

Annual Progress Report (APR)



2025 Air Quality Annual Progress Report (APR) for Perth and Kinross Council
In fulfilment of Part IV of the Environment Act 1995, as amended by the
Environment Act 2021

Local Air Quality Management

August 2025

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Executive Summary: Air Quality in Our Area

Air Quality in Perth and Kinross

This annual progress report covers the period from 1 January 2024 to 31 December 2024.

The air quality within Perth and Kinross is generally good; however, there are a few known hotspots within Perth city centre, and previously in Crieff. The main pollutants of concern are Nitrogen Dioxide (NO₂) and Particulate Matter (PM₁₀/PM_{2.5}) from vehicle emissions, which cannot escape due to the canyoning effect of high buildings within the effected streets.

Perth & Kinross Council (PKC) has one active air quality management area (AQMA) covering the whole of Perth City (declared in 2006), with monitoring locations at Atholl Street, Bridgend and Glasgow Road as well as a widespread diffusion tube network. PKC previously had an AQMA encompassing the high street corridor running through Crieff (declared in 2014), however due to consistent low levels of air pollution within the Crieff in recent years the Crieff AQMA was revoked in December 2024.

Once again there were no exceedances of NO₂ identified within Perth and Kinross during the reporting year, making this the sixth year without an exceedance. Throughout the region the overall trend was a reduction in NO₂ levels compared to 2023, in some cases to below those measured during 2020 (the previous minimum recorded levels due to Covid-19 lockdowns). NO₂ levels at both the Atholl Street and Bridgend Real Time Monitors (RTMs) fell to their lowest ever recorded levels, though it should be noted in Atholl Street's case that data capture at this monitor was affected by electrical issues following the replacement of the RTM cabinet in 2024 and as such annualisation was required to attain these results. As the NO₂ analyser at the Glasgow Road RTM was only installed in September 2024 a full year's data is not yet available, however the first few months of data show concentrations are below objective levels at this site as well. NO₂ levels at the Crieff RTM saw a slight increase from 2023 but were still well below objective levels.

Across the region all areas also saw diffusion tube levels decreasing in general compared to those recorded in 2023, with 58 tubes decreasing, 3 remaining at the same levels as 2023 or it being their first year exposed, and 11 seeing an increase in NO₂. The majority of these increases were small (>0.5 µg/m³), however there were a number of larger

increases which should be monitored in future years: P67 and P68 on Atholl Street, P40 in Bridgend, and P20 on Crieff Road, Perth. Maps showing the increases and decreases in diffusion tube levels are shown in 3.1.2, with graphs showing the trends in NO₂ in Figure A.1 - Figure A.4.

The bias adjustment factor for our 2024 diffusion tubes was slightly less than in 2023: 0.83 compared to the previous year's 0.8. It should be noted that due to poor data capture on three of the four co-located monitors in 2024 due to refurbishment works, only the data from Bridgend was used in the local bias adjustment factor calculations this year, rather than the usual four monitors.

No new sources of NO₂ emissions have been identified within Perth & Kinross.

In light of the continued compliance with NO₂ objectives and an observed downward trend in concentrations in recent years, PKC will seek to carry out a detailed assessment to determine the feasibility of revoking the Perth AQMA for NO₂ in the near future.

There were no exceedances of the annual mean PM₁₀ objective and no exceedance of the overall PM₁₀ 24-Hour Mean national objective during the reporting year. PM₁₀ levels remained reasonably steady at Crieff and Bridgend RTMs compared to previous years, and a slight increase was seen at Glasgow Road. However there was a sharp reduction seen at the Atholl Street RTM compared to 2023, with levels reducing from 23.4 µg/m³ to 13 µg/m³ (FIDAS adjusted values).

This is a marked difference from the previous year where PKC also recorded 15 exceedances of the 50 µg/m³ 24-Hour Mean at Atholl Street, and is thought to be a direct result of building works previously carried out behind the Atholl Street monitor between 2021 and 2023. This confirms that the high PM₁₀ levels recorded at the site over the past three years were largely due to these building works rather than an increase from road traffic emissions, however it will take a number of years for the true trend of PM₁₀ emissions at this site to reemerge due to this long period of influenced results.

