ADUR & WORTHING

COUNCILS

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: July 2025

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Local Responsibilities and Commitment

This ASR was prepared by the Environmental Health & Licensing team at Adur & Worthing Councils with the support and agreement of the following officers and departments:

- Adur & Worthing Councils: Planning, Parking Services, Place & Economy, Waste Services.
- West Sussex County Council: Jamie Dallen, Transport Planning and Policy Team; Planning Services; Liz Robbins, Team Leader, ITS and Traffic Monitoring, Highways, Transport and Planning.
- National Highways (traffic data): John Farnaby, Programme Development Specialist (Area 4) South East Programme Development Team – Strategy.

This ASR has been approved by:

Cllr Andrew Harvey, Adur Cabinet Member for the Environment

Cllr Vicki Wells, Worthing Cabinet Member for the Environment

At the time of writing this ASR had not been signed off by the West Sussex County Council Director of Public Health, although a copy has been sent for comment.

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

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Executive Summary: Air Quality in Our Area

Air Quality in Adur District and Worthing Borough Councils

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.

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.

The Environmental Improvement Plan[1] sets out actions intended to drive continued improvements to air quality and to meet the new national interim and long-term targets for fine particulate matter ($PM_{2.5}$), the pollutant of most harm to human health. The Air Quality Strategy[2] provides more information on local authorities' responsibilities to work towards these new targets and reduce fine particulate matter in their areas.

The Road to Zero[3] details the Government's approach to reduce exhaust emissions from road transport in balance with the needs of the local community. This is extremely important given that the majority of Air Quality Management Areas (AQMAs) are designated due to elevated concentrations from transport emissions.

This report covers actions carried out during 2024.

In 2024 we progressed a number of measures in pursuit of reduced concentrations of pollutants and attempt to improve air quality. These included publishing our new Worthing Air Quality Action Plan; WSCC refreshed their Local Cycling and Walking Plan (LCWIP); completed work on Upper Shoreham Road to assist with active travel, including school travel; continued work on and in some cases developed options for transport improvements, particularly cycling and walking (Lancing Beach Green cycle path, Durrington-Goring, A259 segregated cycle route); continued funding of the Council's bike share scheme (Donkey Bikes) across both Districts; delivery of an Active Schools Grant, assisting schools to encourage more walking, cycling and wheeling to school; installation of new bike racks across Adur and Worthing; use of a low cost sensor in Shoreham High Street as part of the Brighton & Hove and Sussex real Time Air Quality Network; delivery of a scaled down Sussex-air intervention programme in primary and secondary schools; continuation of School Streets at Swiss Gardens Primary and Shoreham Academy (Adur) and Thomas A Becket Junior School (Worthing); delivery of new kerbside charge point sites across Adur & Worthing as part of the West Sussex Connected Kerb EV charge point project; use of the Sussex Air Quality Emissions Mitigation Planning Guidance when assessing the impacts of 'major' developments; and ongoing discussions with car club providers to develop dedicated car club spaces within Adur & Worthing.

[1] Defra. Environmental Improvement Plan 2023

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

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

Conclusions and Priorities

Measured concentrations of Nitrogen Dioxide (NO_2) decreased at most monitoring sites across both Adur & Worthing. This continued the downward trend seen over recent years.

All but one measurement site had concentrations well below the annual mean objective of 40µg/m^3. That one site was within Worthing Air Quality Management Area (AQMA) No.2 and when predicted back to the nearest façade still exceeds the objective. We will work with our partner organisations to deliver the actions contained within our revised air quality action plan for the AQMA.

Measured concentrations of Particulate Matter $PM_{2.5}$ in Shoreham and Worthing were down from 2023, below the current limit value and also the 10µg/m^3 long term Air Quality Strategy Objective.

Development pressures remain in both Adur & Worthing. A large number of major developments have either been granted permission or are being planned for both areas, particularly in Worthing town centre and Shoreham Harbour. Construction commenced or continued on some of these developments but have yet to be occupied. Balancing the demand for development with the need to improve air quality brings challenges. Conversely these developments also bring opportunities to improve infrastructure, especially for walking and cycling.

Specific priority actions for 2024 include developing an Adur Air Quality Strategy; working with partners to deliver the Worthing Air Quality Action Plan (AQAP) through Steering Group meetings; continue working with WSCC on the Connected Kerb EV charge point project; continue shaping and delivering improvements for active travel (walking and wheeling); work with WSCC and others to improve public transport options as this appears to have the greatest scale potential to influence modal shift from private vehicles; continue to embed air quality considerations into the development control process when looking at the impacts of major developments; and seek new funding to deliver a schools and community group educational programme (across West Sussex).

How to get Involved

We endeavour to engage with interested parties in the area, including community groups, schools, bus providers, transport planners, planning policy and development control. The Councils are both active members of the Sussex Air Quality Partnership (Sussex-air), co-chairing the Partnership. Sussex-air provides assistance to members and information to

the public via their website, which provides air quality data, news updates, educational resources and relevant links. See http://www.sussex-air.net/ for more information.

With development pressures across the Adur and Worthing area, it is more important than ever for interested parties, associated authorities and infrastructure stakeholders to work together to achieve improved air quality outcomes. It is noted and regrettable that National Highways have again not provided suitable content for this year's report.

Locally the Council will actively seek engagement from residents and businesses who may have innovative ideas to help reduce air pollution in and around Adur & Worthing.

Road vehicles produce over 50 per cent of the emissions of nitrogen oxides in the UK. Modelling shows that small diesel cars are responsible for 44% of the NO_2 concentrations in Worthing's AQMA.

The Sussex-air website provides tips for residents to help play their part to improve air quality: https://sussex-air.net/

Before using your car, ask yourself:

- Could I walk or cycle instead of taking the car?
- Could I take a bus or train?
- What is the forecast for air pollution today? (See https://sussex-air.net/)
- Using quieter streets when you're on a bike or on foot can lower your exposure to air pollution by up to 20%.

If you must drive:

- Drive smoothly and don't rev your engine unnecessarily. You'll save fuel, and your engine will also pollute less;
- Maintain your car. Keep the engine properly tuned and the tyres at the right pressure; and
- Turn off your engine when your car is stationary for prolonged periods, particularly at main junctions and level crossings. By not idling your engine you'll help to make the air cleaner for you, other drivers, pedestrians and cyclists.

At home:

- Buy water-based or low-solvent paints, varnishes, glues and wood preservatives.

- Consider using pick up points at shops or lockers in train stations to help reduce pollution from delivery vans which are often diesel. If this is not possible, grouping deliveries together can reduce the number of journeys made by delivery vans.
- Open fires and wood-burning stoves have risen in popularity, particularly as gas and electricity prices have risen. This means more smoke from chimneys, which has a negative effect on air quality, particularly in relation to fine particulate matter $PM_{2.5}$. This can cause breathing problems, asthma attacks and contribute to other health conditions. The use of inappropriate fuels such as treated or damp wood can cause additional problems with local air quality.

  The website at the link below provides information and advice for those that use wood burning stoves or open fires. Following its advice can help reduce the effect of burning: https://sussex-air.net/clean-burn/. However, if you do not have to burn wood for your primary source of heating then we strongly recommend not doing so.

- Avoid lighting bonfires and instead take waste to your local recycling centre for them to compost, sign up for our garden waste collection service, buy some garden waste sacks or make compost at home. Never burn household waste, particularly plastic, rubber, foam or paint. Levels of pollution can be quite high on bonfire night and other events/festivals and sensitive people, including people with respiratory conditions, may notice some effects. Exposure can be reduced by remaining indoors and keeping windows closed. Further information is available on our website at https://www.adur-worthing.gov.uk/environmental-health/pollution/air-quality-and-pollution/bonfires-and-smoke/.
- Check the pollution forecast available via the Met Office and take action to limit your exposure when high pollution episodes are predicted.
- Information on Air Quality, including reports and monitoring results, is available on our website at https://www.adur-worthing.gov.uk/environmental-health/pollution/air-quality-and-pollution/.
- Information is also available at http://www.sussex-air.net/.

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Tables

1 Local Air Quality Management

This report provides an overview of air quality in Adur District and Worthing Borough Councils 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 Adur District and Worthing Borough Councils 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.3.

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 Adur District and Worthing Borough Councils can be found in Table 2.1.

Worthing Borough Council

The table presents a description of the AQMA that is currently designated within the **Worthing Borough**. Appendix D: Map(s) of Monitoring Locations and AQMAs provides a map of the AQMA and also the air quality monitoring locations in relation to the AQMA. The air quality objectives pertinent to the current AQMA designation are as follows:

- NO_2 annual mean

Adur District Council

Adur District Council currently does not have any declared AQMAs. A local Air Quality Strategy is under development to prevent and reduce polluting activities.

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 (µg/m^3)	Level of Exceedance: Current Year (µg/m^3)	Number of Years Compliant with Air Quality Objective	Name and Date of AQAP Publication	Web Link to AQAP
Worthing Borough Council AQMA No.2	Declared 13/07/201 Amended 15/12/2014	NO2 Annual Mean	Crockhurst Hill, Offington Corner Roundabout, Warren Road, Grove Lodge Roundabout, Upper Brighton Road up to and including the Downlands Retail Centre and Lyons Way	YES	71.5	41.7	0	Worthing Air Quality Action Plan 2024	https://www.adur-worthing.gov.uk/environmental-health/pollution/air-quality-and-pollution/local-air-quality-management/

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

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

2.2 Progress and Impact of Measures to address Air Quality in Adur and Worthing

Defra's appraisal of last year's ASR concluded

1. Comments from last year's ASR have been mentioned and addressed.

2. The report states that the Councils collaborated with consultants Bureau Veritas to produce a draft Worthing Air Quality Action Plan. At the time of writing, the Plan was scheduled for public consultation following local and national elections. Updates on the new AQAP for Worthing and the AQS for Adur are anticipated in next year's report. *Updates are included in this report.*

3. Mapping of the diffusion tube locations has been provided in the Appendix. However, it would be beneficial to also make the boundaries of the AQMAs clearer (e.g., change the colour and line thickness). *Noted and amended this year*.

4. Defra recommends that Directors of Public Health approve draft ASRs. Sign off is not a requirement, however collaboration and consultation with those who have responsibility for Public Health is expected to increase support for measures to improve air quality, with co-benefits for all. Please bear this in mind for the next annual reporting process. *The ASR has been sent to the West Sussex Director of Public Health for comment and sign off.*

5. Tables C.3 and C.4 both describe the same non-automatic monitors. However, Table C.4 is placed within the QA/QC section for automatic monitors. The report mentions that automatic monitors were distance-corrected where appropriate and refers to Table A.3, which does not provide any information on this matter. Additionally, Table C.4 indicates that diffusion tube S9 was distance-corrected, but this information is not included in Table C.3 within the QA/QC section for non-automatic monitors. *This was amended in the published version of the 2024 report on our website.*

6. The graphs and maps are generally well presented and are clear to read. The Council have also provided a detailed discussion of the trends in pollutant concentrations.

7. A national bias adjustment factor has been applied, and a screenshot of the tool has been provided, which is welcomed. According to the report, several tubes were

co-located with a continuous analyser. It would be beneficial to include an explanation of why the national bias adjustment factor was selected and whether a local bias adjustment factor was also calculated, and if so, why a local factor was not used. *This is included in this year's ASR.*

8. Overall, the report provides a good insight into the work that the Council are doing and all the current and future measures to improve local air quality.

Adur District and Worthing Borough Councils have taken forward a number of direct measures during the current reporting year of 2024 in pursuit of improving local air quality. Details of all measures completed, in progress or planned are set out in Table 2.2. For Adur there are 10 measures and for Worthing 16 measures included within Table 2.2, with the type of measure and the progress Adur District and Worthing Borough Councils have made during the reporting year of 2024 presented. Where there have been, or continue to be, barriers restricting the implementation of the measure, these are also presented within Table 2.2. For Worthing the 16 listed measures replicate those contained within the new Air Quality Action Plan (AQAP).

The top 3 key air quality improvement measures that each local authority would like to raise awareness of amongst local communities are listed first.

More detail on these measures can be found in the Worthing Air Quality Action Plan, Adur and Worthing Sustainability Framework 2021-2023, West Sussex Active Travel Strategy 2024-2036, Adur & Worthing Local Cycling and Walking Infrastructure Plan (LCWIP), West Sussex Transport Plan 2022-2036 (WSTP), West Sussex public health and sustainability framework – Creating healthy and sustainable places, West Sussex Electric Vehicle Strategy 2019-2030, Adur Local Plan 2017 and Worthing Local Plan 2023.

. Key completed measures are:

- Drafted, carried out consultation and published a new Worthing Air Quality Action Plan.
- Continued discussions with car club providers to develop dedicated car club spaces within Adur & Worthing;
- Work undertaken on Upper Shoreham Road to assist with active travel, including positive contribution towards active school travel in the area;
- Lancing Beach Green cycle path in development and due to be completed in 2025 (a Community Highways Scheme supported by WSCC);

- Consultation results on Durrington-Goring transport improvements shared with the public and next steps being assessed;
- WSCC continued to work on proposals for the A259 segregated cycle route;

- WSCC refreshed their LCWIP, which connects with the previous year's prioritisation of the Adur & Worthing LCWIP routes (ranked cycle routes and identified walking & wheeling zones - areas with a density of schools, green spaces and services where walking should be simple, but is often congested/difficult);
- Continuation of the Council's bike share scheme (Donkey Bikes) across Adur and Worthing;
- Delivery of an Active Schools Grant, which assisted schools to purchase new equipment to encourage more walking, cycling and wheeling to school;
- Installation of over 100 new bike racks at new locations across Adur and Worthing, including in town / village centres and in green and blue spaces;
- Installation of refreshed and updated signage in all Adur town and village centres, showcasing and encouraging cycling and walking by showing walk and cycle times to a number of destinations around the Adur District;
- Installation of a low cost sensor in Shoreham High Street as part of the Brighton & Hove and Sussex Real Time Air Quality Network, measuring nitric oxide, nitrogen dioxide, ozone and particulate matter - see https://portal.earthsense.co.uk/BrightonHoveandSussexPublic/.
- New solar panels delivered at Wadars Swimming Pool (Adur) and Splashpoint Leisure Centre (Worthing) to assist with energy capture and distribution;
- Commencement of the large, low carbon heat network in Worthing Town Centre, with removal of multiple large gas boilers from public and private sector developments, which will assist in the reduction of NOx emissions;
- Delivery of a now scaled back (due to funding) Sussex-air Defra funded intervention programme in primary and secondary schools. A Sustrans Air Quality officer engaged with schools and groups to investigate local air quality. Local schools to have participated in the project since 2018 are Shoreham Academy, Swiss Gardens Primary, St Nicholas and St Marys Primary and Eastbrook Primary in Adur; Downsbrook Primary, Thomas A Becket Infant and Junior Schools, Bohunt School, Durrington High School, Davison High School for Girls, Worthing High, Chesswood Junior and Broadwater CofE School in Worthing;
- Continuation of School Streets, launched in 2023, at Swiss Gardens Primary and

Shoreham Academy and Thomas A Becket Junior School, Worthing. Our Sustrans work dovetailed with WSCC appointed Sustrans work at these locations.

- Continued to work with WSCC on the Connected Kerb EV charge point project, identifying and installing kerbside charge point sites across Adur & Worthing;
- Use of the Sussex Air Quality Emissions Mitigation Planning Guidance when looking at the impacts of 'major'[4] developments. The Guidance has assisted the Councils with obtaining costed air quality mitigation at development sites and relevant section 106 funds;
- Continued discussions with car club providers to develop dedicated car club spaces within Adur & Worthing.
- Although not a Council operated site, a new AURN monitoring site opened in Worthing and commenced measurements in August 2024. Worthing Ten Acres is an urban background site measuring PM_{10} and $PM_{2.5}$.

Adur District and Worthing Borough Councils expects the following measures to be completed over the course of the next reporting year:

- Publish an Air Quality Strategy for Adur;
- Begin Worthing AQAP Steering Group meetings to deliver the Worthing AQAP;
- Seek additional low cost sensors for Worthing and seek to expand the Brighton & Hove and Sussex Real Time Air Quality Network;
- Improve the provision of local air quality information and community participation to engage residents in behaviour change;
- Continue discussions with Car Club providers in Adur and Worthing, particularly in new developments and those with reduced parking;
- Seek alternative sources of funding to recommence the Sussex-air schools and community group educational programme in West Sussex;
- Seek new funding for continuation of the Donkey Bikes bike sharing scheme across Adur and Worthing;
- Revise the Sussex-air 'Air Quality & Emissions Mitigation Planning Guidance for Sussex' as part of the Sussex-air project team;

[4] as defined by Town and Country Planning (Development Management Procedure) Order (England) 2015

- Continue to engage with WSCC on their school streets programme.

Adur District and Worthing Borough Council's priorities for the coming year are:

- Work with West Sussex County Council to develop a new Adur Air Quality Strategy;
- Worthing AQAP Steering Group meetings to deliver the actions contained within the Worthing AQAP;
- Continue to embed air quality considerations into the development control process when looking at the impacts of major developments, with particular reference to the Sussex Air Quality Emissions Mitigation Planning Guidance;
- Improve the provision of local air quality information and community participation in Worthing to engage residents in behaviour change, better utilising our Communications team to improve our messaging;
- Seek improvements to infrastructure in and around the Worthing AQMA, working with National Highways and WSCC;
- Continue to work with WSCC on the Connected Kerb EV charge point project;
- Work with WSCC and others to improve public transport options across both Adur and Worthing, as this appears to have the greatest scale potential to influence modal shift away from private vehicles;
- Continue shaping and delivering improvements for active travel (walking and wheeling), promoting active travel for shorter journeys and work with WSCC on the their ongoing cycle route consultations;
- Seek new funding to deliver a schools and community group educational programme (across West Sussex).
- Seek additional low cost sensors for Worthing.

Adur District and Worthing Borough Councils worked to implement these measures in partnership with the following stakeholders during 2024:

- West Sussex County Council
- Sussex-air
- National Highways

The principal challenges and barriers to implementation that Adur District and Worthing Borough Councils anticipates facing are:

1. *Adequate input from National Highways.* To deliver the Worthing AQAP we require meaningful engagement from National Highways, particularly as the A27 is a key trunk road under their jurisdiction.

2. *Development pressures across both Adur and Worthing.* A large number of major developments have been granted permission and there are still a large number planned, particularly around Shoreham Harbour. Balancing the demand for development with good air quality is challenging. These developments do also bring opportunities to improve infrastructure, especially for walking and cycling, and thus limit the impacts on the existing AQMAs and avoid creating new hotspots. Many developments in Worthing, either granted or planned, are in or close to the Town Centre, away from the AQMA. Similarly, there are several planning permissions granted for development at the Western Harbour Arm, Shoreham, or in the vicinity, some of which are almost completed.

Adur

Adur District Council is at an early stage of preparing a new local plan. Significant changes to the planning system are expected to be introduced in 2025. The new local plan will be prepared and adopted under the new system.

The Adur Local Plan 2017 allocated the following sites:

- West Sompting – allocated in the Adur Local Plan for a minimum of 480 homes and a range of open space. Application AWDM/0323/19 was granted consent on 20th September 2021, for a total of 469 dwellings, subject to completion of a s106 agreement which is anticipated by the end of summer 2023. The S.106 was signed on 7th August 2023. Phase 1 for 96 units has been approved in full, and development has commenced.
- New Monks Farm. Application AWDM/0961/17 was determined on 4th February 2020 (following completion of the associated s106). Outline permission was granted for 249 dwellings and other matters including a country park and relocation and extension of a gypsy and traveller site, in addition to outline permission for 351

further dwellings, a primary school, and a non-food retail store (use class A1). This retail store was intended to replace the employment allocation originally sought by the Adur Local Plan 2017, creating a number of jobs, and contributing to the local economy. A Reserved Matters application for the additional dwellings was submitted in 2022. This proposed an increase of 34 dwellings from the outline approval. The plans submitted related to the erection of 385 dwellings and Community Hub (Flexible Class E/F1/F2 use). This application went to Adur Planning Committee on 30th November 2022 with the decision to grant the application subject to the completion of a planning obligation. The Deed of Variation to the original s106 agreement (under AWDM/0961/17) was signed on 13th February 2023 and supersedes some of the previous obligations. Development is well underway. The new Traveller Site has been completed and all pitches occupied. A new roundabout on Old Shoreham Road (A27) is now complete. In July 2021 IKEA announced that it would not be delivering its retail store; this allows the authority to seek commercial floor space (consistent with the Adur Local Plan policy requirement), but there may be an opportunity for further residential development. This will be considered in the new Adur Local Plan.

- The New Monks Farm application is linked to planning ref. AWDM/1093/17 at Shoreham Airport due to a shared access to the A27. This site was allocated in the Adur Local Plan 2017 for 15,000 square metres of employment generating floorspace. (Subsequent to this, application planning ref. AWDM/1093/17 was granted consent for 25,000sqm of business floorspace in 2019). A reserved matters application (AWDM/1831/21) was submitted in October 2021, and permitted in July 2022. The development has now been constructed.

The Adur Local Plan (adopted 2017) allocates Shoreham Harbour Regeneration Area for a minimum of 1100 dwellings. Subsequently the Shoreham Harbour Joint Area Action Plan was adopted in 2019. At the time of writing, the following developments have come forward:

- 255 dwellings permitted at Kingston Wharf (AWDM/0204/20) in January 2021. These are now under construction.
- Development at Free Wharf (AWDM/1497/17, 548 dwellings) was granted consent in 2018; application AWDM/1315/22 sought amendments for additional dwellings on this site bringing the total to 587 dwellings. Adur Planning Committee 31st January

2023 resolved to grant consent subject to s106 agreement, which was signed on 6th march 2024.

- A development of 14 units has been completed at Humphrey's Gap on Brighton Road (AWDM/1625/16);
- Mariner's Point (132 dwellings permitted before the adoption of the Adur Local Plan and JAAP) also falls within this allocation.
- An application for the development of 176 apartments at Frosts 69-75 Brighton Road, just outside AQMA1 and was approved on 16 June 2023 (AWDM/1473/21).
- Schemes at 5 Brighton Road (Howard Kent site) were initially refused; however following appeal, one was dismissed on 8 December 2023, but the revised scheme (AWDM/1962/22) for 21 townhouses and a block of 24 flats (with revised design and provision of on-site affordable housing) was allowed on appeal on 8 December 2023.
- The Mannings (AWDM/1281/19). This is a redevelopment of an existing residential (affordable housing) block. The scheme will deliver 74 units in total, a net addition of 40 dwellings. This was approved in October 2021. (This sits outside of, but nearby, the Western Harbour Arm allocation). Development is underway.
- Pilot Pub AWDM/2139/20. A development of 34 apartments on the site of a former pub. Work has not commenced and the planning permission for this development has now expired.

Current housing projections for the Shoreham Harbour JAPP show potential for more development than originally anticipated, significantly more than the original projections, adding parking pressure issues and therefore increasing the importance of alternatives to private car use such as car clubs. A 'Placemaking Study' considered options for the remaining area within the allocation. Work is underway to develop this into adopted guidance and to inform site allocations which are carried forward to the new local plan.

Worthing

The Worthing Local Plan was adopted in March 2023. The Plan includes the following allocations (dwelling numbers are minimums):

- Beeches Avenue - 90 dwellings
- Caravan Club - 100 dwellings
- Centenary House - 250 dwellings and employment uses (10,000 sqm)

- Civic Centre - integrated health hub (7,000 sqm)
- Decoy Farm - employment uses (14,000 sqm)
- Fulbeck Ave - 152 dwellings
- Grafton - 150 dwellings and commercial uses (2,500 sqm)
- HMRC offices - 250 dwellings and care home – in development
- Lyndhurst Road - 150 dwellings
- Martlets Way - 28 dwellings and employment uses (10,000 sqm)
- Stagecoach site - 60 dwellings and commercial uses (2,000 sqm)
- Teville Gate - 250 dwellings and commercial uses (4,000 sqm)
- Union Place - 150 dwellings and commercial uses (700 sqm)
- Upper Brighton Road - 123 dwellings

The sites at Upper Brighton Road and Beeches Avenue are in close proximity to the AQMA.

A. Developments in Adur District and Worthing Borough could have an effect on traffic volumes in the other District, particularly along the A27 and within the Worthing AQMA;

B. Providing sufficient resources in order to progress and deliver effective air quality measures. As part of the Sussex-air consortium we have been running the Sustrans schools and community engagement work. However a lack of suitable funding means this work had to cease in most of West Sussex in 2024. Alternative funding streams are currently being explored.

C. Identifying suitable sites for the provision of car club spaces alongside sufficient funding;

D. Purchasing alternatively fuelled large vehicles (LGV's and HGV's) to replace conventionally fuelled vehicles within the Council's fleet depends on suitable funding being made available alongside the sourcing of appropriate vehicles and associated refuelling facilities.

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

- Adur Air Quality Strategy. Development has been delayed as a result of staff pressures. This will be completed during 2025.
- We decided not to pursue the purchase of a separate low cost sensor as it was not deemed cost effective at the time.

- The anticipated revision of the Sussex- air ‘Air Quality & Emissions Mitigation Planning Guidance for Sussex’ has yet to be completed.

Worthing Borough Council anticipates that the measures stated above and in Table 2.2 will achieve compliance in AQMA No.2.

