AQAP was completed and approved by Defra in the last reporting year. Measures being delivered or planned to improve air quality are set out in the AQAP and progress on these measures are updated in the ASR (Table 2.2).



Conclusions and Priorities

Key findings and conclusions from this year's Annual Status Report:

- There were no exceedances of the 40µg/m^3 annual mean and hourly air quality objective for nitrogen dioxide in 2024, and NO_2 concentrations remained below pre-COVID levels four years post pandemic.
- There were no exceedances of the 40µg/m^3 annual mean and 24-hour objectives for PM_{10} in 2024 and annual mean $PM_{2.5}$ was below the target value of 10ug/m^3. A new AURN site is to be installed at a background site in Crawley. It is expected that monitoring results for this site will be available for reporting in next year's ASR.
- The long-term trends for nitrogen dioxide and particulate pollution in Crawley continue to be downwards in line with similar patterns seen regionally and nationally.
- Traffic volumes in Crawley were lower in 2024 compared to indicative levels last year, however the national and regional trend is still showing a gradual rise. Given the primary source of pollution in Crawley is from vehicle emissions, understanding future traffic trends in our area is important. Although volumes still remain below the pre-pandemic levels of 2019, the council will continue to monitor trends and how they may impact future air quality in Crawley.
- The 2025 review and assessment of air quality in Crawley concludes that there have been widespread improvements in air quality over the last 5 years at all locations, across the borough, including background, roadside, airport and within the AQMA. It is likely that the combined effects of national policy controls, cleaner engine technologies, lower traffic volumes and targeted local measures (set out in the AQAP) have all contributed to these measurable improvements.
- As air quality has improved the WHO and the European states have followed the science on the medical effects of air pollutants on human health and responded by

tightening their air quality standards or targets. It is uncertain whether the UK government will follow by lowering the national air quality standards in the future.

- There are other uncertainties which may affect local air quality management in future years in Crawley. These include the proposed expansion of Gatwick Airport and the West of Bewbush neighbourhood development. Whilst improving trends in air quality have been recorded across the borough over the last few years it is still not clear how these new developments may impact air quality at a local level. The council is not therefore considering revoking the AQMA until further evidence of sustained improvement in NO_2 concentrations exists to support the decision.

Crawley Borough Council's priorities for the coming year are:

- **Draft Clean Air Charter for Crawley**: to demonstrate the Council's commitment to, and pledges for reducing emissions from sources within its control and also engage local business community and residents to participate on a voluntary basis. The Charter will set out the Council's aspirational targets for clean air in Crawley and align itself with the Council's Climate Emergency and Nature Declaration.
- **Air Quality Monitoring Site**: the continuous monitoring station located on the eastern boundary of the airport for the last 20 years was decommissioned in 2024 due to redevelopment of the site. Setting up a new site in the close vicinity is priority for 2025.
- **Development related emissions**: work with Development Control to identify damage costs for air quality impacts from new development and mitigation in accordance with national planning policy and Sussex Emissions and Mitigation Guidance.

- **Awareness raising for health impacts and controls of smoke emissions:** improve public awareness of the links between particulate emissions from domestic solid fuel burning and health. To include advice on "Clean Burn" and information on the civil penalties now in place for smoke emissions within Crawley's Smoke Control Areas.

Principal challenges and barriers to implementation that the council anticipates facing are:

- Increasing developmental pressure impacting action plan measures
- Securing resources and/or funding streams to implement air quality measures.
- Identifying schemes that can generate a measurable improvement in air quality and which are feasible, deliverable and funded.
- Funding options to continue school's project.

How to get Involved

Crawley is one of the smallest districts in Sussex covering an area of 45 km^2 but attracts some of the highest levels of incoming commuter traffic. As well as commuter traffic, many local car journeys are less than 2km, and about 58% of all car trips are under 5km. High volumes of traffic on our local roads contribute to congestion and poor air quality. However, since many journeys are short, there is opportunity to improve local air quality by switching to sustainable and active transport options such as walking, cycling, public transport or car sharing. Many of our action plan measures include schemes that are aimed at infrastructure improvements to reduce congestion, improve sustainable transport and encourage modal shift.

In addition to the Council's initiatives to tackle air quality, there are many ways to get involved and take action on a personal level to improve air quality in Crawley:

Walk or cycle: Replacing car journeys by walking or cycling to reduce congestion and emissions. These activities also have proven physical and mental health benefits.
Public transport or car-share: consider car share or public transport.
Ultra-Low Emission Vehicle (ULEV): The sale of new petrol and diesel cars is due to end in the UK by 2035, consider EV or hybrid vehicle when next replacing your car.
Driving Style: There are ways to drive which help reduce emissions and can also save money on fuel and wear and tear:

- Drive smoothly and try not to accelerate or brake hard.
- Regular maintenance and engine service will help reduce emissions.
- Correct tyre pressure reduces friction/drag and minimises fuel use and emissions.
- Limit use of the air conditioning to reduce fuel consumption and emissions.
- Turn off engine when car stationary to release less exhaust emissions.

Go for local produce: long distance transport creates more air pollution.

Local authority engagement with decision makers and the public: Local engagement helps the council understand the needs of the community, provide information and raise awareness to support behavioural change.

The council hosts an annual Junior Citizen event for all Crawley's primary school yr-6 pupils. This event has been used to raise awareness through interactive games on air quality issues and we are also hoping to find funding to continue our work in schools through Sustrans on air quality, active travel and behavioural change.

Public awareness campaigns such as Clean-Air Day and Breath Easy Week are promoted via West Sussex and Crawley Borough's websites and social media pages and on digital advertising boards throughout Manor Royal business district. The Sussex-air website also provides detailed information to the public on local air quality, news updates, educational resources, and links to other services such as the national air pollution alert service.

In developing our air quality action plan measures, the council consulted with the public and working closely with interested parties such elected Members, transport planners and development control and policy planners.

More information on local air quality in Crawley can be found on its website (www.crawley.gov.uk) and local magazine:

Air quality in Crawley

Reducing Emissions and Sustainable Transport

The Crawley Growth Programme

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Tables

1 Local Air Quality Management

This report provides an overview of air quality in Crawley during 2024. It fulfils the requirements of Local Air Quality Management (LAQM) as set out in Part IV of the Environment Act (1995), as amended by the Environment Act (2021), 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 order to achieve and maintain the objectives and the dates by which each measure will be carried out. This Annual Status Report (ASR) is an annual requirement showing the strategies employed by Crawley Borough 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 18 months. The AQAP should specify how air quality targets will be achieved and maintained and provide dates by which measures will be carried out.

A summary of AQMAs declared by Crawley Borough Council can be found in Table 2.1. The table presents a description of the AQMA that is currently designated within Crawley. Appendix D: Map(s) 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 for NO_2 annual mean.

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 Highways England?	Level of Exceedance: Declaration	Level of Exceedance: Current Year	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Crawley AQMA	09.07.2015 (Amended 11.03.21)	NO_2 Annual Mean	Land and residential properties as described in Schedule 2 to the Order.	NO	41	33	3 years (borderline for 2 years)	Crawley Air Quality Action Plan 2024-2029	Visit the AQAP for Crawley AQMA

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

☒ **Crawley Borough Council confirm that all current AQAPs have been submitted to Defra**

2.2 Progress and Impact of Measures to address Air Quality in Crawley Borough Council

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

The report is well structured, detailed and provides the information specified in the Guidance.

1. The Council have included a detailed list of AQAP measures and have appropriately organized the table with the main priorities highlighted in the top three measures. This is commended and welcomed in future reports.
2. The Council have highlighted key completed measures within the reporting year and future actions. This is encouraging as it provides evidence of the council's dedication to improving air quality as they are able to highlight any new sources of pollution and the potential impacts they may have.
3. CBC have referenced the Public Health Outcome Framework D01 and utilised comparison to national and regional indicators within the South-East Region. This is welcomed and encourage in future reports as it provides context for measures which tackle $PM_{2.5}$ emissions.
4. The Council has had the ASR signed off by the director of public health which is an example of good practice and encouraged in future reports.
5. The AQMA amendment date in the Defra portal still does not match the details in the report. The Defra portal quotes the amendment taking place in 2022 whereas the report states the amendment was in 2021. Table 2.1 of the report should also include date of declaration on top of the date of most recent amendment.

***Response**: LAQM Helpdesk assisted in amending the date on the LAQM Portal – The correct date of 11.03.2021 should now be reported on the Portal.*
Table 2.1 corrected to show date of declaration on top of the date of amendment.

6. LA details should be included in the table headings (Local Authority Details table) and should take care to remove all template text prior to submission in future ASRs.

***Response**: LA details have been included in the Local Authority Details table. Care has been taken to ensure template instruction text has been removed before submission of the final ASR.*

Progress Summary of Measures to Improve Air Quality in Crawley

Crawley Borough Council has taken forward a number of direct measures during the current reporting year of 2024-25 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2.

There are 50 measures in Table 2.2, with the type of measure and the progress the Council has made during the reporting year 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 Crawley's Action Plan on the air quality pages of the Council's websites.

Key completed measures are:

Updated Air Quality Action Plan

Crawley's AQAP completed and approved by Defra in 2024/25, setting out measures the Council and its partners are taking to reduce pollution in the AQMA and across the borough.

- ***Key outcomes from measure:*** *AQAP measures aim to secure the achievement and maintenance of air quality standards and objectives within the AQMA.*

Climate Emergency and Nature Declaration

The new declaration approved by full cabinet December 2024 addresses the Council's strategy for reducing its impact on the environment for both climate, nature and air quality.

- ***Key outcomes from measure:*** *reducing our direct emissions to net zero by 2030 and halting the loss of biodiversity by 2030.*

Crawley's Local Plan 2023-2040

The new local plan adopted in October 2024, provides detailed environmental policy and guidance to help reduced the air quality impacts of building through the development control process.

- ***Key outcomes from measure:*** *Requirements for emissions reduction and mitigation, improvements to public and active transport infrastructure, EV charging and energy efficient housing.*

Crawley Growth Programme

Western Boulevard Walking & Cycling Scheme - completed March 2025, delivering improved bus routes, additional dedicated bus lane, widening of junction, two new segregated cycle lanes linking to existing cycle lanes, upgraded pedestrian footways and enhanced infrastructure to the public realm

- ***Key outcomes from measure:*** *Encourage shift to active travel and public transport and reduce vehicle emissions.*

School Street Scheme for Ifield Mill School

School Streets Traffic Regulation Order at Ifield Mill School commenced April 2025.

- ***Key outcomes from measure:*** *Encourage travelling to school by active travel and reduce exposure to vehicle emissions during morning and afternoon school run.*

West Sussex Electric Vehicle Strategy - EV Charge Point Project

Phase 3 installation of EV charge points at 10 public car parks and 10 on-street residential locations completed April 2025.

- ***Key outcomes from measure:*** *encourage transition to EV and reduce vehicle emissions. Target for 70% of new cars in the County to be electric by 2030.*

Liquid Hydrogen Storage and Bus Re-fuelling Station

Liquid hydrogen storage facility at Metrobus depot on Manor Royal Business District completed in 2024 - supplying hydrogen fuel to 34 hydrogen buses in Crawley and the wider bus fleet.

- ***Key outcomes from measure:*** *providing alternative refuelling infrastructure to promote gas fuel recharging for zero emission buses*

Energy Efficiency Retrofit Project in Crawley Homes (SHDF Wave 1)

Upgrades to insulation and low emission heating to Pas 2035 standard at 59 Crawley Homes properties completed August 2024.

- ***Key outcomes from measure:*** *Increased energy efficiency, reduced carbon/emissions. Energy savings >30% achieved*

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

Crawley Growth Programme – Manor Royal Highways Improvement Scheme

Phase 3 bus lane extension estimated completion Oct 2025

- ***Expected impact of measure****: Encourage modal shift and reduce vehicle emissions*

CBC Staff Travel Survey

New staff travel survey to be completed in 2025 (delayed from 2024) to understand new travel habits around hybrid working.

- ***Expected impact of measure:*** *Understand staff travel and identify measures to encourage transition to active/ sustainable travel modes. Reduce vehicle emissions.*

EV Charge-Point Network for Crawley

Phase 4 to install a further 66 electric charge points at publicly accessible locations across Crawley expected to be completed 2025/26.

- ***Expected impact of measure:*** *Encourage transition to EV vehicles and reduce vehicle emissions.*

Clean Air Charter for Crawley

Draft charter outlining the aims and objectives, and a framework for achieving aspirational targets for clean air in Crawley.

- ***Expected impact of measure:*** *Council lead commitment to clean air, reducing own emissions to improve air quality and meet climate targets, encourage business and community engagement*

Gatwick Northern Runway Development Consent Order (DCO) Gatwick Northern Runway Infrastructure Project - DCO decision from Secretary of State expected October 2025.

- ***Expected impact of measure:*** *Requirements (DCO planning conditions) to help control and mitigate the air quality impacts of the development.*

Crawley Borough Council's priorities for the coming year are

- Air Quality Monitoring Site - identifying and installing a new continuous monitoring site as close as practical to previous Gatwick East (CA2) site, which had to be decommissioned last year due to the redevelopment of the site.
- Clean Air Charter for Crawley – drafting the charter and achieving Member sign off.
- Development Control - continue work through the Planning development control process to secure air quality mitigation from new development.
- Smoke Control - improve public awareness of the links between domestic solid fuel burning and health, including advice on "Clean Burn" and civil penalties for smoke emissions within smoke control areas.
- Monitoring Network - review and update the diffusion tube network to respond to local developments and identify pollution hotspots.

Crawley Borough Council worked to implement these measures in partnership with the following stakeholders during 2024:

- CBC Planning Team
- CBC Sustainability Team
- CBC Economic Development Team
- CBC Decarbonisation Team (Housing and Amenity Services)
- Manor Royal and Town Centre BIDs
- Sussex-air Partnership
- Neighbouring Local Authorities
- WSCC Highways Authority
- Environment Agency

The principal challenges and barriers to implementation that the Council anticipates facing are:

- Increasing developmental pressure impacting the effectiveness of action plan measures or extending time taken to achieve improvements.
- Securing resources and/or funding streams to implement air quality measures.
- Identifying schemes that can generate a measurable improvement in air quality and which are feasible, deliverable and funded.
- Funding options to continue school's project.
- Many of the solutions for tackling transport related air quality fall outside the powers of the council. Work with stakeholders and decision-making bodies outside of the council is therefore important to help to deliver action plan measures.

Progress on the following measures has been slower than expected due to:

- New Continuous Air Quality Monitoring Site – difficulty identifying and securing suitable site has caused delays and staff time diverted away from LAQM work due to the Gatwick DCO further impacted the rate of progress.
- Crawley Growth Programme - progress on some of the infrastructure projects has been delayed due to the issue of water neutrality required to ensure compliance with Habitat Regulations - addressed through Local Plan.
- Walking and Cycling Schemes - projects identified through LCWIP (Local Cycling and Walking Infrastructure Plan) and New Directions for Crawley (Transport and Access Strategy) delayed due to funding constraints

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

Table 2.2 – Progress on Measures to Improve Air Quality

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	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	Crawley Growth Programme & Towns Fund Station Gateway (Phase 1). Public realm/ highways and bus station improvements scheme to provide better station/ road layout and upgraded pedestrian and cycle routes between the rail station, bus station and town centre	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	2019 Design/ Approval Stage	Phased delivery programme for scheme extended to 2026. Construction commencing date November 2025. Completion 2027	Crawley Borough Council (CBC)/ West Sussex County Council (WSCC/ Metrobus / Local Enterprise Partnership (LEP)	Crawley Growth Programme, LEP/CBC, WSCC, Towns Fund (MHCLG)	Fully funded public scheme	£7.4m for public realm/ highways (£5.4m Growth Programme and £2m Towns Fund)	Planning Approval given and works due to start 2025.	Medium/ High Reduced private car dependency, reduce vehicle emissions	Measured concentration at CR110 and CR111 on Station Way. Traffic count - encourage public transport and walking, cycling resulting in lower vehicle emission	Public consultation Feb 2024. Planning permission March 2025. Construction due estimated Nov 2025. Completion estimated Nov 2027. Current intention to proceed with public realm and highways phase ahead of private developer led car free residential scheme.	Local Transport Authorities (LTAs) and bus operators working together to develop a bus service improvement plan (BSIP) for station layout for bus and traffic flows around Friary Way. Dedicated left-hand turn for buses from Friary Way onto Station Way. Expanded pedestrian paving and continuous, safe cyclist access between the railway station, bus station and town centre and the wider cycle network.
2	EV Charge Point Project. Encourage use of electric vehicles by providing public charging points to CBC owned publicly accessible locations (neighbourhood parades/ carparks) and on-street EV charging network in residential areas with limited off-road parking.	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging	Approved 2019	Ongoing/2030	WSCC/ CBC	On-Street Residential Charging Grant (75% installation costs). Workplace Charging Grant – (50% installation costs). Ongoing management costs funded via concession contract to appointed contractor. No capital funding requirement for Council	Fully Funded	Not known	Implemented through the Electric Vehicle Strategy for West Sussex 2019-2030. EV infrastructure provider Connected-Kerb commissioned to deliver a district-wide electric vehicle charging point network. Sites identified across Crawley at WSCC and CBC owned on-street locations.	Reduce vehicle emission. No emissions target set in WSCC EV Strategy instead target for 70% of new cars in County to be EV by 2030. To achieve this need approx. 3500 publicly accessible charging points by 2025, and 7,346 by 2030.	Transport contributes > 30% carbon emission across Crawley Increase on-street EV charge points to incentivise switch to EVs and reduce carbon (250 ktCO2 pA) and air quality emissions (with a renewable energy source for all charge points).	2021/2022 Contract awarded (Connected Kerb) for installation of public EV charge points across borough over next decade. **Phase 1** (2022/23) Installation of EV charge points at CBC (neighbourhood parades/ and carparks **Phase 2** (2023/24) Installation of EV charge points 11 CBC owned Car parks and 3 on-street residential locations **Phase 3** (2024/25) Installation 10 public car parks and 10 (on-street residential locations **Phase 4** (2025/26) A further 66 EV sockets expected across residential roads and public parking locations.	30% of CBC households have no access to off-road parking, causing barrier to switch. Strategy aims to address barriers by providing accessible EV charging infrastructure to encourage switch. Challenge has arisen due to competition for on street parking spaces where locations are reserved for EV charging only.
3	Energy Efficiency and de-carbonisation Retrofit Project for Crawley Homes (social housing) to upgrade insulation and install low	Promoting Low Emission Plant	Other - installations of wall/floor/roof insulation and low emission heating to reduce emissions	2023	2026	CBC	SHDF (Social housing de-carbonisation fund) Wave 2	Fully Funded SHDF W2 £6.8m	£6.8m Costed on a project-by-project basis	Implemented - Full decarbonisation retrofit programme of works to Pas 2035 standard following on from net Zero pilot study Works to include upgrades to insulation and low emission heating to 408 Crawley homes	Reduced emissions from low energy/clean domestic heat sources Aiming for net zero	De-carbonisation Higher energy efficiency, reduced emissions, and lower energy bills (>30%)	Work commenced 2024 on SHDF Wave 2 installation programme. 2025 works ongoing. Expected completion of upgrade to 408 houses by Jan 2026. Measures include: Flat roof insulation, loft insulation, external wall	Working with Crawley College new STEM Centre to provide specialist training in advanced technologies and green retrofit.

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	emission heating to passive house standard (Pas 2035) to achieve Net Zero												insulation, cavity wall insulation, new windows & doors, ventilation, air source heat pumps, solar PV with battery, removal of gas supply.	
4	Crawley Station Gateway (Overline House) including car free residential/ commercial development	Promoting Low Emission Transport	Other	2019 Design/ Approval Stage	Completion date tbc. Currently delayed due to water neutrality	Private Developer (Arora Group)	Arora Group	Private Funded	Not Known	Planning Approval (reserved matters) April 2021	Reduced vehicle and housing energy emissions Medium/ High	Low emission housing reducing energy bills and emissions Car free housing encouraging behavioural change to sustainable and active modes of transport. Reduced traffic congestion and vehicle pollution.	Planning permission for the residential/ commercial development April 2021 (reserved matters) however the scheme is currently constrained by water neutrality requirements. As a result, the current intention is to proceed with public realm and highways improvements (see1 above) ahead of the residential (private developer led) scheme.	Progress on residential development slowed in 2020/21 (Covid). Currently progress delayed due to water neutrality.
5	Crawley Growth Programme Three Bridges railway station Interchange improvement schemes	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	2019 Design Stage	Delivery programme for scheme extended to 2027/8. Anticipate construction commencing 2025/26 (Extended from 24/25)	WSCC/ CBC / Network Rail / Govia Thameslink Railway (GTR)	LEP/ WSCC/ CBC	Fully funded	Estimated £5.2m Full scheme cost review currently being undertaken. (Previous estimate £2.94m)	Planning permission granted March 2023.	Reduced vehicle emissions Medium/ High	Modal Shift/ Improved traffic flow (Improved cycle/ pedestrian route connections and train station interchanges)	Following extension of AQMA into Three Bridges, AQ assessment undertaken - which showed AQ impacts of scheme within AQMA negligible /not significant. Planning permission granted March 2023 Detailed design development is ongoing aligned to progressing Network Rail's Station Change Management Procedure	Scheme comprises new station forecourt, relocated bus shelters, improved cycle and pedestrian routes, new taxi rank, car waiting/ drop off area, highway junction traffic light upgrades, new 'eastern 'access to the station with vehicle drop off point/ pedestrian access to platforms
6	Crawley Growth Programme Three Bridges Stations EV Parking/ charging points	Promoting Low Emission Transport	Priority parking for LEV's Procuring alternative Refuelling infrastructure to promote EV recharging	2020 Design Stage	Delivery of scheme extended to 2027 Anticipate construction commencing 2025/26. (Extended from late 2024/25)	LEP/ WSCC/ CBC	LEP/WSCC/ CBC	Fully funded	> £1m	Planning permission granted March 2023.	Reduced vehicle emissions Medium	Modal Shift	Planning permission granted March 2023. Full scheme review completed.	Increase supply electric vehicle points/ parking bays at the station (20 in total) identified in response to increase demand.
7	Crawley Growth Programme. Western Boulevard (Formerly Town Centre Walking & Cycling Scheme). Connecting	Transport Planning and Infrastructure	Strategic highway improvements, Re-prioritising Road space away from cars, including Access management, Selective vehicle priority, bus priority, high	2020 Design Stage	Planning permission approved 2022. Scheme completed March 2025	WSCC/ CBC/ DFT Bus Service Improvement Plan (BSIP)	BSIP/LEP/ WSCC/ CBC	Fully Funded	£1.95m (following scheme cost review to account for inflation uplift. Previous estimated £1.1m)	Public consultation completed 2021. Planning application granted 2022. Completion Mar 2025	Reduced vehicle emissions Medium	Modal Shift	Planning permission granted. Construction of a single, safe, and connected cycle/walking route that runs around the town center. Construction commenced May 2024, scheme	Scheme comprises: Improve bus facilities north of the town center by widening junction between The Boulevard and The Broadway. Additional dedicated bus lane for right

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	Eastern Gateway to the High Street and delivering improved bus routes, walking & cycling infrastructure, and public realm		vehicle occupancy lane										completion March 2025	turn from The Boulevard. 2 new segregated cycle lanes linking existing cycle lanes at eastern end of The Boulevard to High Street. Upgraded pedestrian footways
8	Crawley Growth Programme Manor Royal - highway improvement scheme	Transport Planning and Infrastructure	Bus Route Improvements	2020 Design Stage	Construction of Phase 1 works completed August 2022. Phase 2 works completed November 2023 Phase 3 estimated Completion Oct 2025	WSCC	LEP/ WSCC/ CBC	Fully Funded	Revised £3.98m (Previous estimate £3.31m) Phased delivery – Phase one £1.18m. Phase 2 incorporating the bus extension project £2.8m	Phase 1 completed Aug 2022. Phase 2 completed Nov 2023 Phase 3 commenced Q1 2025 estimated completion Oct 2025	Reduced vehicle emissions. Medium/ High	Modal Shift/ Improved traffic flow	Phase 1 complete August 2022 delivered junction improvements at County Oak/London Road, upgraded crossing units, signal heads, lane markings and a new bus stop. Phase 2 completed November 2023 include public realm improvements from Manor Royal to Gatwick Road roundabout, construction of a new bus/cycle lane along Manor Royal and improved crossings at County Oak Way & Metcalf Way Phase 3 Manor Royal Bus Lane Extension - commenced Q1 2025	Manor Royal highways improvement scheme to deliver better connectivity and enhanced pedestrian and cycle access across the Business district.
9	Signalisation of Hazelwick Roundabout (in AQMA)	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2023	Estimated completion 2027/28	WSCC/ Developer contribution	WSCC/Developer contribution	Fully Funded	Not known	Funding identified	Reduced vehicle emissions. Medium/ High	Improved flow at roundabout and reduced congestion	Introduction of traffic signals required to mitigate the transport impacts of the Forge Wood development. Scheme funded using developer contributions	
10	A2011 Crawley Avenue - Hazelwick and Tushmore Junction Improvements as part of WSCC Strategic Transport Investment Programme	Traffic Management	Strategic highway improvements, Re-prioritising road space away from cars, including Access management, Selective vehicle priority, bus priority, high vehicle occupancy lane	2024	Estimated completion 2028/29	WSCC	Government Grants and Developer Contribution	Not fully funded at this time, but proposals are for future funding opportunities Gov Grants/ Developer contribution	Not Known	Consultation 2024-2025	Reduced vehicle emissions. Medium/ High	Modal shift to active travel and public transport options Reduced congestion	Consultation phase for potential measures including: Improved bus priority, walking/cycling infrastructure Reduced speed limits Carriage way widening	
11	Crawley Avenue (A2011) Speed Limit (in AQMA)	Traffic Management	Reduction of speed limits	2024	Estimated completion 2028/29	WSCC	Seeking Government Grants and Developer contribution	Not fully funded at this time, but proposals are for future funding opportunities from Gov Grants/	Not Known	Consultation 2024-2025	Reduced vehicle emissions. Medium/ High	Reduced speed and congestion	Consultation phase for potential reduced speed limits on A2011 close to Hazelwick roundabout where	