PKC also monitors for PM_{2.5} at all RTMs. No exceedances of objective levels were observed in 2024, and levels have continued to remained fairly steady since monitoring began with no significant increasing or decreasing trend.

PKC closely monitors the air quality across the whole of Perth and Kinross, and works in close partnership with a number of agencies to manage and improve local air quality,

including TACTRAN (Tayside and Central Scotland Transport Partnership), SEPA, Transport Scotland (TS) and Bear Scotland.

Actions to Improve Air Quality

- **Cross Tay Link Road** – The Cross Tay Link Road, now named The New Kingsway and Destiny Bridge, opened on 31 of March 2025 after three years of construction. A key component of the Perth Travel Future Project, the road links the A9, the A93 and the A94 by providing a crossing over the River Tay and bypassing the city centre, with key project priorities being the reduction of congestion and improvement of air quality within Perth City. The new route also includes a 12km active travel path network, a new Park-and-Choose area and a green bridge to separate active travel users and wildlife from the road.
As one of the main air quality improvement measures included in the original Perth Air Quality Action Plan, the completion of this project is anticipated to lead to significant improvements in air quality in city centre hotspots, particularly in areas like Atholl Street and Bridgend. Close monitoring of the effects of the new crossing will be carried out over the next few years to assess air quality improvement and will be reported on in subsequent Annual Progress Reports.



Completed Destiny Bridge April 2025



Completed New Kingsway April 2025

- **Perth AQAP** – Public consultation on the updated Perth Air Quality Action Plan (AQAP) was carried out in late 2024 between November and December. The feedback received was considered and the AQAP amended where required, with the final Perth AQAP awaiting committee approval in August 2025. Once published, PKC will begin delivering the new measures within the updated AQAP over the next five years.
- **Crieff AQMA Revocation** – Following a detailed assessment of Crieff's current and future air quality in late 2023 which confirmed air quality objectives were not likely to be exceeded within Crieff, PKC formally revoked the Crieff AQMA in December 2024. Though the AQMA is revoked, monitoring within Crieff will be maintained and remaining measures within the Crieff AQAP will be progressed to ensure air quality continues to improve in the town.
- **Clean Air Day** – PKC once again took part in Clean Air Day in 2024. Alongside social media content, education activities were delivered at seven primary schools across Perth and Kinross, designed to help pupils understand key issues around air

pollution and climate change. As with last year, class activities focused on vehicle idling to tie in with PKC's ongoing anti-idling enforcement and promotional campaign "Ease Our Wheeze". Pupils made artwork with anti-idling messaging to be used in the future posters for display outside schools.

- **Anti Idling Enforcement** – Enforcement continued in Perth and Kinross for its second year in 2024, with PKC parking attendants continuing to carry out enforcement on an intelligence-led basis following a '4 E's' approach – Engage, Explain, Encourage, Enforce. Following information gathered the previous year about idling hotspots, anti-idling messaging was displayed outside several schools in the form of lamppost wraps. Furthermore, new road signage was created and deployed at a known idling hotspot in Milnathort to discourage offenders. Encouragingly, once again no fixed penalty notices needed to be issued in 2024, and parking attendants continue to regularly ask motorists to switch off their engines while on patrol as well as identify hotspots for future focus. It should be noted that the first fixed penalty notice has been issued in July 2025, and will be reported on in the next APR.



New Anti-Idling Lamppost Wraps Installed at Craigie Primary School

- **PKC Fleet HVO Trial** – PKC Fleet carried out a three-month trial in May 2024 of moving six refuse collection vehicles (RCVs) from diesel to Hydrotreated Vegetable Oil (HVO) to reduce vehicle emissions. Though the cost of HVO is higher than diesel, the main focus of the move was for the benefits of CO₂ reduction. Switching from diesel to HVO fuel can also result in a 75% reduction in PM emissions and 10% reduction in NOx emissions, making it a positive move from both a climate change and air quality point of view.