Table 2.2(A) – Progress on Measures to Improve Air Quality - ADUR

Measure No.	Measure Title	Category	Classification	Year Measure Introduced	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
ADUR														
1	Improve the provision and quality of Public Transport options	Alternatives to private vehicle use	Other	2019	Ongoing	West Sussex County Council Adur District Council	Department For Transport, WSCC/Public Transport Operators	Partially funded	£500k	Implementation	Reduced NO_2 and PM emissions from mode shift to public transport combined with cleaner public transport fleets	Passenger numbers on public transport/WSCC Traffic counts	*BSIP funding awarded for* West Sussex includes additional provision of real time passenger information screens at bus stops and some bus stop improvements in Adur, as well as junction traffic light priority signal upgrades in particular to support the Coastliner Route 700 service. Ongoing work with South East Communities Rail Partnership to promote use of the Sussex Coast Line. Bus operators in West Sussex continue to explore low emission fuel technologies in their fleets and local authorities are in dialogue with operators as plans develop, including consideration of any funding opportunities as they arise.	Limits to the funding available for improvements
2	Encourage the use and uptake of electric vehicles by providing on street public charging points	Promoting low emission transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging.	2023	2030	Adur District Council, West Sussex County Council, Connected Kerb	WSCC, ADC, Connected Kerb	Funded	£500k	Implementation	Reduced vehicle emissions. Estimated to be less than 1µg/m µg/m^3 based on a low to medium uptake.	Number of on street charging points provided	Programme of fleet replacement with EV/hybrid vehicles continues, as and when vehicles are due for replacement. All pool cars hybrids. Explore alternative fuels for refuse vehicles. EV charge points continue to be provided for new 'major' developments aided by new Building Regulations Approved Documents; West Sussex County Council, Adur and Worthing Councils, and all other West Sussex local planning authorities together with Connected Kerb have formed a partnership to provide a new Chargepoint network across West Sussex. The partners are working together to install thousands of chargepoints across the county within the next ten years, forming the new West Sussex Chargepoint Network. WSCC parking standards sets increasing year on year targets for ev charge points at new developments	Space and capacity on street to accommodate suitable and sufficient spaces

Measure No.	Measure Title	Category	Classification	Year Measure Introduced	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
ADUR														
3	Use/embedding of AQ Emissions Mitigation Planning Guidance in the Planning Process	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2019	Ongoing	Adur District Council, Sussex-air, West Sussex County Council	ADC	Funded	<£10k	Implementation	Reduced emissions from transport associated with new major developments	Low emission mitigation secured in local developments	Revised Guidance published in April 2021. The guidance is signposted within the Adur Local Plan. Guidance and appropriate mitigation is flagged as a requirement of the development control process. Emission mitigation assessments are required for major developments to ensure mitigation is provided	Developing the Guidance into a Supplementary Planning Document would be considered if deemed necessary (but not at this stage) Update to Guidance due 2025
1	Adur/Worthing Car Club	Alternatives to private vehicle use	Car Clubs	2022		Adur DC/Worthing BC/WSCC	Developer contributions/Adur DC	Partially Funded	£100k - £500k	Implementation	Small impact upon NO_2 concentrations from measure individually, estimated to be less than 1µg/m^3 based upon a low to medium uptake.	Number of car sharing individuals Website hits/journeys planned/Number of registrants/take-up of initiatives	Car club providers continued discussions with developers regarding specific development sites in Shoreham. These developments are still yet to be completed. The two dedicated bays in Pond Road car park, Shoreham were reduced to one on advice from Enterprise (the car club provider).	Encouragement of Car Clubs as well as Car Sharing schemes. Car clubs embedded in planned new major developments.
2	Embed AQ Emissions Mitigation Planning Guidance for Sussex into the planning process	Policy Guidance and Development Control	Air Quality Planning and Policy Guidance	2012		Adur DC/Worthing BC/WSCC	LA	Funded	< £10k	Implementation	Low Reduced emissions from transport associated with new major developments	Low emission mitigation secured in local developments	Revised Guidance published in April 2021. The guidance is signposted within the Adur Local Plan. Guidance and appropriate mitigation is flagged as a requirement of the development control process. Emission mitigation assessments are required for major developments to ensure mitigation is provided. Shoreham Harbour JAAP includes policies for sustainable travel and infrastructure improvements.	Developing the Guidance into a Supplementary Planning Document could be considered if deemed necessary (but not at this stage).
3	Behavioural Change Campaign	Promoting Travel Alternatives	Other/ Encourage / Facilitate home-working	2023		Adur DC/Worthing BC/WSCC/Sussex-air	ADC/WSCC/Sussex-air	Partially Funded	<£10k	Planning	NO_2 measure to raise public awareness	Number of campaigns	The Sussex Air/Sustrans led project ran from 2022 working with schools and communities to raise awareness of air pollution. Funding was due to end in early 2025. Schools in Adur included Swiss Gardens, Buckingham Park and Shoreham Academy. School Streets Trial launched in 2023 at Swiss Gardens Primary School, Shoreham, and made permanent during 2024. WSCC EASIT scheme for staff and local businesses continues. All pool cars now hybrid. Newer cleaner models being phased in.	Educational behaviour change campaigns at schools and workplaces to reduce single occupancy car trips and promote the switch to sustainable alternatives. Including promotion of district wide clean air days, homeworking where possible. Linked to Carbon Neutrality policies and schemes.

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ADUR														
														EASIT ceased in Adur & Worthing Councils. School streets trial at Swiss Gardens Primary School made permanent.
4	Ultra Low/Zero Emission Vehicle Encouragement	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of low emission vehicles	2022		Adur DC/Worthing BC/WSCC	Adur DC/ WSCC/Sussex-air	Partially Funded	£1m - £10m	Implementation	Small impact upon NO_2 concentrations from measure individually, estimated to be less than 1µg/m^3 based upon a low to medium uptake.	Number of Low Emissions Vehicles	Programme of fleet replacement with EV/hybrid vehicles continues, as and when vehicles are due for replacement. All pool cars hybrids. Explore alternative fuels for refuse vehicles. EV charge points continue to be provided for new 'major' developments aided by new Building Regulations Approved Documents; West Sussex County Council, Adur and Worthing Councils, and all other West Sussex local planning authorities together with Connected Kerb have formed a partnership to provide a new changepoint network across West Sussex. The partners are working together to install thousands of chargepoints across the county within the next ten years, forming the new West Sussex Chargepoint Network. WSCC parking standards sets increasing year on year targets for ev charge points at new developments.	Procuring ultra low or zero emission vehicles for council owned fleets. Including further development of alternative fuel, installing EV charge points on council land, in accordance with EV strategy. This also links to part of the West Sussex County Council EV Strategy to improve charging infrastructure.
5	Bus and Taxi Fleet Improvements	Promoting Low Emission Transport	Public Vehicle Procurement - Prioritising uptake of low emission vehicles	2023		ADC/WSCC/Sussex-air/Bus operators	ADC/WSCC/Sussex-air	Partially Funded	£100k - £500k	Implementation	Small impact upon NO_2 concentrations from measure individually, estimated to be less than 1µg/m^3 based upon a low to medium uptake.	Number of ultra-low emission busses and EV Taxis	Defra funded Sussex-air taxi fleet study has been completed, including a survey of taxi operators. Results identified key recommendations for growing confidence in EV uptake amongst taxi operators. See https://sussex-air.net/wp-content/uploads/2023/11/West-Sussex-taxi-and-private-hire-survey_Final-report_Oct-2023.pdf Bus operators in West Sussex continue to explore low emission fuel technologies in their fleets and local authorities are in dialogue with operators as plans develop, including consideration of any funding opportunities as they arise. The West Sussex BSIP (bus service improvement plan) was revised in 2024 . WSCC were awarded £17.4M in 2022 to support delivery of	Collaboration with bus operators to introduce ultra-low emission vehicles into the bus fleet. Target use of ULEV into the problem areas. Review taxi EV charging provision, taxi rank locations and update licence fees to encourage EV uptake.

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ADUR														
													the West Sussex Bus Service Improvement Plan which includes improvements in Adur (see below).	
6	Public Transport Encouragement	Transport Planning and Infrastructure	Public transport improvements-interchanges stations and services	2023		WSCC/ADC/public transport operators	WSCC/ADC		£100k-£500k	Planning	Small impact upon NO_2 concentrations from measure individually, estimated to be less than 1µg/m^3 based upon a low to medium uptake.	Number of campaigns and use of public transport.	BSIP funding awarded for West Sussex includes additional provision of real time passenger information screens at bus stops and some bus stop improvements in Adur, as well as junction traffic light priority signal upgrades in particular to support the Coastliner Route 700 service. Ongoing work with South East Communities Rail Partnership to promote use of the Sussex Coast Line.	Improvements to public transport infrastructure, frequency, routes and incentivise usage, including rail travel services and information campaigns focusing on tourists to district. This also links to the West Sussex Bus Service Improvement Plan.
7	Domestic emissions reduction campaigns focused on PM2.5	Public information	Other	2022	2025	ADC/WBC/Sussex-air	ADC/Sussex-air	Part funded	£10k-£50k	Implementation	$PM_{2.5}$ measure to raise public awareness	Number of Campaigns	Social media posts around Clean Air Day	Includes consideration of Smoke Control Areas and domestic and commercial emissions reduction work.
8	Active Travel	Transport Planning and Infrastructure	Cycle Network	2023		Adur DC/WBC/WSCC/Sussex-air	Adur DC/ WSCC/Sussex-air	Partially Funded	<£10K	Planning	Reduction in NO_2 concentrations and raises public awareness	Number of those using active travel. Number of those using cycle facilities and number of cycle routes	Development work is continuing to develop major active travel schemes for the A259 Shoreham to Hove and for an east-west route through Lancing and Sompting in 2024. Further development work undertaken on Upper Shoreham Road and Middle Road active travel/crossing improvement schemes ahead of scheme delivery in 2025. WSCC published countywide Local Cycling & Walking Infrastructure Plan and updated Active Travel Strategy in 2024. Donkey Bike scheme continued across Adur DC and Worthing BC. Consultations launched on Lancing Beach Green cycle path reroute in early 2024, with development work continuing ahead of planned delivery in 2025.	Improving cycle parking facilities, cycle and scooter rental schemes, signage and providing new cycle and pedestrianised routes in line with Adur and Worthing Local Cycling and Walking Infrastructure Plan.
9	Public Health Information based campaigns and ongoing monitoring	Public Information	Other	2023		Adur DC/Worthing BC/WSCC/Sussex-air	AdurDC/WSCC/Sussex-air	Partially Funded	£50-100k	Implementation	NO_2 measure to raise public awareness	Number of Campaigns	Liaison with WSCC Public Health/Sustainability teams who have supported the promotion of Sussex-air Alert. Sussex-air CleanBurn site promoted via Adur and Worthing's website; continuous NOx and PM2.5 monitoring in	Ongoing funding will be key

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ADUR														
													Shoreham High St; NO_2 diffusion tubes across Adur. Joined Brighton's low cost sensor network with sensor collocated in Shoreham High Street.	
10	Transport Management/Road/Junction improvements and Anti Idling	Traffic Management	UTC, Congestion management, traffic reduction	2023	2025	WSCC/ADC/WBC	To be determined - developer contributions	Partially Funded	£1m - £10m	Planning	Reduction in NO_2 concentrations	Reduction in NO_2 Emissions	Anti idling signs placed at known hotspots. Feasibility work undertaken through Shoreham Town Centre Study 2014. Scheme options for Norfolk Bridge junction were reviewed in 2022 given challenges of limited highway space. Engagement with Members and stakeholders has been unable to identify a scheme to date that is supported. Engagement undertaken in 2023 to understand views on potential Controlled Parking Zones (CPZs) in Shoreham Town Centre and Fishersgate, however as a result of the lack of support expressed, it was announced in 2024 that these CPZ schemes would not be taken forward.	Improvements to A259/A283 Norfolk Bridge roundabout. Traffic light/pelican crossing optimisation/MOVA traffic control. Review of Shoreham parking and parking restrictions. Scheduling business delivery time away from peak hours, waiting and loading restrictions/ keep clear zones. Level crossings Review of bus stops within High Street, traffic signage, routing and car park signposting.

Table 2.3(B) – Progress on Measures to Improve Air Quality - WORTHING

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
WORTHING														
1	Seek improvements to A27 Highway infrastructure in and around the AQMA	Traffic Management	Strategic Highway Improvements	2024	2029	National Highways, West Sussex County Council, Worthing Borough Council	National Highways, WSCC, WBC	Not Funded	£10m/ > £10m	Planning	Significantly reduce levels of NO_2 and $PM_{2.5}$ in and around the AQMA	Reduction in measured levels of NO_2 and $PM_{2.5}$; Reduction in number of vehicles using A27	Initial discussions will take place through the AQAP Steering Group	Funding required
2	Improved provision of local air quality information and community participation to engage residents in behaviour change.	Public Information	Other	2024	2029	West Sussex County Council, Worthing Borough Council	WBC, developer contributions	Partially Funded	< £10k	Planning	Reduce levels of NO_2 and $PM_{2.5}$ emitted by private vehicles especially diesel vehicles in and around the AQMA and Borough	Reduction in measured levels of NO_2 and $PM_{2.5}$; number of times website accessed; number of activity participants	Discussions taking place on how to improve the website, how to engage 'citizen scientists' to assist with messaging and activities e.g. monitoring	Further funding/staff time required.
3	Improve the provision and quality of Public	Alternatives to private vehicle use	Other	2019	2029	West Sussex County Council, Worthing Borough Council,	Department For Transport, WSCC/Public	Partially funded	£500k	Implementation	Reduced NO_2 and PM emissions from mode shift to public	Passenger numbers on public	Construction work on improvements at Worthing Station	Limits to the funding available for improvements.

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
WORTHING														
	Transport options in and around the AQMA (A27)					Local bus operators, Southern Rail	Transport Operators				transport combined with cleaner public transport fleets	transport/WSCC Traffic counts	Railway Approach and Cross Street commenced in 2024 to benefit pedestrians, cyclists, and train, bus and taxi users. “ Also include similar Adur comments: “BSIP funding awarded for West Sussex includes additional provision of real time passenger information screens at bus stops and some bus stop improvements in Worthing, as well as junction traffic light priority signal upgrades in particular to support the Coastliner Route 700 service. Ongoing work with South East Communities Rail Partnership to promote use of the Sussex Coast Line. Bus operators in West Sussex continue to explore low emission fuel technologies in their fleets and local authorities are in dialogue with operators as plans develop, including consideration of any funding opportunities as they arise	Further funding required.
1	A27 Highway Improvements	Traffic Management	Strategic highway improvements	2024	N/A	National Highways (NH)	NH	Not Funded	> £10 million	Aborted	High	Reduction in levels of NO2	National Highways have been working with key stakeholders to identify a package of potential improvements to meet the revised objectives in the Governments Road Investment Strategy 3 (RIS 3): 2025 - 2030, to improve capacity and flow of traffic on the A27from Worthing to Lancing. A public consultation was held in 2023 and this did not identify a solution that generated broad support. The scheme was cancelled by the Government in summer 2025.	The recent proposed scheme was cancelled by the Government in summer 2025. WBC will be seeking improvements through discussions with National Highways and WSCC.

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
WORTHING														
2	Cut Engine, Cut PollutionSigns	Traffic Management	Anti-idling enforcement	2024	2025	NH/WSCC	Worthing BC/NH/WSCC	Funded	< £10k	Implementationon	Low	Local AQ monitoring/reduction in NO2	'Cut Engine, Cut pollution' signs at certain junctions in the AQMA A27 to help encourage anti-idling behaviours. Regular reviews carried out by WBC.	Funded by Worthing BC. Sussex-air funded additional signs at level crossings. For A27 and feeder roads Highway 'clutter' is a concern. Some research to suggest signs have limited impact.
3	Embed Air Quality Emissions Mitigation Planning Guidancefor Sussex into the planning process/planning policies	Policy Guidance andDevelopment Control	Air Quality Planning andPolicy Guidance	2024	2025	Worthing BC/WSCC	Worthing BC/WSCC	Funded	< £10k	Implementation	Low	LE mitigation secured in developments	Revised Guidance published April 2021. The guidance is signposted within theWorthing Local Plan. Guidance and appropriate mitigation is flagged as a requirement at an early stage. Emission mitigation assessments required from major developments to ensuremeaningful mitigation.	Developing the Guidance into a Supplementary Planning Document could be considered if deemed necessary (but not at this stage).
4	EV vehicles and infrastructure	Promoting Low Emission Transport	Procuring alternative Refuelling infrastructure to promote Low Emission Vehicles, EV recharging, Gas fuel recharging	2016	2025	Worthing BC/WSCC	Worthing BC/WSCC/NH	Partially Funded		Implementation	Low/Medium	EV charge points continue to be provided for new 'major' developments aided by new Building Regulations Approved Documents ; West Sussex County Council, Adur and Worthing	Worthing BC and all other West Sussex local planning authorities together with Connected Kerb have formed a partnership to provide a new chargepoint network across West Sussex. The partners are working together to install thousands of chargepoints across the county within the next ten years, forming the new West Sussex Chargepoint Network. West Sussex County Council currently installing electric vehicle charging points on the highway at various locations in Worthing. WSCC parking standards sets increasing year on year targets for ev charge points at new developments.	Focus is to increase the number of eV's. Discussions continue successfully with developers as part of AQ mitigation packages, aided by new Building Regulations Approved Document. Promoting an accelerated move to more EV vehicles in the local fleet will help to target the key source of emissions in the AQMA, namely older diesel vehicles.
5	Worthing Car Club	Alternatives to private vehicle use	Car Clubs	2015	2029	Worthing BC/ADC	Worthing BC/Developer Contributions	Partially Funded	£50k - £100k	Implementation on	Low	Number of people using the service/	There are 2 car club bays which are in High St surface car park, Worthing. Discussions	V. small reduction in AQMA, however larger reductions

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WORTHING														
												Number of vehicles	with car club providers continue. Car club providers continue discussions with developers regarding specific development sites.	anticipated elsewhere (e.g. town centre where new developments are more likely to be car free). Car clubs embedded in planned new developments.
6	Public transport improvement	Transport Planning and Infrastructure	Public transport improvements- interchanges stations and services	2010	2025	WSCC	WSCC/DFT/OLEV	Partially Funded		Implementation	Low	Journey time and passenger number improvements	Construction work on improvements at Worthing Station Railway Approach and Cross Street commenced in 2024 to benefit pedestrians, cyclists, and train, bus and taxi users. "Bus operators in West Sussex continue to explore low emission fuel technologies in their fleets and local authorities are in dialogue with operators as plans develop, including consideration of any funding opportunities as they arise. WSCC were awarded £17.4M in 2022 to support delivery of the West Sussex Bus Service Improvement Plan. This includes improvements across Worthing, including additional provision of real time passenger information screens and other bus stops infrastructure improvements, as well as junction traffic light priority signal upgrades, in various locations across Worthing.	Subject to appropriate funding being made available.
7	WBC and WSCC Staff Travel Planning	Promoting Travel Alternatives	Workplace Travel Planning	2021		Worthing BC/ ADC/ WSCC	Worthing BC/ ADC/ WSCC	Partially Funded		Implementation	Low	Staff travel surveys reduced commuting and business travel by car	WBC Staff Travel Plan updated in 2021. Hybrid models for mixed working from home/office is the business model. WSCC EASIT scheme for staff and local businesses continues. Adur & Worthing discontinued this in 2024.	
8	Improve Emissions from Council's Vehicle fleet	Promoting Low Emission Transport	Company Vehicle Procurement - Prioritising uptake of	2024	2030	Worthing BC/ADC/ WSCC	Worthing BC/ADC/WSCC	Partially Funded	£1 million - £10 million	Planning	Low	No. of vehicles replaced with better Euro standard models	Programme of fleet replacement with low emission vehicles considered as and when vehicles are due	Barrier: Suitable vehicles are both available and affordable (e.g.

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
WORTHING														
			low emission vehicles										for replacement. A&W staff pool cars are hybrids. Exploring alternative fuels for larger vehicles including the fleet of refuse vehicles as part of the decarbonisation strategy to replace the existing diesel fleet. EV's now part of WSCC pool car fleet.	HGV's/refuse vehicles).
9	Increase availability of AQ information in relation to	Public Information	Via the Internet	2023	2026	Worthing BC	Worthing BC	Funded	< £10k	Implementation	Low	Reduction in levels of NO2/No. of hits on AQ pages	Public Health pages on Sussex-air website.	New more informative pages were due to be added to the Sussex-air website to promote good practice, low pollution transport alternatives, etc. Measure success of AQAP/levels in AQMA. Assist with PM2.5 reduction approach.
10	Promotion of Sussex Air Quality Alert Service	Public Information	Via the Internet	2014	2026	Worthing BC	Worthing BC/ WSCC	Partially Funded	£10k - 50k	Implementation	Low	Annual increase in subscriber numbers	Liaison with WSCC Public Health Team who have supported the promotion of alert services. Sussex-air website	Service was promoted throughout 2024 but due to cease operation in 2025.
11	Re- assess traffic light sequencing in AQMA	Traffic Management	UTC, Congestion management, traffic reduction	2010		NH/WSCC	HE/WSCC	Funded		Implementation	Low	Reduction in levels of NO2	Ongoing optimisation by NH/WSCC.	
12	Safe Cycling and Walking Routes	Transport Planning and Infrastructure	Cycle network	2010	2030	NH/WSCC	NH/WSCC	Funded	£1 million - £10 million	Implementation	Low	Length of new cycle routes provided	The Adur and Worthing Local Cycling and Walking Infrastructure Plan (LCWIP) was adopted in summer 2020. This sets out a series of cycling and walking routes intended to be supported by government funding or contributions from strategic developments across the Borough. Throughout 2022, construction of the Findon Valley to Findon village cycle path took place, to connect cycle route from the A24 Findon village to Worthing through the AQMA (see entry 25). Development work took place in 2024 for a	There already exist cycle paths segregated from pedestrians in and around the Grove Lodge AQMA.

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
WORTHING														
													contraflow cycle lane on Cross Street Worthing to improve connectivity to Worthing Railway Station for delivery in early 2025. WSCC published countywide Local Cycling & Walking Infrastructure Plan and updated Active Travel Strategy in 2024.	
13	Travel plans for significant /major developments	Promoting Travel Alternatives	Other	2023	2026	Worthing BC/WSCC	Developer Contribution	Partially Funded	£500k - £1 million	Planning/ Implementation	Low	Number of plans delivered	The Worthing Local Plan was formally adopted by the Council in 2023.	Plans continue to be secured as and when developments come forward. The Local Plan adds weight to the requirement for travel plans.
14	Car Sharing	Alternatives to private vehicle use	Car & lift sharing schemes	2015		WSCC	WSCC	Funded		Implementation	Low	Website hits/ journeys planned/Number of registrants/take-up of initiatives	Car share website www.westsussexcarshare.com	Focus on promoting sustainable travel for work. Link on Worthing BC website.
15	Cycling & Walking promotion	Promoting Travel Alternatives	Promotion of cycling	2015		Worthing BC/WSCC	WSCC, Developer Contributions, Defra funding and WBC funding	Partially Funded		Implementation	Low	Automatic cycle counters and travel surveys	WSCC Bikeability has been engaging with primary and secondary schools across Worthing to offer cycle training. The Sussex Air/ Sustrans led schools and community project ran from 2022 working with schools and communities to raise awareness of air pollution. Funding was due to end in 2025. Schools included workshops at Thomas a Becket Junior School, Bohunt Worthing, Durrington High School, Worthing College and Davison CoE High School for Girls. Donkey Bike scheme continued across Worthing	Focus on reducing traffic congestion and promoting sustainable travel for trips to and from school. Subject to available funding.
16	Increase and improve availability of WBC Air Quality Monitoring results	Public Information	Via the Internet	2015	2026	Worthing BC	Worthing BC	Funded	£10k - 50k	Implementation	Low	Reduction in levels of NO2/No. of hits on AQ pages	Worthing AURN Grove Lodge Monitoring Station cabinet replaced in early 2023. AURN urban background site added at Ten Acres, Worthing with results available on UK Air. All continuous	Revision of Worthing BC and Sussex-air webpages ongoing

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
WORTHING														
													monitoring results available via UK Air (for AURN sites) and the Sussex- air website, with links on the Council website. Diffusion tube data sets added to Sussex-air website annually.	

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[5], 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.

Adur District and Worthing Borough Councils is taking the following measures to address $PM_{2.5}$.

The Councils continue to consider the declaration of Smoke Control Areas (SCA). Our new Worthing Air Quality Action Plan includes a commitment to explore domestic solid fuel and bonfire policy options to help to reduce domestic emissions. The Adur Air Quality Strategy will include similar.

- Both Adur District and Worthing Borough Council monitor levels of $PM_{2.5}$ through the automatic monitoring sites in Shoreham High Street (site ref. AD1) and the AURN affiliated continuous monitoring site at A27 Grove Lodge, Worthing (Site ref. WT2). In addition a new AURN urban background site went live midway through 2025. Worthing East (Ten Acres) measures PM_{10} and $PM_{2.5}$, although the site is not local authority controlled. All monitoring sites will assist us with assessing $PM_{2.5}$ and developing strategies to address particulates.

Since October 2024 we have been following the interim $PM_{2.5}$ planning guidance issued by Defra[6]. This sets out requirements that should be applied in the design process and documented within planning applications. The two key questions asked for major applications are:

a. How has exposure to $PM_{2.5}$ been considered when selecting the development site?

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

[6] $PM_{2.5}$ Targets: Interim Planning Guidance, 4 October 2024 available at https://uk-air.defra.gov.uk/pm25targets/planning

b. What actions and/or mitigations have been considered to reduce $PM_{2.5}$ exposure for development users and nearby receptors (houses, hospitals, schools etc.) and to reduce emissions of $PM_{2.5}$ and its precursors?

- Work carried out by Public Health England as part of the Public Health Outcomes Framework (PHOF) shows that the mortality associated with particulate air pollution within Adur District is 4.6% and Worthing Borough is 4.7%. This information is available from the following web link: https://fingertips.phe.org.uk/profile/public-health-outcomes-framework. The calculated mortality is lower than that for both the south east of England (5.7%) and for England (5.8 %).

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

This section sets out the monitoring undertaken during 2024 by Adur District and Worthing Borough Councils 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

Adur District and Worthing Borough Councils undertook automatic (continuous) monitoring at two sites during 2024. Table A.1 in Appendix A shows the details of the automatic monitoring sites. 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. The Sussex air website presents automatic monitoring results for Adur District and Worthing Borough Councils, with automatic monitoring results also available for Worthing through the UK-Air website.

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

3.1.2 Non-Automatic Monitoring Sites

Adur District Council undertook non- automatic (i.e. passive) monitoring of NO_2 at 28 sites during 2024.

Worthing Borough Council undertook non- automatic monitoring of NO_2 at 28 sites during 2024.

Table A.2 in Appendix A presents the details of the non-automatic sites.

No sites were added or removed for 2024.

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.

A. Adur

Automatic Monitoring

The measured annual mean at the continuous monitoring site in Shoreham High Street was 17.8µg/m^3 (data capture 99.4%). This is another year on year decrease, down from the 21µg/m^3 measured last year and well below the objective of 40µg/m^3.

There were no recorded exceedances of the one hour mean objective of 200µg/m^3.

Non-Automatic Monitoring

28 diffusion tubes were used during 2024. Of these 26 showed decreases in the measured annual means when compared to 2023, ranging from -0.1µg/m^3 (S14) to -4.7µg/m^3 (S52).

Five sites recorded a data capture rate of less than 100% - S8, S9, S13, S37 and S51. Site S51 had a very low capture rate as the tube had to be removed mid-way through the year as a result of the highway reconfiguration works that took place in connection with the adjacent New Monks Farm development.

No monitoring sites exceeded the annual mean objective of 40µg/m^3 during 2024.

Shoreham sites in and around the old AQMA1

S17/18/19 are collocated tubes alongside the continuous analyser in the High Street. These recorded an average of 22.3µg/m^3, a 1.0µg/m^3 reduction on 2023 levels. (This drops to 17.7µg/m^3 at the nearest façade). The average is 4.1µg/m^3 above the continuous monitoring result at this location. It is similar to the average recorded by the low-cost sensor co-located at this site, which recorded 23.0µg/m3. The difference is likely to be the result of the lower accuracy of both diffusion tube and low-cost sensor monitoring.

Tubes in West Street Shoreham, S46 and S47, showed a small drop in recorded levels and were well below the objective at 17.7µg/m^3 and 14.6µg/m^3 respectively. West Street is regularly used by vehicles trying to avoid congestion along the High Street (A259).

Site S36 Victoria Road Footpath showed a decrease of 0.5µg/m^3 to 17.2µg/m^3.

S37 Humphrey's Gap, immediately adjacent to several large development sites, showed an increase of 2.9µg/m^3 to 26.3µg/m^3. This could be due to emissions from non-road plant and equipment and vehicles associated with these developments and is a site we will need to keep an eye on in future years.

Site S50 was erected on a facade in the High Street in 2021, replacing site S49 near the continuous monitoring site. The measured level decreased very slightly in 2023 to 20.3µg/m^3.

S45 Dolphin Mews, adjacent to a level crossing where vehicles often queue and idle for prolonged periods, increased by 0.2µg/m^3 to 14.9µg/m^3.

The AADT for 2024 measured via the automatic traffic counter (ATC) in Shoreham High Street was 15,605. This was another small increase (3% or 273 vehicles) compared to 2023. This does not appear to have resulted in an increase in measured levels of NO_2 at most sites.

Southwick in what was AQMA2

Site S8 decreased by 2.8µg/m^3 to 20.1µg/m^3 and S9 decreased by 0.8µg/m^3 to 22.8µg/m^3. Both are well below the annual mean objective and, being roadside locations, levels drop further when predicted back to the nearest receptors which are 4m and 2m away respectively.

The nearby automatic traffic counter recorded a 3% increase in AADT to 23,535, although crucially this does not appear to have resulted in an increase in nearby measured levels of NO_2.

Lancing

Site S48 Grinstead Lane has measured fluctuating levels over recent years. In 2024 the level was 24.7µg/m^{3}which is a decrease of 2.8µg/m^3, its second consecutive annual drop. This reduces to 24.0µg/m^3 when predicted back to the nearest receptor.