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								Developer contribution					there are High residential exposure levels in AQMA	
12	Liquid Hydrogen Storage/ Fuelling Station - Manor Royal	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2023	2024	CBC/ MetroBus	MetroBus	Fully Funded	Not Known	The facility is based on Manor Royal Business District at the MetroBus depot supplying Hydrogen fuel to 34 Hydrogen Buses.	Zero emission fuel	Increased Zero-emission bus Fleet	Planning permission granted 2023 for liquid fuelling station facility on Manor Royal. 2024 the facility is operational - however, it is not currently operating at full capacity pending a decision on Hazardous Substances licence/ safety concerns	The facility is the largest liquid hydrogen refuelling facility in the UK. At full capacity it is capable of providing 1600kg of liquid hydrogen per day, which is sufficient to fuel the entire Crawley based bus fleet (140 vehicles).
13	Crawley Zero Emission Bus Regional Area	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2024	2026	WSCC, SCC, KCC and Gatwick Airport	ZEBRA 2 (Zero Emission Bus Regional Areas)	Fully Funded	Not known	54 new buses made up of 34 Hydrogen buses including 20 Fastway buses	Zero tailpipe emissions	Zero emissions for air quality and climate change	20 new Fastway buses operating between Crawley, Manor Royal business District, Crawley Town Centre and Gatwick Airport	
14	Crawley's Declaration of Climate and Nature Emergency	Policy Guidance and Development Control	Other policy	Declared 2019	Climate Emergency Action Plan approved and published Nov 2021 This will be followed by ongoing implementation.	CBC	CBC	Fully Funded	Individual measures funded on project-by-project basis	Action Plan published Nov 2021	Reduce our direct emissions to net zero by 2030. Reduce borough wide emissions to net zero by 2045. Halt loss of biodiversity by 2030. Improve air quality across the borough Town centre district heat network estimated to save 103 tco2e per year. Decarbonisation programme for Crawley Homes (social housing) estimated to save 648 tco2e per year.	Assessed using emissions balance sheet for: Reduced energy demand. Transition to low/ zero carbon heating & cooling: Phase out investment in technologies with carbon legacy. All new developments required to increase biodiversity	2020 OSC recommendation for carbon reduction targets Climate Emergency Advisory Group set up to implement OCS recommendations. 2021 Climate Emergency Action Plan Published CEAP Updated Climate and Nature Emergency Declaration approved by cabinet Dec 2024 June 2025 – CEAP independent evaluation - Climate Action Scorecard: CBC was given a score of 29% (an improved from 25% score of 2023). The audit recommendations useful to target areas that can be improved. Next audit 2027	Detailed plan now in place to improve energy efficiency and reduce gas consumption of Council owned buildings, with focus on those with highest energy consumption (especially K2 leisure centre) and the least efficient (some community centres with poor insulation) CBC received government grant of £98k from Low Carbon Skills Fund to develop Heat Decarbonisation Plans for council housing with 'end of life' gas heating systems The Plan aims to halt biodiversity loss by ensuring all new developments increase biodiversity, implementing tree strategy and continuing to invest in parks and green spaces
15	Defra funded AQ Taxi Project	Promoting Low Emission Transport	Procuring alternative Refuelling	2021	Project completion 2023	CBC/ Sussex-air/ WSCC		Fully Funded Defra funding	Proportion of the £376k funding for	Planning//Project development	Decarbonising transport and reduced vehicle	Increase % of EV/ ULEV's by Taxis and	Defra AQ grant funded contract	Response rate low in Crawley – Taxi

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			infrastructure to promote Low Emission Vehicles, EV recharging.		Taxi electrification by 2030		Defra Grant Funded		the Monitoring and Community Engagement Project		emissions by facilitating increased rate of uptake of EV vehicles in taxi fleet	private hire vehicles	awarded to Energy Saving Trust. Taxi engagement campaign set up to facilitate a transition to EV vehicles by taxi drivers. Taxi and Private hire survey–results published on Sussex-air Taxi project page providing information and recommendations to the trade to encourage uptake of EVs.	trade difficult to engage
16	AQ Schools project	Public Information	Other (community Engagement – Schools)	2018	Project extended to Q2 2025	Sussex-air/ CBC/ Sustrans	Defra Grant Funded until 2024. No Defra Grant Funding awarded 2024/25 - Sussex authorities raised funds to continue for 2024-2025 No Defra Grant Funding 2025/26 Schools AQ project officer will end 2025 unless alternative funding can be found	Previously fully funded Defra funding	£10-£50K	Sustrans working with Sussex Air to deliver the programme to schools across the Sussex area	Indirect impact - aiming for reduced emissions through behavioural change / Modal shift	Awareness raising/ Modal shift/ reduction in vehicle emission. Sussex Air project targets are all output based. Sustrans also records behaviour change and knowledge surveys to measure impact of workshops on knowledge / understanding of air quality. 48% increase in Knowledge was recorded. Overall targets were exceeded.	2018 - 2024, Sustrans delivered school's air quality project on behalf of Sussex-air, funded by DEFRA AQ Grant Sustrans worked with schools across Sussex in/ near AQMAs to raise awareness and ways to reduce air pollution through active travel. 55,000 school children across Sussex educated through the project. Project extended to Community groups 2023/24 due to its success in schools. Sustrans raising awareness of health impacts of poor air quality and how to mitigate. Social media and newsletters used to communicate key information and links to raise awareness of air quality in Sussex.	No Defra grant funding awarded for 2024/5 or 2025/6. Unless alternative funding can be found the work in Sussex schools will end this year.
17	Crawley Local Plan 2023 - 2040 - providing detailed environmental policy and guidance through the development control process	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Draft 2019	Adopted Oct 2024 (see comments section) The Crawley Borough Local Plan 2023 to 2040 was formally	CBC	CBC	Fully Funded	Not Known	Draft Local Plan 2024-2040 awaiting inspectors' Final Report, following which the Council expects the Local Plan will be taken to Full Council in July 2024 for decision on adoption of the Plan with any modifications which may have been recommended. The council's adopted Local Plan (December 2015 - 2030) remains up to date following its 5-year Review by Full Council in December 2020	Reduced air quality impact through development control conditions for air quality and emission mitigation	Emissions reductions/ mitigation – including improvements to public/active transport infrastructure, EV charging, energy efficient housing.	Draft Local Plan submitted to Planning Inspectorate 2023. Examination in Public completed Jan 2024. Consultation on Main Modifications completed Mar 2024. Adopted October 2024	Significant delay due to issue of water neutrality to be addressed through Local Plan to ensure compliance with Habitat Regs. Adopted October 2024. It is the council's adopted development plan and replaces the Crawley Borough Local Plan 2015 to 2030. The adopted Crawley Borough Local Plan 2023 to 2040 can be

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														viewed on the Council's website.
18	Air Quality and Emissions Mitigation Guidance for Sussex	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	Revised Guidance April 2021 (Original Guidance 2013)	Ongoing/2040	CBC with Sussex-air (SAQP)	Sussex-air/ CBC	Fully funded	N/A covered by SAQP annual subscription	Implemented (ongoing updates)	Reduction in emissions from transport associated with new development through mitigation. Individual scheme emissions calculations undertaken.	Conditions on planning applications to require assessment of emissions from development, damage cost calculation and where appropriate scheme of mitigation for emissions mitigation	Air Quality and Mitigation Guidance incorporated in Crawley Local Plan referenced to developers in local list. Ongoing review and update for 2025/26	Development of the Guidance as Supplementary Planning Document (SPD) being considered – dependent on review of application across Sussex authorities
19	WSCC Parking Standards Guidance	Policy Guidance and Development Control	Other policy Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging,	Approved 2019	Ongoing/2030	WSCC	WSCC	Fully Funded	Not known	Implemented	Reduced vehicle emissions Parking EV parking standards Targets set in the guidance	Increased EV's infrastructure and active transport	The WSCC Parking Standards Guidance sets out parking targets for vehicles as well as cycle storage. The CBC Parking Standards are formulated from the WSCC Guidance and are annexed to Crawley's Local Plan 2023-2040 The levels of EV charging spaces to be provided is based on the Building Regulations.	CBC new Local Plan adopted 2024 (Crawley borough Local Plan 2023 to 2040.pdf
20	Crawley LCWIP (Local Cycling and Walking Infrastructure Plan)	Transport Planning and Infrastructure	Cycle Network	Published March 2021	Ongoing/2030 implementation (see comments)	CBC /WSCC	Towns Fund/ CGP/Active Travel fund/ S106/CIL	Not known. Individual measures funded on project-by-project basis	Not known. Costs on project-by-project basis	Published.	Reduced vehicle emissions No Target set	Modal shift	2020/21 LCWIP Published and reviewed by WSCC 2022/23 Transport study. 2024 LCWIP adopted into new Local Plan (2023-2040) – with requirement for developers to mitigate development impacts thorough S.106/CIL contributions to LCWIP targets and projects. 2024/5 Working with WSCC and Active Travel Crawley community group to develop detailed plans for walking and cycling projects.	CBC LCWIP plan for network of 16 high quality, safe, cycling /walking routes though the borough. Funding sources sought to implement plan including contributions to LCWIP targets/ projects from planning S.106/ CIL.
21	New Directions for Crawley (Transport and Access Strategy)	Policy Guidance and Development Control	Other policy (see comments section)	2020 for Strategy	Ongoing/2030	CBC/WSCC		Not known. Individual measures funded on project-by-project basis	Not known. Costs on project-by-project basis	Transport and Access Strategy 2023 Transport Study (stage 1) completed 2023 – measures included in new Local Plan 2024-2040	Reduced vehicle emissions No Target set	Modal shift / reduced traffic emissions	2020 Strategy adopted. 2022 Transport study completed 2023. Measures from Stage 1 transport study fed into new Local Plan.	The strategy document addresses issues and options for shifting from car to people-centred approach, mobility and access. 10-year action plan to be developed

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							WSCC/ CBC/ Private Funding sources						Local plan includes policies on active and sustainable travel which will influence design of new developments. 2024/25 Stage 2 Transport Study to look at walking/ cycling/ street access – awaiting funding.	from New Directions strategy together with LCWIP - to inform emerging Local Plan to guide design and access of new development.
22	Schools Active Transport Project Officer (Sustrans)	Promoting Travel Alternatives	Promotion of cycling/ walking	2012	Ongoing for last 10 yrs / Ends July 2025(due to lack of funding)	CBC	CBC	Fully funded for Part time officer until 2025. No Funding after July 2025	£10k - 50k	Ongoing (until July 2025 when funding ends	Reduce vehicle emissions	% increase in modal shift % children travelling to school by walking/cycling	CBC funding half a full-time post for a Schools Active Transport Project Officer from Sustrans, working with schools in Crawley to engage with school staff, pupils and parents to promote active travel and air quality awareness in schools.	Funding for Sustrans Active Transport Project Officer ends July 2025. No further funding available.
23	School Travel Plans	Promoting Travel Alternatives	School Travel Plans	2017	Ongoing/2030	CBC / WSCC	CBC and WSCC	Fully Funded	Not Known	Ongoing	Reduce vehicle emissions and exposure to emissions during school run and morning/ afternoon rush hour No Target set Medium/ low	% increase in modal shift % children travelling to school by sustainable means	June 2023 -18 month experimental “School Streets” TRO (Traffic Regulation Order) at Ifield Mill School. 2024 WSCC have adopted the School Streets TRO for Ifield Mill school. School Streets Scheme (TRO) at the Mill Primary school launched April 2025	
24	Residential and Business Travel Plans	Promoting Travel Alternatives	Residential/ Business travel plans	2012	Ongoing/2030	CBC	CBC	Fully Funded	Not Known	Implemented (Individual developers/ businesses)	No Target set. Reduced vehicle emissions	Increase uptake of sustainable transport modes	Developments of certain size required to implement Travel Plan	Travel Plans implemented on an individual basis through Planning (Development Control process)
25	Crawley Borough Council Staff Travel Survey	Promoting Travel Alternatives	Workplace Travel Planning	2020	2025	CBC	CBC	Fully Funded	Not Known	Survey completed Dec 2020 Draft Travel policy 2021	No target set Reduced vehicle emissions.	Modal shift/ staff travelling by sustainable means	2020 Staff Travel Survey completed. 2021 Staff travel policy. Council’s staff travel survey to inform Staff Travel Plan for new Town Hall (Planning condition – see below) and development of travel policy measures for emerging Climate Emergency Action Plan. Reduction in staff commute due to hybrid working. New staff travel survey to be	

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													completed in 2025 to understand new travel habits.	
26	CBC Staff Travel Plans	Promoting Travel Alternatives	Workplace Travel Planning	2019	Estimated 2026 (revised from 2025) Ongoing implementation	CBC	CBC	Fully Funded	Not Known	Not yet Implemented.	No Target set Reduced vehicle emissions. Medium/ low	Increase % staff travelling by sustainable means	2019 Draft Travel plan 2020 Staff Travel Survey to shape final plan. 2021 Staff Travel Plan submitted through the planning application for new Town Hall and conditioned in the planning consent (2022). 2025 - revised staff travel plan to be drafted based on results of staff survey	
27	easit-Crawley Green Travel Network – easit discount (15%) staff rail/ 48% bus commuting available to Crawley staff and businesses	Promoting Travel Alternatives	Promote use of rail and bus	2018	Ongoing/2030	easit/CBC	Easit /CBC / other member company	Partial Funding	£2500 per year for membership	ongoing	Reduced vehicle emissions No Target set Medium/ low	Increase % staff travelling by sustainable means Also help staff with lift shares and access to car clubs to reduce travel cost and emissions	2024/25 Membership of Easit renewed to encourage use of public transport and car sharing.	Council involved in funding the setting up of the scheme.
28	Crawley Car Club - scheme with private sector partner	Promoting Travel Alternatives	Personalised Travel Planning	2019	Contract Geraint Thomas Hse to end 2025 Station Gateway EV Car-Club ongoing/2040	CBC/ Private sector partner	Private sector partner/ S.106 contribution	Fully Funded	s.106 monies £20k Private sector contribution N/K	Contract awarded Co-Wheels	No Target set Reduced vehicle emissions. Medium/ low	Reduction in private vehicle ownership	2022-25 Contract awarded to Co-Wheels to supply and run EV car /car club at new Town Center residential development (Geraint Thomas House). 2025/26 EV Car-club planned for Station Gateway infrastructure project (CGP). Highly accessible location for rail/bus stations and town centre facilities. Available for public use as well as residents.	Car Club at Geraint Thomas House – S106 funding and contract with Co-Wheels ended Jan 2025. Uptake of scheme was not sufficient for Co-Wheels to renew. Station Gateway EV Car-Club delayed due to Planning issues (water neutrality) for the residential development
29	CBC Staff Car Loan - Council Vehicle procurement requires vehicle emissions limit eligibility for loan	Promoting Low Emissions Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles.	2000	Ongoing /2040	CBC	CBC	Fully Funded	Not Known (dependant on number and value of loans). Estimate £100k - £500k	Implemented /ongoing. (Individual applications)	Reduced vehicle emissions CO2 level of < 150 g/kg.	Minimum CO2 level of < 150 g/kg.	14 new-staff car loan applications 2024/2025	
30	CBC Staff Bicycle Loan Scheme	Alternatives to private vehicle use	Other	2015	Ongoing/2040	CBC	CBC	Fully Funded	Not Known dependant on number and value of loans). Estimate < £10k	Implemented /ongoing. (Individual applications)	No Target set (low)	Modal shift from private vehicle to bicycle	2 new loans awarded 2024/25	CBC staff loan to buy Bike

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31	CBC Staff Cycle to Work Scheme	Alternatives to private vehicle use	Other	2015	Ongoing/2040	CBC/Cycles scheme	Cycles scheme	Fully Funded	Not Known Estimate < £10k	Implemented /ongoing. (Individual applications)	low	Modal shift from private vehicle to bicycle	7 new applicants 2024/25	Bike Hire Scheme CBC/Partnership with "Cycle scheme" which allows employees to purchase bike through other shop outlets
32	Council Vehicle Fleet - LEVs Fleet replacement prioritising uptake of EV/low emission vehicles	Vehicle Fleet Efficiency	Promoting Low Emission Public Transport	2012	Ongoing/2040	CBC	CBC	Fully Funded (Capital replacement budget)	Not Know Estimate £500k - £1 million	Funding identified/ tender awarded.	Reduced vehicle emissions	Council vehicle Fleet improvement shift to LEV/ Zero emissions	**Vehicle Replacements for 2024/25** (no new EV vehicles acquired): 2 x New Euro 6 Diesel ride on mower for Neighbourhood Services (replacing Euro 5) 1 x New Euro 6 Diesel HGV Road Sweeper for Neighbourhood Services (replacing Euro 5) 2 x New Euro 6 Diesel Groundsman Pick up vehicles (replacing Euro 5) **Procurement for 2025/26** Additional vehicles for new projects (no EVs): 4 x ride on mowers for Neighbourhood services 2 x additional tractors for sports grounds 5 x additional HGV refuse vehicles for Waste and Recycling	No vehicle replacements are planned for 2025/26 due to budget restraints. Any additional new vehicles required for new projects are expected to be Euro 6 diesel. No EVs have been identified.
33	Emission Standards for Licensed Taxis	Promoting Low Emissions Transport	Taxi emission incentives	2020	Due to be adopted 2021/22 and implemented from 2022/23 Delayed until 2025/6(see Comments)	CBC	LEV capital replacement funded by individual licensed taxi operators' (or alternative funding sources where available eg grants)	Not Funded by CBC. Privately funded or partially grant funded	Not Known (Renewal purchase costs on individual basis)	2020 Policy update not formally adopted due to Covid impact on taxi trade. Report to go to Licensing committee Q4 2024 to introduce tighter emissions standards (delayed from 2023 - see comments section)	Target for Zero emissions by 2030	Original 2020 indicators: All new taxis zero emission capable (ZEC) from Q2 2022 Existing taxis retrofitted to Euro 6 Q4 2022. Diesel phased out 2027. Following post Covid new policy requires all new taxis Euro 6 from 2022. New tighter standards proposed from 2024/25	Policy Review report to include more robust emissions strategy (engine size, emissions and vehicle age) was due to go to Licensing Committee 2023 This was delayed are re-scheduled for 2024. 2024 - no significant improvements in emissions standards. Committee considered introduction of tougher emission controls unreasonable financial burden on Taxi trade during cost-of-living crisis. However, the Council continues	Geographical vicinity of Crawley to M25 ULEZ border may positively impact transitional speed of Crawley's Taxis and private hire vehicles (PHVs) fleet to cleaner vehicles for compliance in London's ULEZ. Taxi fleet mix being monitored to assess if rate of replacement/ LEV mix is improving.

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
													to incentivise electric / hybrid through reduced licence fee. Improved standards to be tabled again at Nov 2025 licensing committee.	
34	Junior Citizen Annual Event on citizenship safety, sustainability and environmental issues, including air quality	Public Information Promoting Travel Alternatives	Other (Interactive games and Awareness raising)	1990	Ongoing/2040	CBC	CBC	Fully Funded	£8k	Annual September event	No Target set	Education/ Awareness / Modal Shift	Annually approximately 1200 KS2 (Year 6) pupils per year attend the event which has been running for over 30 years. Educational programme “Air quality in our local area” delivered through eco-action games and small discussion groups.	
35	airAlert Pollution Warning Service for people with asthma, COPD, or other respiratory/ cardio problems Smoke Control Area publicity	Public Information	Via other mechanisms SMS/ Mobile phone App/ Email	2006	2025	Sussex Air Quality Partnership (Sussex-air)	Sussex Air Quality Partnership (Sussex-air)	Fully funded	£4.2k	implemented	Health based service. No Target set but raises awareness of health impacts of pollution to help manage chronic health conditions and drive behavioural change.	Subscriber numbers: Subscription numbers to the alert service	App, text, or email sent to warn of high pollution and advise action to manage health and drive behavioural change. Over 800 registered subscribers. No direct emissions reductions but health benefits from direct application of monitoring data and raises awareness of air quality.	Sussex-air partnership decision to discontinue air-Alert service as no longer financially sustainable. Subscribers signposted to alternative services available to support respiratory health.
36	Public Health Awareness and Information on the Effects of Solid Fuel Burning	Public Information	Via other mechanisms SMS/ Mobile phone App/ Email	2024	ongoing	CBC	Defra New Burdens Funding	Fully funded	£11,700	Implemented	Health based service. No Target set but raises awareness of health impacts	Reduction in Smoke emissions and complaints	2024 enforcement procedure for civil penalties for smoke emissions within Smoke Control Areas and policy to set the level of the charge (for financial penalties) 2025 Awareness raising for health impacts and controls of smoke emissions	
37	Living Streets Campaign	Promoting Travel Alternatives	Promotion of Walking	2000’s/ ongoing	Ongoing/2040	WSCC Wellbeing/ Living Streets/ CBC	WSCC/ CBC	Fully Funded	Not Known	Implemented (annually)	No Target set Reduced vehicle emissions.	Modal shift	Annual campaign event with information, events, and activities to promote walking.	Targeted at council staff and local businesses
38	Events: Clean Air Day, Love Your Lungs Week, Car free Day, Cycle to Workday	Public Information	Other – see comments	2000’s/ ongoing	Annual events – ongoing/2040	CBC/ WSCC/ Sussex-air	CBC/ WSCC/ Sussex-air	Fully Funded	Not Known	Implemented (annually)	No Target set. Reduction in emissions from behavioural change And mode shift	Public Engagement. Pledges for behavioral change. Modal shift. Take-up of initiatives. Website hits.	Joint working with WSCC/ Sussex-air/ Public Health/ CBC (EH/ Sustainability Teams) to support campaigns and promotion of air-Alert through social media posts on:	Public Health Information/ Awareness Campaigns promoting sustainable modes of travel to staff and public: Public awareness campaign through

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
												Increase subscribers for air-Alert	Clean Air Day 20 June 2025, Love Your Lungs Week 23 to 29 June 2025 Cycle To Work Day 07 August 2025 - CBC to host EV bike display for public and staff Car Free Day 22 Sept 2025	editorials and advertisements in WSCC Connections and social media posts.
39	Carbon Literacy Training - for staff and Councillors to raise awareness of causes of climate change	Public Information	Other (in house training)	2025	ongoing	CBC	CBC	Fully Funded	Not known	Implemented	No Target set. Reduction in emissions from behavioural change	Behavioral change. Modal shift.	Carbon Literacy Training available for staff and Councillors – with candidates achieving certified Carbon literate. Further courses due to be delivered for local community-based organisations and businesses in the local area.	
40	Crawley Homes (Council owned housing) LED lighting installation Programme	Promoting Low Emission Plant	Shift to installations using low emission fuels	2015	Ongoing/2030 LED Replacement scheme when lights fail replaced with LED	CBC	CBC	Fully funded	Costed on a project-by-project basis	ongoing	LED replacement providing 40% reduction weekly wattage (> 50k watts)	45% Reduction in CO2 Emissions by 2030 100% Reduction in CO2 Emissions by 2050	Ongoing programme of LED lighting installation in communal areas of residential blocks, sheltered accommodation and other Crawley residential and community own property.	
41	Net Zero Retrofit Project for Crawley Homes (Council owned housing) for Energy Saving and Carbon Reduction Measures	Promoting Low Emission Plant	Other - installations of wall/floor/roof insulation and low emission heating to reduce emissions	2020	Estimated completion 2024	CBC /Net Zero Collective Group/ University of Southampton	CBC/ LEP funding for green retrofitting.	Fully Funded (see comments)	Estimate £15-20K per property.	Pilot project collaboration between CBC, Net Zero Collective Group and University of Southampton to monitor and assess different housing types in Crawley Homes for energy saving and carbon reduction measures and energy efficiency. Aim to find most cost-effective methodology for retrofit across mixed portfolio of CBC homes to pas2035 standards. https://netzerocollective.co.uk Pilot completed - retrofit programme to continue	Reduction in Emissions Aiming for net zero	Lower energy bills and reduced carbon footprint - measured by EPC rating before and after retrofit. Toolkit developed by Southampton Uni to calculate EPC (future industry standard) for decarbonisation / energy efficiency. Research to find most efficient / effective method of decarbonising UK homes to maximise social value of investment.	2021/22 - pilot completed (10 properties) Results: energy savings>30% achieved. 2022-24 further pilot (and retrofit of cavity wall insulation, external wall) Insulation (timber framed), loft insulation, air source heat pumps, solar PV with battery, removal of gas supply CBC contractors for Crawley Homes (Mears and Waites) are now Pas 2035 accredited and responsible for surveying coordinating and installing retrofit to Pas 2035 standard from March 2023.	Ongoing monitoring and research into the 'Net Zero Project' has provided insight into how renewable and low carbon technologies work best in Crawley Homes properties. Applying for LEP funding through Town Investment plan
42	Energy Efficiency Retrofit Project in Crawley	Promoting Low Emission Plant	Other - installations of wall/floor/roof insulation and low emission heating	2022	2023/24	CBC	SHDF (Social housing de-	Fully Funded SHDF Wave1 £690k	£690k Costed on a project-by-project basis.	Full decarbonisation retrofit programme of works to Pas 2035 standard following on from pilot study (above).	Reduction in Emissions Aiming for net zero	De-carbonisation Higher energy efficiency, reduced	2023 Work started on Fully Funded SHDF Wave1 retrofit installation programme. Wall	

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
	Homes (SHDF Wave 1)		to reduce emissions				carbonisation fund) Wave 1			Works to include upgrades to insulation and low emission heating to 59 Crawley Homes properties in Broadfield district of Crawley.		emissions, and lower energy bills	and loft insulation, air source heat pumps Solar PV with battery. Removal of gas supply 2024 Wave 1 works completed for: Loft insulation, external wall insulation, cavity wall insulation, windows & doors, ventilation	
43	Crawley Homes Cavity Wall Insulation project in Crawley Homes (Towns Fund)	Promoting Low Emission Plant	Other - installations of wall insulation to reduce emissions	2023	4-year project 2023-2026	CBC	Towns Fund	Fully Funded	£4m Costed on a project-by-project basis.	2022 Successful bid £4m funding from Crawley Towns Fund for cavity wall insulation to 248 apartment blocks (1500 flats) over 4 years.	Reduction in Emissions by 2030	Higher energy efficiency, reduced emissions, and lower energy bills	2022 survey. 2023 installation started. 2024 on track to complete 1000 installations/ properties. 2025 Towns Fund project has achieved the targeted property completion ahead of programme and below budget. Further properties are being installed in order to achieve the carbon target.	
44	Solar PV Installation in Crawley Homes	Promoting Low Emission Plant	Other - installations of wall/floor/roof insulation and low emission heating to reduce emissions	2021	Ongoing/2030	CBC/WSCC	CBC/WSCC	Fully Funded	Costed on a project-by-project basis	Solar PV programme implemented and ongoing.	Reduction in Emissions by 2030	Higher energy efficiency, reduced emissions, and lower energy bills	Ongoing installation programme. Some communal blocks already supplied with Solar PV have battery storage others awaiting battery installation to improve energy efficiency. 2025 PV scheme and policy being developed	
45	Solar PV Installation at Crawley's K2 Leisure Centre car park	Promoting Low Emission Plant	Other - installations of wall/floor/roof insulation and low emission heating to reduce emissions	2024	2025	CBC	Sport England's Swimming Pool Support Fund (SPSF) and CBC	Fully Funded	£707K SPSF £250K CBC	Completed June 2025	Estimated approx. 100 tonnes CO2/yr	Reduced energy consumption, reduced emissions	Works completed	
46	Thermal Insulation U-Value Improvement Programme in Crawley Homes	Promoting Low Emission Plant	Other - installations of wall insulation to reduce emissions	2022	Ongoing/2030 Annual Planned Maintenance	CBC	CBC	Fully Funded	Costed on a project-by-project basis	Annual planned maintenance to improve U-Value in Crawley homes through a programme of upgrades to: Windows and doors Roof /loft Insulation Floor insulation (suspended timber floors)	Reduction in Emissions by 2030	Higher energy efficiency, reduced emissions, and lower energy bills	Works started 2023 to upgraded u-value windows and doors and roof /loft 2024 167 homes identified for Upgraded u-value windows and doors and 233 homes upgraded u-values roof/loft. 2025 on-going works. Aiming for 200 homes per annum to upgrade windows and doors and 350 homes per	On-going Crawley Homes Thermal Insulation U-Value Improvement Programme

Measure No.	Measure Title	Category	Classification	Year Measure Introduced in AQAP	Estimated / Actual Completion Date	Organisations Involved	Funding Source	Funding Status	Estimated Cost of Measure	Measure Status	Reduction in Pollutant / Emission from Measure	Key Performance Indicator	Progress to Date	Comments / Barriers to Implementation
													annum to upgraded roof /loft Insulation	
47	Boiler Efficiency Improvement Programme in Crawley Homes	Promoting Low Emission Plant	Other - installations of wall insulation to reduce emissions	2022	2025/26	CBC	CBC	Fully Funded	Costed on a project-by-project basis	Annual panned maintenance programme for boiler replacement. Aiming to phase out gas on existing properties by 2025	95% increase in efficiency Reduction in NOx Emissions	Reduction in NOx emissions, improved efficiency and lower energy bills	Annual panned maintenance programme (costed on a project-by-project basis) to phase out gas in existing housing stock.	2025 target timescale may slip. Boiler replacement being determine on a case-by-case basis. Determined by what other works the properties require.
48	Q-Bot installed floor insulation in Crawley Homes with suspended timber floors	Promoting Low Emission Plant	Other - installations of floor insulation to reduce emissions	2023	Pilot – if successful consider for ongoing maintenance /2027	CBC	CBC (potential ECO4 funding being investigated)	Funded	Costed on a project-by-project basis	Implemented (Pilot)	15% energy loss through timber floor improved 60%	Higher energy efficiency, reduced heat loss, and lower energy bills	2023/24 Q-Bot insulation installed into 4 homes. Pilot to understand if CBC has properties suitable for this type of floor insulation. if successful consider for ongoing maintenance. 2024/25 - seeking funding through ECO4	Low volume of suspended timber floor properties - being improved as and when applicable.
49	Environmental Permitting of Industrial Sources of Pollutants including Particulates	Environmental Permits	Measures to reduce pollution through IPPC Permits going beyond BAT	Regulations introduced in 1990s	Ongoing/2040	CBC	CBC	Partially Funded through subsistence fees	Estimated £10k - 50k	Implemented and ongoing	Reduction in pollution from industrial sources including particulates and VOCs	Compliance with Permit Conditions	Ongoing inspection and regulation of industrial processes in Crawley	
50	Clean Air Charter for Crawley	Policy Guidance and Development Control and Promoting Low Emission Plant and Transport	Other Policy/ Shift to low emission equipment and fuels	2024	Draft Charter estimated 2025 Ongoing implementation/ 2040	CBC/ Local Businesses	CBC	Fully Funded or seek Government Grant funding	Costed on a project-by-project basis	In development/ Draft	Reduction in emissions from council-controlled sources including: Vehicle fleet Housing/ Energy emissions from council owned housing/buildings Staff travel Council contractors Staff travel	Emissions balance sheet	A Clean Air Charter for Crawley being developed - aims to demonstrate Council's commitment to, and actions for reducing emissions from sources within its control. The Charter will also seek to engage with local business community and residents - on a voluntary basis.	