The result of this initial trial was a significant reduction in the council's carbon emissions – namely saving 87 tonnes of carbon dioxide. The success of this trial has led to a further 18 bin lorries being swapped to HVO fuel from February 2025, with the changeover expected to achieve an estimated reduction in CO₂ of around 500 tonnes a year, alongside reductions in NO₂ and PM emissions.

- **Public Transport Transformation Project** – The PKC Public Transport Transformation Project was initiated in 2024, with the aim to develop an outline business case proposing the recommended PKC transport model to meet the needs of residents, visitors and to future proof transport provision in the P&K area. This project will include widespread research and consultation to establish the current transport needs of the public as well as work to enhance awareness and promotion of public transport in Perth & Kinross. The overall aim of the project is to increase usage of public transport across the region, which will have a significant positive impact on reducing vehicle emissions and improving local air quality.

As part of this project, PKC began providing free bus travel on the first Saturday of every month in 2024, in collaboration with local bus providers. This service was used by 38,042 people over the course of the year, saving almost £108,000 in fares to residents and encouraging people to get on board their local bus services, while promoting sustainable travel.

- **Mobility Strategy** – PKC's Mobility Strategy was approved by the Climate Change and Sustainability Committee on 23 October 2024, following substantial consultation carried out throughout 2024. Setting out the Council's vision for

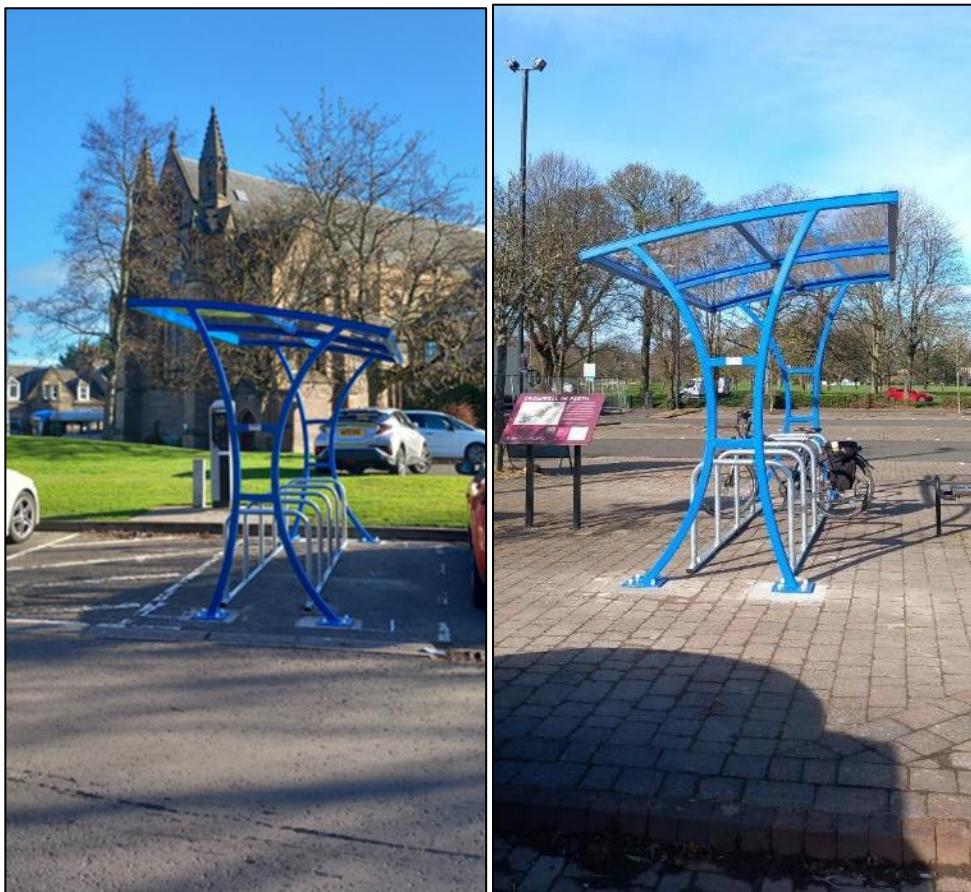
managing and developing the area's transport network, this strategy has close ties with air quality improvement and will be key in delivering many of the measures within our air quality action plans. Air quality features prominently throughout the strategy, with improving air quality being one of the 11 key Transport Planning Objectives within the Strategy and several actions within the associated Mobility Strategy Action Plan relating to air quality. A Lead Officer was employed in June 2025 to take the strategy forward.