Site S52 was erected in Grinstead Lane close to the roundabout in 2022, in response to our concerns about increasing levels of NO_2 in this area. Levels decreased by 4.7µg/m^3 to 30.5µg/m^3, following a small drop in the previous year. This is a kerbside site and the nearest receptors are 17.5m away. When levels are predicted back they drop to 22.7µg/m^3.

Site S44 Upper Brighton Road decreased by 2.8µg/m^3 to 29.0µg/m^3. This site is adjacent to the eastbound A27 dual carriageway with the closest receptor just over 5m away where the predicted level drops to 23.3µg/m^3.

Site S51 close to the Sussex Pad on the A27 Lancing produced an annual mean of 21.0µg/m^3. This is a drop of 2µg/m^3 over 2023 levels. The site was erected to gain an insight into levels of NO_2 prior to the highway being reconfigured in connection with the adjacent New Monks Farm development. The tube had to be removed part way through the year as a result of the highway works. The tube was not located at a site of relevant exposure.

Site S25 Mash Barn Lane showed a fall of 0.8µg/m^3 to 23.6µg/m^3.

Site S53 Abinger Lodge, a roadside site erected in 2023, produced a level of 11.6µg/m^3, a drop of 1.7µg/m^3.

We continue to keep an eye on the A27 in Lancing, particularly around the Grinstead Lane roundabout, with large developments taking place nearby. However levels have shown a drop in 2024 and it is hoped this trend continues.

B. Worthing

Automatic Monitoring

The annual mean recorded at the continuous monitoring site WT2 Grove Lodge in AQMA No.2 was 21.6µg/m^3 (data capture 99.4%). This represents a drop of 1.8ug/m^3 from the 2023 level and below the national objective of 40µg/m^3.

There were no exceedances of the one hour mean objective of 200µg/m^3.

The automatic monitoring site is an AURN affiliated site located adjacent to the A27, a single lane strategic trunk route through Worthing with slow moving or stationary traffic for prolonged periods. Annual average NO_2 peaked at 51.4µg/m^3 in 2014, decreased in 2015 and then increased again in 2016 to 48µg/m^3. Since then levels have been steadily falling. The nearest relevant receptor (a residential facade) is 18m away, meaning levels at the façade reduce.

Whilst we have been able to obtain traffic data from National Highways for 2024, unfortunately we do not have traffic data for 2023 to make comparisons on any changes in flows.

Non-Automatic Monitoring

28 diffusion tubes were used during 2024. 24 sites showed decreases from 2023 levels, 3 showed small increases and one had no change.

The largest increase was 1.4µg/m^3 at site N30A Grove Lodge Cottages. The largest decrease was -2.6µg/m^3 at Site N24 Upper Brighton Road. Both sites are within the AQMA.

As in previous years only one monitoring site exceeded the annual mean objective of 40µg/m^3 – N30A Grove Lodge Cottages.

In and around the AQMA

N30A Grove Lodge Cottages continued to show the highest levels of any of our monitoring sites. As previously mentioned measured levels increased by 1.4µg/m^3 to 42.4µg/m^3. This is still above the 40µg/m^3 objective. The monitoring site is adjacent to the westbound carriageway of the A27 with the nearest residential façade just 2m away, behind a high wall. So the measured level only decreases to 41.7µg/m^3 when predicted back.

Tubes N44A/B/C collocated with the continuous monitoring site WT2, again recorded a reduction of 0.9µg/m^3 to 25.2µg/m^3. This reduces to 17.4µg/m^3 when predicted back to the

nearest receptor. For comparison we measured 15.4µg/m^3 at a close residential façade (site N43), showing the predicted level must be treated with caution as it is more than 20m from the kerb.

The difference in diffusion tube levels when compared to the automatic analyser is likely to be at least in part the result of the lower accuracy of diffusion tube monitoring.

Site N24 close to Lyons Farm at the eastern end of the AQMA showed a decrease of 2.6µg/m^3 to 23.7µg/m^3, well below the 40µg/m^3 objective.

Site N29 Downlands Parade, close to the Lyons Farm junction, showed a v small increase of 0.5µg/m^3 to 23.2µg/m^3.

All the other monitoring sites within the AQMA (N5, N21, N25, N31, N39, N43, N53 AND N66) showed a decrease in measured concentrations and were well below the objective of 40µg/m^3.

Other Sites

N57 Lyndhurst Road showed a small increase of 0.2µg/m^3 to 19.7µg/m^3, well below the annual mean objective. This is adjacent to the gas work site where construction of over 200 apartments in blocks of up to 8 storeys is currently underway, so we continue to closely monitor any changes here.

N66 Sompting Lane, erected in 2020 as it is a site of traffic forming long queues to access the A27, showed a decrease of 0.6µg/m^3 to 23.0µg/m^3.

Concentrations at site N1C in the busy High Street, close to the multi storey car park, Urban Heat Network development and Steyne Gardens, decreased again, this time by 1.9 µg/m^3 to 19.5µg/m^3.

Site N54 on Brighton Road (A259) near Splash Point, showed a small decrease of 0.6µg/m^3 from 18.4µg/m^3.

Two sites added in 2021 following concerns raised by the public about air pollution in those areas, N71 King Street and N72 New Street, both showed levels of 11.1µg/m^3, a decrease of 0.5µg/m^3 and well below the 40 µg/m^3 objective. We will consider removing these sites from our monitoring network should similar concentrations arise next year.

Five-year trend graphs are included in Appendix A.

3.2.2 Particulate Matter (PM_{10})

The Councils do not routinely monitor for PM_{10} concentrations. However, a new AURN background site at Ten Acres in Worthing was installed and commenced operation in August 2024. This recorded an annual mean of 14.6ug/m^3, well below the objective. Note that as it was only operational for part of the year we will have to wait until next year to obtain a meaningful annual mean concentration.

The collocated low-cost sensor (part of the Brighton network) in Shoreham High Street also measures PM_{10} concentrations. The annual mean for 2024 was 11ug/m^3, well below the 40ug/m^3 objective, although measurements only commenced in October so, as with the AURN site in Worthing, we will have to wait until next year to obtain a meaningful annual mean concentration.

3.2.3 Particulate Matter ($PM_{2.5}$)

Table A.6 in Appendix A presents the ratified and adjusted monitored $PM_{2.5}$ annual mean concentrations for the past five years.

The Environmental Targets (Fine Particulate Matter) (England) Regulations 2023 set long-term targets as follows:

- Annual Mean Concentration Target ('concentration target') – a target of 10 micrograms per cubic metre (µg m^{-3}) to be met across England by 2040.
- Population Exposure Reduction Target ('exposure reduction target') – a 35% reduction in population exposure by 2040 (compared to a base year of 2018).

There is a legal requirement for the targets to be achievable and also objectively measurable.

Adur

We have been monitoring $PM_{2.5}$ in Shoreham High Street since August 2021. The measured validated concentration in 2024 was 8.4 µg/m^3 (96.9% data capture), a drop of 2.3 µg/m^3 from 2023. This is well below the 'concentration target' of 10µg/m^3 and the World Health Organisation (WHO) annual mean guideline limit of 10µg/m^3.

The collocated low-cost sensor (part of the Brighton network) recorded an annual mean of 7 µg/m^3, although this only commenced in October.

Worthing

We have been monitoring levels of $PM_{2.5}$ at Worthing Grove Lodge for 7 years. The measured ratified concentration for 2024 was 7.7µg/m^3 (data capture 93.1%) a drop of 1.0µg/$m^{3.}$ This is well below the 'concentration target' of 10µg/m^3 and the World Health Organisation (WHO) annual mean guideline limit of 10µg/m^3.

The concentration recorded at the AURN Ten Acres site was 8.6µg/m^3, but as previously mentioned this is only from August 2024.

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)
AD1	High Street, Shoreham	Kerbside	521399	105039	NO2, PM2.5	No	N/A	Chemiluminescent; FDMS	4.0	1.6	2.0
WT2	Grove Lodge, Worthing	Roadside	514184	104963	NO2, PM2.5	Yes	Worthing AQMA No.2	Chemiluminescent	18.3	2.9	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)
ADUR										
S2	Old Mill Close Fishersgate	Roadside	525330	105085	NO2	No	3.5	1.5	No	2.5
S3	St. Aubyns Crescent Fishersgate	Urban Background	525562	105313	NO2	No	5.1	2.4	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
S7	Queens Road Southwick	Urban Background	524139	106321	NO2	No	3.0	2.5	No	2.5
S8	Underdown Road Southwick	Roadside	524018	106070	NO2	No	4.3	2.3	No	2.5
S9	Old Shoreham Road Southwick	Roadside	523784	106081	NO2	No	1.6	2.8	No	2.3
S10	Holmbush Roundabout Shoreham	Roadside	523343	106111	NO2	No	27.0	1.7	No	2.8
S11	Lancing Manor Lancing	Roadside	518820	105584	NO2	No	14.8	2.0	No	2.8
S12	Boundstone Lane Lancing	Roadside	517731	105505	NO2	No	8.0	1.8	No	2.8
S13	Upper Brighton Road Sompting	Roadside	517291	105550	NO2	No	8.6	4.6	No	2.3
S14	West Street Sompting	Urban Background	516057	105190	NO2	No	3.6	1.2	No	2.0
S17	High Street AQMS 1 Shoreham	Kerbside	521400	105040	NO2	No	5.0	0.9	Yes	2.8
S18	High Street AQMS 2 Shoreham	Kerbside	521400	105040	NO2	No	5.0	0.9	Yes	2.8
S19	High Street AQMS 3 Shoreham	Kerbside	521400	105040	NO2	No	5.0	0.9	Yes	2.8
S25	Mash Barn Lane Lancing	Roadside	519117	105710	NO2	No	N/A	6.0	No	2.5
S26	Loose Lane Sompting	Suburban	516536	104783	NO2	No	5.0	0.8	No	2.5
S36	Victoria Road Footpath Shoreham	Roadside	521282	105254	NO2	No	5.8	1.9	No	2.5
S37	Humphrey's Gap Shoreham	Roadside	522103	105126	NO2	No	0.5	1.7	No	2.8
S39	Brighton Road Kingston	Kerbside	523329	104960	NO2	No	7.0	1.2	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
S43	Brunswick Road Shoreham	Roadside	521733	105251	NO2	No	0.0	2.7	No	2.8
S44	Upper Brighton Road Lancing	Roadside	518494	105464	NO2	No	5.4	2.0	No	2.0
S45	Dolphin Mews Shoreham	Roadside	522300	105258	NO2	No	0.0	4.7	No	2.8
S46	West Street 1 Shoreham	Roadside	521363	105082	NO2	No	0.0	1.3	No	2.5
S47	West Street 2 Shoreham	Roadside	521375	105101	NO2	No	0.0	1.3	No	2.5
S48	Grinstead Lane Lancing	Roadside	518590	105463	NO2	No	4.0	3.3	No	2.5
S50	High Street Shoreham	Roadside	521478	105002	NO2	No	0.0	5.2	No	2.3
S51	Sussex Pad Lancing	Kerbside	520042	106054	NO2	No	16.5	0.4	No	2.0
S52	Grinstead Lane Roundabout Lancing	Kerbside	518560	105460	NO2	No	17.5	1.8	No	2.5
S53	Abinger Lodge (#439) Lancing	Roadside	520196	104350	NO2	No	7.0	2.5	No	2.5
WORTHING										
4N	Heene Way (UK02)	Urban Background	513609	102556	NO2	No	5.3	1.7	No	1.5
5N	Cleveland Road (UK01)	Urban Background	512701	105562	NO2	No	6.2	2.5	No	2.0
N1C	High Street East	Urban Centre	515114	102670	NO2	No	0.0	3.3	No	2.0
N5	First Avenue	Roadside	514495	105020	NO2	Worthing AQMA No.2	15.2	2.2	No	1.5
N8	Littlehampton Road	Roadside	513236	104651	NO2	No	14.1	1.5	No	3.5
N11	Dawes Close	Urban Background	515812	103309	NO2	No	8.4	1.4	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)
N21	Forest Lane	Suburban	510611	105595	NO2	Worthing AQMA No.2	14.5	60.5	No	2.0
N22	Falmer Close, C-Dust monitor	Urban Background	511010	102226	NO2	No	14.6	2.2	No	2.0
N24	152 Upper Brighton Road	Roadside	515151	105109	NO2	No	0.0	8.0	No	1.5
N25	Warren Court	Suburban	513845	105191	NO2	Worthing AQMA No.2	0.0	17.3	No	2.0
N28	Chapel Road / Teville Road	Roadside	514740	103173	NO2	No	1.6	3.0	No	2.0
N29	Downlands Parade	Roadside	515014	105099	NO2	Worthing AQMA No.2	0.5	6.5	No	2.5
N30A	Grove Lodge Cottages	Roadside	514183	104948	NO2	Worthing AQMA No.2	0.2	2.2	No	2.5
N31	South Farm Road, Roundabout	Kerbside	514317	103329	NO2	Worthing AQMA No.2	4.0	0.9	No	3.0
N39	SW of Roundabout, Grove lodge	Roadside	514088	104906	NO2	Worthing AQMA No.2	47.8	2.2	No	2.5
N42	Norfolk House, 122 Chapel Road	Roadside	514742	103234	NO2	No	0.0	3.4	No	2.5
N43	23 Upper Brighton Road	Suburban	514199	104982	NO2	Worthing AQMA No.2	0.0	19.2	No	2.0
N44A, N44B, N44C	AQMS O/S 21 Upper Brighton Road	Roadside	514184	104963	NO2	Worthing AQMA No.2	18.4	2.8	Yes	1.5
N48	Shaftesbury Avenue	Roadside	512063	103385	NO2	No	14.8	2.2	No	2.0
N52	Newland Road, outside 63	Kerbside	514973	103335	NO2	No	4.5	0.4	No	2.0
N53	Offington Corner	Roadside	513278	105623	NO2	Worthing AQMA No.2	20.5	6.0	No	2.0
N54	'Aquarena'	Roadside	515595	102725	NO2	No	30.2	3.7	No	3.0
N57	Lyndhurst Road	Roadside	515114	102975	NO2	No	0.0	3.5	No	2.5

Diffusion Tube ID	Site Name	Site Type	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Pollutants Monitored	In AQMA? Which AQMA?	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Tube Co-located with a Continuous Analyser?	Tube Height (m)
N64	South Street, outside Starbucks	Urban Centre	514946	102541	NO2	No	2.8	2.4	No	2.5
N65	Teville Road (opposite Unleashed)	Kerbside	514543	103220	NO2	No	4.7	0.8	No	2.5
N66	Sompting Road	Roadside	515067	105082	NO2	Worthing AQMA No.2	3.7	4.7	No	2.5
N71	King Street	Roadside	514548	103843	NO2	No	4.0	1.8	No	2.5
N72	New Street	Urban Centre	514558	102416	NO2	No	0.5	1.0	No	2.0

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
AD1	521399	105039	Kerbside	99.4	99.4	20.0	19.6	20.3	21.0	17.8
WT2	514184	104963	Roadside	99.4	99.4	26.0	27.6	25.4	23.4	21.6

☒ **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**

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%).

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
ADUR										
S2	525330	105085	Roadside	100.0	100.0	17.9	18.8	19.8	18.1	16.6
S3	525562	105313	Urban Background	100.0	100.0	13.9	14.4	14.3	13.1	12.6
S7	524139	106321	Urban Background	100.0	100.0	11.5	11.7	11.7	10.7	9.4
S8	524018	106070	Roadside	93.0	93.0	21.1	22.9	23.2	22.9	20.1
S9	523784	106081	Roadside	90.0	90.0	25.6	26.2	25.4	23.6	22.8
S10	523343	106111	Roadside	100.0	100.0	19.2	20.1	20.3	18.0	16.9
S11	518820	105584	Roadside	100.0	100.0	26.9	25.7	26.0	25.2	23.1
S12	517731	105505	Roadside	100.0	100.0	20.7	20.8	22.2	21.6	20.3
S13	517291	105550	Roadside	93.0	93.0	29.5	28.4	28.7	27.7	24.7
S14	516057	105190	Urban Background	100.0	100.0	19.1	21.2	18.4	18.1	17.9
S17	521400	105040	Kerbside	100.0	100.0	24.3	25.4	23.7	23.3	22.4
S18	521400	105040	Kerbside	100.0	100.0	24.2	25.0	24.4	24.2	22.6
S19	521400	105040	Kerbside	100.0	100.0	23.5	24.1	24.4	22.5	21.8

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
S25	519117	105710	Roadside	100.0	100.0	21.5	27.8	25.7	24.4	23.6
S26	516536	104783	Suburban	100.0	100.0	11.8	13.3	12.0	11.7	10.5
S36	521282	105254	Roadside	100.0	100.0	18.3	19.4	18.6	17.8	17.2
S37	522103	105126	Roadside	92.7	93.0	23.4	23.8	24.9	23.4	26.3
S39	523329	104960	Kerbside	100.0	100.0	17.4	17.4	18.1	17.2	15.9
S43	521733	105251	Roadside	100.0	100.0	16.6	18.4	17.1	16.7	15.8
S44	518494	105464	Roadside	100.0	100.0	31.4	31.5	33.6	31.8	29.0
S45	522300	105258	Roadside	100.0	100.0	15.9	17.2	16.4	14.6	14.9
S46	521363	105082	Roadside	100.0	100.0	18.3	18.8	18.8	18.6	17.7
S47	521375	105101	Roadside	100.0	100.0	16.3	16.8	16.9	16.0	14.6
S48	518590	105463	Roadside	99.8	100.0	25.7	26.8	30.0	27.5	24.7
S50	521478	105002	Roadside	100.0	100.0		22.2	22.8	20.5	20.3
S51	520042	106054	Kerbside	100.0	48.9		23.1	24.6	23.0	21.0
S52	518560	105460	Kerbside	100.0	100.0			35.7	35.2	30.5
S53	520196	104350	Roadside	100.0	100.0				13.3	11.6

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
WORTHING										
4N	513609	102556	Urban Background	100.0	100.0	10.8	10.2	11.1	9.5	9.3
5N	512701	105562	Urban Background	100.0	100.0	11.8	12.5	12.1	11.2	10.4
N1C	515114	102670	Urban Centre	92.7	92.7	19.8	22.2	23.5	21.4	19.5
N5	514495	105020	Roadside	100.0	100.0	24.5	23.0	21.5	21.2	20.0
N8	513236	104651	Roadside	72.9	72.8	22.8	22.3	23.6	22.0	21.0
N11	515812	103309	Urban Background	100.0	100.0	11.8	11.9	11.8	10.8	10.3
N21	510611	105595	Suburban	83.3	83.6	8.7	9.1	9.2	8.0	7.6
N22	511010	102226	Urban Background	100.0	100.0	10.2	10.3	10.5	8.5	8.5
N24	515151	105109	Roadside	100.0	100.0	18.4	20.1	29.2	26.2	23.7
N25	513845	105191	Suburban	100.0	100.0	14.8	15.4	15.4	14.2	13.6
N28	514740	103173	Roadside	100.0	100.0	17.3	17.3	17.6	16.0	15.6
N29	515014	105099	Roadside	83.3	83.6	25.6	24.2	26.0	22.7	23.2
N30A	514183	104948	Roadside	100.0	100.0	**45.1**	**44.4**	**44.7**	**41.0**	**42.4**
N31	514317	103329	Kerbside	48.9	48.9	20.8	20.2	20.6	20.3	19.8
N39	514088	104906	Roadside	100.0	100.0	24.1	23.7	24.4	20.9	20.5
N42	514742	103234	Roadside	82.8	82.8	18.1	17.3	19.5	17.6	16.9
N43	514199	104982	Suburban	100.0	100.0	17.6	17.2	16.6	16.0	15.4
N44A, N44B, N44C	514184	104963	Roadside	96.9	100.0	31.1	29.8	27.8	26.1	25.2
N48	512063	103385	Roadside	66.9	66.9	22.5	20.0	22.3	18.5	18.0
N52	514973	103335	Kerbside	100.0	100.0	24.0	19.2	17.3	19.3	17.0
N53	513278	105623	Roadside	100.0	100.0	30.2	23.7	24.4	24.0	22.6
N54	515595	102725	Roadside	89.5	89.5	17.2	17.1	19.3	19.1	18.4
N57	515114	102975	Roadside	100.0	100.0	23.9	20.8	20.7	19.5	19.7
N64	514946	102541	Urban Centre	100.0	100.0	23.8	20.9	21.4	20.2	19.0

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
N65	514543	103220	Kerbside	100.0	100.0	26.5	23.6	24.0	20.4	20.0
N66	515067	105082	Roadside	100.0	100.0	29.8	24.9	21.5	23.5	23.0
N71	514548	103843	Roadside	83.6	83.3		11.7	11.8	11.5	11.1
N72	514558	102416	Urban Centre	100.0	100.0		12.0	12.3	11.5	11.1

☒ **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.

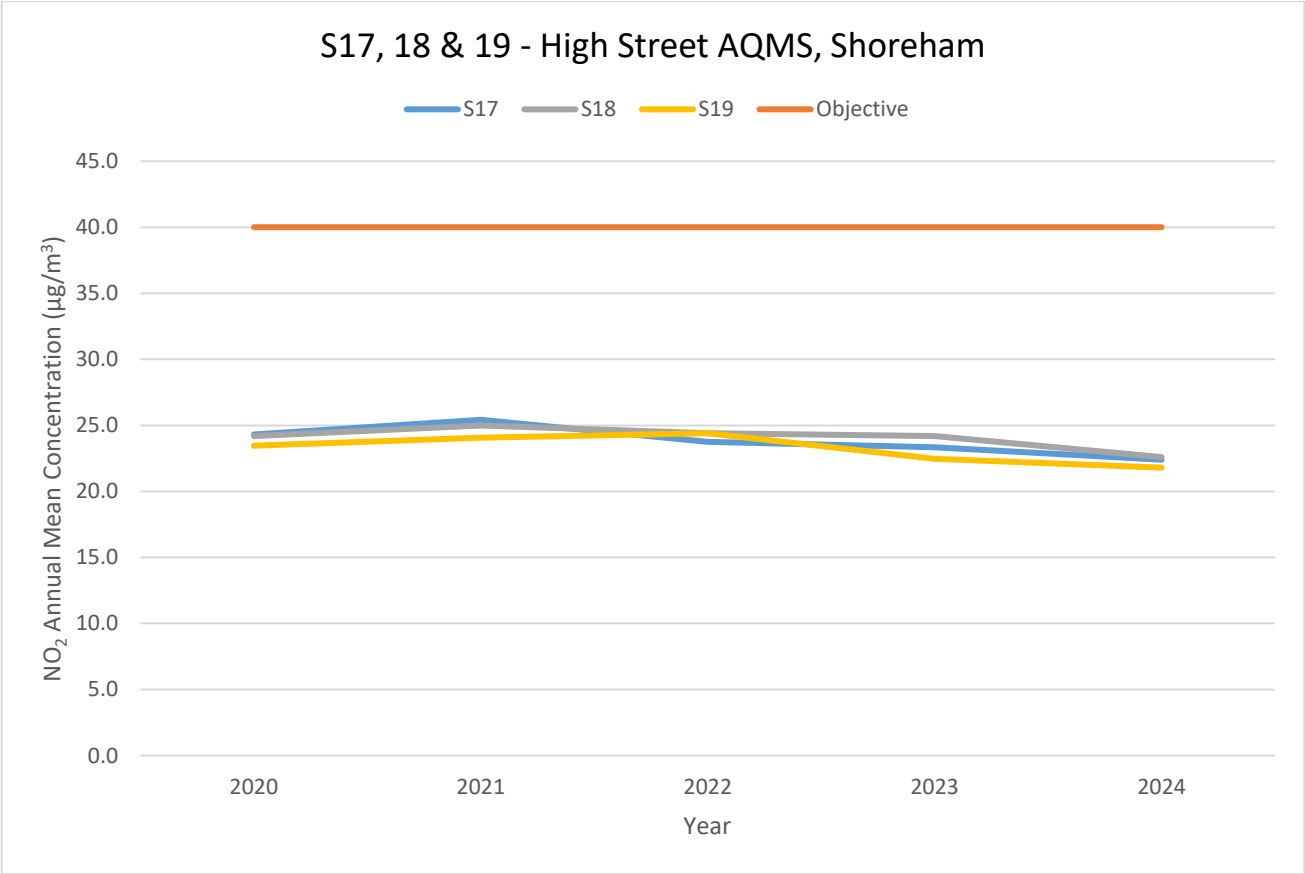
Concentrations are those at the location of monitoring and not those following any fall-off with distance adjustment.

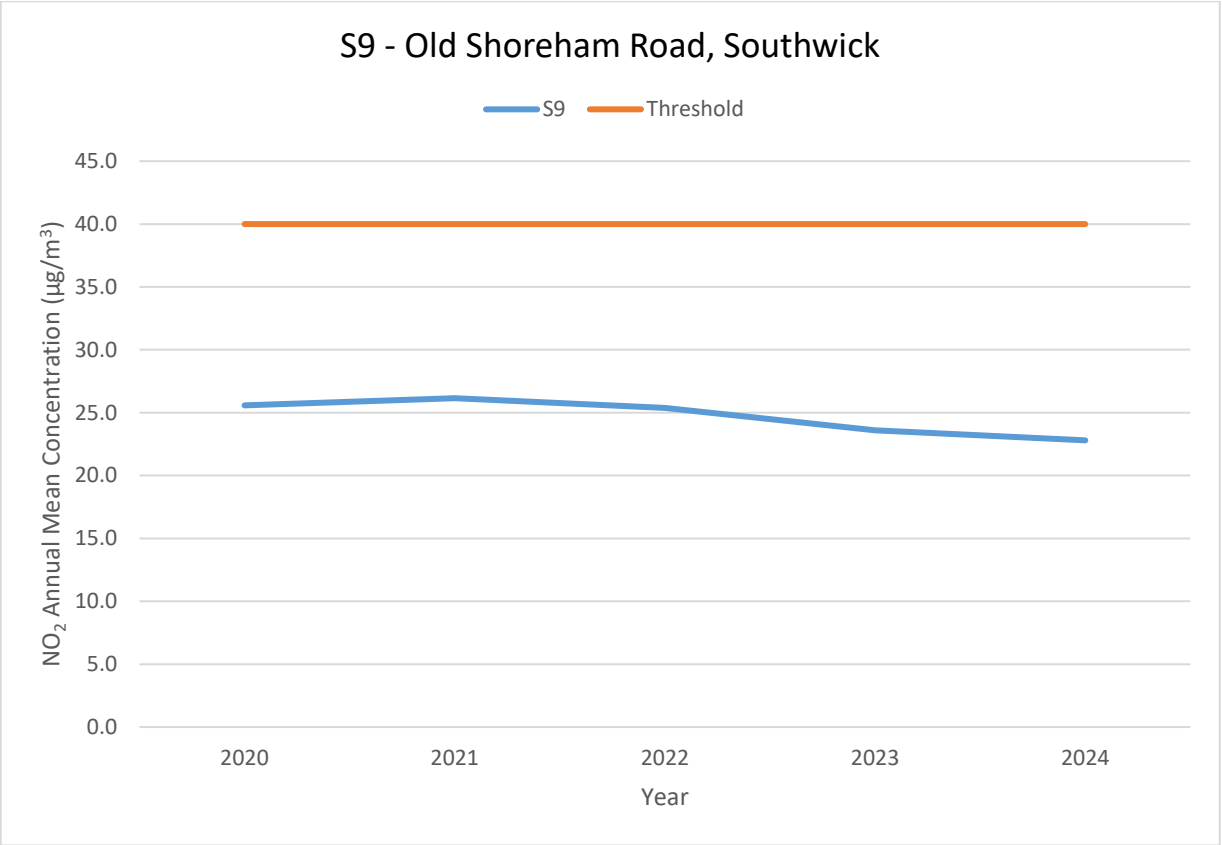
(1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.