2.3 $PM_{2.5}$ – Local Authority Approach to Reducing Emissions and/or Concentrations

As detailed in Policy Guidance LAQM.PG22 (Chapter 8) and the Air Quality Strategy[1], local authorities are expected to work towards reducing emissions and/or concentrations of fine particulate matter ($PM_{2.5}$)). There is clear evidence that $PM_{2.5}$ (particulate matter smaller 2.5 micrometres) has a significant impact on human health, including premature mortality, allergic reactions, and cardiovascular diseases. Those most at risk from particulate pollution are the young, elderly and those with predisposed medical conditions which may be exacerbated by elevated levels of air pollution.

PHE have produced a Public Health Outcomes Framework (PHOF) which identifies an indicator for the fraction of mortality attributable to particulate air pollution in each authority in the UK. Using this framework, it is possible to compare the values for Crawley to regional and national values, as well as other nearby authorities in Sussex.

In Crawley, the latest (2023) estimated fraction of mortality attributable to long-term exposure to particulate pollution was 5.1%. These indicators are calculated for all local authorities in England. Crawley's level (5.1%) places it in a similar position to other urban centres in the region such as Reigate (5.3%), Brighton (5.0%) and Worthing (4.8%), but below the higher mortality values attributable to PM in major cities such as London (6.2%) and the national average in England of 5.2%.

The mortality indicator for particulate pollution in Crawley has improved slightly from the previous year (5.2%). This improvement was not consistently reflected across the region with Brighton and Worthing presenting higher values than the previous reporting year (BHCC 4.5, WDC 4.7). However, year on year variations in exposure to particulate pollution can be influence by many factors including domestic sources from solid fuel burning and gas cooking, industrial sources from mineral industries, construction dust, transport emissions, as well as geographical and weather patterns bringing in transboundary pollution.

The 2024 measured annual mean $PM_{2.5}$ in Crawley was 7.0ug/m^3. The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 require that in England an

[1] Defra. Air Quality Strategy – Framework for Local Authority Delivery, August 2023

annual average of 10µg/m^3 for $PM_{2.5}$ is achieved by the end of 2040 and population exposure to $PM_{2.5}$ is at least 35% less than in 2018 (with interim targets for annual average of 12µg/m^3 and at least 22% reduction, compared to 2018, by January 2028). Although there are no exceedances of $PM_{2.5}$ concentrations in Crawley, the council still has a duty to reduce emissions and exposure to this pollutant.

The Council is working towards reducing $PM_{2.5}$ through measures aimed at a range of sources in the area, including transport, development, industrial processes and domestic burning.

Crawley Borough Council is taking the following measures to address $PM_{2.5}$:

1. **Smoke Control Areas (SCAs) in Crawley**: Most of Crawley (except for Gatwick Airport and some newer residential areas of the borough) are designated as SCAs. In 2024 the Council drafted a new enforcement procedure for civil penalties for smoke emissions within Smoke Control Areas (Clean Air Act 1993, as amended by the Environment Act 2021), including a policy to set the level of the financial penalties. This was followed-up by public awareness raising of the links between domestic solid fuel burning and health, including advice on “Clean Burn” and civil penalties for smoke emissions within smoke control areas. In the last reporting year two warning letters were issued, but no financial penalties resulted from these warnings due to subsequent compliance (Measure 36 Table 2.2).
2. **Regulation of Industrial Processes:** Permits issued under the Environmental Permitting Regulations (England and Wales) 2016 (as amended) set out conditions for the direct control and regulation of certain industrial sources of $PM_{2.5}$ emissions. In Crawley these include mineral processes such as concrete batching, concrete crushing, and road-stone coating, as well as combustion processes such as crematoria and biomass boilers (SWIP). (Measure 49 Table 2.2)
3. **Air Quality Action Plan:** Many of the action plan measures listed in Table 2.2 include infrastructure projects which support low emission travel alternatives (e.g., cycling, walking, electric vehicles, car sharing etc) and help facilitate modal change, which together work to reduce particulate emissions. (Multiple measures - Table 2.2)
4. **Policy Measures:** Council procurement of low emission vehicles and tightening the emissions standards for licensed taxis. (Measures 29, 32,33 Table 2.2)

5. **Local Plan Policy:** Implementation of the planning conditions to control dust emissions and Sussex Air Quality and Emissions Mitigation guidance to reduce and/or mitigate emissions. (Measures 17 and 18 Table 2.2)
6. **Local Transport Plan:** Traffic management measures to reduce congestion, improve traffic flow which help reduce road traffic pollutant emissions, including $PM_{2.5}$. (Multiple measures Table 2.2)
7. **Net Zero Retrofit Project for Crawley Homes**: removal of domestic gas supply for cooking and heating in Crawley social housing (Crawley Homes) leading to reduction in particulate emissions as well as CO_2 and NO_2 ((Measures 3, 41, 42, 47 Table 2.2)
8. **Monitoring:** Direct monitoring of $PM_{2.5}$ in Crawley has been available since 2020 when the TEOM particulate analyser at Crawley's Gatwick Airport monitoring station (CA2) was replaced with a FIDAS. In addition, a new AURN site is being installed at a site in Crawley and data on background levels of $PM_{2.5}$ in Crawley is expected to be available 2025/6.

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

This section sets out the monitoring undertaken within 2024 by Crawley Borough Council and how it compares with the relevant air quality objectives. In addition, monitoring results are presented for a five-year period between 2020 and 2024 to allow monitoring trends to be identified and discussed.

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

Crawley Borough Council undertook automatic (continuous) monitoring at one site (Gatwick East CA2) during 2024. Table A.1 in Appendix A shows the details of the automatic monitoring sites.

The Gatwick East monitoring site was closed following an incident in May 2024, which resulted in a shutdown of the power supply. There are plans to redevelop the site in the long term, but with no guarantees that the monitoring station will be able to remain, and in the meantime the electricity connection is not being restored. Plans are underway to relocate the monitoring station to a new location close to the existing site.

As a result of the closure of CA2, data for 2024 was below 30% so annualisation had to be applied to all collected data. The Sussex-air page presents automatic monitoring results for Crawley Borough Council, with automatic monitoring results also available through the UK-Air website .

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

NB. Local authorities do not have to report annually on the following pollutants: 1,3 butadiene, benzene, carbon monoxide and lead, unless local circumstances indicate there is a problem.

3.1.2 Non-Automatic Monitoring Sites

Crawley Borough Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 52 sites during 2024. 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.

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_2)

Table A.3 and Table A.4 in Appendix A compare the ratified and adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40µg/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 2024 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.

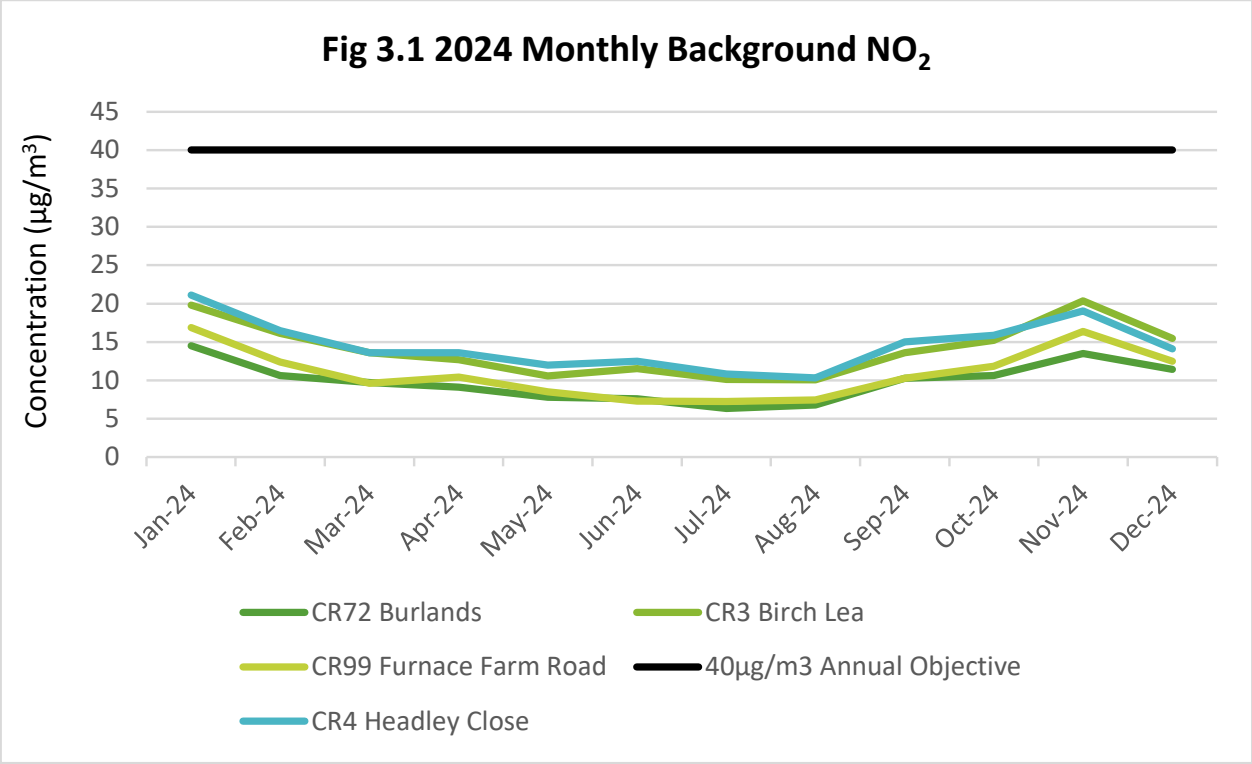
Table A.5 in Appendix A compares the ratified continuous monitored NO_2 hourly mean concentrations for the past five years with the air quality objective of 200µg/m^3, not to be exceeded more than 18 times per year.

The data in Table B.1 shows that air quality in Crawley is mainly good. There is no evidence that the hourly objective for NO_2 was exceeded at any sites across Crawley in 2024 ((an annual mean concentration of >60ug/m^3 NO_2 indicates a potential exceedance of the hourly mean standard), and the annual mean objective of 40µg/m^3 was achieved at all monitoring locations.

2024 Background NO_2 in Crawley

There were no exceedances of the annual or hourly mean objectives for NO_2 at background sites in Crawley in 2024.

Figure 3.1 below shows the monthly concentrations of NO_2 at long term background sites in Crawley for 2024.

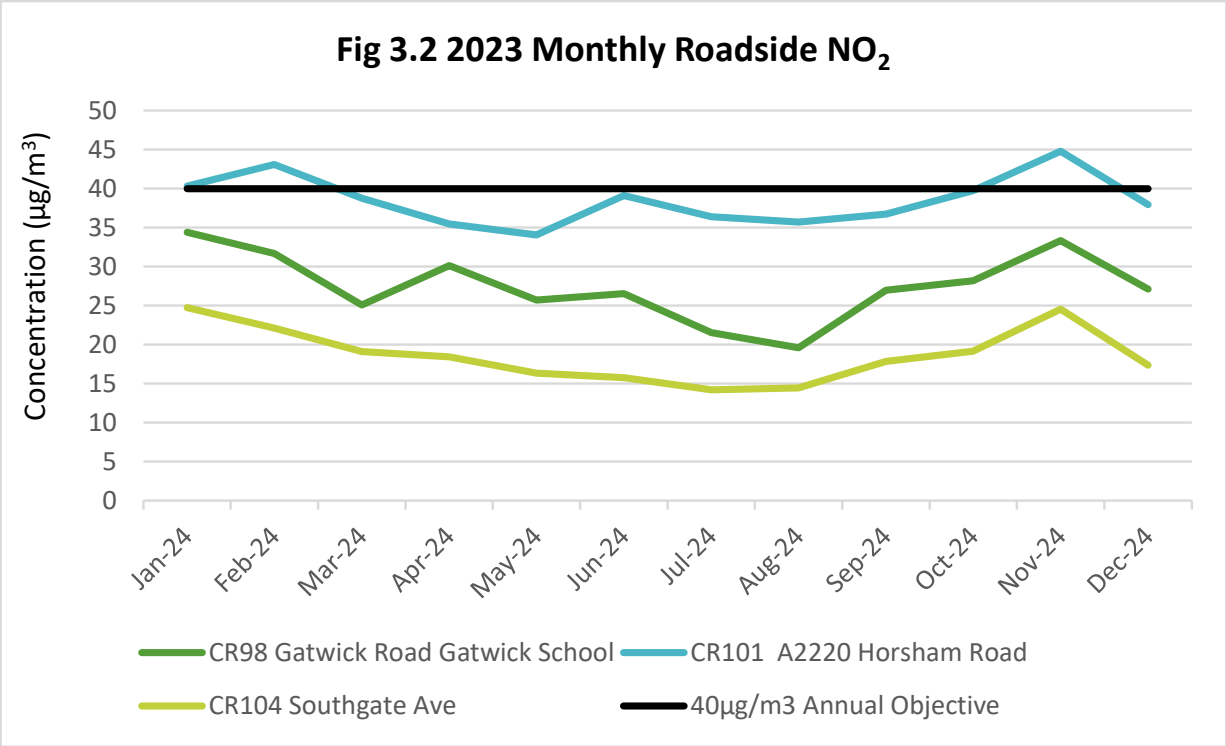


2024 Roadside NO_2 in Crawley

There were no exceedances of the annual mean objective of 40µg/m^3 at roadside sites in 2024. Most sites saw a slight decrease in 2024 on the previous year.

There were no indications that the hourly mean objectives for NO_2 (200 µg/m^3 > 18 times per year) had been exceeded at any of the roadside monitoring sites in Crawley in 2024.

Figure 3.2 shows the monthly concentrations of NO_2 at long term roadside sites in Crawley during 2024.



2024 NO_2 in Crawley AQMA

There were no exceedances of the annual, or hourly mean objectives for NO_2 at sites with relevant exposure within the AQMA in 2024. This is the second year running that no sites in the AQMA have exceeded or been within 10% of the annual mean objective, indicating a positive and measurable improvement in the area.

The annual review process will continue to assess the trend years to see if the impact of major development in the borough slows or offsets these improvements, or if targeted local measures and cleaner fleet mix, can help maintain the air quality gains achieved over the last decade. The Council is not considering revoking the AQMA until a continuing trend of reduced NO_2 concentrations is maintained in future years.

Figure 3.3 shows monthly concentrations of NO_2 in the Three Bridges area of Crawley's AQMA during 2024.

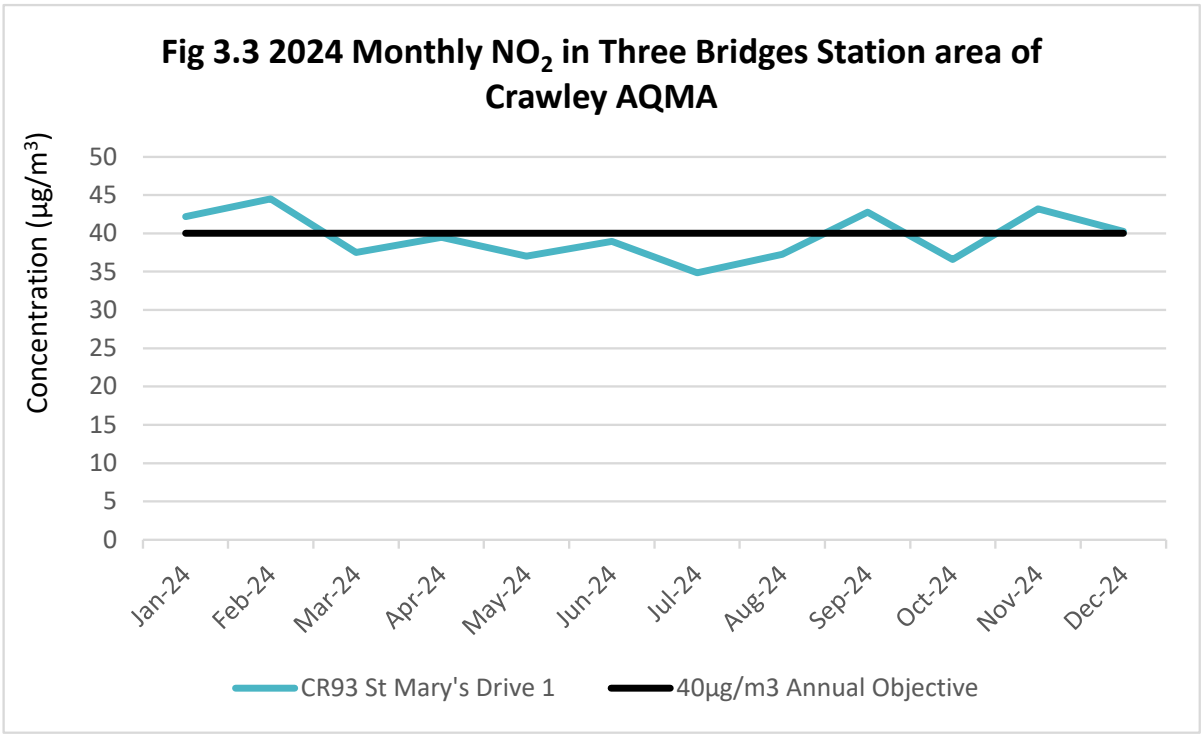
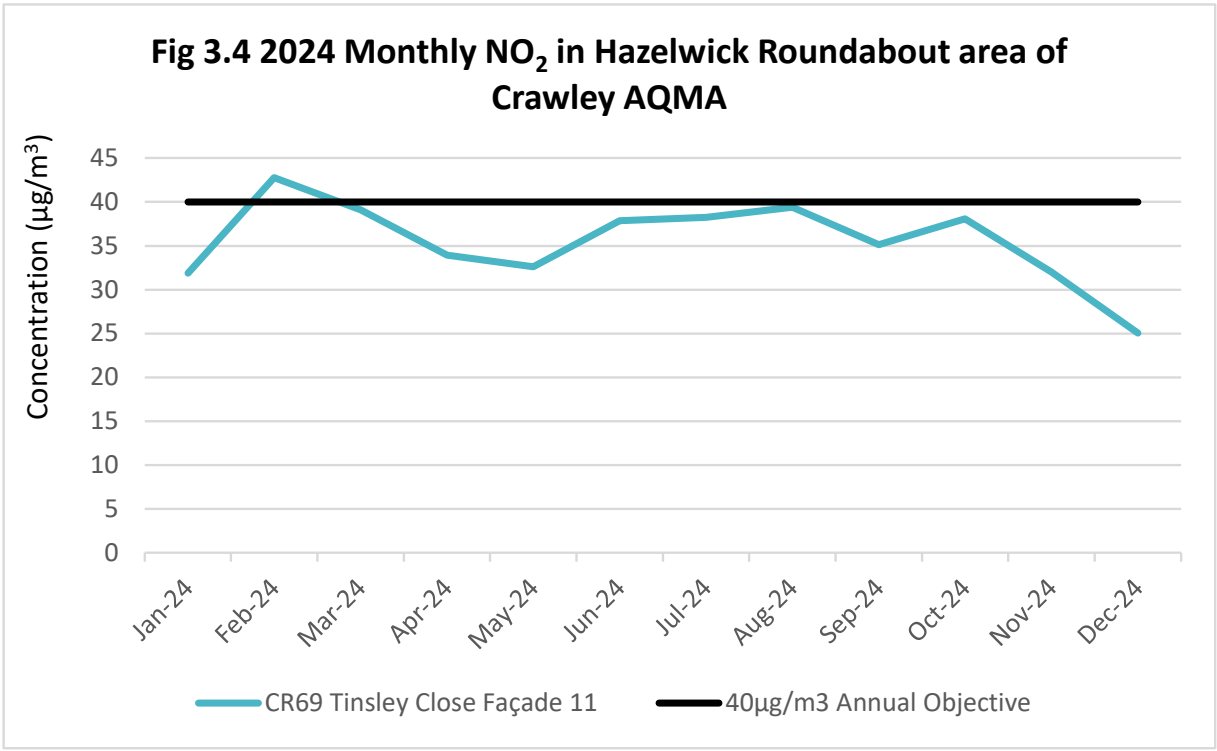


Figure 3.4 shows monthly concentrations of NO_2 in the Hazelwick Roundabout area of Crawley's AQMA during 2024.



2024 NO_2 Gatwick Airport

There were no exceedances of the annual or hourly mean objectives for NO_2 at the Gatwick East monitoring site (CA2) in 2024 or at any residential receptor sites close to the airport.

Figure 3.5 indicates that the co-located diffusion tube data at the CA2 site shows good correlation with the continuous data for the duration of the monitoring period. Following an act of vandalism the continuous monitoring site CA2 ceased operation in May 2024.

The results show a similar monthly pattern and annual means (16.9µg/m^3 at CA2 and 16.2 µg/m^3 at the co-located sites) although the annual mean result from CA2 should be treated with caution due to low data capture.

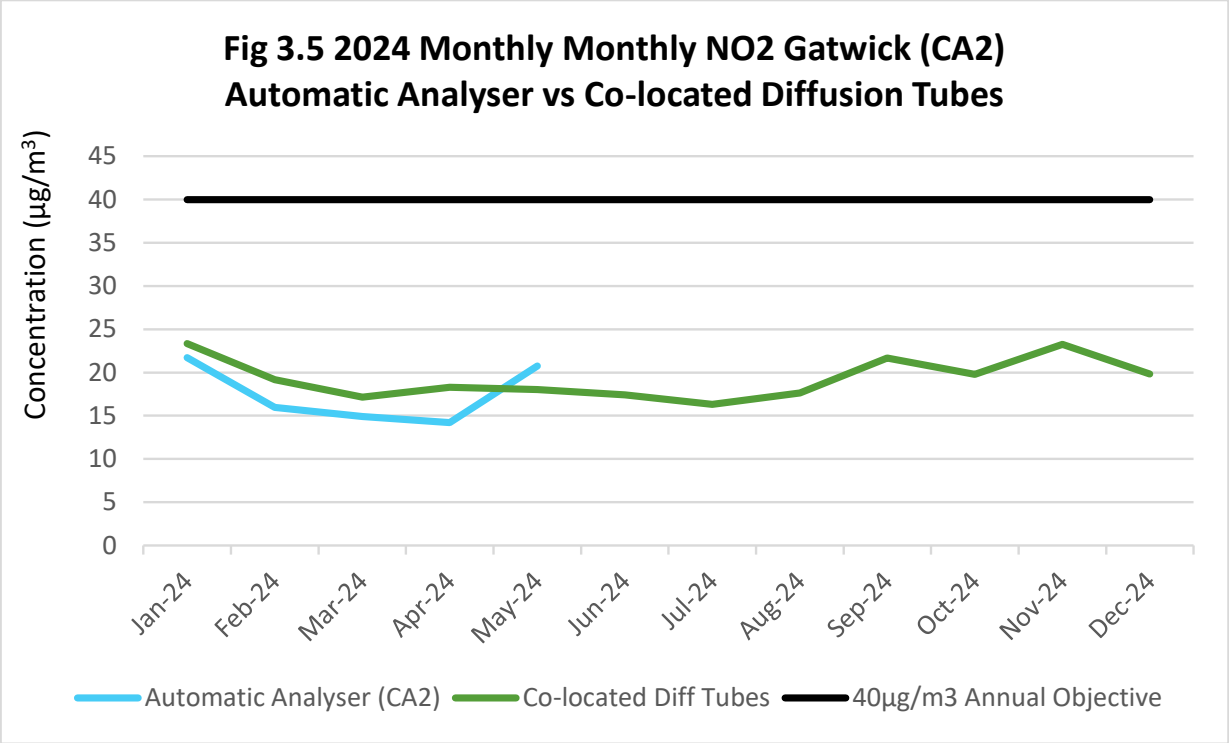
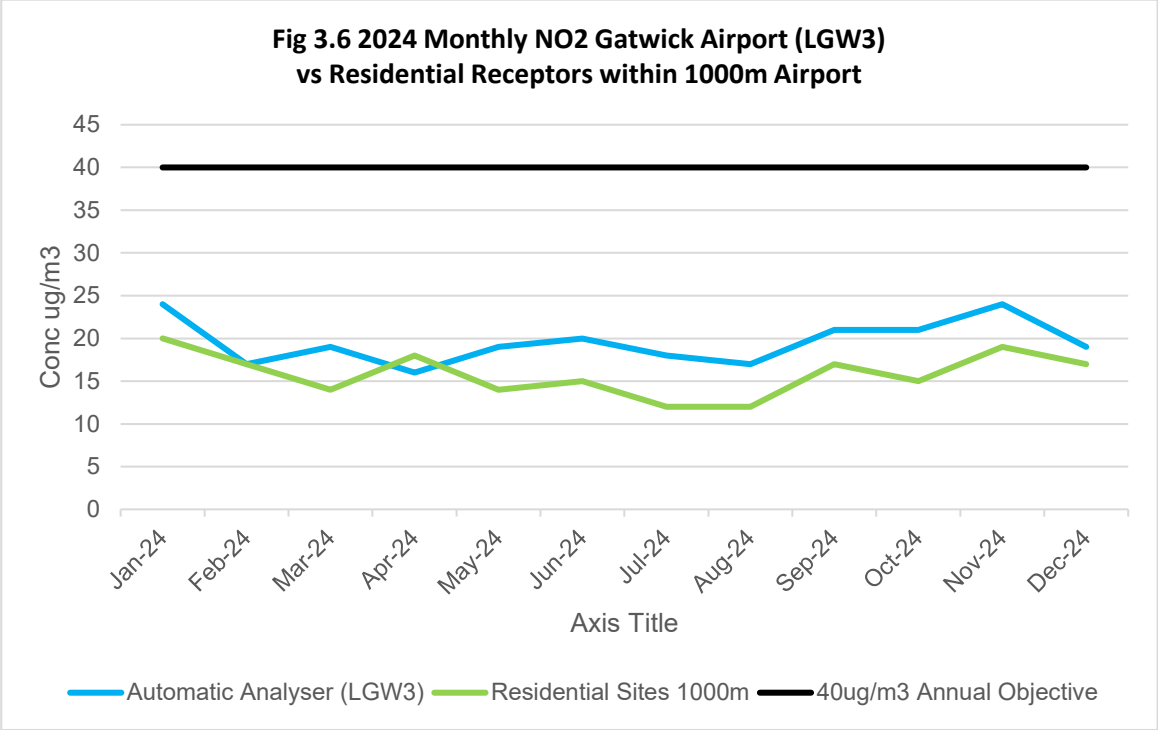


Figure 3.6 presents the 2024 monitoring data for residential properties close to Gatwick. Determining relevant exposure at residential properties within 1000m of the airport is one of the assessment criteria required for authorities with a major airport in their authority.