- **iBike** – PKC has continued to work with SUSTRANS to employ an iBike Officer to provide sessions at schools throughout Perth and Kinross. In 2024 these sessions included Bikeability cycle training, bike maintenance etc across a number of schools to encourage pupils and their parents to take up sustainable and active travel. 2702 pupils were engaged with, along with 209 staff and 19 parent attendees.



PKC iBike Officer Leading a Primary School Bike Ride

- **Bus Infrastructure** – PKC continues to upgrade the bus stop infrastructure throughout the region with new shelters and Real Time Passenger Information Displays (RTPI) to encourage the move to public transport. In 2024 7 new RTPI displays were installed in Perth City with the majority being installed alongside refurbishment of existing bus shelters, along with a 65-inch double sided TFT display being installed at Kinross Park and Ride. Alongside their usual function of showing bus times, these RTPI displays have been utilised to advertise public transport related sites such as PK On The Go and Traveline Scotland. Furthermore, various improvements to Broxden Park and Ride were carried out to better cater for increased express coach and passenger usage at the site, including accessibility improvements and two more bus/coach bays.
- **EV Infrastructure** – Perth and Kinross Council and Angus Council received £1.925 million from the EV Infrastructure Fund Grant in 2024 to enhance the charging network across the two areas, with PKC being the lead authority for delivery of the project. The project is expected to start in Autumn 2025 and will span 15-20 years, involving supply, installation, and maintenance of new and existing EV chargers across both areas. Alongside this work, as of the time of writing, all chargers across the PKC network are now contactless compliant.
- **Encouraging Active Travel** – PKC's Safer Communities Team continued to projects to encourage active travel in 2024. Bikeability training was delivered across the region, engaging with 2816 participants across 85 schools at all three skill levels of Bikeability. Other active travel projects delivered by the team include the Young Offenders Programme and working with HMP Perth to deliver Family Cycle Sessions in the future.
Active travel infrastructure also continued to be rolled out across Perth and Kinross, with an additional 208 cycle parking spaces being installed across 27 new locations in 2024. The majority of these were installed at community facilities to further encourage cycle usage. Within Perth, a new shared use footway was installed in North Muirton, and feasibility design study for cycling infrastructure on Tay Street Perth was carried out. Ongoing installation of dropped kerbs and continuous footways throughout the region were also carried out in 2024 to improve accessibility.



Cycle Shelters Installed at St Ninians Cathedral and South Inch, Perth

- **Staff travel** – Employee commuting and homeworking emissions were included within the Council's annual Public Bodies Climate Change Duties Reporting (PPCCDR) submission for the first time in 2023, calculated from staff travel survey data gathered in mid-2023. This survey was repeated in 2024, where we saw a travel breakdown of 74.9% by car, 13.7% by walking and cycling, 8.4% by bus and 2.7% by train. Though the surveys showed an increase in car usage from the previous year (60%), there was an increase in those using active travel methods. The survey also saw emissions associated with PKC employee commuting fall by 14% (752 tCO₂e) to an estimated 4,617 tCO₂e annually. These surveys will help inform future measures to reduce staff travel emissions.