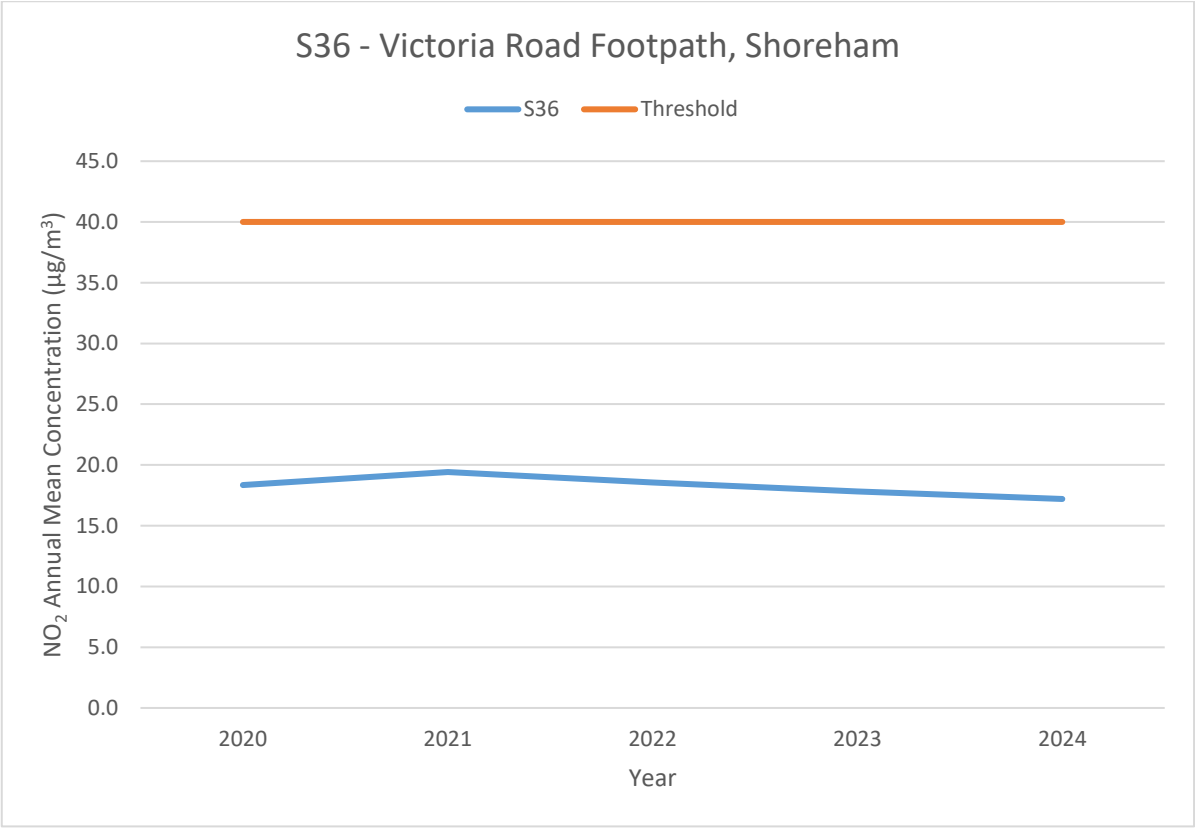
(2) Data capture for the full calendar year (e.g. if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

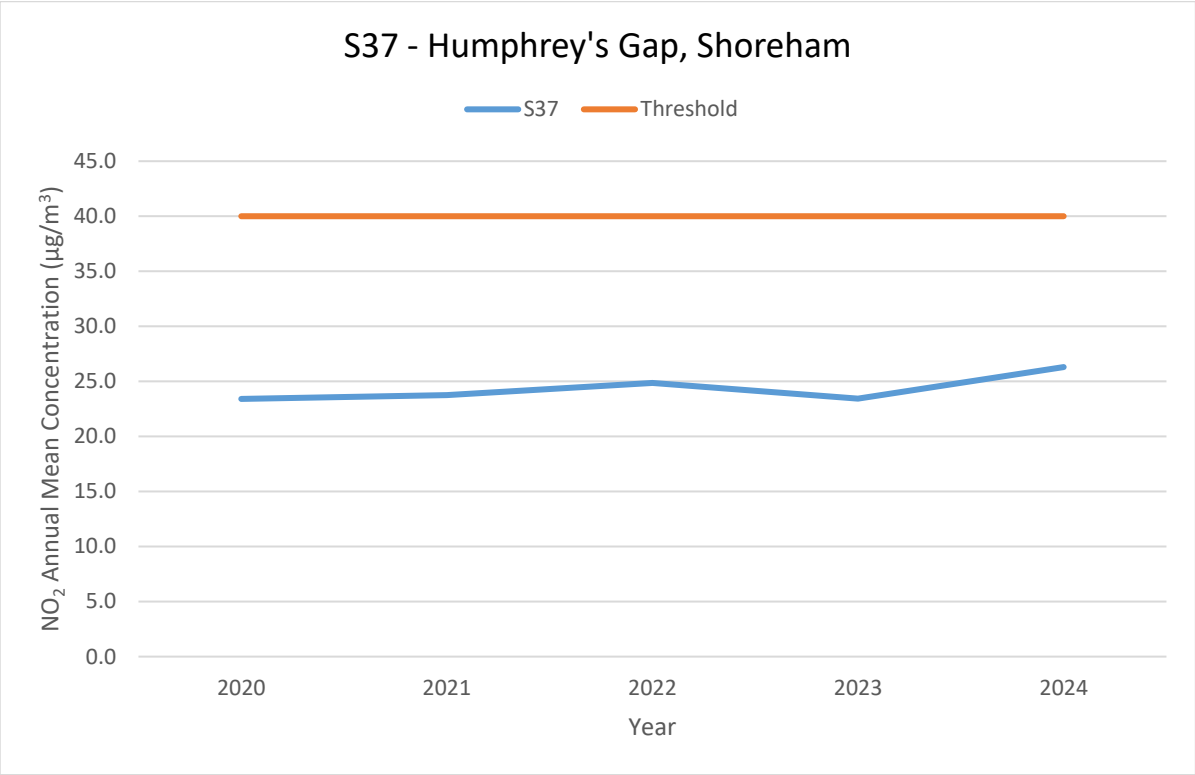
Figure A.1 – Trends in Annual Mean NO_2 Concentrations

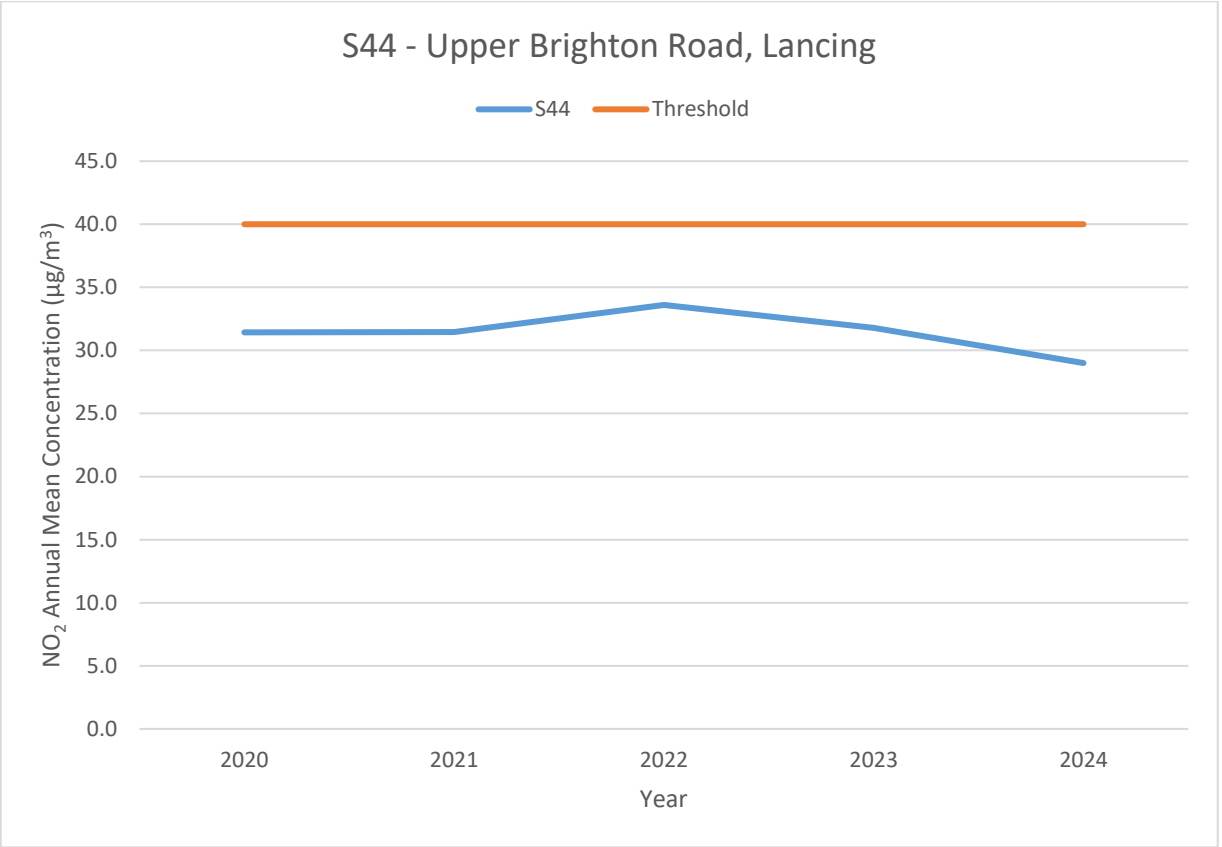
ADUR

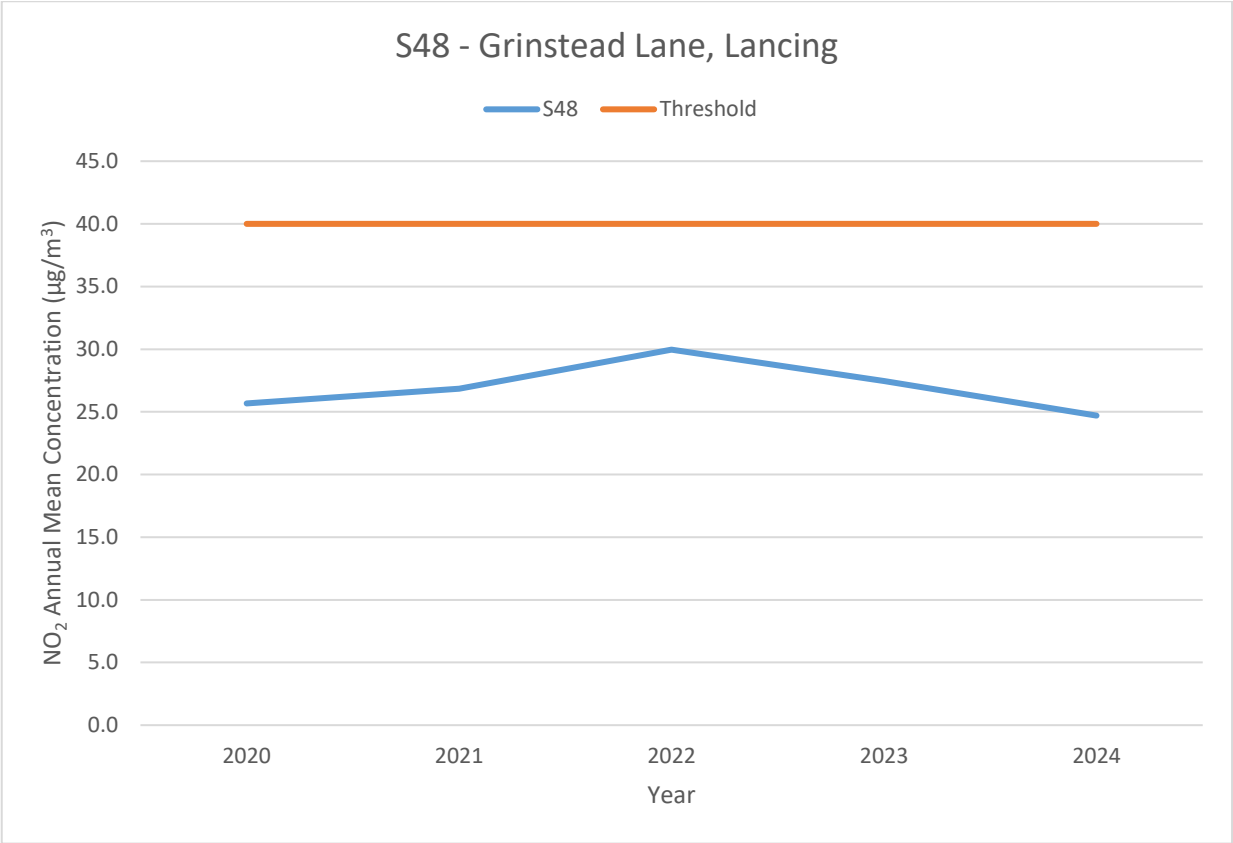

S17, 18 & 19 - High Street AQMS, Shoreham
S17
S18
S19
Objective
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year

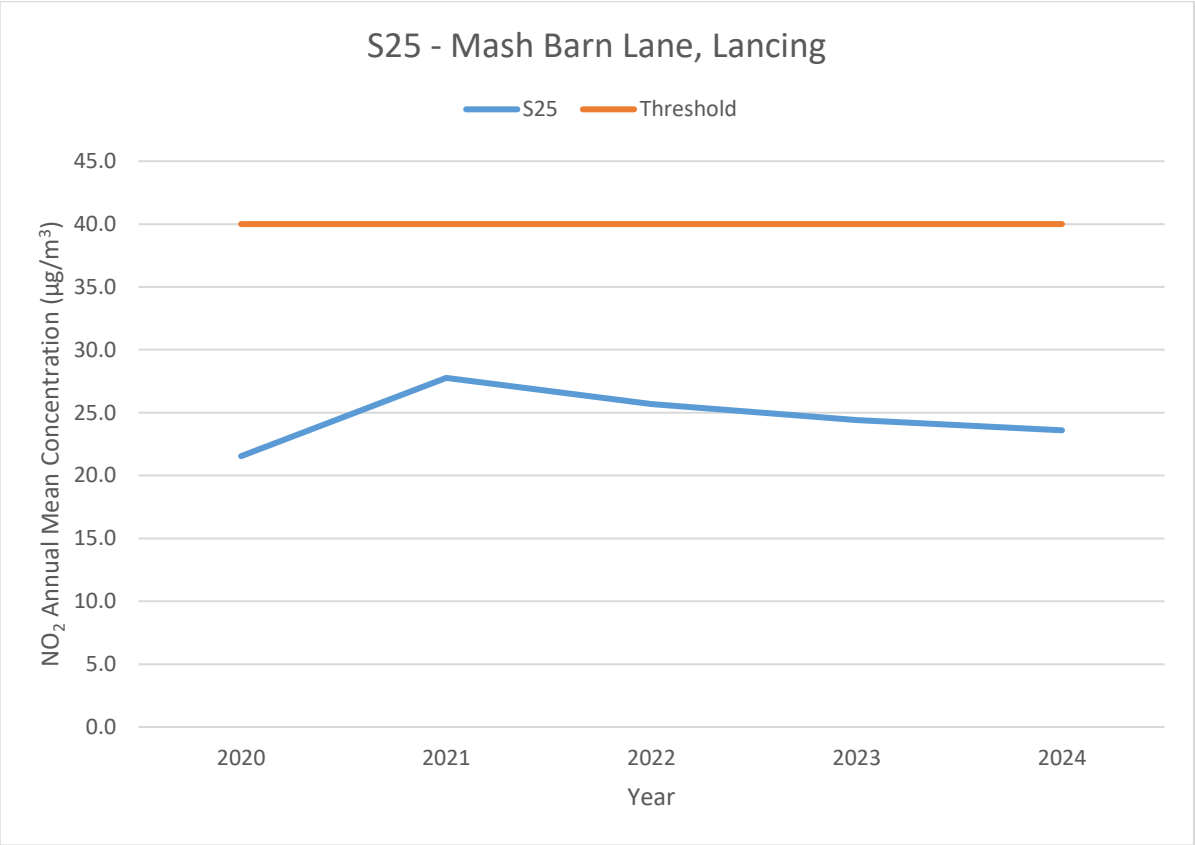

S9 - Old Shoreham Road, Southwick
S9
Threshold
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year

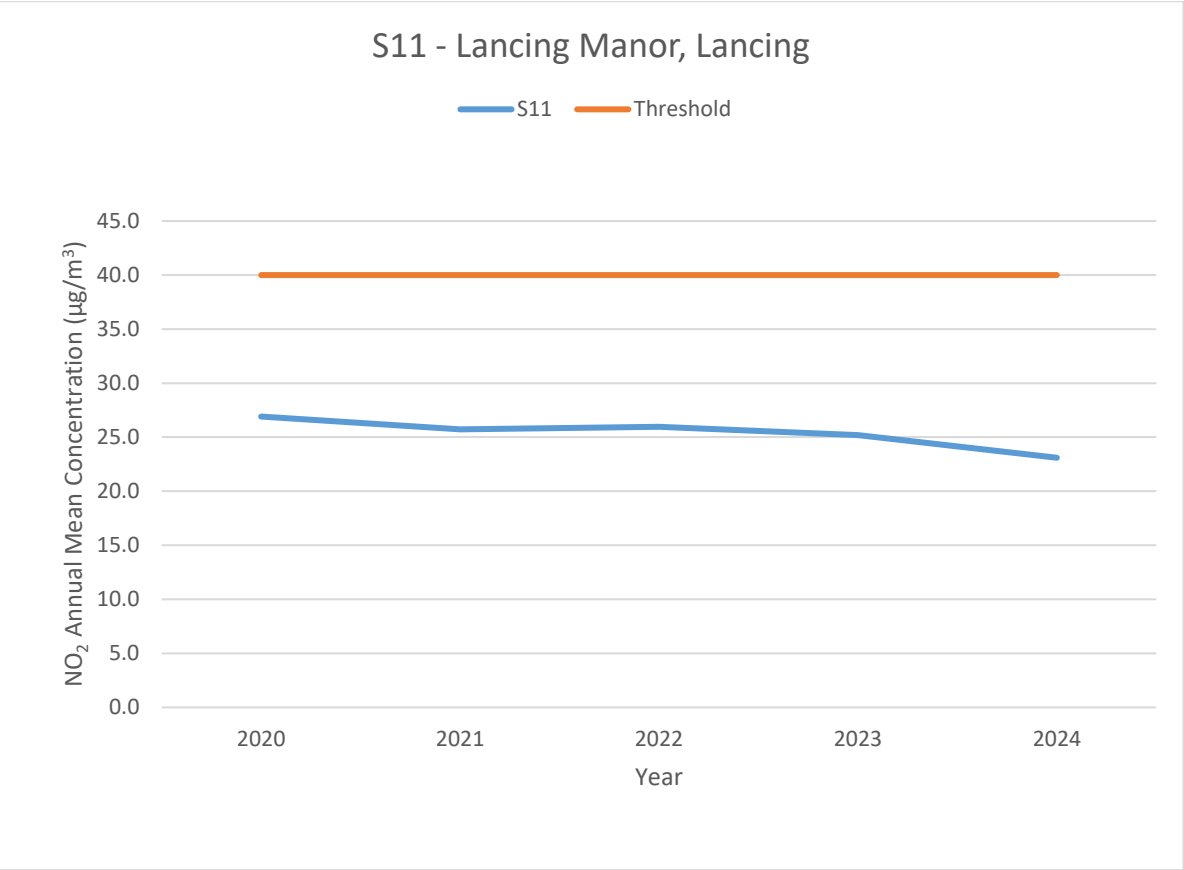

S36 - Victoria Road Footpath, Shoreham
S36
Threshold
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year

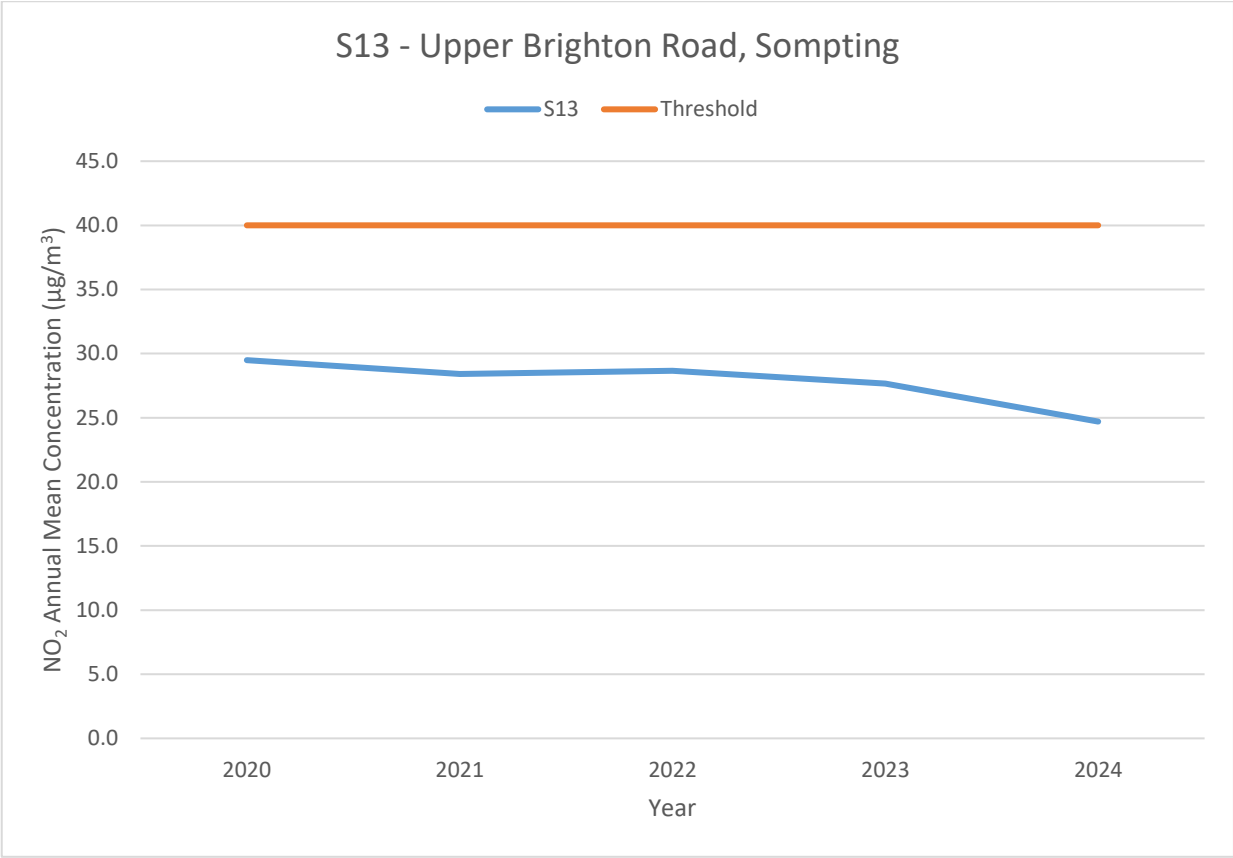

S37 - Humphrey's Gap, Shoreham
S37
Threshold
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year


S44 - Upper Brighton Road, Lancing
S44
Threshold
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year

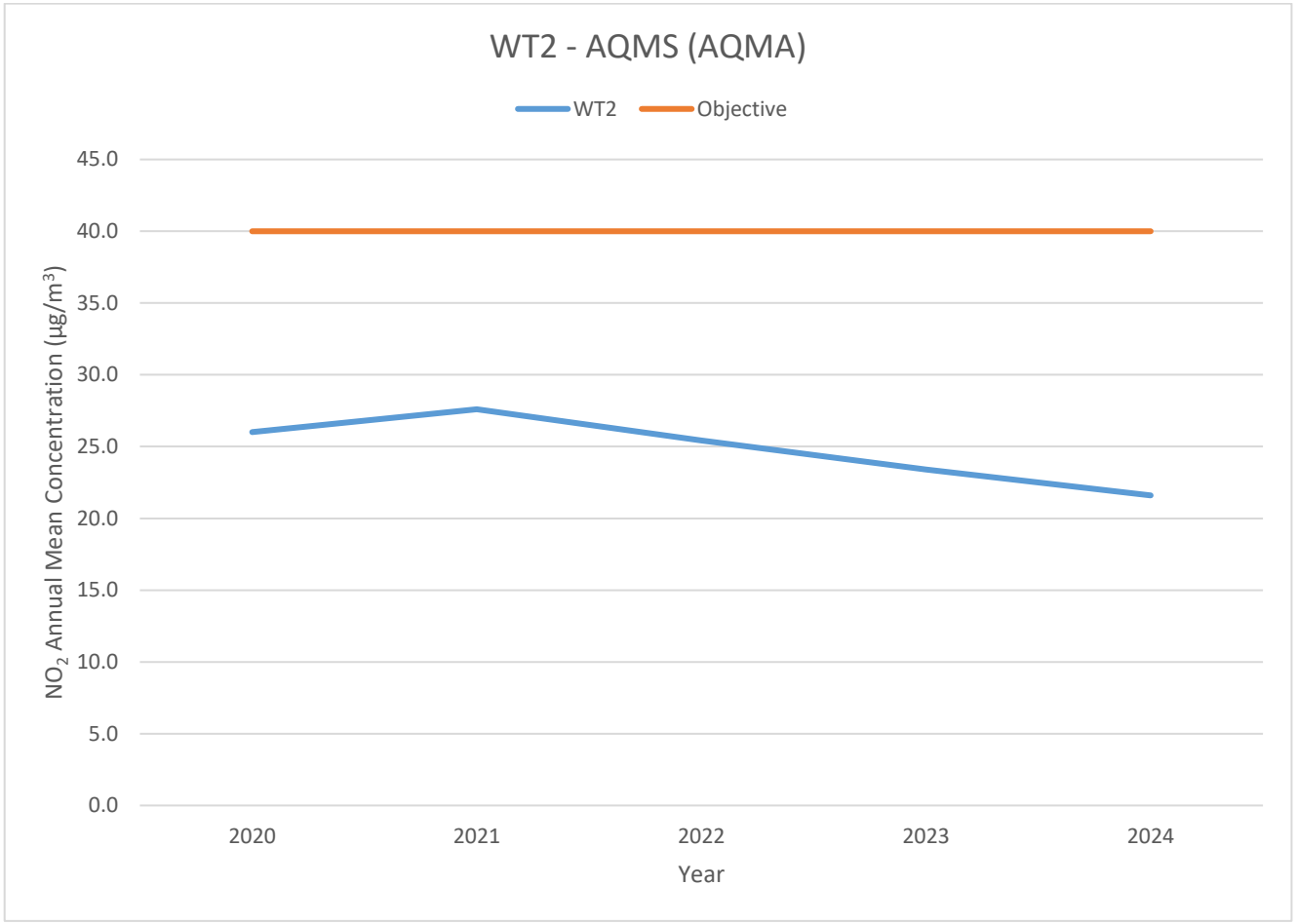

S48 - Grinstead Lane, Lancing
S48
Threshold
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year