The data shows there were no exceedances of the objectives in 2024, and levels follow the similar monthly pattern as the airport data. Following an act of vandalism the continuous monitoring site CA2 ceased operation in May 2024, residential exposure is

therefore compared against data from Gatwick's monitoring site LGW3 (located at the south terminal).



Long term (5 year) trends in NO_2 levels are considered in more detail in Appendix A, where NO_2 concentrations are discussed in relation to traffic flows in Crawley to look at the influence changing traffic levels and to what extent this may impact air quality.

3.2.2 Particulate Matter (PM_{10})

Table A.6 in Appendix A: Monitoring Results compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 40µg/m^3.

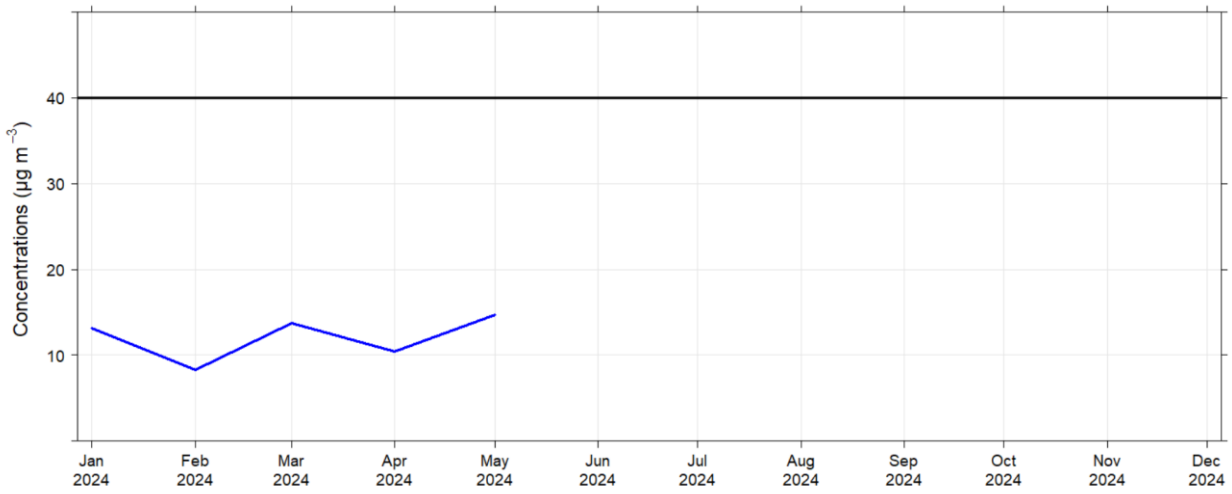
Table A.7 in Appendix A compares the ratified continuous monitored PM_{10} daily mean concentrations for the past five years with the air quality objective of 50µg/m^3, not to be exceeded more than 35 times per year.

A particulate monitor has been permanently located at Crawley's automatic monitoring station (CA2) on the eastern boundary of Gatwick airport for 20 years. A new particulate monitor (FIDAS) which measures both PM_{10} and $PM_{2.5}$ was installed at the beginning of March 2020 to replace the old TEOM monitor. The FIDAS has been certified in the UK for

use without the need for correction to the PM_{10} data. The 2024 PM_{10} monitoring results (Appendix A) show compliance with both the annual and 24-hour mean objectives.
The annual mean PM_{10} concentration recorded in 2024 was 12.2µg/m^3. Although the result for 2024 should be treated with caution due to low data capture, this shows a small decrease on the previous year's (2022) concentration and continues, for a third year running, to be below the annual mean 15µg/m^3 guideline level recommended by the World Health Organisation.

Figure 3.7 shows monthly concentrations of PM_{10} at Crawley's continuous monitoring station at Gatwick (CA2) during 2024.

Fig 3.7 2024 Monthly PM_{10} Gatwick Airport (CA2)



3.2.3 Particulate Matter ($PM_{2.5}$)

Table A.8 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years.

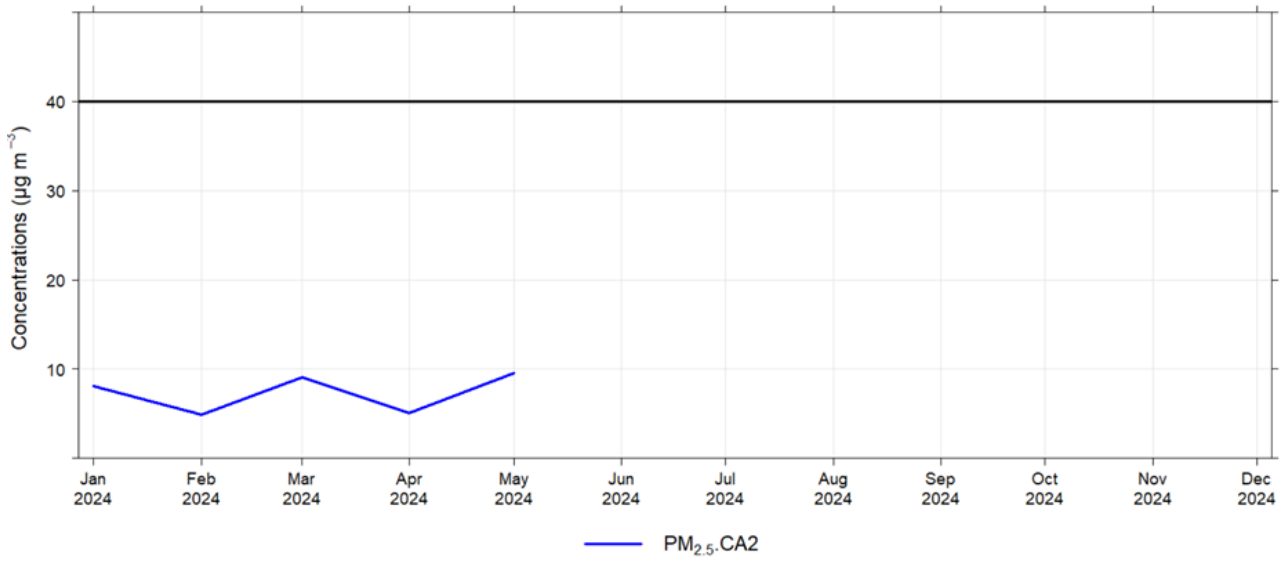
Since the installation of the new particulate monitor in 2020 the council has been able to carry out real-time monitoring for $PM_{2.5}$. Before 2020, annual mean $PM_{2.5}$ was estimated from the TEOM PM_{10} measurements (CA2) using a local ratio of $PM_{2.5}$ to PM_{10}, following the method described in Box 7.7 of Technical Guidance TG (16).

Although the FIDAS has been certified in the UK for use without the need for correction for PM_{10} measurements, precautionary advice given in 7.174 of LAQM.TG (22) requires $PM_{2.5}$ data to be corrected for slope by dividing by 1.06 (Appendix C). This correction has therefore been applied to the $PM_{2.5}$ data reported in Appendix A (Table A.8).

The measured annual average $PM_{2.5}$ in 2024 was 7.0µg/m^3 (corrected as described above). This value is below the annual mean target value of 10µg/m^3. However, the results remain above the WHO-recommended annual mean guideline value of 5µg/m^3.

Figure 3.8 shows monthly concentrations of $PM_{2.5}$ at Crawley's continuous monitoring station at Gatwick (CA2) during 2024.

Fig 3.8 2024 Monthly $PM_{2.5}$ Gatwick Airport (CA2)



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? (1)	Monitoring Technique	Distance to Relevant Exposure (m) (2)	Distance to kerb of nearest road (m) (1)	Inlet Height (m)
CA2	Gatwick East	Industrial	529417	141496	NO_2 PM_{10} $PM_{2.5}$	NO	N/A	Chemiluminescence/ FIDAS	63.0	7.0	1.8

Notes:

(1) N/A if not applicable

(2) 0m if the monitoring site is at a location of exposure (e.g. installed on the façade of a residential property).

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) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
CR1	High St	Urban Background	526799	136785	NO_2	NO	15.8	1.8	No	2.0
CR3	Birch Lea	Urban Background	528438	138392	NO_2	NO	6.9	0.5	No	2.0
CR4	Headley Close	Urban Background	529864	138204	NO_2	NO	14.8	0.5	No	2.0
CR48	Lynhurst Cottage	Urban Background	527110	139530	NO_2	NO	0.0	21.0	No	1.5
CR49	Charlwood Nursery	Urban Background	526320	139860	NO_2	NO	0.0	36.0	No	1.5
CR50	Rowley Cottage	Urban Background	527810	139929	NO_2	NO	0.0	75.0	No	1.5

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) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
CR51	Balcombe Rd	Urban Background	529490	141460	NO_2	NO	0.0	21.0	No	1.5
CR52 T1	Gatwick East	Other	529417	141496	NO_2	NO	63.0	7.0	Yes	1.5
CR53 T2	Gatwick East	Other	529417	141496	NO_2	NO	63.0	7.0	Yes	1.5
CR54 T3	Gatwick East	Other	529417	141496	NO_2	NO	63.0	7.0	Yes	1.5
CR55	Tinsley Close Fence	Urban Background	528446	138085	NO_2	YES	1.1	5.7	No	2.0
CR60	Pegler Way	Roadside	526759	136948	NO_2	NO	6.5	2.3	No	2.0
CR62	Tinsley Close Facade 10	Urban Background	528438	138088	NO_2	YES	0.0	13.6	No	2.0
CR63	Hazelwick R'bout Woodfield Lodge	Roadside	528153	137912	NO_2	YES	30.0	7.4	No	2.0
CR64	Northgate Ave Woodfield Lodge	Roadside	528150	137825	NO_2	YES	4.6	1.5	No	2.0
CR66	Brighton Rd Level Crossing	Roadside	526743	136346	NO_2	NO	0.5	1.2	No	2.0
CR69	Tinsley Close Façade 11	Urban Background	528443	138082	NO_2	YES	0.0	9.3	No	2.0
CR72	Burlands	Urban Background	525534	138472	NO_2	NO	6.8	1.3	No	2.0
CR74	Tinsley Green	Roadside	528978	139599	NO_2	NO	31.5	1.8	No	1.5
CR75	Steers Lane	Roadside	529335	139589	NO_2	NO	18.6	2.0	No	2.0
CR76	Hazelwick Court	Roadside	528292	137810	NO_2	YES	10.3	1.3	No	2.0
CR77	Hazelwick Ave The Bays	Roadside	528362	137812	NO_2	YES	6.3	2.3	No	2.0
CR78	Ferndown	Urban Background	530037	138553	NO_2	NO	0.0	40.0	No	2.0

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) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
CR79	St Hilda's Close	Urban Background	529312	138534	NO_2	YES	0.0	12.0	No	2.0
CR80	Saxon Road	Urban Background	530424	136521	NO_2	NO	0.0	8.7	No	2.0
CR81	Bolton Road	Urban Background	529047	134474	NO_2	NO	0.0	12.8	No	2.0
CR85	Flats Tinsley Lane	Urban Background	528295	138009	NO_2	YES	32.0	9.4	No	2.0
CR86	The Boulevard	Roadside	526878	136821	NO_2	NO	13.8	0.5	No	2.0
CR87	The Broadway	Roadside	526908	136754	NO_2	NO	3.5	0.5	No	2.0
CR88	Filbert Cres	Urban Background	525489	136573	NO_2	NO	0.0	5.4	No	2.0
CR89	Dalewood Gardens	Urban Background	527715	137893	NO_2	YES	0.0	13.8	No	2.0
CR91	Hazelwick Ave Ocean House	Roadside	528681	137177	NO_2	YES	4.7	0.5	No	2.0
CR93	St Mary's Drive 1	Roadside	528895	137115	NO_2	YES	1.5	1.8	No	2.0
CR94	Station Hill	Roadside	528841	137069	NO_2	YES	5.5	3.5	No	2.0
CR95	Worth Park Ave Daniels House	Roadside	528882	137086	NO_2	YES	5.4	2.2	No	2.5
CR96	Worth Park Ave Junior School	Roadside	529125	137196	NO_2	NO	35.0	3.6	No	2.0
CR97	Haslett Ave East Daisy Chain	Roadside	528603	136950	NO_2	YES	3.5	1.1	No	1.5
CR98	Gatwick Road Gatwick School	Roadside	528515	139275	NO_2	NO	12.6	2.1	No	2.0
CR 99	Furnace Farm Road	Urban Background	528410	135628	NO_2	NO	12.1	1.5	No	2.0
CR100	Horsham Road Level crossing	Roadside	526326	136487	NO_2	NO	2.1	1.5	No	2.0

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) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
CR101	A2220 Horsham Road	Roadside	525679	135556	NO_2	NO	8.9	1.1	No	2.0
CR102	A23 Pease Pottage Hill Old Stone Cottage	Roadside	526449	134139	NO_2	NO	5.1	4.5	No	2.0
CR103	St Marys Drive 171	Urban Background	528848	137802	NO_2	NO	0.0	12.6	No	1.5
CR104	Southgate Ave	Urban Background	527333	135846	NO_2	NO	0.0	4.7	No	1.5
CR105	London Rd 102	Roadside	526940	137831	NO_2	NO	10.1	2.7	No	2.0
CR106	London Road 147	Roadside	527000	138357	NO_2	NO	5.9	3.9	No	2.0
CR 107	Rusper Road	Urban Background	524806	136822	NO_2	NO	0.0	10.5	No	1.5
CR 110	Station Way Station car park	Roadside	526928	136356	NO_2	NO	8.0	3.6	No	1.5
CR 111	Station Way Taj Carpark	Roadside	526804	136375	NO_2	NO	0.0	2.4	No	1.5
CR 112	Povey Cross Rd Manor Lodge	Roadside	527206	142325	NO_2	NO	0.0	5.0	No	1.5
CR 113	Haworth Road	Roadside	528928	136266	NO_2	NO	0.0	5.0	No	1.5
CR 114	Billington Drive	Roadside	528947	136206	NO_2	NO	0.0	1.3	No	1.5

Notes:

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

(2) N/A if not applicable.

Table A.3 – Annual Mean NO_2 Monitoring Results: Automatic Monitoring (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
CA2	529417	141496	Industrial	76.0	29.6	17	18	21	19	16.9
LGW3*	528582	140990	Industrial	98.7	98.7	17	18	22	20	19.6
RG3**	526424	139643	Rural	98.6	98.6	10	10	12	11	14.2

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

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

☒ **Where exceedances of the NO_2 annual mean objective occur at locations not representative of relevant exposure, the fall-off with distance concentration has been calculated and reported concentration provided in brackets for 2024.**

Notes:

The annual mean concentrations are presented as µg/m^3.

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

All means have been "annualised" as per LAQM.TG22 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%).

* Site used for comparison, owned/operated by GAL, located on-airport South Terminal runway

** Site used for comparison, Horley AURN site, operated by Reigate & Banstead Borough Council

Table A.4 – Annual Mean NO_2 Monitoring Results: Non-Automatic Monitoring (µg/m^3)

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 2024 (%) (2)	2020	2021	2022	2023	2024
CR1	526799	136785	Urban Background	98.4	98.4	26	28	28	22	19.4
CR3	528438	138392	Urban Background	98.4	98.4	16	17	17	13	11.8
CR4	529864	138204	Urban Background	98.4	98.4	18	18	17	13	12.1
CR48	527110	139530	Urban Background	98.4	98.4	19	19	19	15	15.0
CR49	526320	139860	Urban Background	89.5	89.5	10	12	14	12	10.7
CR50	527810	139929	Urban Background	89.5	89.5	17	18	17	14	13.2
CR51	529490	141460	Urban Background	98.4	98.4	16	15	17	16	13.9
CR52 T1	529417	141496	Other	98.4	98.4	18	18	21	19	16.4
CR53 T2	529417	141496	Other	90.8	90.8	18	18	20	19	16.0
CR54 T3	529417	141496	Other	98.4	98.4	18	18	21	19	16.3
CR55	528446	138085	Urban Background	90.6	90.6	36	35	37	30	27.0
CR60	526759	136948	Roadside	98.4	98.4	25	26	27	20	17.4
CR62	528438	138088	Urban Background	98.4	98.4	34	34	36	29	27.8
CR63	528153	137912	Roadside	98.4	98.4	**42**	**42**	**45**	35	32.8
CR64	528150	137825	Roadside	98.4	98.4	30	31	31	26	24.2
CR66	526743	136346	Roadside	98.4	98.4	27	26	26	22	20.5

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 2024 (%) (2)	2020	2021	2022	2023	2024
CR69	528443	138082	Urban Background	98.4	98.4	36	36	37	32	29.7
CR72	525534	138472	Urban Background	98.4	98.4	11	11	12	9	8.3
CR74	528978	139599	Roadside	89.5	89.5	25	26	25	21	18.5
CR75	529335	139589	Roadside	90.6	90.6	17	19	20	14	13.7
CR76	528292	137810	Roadside	98.4	98.4	28	31	29	24	21.5
CR77	528362	137812	Roadside	98.4	98.4	28	31	31	25	22.0
CR78	530037	138553	Urban Background	98.4	98.4	17	19	19	14	12.5
CR79	529312	138534	Urban Background	89.5	89.5	20	21	21	17	14.4
CR80	530424	136521	Urban Background	98.4	98.4	20	22	22	18	15.5
CR81	529047	134474	Urban Background	98.4	98.4	16	17	17	13	11.9
CR85	528295	138009	Urban Background	98.4	98.4	31	28	30	24	21.2
CR86	526878	136821	Roadside	64.4	64.4	24	21	22	19	16.4
CR87	526908	136754	Roadside	98.4	98.4	29	31	31	26	23.8
CR88	525489	136573	Urban Background	98.4	98.4	21	22	22	18	15.5
CR89	527715	137893	Urban Background	98.4	98.4	17	19	18	14	12.5
CR91	528681	137177	Roadside	89.5	89.5	28	30	29	24	22.4
CR93	528895	137115	Roadside	98.4	98.4	39	**42**	**42**	37	33.1

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 2024 (%) (2)	2020	2021	2022	2023	2024
CR94	528841	137069	Roadside	98.4	98.4	18	25	25	20	17.0
CR95	528882	137086	Roadside	98.4	98.4	24	26	26	20	19.3
CR96	529125	137196	Roadside	90.6	90.6	22	21.7	21	19	16.8
CR97	528603	136950	Roadside	88.9	88.9	28	29	36	29	27.4
CR98	528515	139275	Roadside	98.4	98.4	27	29	29	24	23.0
CR 99	528410	135628	Urban Background	98.4	98.4	13	14	13	10	9.1
CR100	526326	136487	Roadside	98.4	98.4	23	26	26	20	17.7
CR101	525679	135556	Roadside	98.4	98.4	**44**	**41**	**42**	35	32.3
CR102	526449	134139	Roadside	98.4	98.4	26	29	28	23	22.2
CR103	528848	137802	Urban Background	98.4	98.4	13	17	15	12	10.6
CR104	527333	135846	Urban Background	98.4	98.4	19	23	21	17	15.6
CR105	526940	137831	Roadside	98.4	98.4	36	36	38	32	29.2
CR106	527000	138357	Roadside	98.4	98.4	33	37	37	30	27.2
CR 107	524806	136822	Urban Background	92.2	92.2	14	16	15	12	11.8
CR 110	526928	136356	Roadside	81.9	81.9	17	19	19	14	14.4
CR 111	526804	136375	Roadside	98.4	98.4	22	23	23	18	16.9
CR 112	527206	142325	Roadside	98.4	98.4	-	-	18	15	13.3

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 2024 (%) (2)	2020	2021	2022	2023	2024
CR 113	528928	136266	Roadside	98.4	98.4	-	-	-	13	12.7
CR 114	528947	136206	Roadside	98.4	98.4	-	-	-	-	15.5

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

☒ **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 µg/m^3.

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

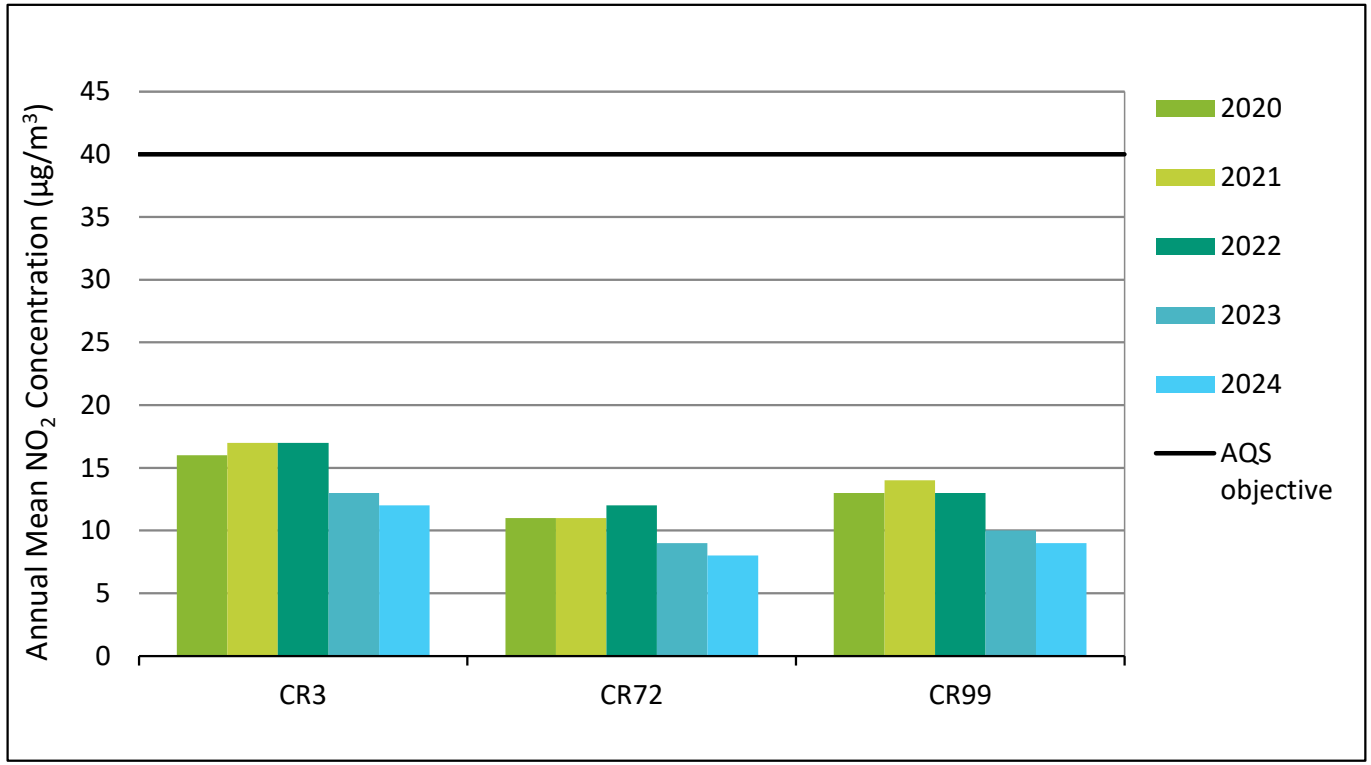
Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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.

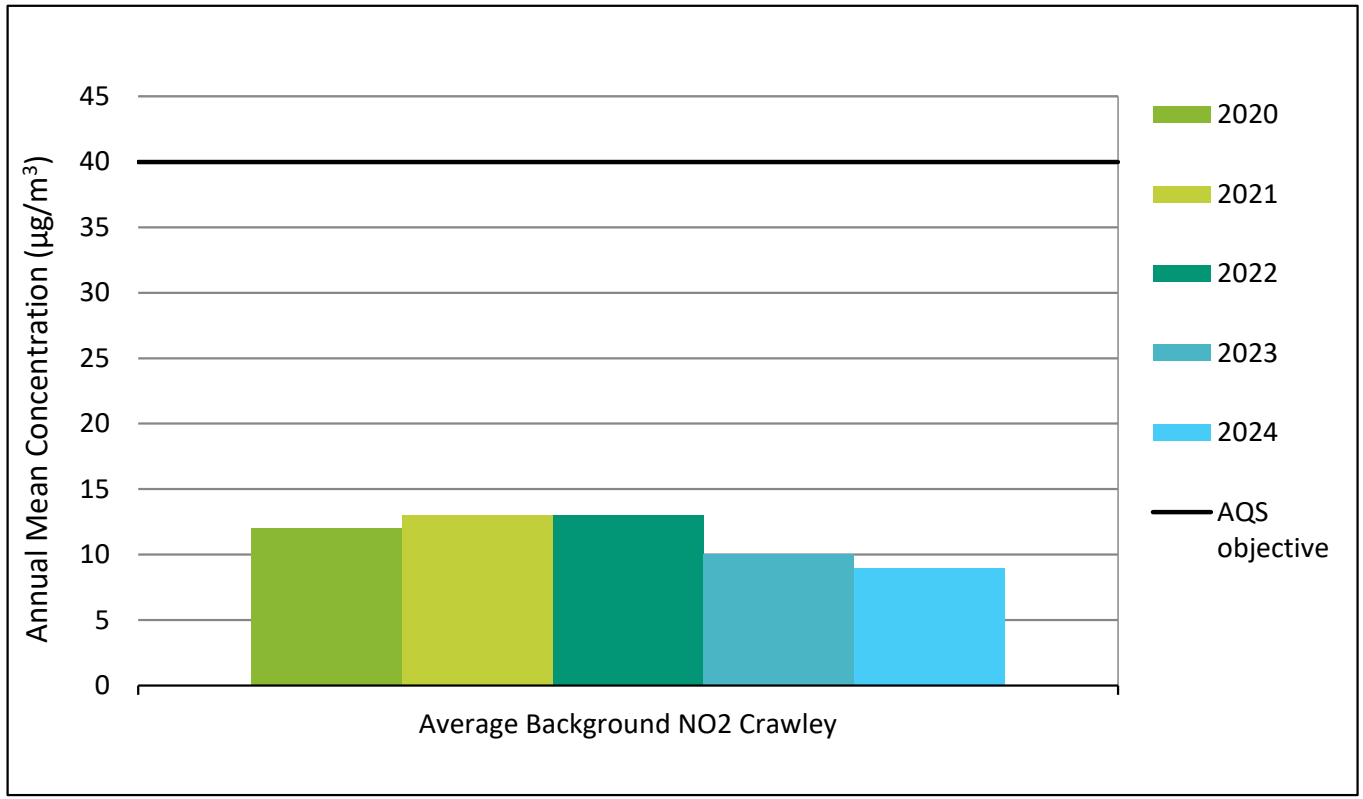
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.1 – 5-year Trend in Annual Mean NO_2 at Long-term Background Sites in Crawley



The data presented in **Figure A.1** shows a decreasing 5-year trend in NO_2 annual mean concentrations for three long-term background sites (CR3, CR72 and CR99) in Crawley from 2020 to 2024.

