Annual Progress Report (APR)

2025 Air Quality Annual Progress Report (APR) for Inverclyde Council

In fulfilment of Part IV of the Environment Act 1995, as amended by the Environment Act 2021

Local Air Quality Management

30th June 2025

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Report Reference Number	Inverclyde Council Progress Report 2025
Date	30th June 2025

Executive Summary: Air Quality in Our Area

Air Quality in Inverclyde Council

Under the requirement of the Environment Act 1995, Inverclyde Council regularly monitors air quality within the local area. An Automatic Air Quality Monitoring Station situated at East Hamilton Street measures NO_2, PM_{10} and $PM_{2.5}$. A diffusion tube network is also in place which monitors NO_2 at 19 different sites

The results have consistently shown NO_2, PM_{10} and $PM_{2.5}$ levels to be below the National Air Quality Objective, therefore there has been no requirement to proceed to a Detailed Assessment for any of the pollutants. To date there has been no declaration of an Air Quality Management Area within Inverclyde.

There have been no significant changes which have taken place within the local area that could have a negative impact on air quality or any new domestic or industrial sources since the previous report in 2024.

Actions to Improve Air Quality

The Scottish Government's goal is to improve air quality in Scotland with the vision of having 'the best air quality in Europe'. The national air quality strategy Cleaner Air for Scotland 2 - Towards a Better Place for Everyone - gov.scot)[1] sets out various actions required to attain this goal. At a local level, Inverclyde Council recognises the importance of implementing plans, polices and strategies that coincide with the national air quality strategy to improve air quality locally whilst helping achieve Scotland's vision. Inverclyde Council strives to have "Success for all - Getting it right for every child, citizen and community". Over the years, the air quality measured in Inverclyde has always been acceptable meeting the limit values set out in The Air Quality Standards (Scotland) Regulations 2010[2]. Inverclyde Council continuously strives to improve local air quality further and give people within the community the opportunity and the means to make better choices.

Past and present, actions have been taking to promote active travel within the community through effective planning and development. Inverclyde Council's active travel strategy [3] aims to 'Make active travel a realistic, convenient and attractive choice for everyone to make everyday journeys in Inverclyde'. Continuous improvements in infrastructure are

hoped to encourage better travel choices within the community. In 2024 works to continue the National Cycle Network Route 75 (NCN 75) through Gourock train station was completed (Image 1). In addition, a dedicated cycle route was created during the transformation of Greenock's high street. Improvements were also made to a section of the NCN 753 route which connects Lunderston Bay and Inverkip. Furthermore, a feasibility study was commissioned to determine the design and construction of an active travel route from Wemyss Bay to Skelmorlie. This will allow Inverclyde to be better contacted to our neighbouring authority, North Ayrshire. These changes will support the mission set out in Inverclyde's active travel strategy as well as improve local air quality.

Image 1: The new cycle path through Gourock Train Station.

Working towards achieving net zero by 2045, Inverclyde Council's Net Zero Strategy [4] details measures that will be taking to attain this target, this will be implemented through a series of action plans. Since 2012/13 Inverclyde Council has reduced carbon emissions by over 51%. Inverclyde Council anticipates further reductions in carbon emissions by achieving the goals set out in the 2022-2027 action plan, helping tackle climate change and improve local air quality.

Local Priorities and Challenges

Inverclyde Council does not have any specific priorities or challenges for the coming year. Statutory monitoring will continue and the next report to be submitted will be the 2026 Air Quality Annual Progress Report.

How to Get Involved

Air Quality information and Inverclyde Council's Air Quality Annual Progress Reports can be found on the Inverclyde Council website, Air quality - Inverclyde Council [5].

Up to date monitoring results from the automatic monitoring station can be found on the Scottish Air Quality website, Site Data | Scottish Air Quality [6].

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1 Local Air Quality Management

This report provides an overview of air quality in Inverclyde Council 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 pursuit of the objectives. This Annual Progress Report (APR) summarises the work being undertaken by Inverclyde Council to improve air quality and any progress that has been made.

Table 1.1 – Summary of Air Quality Objectives in Scotland

Pollutant	Air Quality Objective Concentration	Air Quality Objective Measured as	Date to be Achieved by
Nitrogen dioxide (NO_2)	200 µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
Nitrogen dioxide (NO_2)	40 µg/m^3	Annual mean	31.12.2005
Particulate Matter (PM_{10})	50 µg/m^3, not to be exceeded more than 7 times a year	24-hour mean	31.12.2010
Particulate Matter (PM_{10})	18 µg/m^3	Annual mean	31.12.2010
Particulate Matter ($PM_{2.5}$)	10 µg/m^3	Annual mean	31.12.2021
Sulphur dioxide (SO_2)	350 µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
Sulphur dioxide (SO_2)	125 µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
Sulphur dioxide (SO_2)	266 µg/m^3, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005
Benzene	3.25 µg/m^3	Running annual mean	31.12.2010
1,3 Butadiene	2.25 µg/m^3	Running annual mean	31.12.2003
Carbon Monoxide	10.0 mg/m^3	Running 8-Hour mean	31.12.2003

2 Actions to Improve Air Quality

2.1 Air Quality Management Areas

Air Quality Management Areas (AQMAs) are declared when there is an exceedance or likely exceedance of an air quality objective. After declaration, the authority must prepare, publish and implement an Air Quality Action Plan (AQAP) within the shortest possible time and no later than 12 months of the date of AQMA Designation Order. The AQAP must set out measures the local authority intends to put in place in pursuit of the objectives within the shortest possible time measures should be provided with milestones and a final date for completion. The action plan itself should have a timescale for completion and for revocation of the AQMA. Where measures to reduce air pollution may require a longer timescale an action plan shall be reviewed and republished within five years of initial publication and then five-yearly thereafter.

Inverclyde Council does not have any AQMAs, there has been no exceedance or likely exceedance of any air quality objectives within Inverclyde.

2.2 Implementation of measures to address air quality

Whilst no action plans or local air quality strategies have been produced by Inverclyde Council, decisions and actions that impact on local air quality are considered in conjunction with national air quality strategy. Scotland's latest air quality strategy 'Cleaner Air for Scotland 2 – Towards a Better Place for Everyone (CAFS2)' (1) sets out how the Scottish Government and its partner organisations propose to further reduce air pollution to protect human health. CAFS2 aims to achieve the ambitious vision for Scotland "to have the best air quality in Europe". A series of actions across a range of policy areas are outlined, a summary of which is available on the Scottish Government's website.

Inverclyde Council has successfully incorporated air quality into a variety of plans, polices, City Deals and other initiatives. Further information to evidence this will be provided in the sections below.

2.2.1 Developmental Planning

The National Planning Framework 4 [7], Scotland's national spatial strategy sets out spatial principles, regional priorities, national developments and the national planning policy. This all-encompassing document assists local authorities in the production of a local development plan. Air Quality is an important policy aspect in planning in both the NPF4 and local development plans. Inverclyde's Local Development Plan [8] (Policy 12) states where a development has the potential to affect local air quality or introduce a sensitive receptor to an area with poor air quality. An Air Quality Impact Assessment is required to identify the likely impacts and sets out how these will be mitigated to an acceptable level.

Furthermore, the NPF4 and the Local Development Plan (Policy 10) requires development proposals to have safe and convenient opportunities for walking and cycling access within the site and where practicable links to the wider walking, cycling and public transport network. This policy also has a condition which requires the development to have an electric vehicle charging infrastructure. These planning requirements coincide with Scotland's National Air Quality Strategy (CAFS2) placemaking and transport themes with the objective of improving connectivity and promoting sustainable travel.

Strategic planning is an effective tool in helping reduce future emissions through the creation of neighbourhoods that are well connected and accessible for all. This helps to reduce car dependency and encourage the public to switch to more sustainable travel. In 2024, Inverclyde Council has started to work on the preparation of the new Local Development Plan. Under the Planning (Scotland) Act 2019 [9], the Council must prepare a new Local Development Plan in conjunction with the NPF4, the Regional Spatial Strategy for the area and Local Place Plans. This new LDP will set out the spatial strategy for the 10-20 years, which will again incorporate planning conditions that will directly or indirectly improve local air quality.

2.2.2 Inverclyde's Transport Routes

Inverclyde is well situated and has a great transport network in place to keep people well connected. The A8 and A78 are two trunk roads that run through the area. There are several bus companies that operate. The rail network is comprised of two train lines and fourteen stations. Situated on the coastal route, Inverclyde has ferry services that operate providing travel links to several locations in Argyll and Bute. Inverclyde is also connected by a comprehensive core path network [10] and National Cycle Network routes [11]. The NCN75 and NCN753 are the main active travel routes through Inverclyde which connects people to Renfrewshire, Glasgow and Ayrshire.

2.2.3 Active Travel

Scotland's Active Travel Vision is that by 2030, "Scotland's communities are shaped around people, with walking or cycling the most popular choice for shorter everyday journeys" [12]. Similarly, Inverclyde Council's ambition is to "Make active travel a realistic, convenient and attractive choice for everyone to make everyday journeys in Inverclyde"

Encouraging active travel is crucial to improving air quality and overall public health. To help achieve this vision it is important to create transport routes for people that are safe and accessible. Inverclyde Council's Local Development Plan [8] recognises the importance of keeping people connected and the significance of a green infrastructure. The Clyde Plan ([13]) also sets out strategies to promote sustainable transport, promote active travel and increase connectivity within the region. Participation within the Glasgow City –Region City Deal Project provides funding opportunities for major infrastructure projects. Funding has been received by the Spaces for People and the Safer Walking, Safer Roads groups to make improvements to cycling, walking, and wheeling infrastructure within the local community. These funding schemes allow permanent and temporary measures to be installed in the local area to improve active travel routes.

Over the years Inverclyde Council has been improving connectivity in the local area, redesigning the landscape to create dedicated cycle lanes to encourage active travel. In 2020 Inverclyde Council set out plans to develop a dedicated cycle route from Gourock to Greenock, with an option for a second phase from Greenock to Port Glasgow. The following year a cycle lane and footway from Battery Park to Container Way, Greenock

was completed. In 2022, further progress was made as a new cycle lane and footpath was installed from the Beacon Art Centre, Greenock to the East India and Victoria harbours. This additional route allowed the West and East of Greenock to be connected, reshaping the National Cycle Network Route 75 (NCN75). In 2023 a dedicated cycle lane was established in Port Glasgow and a cycle lane was installed along Ardgowan Street. Further funding was received from the Scottish Government (through the Sustran's Scotland Network Development Fund), Network Rail and Caledonian Maritime Assets Limited (CMAL) to allow for the continuation of the NCN75 through Gourock. Prior to the restructuring of the route, the NCN75 was being interrupted by Gourock train station. In April 2024, this project was completed creating a new dedicated cycle lane (Image 1). This lane is segregated allowing those using the route to continue on the track or connect them to the train or ferry.

Funding from the Scottish Government and support from both Ardgowan Estate and Sustrans led to improvements to a section of the NCN 753 which connects Lunderston Bay to Inverkip. Prior to the redevelopment of this route, the route this was a narrow single-track that was not suitable for wheelchair users or prams. The works undertaken now makes the route safe and accessible for all.

A project to transform Greenock's town centre went underway in January 2024 aiming to make the area more attractive and accessible. The major redevelopment was funded by Inverclyde Council and Sustrans Scotland through their Places for Everyone scheme. The scheme had the backing of Transport Scotland and Strathclyde Partnership for Transport. The project led to the redesign of Greenock's main street, West Blackhall Street, introducing a one-way system. Car parking is now only permitted down one side of the street and on the opposite side there is a dedicated cycle lane (Image 2).

Image 2: Dedicated cycle lane on West Blackhall Street, Greenock

In 2023/2024 Strathclyde Partnership for Transport (SPT) has provided active travel investment, to commission a feasibility study exploring the construction and design of a new national cycle link between Wemyss Bay and Skelmorlie [14]. This would fulfil transport gaps and connect Inverclyde to North Ayrshire. The objective is to connect places to encourage the public to switch to sustainable travel.

There are a variety of various walking and cycling routes within Inverclyde that can be used by people of all ages and abilities. Information can be found on Inverclyde Council's website and social media outlets [15]. Discover Inverclyde also gives a detailed information surrounding walking and cycling routes for people looking to explore Inverclyde [16].