Local Priorities and Challenges

- The updated Perth AQAP will be published in August 2025 following Committee approval. Following publication of the AQAP, work will begin planning the delivery of

the many new measures within the updated plan, alongside promotion of the plan both internally and externally.

- Following approval in 2024 and the appointment of a Lead Officer in June 2025, the PKC Mobility Strategy will now be progressed. The Mobility Strategy is intended to set the direction for the Council's approach on the movement of people and goods, helping coordinate the delivery of transport projects, whilst also providing support for external funding applications. Air quality features throughout various measures in the Strategy, and as such will be a key consideration in its delivery going forward.
- The Public Transport Transformation Project will continue to be delivered over the coming year, with work including assessing the feedback from communities gathered in 2024/25 to develop transport model options, submitting a revised Home to School Policy and examining areas where footways could be improved to improve safety for students walking to school.
- PKC will also continue to deliver the Perth Transport Futures Project in order to address key congestion points in the existing road network and provide linkages to growth areas set out in the Local Development Plan.

This project is split into four phases and will be delivered over several years. Progress is as follows:

- **Phase 1 A9/A85 Junction Improvement and Link Road to Bertha Park –**
Completed in 2019
- **Phase 2 Cross Tay Link Road (CTLR) –** Completed in March 2025
- **Phase 3 Bertha Park North Link to A9 –** Planning permission for the road to link Phase 1 and 2 was granted in February 2025 (Sweco UK Ltd, 24/01303/AMM). Construction is now underway on the road, which will run from Bertha Park High School to the new A9 West Roundabout, and will complete the Cross Tay Link Road.

- **Phase 4 Associated Perth City Centre Improvements** – Following completion of the Cross Tay Link Road, work is now underway to assess what improvements can now be made to Perth City Centre due to the reduction in traffic, such as a segregated cycle network, bus lanes, increased pedestrian areas etc.

More information on the Perth Transport Futures Project can be found at

<https://www.perthtransportfutures.co.uk/>

How to Get Involved

For further information on air quality within Perth and Kinross visit the PKC air quality website at: <https://www.pkc.gov.uk/airquality>

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1 Local Air Quality Management

This report provides an overview of air quality in Perth and Kinross 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 Perth and Kinross 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 alongside regular annual reviews.

A summary of AQMAs declared by PKC can be found in Table 2.1 . Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available in Figure 2.1 as well as online at [PKC's Air Quality webpage](#).