Figure A.2 – 5-year Trend in Average Background NO_2 in Crawley



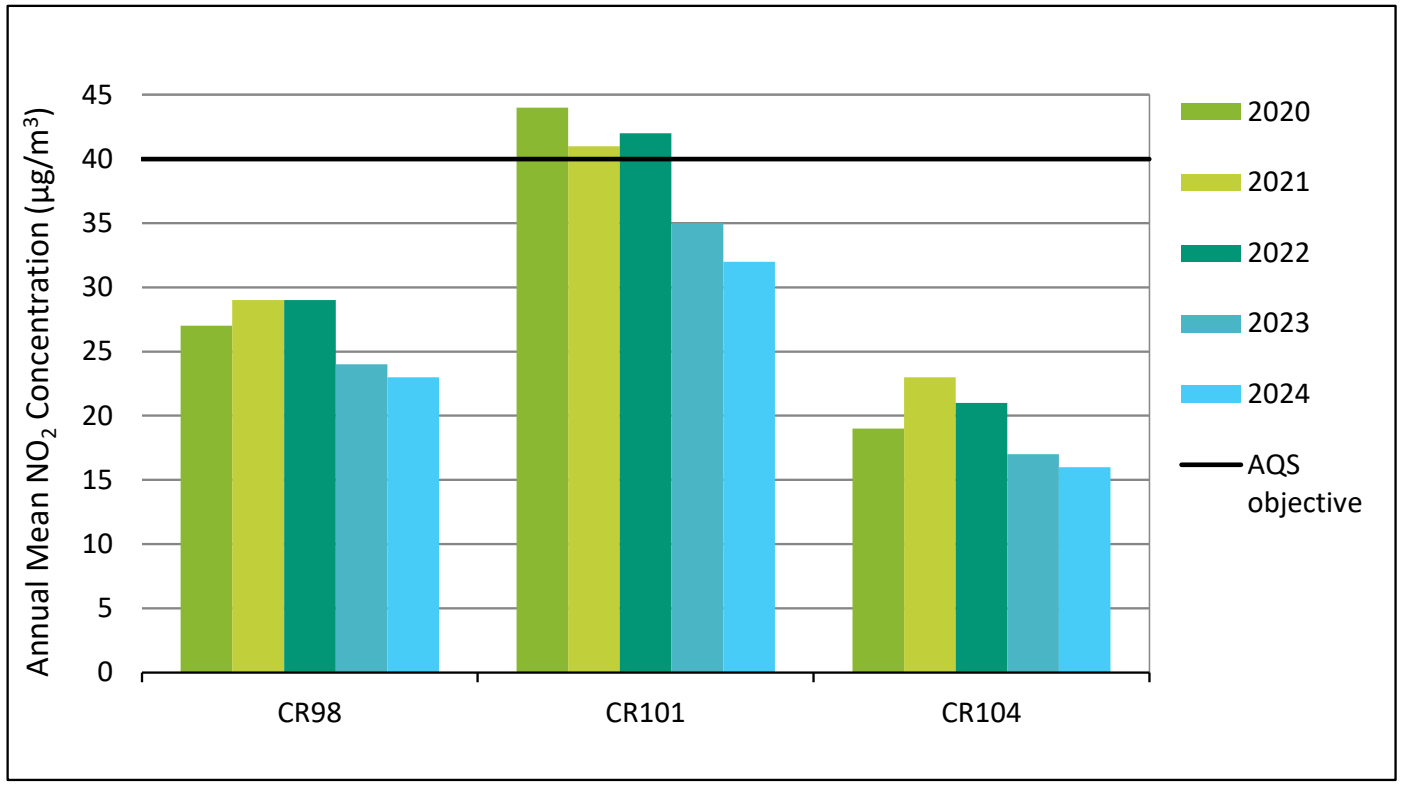
The data presented in **Figure A.2** shows a decreasing 5-year trend in background NO_2 annual mean concentrations in Crawley from 2020 to 2024.

Discussion of trends in annual mean NO_2 at background sites

There were no exceedances of the annual mean objective at background sites in Crawley in 2024 and the long-term trend shows a reduction in NO_2. A similar downward trend in background emissions is seen regionally and nationally.

Prior to Covid, a flattening of the trend in background NO_2 was emerging. However, the low concentrations in 2020/21 due to Covid increased the downward slope, and measured background NO_2 concentrations at most background sites across Crawley have not returned to pre-Covid levels since 2020. Trends will continue to be monitored and reviewed annually through the LAQM process to see how the impact of development and the gradual rise in traffic volumes is affecting background NO_2 levels in Crawley in future years.

Figure A.3 – 5-year Trend in Annual Mean NO_2 at Long-term Roadside Sites in Crawley

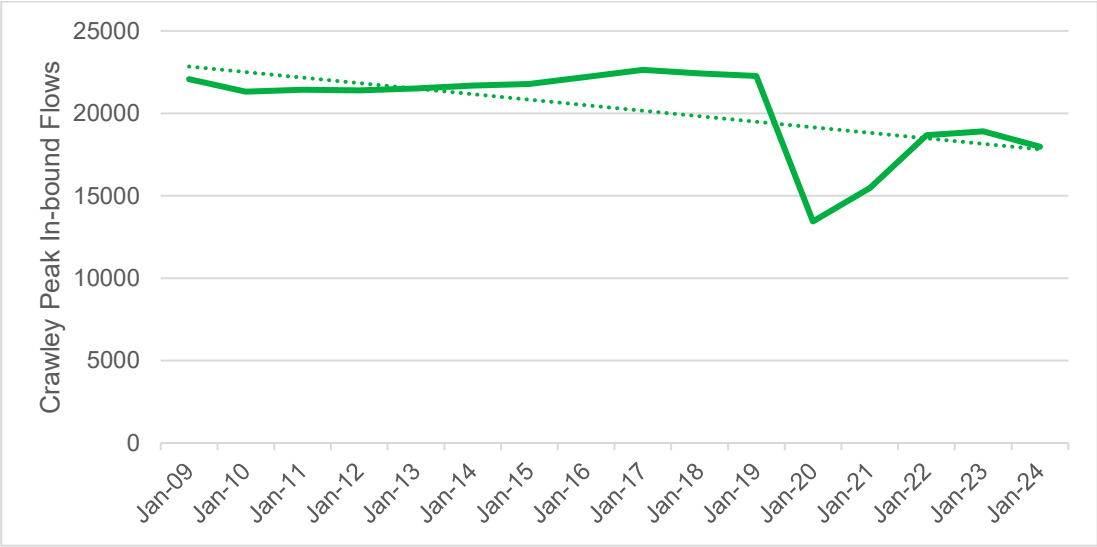


The data presented in **Figure A.3** shows a decreasing 5-year trend in NO_2 annual mean concentrations for three long-term roadside sites (CR98, CR101 and CR104) in Crawley from 2020 to 2024.

Discussion of trends in annual mean NO_2 at roadside sites

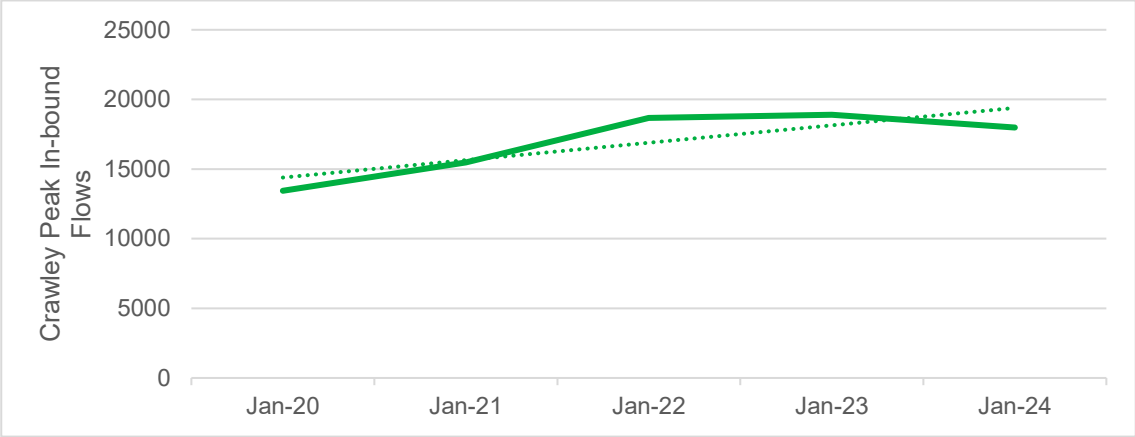
There were no exceedances of the annual mean NO_2 objective at roadside sites in Crawley in 2024. The long-term (5 yr) trend shows a downward slope and reduction in NO_2 reflecting the regional and national long-term trend as policy controls and engine technology, as well as local measures help drive a reduction in emissions. Lower traffic volumes (compared to pre-Covid) are also likely to be contributing to the improvement in NO_2 measured at roadside locations.

Fig A.4 – Trend in Annual Traffic (Peak in-bound Flow) in Crawley 2009-2024



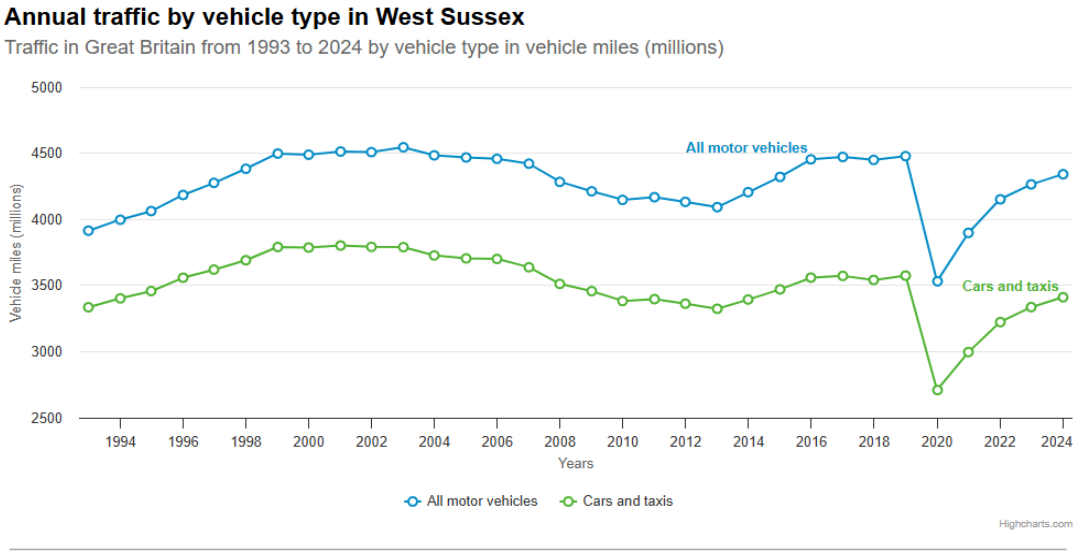
The data presented in **Figure A.4** shows an overall decreasing long-term trend in traffic levels in Crawley

Fig A.5 – Trend in Annual Traffic (Peak in-bound Flow) in Crawley 2020-2024



The data presented in **Figure A.5** shows an increasing post Covid trend in traffic levels in Crawley.

Fig A.6 – Trend in Annual Traffic in West Sussex 1993-2024



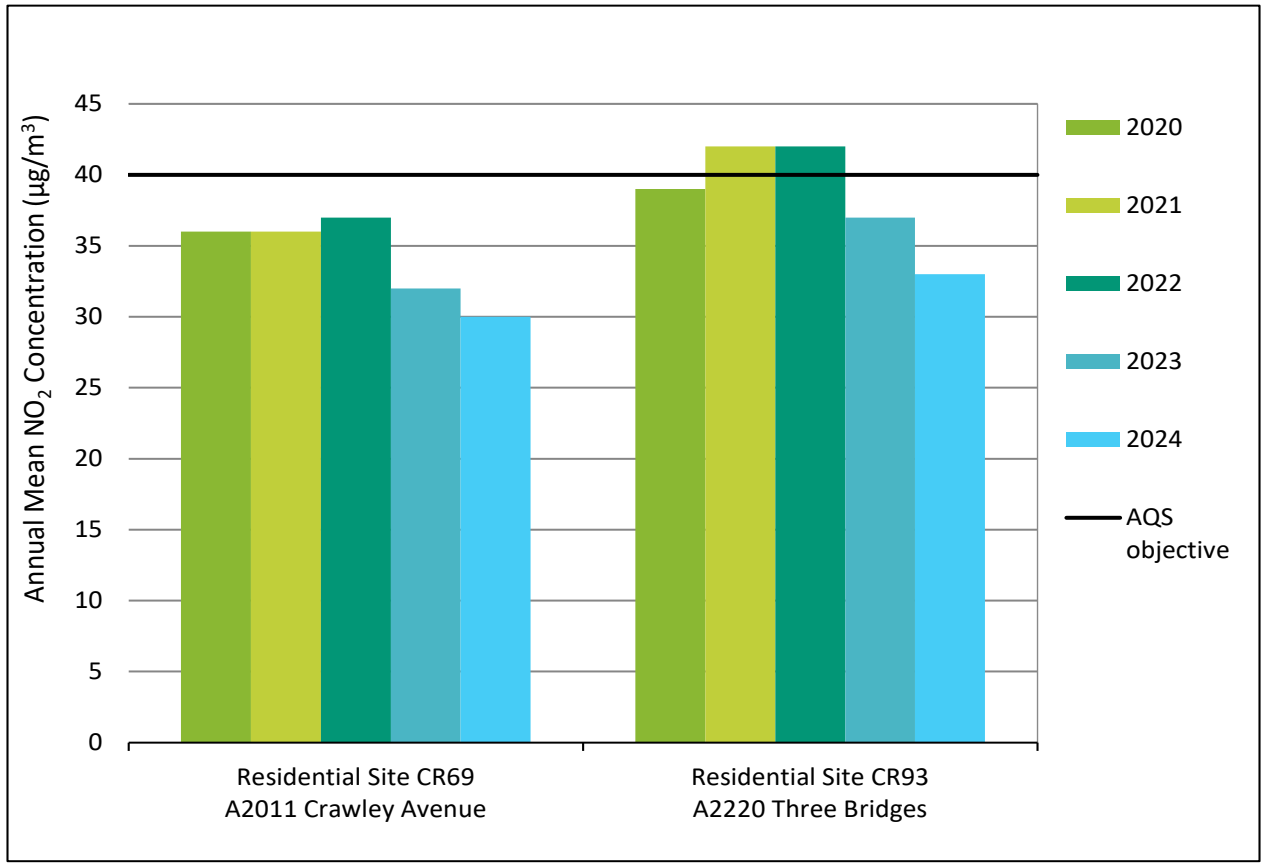
Discussion of trends in traffic flows in Crawley and West Sussex

Traffic data for Crawley presented in Figs A.4 and A.5, uses peak in-bound flow to give an indication of year-on-year trends. Although this data is not a direct measure of total traffic volume in Crawley, it is a useful representation of how traffic levels are progressing in the borough over time.

Fig A.4 shows that from 2009 until 2015 traffic flows were more or less stable with a slight upturn in traffic levels in the 5-year period prior to Covid. The upward trend in traffic (2015-2109) closely correlated with an increase in roadside NO_2 levels over the same period. The travel restrictions in 2020/21 resulted in traffic levels falling steeply and the gradual post covid recovery has resulted in in an overall downward long-term trend.

However, Fig A.6 (West Sussex) shows that, despite a slight dip in Crawley in 2024 (Fig A.5) traffic flows have been gradually rising again across the county during the period 2020-2024. Although they are currently still below 2019 levels, increased local development and the likely expansion of Gatwick airport may result in a steeper rate of traffic growth in the Crawley area over the next few years. This will continue to be monitored and reviewed annually through the LAQM process.

Figure A.7 – 5-year Trend in Annual Mean NO_2 in Crawley AQMA



The data presented in **Figure A.7** shows a decreasing 5-year trend in NO_2 annual mean concentrations for two residential sites adjacent to the A2011 Crawley Avenue (CR69) and the A2220 close to Three Bridges Station (CR93) in the Crawley AQMA from 2020 to 2024.

Discussion of trends in AQMA NO_2 Concentrations

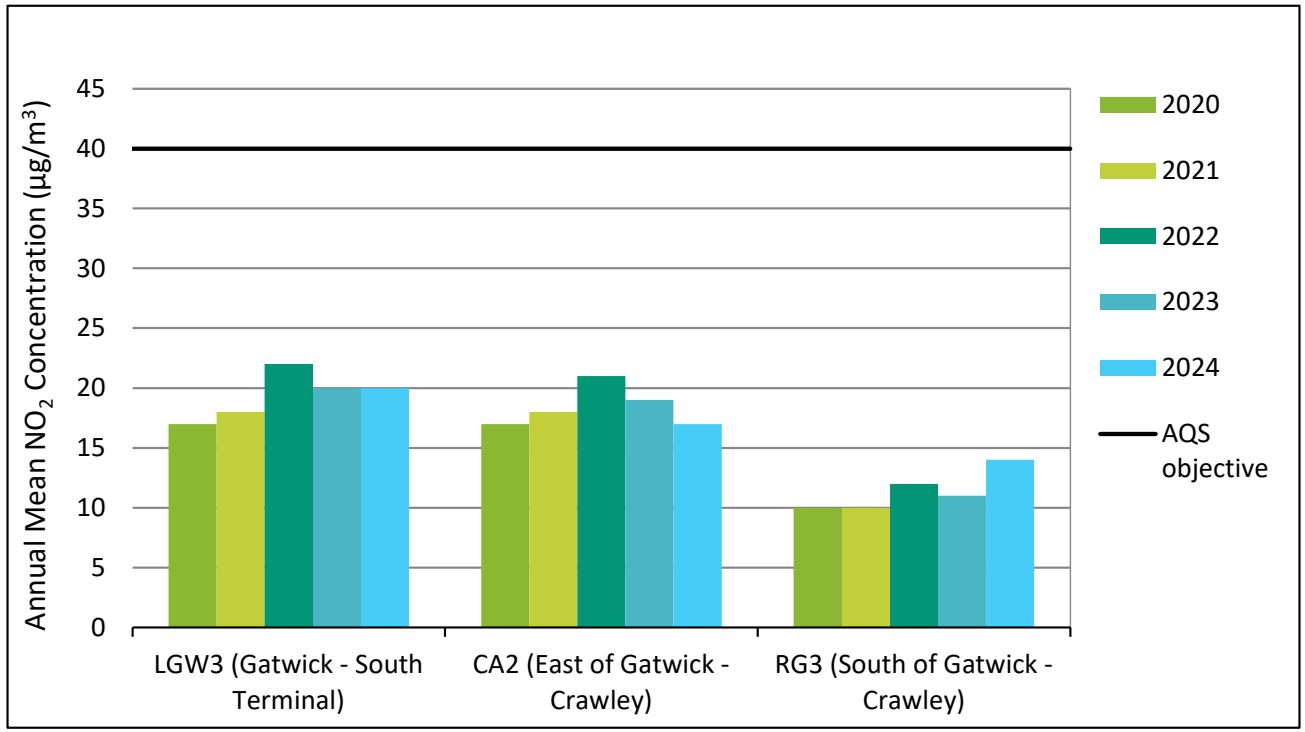
The 5-year trend in NO_2 is downwards at both sites, and there were no exceedances of the annual mean objective at any sites in the AQMA in 2024. However, levels in the AQMA continue to be relatively high, and given that the primary source of pollution in the AQMA is from vehicle emissions, the future trend in traffic volumes in the area will be fundamental to achieving continued improvement.

Site CR93 is close to Three Bridges Station (London to Brighton mainline) and is therefore directly influenced by commuter traffic and buses. The future of hybrid working is a key element in determining if traffic volumes through this route may increase or remain at current levels.

Site CR69 is close to Manor Royal Business District and adjacent to the east bound dual carriage way to J10 of the M23. This location is influenced by commuter traffic but also includes a high percentage of goods vehicles (LGV and HGV) accessing Manor Royal. With easy access to the M23, Manor Royal has seen a significant increase in the number of distribution centres being built in the last 4 years. Source apportionment studies carried out in 2023, as part of the updated AQAP, identified that the dominant pollution source in this area is from LGVs. Action plan measures targeted at encouraging a shift to a low emission commercial vehicle fleet are therefore important in achieving continuing air quality improvements in this area.

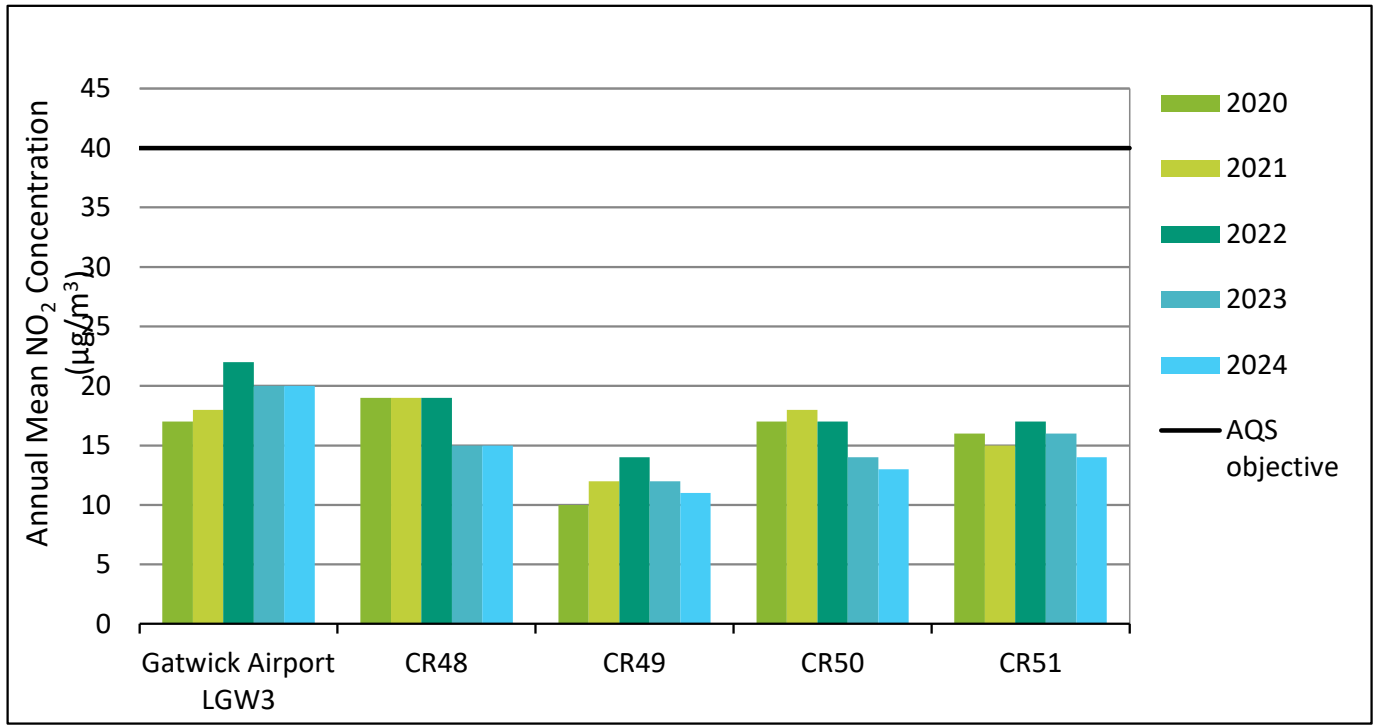
Locations within the AQMA will continue to be monitored and reviewed annually through the LAQM process to assess trends. The Council is not considering revoking the AQMA until a continuing trend of reduced NO_2 concentrations is maintained in future years.

Figure A.8 – 5-year Trend in Annual Mean NO_2 at Sites on and around Gatwick Airport



The data presented in **Figure A.8** shows a decreasing 5-year trend in NO_2 annual mean concentrations from 2020 to 2024 for continuous automatic monitoring sites on and around Gatwick Airport. GAL's LGW3 site (located at the end of South Terminal runway) is compared with Crawley's CA2 site (located east of the runway on the airport boundary close to Balcombe Road residential properties) and RG3 (located southwest of the runway at Poles Lane in a rural area of Crawley). Data from CA2 for 2024 was included but should be treated with caution due to low data capture.

Figure A.9 – 5-year Trend in Annual Mean NO_2 at Gatwick & Residential Sites within 1000m of the Airport



The data presented in **Figure A.9** shows a decreasing 5-year trend in NO_2 annual mean concentrations from 2020 to 2024 for both the airport and surrounding residential receptors close to the airport.

Discussion of trends in NO_2 Concentrations at Gatwick Airport and Residential Properties close to the Airport

There were no exceedances of the annual mean objective for NO_2 in 2024 at Gatwick or any of the residential monitoring locations within 1000m of the airport. Three continuous monitoring sites CA2, RG3 and LGW3 were used to investigate trends in annual mean NO_2 at Gatwick Airport. The industrial Site CA2 showed a slight reduction in 2024 on 2023 (the results should be treated with caution due to low data capture) while there was no change at LGW3. The rural site RG3 showed a slight increase. The overall 5-year trend continues to be downwards. Monitoring sites RG3, LGW3 and CA2 are located on a transect across the airport from southwest to northeast following the prevailing wind direction (south-westerlies) in the area. Comparing the monitoring data from these three sites gives an indication of the level of emissions “picked up” from the airport from southwest (RG3) to northeast (CA2).

Both airport and residential NO_2 showed a steep decline in concentrations in 2020 as a result of Covid restrictions on road and air transport. 2020 levels of NO_2 fell more dramatically at the airport than elsewhere in the borough, with measured airport NO_2 concentrations almost at the same level as those of residential locations, demonstrating the contribution on-airport emissions of NO_2 make to annual mean concentrations in the local area.

Gatwick Airport Ltd are predicting a return to “business as usual” passenger numbers and aircraft movements by 2025. Despite this, NO_2 levels in 2024 have remained at least 25% lower than pre-covid (2019) levels at most sites at or adjacent the airport. This is likely to be due to a combination of cleaner engine technologies and targeted measures to encourage modal shift to more sustainable transport and active travel. In August 2023 GAL submitted an application to the Planning Inspectorate for an expansion of the airport to provide dual runway operations and increased capacity. The potential passenger throughput with development is predicted to be 74 million passengers per annum (mppa) by 2038, representing a 27mppa increase on today’s capacity and a 13mppa increase above the “without development” potential of the single runway airport. Given the scale of development coming forward over the next 10/15 years if the Gatwick expansion project is approved, pollution trends in and around the airport will continue to be monitored and reviewed annually through the LAQM process.

Table A.5 – 1-Hour Mean NO_2 Monitoring Results, Number of 1-Hour Means > 200µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
CA2	529417	141496	Industrial	76.0	29.6	0	0	0	0	0 (71)
LGW3*	528582	140990	Industrial	98.7	98.7	0	0	0	0	0
RG3**	526424	139643	Rural	98.6	98.6	0	0	0	0	0

Notes:

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

Exceedances of the NO_2 1-hour mean objective (200µg/m^3 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%).