Inverclyde Council works in partnership with stakeholders to promote and encourage active travel within the community. Stakeholders include local community groups such as Inverclyde Bothy and Community Tracks. Inverclyde Bothy [17] is a local organisation with an online platform providing similar information and has a walk-in hub situated at Gourock railway station. The hub can help people plan walking and cycling routes, allow people to access history walks, health walks or led bike rides. Community Tracks is an online hub that similarly offers a wide range of advice and support for locals. The hub can provide

people with access to cycle maintenance classes, bike fixing workshops, cycling for confidence sessions and led bike rides. In addition, Community Tracks has had a project titled' flattening hills' which allows people to hire e-bikes. The topography in Inverclyde contains a vast number of hills and this can often be a barrier to encouraging active travel. The Community tracks 'flattening hills' project was an initiative that would attract more people within the community to uptake cycling. Links to these community organisations can be found at Active Travel - Inverclyde Council along with other useful websites that provide information surrounding active travel within the community [15].

2.2.4 Transport – Low Emission Zones

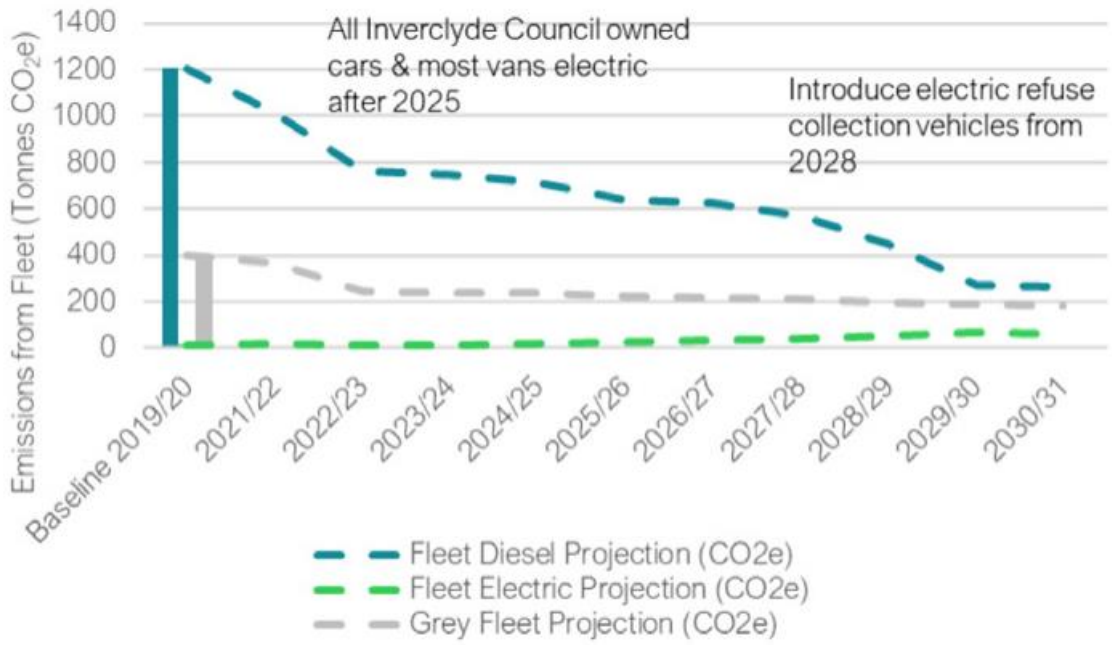
Local authorities working with Transport Scotland and SEPA will look at opportunities to promote zero-carbon city centres within the existing LEZs structure. To date Inverclyde Council has no Low Emission Zones established within the Local Authority area.

2.2.5 Transport - Electrical Vehicles/Charing Infrastructure

To achieve net-zero by 2045 the Scottish Government are phasing out petrol and diesel fuelled cars by 2030. In line with the Scottish Government requirements, Inverclyde Council is striving to have a fully electric fleet in place by 2028. The Council owns a wide range of vehicles including cars, vans, buses, refuge collection lorries, road sweepers etc., in 2021 these were estimated to account for 75% of Inverclyde Council's carbon footprint.

The Environment and Regeneration Committee Delivery and Improvement Plan 2023/26 [18] sets out plans to have an all-electric fleet. The aim is to decrease diesel usage, by March 2026, a reduction in one million litres per year will in turn allow for a 286,000 kg reduction of CO_2 emissions. Similarly, Inverclyde Council's Net Zero Strategy sets out targets for reducing emissions, the graph below (Figure 1) forecasts the gradual decline hoped to be achieved by 2030/31.

Figure 1 - Projected transport-related greenhouse gas emissions produced by Inverclyde Council following electrical vehicle procurement plan



To meet these goals a 12-month procurement programme is in place for the purchasing of Electric Vehicles (EV) and the development of the EV fleet charging infrastructure. Since 2011, Inverclyde Council has been replacing vehicles within its fleet. By the end of 2024, the Council had a total of 55 EVs within its fleet.

To date Inverclyde has a total of 28 council owned public chargers and 20 fleet chargers. In addition to the council owned charging stations there are several privately owned charging stations throughout the local area these can be found using Live Map - Charge Place Scotland [(19)]. Private charging points are commonly found in car parks of supermarkets, train stations and business establishments. The number of privately owned charging points are also increasing in numbers with new commercial premises installing these within their public car parks.

Inverclyde Councils Local Development Plan in line with the National Planning Framework supports the development of the electric vehicle charging infrastructure. Policy 10 states “development proposals, proportionate to their scale and proposed use, are required to include electric vehicle charging infrastructure”. The installation of electric chargers is encouraged in all new build developments but required in larger developments. Further

plans to expand the electric charging infrastructure within Inverclyde is being developed by the Glasgow City Region collaboration through the Electrical Vehicle Infrastructure Fund. The plans are to install accessible charging points at strategic locations across the region to promote a switch to electric vehicles.

2.2.6 Integrated Policy – Climate Change Plan

Inverclyde Council produced the Carbon Management Plan in 2007, with the objective of minimising the generation of carbon emissions from the Councils operation. Since the initial publication the Council has often revised the plan to introduce future targets to achieve further reduction in carbon emissions. The Carbon Management Plan was reinvented and entitled the Climate Change Plan [(20)], this plan focused not only on decreasing carbon emissions but on measures that are required to mitigate climate change at present and in the future. Inverclyde Council introduced a variety of measures to reduce energy consumption; water use and waste production. These measures included switching to electrical vehicles, improving recycling infrastructure and putting LED lamps in streetlights. Upon implementation of the Carbon Management Plan the carbon emissions omitted from the Councils operations have been reducing each year.

In compliance with the Climate Change Act 2009, Inverclyde Council has a statutory duty to report the total amount of greenhouse gas emissions, in tonnes, created by the Council operations over the year (April to March) [(21)]. Inverclyde Council set 2012/2013 as a baseline for reporting on its greenhouse gas emissions to the Scottish Government. Recent figures show emissions have been reduced by 51%. More specifically there has been a 25% reduction in electricity use, 20% reduction in gas use and a 23% reduction in fuel used for transportation. Table 2.1 details the amount of greenhouse gas emissions generated by Inverclyde Council over the last five years. The latest figures are shown in the table below, the figures for the next reporting year (2023/2024), have still to be published.

Table 2.1 Inverclyde Council's Greenhouse Gas Emissions

Greenhouse Gas Emissions Generated by Inverclyde Council for the last 5 years					
Year	2018/2019	2019/2020	2020/2021	2021/2022	2022/2023
tCO_2e	10,928	10,212	10,564	11,705	9,362

The Climate Change Plan [20] also documents the total greenhouse gas emissions generated by the whole of Inverclyde. The most current data on greenhouse gas emissions generated by Inverclyde has been produced by Department for Energy Security and Net Zero [22]. Table 2.2 shows the levels of greenhouse gas emissions recorded over a five-year period for all of Inverclyde. The data presented in the Table 2.2 has been revised following the last update in national statistics June 2024. The Government advises that statistics dating back to 2005 may be altered due to methodological improvements. The latest data for the past five years shows the greenhouse gas emissions generated by Inverclyde have been consistent.

Table 2.2 Inverclyde's Greenhouse Gas Emissions

Greenhouse Gas Emissions Generated by all of Inverclyde in the last 5 years					
Year	2018	2019	2020	2021	2022
$ktCO_2e$	344.3	331.2	319.2	339.7	318.3

2.2.7 Integrated Policy – Net Zero Strategy 2021-2045

The Climate Change (Emissions Reduction Targets) (Scotland) Act 2019, set the target of reducing Scotland's carbon emissions to net zero by 2045. Local Governments have a major role, legally and morally in the reduction of carbon emissions to achieve the net zero target. In 2021, Inverclyde Council published the Net Zero Strategy 2021-2045(4). This strategy aims to implement a series of actions to secure a 73% reduction in carbon emissions by the period 2030/2031 based on the 2012/2013 baseline. From 2030/2031 Inverclyde Council will look to reduce carbon emissions even more by undertaking an improvement process (Plan-Do-Check-Act), working collaboratively with organisations and where needed using certified carbon sinks to offset remainder emissions to attain the net zero target.

Inverclyde Council is continuing its work to implement the measures detailed in the Climate Change Plan and introduce additional measures that will become viable to secure further reduction in carbon emissions. Possible solutions are those detailed in the Net Zero Strategy 2021-2045, these include switching to hydrogen fuelled vehicles, using water-based heat pumps to decarbonise heating systems and/or introduce advanced thermal insulation products to buildings to increase the retention of heat and improve energy efficiency.

Furthermore, the Environment and Regeneration Committee Delivery and Improvement Plan 2023/26 has set out to deliver the Net Zero Strategy and Action Plan 2022/27. This work will enable further carbon reductions in order to protect our natural environment. The Committee Delivery and Improvement Plan is revised each year to ensure it reflects local and national policy changes.

2.2.8 Integrated Policy - Local Heat and Energy Efficiency Strategy

Over the years Inverclyde Council has provided financial assistance, through the Energy Efficient Scotland Area Based Schemes' to help improve the energy efficiency of properties within the local area. The Scottish Government 'Energy Efficient Scotland Area Based Schemes' (ABS) has enabled Inverclyde Council to provide funding to private homeowners to enable energy efficiency measures to be taken. This funding helps private households, that are in or at risk of fuel poverty, to undertake measures to reduce energy usage and costs. The objective of the funding is to support eligible households to have an energy performance certificate rating of C or better by 2030. Whilst the aim of the funding is to improve the energy efficiency of properties within Inverclyde, simultaneously it reduces energy usage and carbon emissions which helps to improve air quality over time.

The Local Heat and Energy Efficiency Strategies (Scotland) Order 2022 [23] places a statutory duty on all Scottish local authorities to publish a Local Heat and Energy Efficiency Strategy (LHEES) and an accompanying 5-year Delivery Plan in line with guidance issued by the Scottish Government. In 2024, Inverclyde Council published a LHEES [24] detailing a place-based approach to improving the energy efficiency and decarbonising the heat supply locally. The strategy sets out a range of interventions over the years to make all buildings within Inverclyde more energy efficient by switching away from fossil fuel-based heat systems to heat pumps/networks. The interventions proposed aim to decarbonise the heat supply and reduce fuel poverty within Inverclyde. It is estimated the heating domestic properties within Inverclyde is estimated to generate 41% of Inverclyde's CO_2 emissions. Switching to low carbon technology will not only help tackle fuel poverty but it will improve local air quality.

2.3 Progress on Measures to Improve Air Quality

Complying with Local Air Quality Management duties, Inverclyde Council has chosen the top three air quality improvement measures to report on. As discussed in the previous sections there are a range of policies and actions that are being progressed by different departments within Inverclyde Council which directly/indirectly improve air quality. The measures detailed below are set out in Inverclyde Councils Net Zero Strategy [(4)].

Table 2.3 – Progress on Measures to Improve Air Quality

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
1	Work with all Council Services and key partners including the Scottish Government to improve the quality of our emissions date and reporting mechanisms, and reduce carbon emissions annually to reach Net Zero by 2045	Policy guidance and development control	Ongoing	Chief Executive Partners including Scottish Government	In Progress	Not funded		Progress update – May 2024 The climate change reporting data submitted by the Council shows that, from a baseline of 2012/2013 the Council continues to steadily reduce its greenhouse gas emissions. By 2022/23, the Council has reduced its emissions from 19,104 in 2012/13 to 9,362 tonnes, a reduction of 51%.	
2	Continue the roll-out of new Electric Vehicle (EV) charge points around the area; develop management and maintenance of existing charge points	Transport planning and infrastructure Promoting low emission transport	2022-ongoing	Roads Services; Transport Scotland (Charge Place Scotland); Planning Service; partners	In Progress	Partially Funded		Progress update – May 2024: Further to the Glasgow City Region Study Inverclyde and partner Councils are considering options for the development of EV network which is covered by separate report on agenda of May 24 Committee.	
3	Work with partners to improve cycling route connectivity and safety, particularly to connect rural communities to larger settlements and/or public transport hubs and connectivity to local amenities	Transport planning and infrastructure Promoting low emission transport Alternatives to private vehicle use	Ongoing	Roads Services; funding partners; local cycle groups	In Progress	Funded		Progress update – May 2024: On-going discussion with funding partners to develop future schemes	

3 Air Quality Monitoring Data and Comparison with Air Quality Objectives

3.1 Summary of Monitoring Undertaken

3.1.1 Automatic Monitoring Sites

This section sets out what monitoring has taken place and how local concentrations of the main air pollutants compare with the objectives.