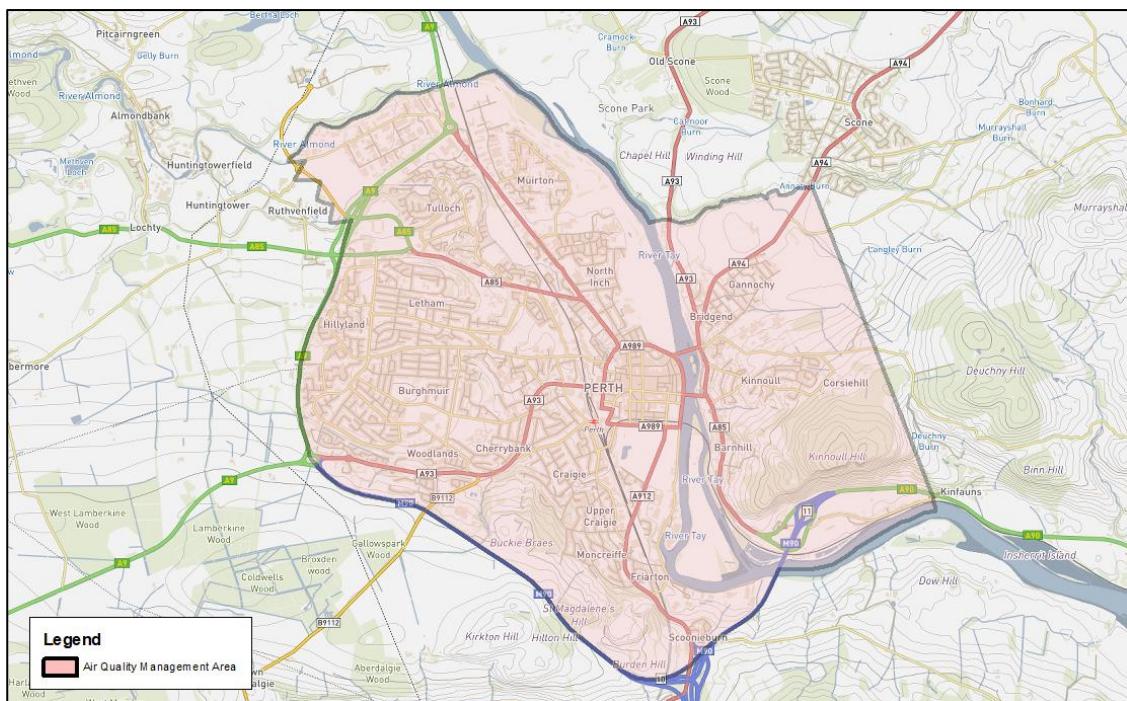


Figure 2.1: Perth AQMA Boundary

Table 2.1 – Declared Air Quality Management Areas

AQMA Name	Pollutants and Air Quality Objectives	City / Town	Description	Action Plan
Perth AQMA	<ul style="list-style-type: none"> • NO₂ annual mean PM₁₀ 24-hour mean 	Perth	The whole area of Perth City was designated an AQMA in 2006.	Perth and Kinross AQAP 2009 http://www.pkc.gov.uk/media/35448/2009-Air-Quality-Action-Plan/pdf/Perth_and_Kinross_Air_Quality

2.3 Implementation of Air Quality Action Plan(s) and/or measures to address air quality

In order to ensure that local authorities implement the measures within an action plan by the timescales stated within that plan, the Scottish Government expects authorities to submit updates on progress through the APR process. Perth and Kinross Council has taken forward a number of measures within the action plan during the current reporting year of 2024 in pursuit of improving local air quality and meeting the air quality objectives within the shortest possible time. Details of all measures completed, in progress or planned are set out in Table 2.2. More detail on these measures can be found in the air quality Action Plan relating to each AQMA.

Key completed measures for this reporting year are:

- The Cross Tay Link Road was completed in March 2025 after three years of construction. The road is expected to have a significant positive impact on Perth's air quality by reducing traffic traveling through the city centre, reducing congestion and vehicle emissions.
- The updated Perth AQAP has been completed following public consultation in late 2024, with the final version to be published in August 2025 following committee approval.
- The Crieff AQMA was revoked in December 2024 following a detailed assessment which concluded that future exceedances were not likely to occur.

- In 2024, PKC Fleet trialled 6 of its refuse vehicles on HVO fuel to reduce emissions. Following a successful trial, as part of a wider Fleet Decarbonisation Strategy a further 18 refuse vehicles will be moved to HVO in 2025
- The PKC Public Transport Transformation Project was initiated in 2024 to develop an outline business case proposing the recommended PKC transport model to meet the needs of residents, visitors and to future proof transport provision in the P&K area. Widespread work was carried out in 2024, including mapping work to assess current transport provision, public consultation work, assessment of current home to school transport provision and more. Also as part of this work, three council minibuses were handed over to Community Transport Groups - Royal Voluntary Service, Perthshire Welfare Society, and Mantalk.
- As part of the above Transformation Project, free bus travel was provided across Perth and Kinross on the first Saturday of each month, with 38,042 people taking advantage of the offer over the course of the year, saving almost £108,000 in fares.
- The PKC Mobility Strategy was approved in October 2024 and a Lead Officer was employed in June 2025 to take the project forward. This project covers a wide range of transport remits and its delivery will have a positive impact on air quality across Perth and Kinross
- Anti Idling enforcement continued for a second year following the “4 E’s” approach (Engage, Explain, Encourage, Enforce). Anti-idling messaging was displayed around several schools in 2024 through the use of lamppost wraps, as well as through new road signs deployed at a known idling hotspot. At the time of writing, one fine has been issued.
- Clean Air Day event delivered with social media and school participation at seven primary schools across P&K
- The iBike Officer continued to provide cycle activities and training at schools across Perth & Kinross, with 2,702 participants in 2024.