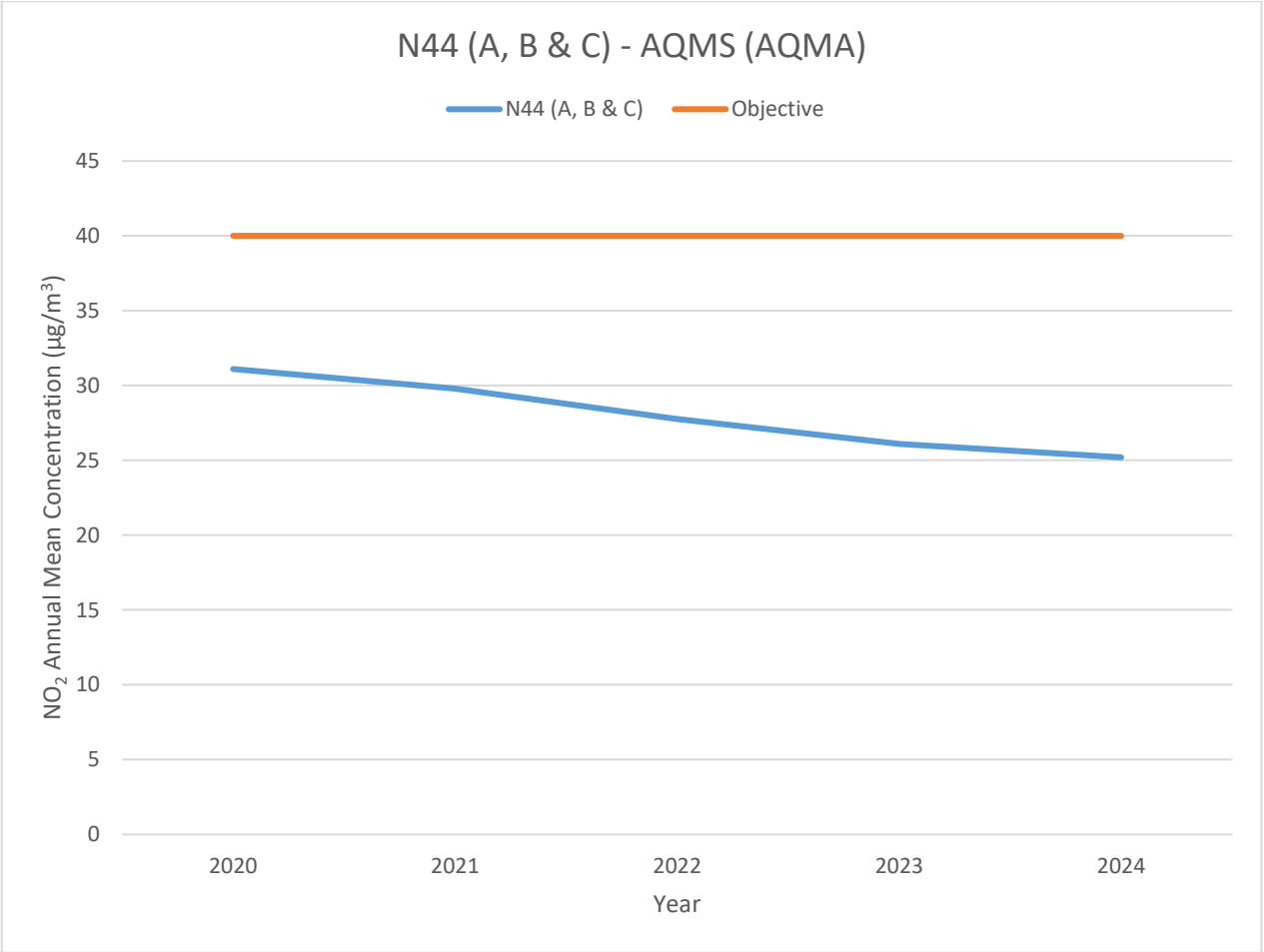

S25 - Mash Barn Lane, Lancing
S25
Threshold
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year

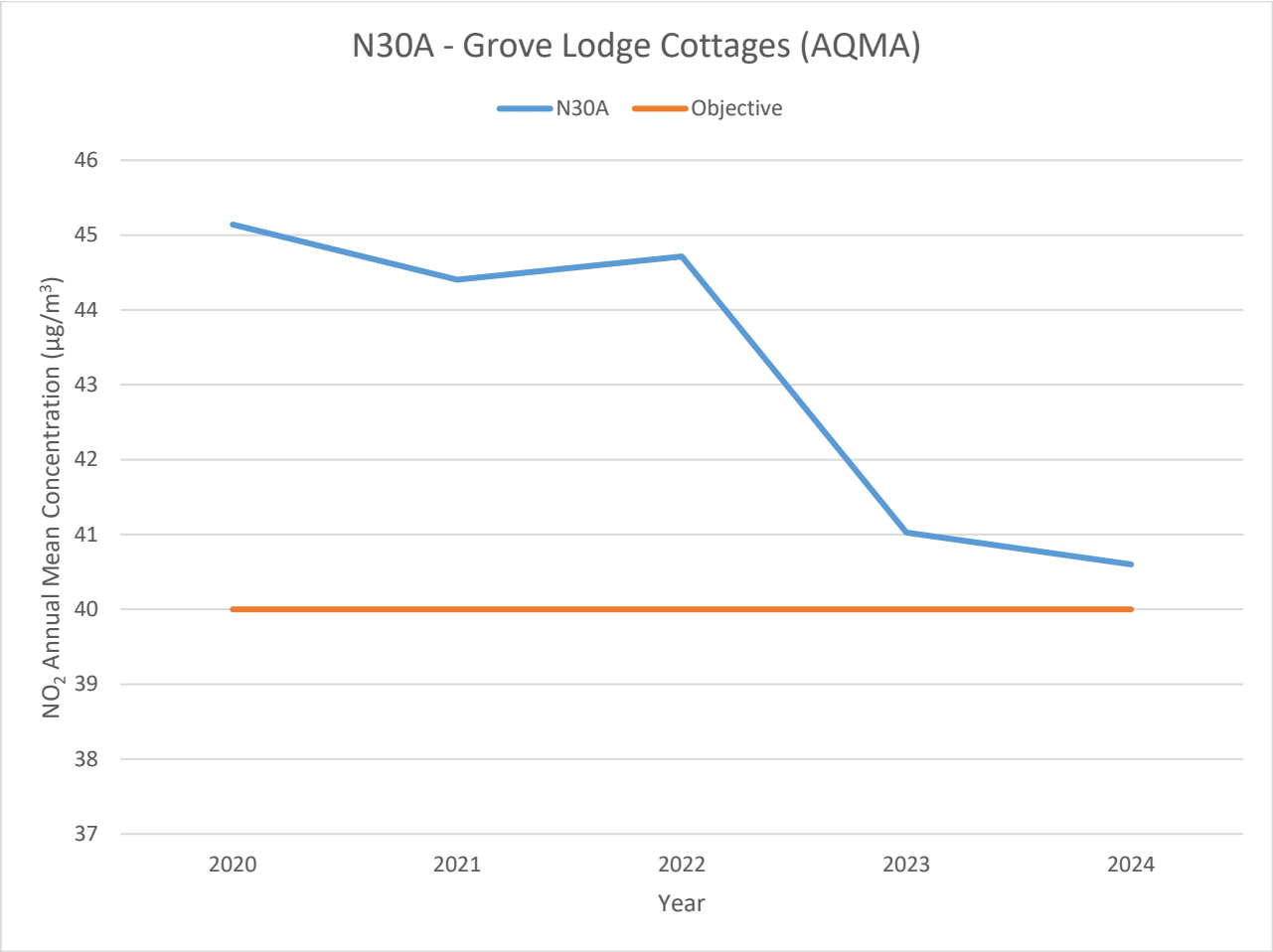

S11 - Lancing Manor, Lancing
S11
Threshold
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year

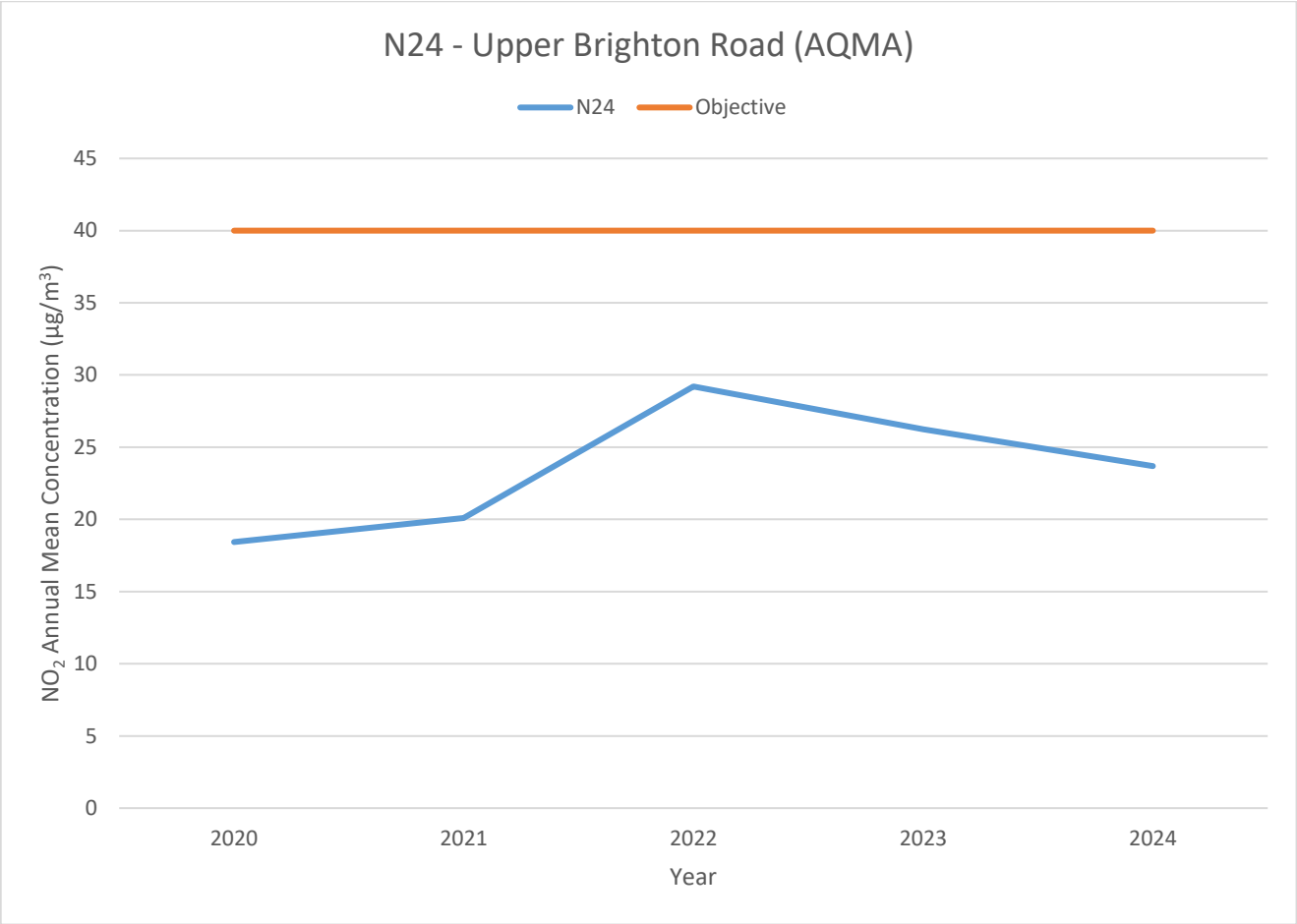

S13 - Upper Brighton Road, Sompting
S13
Threshold
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year

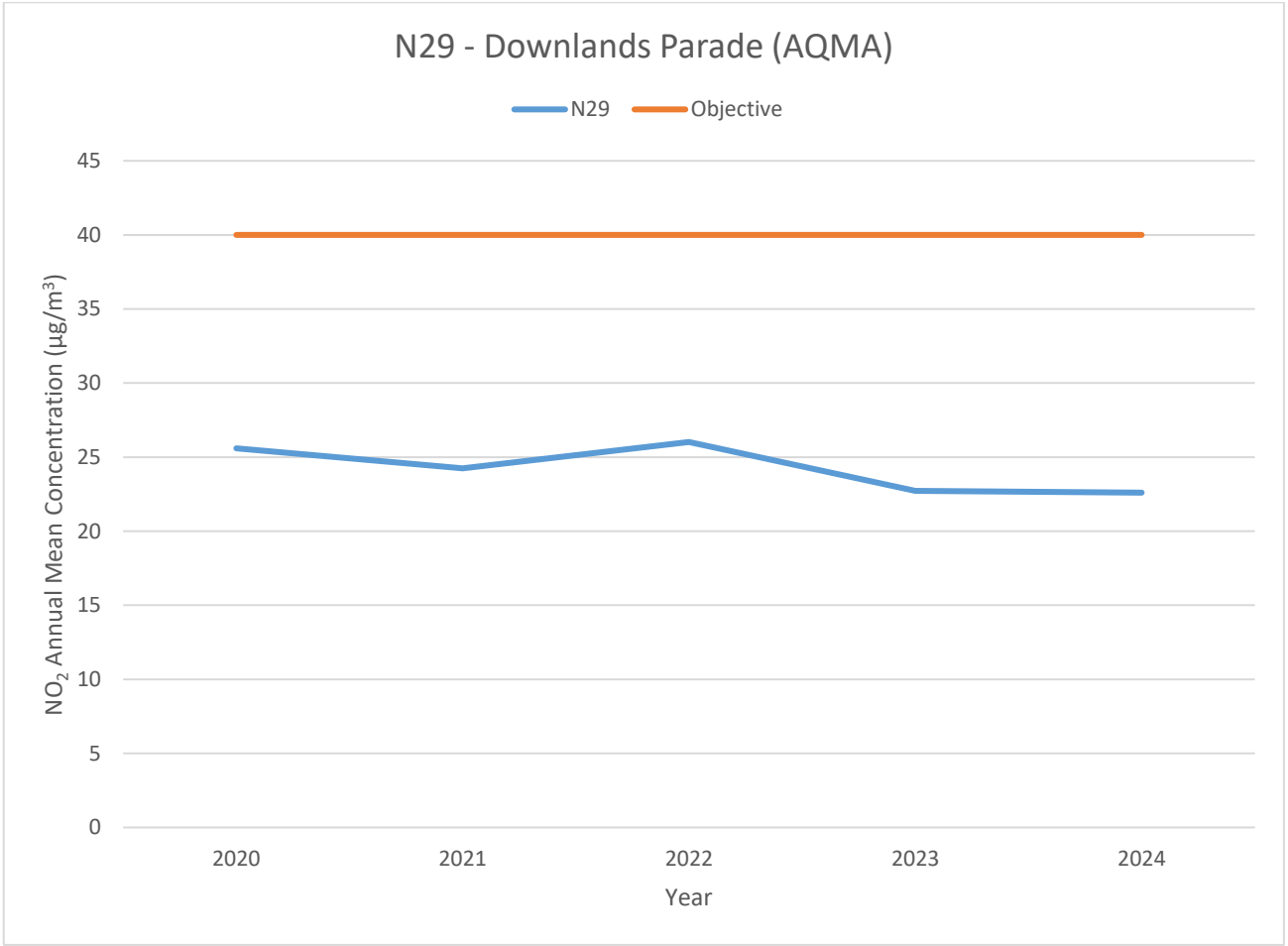
WORTHING

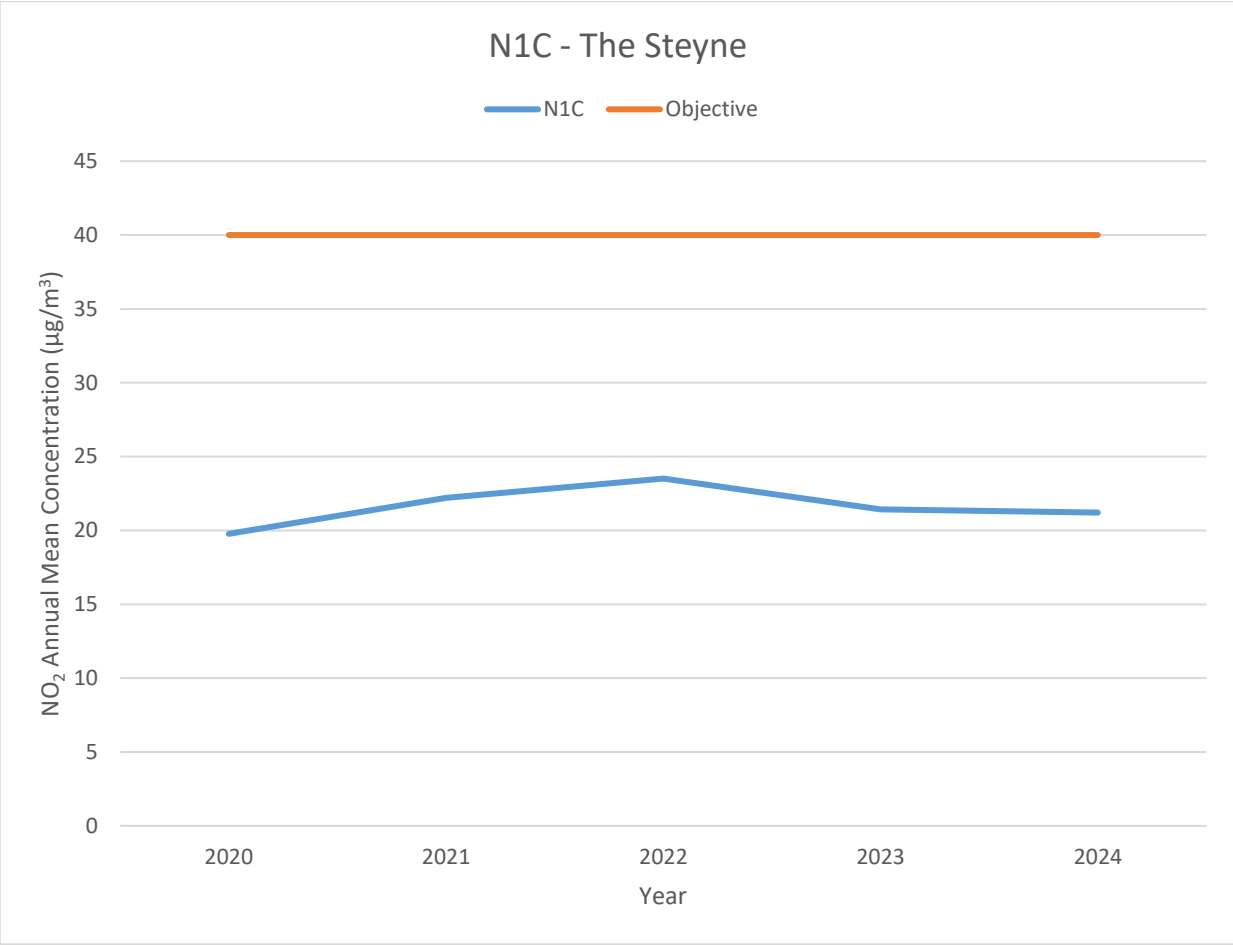

WT2 - AQMS (AQMA)
WT2
Objective
45.0
40.0
35.0
30.0
25.0
20.0
15.0
10.0
5.0
0.0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year

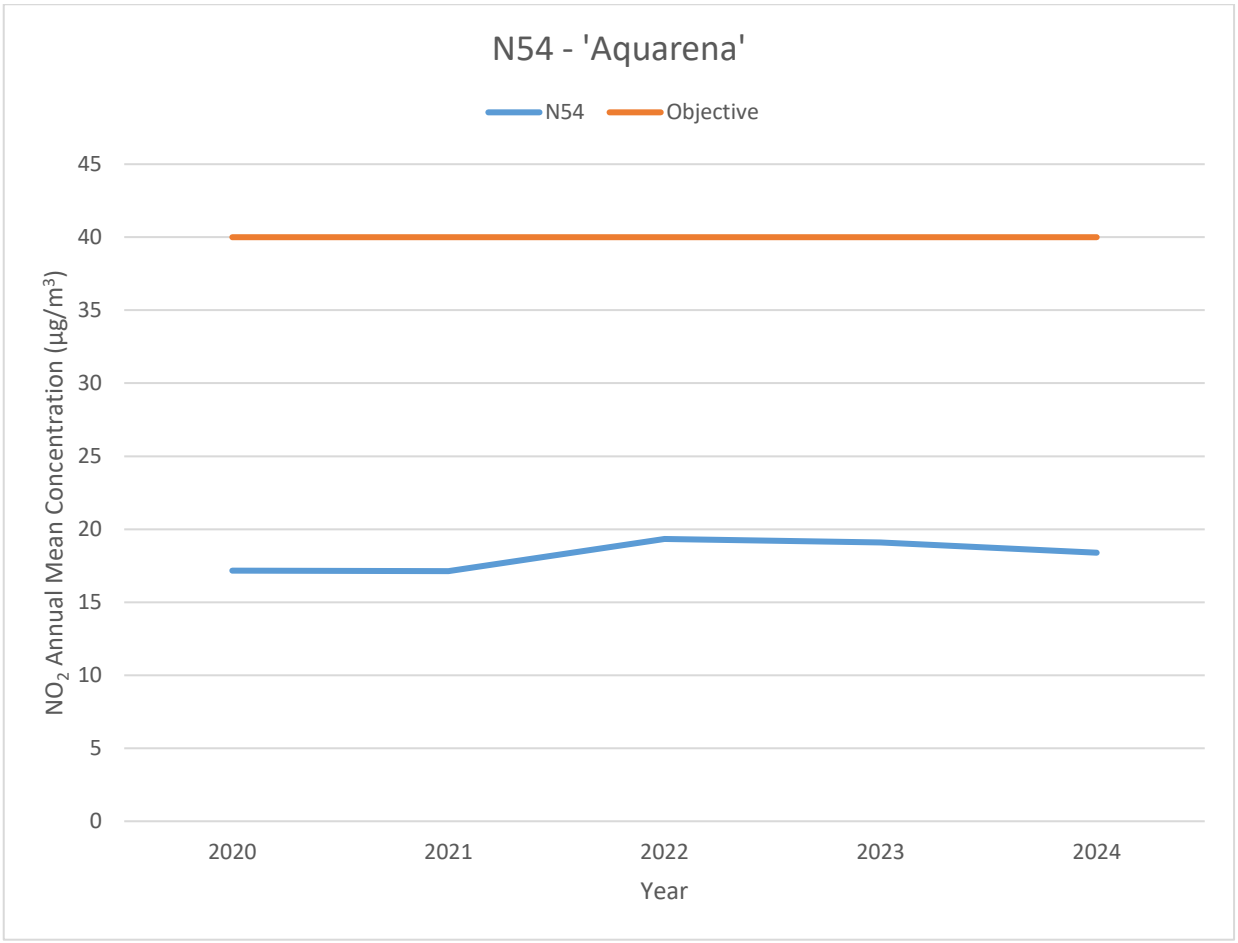

N44 (A, B & C) - AQMS (AQMA)
N44 (A, B & C)
Objective
45
40
35
30
25
20
15
10
5
0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year


N30A - Grove Lodge Cottages (AQMA)
N30A
Objective
46
45
44
43
42
41
40
39
38
37
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year


N24 - Upper Brighton Road (AQMA)
N24
Objective
45
40
35
30
25
20
15
10
5
0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year


N29 - Downlands Parade (AQMA)
N29
Objective
45
40
35
30
25
20
15
10
5
0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year


N1C - The Steyne
N1C
Objective
45
40
35
30
25
20
15
10
5
0
NO2 Annual Mean Concentration (µg/m3)
2020
2021
2022
2023
2024
Year


N54 - 'Aquarena'
N54
Objective
45
40
35
30
25
20
15
10
5
0
NO_2 Annual Mean Concentration (µg/m³)
2020
2021
2022
2023
2024
Year

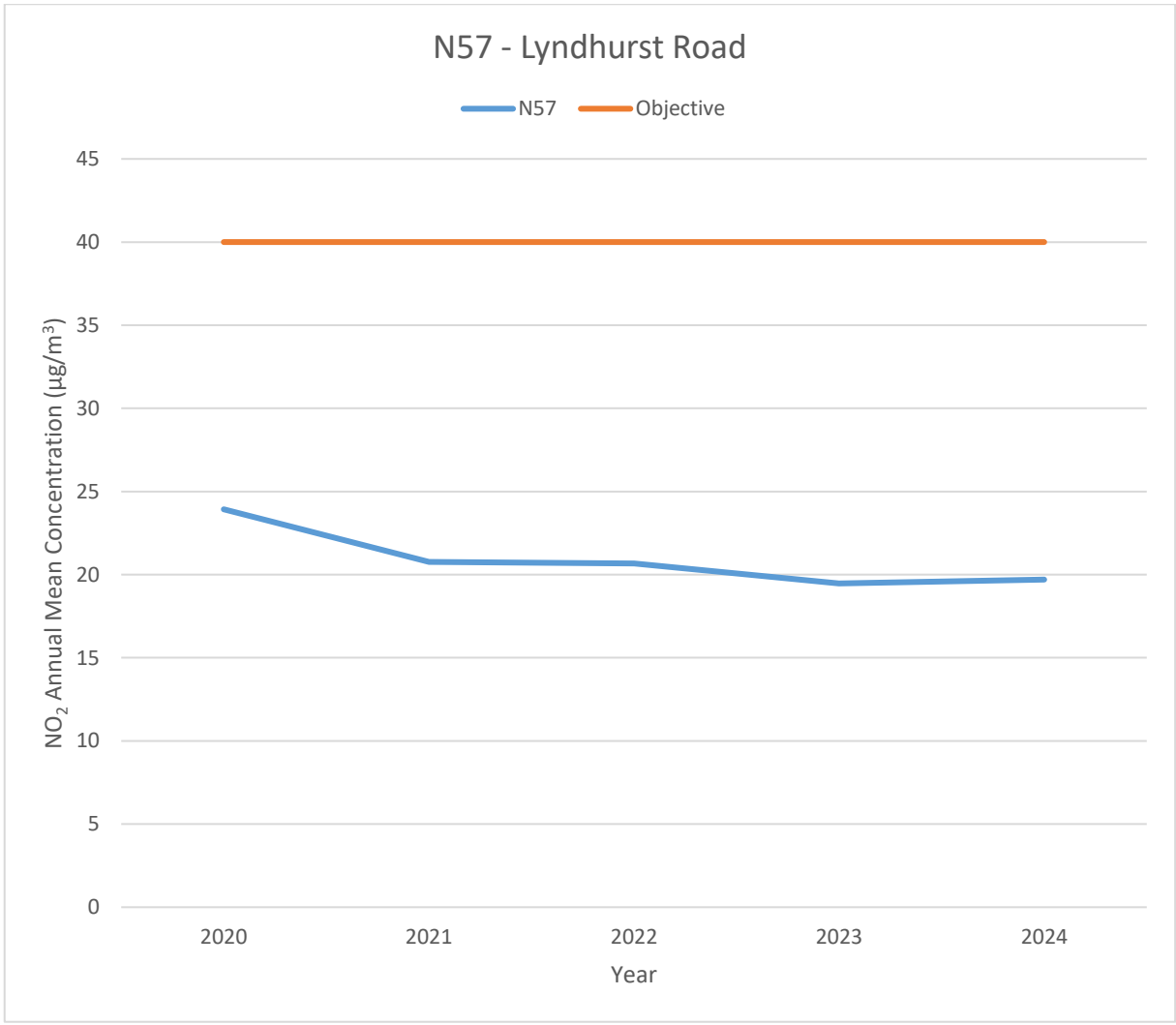

N57 - Lyndhurst Road
N57
Objective
45
40
35
30
25
20
15
10
5
0
NO_2 Annual Mean Concentration (µg/m^3)
2020
2021
2022
2023
2024
Year

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
AD1	521399	105039	Kerbside	99.4	99.4	0	0	0	0	0
WT2	514184	104963	Roadside	99.4	99.4	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%).