Inverclyde Council undertook automatic (continuous) monitoring at East Hamilton Street, Greenock site during 2024. Table A.1 in Appendix A shows the details of the site. National monitoring results are available at: Site Data | Scottish Air Quality [6].

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

Inverclyde Council undertook non- automatic (passive) monitoring of NO_2 at 19 sites during 2024. Table A.2 in Appendix A shows the details of the sites.

Appendix A shows the details of the NO_2 diffusion network. Maps showing the location of the monitoring sites are provided in Appendix D. Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

3.2 Individual Pollutants

The air quality monitoring results presented in this section are, where relevant, adjusted for annualisation and bias. Further details on adjustments are provided in Appendix C.

3.2.1 Nitrogen Dioxide (NO_2)

Table A.3 in Appendix A compares the ratified monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40 µg/m^3 at automatic monitoring sites.

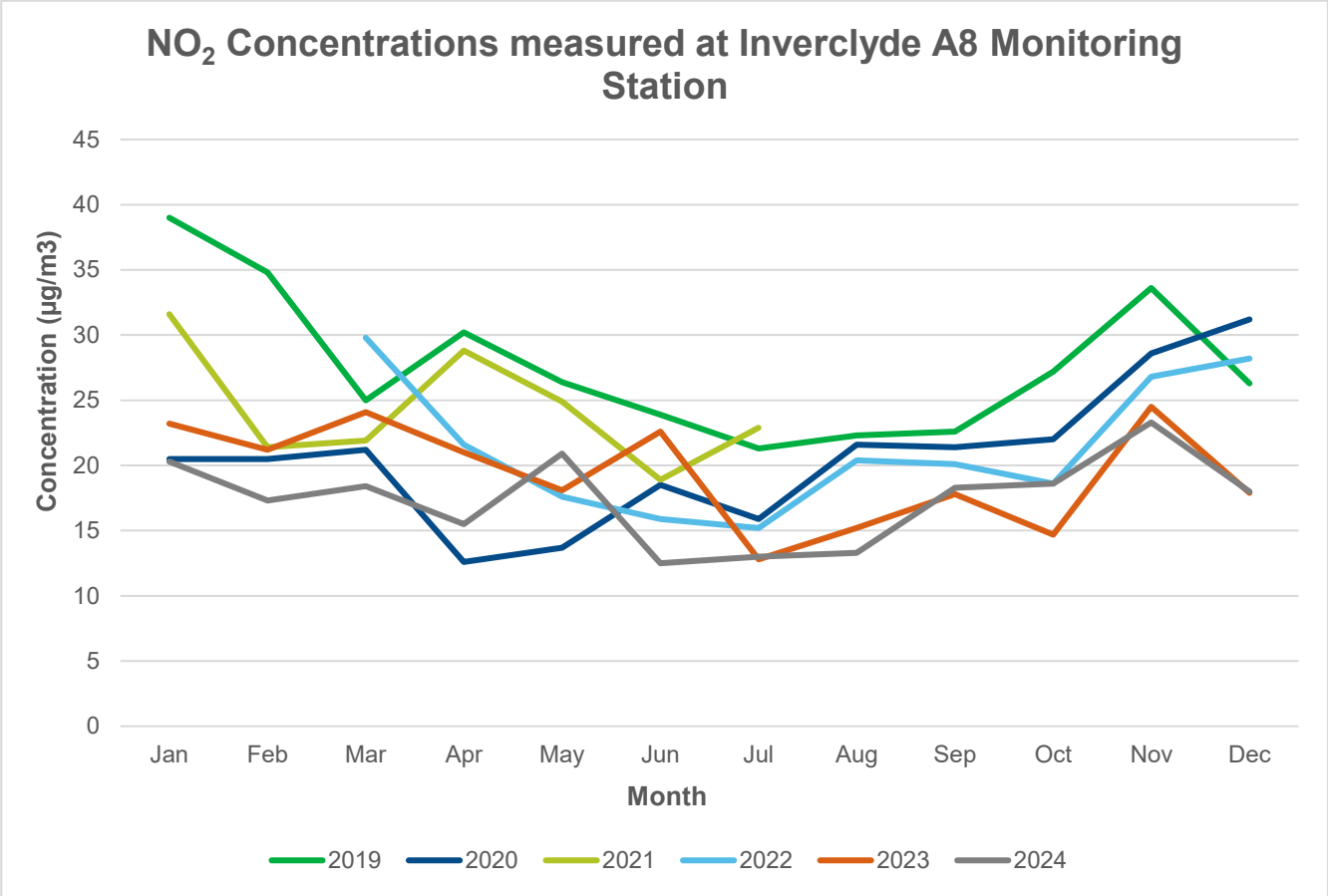
Table A.4 in Appendix A compares the adjusted monitored NO_2 annual mean concentrations for the past five years with the air quality objective of 40 µg/m^3 at non automatic monitoring sites.

For diffusion tubes, the full 2024 dataset of monthly mean values is provided in Appendix B.

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 200 µg/m^3, not to be exceeded more than 18 times per year.

In 2024, NO_2 was measured continously throughout the year (98% Data Capture) with an annual mean concentration of 17 µg/m^3 below the National Air Quality Objective. This has been the lowest annual mean concentration recorded for NO_2 in the past five years. In addition, there were no exceedances of the 1-hour mean objective.

Figure 2- NO_2 Concentrations measured over 5 years in Inverclyde.



Analysing the NO_2 concentrations over the past five years there is notable difference in the concentrations measured at the start of the period compared to the past year.The highest concentrations were measured in 2019, these were the concentrations measured pre-covid. NO_2 concentrations in 2024 has decreased considerably, on average there is a 37% reduction in compairson to 2019 levels. NO_2 concentrations measured during April and May did peak, this is in relation to road works and traffic congestion during this time. Nonetheless, the average NO_2 concentration measured for 2024 is the lowest recorded in the past five years.

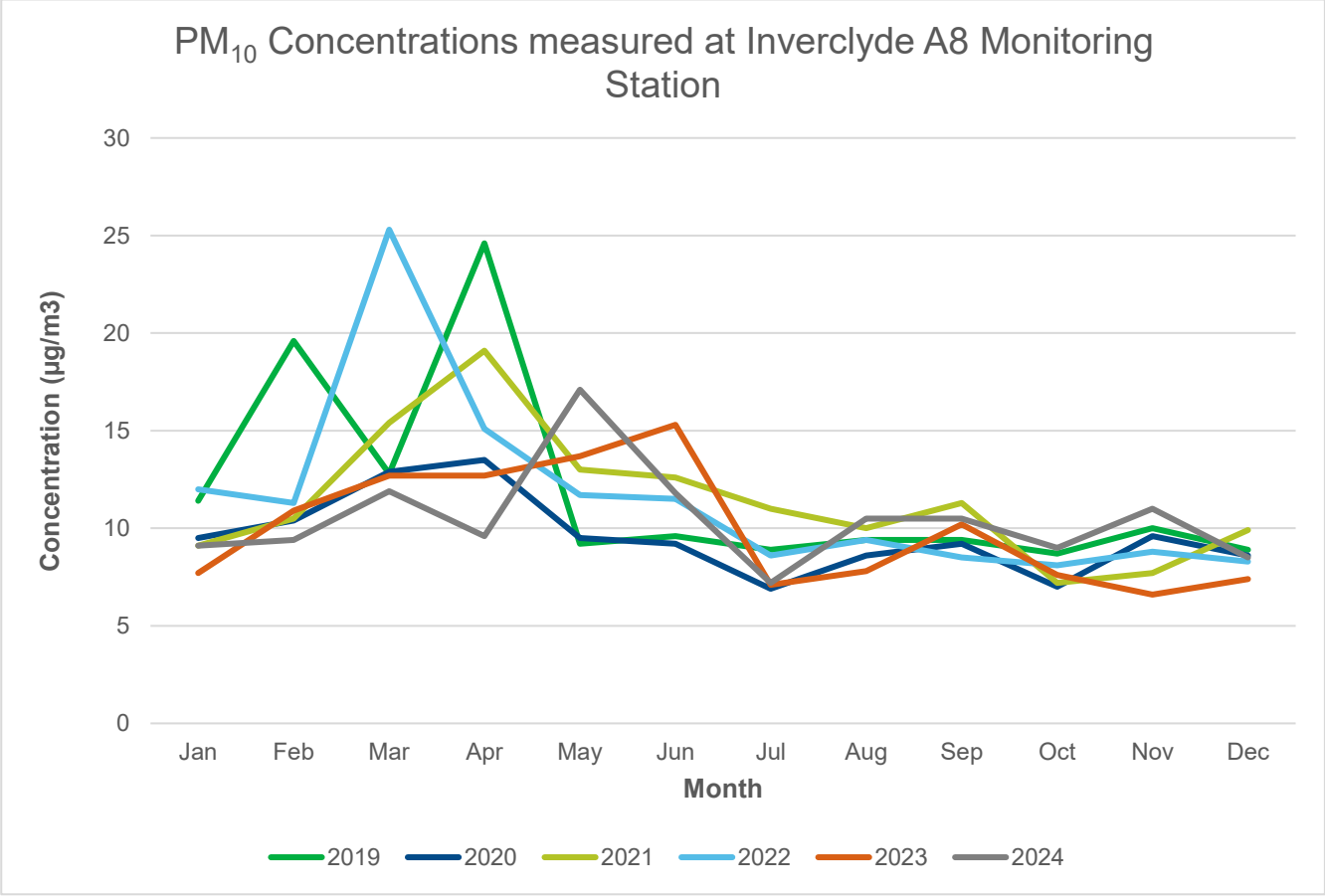
3.2.2 Particulate Matter (PM_{10})

Table A.6 in Appendix A compares the ratified and adjusted monitored PM_{10} annual mean concentrations for the past five years with the air quality objective of 18 µg/m^3.

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

In 2024, PM_{10} was measured continously throughout the year (100% Data Capture) with an annual mean concentration of 10 µg/m^3 , below the National Air Quality Objective. In addition, there was no exceedences in the 24-hour mean objective.