* Site used for comparison, owned/operated by GAL, located on-airport South Terminal runway

** Site used for comparison, Horley AURN site, operated by Reigate & Banstead Borough Council

Figure A.10 – 1-Hour Mean NO_2 Concentrations in 2024

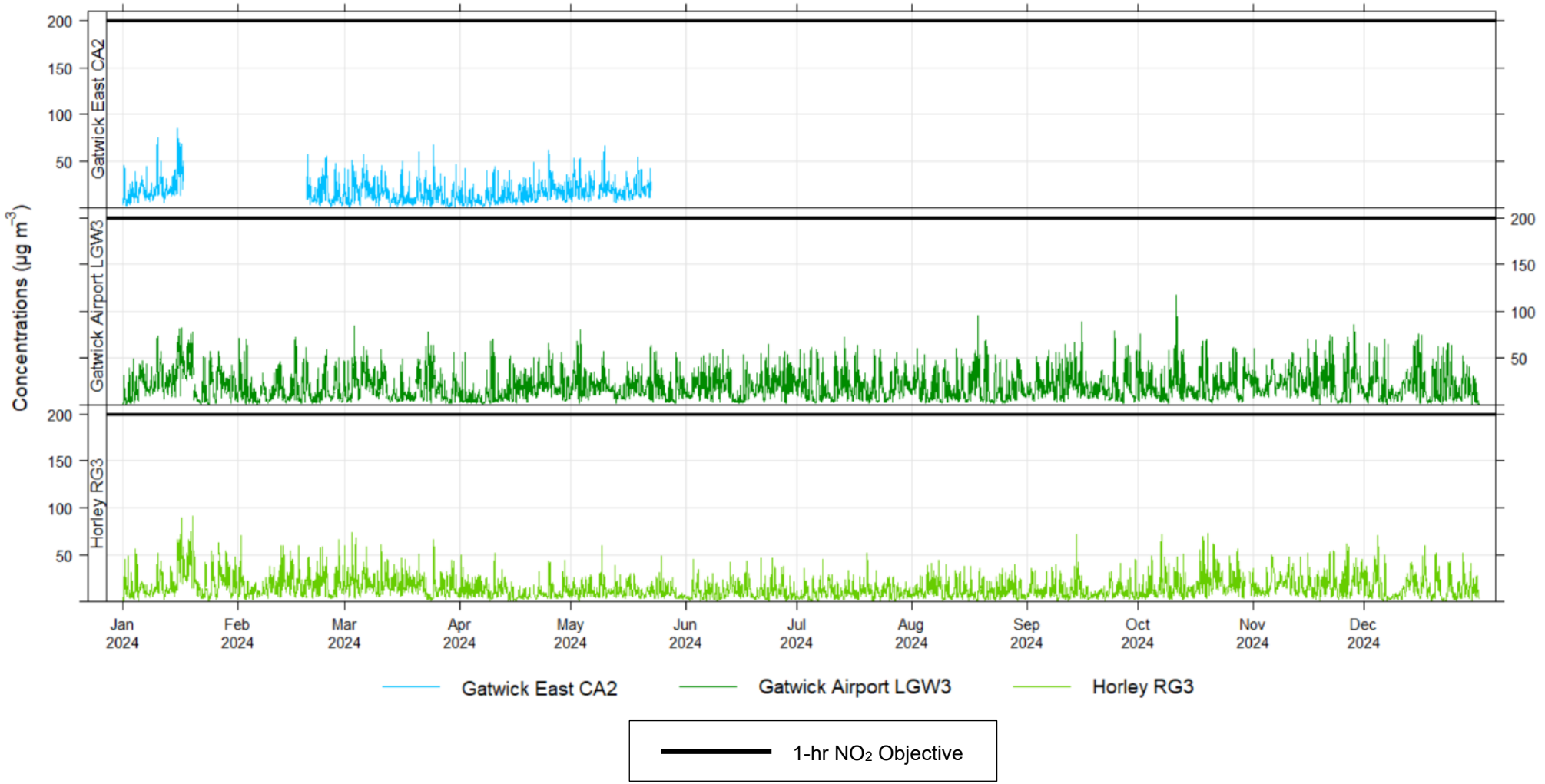


Table A.6 – Annual Mean PM_{10} Monitoring Results ($\mu g/m^3$)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
CA2	529417	141496	Industrial	76.8	29.9	15	18	14	14	12.2
LGW3*	528582	140990	Industrial			14	14	15	13	12.1
RG3**	526424	139643	Rural			-	-	15	12	-

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22**

Notes:

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

Exceedances of the PM_{10} annual mean objective of $40\mu g/m^3$ are shown in **bold**.

All means have been "annualised" as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

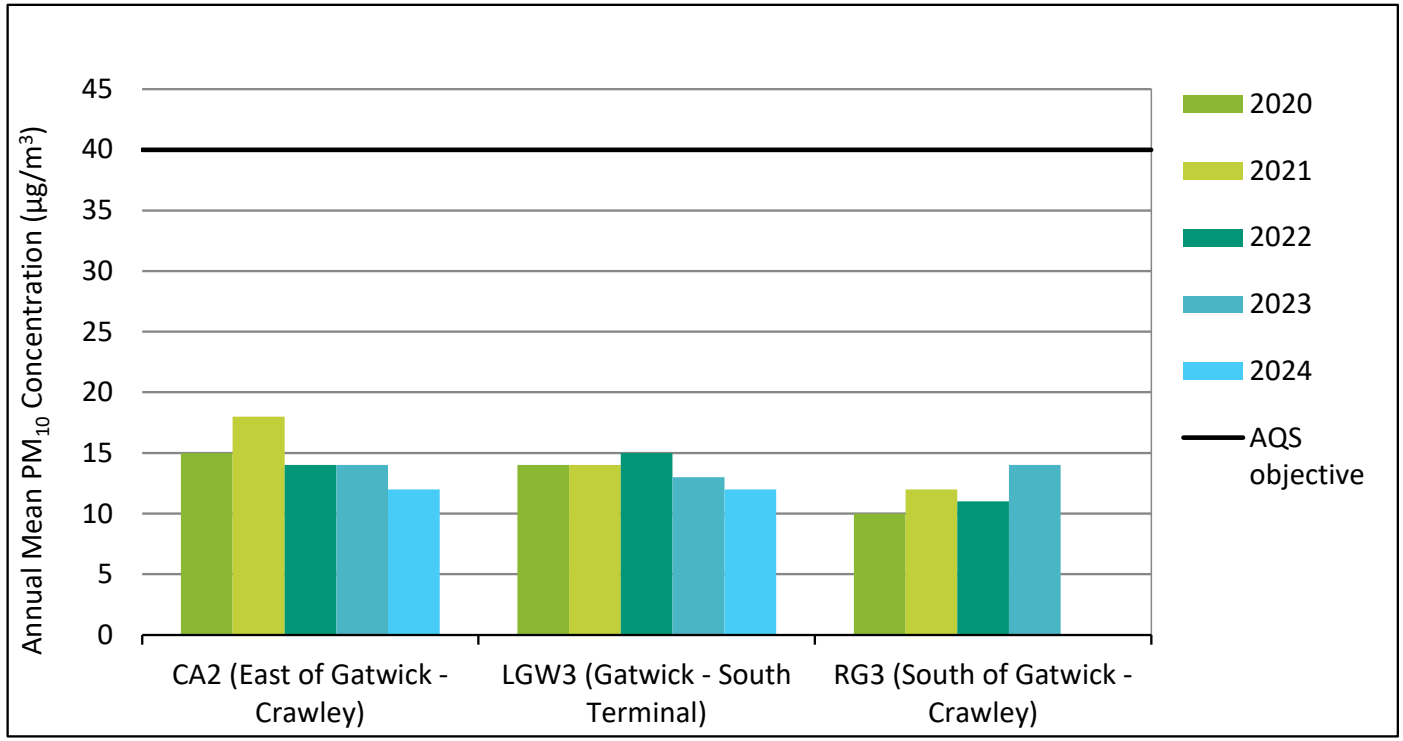
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(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%).

* Site used for comparison, owned/operated by GAL, located on-airport South Terminal runway

** Site used for comparison, Horley AURN site, operated by Reigate & Banstead Borough Council

Figure A.11 – Trends in Annual Mean PM_{10} Concentrations



The data presented in **Figure A.11** shows the 5-year trend in annual mean PM_{10} concentrations at Crawley's air quality monitoring site (CA2), located east of the runway on the airport boundary close to residential properties on Balcombe Road, compared to Gatwick's air quality monitoring site (LGW3) located at the South Terminal and Horley site RG3.

Discussion of Trends in annual mean PM_{10}

There were no exceedances of the annual mean PM_{10} objective at any of the “Gatwick sites” in 2024. Both sites CA2 and LGW3 have shown a decreasing trend in measured concentrations of PM_{10} over the last five years. The trend at RG3 is unclear as the annual mean average for 2024 could not be calculated due to low data capture (below 25%).

The PM_{10} concentrations at CA2 and Gatwick’s LGW3 site decrease slightly in 2024 on the previous year, and recoded levels lower than those measured in 2020.

Table A.7 – 24-Hour Mean PM_{10} Monitoring Results, Number of PM_{10} 24-Hour Means > 50µg/m^3

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
CA2	529417	141496	Industrial	76.8	29.9	4	2	1	5	0 (24)
LGW3*	528582	140990	Industrial			0	2	1	4	0
RG3**	526424	139643	Rural			-	-	0	0	-

Notes:

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

Exceedances of the PM_{10} 24-hour mean objective (50µg/m^3 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%).

* Site used for comparison, owned/operated by GAL, located on-airport South Terminal runway

** Site used for comparison, Horley AURN site, operated by Reigate & Banstead Borough Council

Figure A.12 –24-Hour Mean PM_{10} Concentrations in 2024

Table A.8 – Annual Mean $PM_{2.5}$ Monitoring Results (µg/m^3)

Site ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
CA2	529417	141496	Industrial	76.8	29.9	8	8	8	8	7.0
LGW3*	528582	140990	Industrial			8	9	9	8	7.5
RG3**	526424	139643	Rural			-	-	-	8	-

☐ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22.**

Notes:

The annual mean concentrations are presented as µg/m^3.

All means have been "annualised" as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

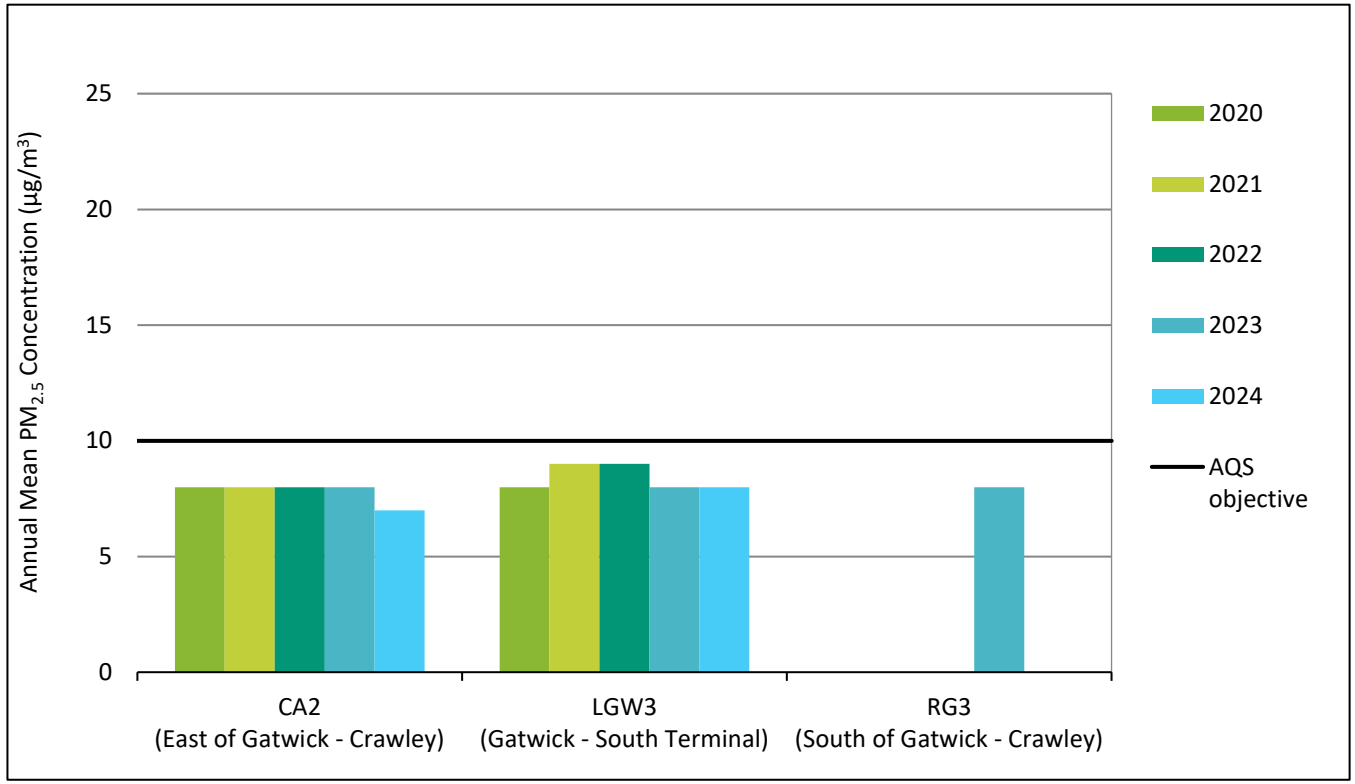
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

(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%).

* Site used for comparison, owned/operated by GAL, located on-airport South Terminal runway

** Site used for comparison, Horley AURN site, operated by Reigate & Banstead Borough Council

Figure A.13 – Trends in Annual Mean $PM_{2.5}$ Concentrations



The data presented in **Figure A.13** shows the 5-year trend in annual mean $PM_{2.5}$ concentrations at Gatwick (LGW3) at the South Terminal compared Crawley's CA2 site, located east of the runway on the airport boundary close to residential properties on Balcombe Road, and the Horley AURN site.

Discussion of Trends in annual mean $PM_{2.5}$

There were no exceedances of the annual mean $PM_{2.5}$ target value of 10µg/m^3 at either site in 2024, and both sites CA2 and LGW3 show a slight downward trend in annual mean $PM_{2.5}$. The measured $PM_{2.5}$ concentrations at both sites have remained at about the same

level of 8 or 9 ug/m^3 since 2020. Although these values are below the national target value of 10µg/m^3 they remain above the WHO-recommended annual mean guideline value of 5µg/m^3.

The impact of Gatwick's Northern runway expansion plans may impact PM levels in future and trends will therefore continue to be monitored and reviewed annually through the LAQM process.

Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO_2 2024 Diffusion Tube Results (µg/m^3)

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.84)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
CR1	526799	136785	27.3	25.9	23.5	25.0	22.1	20.0	17.7	16.9	20.6	26.3	28.1	24.0	23.1	19.4	-	
CR3	528438	138392	19.8	16.1	13.6	12.7	10.6	11.5	10.1	10.1	13.6	15.2	20.4	15.5	14.0	11.8	-	
CR4	529864	138204	21.1	16.5	13.6	13.6	12.0	12.5	10.8	10.3	15.0	15.9	19.1	14.1	14.5	12.1	-	
CR48	527110	139530	22.8	19.1	15.0	20.9	16.2	17.0	13.3	13.6	20.0	16.6	23.0	19.3	17.9	15.0	-	
CR49	526320	139860	14.6	13.6	11.6	15.4		10.7	9.1	9.0	17.9	12.9	13.6	12.6	12.8	10.7	-	
CR50	527810	139929	21.1	16.7	14.8	20.9		12.6	9.8	10.0	15.3	16.8	18.9	17.0	15.8	13.2	-	
CR51	529490	141460	22.1	18.4	15.1	15.7	14.1	14.2	14.1	15.6	16.2	14.4	20.3	19.1	16.5	13.9	-	
CR52 T1	529417	141496	23.7	19.0	17.0	18.7	18.3	17.2	17.0	18.0	22.3	20.1	22.4	20.4	19.5	16.4	-	
CR53 T2	529417	141496	22.4	18.6	17.1	18.1	17.7	17.4	15.6		20.9	18.8	23.9	20.0	19.0	16.0	-	
CR54 T3	529417	141496	24.0	19.9	17.4	18.2	18.1	17.6	16.4	17.3	21.8	20.6	23.5	19.0	19.4	16.3	-	
CR55	528446	138085	32.8		35.8	28.9	34.7	32.7	34.5	36.7	31.1	32.4	28.2	26.4	32.2	27.0	-	
CR60	526759	136948	26.7	23.6	20.9	18.9	17.9	17.3	16.6	15.8	20.7	24.5	23.5	21.4	20.7	17.4	-	
CR62	528438	138088	39.4	33.2	34.5	28.1	40.4	30.6	31.4	33.6	29.8	34.0	29.6	32.1	33.1	27.8	-	
CR63	528153	137912	43.9	42.5	35.9	38.7	38.7	39.5	35.5	22.9	43.4	41.1	47.5	40.5	39.1	32.8	-	
CR64	528150	137825	30.0	28.8	23.2	29.0	28.9	27.7	25.1	35.6	31.8	31.8	30.6	25.6	28.8	24.2	-	
CR66	526743	136346	31.3	28.9	22.8	22.8	21.4	23.4	21.5	17.8	24.7	24.8	29.4	24.9	24.4	20.5	-	
CR69	528443	138082	31.9	42.8	39.1	33.9	32.6	37.9	38.2	39.4	35.1	38.1	32.0	25.0	35.4	29.7	-	
CR72	525534	138472	14.5	10.6	9.7	9.1	7.8	7.6	6.4	6.8	10.3	10.6	13.5	11.4	9.8	8.3	-	
CR74	528978	139599	26.7	22.7	13.1	24.8		23.8	21.4	20.7	24.6	21.9	23.0	21.6	22.0	18.5	-	
CR75	529335	139589	20.4	17.1	13.9	14.6	15.0	15.6	12.1	11.3		17.7	28.6	15.1	16.3	13.7	-	
CR76	528292	137810	32.3	27.5	22.4	27.6	24.7	22.9	20.5	20.9	29.0	26.3	29.7	25.4	25.7	21.5	-	
CR77	528362	137812	30.7	29.7	23.7	27.6	24.6	25.4	23.3	22.8	29.4	21.3	32.8	25.4	26.2	22.0	-	
CR78	530037	138553	19.3	14.9	13.8	14.5	13.8	14.4	11.9	11.1	15.4	17.8	20.3	12.9	14.9	12.5	-	
CR79	529312	138534	21.5	18.0	14.8	19.3		15.0	13.6	13.3	20.4	17.9	20.5	15.4	17.1	14.4	-	
CR80	530424	136521	20.3	16.9	16.8	19.8	20.0	18.4	14.9	14.7	21.4	22.9	21.5	14.7	18.5	15.5	-	
CR81	529047	134474	17.3	15.4	14.8	13.4	13.4	12.8	13.4	12.8	12.9	15.5	16.5	11.6	14.1	11.9	-	
CR85	528295	138009	30.6	30.0	27.4	22.5	24.0	23.4	21.9	21.6	23.9	24.5	27.7	25.2	25.2	21.2	-	

DT ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Annualised and Bias Adjusted (0.84)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
CR86	526878	136821	21.7	21.8	19.9	17.6	17.0	14.9	14.8	13.7					17.7	16.4	-	
CR87	526908	136754	31.5	29.5	24.7	32.7	31.4	30.1	23.4	26.0	28.5	25.4	32.0	26.7	28.3	23.8	-	
CR88	525489	136573	21.2	17.6	18.2	18.7	18.2	17.4	15.3	12.5	22.7	21.3	23.0	15.7	18.4	15.5	-	
CR89	527715	137893	18.7	15.5	12.7	14.2	13.3	15.5	11.3	10.3	17.1	16.6	19.8	15.1	14.9	12.5	-	
CR91	528681	137177	32.8	29.4	23.9	25.6		26.1	23.0	22.9	27.2	26.9	33.3	24.4	26.7	22.4	-	
CR93	528895	137115	42.2	44.5	37.5	39.5	37.0	39.0	34.9	37.3	42.8	36.6	43.2	40.3	39.4	33.1	-	
CR94	528841	137069	22.5	22.2	18.7	23.7	19.1	19.3	15.6	14.6	22.3	20.9	23.6	21.8	20.3	17.0	-	
CR95	528882	137086	26.2	25.7	20.8	21.9	20.8	22.5	19.8	19.6	23.8	25.0	29.2	21.3	22.9	19.3	-	
CR96	529125	137196	27.2		18.1	19.9	17.8	17.7	16.5	16.1	20.9	19.9	26.0	20.9	20.0	16.8	-	
CR97	528603	136950	34.4	37.3	30.6	32.1	31.9	35.2	32.2	27.6	29.7	35.1	32.7		32.6	27.4	-	
CR98	528515	139275	34.4	31.7	25.1	30.1	25.7	26.6	21.5	19.6	27.0	28.2	33.3	27.1	27.4	23.0	-	
CR 99	528410	135628	16.9	12.4	9.6	10.4	8.5	7.3	7.3	7.5	10.3	11.9	16.4	12.5	10.9	9.1	-	
CR100	526326	136487	24.0	24.2	21.7	20.9	19.4	18.9	17.3	16.9	21.9	22.7	24.5	21.4	21.1	17.7	-	
CR101	525679	135556	40.3	43.1	38.8	35.5	34.1	39.1	36.4	35.7	36.8	39.7	44.8	37.9	38.4	32.3	-	
CR102	526449	134139	33.2	28.9	24.2	30.1	25.8	23.7	21.5	21.2	26.1	25.1	33.8	25.5	26.4	22.2	-	
CR103	528848	137802	17.9	13.6	11.1	12.9	11.6	10.7	9.6	9.7	14.2	13.8	16.4	11.5	12.7	10.6	-	
CR104	527333	135846	24.7	22.1	19.1	18.4	16.3	15.8	14.2	14.4	17.9	19.1	24.5	17.4	18.6	15.6	-	
CR105	526940	137831	41.9	37.3	31.1	34.0	30.3	34.5	30.1	29.0	35.1	36.0	43.0	37.2	34.8	29.2	-	
CR106	527000	138357	35.0	37.2	33.5	32.5	30.3	33.1	28.4	29.3	29.0	31.9	38.9	31.1	32.4	27.2	-	
CR107	524806	136822	18.8	14.0	13.0	13.6	12.3		10.3	10.4	14.1	15.2	20.0	14.4	14.1	11.8	-	
CR110	526928	136356	23.6	16.6	14.3	14.7		12.5	10.7		18.6	18.5	24.4	18.7	17.2	14.4	-	
CR111	526804	136375	24.1	22.1	18.3	18.8	17.3	18.5	17.7	15.8	21.5	21.4	26.8	20.3	20.1	16.9	-	
CR112	527206	142325	20.0	17.8	16.8	14.2	13.0	13.9	13.1	13.2	15.2	18.0	20.2	15.1	15.9	13.3	-	
CR113	528928	136266	20.1	15.7	13.6	14.2	13.6	13.1	12.0	12.6	15.1	16.9	20.4	14.7	15.1	12.7	-	
CR114	528947	136206	22.6	20.4	14.8	19.9	17.2	17.2	15.1	14.9	17.9	19.1	23.5	19.7	18.4	15.5	-	

☒ **All erroneous data has been removed from the NO_2 diffusion tube dataset presented in Table B.1**

☒ **Annualisation has been conducted where data capture is <75% and >25% in line with LAQM.TG22**

☐ **Local bias adjustment factor used**

☒ **National bias adjustment factor used**

☒ **Where applicable, data has been distance corrected for relevant exposure in the final column**

☒ **Crawley Borough Council confirms that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System**

Notes:

Exceedances of the NO_2 annual mean objective of 40µg/m^3 are shown in **bold**.

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in **bold and underlined**.

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 Crawley During 2024-25

Major development sites can be a significant source of dust and vehicle pollution. All new development is examined through the planning system and where necessary air quality and emissions mitigation assessments are required in order to offset the impacts of new or changed sources of pollution on existing and future residents.

In addition, diffusion tube monitoring within the AQMA and surrounding areas can measure the effects of new developments and new pollution sources, allowing the council to identify pollution hotspots and assess long term trends. These results are reported annually through the LAQM process.

There are a number of significant new or ongoing developments within the borough which may cumulatively contribute to pollution sources in the area. These include:

Commercial/Industrial Development

Most industrial and commercial development occurs on Manor Royal Business District, which is located adjacent to Crawley's AQMA. The main route into and out of Manor Royal is via A23 Gatwick Road to the Hazelwick Roundabout, a busy junction within the AQMA with residential properties.

Commercial development currently under construction:

- Land at Jersey Farm, Manor Royal Business District: 1 Storage and Distribution Warehouse Units (Class B8) –construction started/ongoing 2025
- Faraday Road: 1 Storage and Distribution Warehouse Units (Class B8) – completed Q1 2025.
- Crompton Way, Manor Royal Business District: 3 Storage and Distribution Warehouse Units (Class B8) – construction started Q3 2024 – expected completion Q2 2025.
- Fleming Way, Manor Royal Business District: 2 Storage and Distribution Warehouse Units (Class B8) –construction started Q1 2025.

- Hydehurst Lane, Manor Royal Business District: 3 Storage and Distribution Warehouse Units (Class B8) – construction started Q1 2025.
- Gatwick Road, Manor Royal: MacDonalds Drive-Thru Restaurant and Starbucks Coffee Shop –construction started 2024 completed Q1 2025

Commercial development coming forward 2025/26:

- Linac House, Fleming Way, Manor Royal Business District: 3 Storage and Distribution Warehouse Units (Class B8) and Office (Class B2) Units–planning permission Q1 2025 – construction not yet started.
- Tilgate Business Park, Brighton Road: 2 Storage and Distribution Warehouse Units (B8) and Industrial Space(B2) – Planning decision delayed 2024/5 due to regulations for development close to ancient woodland.
- Manor Royal District Heating Network: Two energy centres: one with ground source heat pump and one with low NOx gas boiler - feasibility study completed – no application or planning permission.
- Three Bridges Station Improvement Work; Highways Alterations; Provision of Pedestrian/Cycle Access – Planning permission given – works not yet started pending legal agreement.
- Northwood Park, Gatwick Road: EV charge/Service Station and retail – planning permission given, demolition complete, construction due to start Q2 2025
- Aviation House, Beehive Ring Road – B8 Storage facility – pre-app received. No application submitted.

Residential Development

Key Housing Sites identified in the Local Plan Map may generate increased emissions during construction and operation from dust and increased traffic.

Over the last four reporting years the issue of water neutrality has emerged as a problem for residential development in the borough that must be addressed through the planning process to ensure its compliance with the Habitat Regulations. This continues to delay progress of many of the larger residential developments in Crawley.

Residential development currently under construction:

- Steers Lane - Phase 2 (60 dwellings) – issues of water neutrality which delayed start now resolved. Construction started 2024.