Table A.6 – Annual Mean $PM_{2.5}$ 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
AD1	521399	105039	Kerbside	96.9	96.9	N/A	16.2	11.6	10.7	8.4
WT2	514184	104963	Roadside	93.1	93.1	8.0	8.7	8.8	8.7	7.7

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

Notes:

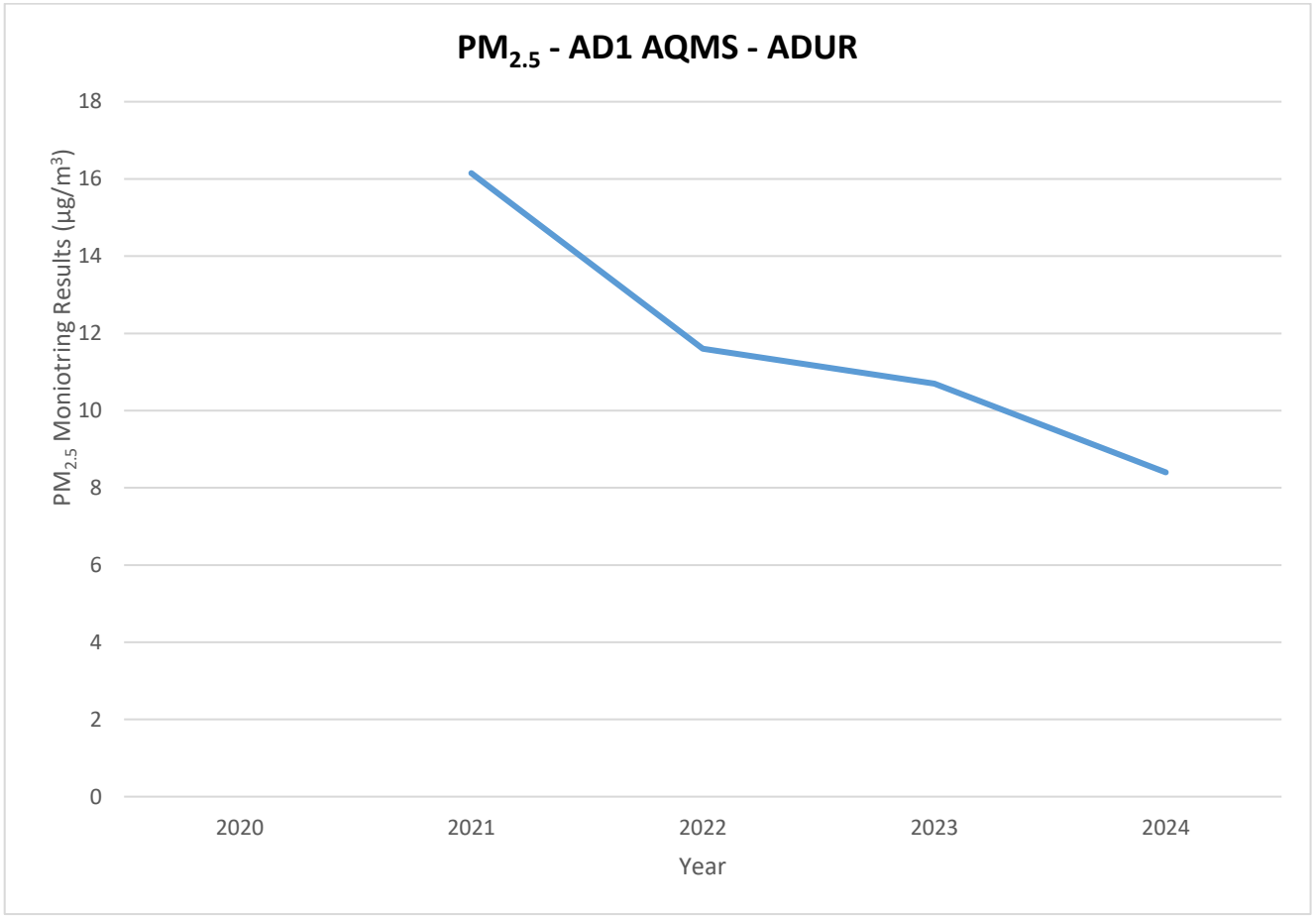
The annual mean concentrations are presented as $\mu g/m^3$.

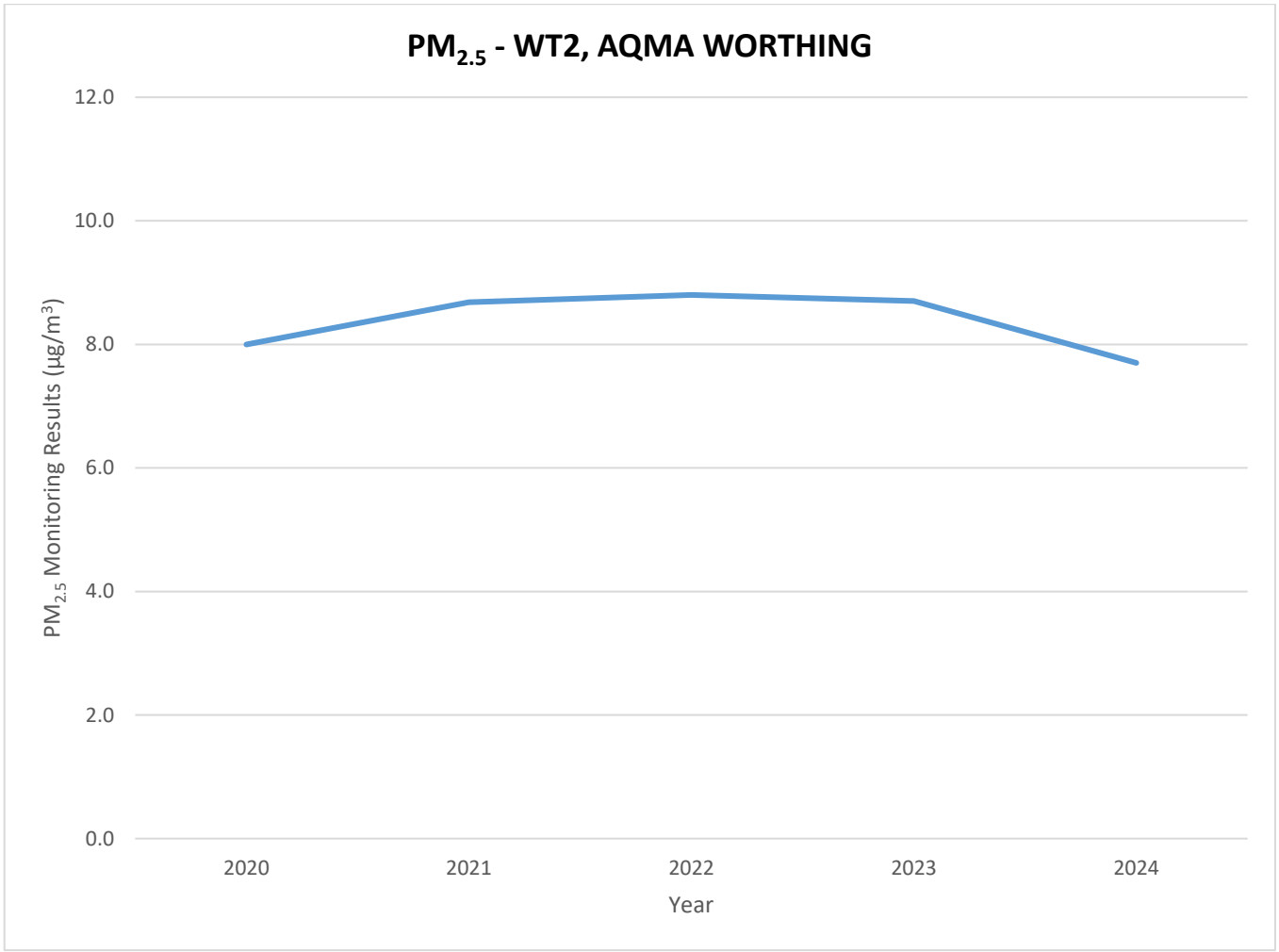
All means have been "annualised" as per LAQM.TG22 if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

(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%).

Figure A.2 – Trends in Annual Mean $PM_{2.5}$ Concentrations




PM2.5 - WT2, AQMA WORTHING
12.0
10.0
8.0
6.0
4.0
2.0
0.0
PM2.5 Monitoring Results (µg/m3)
2020
2021
2022
2023
2024
Year

Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO_2 2024 Diffusion Tube Results ($\mu g/m^3$)

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 (0.88)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
ADUR																		
S2	525330	105085	25.4	18.9	20.2	17.9	20.7	14.3	18.5	14.8	15.3	20.6	20.7	19.2	18.9	16.6	-	
S3	525562	105313	18.7	14.7	18.2	14.8	13.1	9.4	10.9	10.0	10.2	16.4	19.0	15.7	14.3	12.6	-	
S7	524139	106321	15.5	13.3	12.6	10.0	9.4	7.0	8.4	6.9	8.7	12.4	13.1	11.1	10.7	9.4	-	
S8	524018	106070	25.2	29.6	24.6	22.8	22.8	17.3	19.6	16.4		23.3	26.2	23.6	22.9	20.1	-	
S9	523784	106081	31.8	26.3	29.9	21.0	26.2	23.1	26.0	22.7	23.1		31.1	24.5	26.0	22.8	-	
S10	523343	106111	25.5	22.0	15.9	20.0	18.7	13.1	15.6	14.9	20.5	20.5	30.7	12.7	19.2	16.9	-	
S11	518820	105584	35.6	29.4	26.6	27.1	23.7	21.4	23.8	20.0	28.8	26.2	29.6	23.1	26.3	23.1	-	
S12	517731	105505	22.7	25.6	21.4	23.3	21.1	20.0	22.2	18.1	25.9	26.1	28.5	22.6	23.1	20.3	-	
S13	517291	105550	28.3	34.5		24.7	30.0	24.9	30.1	31.1	25.7	27.3	25.8	26.6	28.1	24.7	-	
S14	516057	105190	24.9	20.8	22.8	19.7	23.5	16.1	18.7	20.1	16.5	21.0	23.0	17.2	20.4	17.9	-	
S17	521400	105040	31.4	29.7	28.3	25.5	27.0	25.3	23.1	21.9	23.4	23.4	24.9	21.0	25.4	22.4	-	
S18	521400	105040	27.1	31.6	26.8	24.6	27.1	23.6	25.5	22.4	21.0	26.5	27.0	24.7	25.6	22.6	-	
S19	521400	105040	27.0	30.3	29.1	27.0	24.3	23.1	24.4	20.4	22.1	25.9	27.0	17.4	24.8	21.8	-	
S25	519117	105710	34.0	29.9	26.6	26.6	26.5	25.2	23.3	19.7	26.1	28.5	30.4	24.9	26.8	23.6	-	
S26	516536	104783	12.9	13.4	12.0	12.9	12.0	9.0	10.8	10.9	11.4	12.0	14.5	11.8	12.0	10.5	-	
S36	521282	105254	25.2	21.9	24.1	19.6	20.6	15.4	16.8	14.5	16.2	18.4	24.2	17.7	19.6	17.2	-	
S37	522103	105126	29.2	33.9	36.5	29.7	32.5	31.0	31.9	30.3	26.2	26.8		21.0	29.9	26.3	-	
S39	523329	104960	22.9	20.5	18.6	17.3	17.3	11.7	15.3	13.8	18.2	18.7	24.0	18.0	18.0	15.9	-	
S43	521733	105251	24.2	19.6	19.0	15.0	17.6	15.6	14.9	13.4	17.5	17.8	25.6	15.8	18.0	15.8	-	
S44	518494	105464	31.6	36.0	38.1	30.3	36.6	31.8	33.3	26.7	34.5	36.2	34.6	26.2	33.0	29.0	-	
S45	522300	105258	20.7	20.0	19.3	16.6	16.4	13.3	14.6	13.5	15.0	17.6	19.6	15.9	16.9	14.9	-	
S46	521363	105082	22.9	25.1	22.7	19.2	19.8	17.4	19.1	17.5	16.4	19.6	21.9	19.7	20.1	17.7	-	
S47	521375	105101	18.7	21.8	17.3	16.6	17.2	14.3	16.4	9.6	15.1	17.1	18.2	16.4	16.5	14.6	-	
S48	518590	105463	32.0	32.3	28.7	31.8	30.8	28.5	28.1	23.6	27.2	25.1	24.6	24.3	28.1	24.7	-	
S50	521478	105002	24.8	29.2	26.3	23.1	22.1	20.8	21.5	20.3	19.6	22.8	27.1	19.4	23.1	20.3	-	
S51	520042	106054	23.8	30.1	27.1	22.1	24.8	21.0							24.8	21.0	-	
S52	518560	105460	42.2	35.3	33.9	37.9	31.9	34.7	34.7	27.6	36.0	34.9	35.0	31.9	34.7	30.5	-	

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 (0.88)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
S53	520196	104350	17.3	17.1	14.5	13.9	14.7	10.8	12.0	9.2	10.5	12.8	16.0	9.6	13.2	11.6	-	
WORTHING																		
4N	513609	102556	15.1	10.1	14.0	9.0	9.2	6.3	8.1	6.9	7.3	11.1	16.9	12.6	10.5	9.3	-	
5N	512701	105562	18.1	12.3	13.9	11.0	11.3	8.0	8.9	8.4	9.7	12.9	17.1	11.0	11.9	10.4	-	
N1C	515114	102670		17.7	23.5	21.0	25.0	19.9	22.7	19.1	21.6	26.3	25.6	21.2	22.1	19.5	-	
N5	514495	105020	21.1	27.1	26.3	21.7	24.0	20.6	22.4	19.0	21.3	24.2	23.8	21.5	22.7	20.0	-	
N8	513236	104651	30.4	27.4	26.2	21.9	22.9	18.2			19.9	26.2	30.8		24.9	21.0	-	
N11	515812	103309	16.0	12.2	13.3	10.8	9.7	8.1	9.1	9.3	9.1	12.9	15.3	14.6	11.7	10.3	-	
N21	510611	105595	10.6		9.9	7.9	8.4	6.3	7.4	6.6		8.9	12.0	8.8	8.7	7.6	-	
N22	511010	102226	14.2	8.4	12.6	8.6	9.7	6.1	6.9	6.5	7.2	10.6	14.4	11.1	9.7	8.5	-	
N24	515151	105109	33.7	27.1	30.8	21.9	26.6	22.5	26.5	21.1	30.7	19.9	32.6	29.2	26.9	23.7	-	
N25	513845	105191	18.2	16.9	19.9	13.0	14.8	11.8	13.8	11.9	13.4	16.8	19.5	15.7	15.5	13.6	-	
N28	514740	103173	20.7	16.0	19.0	16.4	19.3	12.8	14.7	11.6	17.0	21.0	25.7	18.1	17.7	15.6	-	
N29	515014	105099	29.8		31.2	23.2	25.9	21.5	27.6	23.3		29.2	29.5	22.6	26.4	23.2	-	
N30A	514183	104948	51.6	52.6	53.2	47.5	51.2	49.2	52.9	42.0	42.2	46.6	48.3	40.6	48.2	**42.4**	**41.7**	
N31	514317	103329	28.5	25.4	24.8	20.9	20.6	19.6							23.3	19.8	-	
N39	514088	104906	27.7	20.5	22.1	22.5	21.0	20.5	21.9	19.3	26.9	24.0	30.0	22.8	23.3	20.5	-	
N42	514742	103234		17.1	24.9	18.4		15.2	18.9	13.7	18.3	24.7	21.9	18.7	19.2	16.9	-	
N43	514199	104982	20.3	20.5	20.8	15.8	16.7	14.7	16.0	14.8	14.3	17.5	20.7	17.4	17.5	15.4	-	
N44A	514184	104963	27.0	31.7	31.8	30.9	30.9	29.4	27.0	26.8	28.9	26.8	26.4	24.3	-	-	-	Triplicate Site with N44A, N44B and N44C - Annual data provided for N44C only
N44B	514184	104963	28.7	33.8	29.0	32.9	29.0	27.9	28.8	28.4	27.9		24.0	26.2	-	-	-	Triplicate Site with N44A, N44B and N44C - Annual data provided for N44C only
N44C	514184	104963	33.2	27.0	32.8	30.5	30.6	29.6	30.0	27.7	26.5	26.3	24.4	26.9	28.6	25.2	-	Triplicate Site with N44A, N44B and N44C - Annual data provided for N44C only
N48	512063	103385	22.6	22.2	24.7		21.8	17.3	19.2		16.0	21.7			20.7	18.0	-	
N52	514973	103335	23.7	21.0	23.1	17.1	18.5	16.4	16.1	15.8	19.6	19.1	27.1	13.8	19.3	17.0	-	
N53	513278	105623	27.0	29.8	33.1	25.1	26.6	25.2	29.8	25.1	18.9	25.9	20.1	21.9	25.7	22.6	-	
N54	515595	102725	24.3	18.0	22.4	15.9	20.6	21.5	23.6	20.1	16.8	22.7	24.6		21.0	18.4	-	
N57	515114	102975	30.7	21.9	24.9	19.8	20.0	19.1	18.9	19.4	22.3	23.6	25.7	21.8	22.4	19.7	-	
N64	514946	102541	22.5	22.0	25.1	19.8	23.4	19.2	21.4	19.2	21.0	22.9	23.0	19.6	21.6	19.0	-	
N65	514543	103220	29.4	25.4	24.9	20.6	23.9	18.8	18.9	9.0	22.7	25.6	29.6	24.4	22.8	20.0	-	

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 (0.88)	Annual Mean: Distance Corrected to Nearest Exposure	Comment
N66	515067	105082	28.9	26.4	27.1	26.7	26.5	24.0	25.6	22.9	24.0	28.7	26.7	25.6	26.1	23.0	-	
N71	514548	103843	17.3	13.4	14.9	10.7	11.2	7.3	9.6	19.0	9.4			13.3	12.6	11.1	-	
N72	514558	102416	16.4	11.9	14.9	11.9	11.0	9.3	11.3	10.1	10.1	13.4	17.2	13.3	12.6	11.1	-	

☒ **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**

☒ **National bias adjustment factor used**

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

☒ **Adur & Worthing Councils confirm 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 Adur District and Worthing Borough Councils During 2024

Adur District and Worthing Borough Councils has not identified any new sources that have a significant impact relating to air quality within the reporting year of 2024.

Section 2.2 details developments in both areas that are either planned or under construction. When completed they will be referenced as new or changed sources.

Additional Air Quality Works Undertaken by Adur District and Worthing Borough Councils During 2024

Adur District Council commissioned a report in 2024 to look at the air quality of impacts of developments contained within the Local across Adur District. The assessment considered ambient NO_2, PM_{10} and $PM_{2.5}$ concentrations to which existing and future receptors may be exposed to if certain development were to proceed, based on a review of current site boundary plans, pollutant concentrations and the predicted traffic associated with the land allocations.

The report and its conclusions were due to be made available during 2025 and will be reported on in next years annual status report.

QA/QC of Diffusion Tube Monitoring

NO_2 diffusion tubes are provided and analysed by Gradko laboratory. The NO_2 tube preparation method used is 50% triethanolamine (TEA) in Acetone**.**

In order to ensure NO_2 concentrations are of a high quality, strict performance criteria need to be met through the execution of QA and QC procedures. A number of factors have been identified as influencing the performance of NO_2 diffusion tubes including the laboratory preparing and analysing the tubes, and the tube preparation method (AEA, 2008). QA and QC procedures ensure that uncertainties in the data are minimised and

allow the best estimate of true concentrations to be determined. Gradko participate in several national quality schemes such as Air PT, LEAP and Field Intercomparison, giving confidence in analysis results. Since April 2014, Gradko has taken part in AIR PT, which combines two long running PT schemes: LGC Standards STACKS PT scheme and HSL WASP PT scheme.

Gradko International Ltd is a UKAS accredited laboratory (No. 2187) to ISO17025:2017 and participates in laboratory performance and proficiency testing schemes. These provide strict performance criteria for participating laboratories to meet, ensuring NO_2 concentrations reported are of a high calibre.

Gradko participate in the AIR NO_2 Proficiency Testing (PT) Scheme. The AIR PT scheme uses diffusion tubes laboratory spiked with a Nitrite solution to test each participating laboratory's analytical performance on a quarterly basis. Defra advise that diffusion tubes used for LAQM should be obtained from laboratories that have demonstrated satisfactory performance in the AIR-PT scheme. Gradko's performance in the first half of 2022 was 100% (more recent performance data was not available at the time of writing).

All Local Authority monitoring was completed in accordance with the 2024 Defra Diffusion Tube Monitoring Calendar.

Data from the NO_2 diffusion tubes has been bias corrected using the national factors produced by the UK co-location data-base available from Defra, https://laqm.defra.gov.uk/air-quality/air-quality-assessment/national-bias/

Schedule of Accreditation

issued by

United Kingdom Accreditation Service

2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK

UKAS TESTING

2187

Accredited to ISO/IEC 17025:2017

Gradko International Ltd
(Trading as Gradko Environmental)

Issue No: 027 **Issue date:** 23 December 2024

St Martins House 77 Wales Street Winchester Hampshire SO23 0RH	Contact: Mr A Poole Tel: +44 (0)1962 860331 Fax: +44 (0)1962 841339 E-Mail: diffusion@gradko.co.uk Website: www.gradko.co.uk

Testing performed at the above address only

DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ATMOSPHERIC POLLUTANTS Collected on diffusion (sorbent) tubes and monitors	<u>Chemical Tests</u>	Documented In-House Methods
	Ammonia as ammonium (NH_4^+)	GLM 8 by Ion Chromatography
	Benzene Toluene Ethyl benzene Xylene	GLM 4 by Thermal Desorption/ FID Gas Chromatography
	Hydrogen chloride as chloride (Cl^-) Nitrogen dioxide as nitrite (NO_2^-) Sulphur dioxide as sulphate (SO_4^{2-}) Hydrogen fluoride as fluoride (F^-)	GLM 3 by Ion Chromatography
	Hydrogen sulphide	GLM 5 by Colorimetric determination (UV Spectrophotometry)
	Ozone as nitrate (NO_3^-)	GLM 2 by Ion Chromatography
	Nitrogen Dioxide as nitrite (NO_2^-)	GLM 7 by Colorimetric determination (UV Spectrophotometry)
	Sulphur dioxide as sulphate (SO_4^{2-})	GLM 1 by Ion Chromatography
	Formaldehyde as formaldehyde-DNPH	GLM 18 by HPLC
	Volatile Organic Compounds including: Benzene Toluene Ethylbenzene p-Xylene o-Xylene	GLM 13 by Thermal Desorption GC-Mass Spectrometry

UKAS TESTING 2187 Accredited to ISO/IEC 17025:2017	**Schedule of Accreditation** issued by **United Kingdom Accreditation Service** 2 Pine Trees, Chertsey Lane, Staines-upon-Thames, TW18 3HR, UK **Gradko International Ltd** **(Trading as Gradko Environmental)** **Issue No:** 027 **Issue date:** 23 December 2024
Testing performed at main address only	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used
ATMOSPHERIC POLLUTANTS Collected on diffusion (sorbent) tubes and monitors (cont'd)	Chemical Tests (cont'd)	
	Qualitative Analysis and Estimation of Volatile Organic Compounds on diffusion (sorbent) tubes and monitors	GLM 13 by Thermal Desorption GC-Mass Spectrometry with estimations in accordance with ISO standard 16000-6
	Naphthalene Tetrachloroethylene Trichloroethylene Styrene 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene Chlorobenzene 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene	GLM 13-1 by Thermal Desorption GC-Mass Spectrometry
	1,3-Butadiene	GLM 13-6 by Thermal Desorption GC-Mass Spectrometry
	Carbon Disulphide	GLM 13-7 by Thermal Desorption GC-Mass Spectrometry
	Flexible scope for quantitative analysis of Volatile Organic Compounds on diffusion (sorbent) tubes and monitors in accordance with methods developed and validated by in-house procedure LWI 47	LWI 47 by Thermal Desorption GC-Mass Spectrometry
END		

Diffusion Tube Annualisation

Site S51 Sussex Pad, Lancing recorded a data capture of less than 75% but over 25% and therefore required annualisation. The area was subject to a major road scheme on the A27 and therefore access to the site was not possible for some of the year. Annualisation details are contained in Table C.1 below.

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

Site ID	Annualisation Factor AD1	Annualisation Factor WT2	Annualisation Factor Preston Park UKA00483	Annualisation Factor Storrington UKA00548	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean
S51	0.9342	0.9439	0.9905	0.9824	0.9628	24.8	23.9

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.

Adur District and Worthing Borough Councils have applied a national bias adjustment factor of 0.88 to the 2024 monitoring data. A summary of bias adjustment factors used by Adur District and Worthing Borough Councils over the past five years is presented in

Table C.2.

Table C.2 – Bias Adjustment Factor

As with previous years a National Bias Adjustment Factor was used for 2024. We considered using a local bias factor as we have diffusion tubes collocated with our automatic analysers. However, after consideration of the guidance contained within Chapter 7 (and specifically Box 7.13) of the LAQM Technical Guidance (TG22), we decided to continue using the national factor. Part of our consideration was that by using the national factor members of the public are better able to understand changes in concentrations when comparing concentrations from previous years which also used national factors.

Monitoring Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	06/25	0.88
2023	National	03/24	0.83
2022	National	03/23	0.82
2021	National	06/22	0.82
2020	National	09/21	0.84

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 06/25

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 September 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[2] (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[4]	Bias Adjustment Factor (A) (Cm/Dm)
Gradko	50% TEA in acetone	2024	UB	City Of London Corporation	10	26	20	29.5%	G	**0.77**
Gradko	50% TEA in acetone	2024	R	City Of London Corporation	12	34	30	11.5%	G	**0.90**
Gradko	50% TEA in Acetone	2024	UB	Falkirk Council	11	13	13	-1.6%	G	**1.02**
Gradko	50% TEA in acetone	2024	SU	Redcar And Cleveland Borough Council	12	12	9	35.4%	G	**0.74**
Gradko	50% TEA in acetone	2024	KS	Marylebone Road Intercomparison	11	43	36	20.8%	G	**0.83**
Gradko	50% TEA in acetone	2024	R	Sandwell Mbc	12	30	25	24.2%	G	**0.81**
Gradko	50% TEA in acetone	2024	UB	Sandwell Mbc	12	19	17	8.0%	G	**0.93**
Gradko	50% TEA in acetone	2024	R	Sandwell Mbc	12	20	20	-2.6%	S	**1.03**
Gradko	50% TEA in Acetone	2024	R	London Borough Of Merton	12	27	22	25.7%	G	**0.80**
Gradko	50% TEA in acetone	2024	UB	London Borough Of Wandsworth	10	19	14	31.7%	G	**0.76**
Gradko	50% TEA in acetone	2024	R	London Borough Of Richmond Upon Thames	12	18	19	-9.1%	G	**1.10**
Gradko	50% TEA in acetone	2024	B	London Borough Of Richmond Upon Thames	12	13	13	5.0%	G	**0.95**
Gradko	50% TEA in acetone	2024		**Overall Factor[3] (12 studies)**				**Use**		**0.88**

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.

Table C.3 – Non-Automatic NO_2 Fall off With Distance Calculations (concentrations presented in µg/m^3)

Site ID	Distance (m): Monitoring Site to Kerb	Distance (m): Receptor to Kerb	Monitored Concentration (Annualised and Bias Adjusted	Background Concentration	Concentration Predicted at Receptor	Comments
WORTHING						
N30A	2.2	2.4	42.4	10.2	**41.7**	Predicted concentration at façade of Grove Lodge Cottages, withing AQMA No.2.

In addition to the site listed in the table above, we distance corrected other diffusion tube sites to demonstrate concentrations at relevant receptors. The calculations for these sites are below.