Figure 3 – PM_{10} Concentrations measured over 5 years in Inverclyde



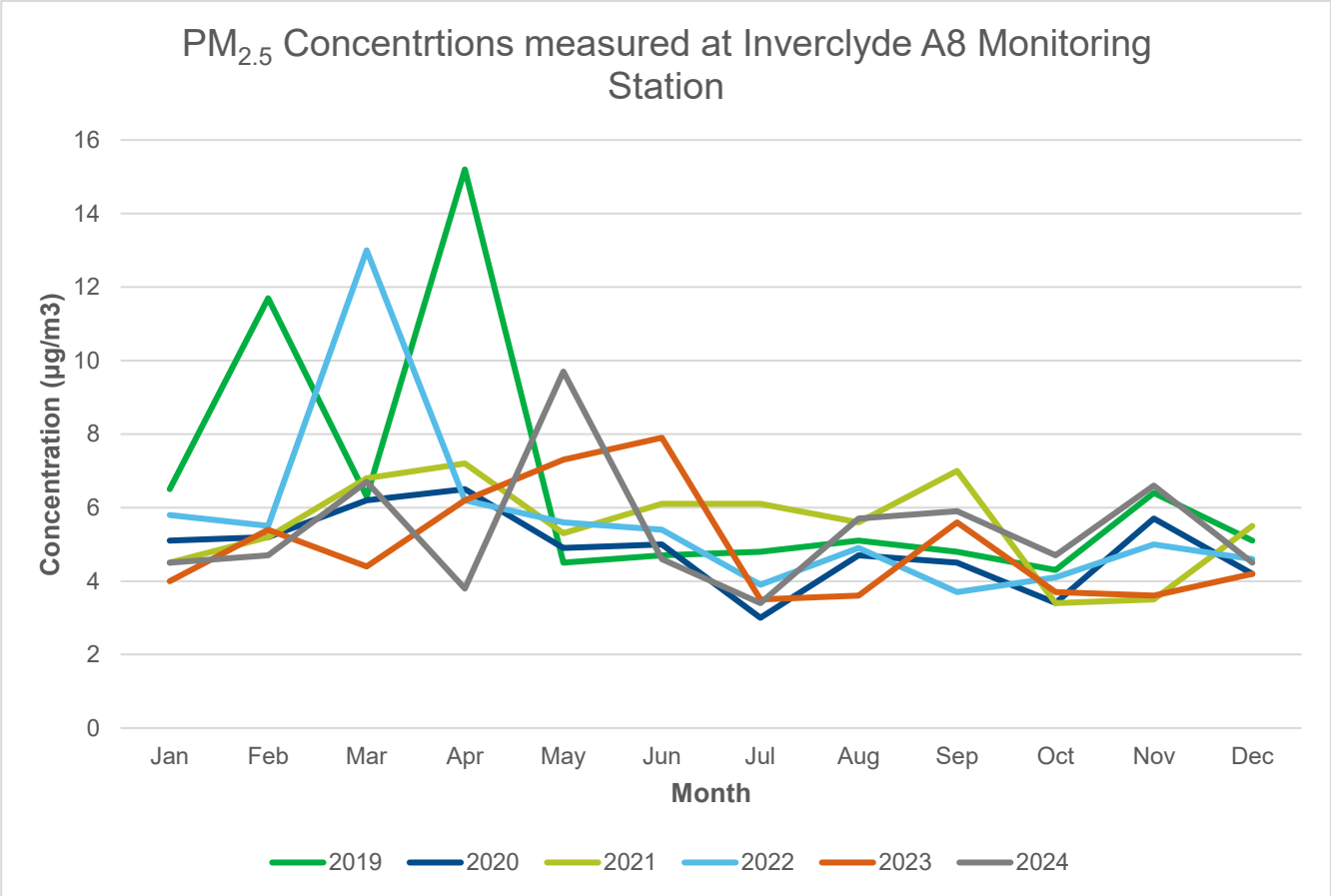
The PM_{10} concentrations measured in the past five years are depicted in Figure 3. The graph shows the PM_{10} concentrations are fairly comparative over the years with the exception of some increased concentrations in 2019, 2022 and 2023. The annual mean PM_{10} concention has measured 10µg/m^3 for the past two years. To date this is the lowest PM_{10} concentration recorded by Inverclyde's automatic monitoring station.

3.2.3 Particulate Matter ($PM_{2.5}$)

Table A.8 in Appendix A compares the ratified and adjusted monitored PM2.5 annual mean concentrations for the past five years with the air quality objective of 10 µg/m3.

In 2023, $PM_{2.5}$ was measured continuously throughout the year (100% Data Capture) with an annual mean concentration of 5 µg/m^3 , below the National Air Quality Objective.

Figure 4 – $PM_{2.5}$ Concentraitons measured over 5 years in Inverclyde



The $PM_{2.5}$ concentrations measured in the past five years are depicted in Figure 4. Similar to the PM10 Concentrations, the $PM_{2.5}$ concentrations are alike over time with some heightened averages recorded sporadically over the years. The annual mean $PM_{2.5}$ concentrations have remained at 5µg/m3, the lowest $PM_{2.5}$ concentration recorded by Inverclyde's automatic monitoring station.

3.2.4 Sulphur Dioxide (SO_2)

Inverclyde Council does not monitor for SO_2.

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

Inverclyde Council does not monitor for Carbon Monoxide, Lead and 1,3-Butadiene.

4 New Local Developments

4.1 Road Traffic Sources

In 2024, the road layout in Greenock town was redesigned, introducing a one-way system and permitting on-street car parking only down one side of the road.

4.2 Other Transport Sources

Inverclyde Council does not have an airport; however, it does have a shipping industry along the River Clyde.

4.3 Industrial Sources

There are no new or proposed industrial installations for which an air quality assessment has been carried out in 2024. Inverclyde Council is not aware of any significant changes to existing installations or the introduction of a new receptor that is exposed.

4.4 Commercial and Domestic Sources

There have been no new planning applications approved for the installation of biomass combustion plants.

4.5 New Developments with Fugitive or Uncontrolled Sources

Inverclyde Council has not identified any new potential sources of fugitive or uncontrolled particulate matter.

5 Planning Applications

Applications for Battery Energy Storage Systems (BESS) have been submitted to Inverclyde Council and the Scottish Government for planning consent.

In 2023 an application to construct a large-scale Battery Energy Storage System (BESS) with a generating capacity of up to 700 MW on land at Auchentiber Road, Port Glasgow was submitted to Scottish Ministers [25]. This planning application has been permitted.

In March 2024 a planning application was submitted to the Energy Consents Unit proposing the development of a BESS of up to 400MV capacity on the land at Loganwood House, High Mathernock Farm, Kilmacolm [26]. This application is still being considered.

Last year Inverclyde Council received a planning application to construct and operate a BESS at former Dougliehill water treatment works [27]. The application was withdrawn and has since been resubmitted, to date no decision has been made.

In compliance with the National Planning Framework 4 (Policy 11), development proposals for all forms of renewable, low-carbon and zero emissions technologies will be supported. These include energy storage, such as battery storage. At present only one planning application has been approved.

Air quality impact assessments have shown that under normal operating conditions BESSs have little impact on local air quality. However, where a fire was to occur at one of these sites the typical pollutants released into the atmosphere would be Nitrogen Dioxide (NO_2), Hydrogen Fluoride (HF), Carbon Monoxide (CO), Methane (CH_4). An Air Quality Impact Assessment has been published for the proposed Auchentiber BESS site [25], it concluded that the modelled short-term exceedances of these pollutants in different scenarios would have a low adverse effect on sensitive receptors. The risk to the environment and public health is further reduced when fire safety controls and procedures are in place.

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

In 2024, the annual concentrations for NO_2, PM_{10} and $PM_{2.5}$ remained low, measuring below the National Air Quality Objectives. Thus, Inverclyde does not need to declare an AQMA.

The annual average NO_2 concentration measured by the automatic monitoring station in 2024 remains the lowest on record. NO_2 was measured throughout Inverclyde via the diffusion tube network and the annual average measured at each diffusion tube site was also found to be below the National Air Quality Objective. No exceedances for NO_2 were recorded.

PM_{10} and $PM_{2.5}$ were measured continuously throughout the year by the automatic monitoring station at East Hamilton Street, Greenock. The annual average concentrations for both pollutants remained the lowest on record and well below the National Air Quality Objectives. No exceedances for PM_{10} and $PM_{2.5}$ were recorded.

The data within this report and within Ricardo's Energy and Environment Annual Statistics Report for Inverclyde [28] have shown that air pollution in Inverclyde continues to be low. Inverclyde Council strives to better local air quality through the implementation of many national and local strategies/plans (CAFS2, Active Travel Strategy, Net Zero Strategy, Local Development Plan etc.). Working continuously to deliver these strategies and plans will in the long term improve air quality directly and indirectly. It is expected that the air quality within Inverclyde next year will continue to remain within the permitted levels, aiming to have annual average pollutant concentrations lower than those reported for 2024.

6.2 Proposed Actions

Inverclyde Council will continuously monitor and review air quality within the local area. If there appears to be an unexplained reason for heightened concentrations of pollutants, this will be investigated, and the current monitoring network will be reviewed.

The automatic monitoring machine will remain situated at East Hamilton Street. The collocation study will continue at East Hamilton Street, obtaining data from the air monitor and three NO_2 diffusion tubes to develop a local bias adjustment factor.

Results from previous annual progress reports have documented that road traffic is the main source of air pollution within Inverclyde Council. No new sources of air pollution have been identified within Inverclyde and to date road traffic emissions are the predominant cause of air pollution.

It is anticipated that the shipping operations at Clyde Port will be increasing in the coming years, thus it is proposed that future monitoring of this area will be undertaken to determine whether there is a possible exceedance or likely exceedance of air pollutants. It is hoped that funding is obtained next year to lease portable air quality monitors to allow for monitoring to be carried out.

Inverclyde Council continues to implement plans and polices which aims to increase active travel within the area which in turn will decrease air pollution and improve the health of people within society. The Glasgow City Region collaboration will work towards expanding the electric charging infrastructure which is hoped to encourage the public to switch to electric vehicle. In addition, further actions will be taken by Inverclyde Council to minimise carbon emissions over the course of the year to better local air quality and help Scotland achieve its net zero target.

The next Air Quality Annual Progress Report will be submitted June 2026.

Appendix A: Monitoring Results

Table A.1 – Details of Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	Pollutants Monitored	In AQMA? Which AQMA?	Monitoring Technique	Distance to Relevant Exposure (m) (1)	Distance to kerb of nearest road (m) (2)	Inlet Height (m)
MS01	Inverclyde Greenock A8	Roadside	229365	675700	NO_2, PM_{10}, $PM_{2.5}$, PM_1	N	TEOM	12	2.5	1.8

Notes:

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

(2) N/A if not applicable.

Table A.2 – Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Site Type	X OS Grid Ref	Y OS Grid Ref	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?
MS02	Carwood Court, Greenock	Roadside	229503	675400	NO2	N	13.5m	5m	N
MS03	Brown Street, Port Glasgow	Roadside	231699	674620	NO2	N	1m	1m	N
MS04	Bridge of Weir Rd, Kilmacolm	Roadside	235824	669909	NO2	N	1m	1m	N
MS05	East Hamilton Street (1), Greenock	Roadside	229365	675700	NO2	N	12m	2.5m	Y
MS06	East Hamilton Street (2), Greenock	Roadside	229365	675700	NO2	N	12m	2.5m	Y
MS07	East Hamilton Street (3), Greenock	Roadside	229365	675700	NO2	N	12m	2.5m	Y
~~MS08~~	~~East Hamilton Street (property), Greenock~~	~~Roadside~~	~~229301~~	~~675712~~	~~NO2~~	~~N~~	~~0m~~	~~14.25m~~	~~N~~
MS09	Dellingburn St, Greenock	Roadside	228422	675735	NO2	N	3.5m	5m	N
MS10	Dalrymple St, Greenock	Roadside	228311	675993	NO2	N	15m	3m	N
MS11	Inverkip St, Greenock	Roadside	227563	676246	NO2	N	1m	2.5m	N
MS12	Dunlop St, Greenock	Roadside	226827	675622	NO2	N	4m	2m	N
MS13	Nelson St, Greenock	Roadside	227092	676134	NO2	N	1m	5m	N

MS14	Inverkip Rd, Greenock	Roadside	224441	675224	NO2	N	15m	4m	N
MS15	Larkfield Rd, Greenock	Roadside	224869	675757	NO2	N	3m	2m	N
MS16	Main St, Wemyss Bay	Roadside	219407	668573	NO2	N	1m	2m	N
MS17	Kempock St, Gourock	Roadside	224097	677910	NO2	N	1m	1m	N
MS18	Cardwell Rd, Gourock	Roadside	224664	677168	NO2	N	3m	4m	N
MS19	Newark St, Gourock	Roadside	225460	677501	NO2	N	1m	5m	N
MS20	Brougham St, Greenock	Roadside	227242	677032	NO2	N	7m	5.5m	N
MS21	MacDougall St, Greenock	Roadside	229605	675593	NO2	N	13m	3m	N
MS22	Brisbane St, Greenock	Roadside	227287	676410	NO2	N	0m	2.7m	N
MS23	Blairmore Rd, Greenock	Roadside	228915	674682	NO2	N	4.5m	2.5m	N

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

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
MS01	Roadside	Automatic	98	98	21	24	21	19	17

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**.

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.

(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	Y OS Grid	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
MSO2	229503	675400	Roadside	100	100	8.0	5.5	6.9	5.9	5.3
MS03	231699	674620	Roadside	100	100	13.4	9.3	11.0	9.4	7.5
MS04	235824	669909	Roadside	100	100	9.0	9.6	12.2	10.4	4.3
MS05,MS06,MS07	229365	675700	Roadside	100	100	23.5	19.1	20.5	17.6	14.2
MS09	228422	675735	Roadside	100	100	20.5	17.2	25.9	19.9	15.2
MS010	228311	675993	Roadside	100	100	15.3	11.3	16.1	14.4	10.1
MS011	227563	676246	Roadside	100	100	23.5	15.9	23.2	17.0	13.5
MS12	226827	675622	Roadside	100	100	13.1	11.0	14.5	11.4	9.6
MS13	227092	676134	Roadside	100	100	18.0	15.0	18.1	15.5	12.3
MS14	224441	675224	Roadside	100	100	13.0	12.5	15.5	10.3	8.3
MS15	224869	675757	Roadside	100	100	11.8	10.9	13.7	9.5	7.9

Diffusion Tube ID	X OS Grid	Y OS Grid	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
MS16	219407	668573	Roadside	100	100	8.2	7.4	9.3	6.9	5.1
MS17	224097	677910	Roadside	100	100	9.2	7.6	10.8	8.2	6
MS18	224664	677168	Roadside	100	92.3	16.4	14.1	19.4	14.7	12.1
MS19	225460	677501	Roadside	100	100	9.7	7.7	9.5	7.6	6.4
MS20	227242	677032	Roadside	100	100	14.8	12.6	16.0	13.3	10
MS21	229605	675593	Roadside	100	100	12.8	13.8	14.7	12.7	9.3
MS22	227287	676410	Roadside	100	100			10.2	7.3	6.3
MS23	228915	674682	Roadside	100	90.4			7.0	5.1	5.5

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**.