Residential development coming forward 2025/26:

- Former Moka Club, Station Way (150 dwellings) – Planning permission given, demolition complete. Construction delayed (water neutrality).
- Breezehusrt Drive (85 dwellings) –start delayed by water neutrality and legal agreement.
- Town Centre, The Boulevard: Phase 2 (182 dwellings) - demolition underway, further delays due to potential new developer, reserved matter not yet agreed.
- Station Gateway (300 dwellings) including Overline House (85 dwellings) – Outline Planning Permission. Start delayed by water neutrality.
- Longley House (120 dwellings) – awaiting planning permission - delayed due to water neutrality issues.
- Ambulance Station site, Ifield Avenue (44 dwellings) - awaiting planning permission. Issues of water neutrality which delayed start now resolved.
- Land East of Tinsley Lane (150 dwellings) – water neutrality which delayed start now resolved, awaiting planning permission.
- Telford Place (Former Car Park) (300 dwellings) and 2 Commercial Units: outline planning permission given 2024.
- 44 Goffs Park Road, Retirement/ Care Facility (116 dwellings) - delayed by water neutrality and legal agreement.
- Land at Former County Court site, Exchange Road – mixed residential and commercial development. Feasibility study undertaken 2024. No further progress
- County shopping Mall – being considered for potential 300 residential units above the mall – 2024 no application yet submitted.
- Thomas Bennett School site, Winchester Road (131 dwellings) - awaiting planning permission - delayed due to water neutrality issues.
- 14-19 Queen Square (67 dwellings) – Pre-app 2024, but no application yet submitted

Major Planned Development with EIAs

These schemes require more detailed assessment and conditions due to size and impact on the local area.

Gatwick Northern Runway Expansion DCO (Development Consent Order)

- The Gatwick Northern Runway Project proposes alterations to the existing northern runway to provide dual runway operations and increased capacity. The potential

passenger throughput with development is predicted to be 74 million passengers per annum (mppa) by 2038. This represents a 13mppa increase above the "without development" potential of the single runway airport.

The proposals include construction works over a 15-year period, increased on-airport car parking for 18.5 k more vehicles and a 70% increase in surface access including passenger numbers, cargo freight and employment traffic.

Gatwick's air quality assessment predicts increased emissions but negligible impacts (based on current air quality standards) at all receptors for NO_2, PM_{10} and $PM_{2.5}$ in 2029 and 2032 and no significant air quality effects expected for 2029 and 2032 at human receptors.

The council was involved in the DCO examination process and Hearing during 2023-2024, trying to secure planning controls and mitigation measures to offset the impact of additional emissions created by the scheme. A decision on DCO by the Secretary of State is expected October 2025.

Forgewood - New Residential Neighbourhood:

- Ongoing development of new neighbourhood, including 2000 new residential units, local shops, amenities, community centre, school and realignment of surrounding roads. The Forgewood development was agreed on appeal before the Hazelwick AQMA was declared. The development has been under construction since 2016 and is expected to be completed/ fully operational by 2026/27.

  Construction Phase 4B (434 residential dwellings) due to start 2024 but delayed – waiting details of infrastructure agreements to be submitted by developer on community centre and highways redesign/improvements.

Crawley Growth Programme – Infrastructure Project:

- £60m investment programme (public and private) to deliver infrastructure improvements and growth/regeneration to sites in the town centre and Manor Royal business district. The scheme will deliver: 1,000 new homes in Crawley town centre by 2030, new Crawley railway station and sustainable transport infrastructure (bus, cycle routes and pedestrian walkways) and office/industrial space. Phased development. Some schemes completed, others in development/design or awaiting planning permission.

West of Ifield Urban Development Project

- Homes England to redevelop 194 hectares of land west of Ifield within the administrative area of Horsham District Council (HDC) and Crawley Borough Council (CBC) for residential mixed-use neighbourhood. The full scheme to include

approximately 10-15,000 homes, community infrastructure, commercial units and the creation of a new road including a bridge across the river Mole. The development will be delivered in Phases. Phase 1 is for approximately 3000 dwellings. The Scoping consultation was completed in 2023. An application for Phase 1 is expected by Horsham DC July 2025.

Additional Air Quality Works Undertaken by Crawley Borough Council During 2024-25

Crawley Borough Council has not completed any additional works within the reporting year of 2024-25.

QA/QC of Diffusion Tube Monitoring

Diffusion tubes are supplied and analysed by Gradko Environmental (part of Gradko International Ltd) using 20% Triethanolamine / 80% De-ionised Water (20% TEA in water) preparation method.

Analysis of the NO_2 diffusion tubes is carried out using colorimetric techniques in accordance with Gradko's UKAS accredited (ISO/IEC 17025) internal laboratory procedures. These procedures follow the Defra 2008 Practical Guidance for Laboratories.

The council generally follows the diffusion tube monitoring calendar provided by the LAQM Helpdesk for tube exposure period, which provides an exposure time of 4 or 5 weeks. The diffusion tube deployment dates in 2024 adhered to the 2024 Diffusion Tube Monitoring Calendar for most of the year. There was one divergence from the calendar, i.e. June exposure period was shorter than the recommended 4 weeks (- 4 days).

Tubes received from Gradko are stored in a fridge before they are exposed, and location sites and fixings follow the recommendations in LAQM.TG (22). Three tubes are co-located with the continuous analyser at the Gatwick East site (CA2).

Diffusion tube monitoring data is ratified following the methods described in LAQM.TG (22) to ensure reporting spreadsheet inputs are accurate and any suspect analysed data is removed. An audit of the Council monitoring practices and procedures carried out by external auditors in 2022 found the council to have a sound system of governance, risk management and control in place.

Laboratories participate in two QA/QC schemes. The new AIR-PT Scheme (a continuation of the Workplace Analysis Scheme for Proficiency (WASP)) is run by LGC and supported

by the Health & Safety Laboratory. The other scheme is a monthly field intercomparison Exercise operated by the National Physics Laboratory (NPL). Defra advises that local authorities should use diffusion tubes supplied by laboratories that have demonstrated satisfactory performance under the QA/QC schemes.

Gradko Environmental is UKAS accredited to ISO:17025(2017), follows the quality assurance/quality control procedures detailed in 'Diffusion Tubes for Ambient NO_2 Monitoring: Practical Guidance for Laboratories and Users' (Issue 1a, Feb 2008 - AEA Energy and Environment), and participates in both QA/QC schemes described above.

The list of those laboratories which have performed satisfactorily in the AIR-PT scheme is provided to local authorities on the LAQM Support website[2]. In the latest available AIR-PT edition of results, Gradko has scored 100% for all rounds in 2024. The percentage score reflects the results deemed to be satisfactory based upon the z-score of < ± 2.

Regarding the inter-comparison co-location study from Marylebone Road, it was rated as 'good' (tubes are considered to have "good" precision where the coefficient of variation of duplicate or triplicate diffusion tubes for eight or more periods during the year is less than 20%).

Diffusion Tube Annualisation

Annualisation (short to long term data adjustment) is required for any site with data capture less than 75% but greater than 25%.

The adjustment was undertaken for one roadside diffusion tube monitoring site' CR86 on The Boulevard' which was discontinued.

The calculations presented in **Table C.1** were carried out using Diffusion Tube Data Processing Tool[3] in line with LAQM Technical Guidance LAQM Guidance TG(22) Box 7-9.

Table C.1 – Annualisation Summary (concentrations presented in µg/m^3)

Site ID	Annualisation Factor Reading New Town	Annualisation Factor Horley	Annualisation Factor London Bexley	Annualisation Factor Thurrock	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
CR86	1.1164	1.0496	1.1433	1.0875	1.0992	17.7	19.5

[2] https://laqm.defra.gov.uk/air-quality/air-quality-assessment/precision-and-accuracy/

[3] https://laqm.defra.gov.uk/air-quality/air-quality-assessment/diffusion-tube-data-processing-tool/

Diffusion Tube Bias Adjustment Factors

The diffusion tube data presented within the 2024 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.TG22 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/NO_2 continuous analysers. Alternatively, the national database of diffusion tube co-location surveys provides bias factors for the relevant laboratory and preparation method.

Crawley Borough Council have applied a national bias adjustment factor of 0.84 to the 2024 monitoring data. A locally derived factor could not be used due to the data capture from the Gatwick East continuous analyser not achieving 90% in 2024. A bias adjustment of 84 is in line with the adjustment factors used in the previous years.

A summary of bias adjustment factors used by Crawley Borough Council over the past five years is presented in Table C.2.

Table C.2 – Bias Adjustment Factor

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.84
2023	Local	-	0.85
2022	Local	-	0.99
2021	Local	-	0.96
2020	Local	-	0.98

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 04/25

Follow the steps below **in the correct order** to show the results of **relevant** co-location studies
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.

This spreadsheet will be updated at the end of June 2025

LAQM Helpdesk Website

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: Select the Laboratory that Analyses Your Tubes from the Drop-Down List

If a laboratory is not shown, we have no data for this laboratory.

Step 2: Select a Preparation Method from the Drop-Down List

If a preparation method is not shown, we have no data for this method at this laboratory.

Step 3: Select a Year from the Drop-Down List

If a year is not shown, we have no data[2]

Step 4:

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[3] shown in blue at the foot of the final column.

If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By[1]	Method (To undo your selection, choose (All) from the pop-up list)	Year[5] (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	20% TEA in water	2024	UV	Belfast City Council	10	24	20	19.9%	G	**0.83**
Gradko	20% TEA in water	2024	R	Belfast City Council	12	43	34	28.8%	G	**0.78**
Gradko	20% TEA in water	2024	R	Belfast City Council	12	24	21	13.9%	G	**0.88**
Gradko	20% TEA in water	2024	R	Belfast City Council	12	34	27	25.5%	G	**0.80**
Gradko	20% TEA in water	2024	R	Blackburn With Darwen Bc	12	22	17	32.9%	G	**0.75**
Gradko	20% TEA in water	2024	R	Bath & North East Somerset	12	25	20	22.6%	G	**0.82**
Gradko	20% TEA in water	2024	R	Cambridge City Council	12	19	15	28.5%	G	**0.78**
Gradko	20% TEA in water	2024	UB	Plymouth City Council	12	16	14	13.8%	G	**0.88**
Gradko	20% TEA in water	2024	R	Plymouth City Council	12	31	23	33.4%	S	**0.75**
Gradko	20% TEA in water	2024	R	Monmouthshire County Council	12	29	24	19.4%	G	**0.84**
Gradko	20% TEA in water	2024	KS	Marylebone Road Intercomparison	11	41	36	16.1%	G	**0.86**
Gradko	20% TEA in water	2024	R	Lisburn & Castlereagh City Council	12	24	19	27.8%	G	**0.78**
Gradko	20% TEA in water	2024	R	Ards And North Down Borough Council	11	28	20	44.5%	G	**0.69**
Gradko	20% TEA in water	2024	R	Eastleigh Borough Council	12	29	24	20.3%	G	**0.83**
Gradko	20% TEA in water	2024	UB	Eastleigh Borough Council	12	19	17	12.4%	G	**0.89**
Gradko	20% TEA in water	2024	R	Eastleigh Borough Council	12	19	17	12.0%	G	**0.89**
Gradko	20% TEA in water	2024	R	Gateshead Council	12	20	18	13.9%	G	**0.88**
Gradko	20% TEA in water	2024	R	Gateshead Council	11	20	17	19.7%	G	**0.84**
Gradko	20% TEA in water	2024	R	Gateshead Council	12	24	20	21.7%	G	**0.82**
Gradko	20% TEA in water	2024	R	Gateshead Council	12	27	23	19.0%	G	**0.84**
Gradko	20% TEA in water	2024	R	Gateshead Council	12	28	30	-6.0%	G	**1.06**
Gradko	20% TEA in water	2024	R	Brighton & Hove City Council	11	34	27	26.3%	G	**0.79**
Gradko	20% TEA in water	2024	R	Liverpool City Council	12	34	25	35.7%	G	**0.74**
Gradko	20% TEA in water	2024	KS	Liverpool City Council	10	52	47	10.2%	G	**0.91**
Gradko	20% TEA in water	2024	R	Nottingham City Council	10	29	26	12.2%	G	**0.89**
Gradko	20% TEA in water	2024	R	Wychavon District Council	10	29	26	14.7%	G	**0.87**
Gradko	20% TEA in water	2024	R	Worcestershire	12	12	12	-3.4%	G	**1.04**
Gradko	20% TEA in water	2024		**Overall Factor[3] (27 studies)**				**Use**		**0.84**

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the Diffusion Tube Data Processing Tool/NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, non-automatic annual mean NO_2 concentrations corrected for distance are presented in Table B.1.

Distance correction should be considered at any monitoring site where the annual mean concentration is greater than 36µg/m^3 and the monitoring site is not located at a point of relevant exposure (taking the limitations of the LAQM NO_2 fall-off with distance calculator into account).

As the monitoring results were below 36µg/m^3 at all sites no diffusion tube NO_2 monitoring locations within Crawley Borough Council required distance correction during 2024.

QA/QC of Automatic Monitoring

Crawley's monitoring site (CA2), located on the eastern boundary of Gatwick Airport, has two automatic analysers: a nitrogen dioxides analyser (ML9841B) and a FIDAS 200 particulate monitor, which replaced the existing TEOM (Tapered Element Oscillating Microbalance) in March 2020.

Data collection for Crawley's monitoring station is undertaken by the Bureau Veritas through a contract with Sussex Air Partnership. The monitoring data from this site is available online at sussex-air. Current and historic data is accessible to the public and commercial users by searching the sites on the interactive site locations map. The website also provides an API (application programming interface) for air quality data. This uses a copy of the live database, which validates the data and calculates information like air quality indexes and objectives. Live data can be viewed here.

Bureau Veritas also carry out the verification and ratification of the data for the whole of the Sussex monitoring network which is reported on the Sussex-air website.

Site calibration checks are undertaken every 4 weeks by the Local Site Operator (LSO), Enviro-Technology services Ltd. The analysers are also maintained and serviced every 6 months under contract with Enviro- Technology services Ltd who provide the equipment support unit services (ESU).

PM_{10} and $PM_{2.5}$ Monitoring Adjustment

Crawley Borough Council's particulate monitor is a Palas FIDAS 200 which measures both PM_{10} and $PM_{2.5}$.

7.174 of LAQM.TG (22) advises that the FIDAS PM_{10} data can be used without the need for correction, however, the $PM_{2.5}$ data should be corrected for slope by applying a factor of 1.06. The 2024 $PM_{2.5}$ raw data has been corrected by this factor to achieve equivalence to the reference method (7.0µg/m^3).

Automatic Monitoring Annualisation

Where data capture is less than 75% and greater than 25% of a full calendar year (between 3 and 9 months), the mean should be 'annualised' – i.e. adjusted using the methodology outlined in LAQM.TG(22), before being compared to annual mean objectives.

Gatwick East continuous monitoring site was damaged by vandalism and ceased operating in May 2024, all the collected data had to be annualised; details are provided in the tables below.

Table C.3 – Automatic NO_2 Annualisation Summary (concentrations presented in µg/m³)

Background Site	Annual Data Capture	Annual Mean (A_m)	CA2	
			Period Mean (P_m)	Ratio (A_m/P_m)
Reading New Town	99.1	10.5	10.7	0.985
Horley	98.6	14.2	14.9	0.956
London Bexley	87.8	15.3	15.3	1.000
Thurrock	97.2	17.8	16.9	1.052
Average (R_a)			**0.998**	
Raw Data Annual Mean (M)			**17.0**	
Annualised Annual Mean (M x R_a)			**16.9**	

Table C.4 – Automatic PM_{10} Annualisation Summary (concentrations presented in µg/m³)

Background Site	Annual Data Capture	Annual Mean (A_m)	CA2	
			Period Mean (P_m)	Ratio (A_m/P_m)
Reading New Town	99.9	10.5	10.6	0.989
Lullington Heath	99.4	10.3	10.4	0.985
London Bexley	99.9	12.3	12.8	0.958
Thurrock	99.4	12.6	12.6	0.994
Average (R_a)			**0.982**	
Raw Data Annual Mean (M)			**12.4**	
Annualised Annual Mean (M x R_a)			**12.2**	

Table C.5 – Automatic $PM_{2.5}$ Annualisation Summary (concentrations presented in $\mu g/m^3$)

Background Site	Annual Data Capture	Annual Mean (A_m)	CA2	
			Period Mean (P_m)	Ratio (A_m/P_m)
Reading New Town	99.9	6.7	7.2	0.926
Lullington Heath	99.4	6.4	6.9	0.935
London Bexley	99.9	7.7	8.4	0.913
Thurrock	99.4	7.5	8.0	0.942
Average (R_a)			**0.929**	
Raw Data Annual Mean (M)			**7.5**	
Annualised Annual Mean (M x R_a)			**7.0**	

NO_2 Fall-off with Distance from the Road

Wherever possible, monitoring locations are representative of exposure. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure has been estimated using the NO_2 fall-off with distance calculator available on the LAQM Support website. Where appropriate, automatic annual mean NO_2 concentrations corrected for distance are presented in Table A.3.

No automatic NO_2 monitoring locations within Crawley Borough required distance correction during 2024.

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

Figure D.1 – Map of Crawley AQMA Boundary

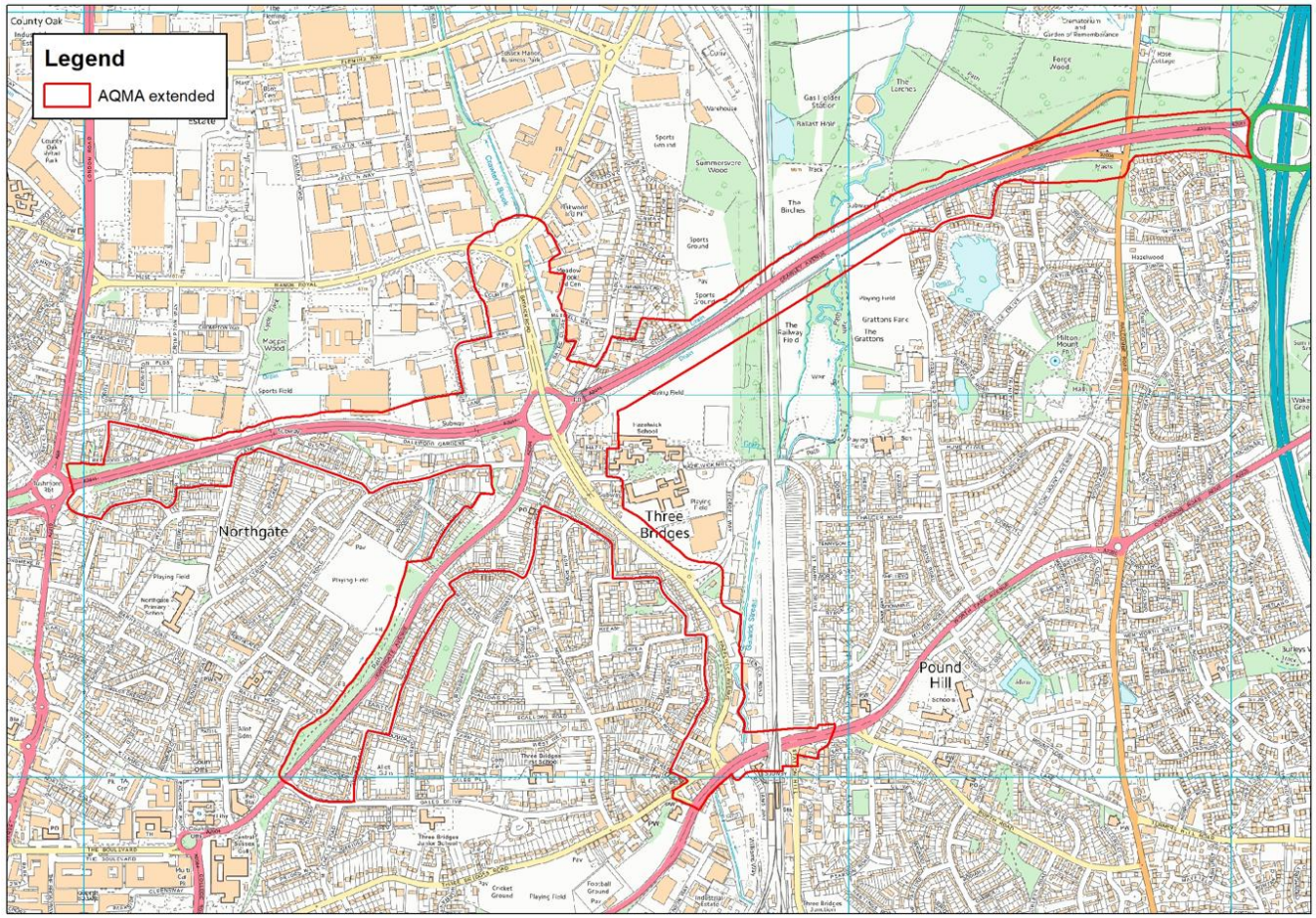


Figure D.2 – Map of Non-Automatic Monitoring Sites in Crawley in relation to AQMA

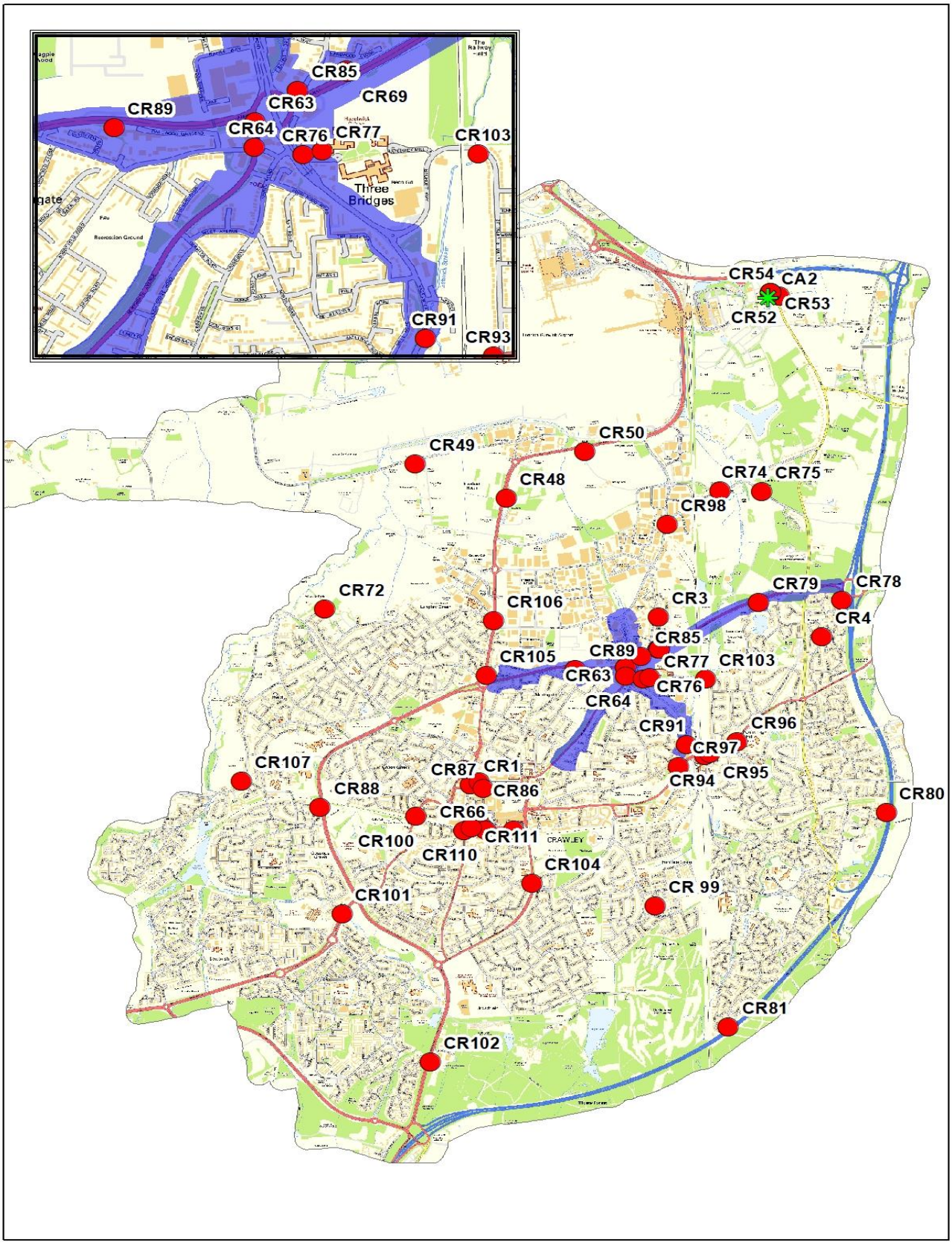


Figure D.3 Map of Diffusion Tube Sites: CR3, 55, 62, 63, 64, 69, 76, 77, 85, 89 and 103

Figure D.4 Map of Diffusion Tube Site: CR49

Figure D.5 Map of Diffusion Tube Sites: CR91, 93, 94, 95, 96 and 97

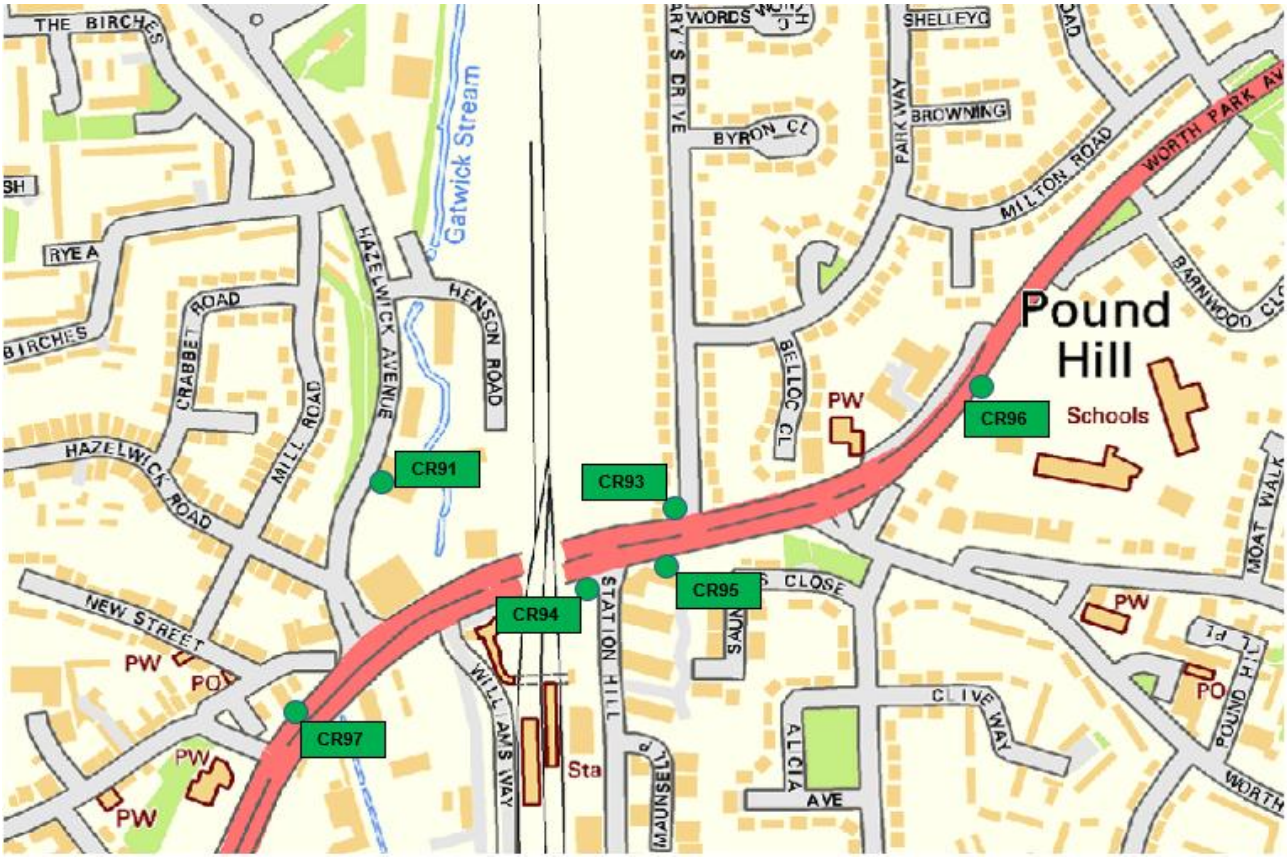


Figure D.6 Map of Diffusion Tube Sites: CR88 and CR107

Figure D.7 Map of Diffusion Tube Sites: CR1, 60, 66, 86, 87, 100, 108, 109, 110, 111