S17/18/19

Enter data into the pink cells

Site Name/ID	Distance (m)		NO_2 Annual Mean Concentration (µg/m^3)		
	Monitoring Site to Kerb	Receptor to Kerb	Background	Monitored at Site	Predicted at Receptor
S17	0.9	5.9	10.0	22.4	17.8
S18	0.9	5.9	10.0	22.6	17.9
S19	0.9	5.9	10.0	21.8	17.5

S44

Enter data into the pink cells

Step 1	How far from the KERB was your measurement made (in metres)?	2	metres
Step 2	How far from the KERB is your receptor (in metres)?	7.4	metres
Step 3	What is the local annual mean background NO_2 concentration (in µg/m^3)?	10.40879	µg/m^3
Step 4	What is your measured annual mean NO_2 concentration (in µg/m^3)?	29.03	µg/m^3
Result	The predicted annual mean NO_2 concentration (in µg/m^3) at your receptor	23.3	µg/m^3

S48

Enter data into the pink cells

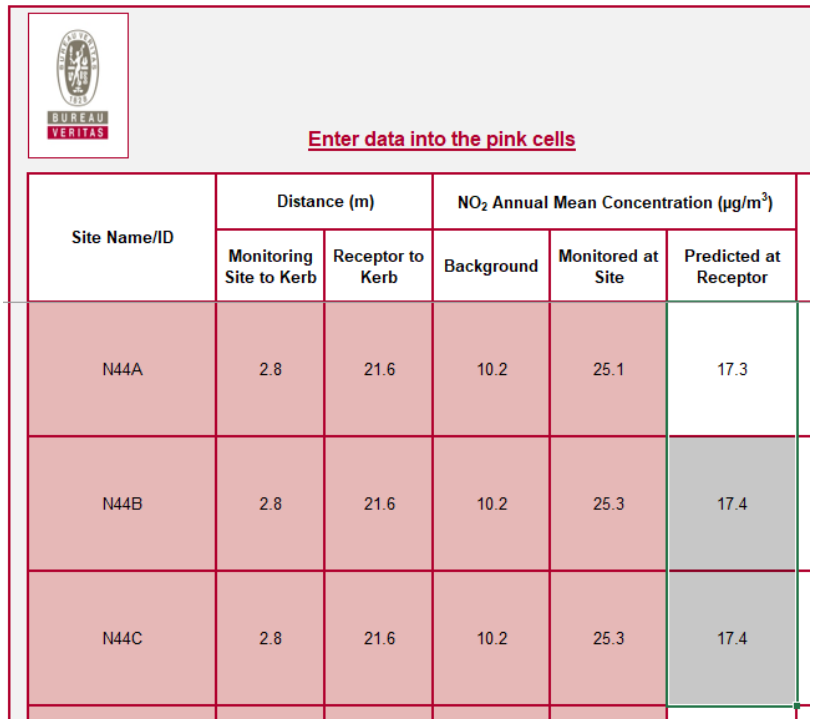
Step 1	How far from the KERB was your measurement made (in metres)?	3.3	metres
Step 2	How far from the KERB is your receptor (in metres)?	4	metres
Step 3	What is the local annual mean background NO_2 concentration (in µg/m^3)?	10.40879	µg/m^3
Step 4	What is your measured annual mean NO_2 concentration (in µg/m^3)?	24.71	µg/m^3
Result	The predicted annual mean NO_2 concentration (in µg/m^3) at your receptor	24.0	µg/m^3

S52

Enter data into the pink cells

Step 1	How far from the KERB was your measurement made (in metres)?	1.8	metres
Step 2	How far from the KERB is your receptor (in metres)?	9.8	metres
Step 3	What is the local annual mean background NO_2 concentration (in µg/m^3)?	10.40879	µg/m^3
Step 4	What is your measured annual mean NO_2 concentration (in µg/m^3)?	30.51	µg/m^3
Result	The predicted annual mean NO_2 concentration (in µg/m^3) at your receptor	22.7	µg/m^3

N44A/B/C



Enter data into the pink cells

Site Name/ID	Distance (m)		NO_2 Annual Mean Concentration ($\mu g/m^3$)		
	Monitoring Site to Kerb	Receptor to Kerb	Background	Monitored at Site	Predicted at Receptor
N44A	2.8	21.6	10.2	25.1	17.3
N44B	2.8	21.6	10.2	25.3	17.4
N44C	2.8	21.6	10.2	25.3	17.4

QA/QC of Automatic Monitoring

Adur: The automatic continuous monitoring site in Shoreham High Street (site AD1) is part of the Sussex-air monitoring network (www.sussex-air.net/). The site is serviced every six months and Local Site Operator (LSO) routine calibrations are completed by Adur District Council every fortnight.

Data validation is carried out via the Sussex-air data management contract, which for 2024 was with Bureau Veritas. Information on the data validation process is available here - https://sussex-air.net/wp-content/uploads/2024/08/Sussex-data-validation-process-v2.1-2024-update.pdf

Worthing: The automatic continuous monitoring site at Grove Lodge Worthing is part of the national Automatic Urban and Rural Network (AURN) and complies with the EU Directive on ambient air quality (2008/50/EC). The site is audited and serviced every six months and Local Site Operator (LSO) routine calibrations are completed by Worthing Borough Council every two weeks.

For information on data ratification visit https://uk-air.defra.gov.uk/assets/documents/Data_Validation_and_Ratification_Process_Apr_2017.pdf.

Data for both sites is available via www.sussex-air.net/

Worthing data is also available via the UKAir website - https://uk-air.defra.gov.uk/data/data_selector

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

The type of /$PM_{2.5}$ monitors utilised within Adur District and Worthing Borough Councils do not required the application of a correction factor.

Automatic Monitoring Annualisation

All automatic monitoring locations within Adur District and Worthing Borough Councils recorded data capture of greater than 75%, therefore it was not necessary to annualise any monitoring data. In addition, any sites with a data capture below 25% do not require annualisation.

NO_2 Fall-off with Distance from the Road

No automatic NO_2 monitoring locations within Adur District and Worthing Borough Councils required distance correction during 2024.

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

Figure D.1 – Map of Automatic and Non-Automatic Monitoring Sites in both Adur and Worthing[7]

See next page

[7] Automatic sites marked in purple

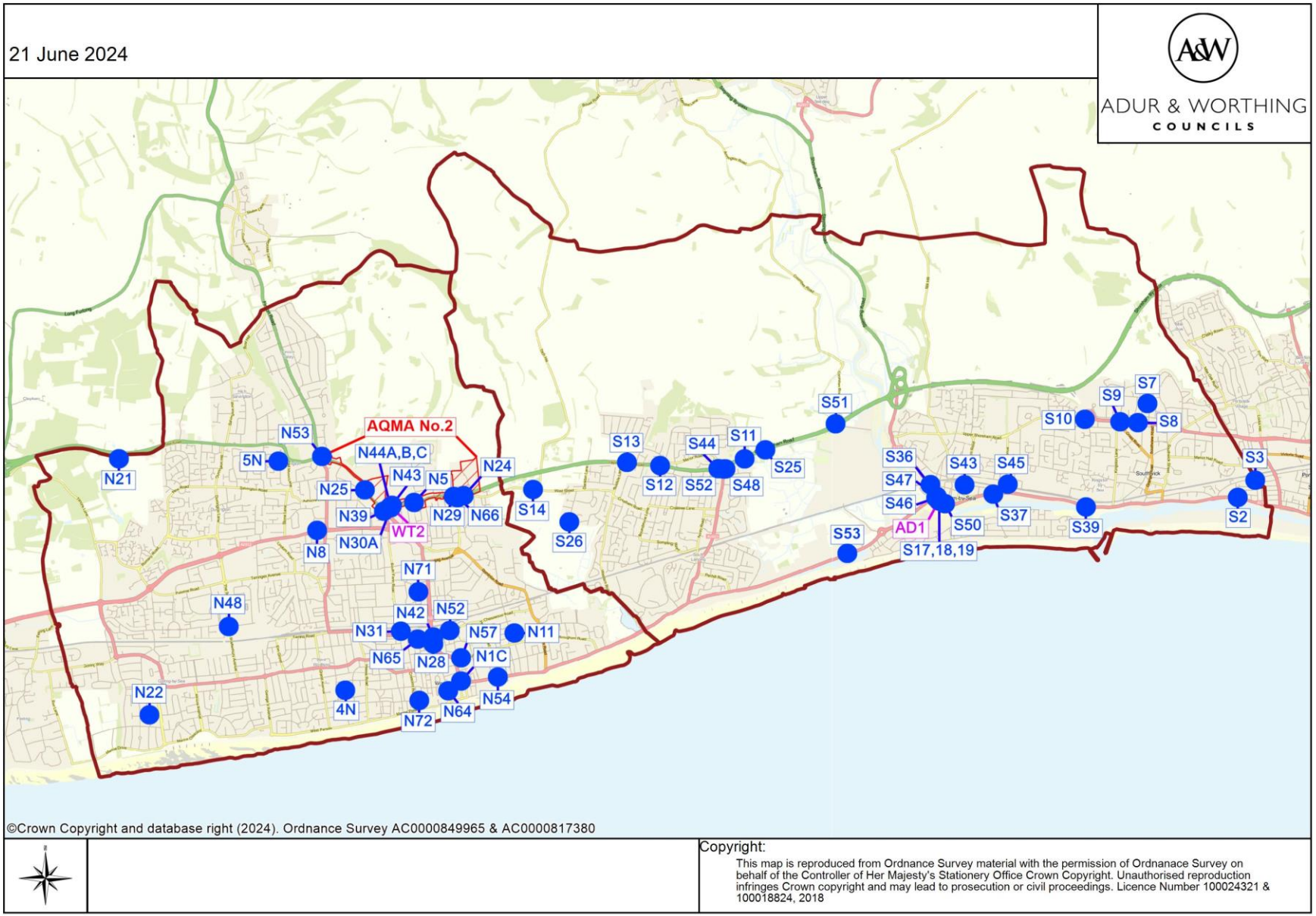

21 June 2024
ADUR & WORTHING
COUNCILS
AQMA No.2
N21
N53
5N
N44A,B,C
N43
N5
N24
N25
N39
N29
N66
WT2
N30A
N8
N71
N48
N42
N52
N31
N57
N11
N65
N28
N1C
N22
4N
N54
N64
N72
S14
S26
S13
S44
S11
S51
S12
S52
S48
S25
S36
S47
S46
S43
S45
S10
S9
S7
S8
S3
S2
S37
S39
AD1
S50
S53
S17,18,19
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Figure D.2 – Map of Monitoring Sites in Adur