Means for diffusion tubes have been corrected for bias. All means have been "annualised" as per LAQM.TG(22) if valid data capture for the full calendar year is less than 75%. See Appendix C for details.

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

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

Site ID	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
MSO1	Roadside	Automatic	100	100	0	0	0	0	0

Notes:

Exceedances of the NO_2 1-hour mean objective (200 µg/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_{10} Monitoring Results (µg/m^3)

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
MS01	Roadside	100	100	10	11	12	10	10

Notes:

Exceedances of the PM_{10} annual mean objective of 18 µg/m^3 are shown in bold.

All means have been "annualised" as per LAQM.TG(22), 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%).

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

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
MS01	Roadside	100	100	0	0	**4**	0	0

Notes:

Exceedances of the PM_{10} 24-hour mean objective (50 µg/m^3 not to be exceeded more than seven times/year) are shown in bold.

If the period of valid data is less than 85%, the 98.1st percentile of 24-hour means is provided in brackets.

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

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

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

Site ID	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	2020	2021	2022	2023	2024
Ms01	Roadside	100	100	5	6	6	5	5

Notes:

Exceedances of the $PM_{2.5}$ annual mean objective of 10 $\mu g/m^3$ are shown in bold.

All means have been "annualised" as per LAQM.TG(22), 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%).

Appendix B: Full Monthly Diffusion Tube Results for 2024

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

Site ID	Site Name	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean: Raw Data	Annual Mean: Bias Adjusted
MS02	Carwood Court, Greenock	12.7	9.3	3.6	2.3	5.9	2.3	6.2	6.2	4.5	6.5	9.7	9.0	6.5	5.3
MS03	Brown Street, Port Glasgow	8.9	8.6	24.3	2.3	11.3	6.3	10.5	3.3	8.2	8.3	15.2	12.7	9.2	7.5
MS04	Bridge of Weir Road, Kilmacolm	6.3	4.4	7.3	2.3	6.6	2.4	6.4	4.5	5.8	7.9	4.3		5.3	4.3
MS05	East Hamilton St, Greenock (1)	12.5	11.9	20.6	11.9	20.1	16.1	18.7	15.8	17.5	17.2	21.1	24	Triplicate site with MS07- Annual data provided below	
MS06	East Hamilton St, Greenock (2)	13.0	9.9	8.1	17.5	22.6	12.4	19.2	18.3	7.3	17.9	24.1	24.3		
MS07	East Hamilton Street, Greenock (3)	13.4	11.7	21.7	17.1	22.3	4.3	19	18.9	19	26.4	22.6	23.8	17.3	14.2
MS09	Dellingburn Street, Greenock	20.9	14.5	19.5	16.0	20.5	9.7	20.7	20.6	13.1	15.3	30.9	20.7	18.5	15.2
MS10	Dalrymple Street, Greenock	11.4	9.7	15	9.0	15.2	4.9	12.3	10.6	12	15.2	17.1	16	12.4	10.1
MS11	Inverkip Street, Greenock	13.9	10.5	17.5	8.8	17.3	10.3	17.8	17	15.2	15.9	25.2	27.9	16.4	13.5
MS12	Dunlop Street, Greenock	16.6	8.4	11.9	8.6	11.0	5.3	9.3	7.8	10.5	14.2	19.3	17.4	11.7	9.6
MS13	Nelson Street, Greenock	17.2	11.6	14.5	10.8	13.4	7.7	13.5	13	15.4	15.3	24.3	22.7	15	12.3
MS14	Inverkip Road, Greenock	12.5	8.8	11.8	4.6	13.0	6.9		8.6	2.8	16	10.2	16.6	10.2	8.3
MS15	Larkfield Road, Greenock	12	6.7	9.6	5.1	12.4	3.7	9	7.5	7.8	12.8	2.1	26.9	9.6	7.9
MS16	Main Street, Wemyss Bay	6.5	6.7	5.7	4.1	10.3	3	8.7	6	3.3	5.4	6.2	8.4	6.2	5.1
MS17	Kempock Street, Gourock	4.9	4.4	8	4.2	9.5	3.5	10.2	6.3	7.0	8	13.1	8.9	7.3	6
MS18	Cardwell Road, Gourock	7.3	10.8	14.5	10.0	19.1	8.9	17.3	13.1	14.1	18.3	21.8	22.1	14.8	12.1
MS19	Newark Street, Greenock	12.5	7.0	10.8	4.3	5.3	5.7	6.3	5.5	8.2	5.3	12.1	10.3	7.8	6.4
MS20	Brougham Street, Greenock	12.8	9.7	13.7	6.4	12.2	10.9	14.8	12.2	10.8		17.2	14.1	12.3	10
MS21	MacDougall Street, Greenock	13.0	7.6	13.2	9.7	12.9	11.7	12.1	6.9	13	11	13.5		11.3	9.3
MS22	Brisbane Street, Greenock	9.1	5.9	9.1	2.3	7.2	5.5	6.5	5.4	6.9	11.2	13	10.3	7.7	6.3
MS23	Blairmore Road, Greenock	1.9	8.5	8.6	4.4	3.6	7.3					10.7	8.6	6.7	5.5

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

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

☐ **Local bias adjustment factor used**

☑ **National bias adjustment factor used**

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

☑ **Inverclyde Council confirms that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System**

Notes:

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

NO_2 annual means exceeding 60µg/m^3, indicating a potential exceedance of the NO_2 1-hour mean objective are highlighted 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 Inverclyde Council During 2024

Since 2003, Peel Ports Group has been operating the Port of Greenock. They process and ship more than 15.4 million tonnes of cargo a year. In addition, they manage passengers embarking/disembarking from the docked cruise ships. The port acts as a travel corridor for passengers travelling to Glasgow, Edinburgh and other destinations along the West of Scotland. It was recently announced that Global Ports Holding Ltd, the world's largest cruise ship operator, has signed a 50-year lease deal to operate Greenock's Cruise Port from 2025 [29]. This is thought to be a 'landmark deal' that will increase the number of cruise liners docking at Greenock. The established container ship operation coupled with the growing cruise operation and associated vehicle traffic, could potentially impact local air quality. Thus, Inverclyde Council is planning to investigate this effect by monitoring air quality in this area.

Additional Air Quality Works Undertaken by Inverclyde Council During 2024

Inverclyde Council has not completed any additional works within the reporting year of 2024.

QA/QC of Diffusion Tube Monitoring

Glasgow Scientific Services supply and analyse the NO_2 diffusion tubes monthly. The NO_2 diffusion tubes were deployed/collected in adherence with the Diffusion Tube Monitoring Calendar (±2 days). The preparation method used for NO_2 diffusion tubes is 20% TEA in Water. The Laboratory has adopted the procedures for preparation and analysis of the diffusion tubes contained in the document 'Diffusion Tubes for Ambient NO_2 Monitoring: Practical Guidance' [30].

Diffusion Tube Annualisation

Annualisation was required for only one diffusion tube (Blairmore Road -MS23) as the data capture was less than 75% but greater than 25%. In line with the local air quality management technical guidance (LAQM TG22) [31] only data from one monitoring site (Glasgow Townhead) could be used to annualise. Details of the annualisation is clearly set out in Table C.2. All other diffusion tube sites had data capture above 75%, therefore no annualisation of monitoring data was required.

Diffusion Tube Bias Adjustment Factors

Inverclyde Council have applied a national bias adjustment factor of **0.82** to the 2024 monitoring data. A summary of bias adjustment factors used by Inverclyde Council over the past five years is presented in Table C.1.

Inverclyde Council has one co-location study in place with three diffusion tubes (MS05, MS06 and MS07) positioned at the automatic monitoring site (MS01) at East Hamilton Street. The data input into DEFRA's Diffusion Tube Processing Tool had poor precision with a local bias adjustment factor of 1.03 obtained.

The National Bias adjustment factor of **0.82** was retrieved from Glasgow Scientific Services data provided in the DEFRA National Diffusion Tube Bias Adjustment Factor Spreadsheet (6/25) [32]. However, in accordance with the LAQM TG22 the decision was taken to apply the National Bias adjustment factor to the data obtained [31].

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	National	04/25	0.82
2023	Local	-	0.85
2022	National	03/23	1.05
2021	National	03/22	1.12
2020	Local	-	0.81

NO_2 Fall-off with Distance from the Road

No diffusion tube NO_2 monitoring locations within Inverclyde Council required distance correction during 2025.

QA/QC of Automatic Monitoring

The automatic monitoring site at East Hamilton Street contains one NO_x/NO_2 analyser and one TEOM Ambient Particulate Monitor. Throughout 2024 site audits and calibrations were undertaken by Ricardo Energy & Environment and services carried out every 6 months by Air Monitors. Fortnightly manual calibrations were carried out by Inverclyde Council. The monitoring data obtained from the Inverclyde Greenock A8 automatic air quality monitor is uploaded onto the Scottish Air Quality website [6]. This data provided within the report has underwent ratification by Ricardo Energy & Environment.

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

The PM_{10} and $PM_{2.5}$ data contained in this report has been obtained from the Scottish Air Quality website [6]. The PM_{10} and $PM_{2.5}$ concentrations have been corrected using factors (PM_{10} divided by 0.909 and $PM_{2.5}$ multiplied by 1.06) identified by the “Scottish Government Equivalence Study to Investigate Particulate Matter Monitoring In Scotland Using the Fidas 200”.

Automatic Monitoring Annualisation

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

NO_2 Fall-off with Distance from the Road

No automatic NO_2 monitoring locations within Inverclyde Council required distance correction during 2025.

Table C.1 – Local Bias Adjustment Calculations

	STEP 3a Local Bias Adjustment Input 1
Periods used to calculate bias	6
Bias Adjustment Factor A	1.03 (0.75 - 1.61)
Diffusion Tube Bias B	-3% (-38% - 32%)
Diffusion Tube Mean (µg/m^3)	17.5
Mean CV (Precision)	6.2%
Automatic Mean (µg/m^3) (for periods used to calculate bias)	18.0
Data Capture (for periods used to calculate bias)	100%
Overall Data Capture	97%
Adjusted Tube Mean (µg/m^3)	18 (13 - 28)

Overall Diffusion Tube Precision	**Poor Overall Precision**
Overall Continuous Monitor Data Capture	**Good Overall Data Capture**

Local Bias Adjustment Factor	**1.03**

Notes:

A single local bias adjustment factor has been used to bias adjust the 2024 diffusion tube results.