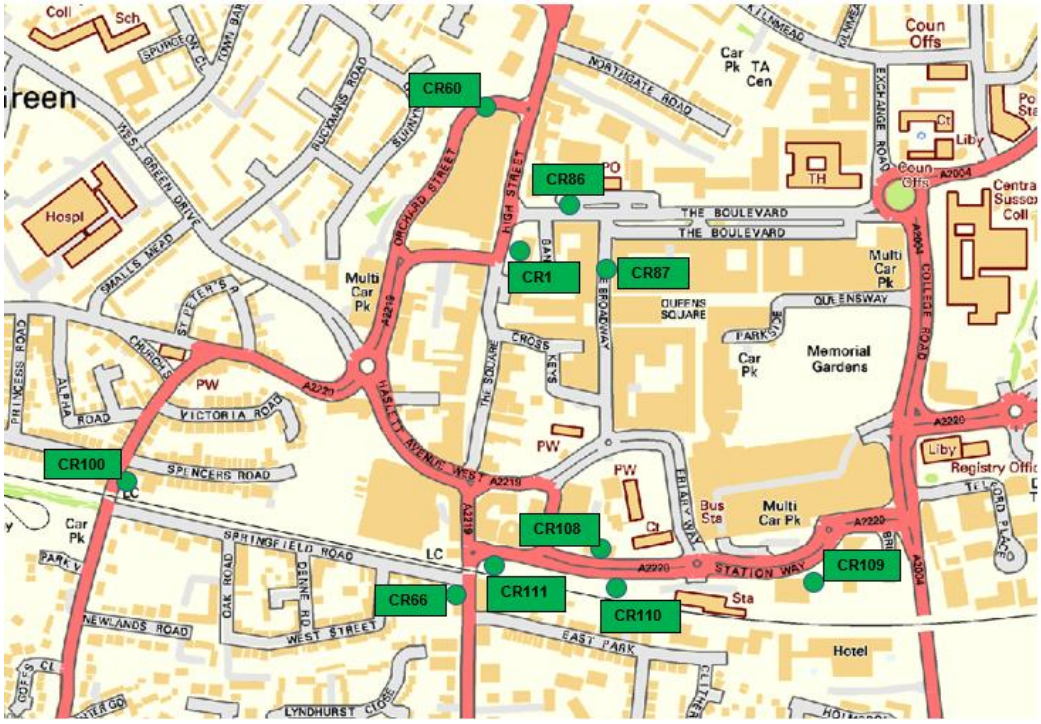


Figure D.8 Map of Diffusion Tube Site: CR104

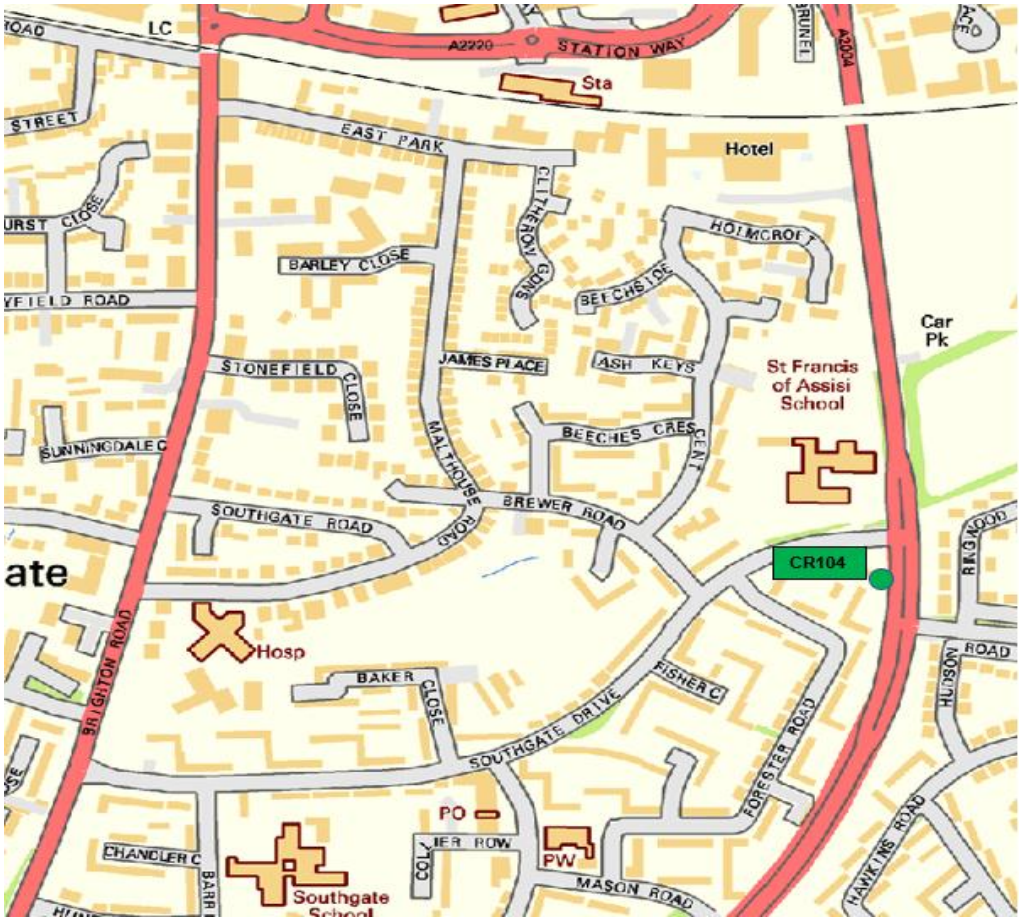


Figure D.9 Map of Diffusion Tube Sites: CR4, 78, 79

Figure D.10 Map of Diffusion Tube Sites: CR74 and CR75

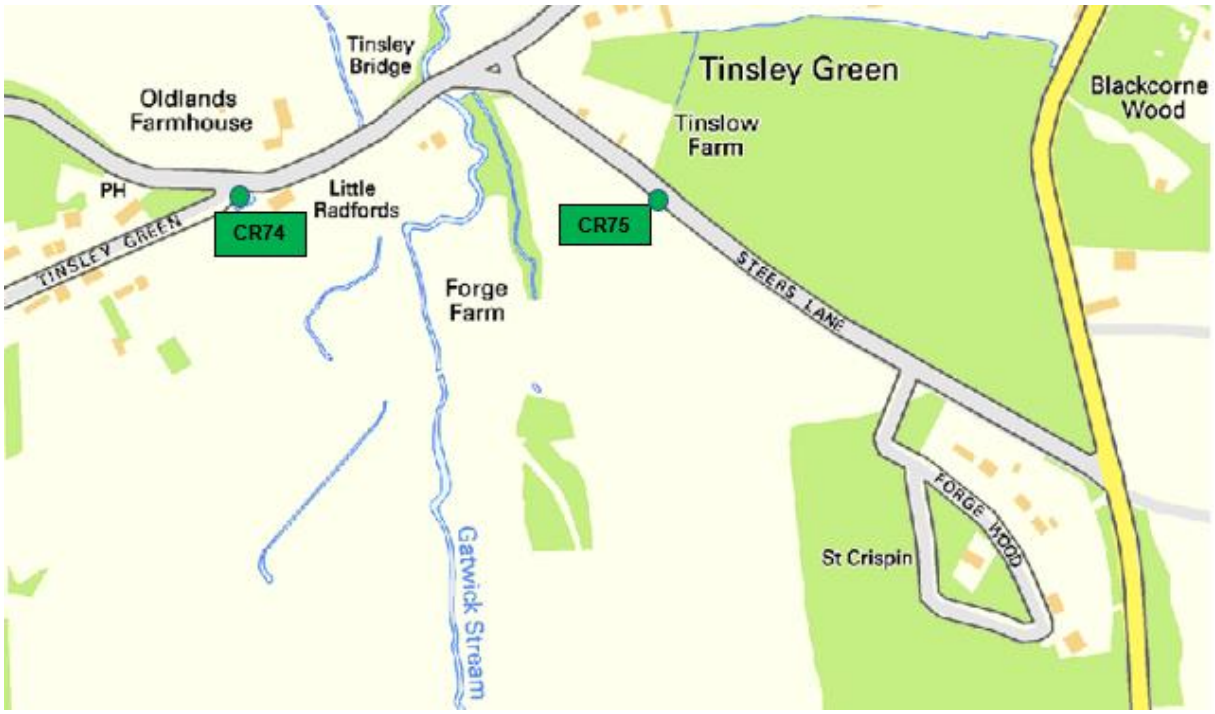


Figure D.11 Map of Diffusion Tube Sites: CR48, CR50 and CR98

Figure D.12 Map of Diffusion Tube Site: CR72

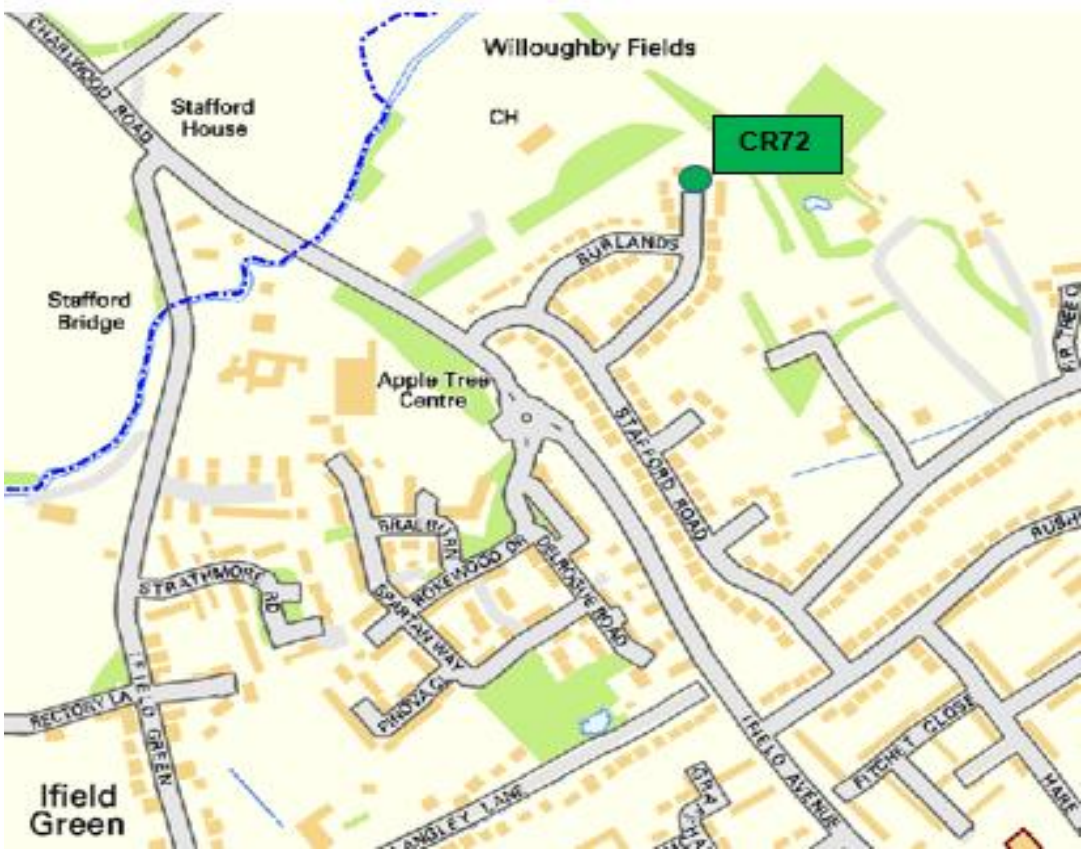


Figure D.13 Map of Diffusion Tube Sites: CR105 and CR106

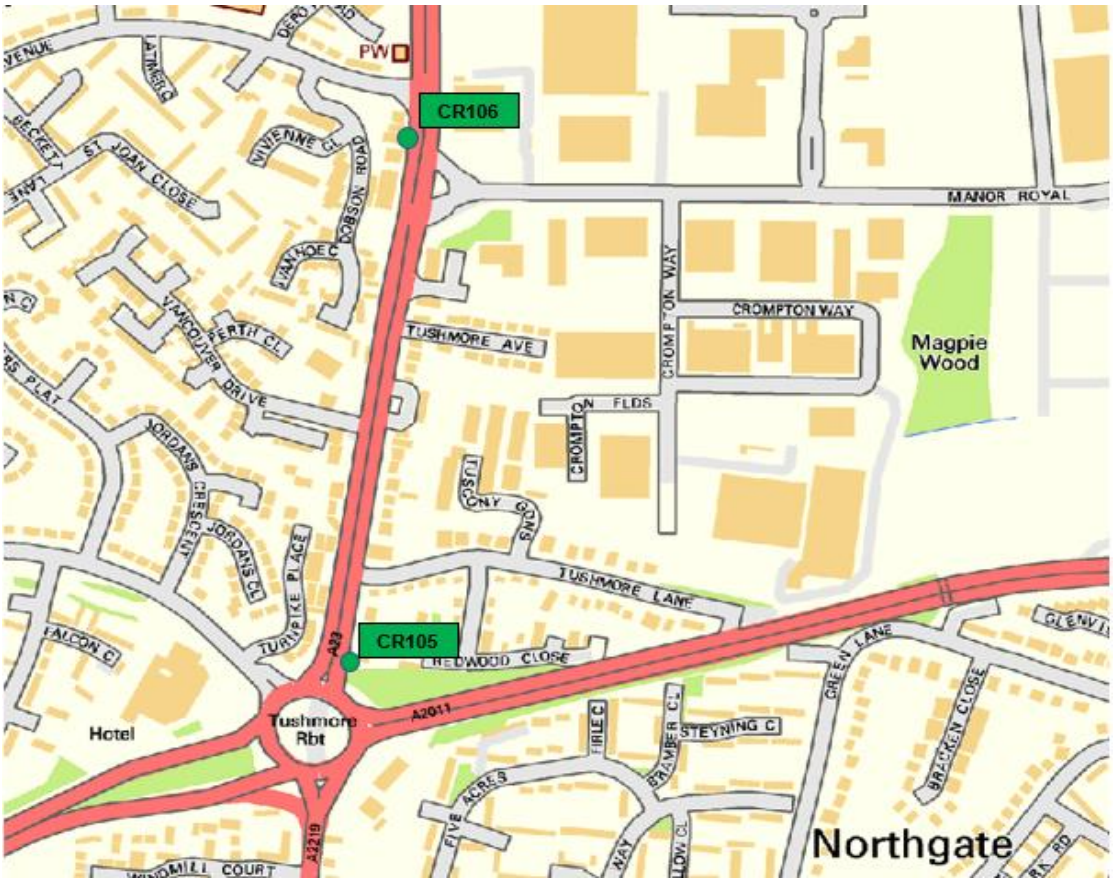


Figure D.14 Map of Diffusion Tube Site: CR99

Figure D.15 Map of Diffusion Tube Site: CR101

Figure D.16 Map of Diffusion Tube Site: CR102

Figure D.17 Map of Diffusion Tube Site: CR80

Figure D.18 Map of Diffusion Tube Site: CR81

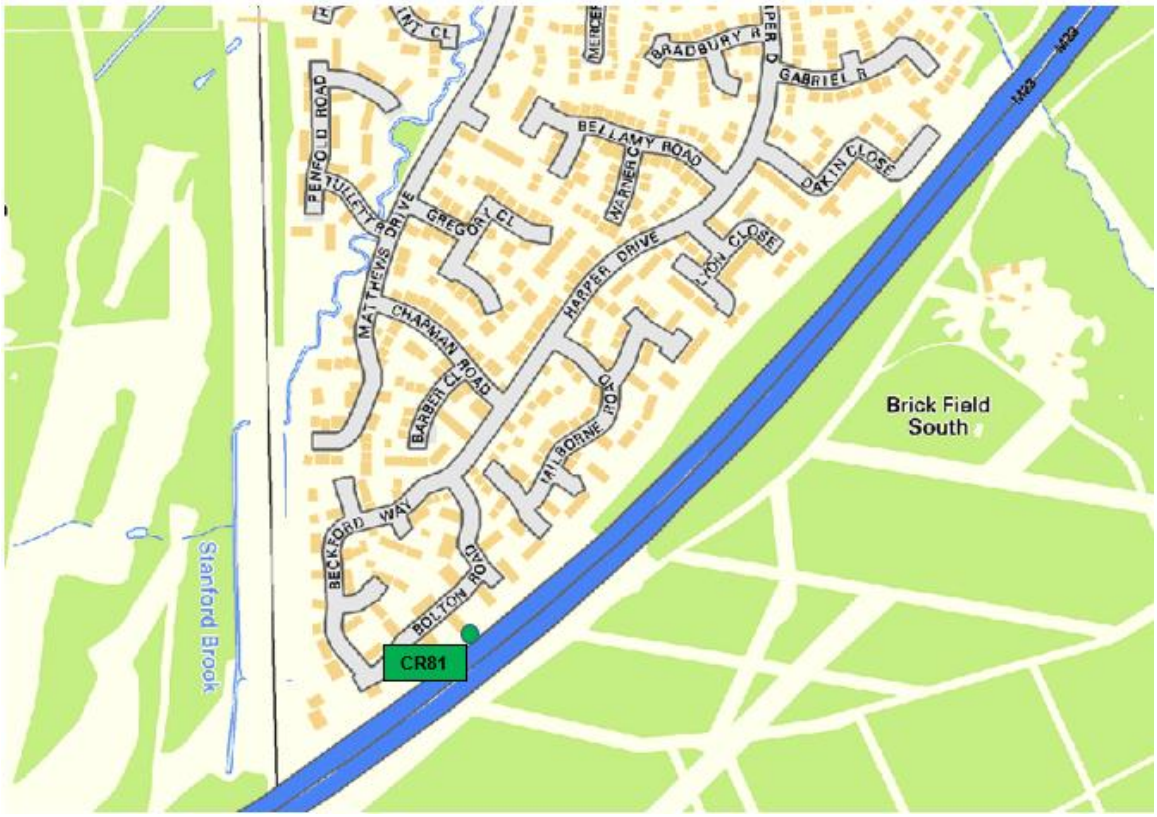


Figure D.19 Map of Diffusion Tube Site: CR112

Figure D.20 Map of Diffusion Tubes Sites: CR51,52, 53, 54

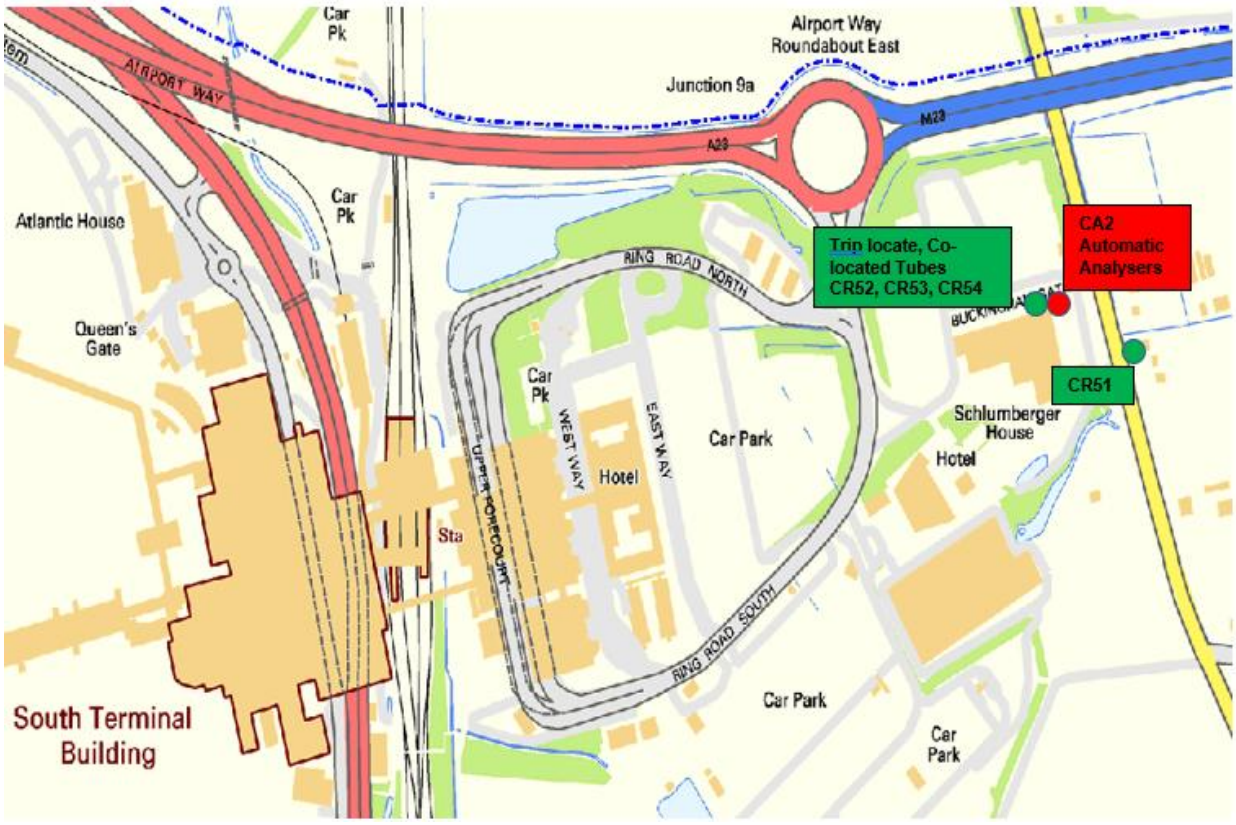
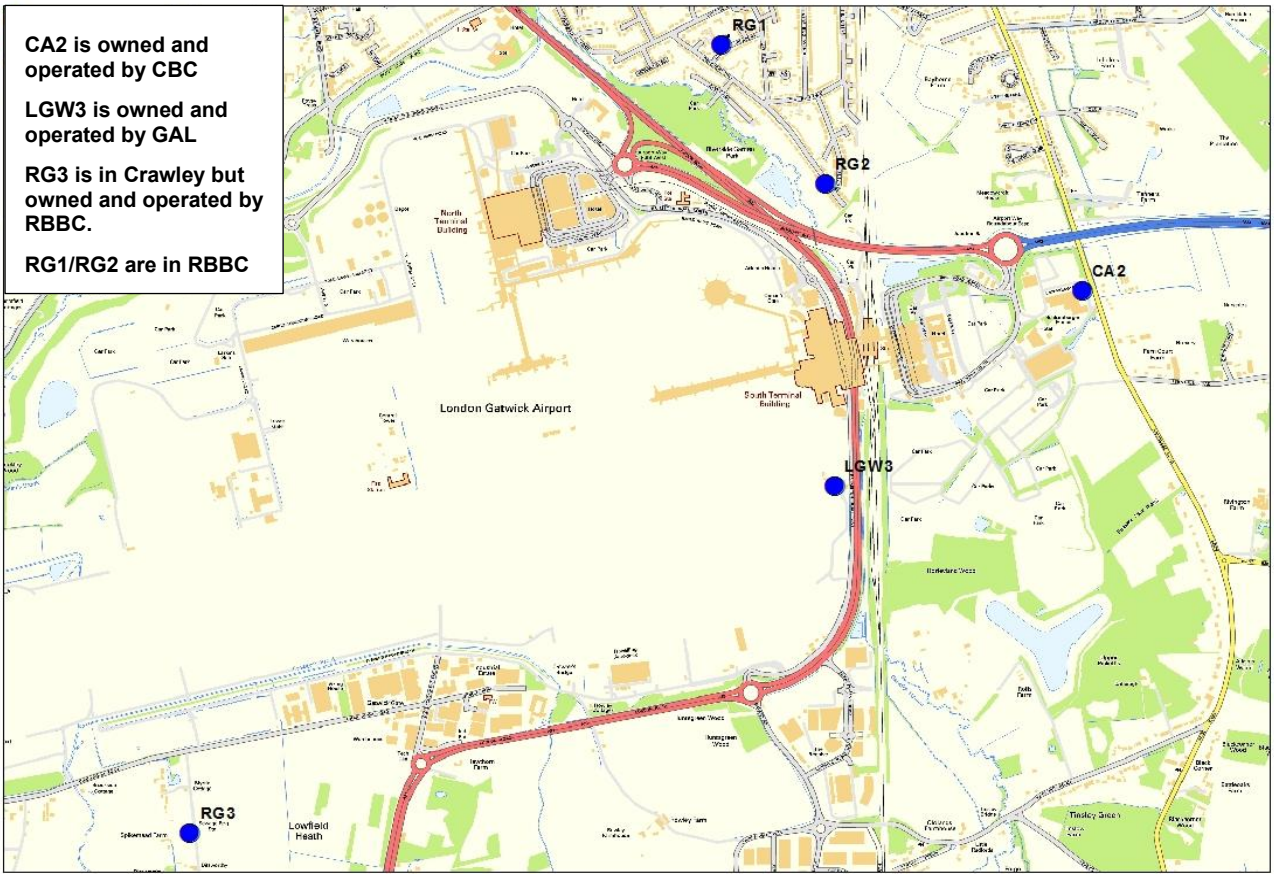


Figure D.21 – Map of Diffusion Tubes Site: CR113

Figure D.22 – Map of Automatic Monitoring Sites in Crawley



Appendix E: Summary of Air Quality Objectives in England

Table E.1 – Air Quality Objectives in England[4]

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

[4] The units are in microgrammes of pollutant per cubic metre of air (µg/m^3).

Glossary of Terms

Abbreviation	Description
AADT	Annual Average Daily Traffic
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the 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
AQS	Air Quality Strategy
ASR	Air quality Annual Status Report
CBC	Crawley Borough Council
CGP	Crawley Growth Programme
CAZ	Clean Air Zones
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
DFT	Department for Transport
EA	Environment Agency
EFT	Emissions Factor Toolkit
EPAQS	Expert Panel on Air Quality Standards
EU	European Union
FDMS	Filter Dynamics Measurement System
FIDAS	Fine Dust Aerosol Spectrometer
GAL	Gatwick Airport Ltd
LAQM	Local Air Quality Management
LEP	Local Enterprise Partnership
LEZ	Low Emission Zone

LPTS	Local Plan Transport Strategy
NAQS	National Air Quality Strategy
NPPF	National Planning Policy Framework
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
OLEV	Office for Low Emission Vehicles
PHE	Public Health England
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SAQP	Sussex Air Quality Partnership
WHO	World Health Organisation
WSCC	West Sussex County Council

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- Crawley Town Centre Regeneration Programme 2016
- National bias adjustment factor spreadsheet: http://laqm.defra.gov.uk/bias-adjustment-factors/national-bias.html
- Tube precision spreadsheet: www.airquality.co.uk/archive/laqm/tools/AEA_DifTPAB_v03.xls
- Bureau Vitas LAQM Diffusion Tube Data Processing Tool
- Public Health Outcomes Framework