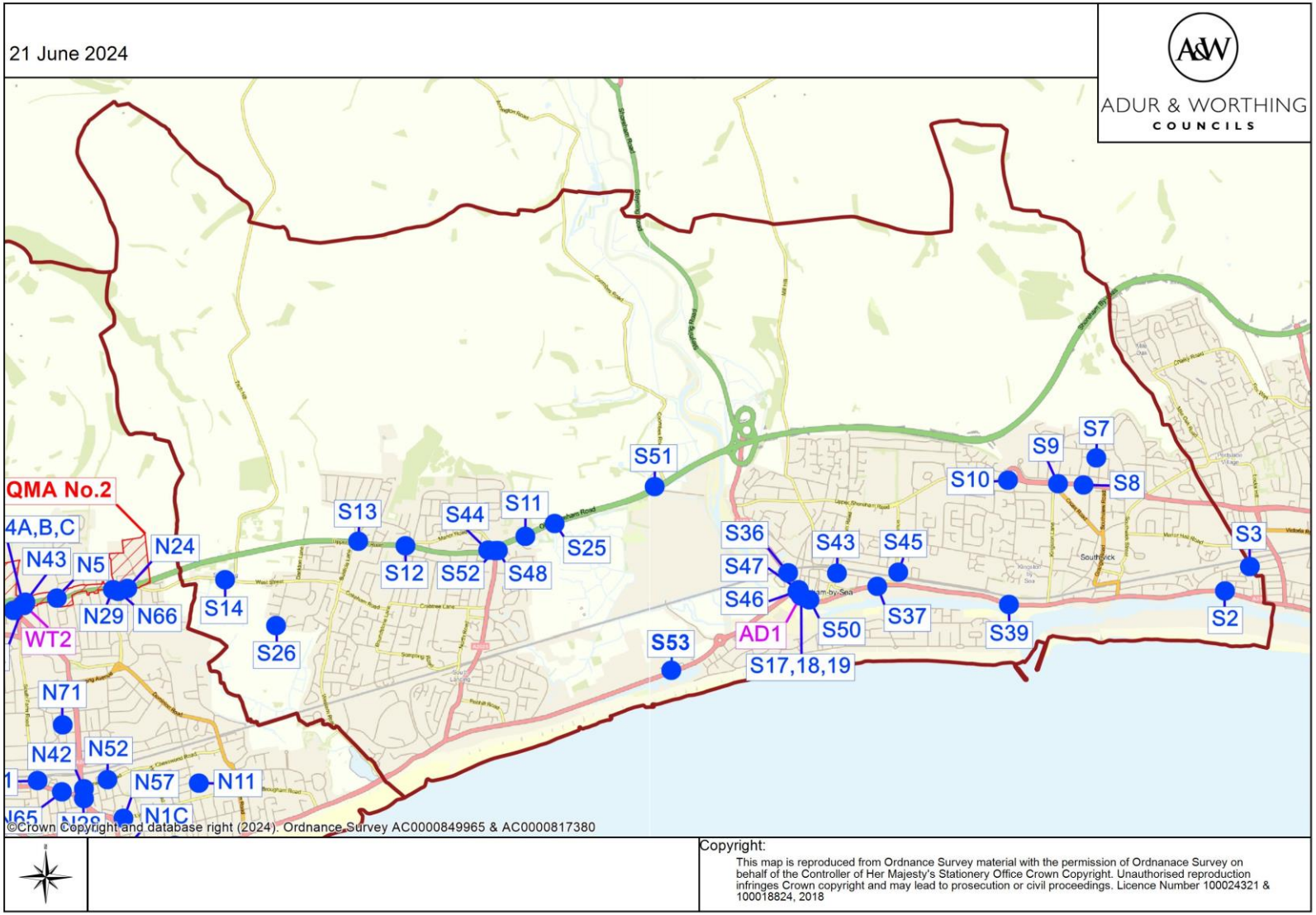


Figure D.3 – Map of Monitoring Sites in Adur – Shoreham

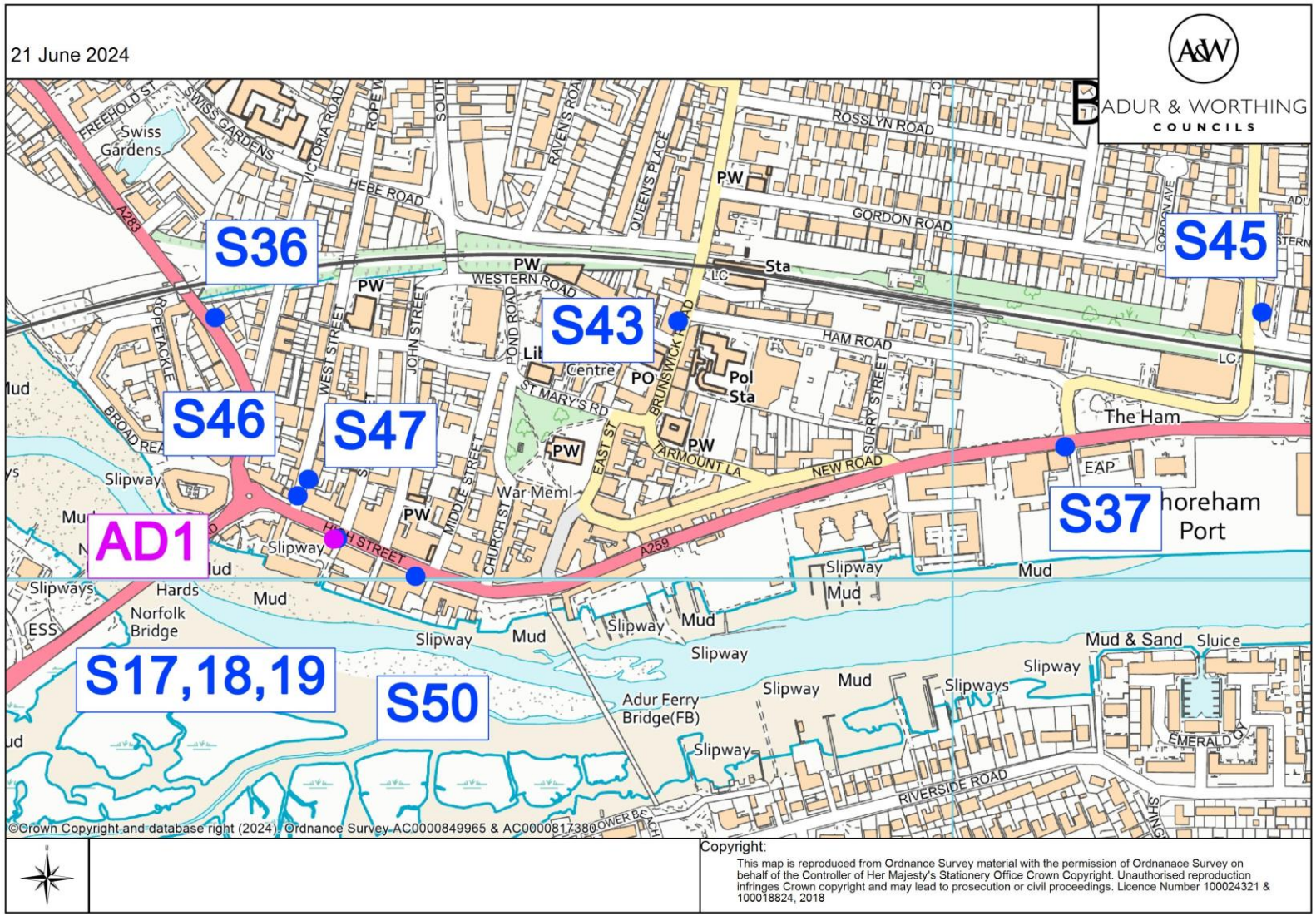


Figure D.4 – Map of Monitoring Sites in Adur – Southwick

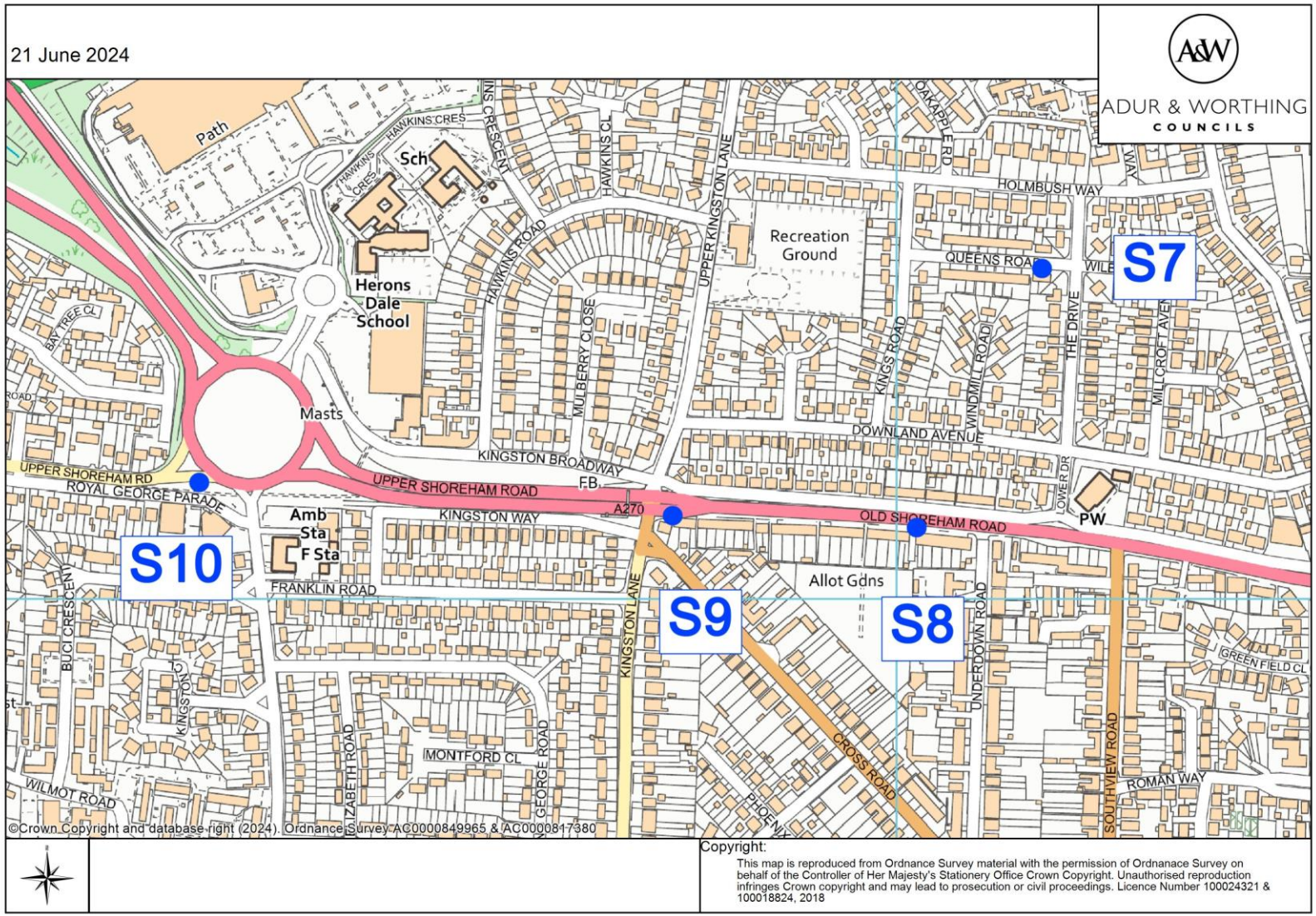


Figure D.5 – Map of Monitoring Sites in Adur – Lancing

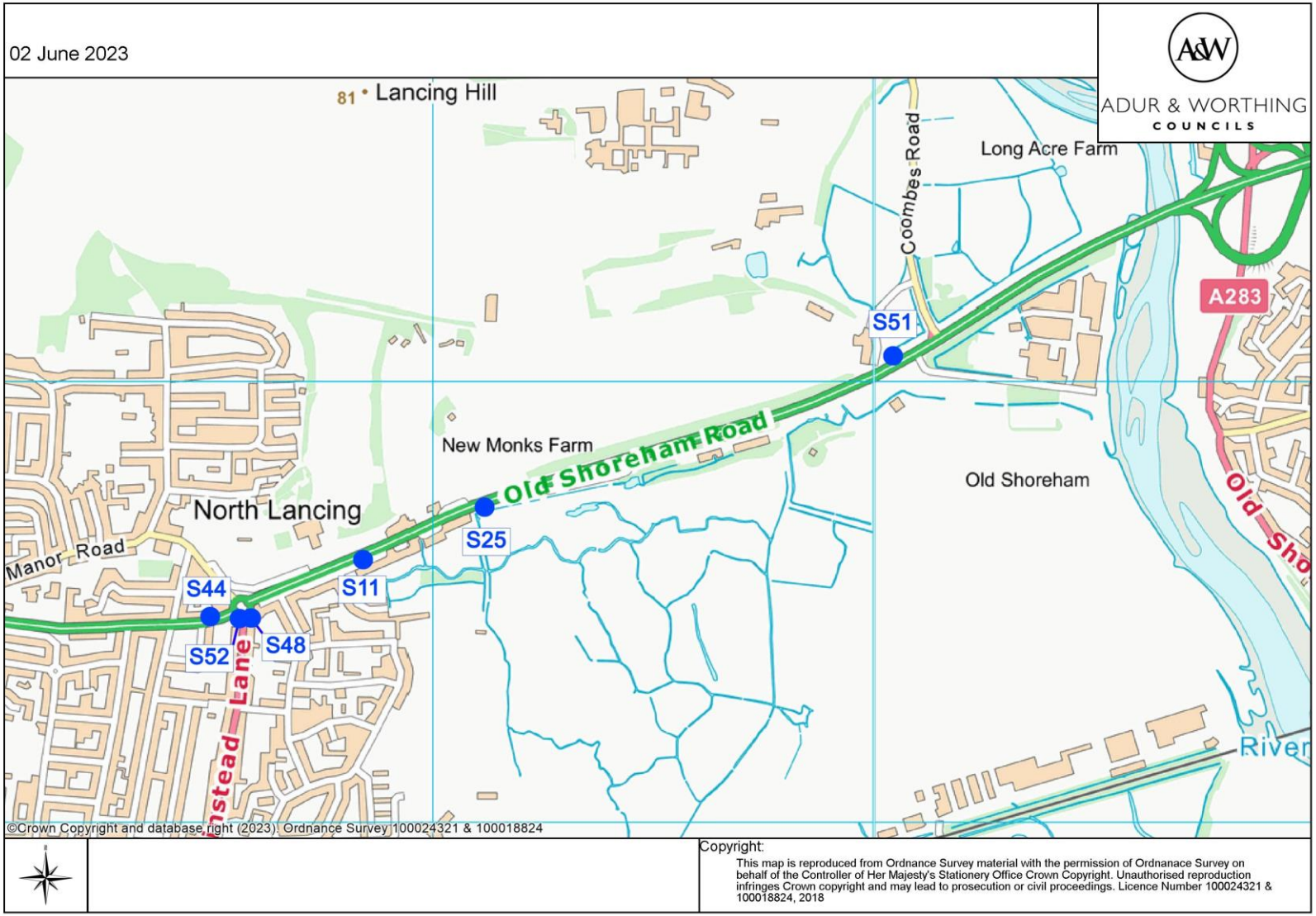


Figure D.6 – Map of Monitoring Sites in Adur – Fishersgate

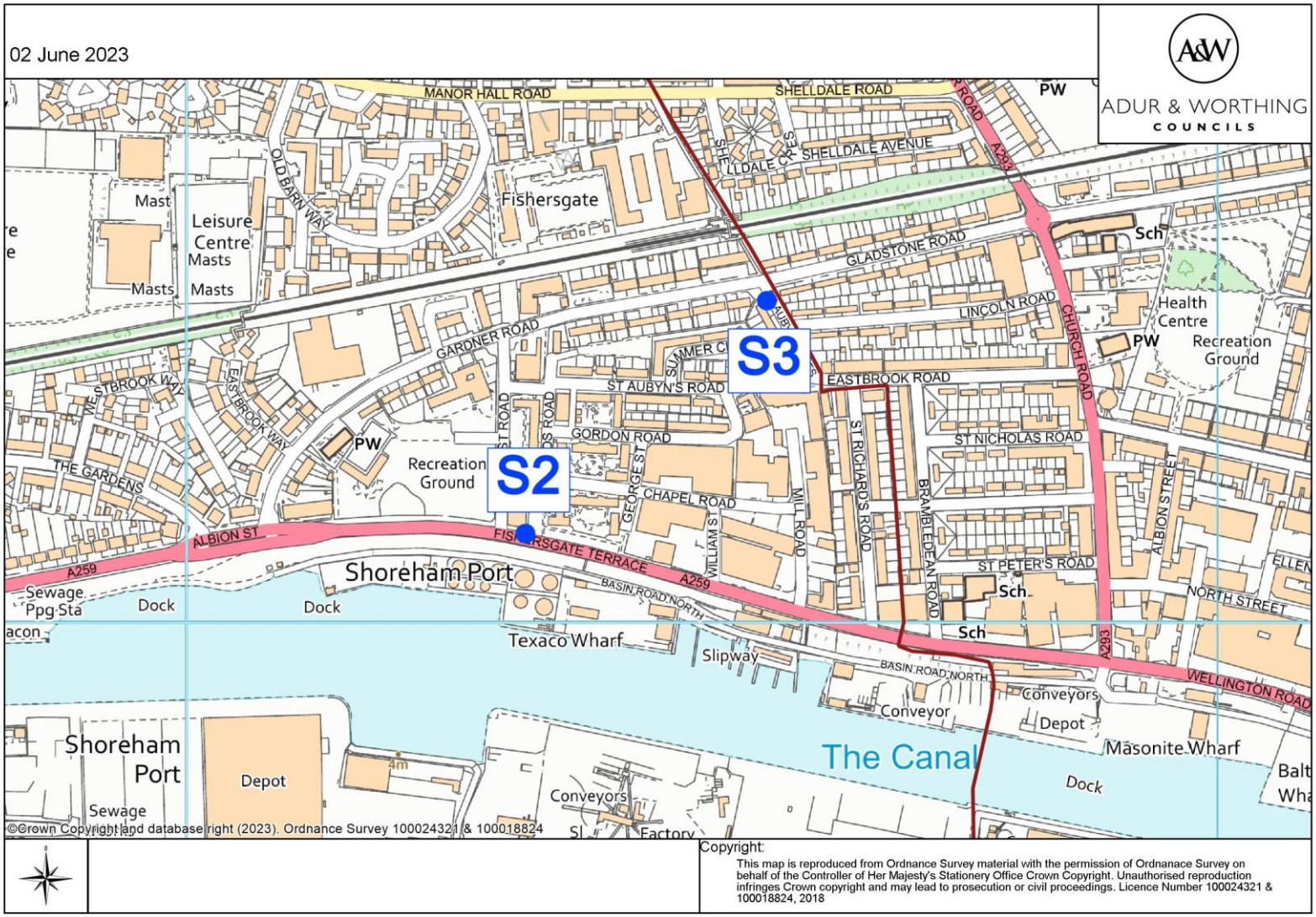


Figure D.7 – Map of Monitoring Sites in Worthing

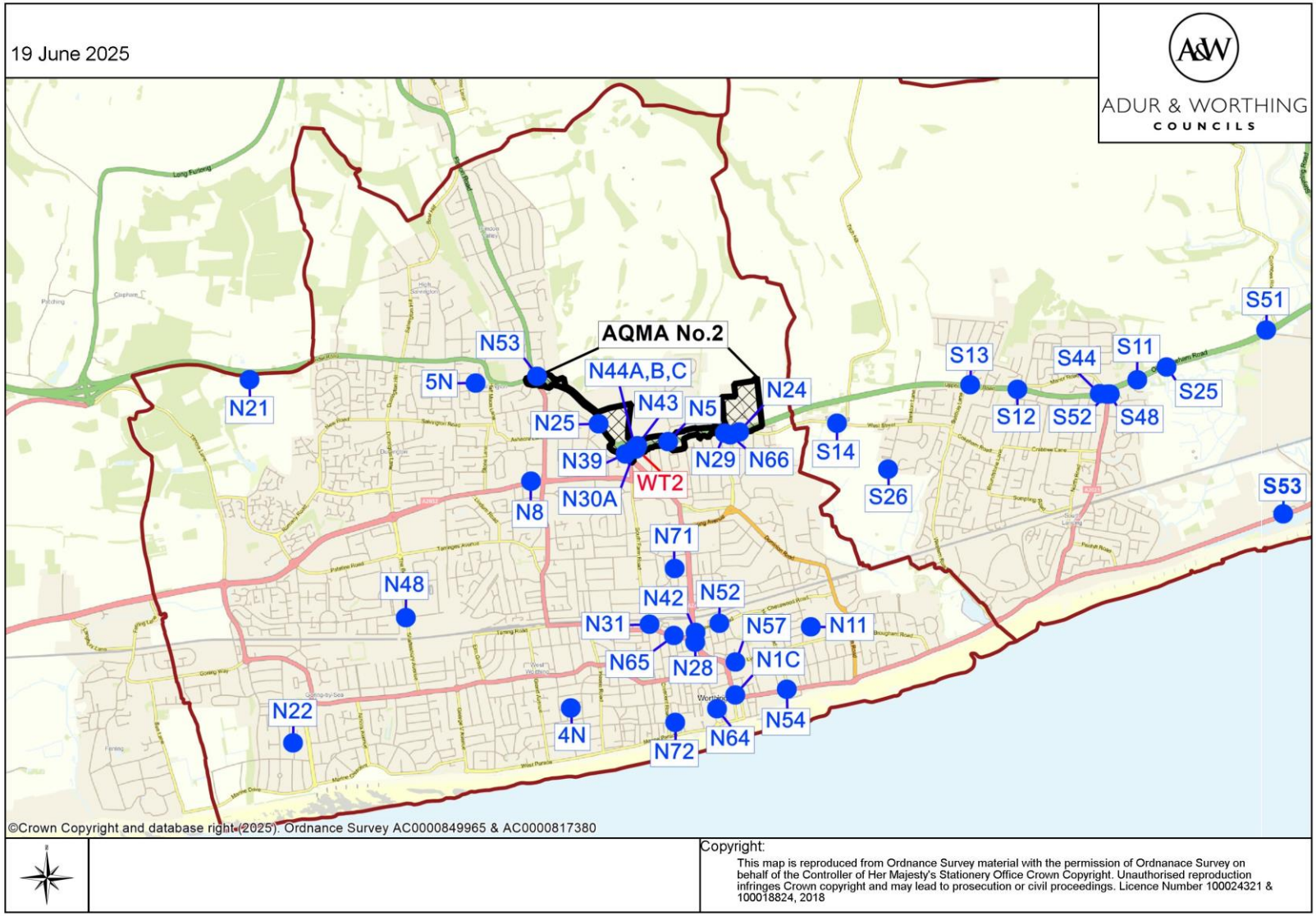


Figure D.8 – Map of Monitoring Sites in Worthing – A27/AQMA No.2

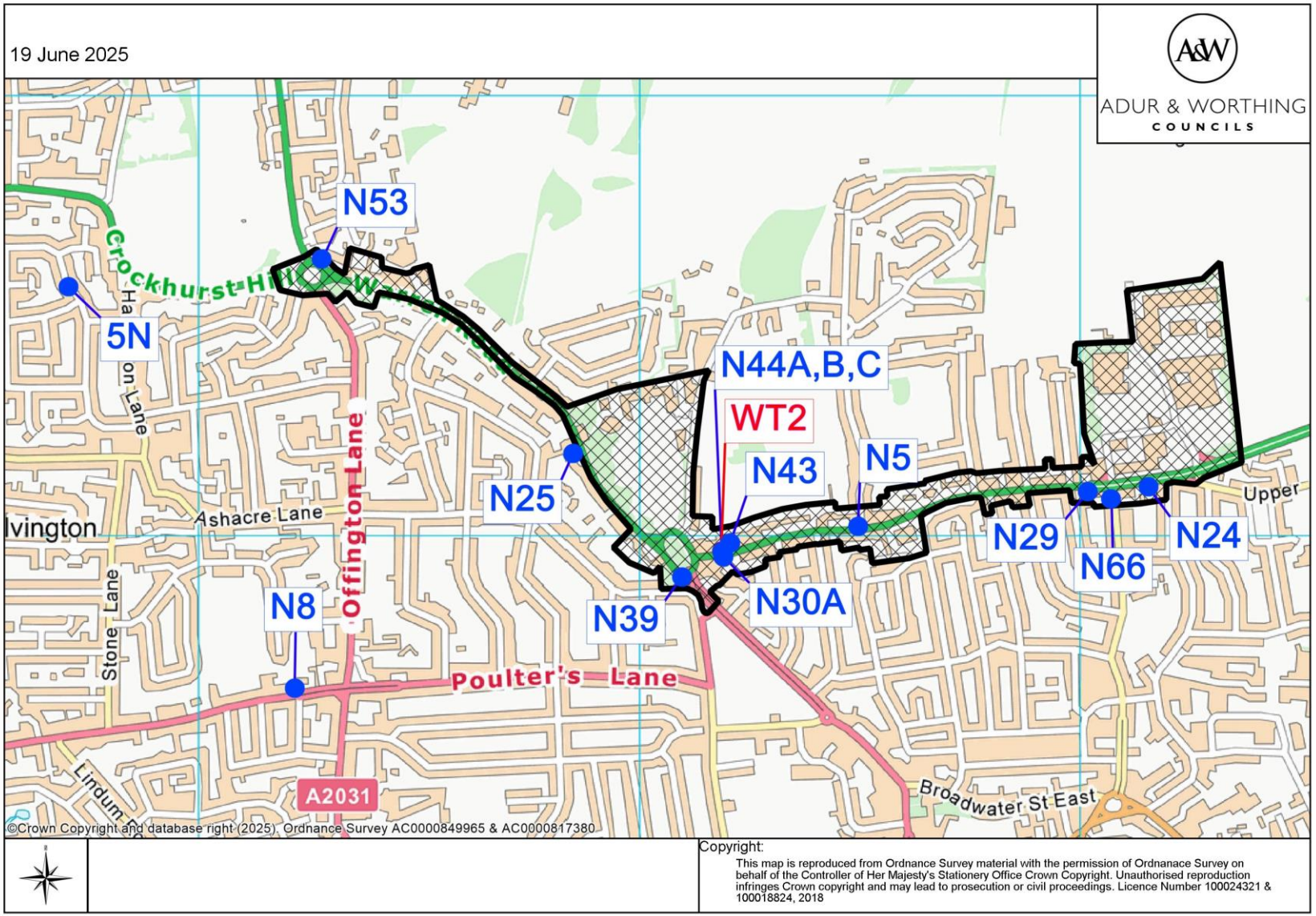


Figure D.9 – Map of Monitoring Sites in Worthing – Central

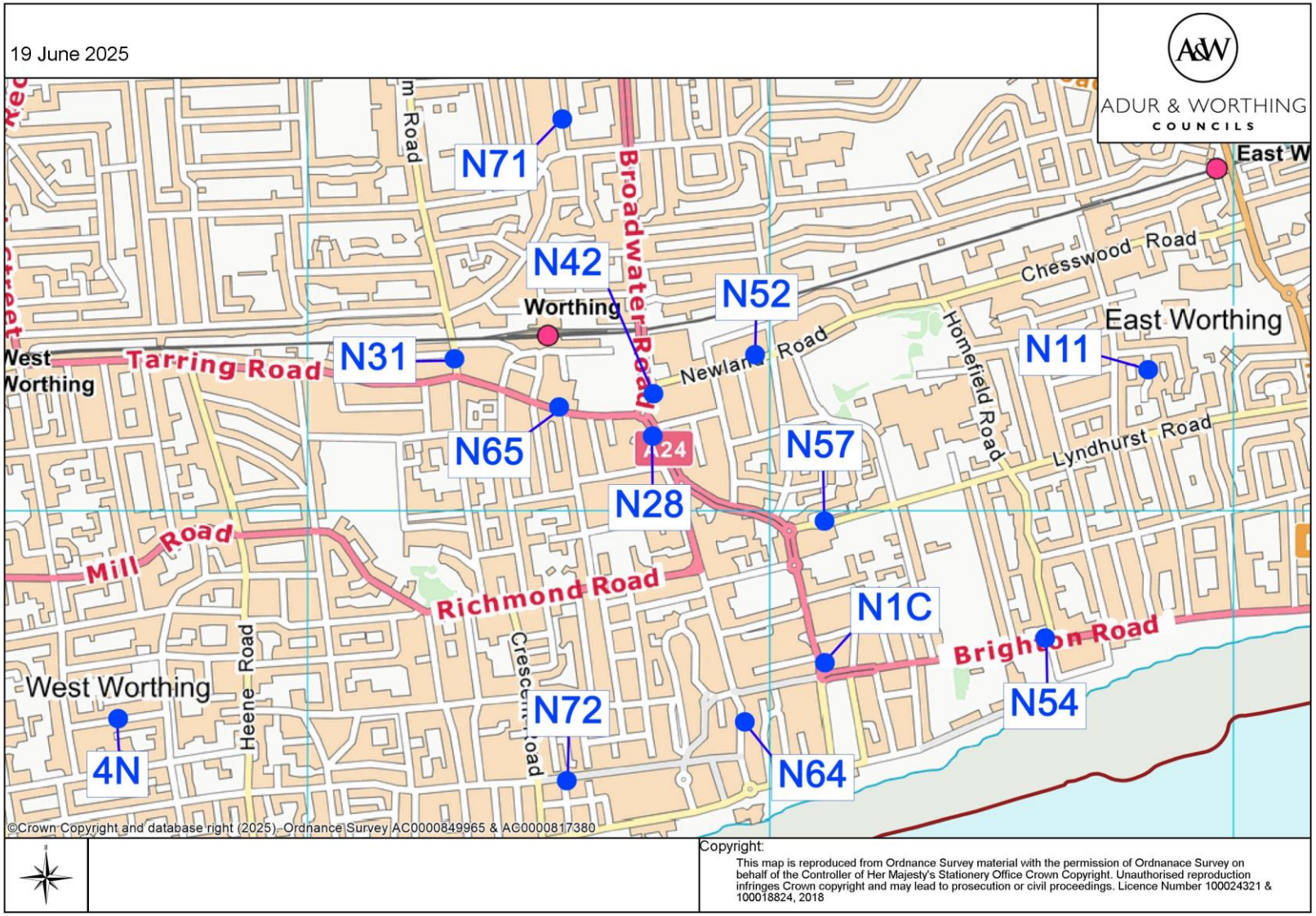


Figure D.10 – Map of Monitoring Sites in Worthing – A24

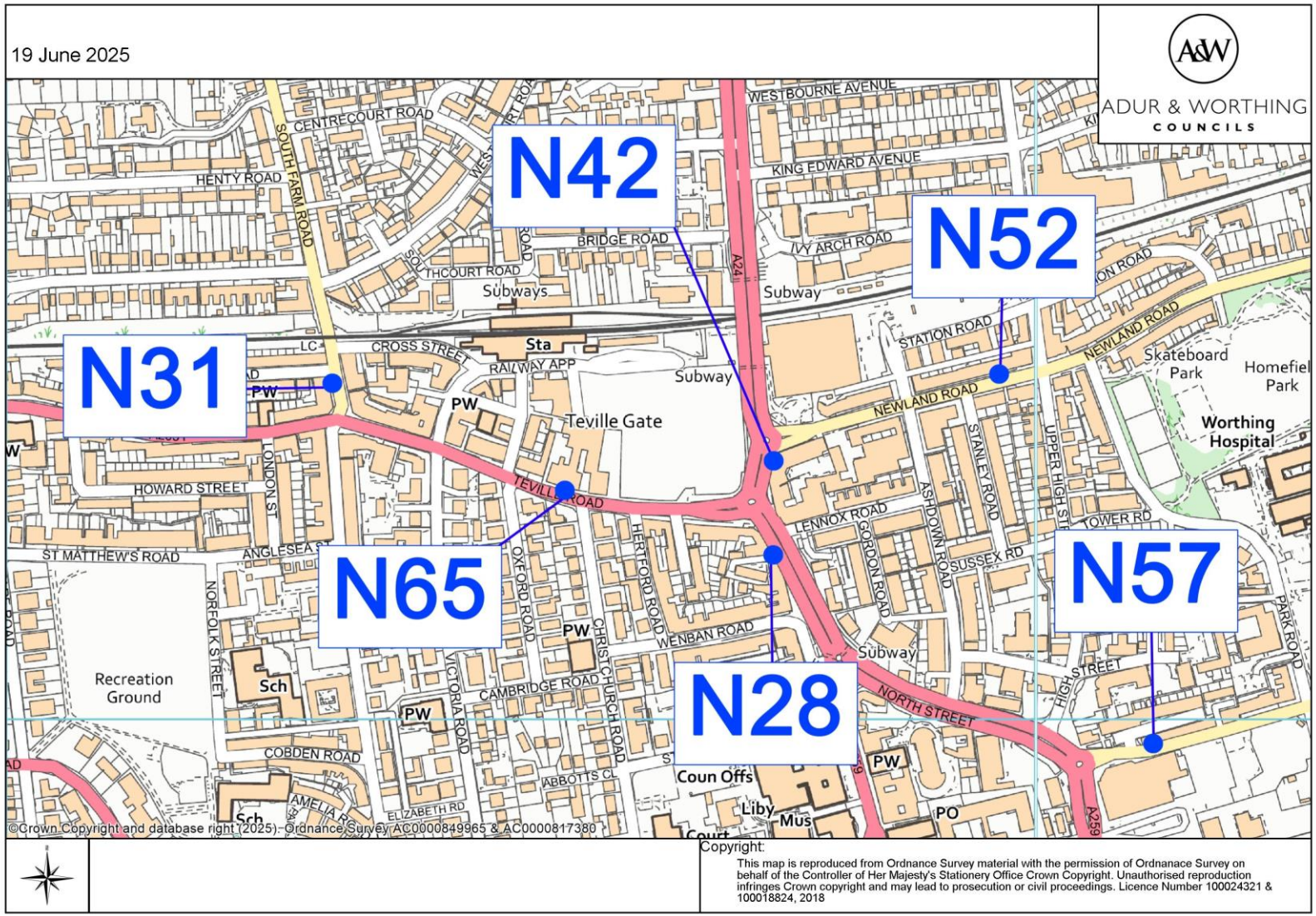


Figure D.11 – Map of Monitoring Sites in Worthing – Goring

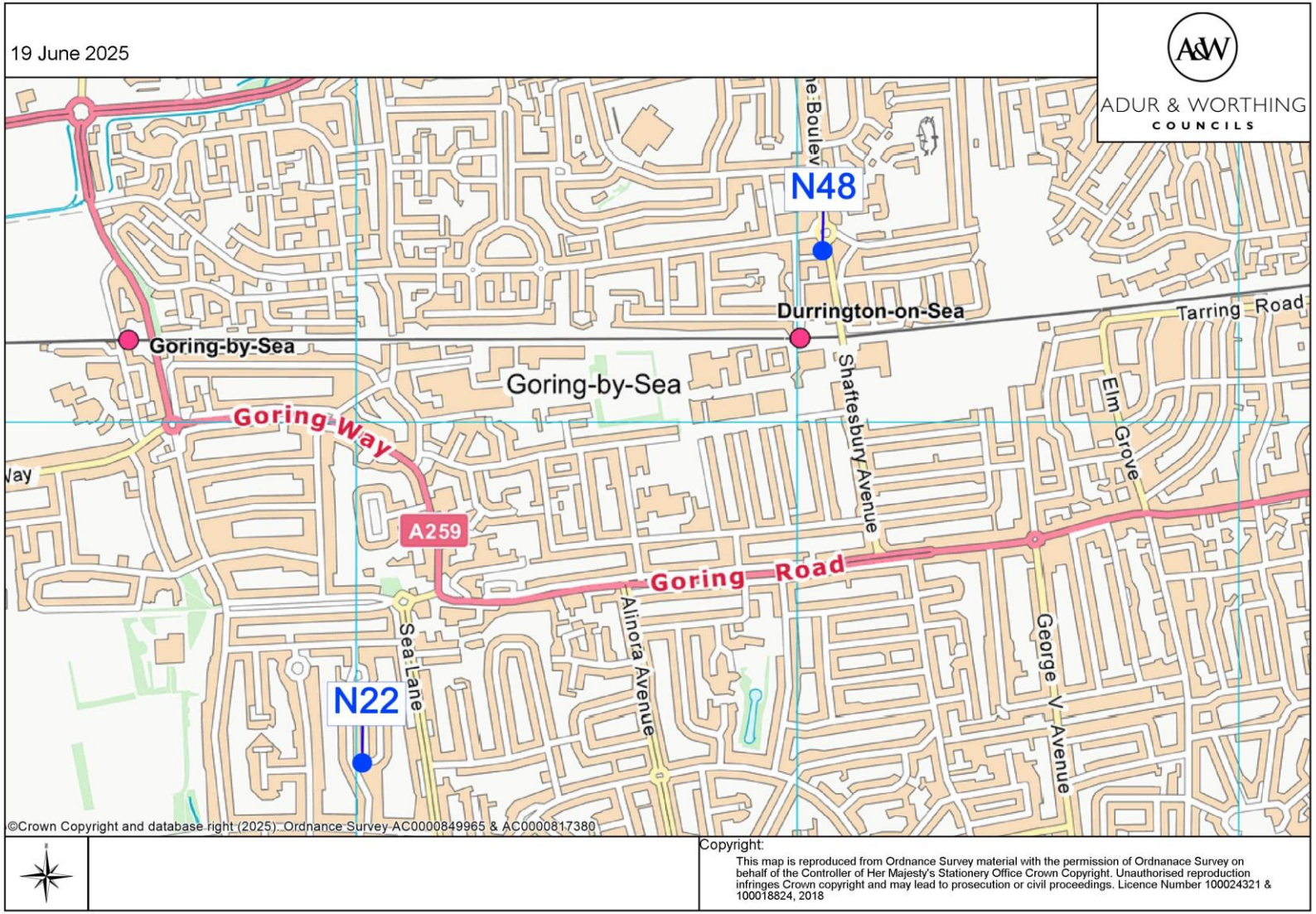
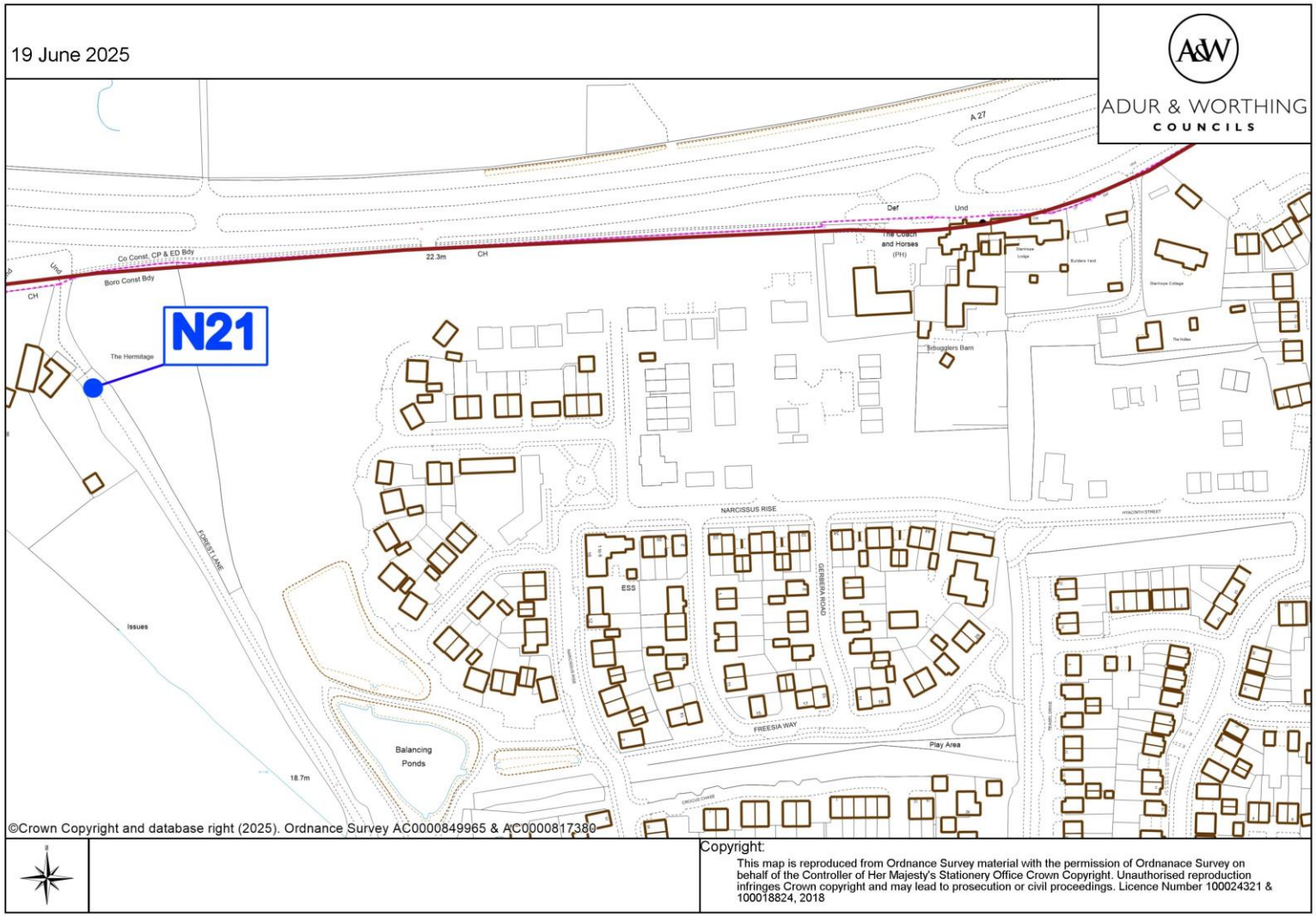


Figure D.122 – Map of Monitoring Sites in Worthing – Durrington New Builds by A27



Appendix E: Local Traffic Data

ADUR: Traffic data has been obtained from West Sussex County Council (WSCC) for four locations in Adur, allowing a comparison of traffic numbers. The table below shows Annual Average Daily Traffic (AADT) data for these sites. Volumes increased at each of the sites with that at the A283 Old Shoreham Road increasing by over 13%.

WORTHING: Traffic data was obtained from National Highways for the A27 and is displayed in Table E.2. Unfortunately despite requesting it, at the time of writing 2023 data had not been received so we have been unable to comment on any changes in traffic flows.

Table E.1 – Adur Traffic Data 2018-2024

		AADT									Difference	% change
Site no.	Location	2016	2017	2018	2019	2020	2021	2022	2023	2024	2023-24	2023-24
5035	A270 Old Shoreham Road, west of Southview Road, Southwick	23,667	23,671	23,288	23,541	N/A	21,229	22,806	22,837	23,535 [8]	698	+3
257	A259 east of New Salts Farm Roundabout, Shoreham	25,915	25,415	25,194	24,730	20,991	22,266	22,242	23,310	24,010	700	+3
5037	A283 Old Shoreham Road, o/p no.138, Shoreham	13,665	13,659	13,775	12,087	10,324	11,261	11,124	10,668	12,108	1440	+13.5
5036	A259 High Street, East of Middle St, Shoreham	No data	No data	No data	No data	No data	No data	15,120	15,332	15,605	273	+1.8

[8] Note: this site is based on data from 12 August to 31 December 2024

-	A27 eastbound between A2025 (Grinstead Lane) and A283		No data	23774	26768	23458	25021	26084	-	No data provided	-	-
-	A27 westbound between A283 and A2025		No data	24910	25520	22789	24057	25079	-	No data provided	-	-

Worthing

Table E.2 – Worthing Traffic Data 2024[9]

NTISLinkID	NTISLinkLocationName	Jan ADT[10]	Feb ADT	March ADT	Apr ADT	May ADT	Jun ADT	Jul ADT	Aug ADT	Sep ADT	Oct ADT	Nov ADT	Dec ADT	24 AADT[11]
103024103	A27 westbound between A2025 and A24 near Worthing (east)	64622	65354	63296	63365	61190	68349	76020	75198	73102	71716	68601	65148	**68194**

[9] Traffic data obtained from National Highways for the A27 through Worthing.

[10] Average Daily Traffic - the total volume of vehicles passing a point on a road over a specific period, typically a year, divided by the number of days in that period. It provides a measure of the average number of vehicles using a road segment daily.

[11] Annual Average Daily Traffic - a standard traffic measurement representing the average number of vehicles passing a specific point on a road in a single day over the course of a year. Calculated by dividing the total annual traffic volume by 365 (or 366 for leap years).

125021201	A27 eastbound between A24 near Worthing (east) and A2025	64619	65860	64399	65327	65008	65276	66477	64989	62812	58919	59654	55098	**63361**
125020401	A27 westbound between A283 and A2025	99422	101134	95594	96779	94610	101468	102756	103519	102943	104339	102096	94908	**100222**
125020201	A27 eastbound between A2025 and A283	98319	100374	103190	103150	104408	106516	108605	109134	108579	109631	107255	98572	**105105**

Appendix F: Summary of Air Quality Objectives in England

Table E.3 – Air Quality Objectives in England[12]

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

[12] 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
ADT	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
ASR	Annual Status Report
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by National Highways
LAQM	Local Air Quality Management
NH	National Highways
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide
WSCC	West Sussex County Council

References

- Local Air Quality Management Technical Guidance LAQM.TG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Local Air Quality Management Policy Guidance LAQM.PG22. August 2022. Published by Defra in partnership with the Scottish Government, Welsh Assembly Government and Department of the Environment Northern Ireland.
- Chemical hazards and poisons report: Issue 28. June 2022. Published by UK Health Security Agency
- Air Quality Strategy – Framework for Local Authority Delivery. August 2023. Published by Defra.
- Air Quality and Emission Mitigation Guidance for Sussex (2021) - Available from https://www.sussex-air.net/