Table C.2 – Diffusion Tube Annualisation Summary (concentrations presented in µg/m^3)

Diffusion Tube ID	Annualisation Factor Inverclyde A8 Greenock	Annualisation Factor Glasgow Townhead	Annualisation Factor Site 3 Name	Annualisation Factor Site 4 Name	Average Annualisation Factor	Raw Data Simple Annual Mean (µg/m^3)	Annualised Data Simple Annual Mean (µg/m3)
MS23	0.9616	0.8956			0.9286	6.7	6.2

Appendix D: Maps

Map 1: Monitoring locations across Inverclyde

Map 2: Automatic air monitoring site and colocation study at East Hamilton Street

Map 3: NO2 diffusion tube monitoring network - Greenock Central

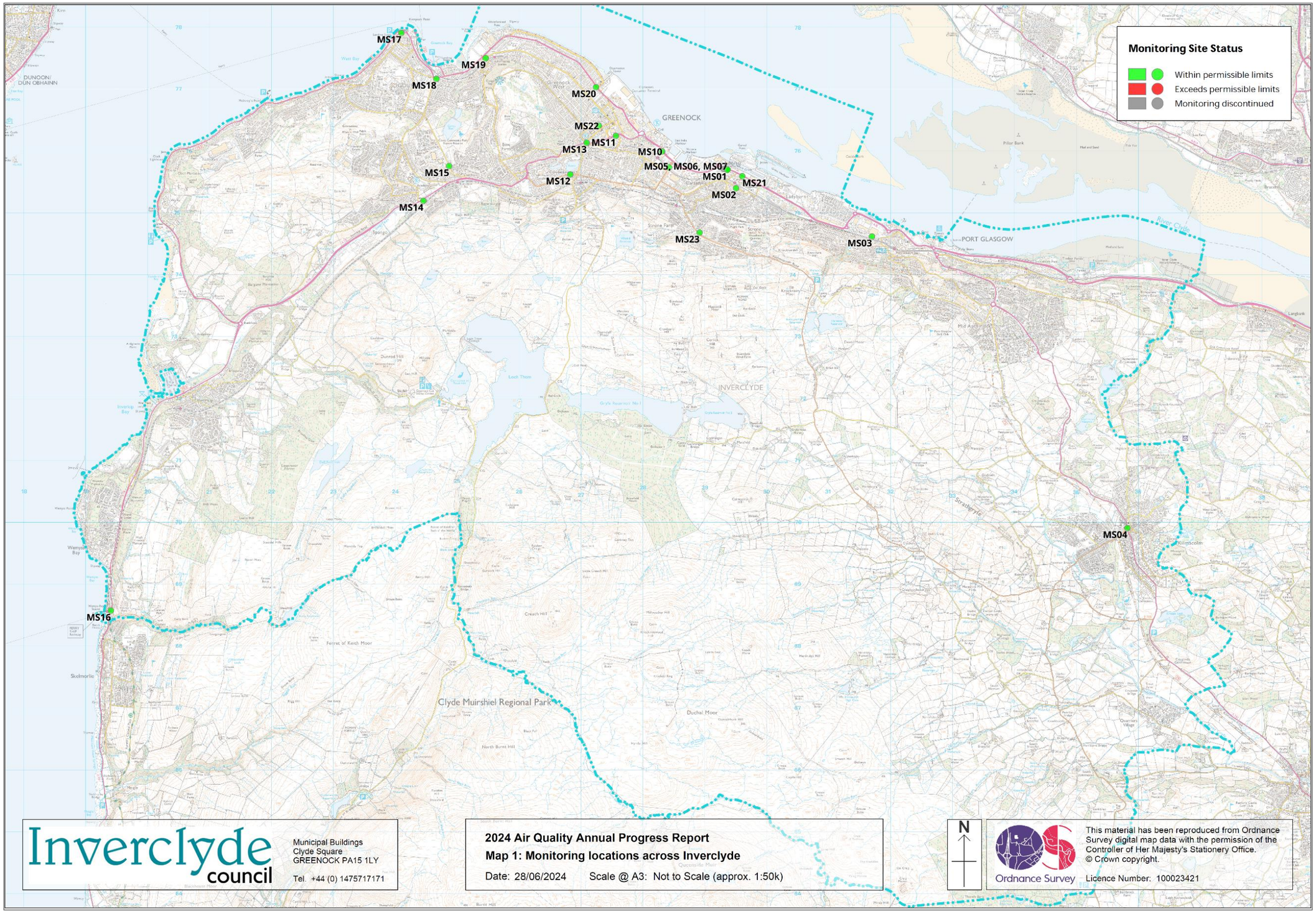
Map 4: NO2 diffusion tube monitoring network - Greenock South

Map 5: NO2 diffusion tube monitoring network – Gourock & Greenock West

Map 6: NO2 diffusion tube monitoring network - Port Glasgow

Map 7: NO2 diffusion tube monitoring network – Kilmacolm

Map 8: NO2 diffusion tube monitoring network - Wemyss Bay


Monitoring Site Status
Within permissible limits
Exceeds permissible limits
Monitoring discontinued
MS17
MS19
MS18
MS20
MS22
MS11
MS13
MS10
MS05, MS06, MS07
MS01
MS21
MS02
MS15
MS12
MS14
MS23
MS03
MS04
MS16
GREENOCK
PORT GLASGOW
INVERCLYDE
DUNOON/
DUN OBHAINN
Clyde Muirshiel Regional Park
Inverclyde council
Municipal Buildings
Clyde Square
GREENOCK PA15 1LY
Tel. +44 (0) 1475717171
2024 Air Quality Annual Progress Report
Map 1: Monitoring locations across Inverclyde
Date: 28/06/2024
Scale @ A3: Not to Scale (approx. 1:50k)
N
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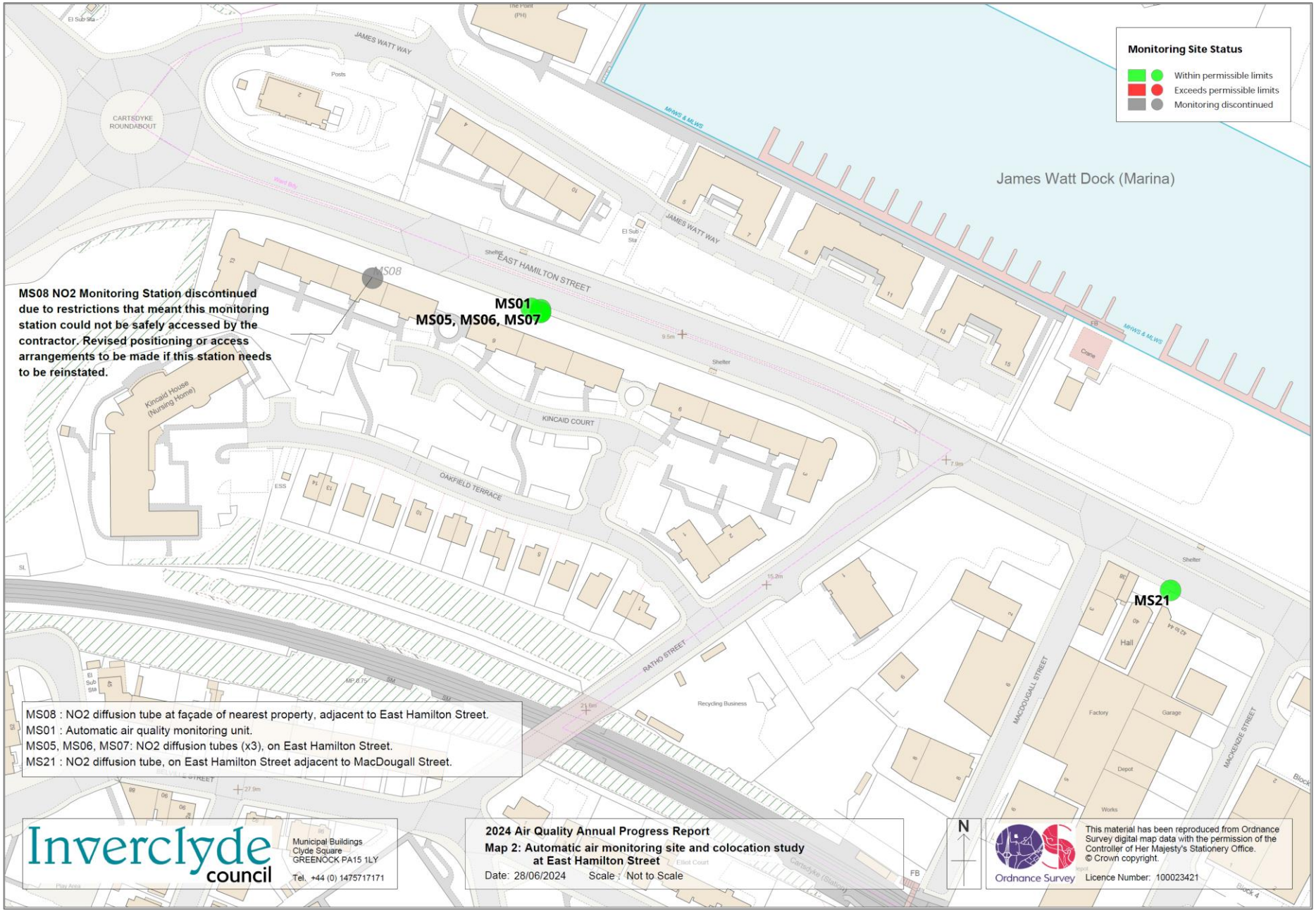
Monitoring Site Status
Within permissible limits
Exceeds permissible limits
Monitoring discontinued
James Watt Dock (Marina)
JAMES WATT WAY
EAST HAMILTON STREET
KINCAID COURT
OAKFIELD TERRACE
RATHO STREET
MACDOUGALL STREET
MACKENZIE STREET
CARTSDYKE ROUNDABOUT
Kincaid House (Nursing Home)
MS08
MS01
MS05, MS06, MS07
MS21
MS08 NO2 Monitoring Station discontinued due to restrictions that meant this monitoring station could not be safely accessed by the contractor. Revised positioning or access arrangements to be made if this station needs to be reinstated.
MS08 : NO2 diffusion tube at façade of nearest property, adjacent to East Hamilton Street.
MS01 : Automatic air quality monitoring unit.
MS05, MS06, MS07: NO2 diffusion tubes (x3), on East Hamilton Street.
MS21 : NO2 diffusion tube, on East Hamilton Street adjacent to MacDougall Street.
Inverclyde council
Municipal Buildings
Clyde Square
GREENOCK PA15 1LY
Tel. +44 (0) 1475717171
2024 Air Quality Annual Progress Report
Map 2: Automatic air monitoring site and colocation study at East Hamilton Street
Date: 28/06/2024 Scale : Not to Scale
N
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Monitoring Site Status
Within permissible limits
Exceeds permissible limits
Monitoring discontinued
MS20
MS22
MS11
MS13
MS10
MS09
MS05, MS06, MS07
MS01
MS21
MS02
MS12
MS23
GREENOCK
Central
Cartsburn
Cartsdyke
Ladyburn
Bridgend
Cornhaddock
Cowdenknowes
Overton
Whin Hill Golf Course
Charing Cross
Inverclyde council
Municipal Buildings
Clyde Square
GREENOCK PA15 1LY
Tel. +44 (0) 1475717171
2024 Air Quality Annual Progress Report
Map 3: NO2 diffusion tube monitoring network - Greenock Central
Date: 28/06/2024
Scale : Not to Scale
N
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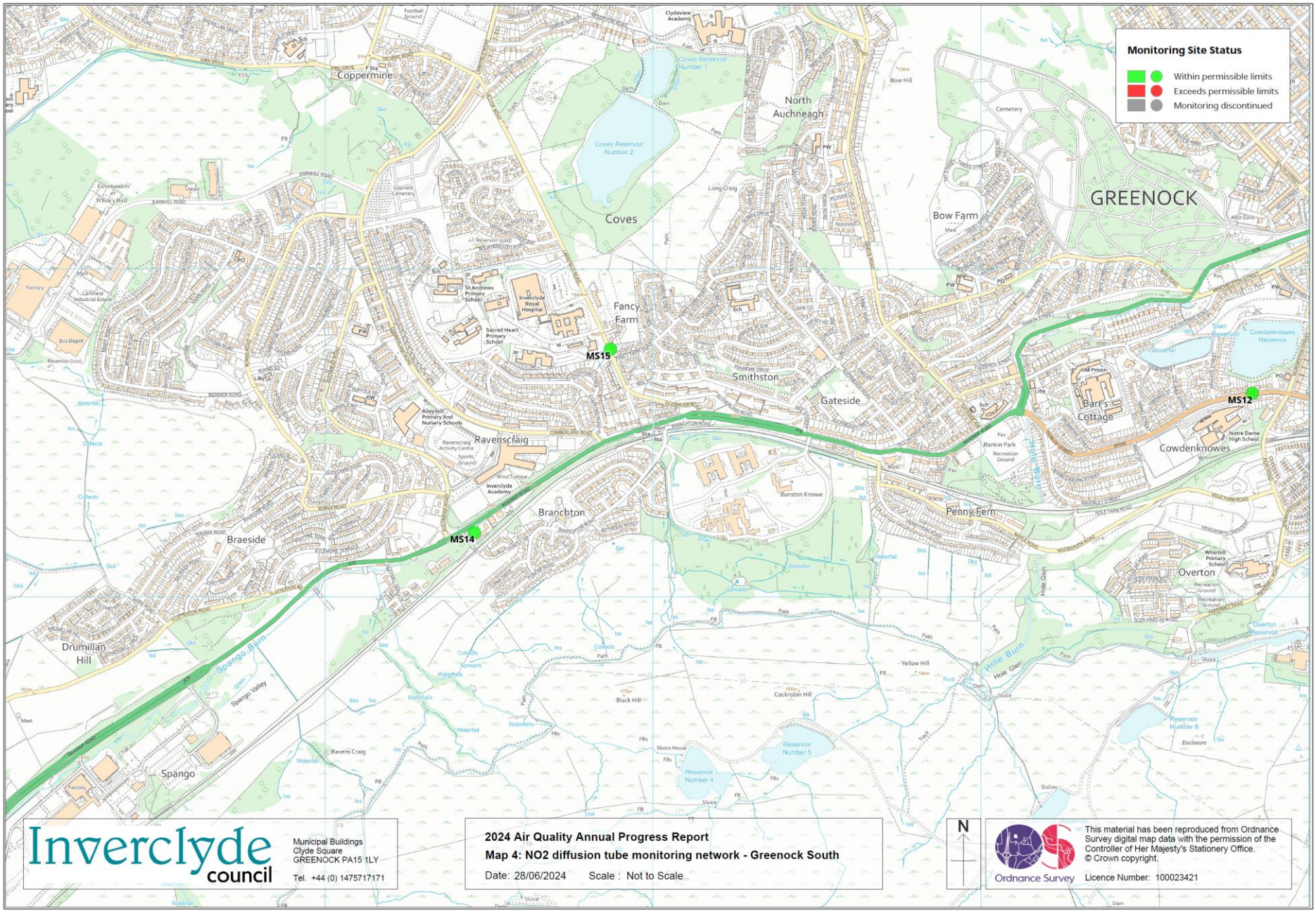
Monitoring Site Status
Within permissible limits
Exceeds permissible limits
Monitoring discontinued
GREENOCK
Coppermine
North Auchneagh
Coves
Bow Farm
Fancy Farm
Smithston
Gateside
Ravenscraig
Branchton
Braeside
Barr's Cottage
Cowdenknowes
Penny Fern
Overton
Drumillan Hill
Spango
MS15
MS14
MS12
Inverclyde council
Municipal Buildings
Clyde Square
GREENOCK PA15 1LY
Tel. +44 (0) 1475717171
2024 Air Quality Annual Progress Report
Map 4: NO2 diffusion tube monitoring network - Greenock South
Date: 28/06/2024
Scale : Not to Scale
N
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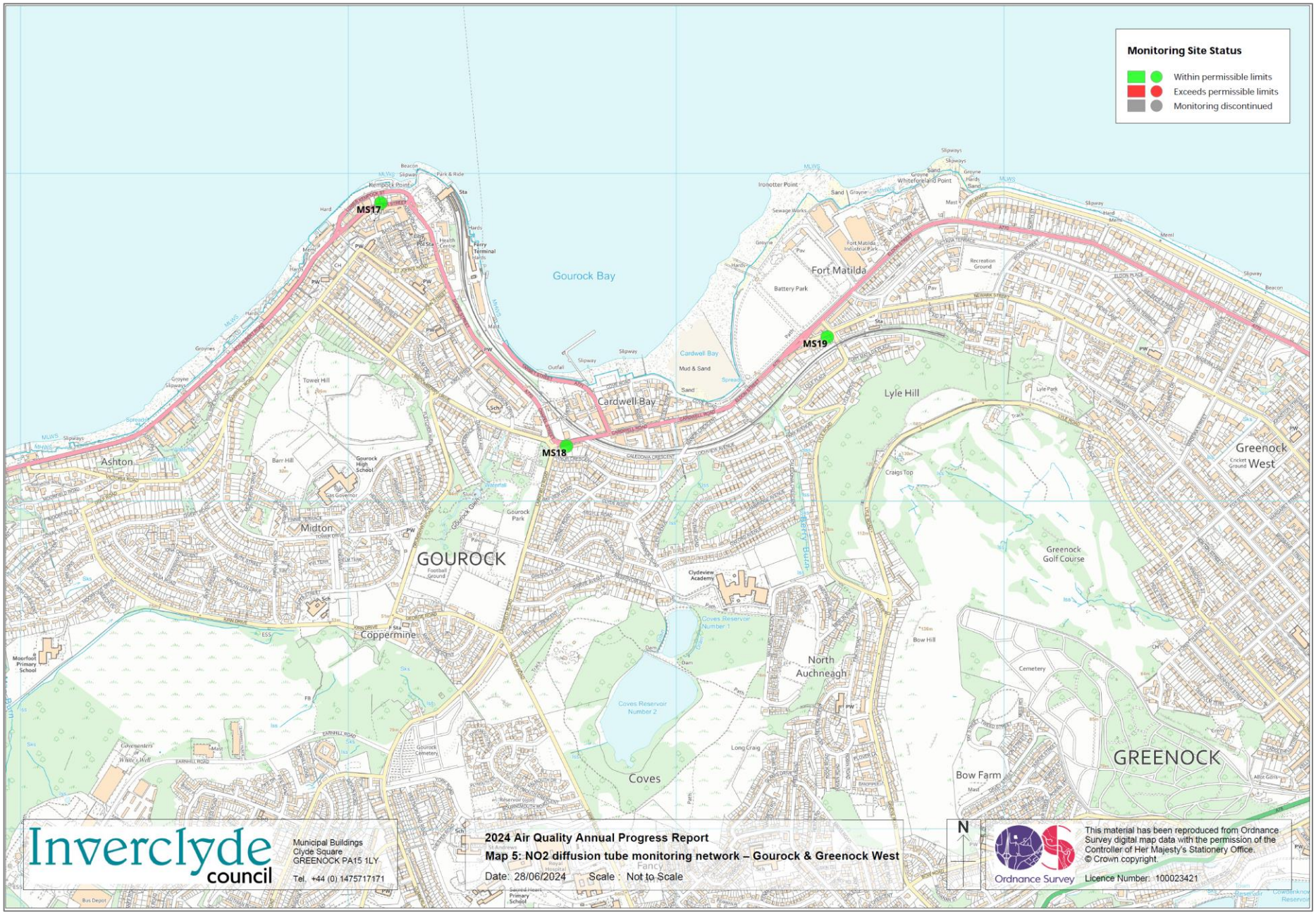
Monitoring Site Status
Within permissible limits
Exceeds permissible limits
Monitoring discontinued
MS17
MS18
MS19
Gourock Bay
Cardwell Bay
Fort Matilda
Lyle Hill
Greenock West
Ashton
Midton
GOUROCK
Coppermine
North Auchneagh
Coves
Bow Farm
GREENOCK
Greenock Golf Course
Inverclyde council
Municipal Buildings
Clyde Square
GREENOCK PA15 1LY
Tel. +44 (0) 1475717171
2024 Air Quality Annual Progress Report
Map 5: NO2 diffusion tube monitoring network – Gourock & Greenock West
Date: 28/06/2024
Scale : Not to Scale
N
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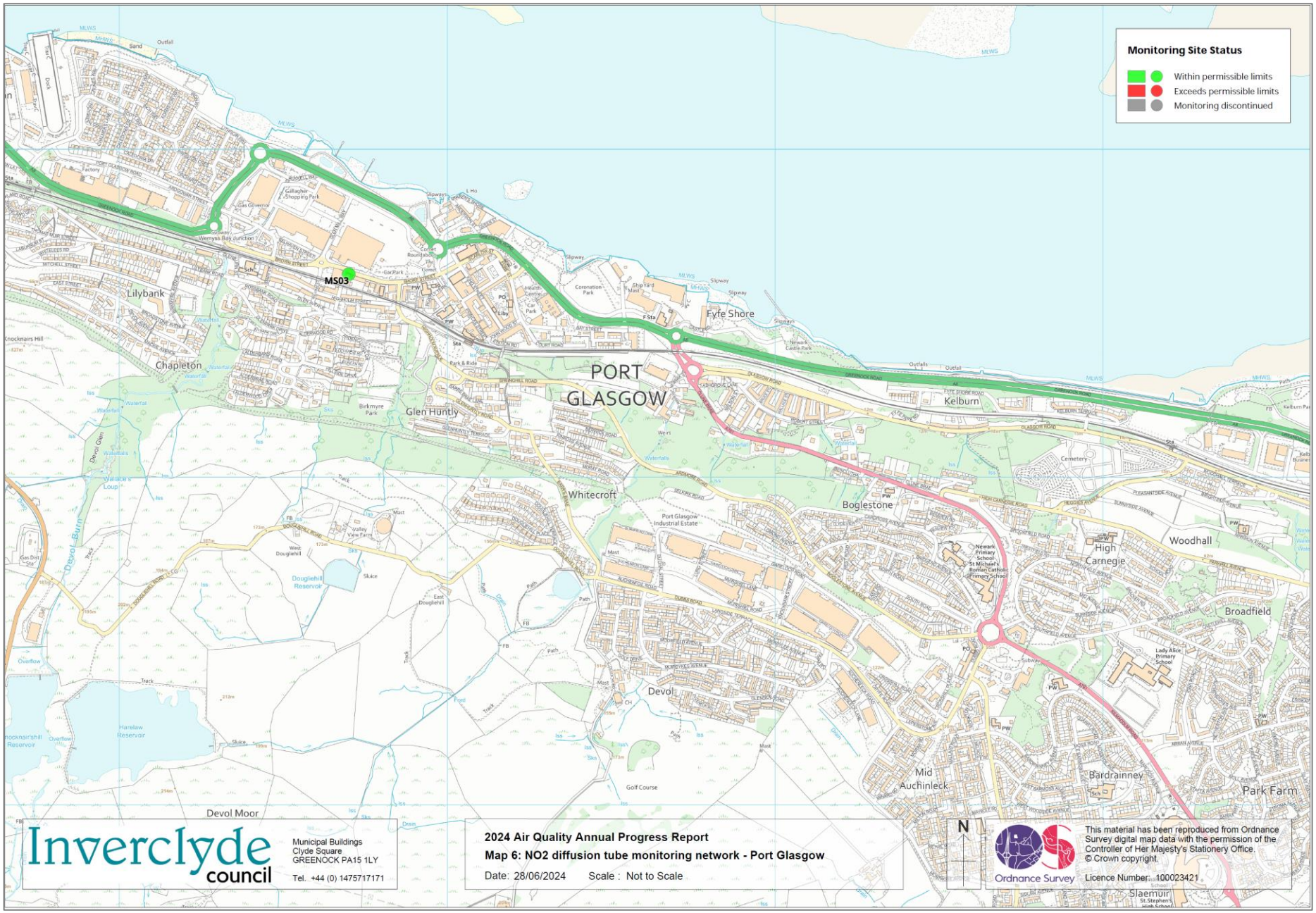
Monitoring Site Status
Within permissible limits
Exceeds permissible limits
Monitoring discontinued
MS03
PORT GLASGOW
Lilybank
Chapleton
Glen Huntly
Fyfe Shore
Kelburn
Whitecroft
Boglestone
Woodhall
High Carnegie
Broadfield
Devol
Mid Auchinleck
Bardrainney
Park Farm
Slaemuir
Devol Moor
Inverclyde council
Municipal Buildings
Clyde Square
GREENOCK PA15 1LY
Tel. +44 (0) 1475717171
2024 Air Quality Annual Progress Report
Map 6: NO2 diffusion tube monitoring network - Port Glasgow
Date: 28/06/2024
Scale : Not to Scale
N
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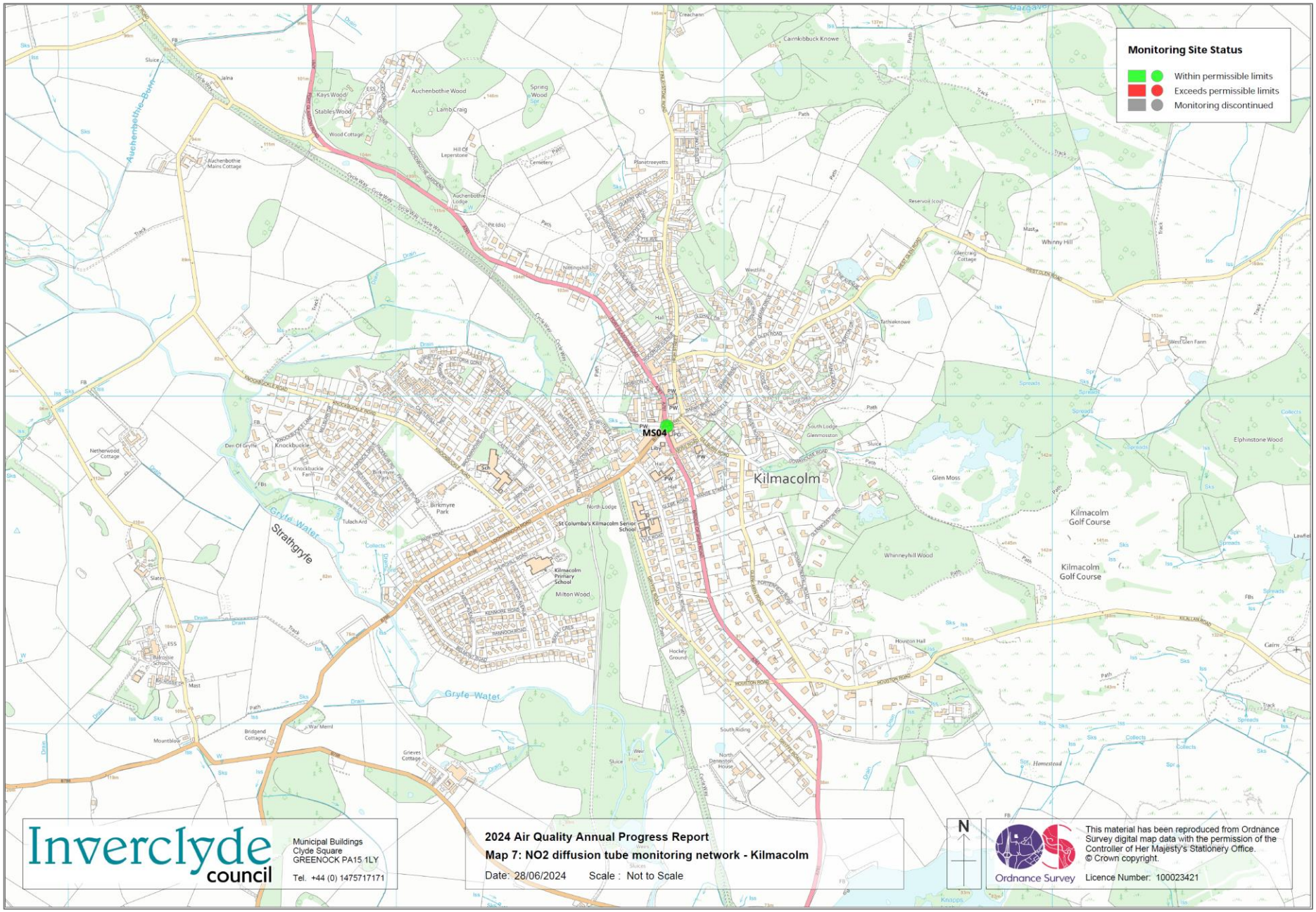
Monitoring Site Status
Within permissible limits
Exceeds permissible limits
Monitoring discontinued
MS04
Kilmacolm
Strathgryfe
Gryfe Water
Inverclyde council
Municipal Buildings
Clyde Square
GREENOCK PA15 1LY
Tel. +44 (0) 1475717171
2024 Air Quality Annual Progress Report
Map 7: NO2 diffusion tube monitoring network - Kilmacolm
Date: 28/06/2024 Scale : Not to Scale
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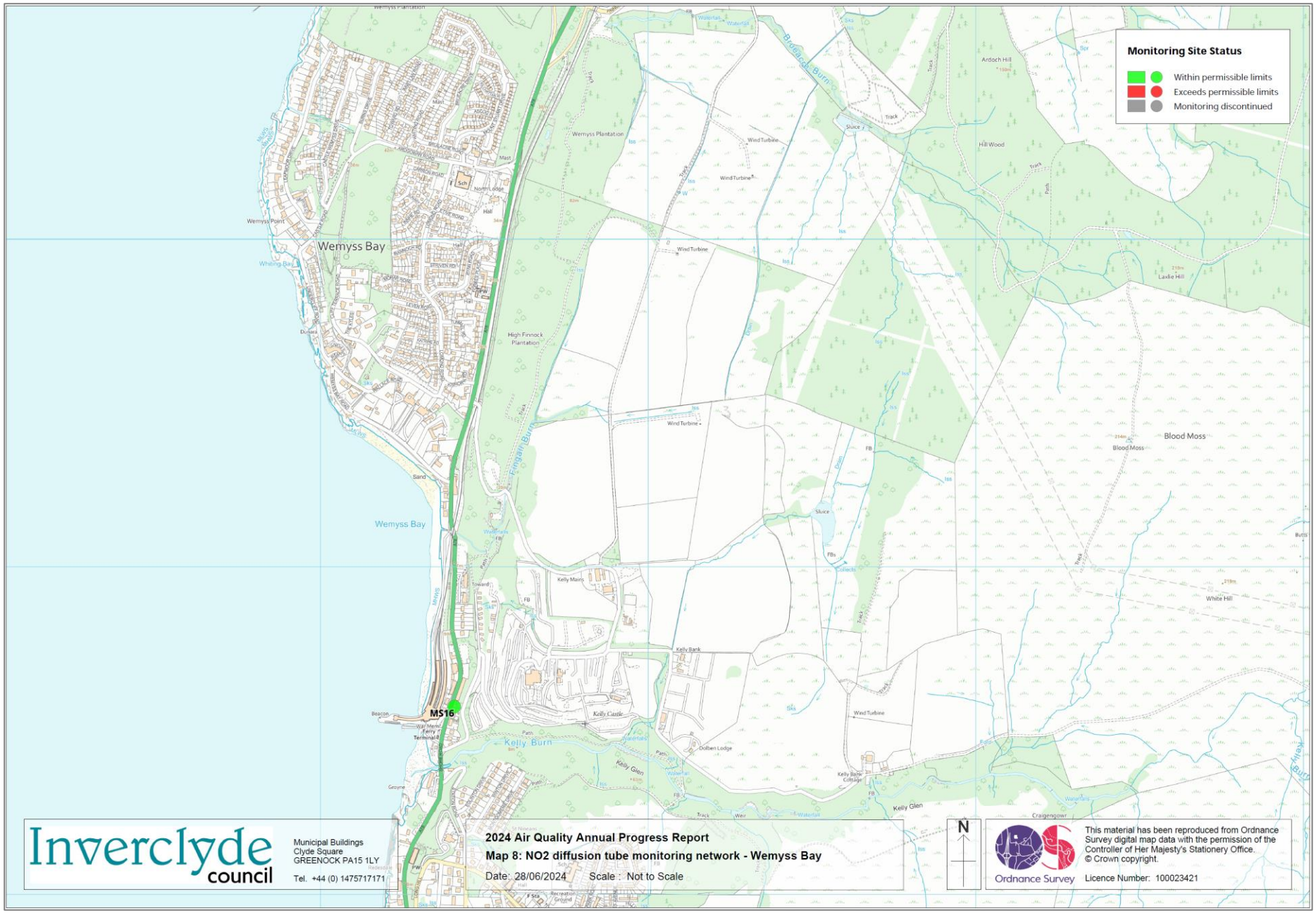
Monitoring Site Status
Within permissible limits
Exceeds permissible limits
Monitoring discontinued
Wemyss Bay
MS16
Kelly Burn
Blood Moss
Inverclyde council
Municipal Buildings
Clyde Square
GREENOCK PA15 1LY
Tel. +44 (0) 1475717171
2024 Air Quality Annual Progress Report
Map 8: NO2 diffusion tube monitoring network - Wemyss Bay
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Glossary of Terms

Abbreviation	Description
AQAP	Air Quality Action Plan - A detailed description of measures, outcomes, achievement dates and implementation methods, showing how the LA 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
APR	Annual Progress Report
AURN	Automatic Urban and Rural Network (UK air quality monitoring network)
Defra	Department for Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges – Air quality screening tool produced by Highways England
DT	Diffusion Tube
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO_2	Nitrogen Dioxide
NO_X	Nitrogen Oxides
PM_{10}	Airborne particulate matter with an aerodynamic diameter of 10µm (micrometres or microns) or less
$PM_{2.5}$	Airborne particulate matter with an aerodynamic diameter of 2.5µm or less
QA/QC	Quality Assurance and Quality Control
SO_2	Sulphur Dioxide

References

(1) Scottish Government (2021) *Cleaner Air for Scotland 2 - Towards a Better Place for Everyone* [Online] Available at: https://www.gov.scot/publications/cleaner-air-scotland-2-towards-better-place-everyone/

(2) *The Air Quality Standards (Scotland) Regulations 2010* (No.204) Available at: https://www.legislation.gov.uk/ssi/2010/204/regulation/1/made

(3) Inverclyde Council (2019) *Inverclyde Council Active Travel Strategy* [Online] Available at: Active Travel - Inverclyde Council

(4) Inverclyde Council (2021) *Net Zero Strategy* [Online] Available at: Net Zero Strategy - Inverclyde Council

(5) Inverclyde Council (2019) *Air quality* [Online] Available at: Air quality - Inverclyde Council

(6) Air Quality in Scotland (2021) *Inverclyde Greenock A8* [Online] Available at: Site Data | Scottish Air Quality

(7) Scottish Government (2023) *National Planning Framework 4* [Online] Available at: National Planning Framework 4

(8) Inverclyde Council (2019) *Inverclyde Local Development Plan* [Online]. Available at: Inverclyde Local Development Plan - Inverclyde Council

(9) Planning (Scotland) Act 2019 [Online]. Available at: Planning (Scotland) Act 2019

(10) Inverclyde Council (2019) *Inverclyde Core Path Plan* [Online]. Available at: Core Paths Plan Map 2019 (2).pdf

(11) Sustrans (2025) *National Cycle Network routes in Glasgow and the surrounding area* [online]. Available at: National Cycle Network routes in Glasgow and the surrounding area - Sustrans.org.uk

(12) Transport Scotland (2020) *Active Travel Framework* [Online] Available at: Active Travel Framework (transport.gov.scot)

(13) Clydeplan (2017) *Strategic Development Plan* [Online] Available at: Current Strategic Development Plan July 2017 (clydeplan-sdpa.gov.uk)

(14) Strathclyde Partnership for Transport (SPT) (2024). *Annual Report 2023/2024* [Online] Available at: annual-report_2023-24.pdf

(15) Inverclyde Council (2019) *Active Travel* [Online] Available at: Active Travel - Inverclyde Council

(16) Discover Inverclyde (2025) Walking. [Online] Available at: Walking Archives - Discover Inverclyde

(17) Cycling UK (2021) *The Inverclyde Bothy* [Online] Available at: The Inverclyde Bothy | Cycling UK

(18) Inverclyde Council (2023) *The Environment and Regeneration Committee Delivery and Improvement Plan 2023/26* [Online] Available at: Environment and Regeneration Committee Delivery and Improvement Plan 2023/26 - Inverclyde Council

(19) Charge Place Scotland (2021) *Live Map* [Online] Available at: Live Map - Charge Place Scotland

(20) Inverclyde Council (2019) *Climate Change Plan* [Online] Available at: Climate Change Plan - Inverclyde Council

(21) Sustainable Scotland Network (2023) *Reporting: Public Bodies Climate Change Duties* [Online] Available at: Reports (sustainablescotlandnetwork.org)

(22) Department for Business, Energy & Industrial Strategy (2023) *UK local authority and regional greenhouse gas emissions national statistics, 2005 to 2021* [Online] Available at: UK local authority and regional greenhouse gas emissions national statistics, 2005 to 2021 - GOV.UK

(23) *The Local Heat and Energy Efficiency Strategies (Scotland) Order 2022* [Online] Available at: The Local Heat and Energy Efficiency Strategies (Scotland) Order 2022

(24) Inverclyde Council (2024) *Local Heat and Energy Efficiency Strategy* [Online] Available at: Inverclyde LHEE Strategy - Final (2).pdf

(25) The Scottish Government - *Energy Consents Unit (2005). Auchentiber BESS (ECU00004979)*. [Online] Available at: Scottish Government - Energy Consents Unit - Application Details

(26) The Scottish Government - Energy Consents Unit (2005). *High Mathernock Battery Energy Storage System, Kilmacolm (ECU00005083)*. [Online] Available at: Scottish Government - Energy Consents Unit - Application Details

(27) Inverclyde Council (2025) *Inverclyde Council Online Planning Portal – Planning Application Summary 25/0033/IC* [Online] Available at: 25/0033/IC | Construction and operation of Dougliehill 49MW (AC) Battery Energy Storage System (BESS), associated infrastructure and miscellaneous works | Land At Former Dougliehill Water Treatment Works Dougliehill Road Port Glasgow PA14 5AY

(28) Kramer, L. and Hector, D., 2024. *Inverclyde Annual Report*. [Online] Available at: Scottish Air Quality Database Annual Report

(29) Peel Ports Group (2025) *New Operator for Greenock Cruise Port* [Online] Available at: New Operator for Greenock Cruise Port

(30) AEA Energy & Environment (2008) *Diffusion Tubes for Ambient NO_2 Monitoring: Practical Guidance*. Available at: Microsoft Word - NO2_WG_PracticalGuidance_Issue1a.doc (defra.gov.uk)

(31) Department for Environment Food & Rural Affairs (2025) *Local Air Quality Management Technical Guidance (TG22)* [Online] Available at: LAQM-TG22-May-25-v2.0.pdf

(32) Department for Environment Food & Rural Affairs (2025) *National Bias Adjustment Factors* [Online] Available at: National Bias Adjustment Factors | LAQM