- PKC's Safer Communities Team continued to deliver Bikeability training across the region, with 2816 participants across 85 schools at all three skill levels of Bikeability. Other active travel projects delivered by the team include PKC's Trail Therapy Sessions and the Young Offenders Programme
- Cycle parking was installed at 27 locations across P&K, totalling 208 new cycle parking spaces. Other active travel infrastructure works included a new shared used footway in North Muirton and feasibility design for future cycling infrastructure on Tay Street, Perth.
- PKC continued to improve bus infrastructure in 2024 with the installation of a further 7 Real Time Passenger Information boards within Perth City and a double-sided totem display at Kinross Park and Ride, along with various improvements to Broxden P&R for improved capacity and accessibility for both buses/coaches and passengers.
- PKC and Angus Council received £1.925 million from the EV Infrastructure Fund Grant to enhance the EV Charging network across both regions. All existing chargers in PKC are also now contactless compliant
- The PKC staff travel survey was carried out for a second year to calculate employee commuting and homeworking emissions for the Council's annual Public Bodies Climate Change Duties Reporting (PPCCDR) submission. Emissions fell by 14% (752 tCO₂e) compared to the previous year, with a larger proportion of staff using sustainable travel methods.

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

- Zephyr Monitor & Traffic Management Trial – The trial to link air quality sensors with the traffic signalling network was delayed due to ongoing communication issues with the signalling system across Perth, making overall operation unreliable and preventing the linking of the Zephyr monitors and traffic signalling. A permanent solution was put in place in Autumn 2024, however due to the Cross Tay Link Road opening in March 2025 the trial will be delayed until traffic levels have stabilised once more. Work will be expected to resume late 2025/early 2026

Perth and Kinross Council expects the following measures to be completed over the course of the next reporting year:

- The updated Perth AQAP will be completed and published in August 2025, and work will begin to deliver the new measures within the plan.
- Following the opening of the Cross Tay Link Road in March 2025, PKC will closely monitor the impact the new road has on Perth's air quality in its first year. Monitoring data, traffic data, traffic modelling and air quality modelling will be analysed to determine the impact the road is expected to have on local air quality in Perth.
- The Perth Circulation Plan is under consideration to reallocate the newly available road space within Perth City freed up by the Cross Tay Link Road for more sustainable travel (bus, walking, cycling). These works may have a significant impact on air quality, and as such we will be involved closely in the planning of this project.
- Anti Idling enforcement will continue within Perth and Kinross and may be further improved with the implementation of new parking systems, currently at the procurement stage.
- The 2025 PKC staff travel survey is underway with the results being used to inform future measures for reducing staff emissions.
- Following a successful trial of HVO in 2024 and as part of a wider Fleet Decarbonisation Strategy (2025-2030), a further 18 refuse vehicles will be moved to HVO in 2025. The decarbonisation strategy will also lead a further push for PKC petrol and diesel vehicles to be replaced with electric alternatives.
- Work on the Public Transport Transformation Project will continue in 2025, including assessing results from a mapping exercise and the feedback from communities, reviewing all existing contracts, and producing a revised Home to School policy.
- PKC will begin delivery of the joint EV infrastructure project with Angus Council utilising £1.925 million funding from EV Infrastructure Fund Grant in Autumn 2025, with contracts going out to tender in the summer.

- Funding has been granted to once again allow the iBike Officer to provide cycle activities and training at schools across Perth & Kinross.
- Active travel infrastructure will continue to be installed across Perth & Kinross, including new cycle parking, shared use footways and accessibility improvements
- PKC Safer Communities team will continue to deliver Bikeability training, with level one participation increasing in 2025. Other active travel work will include continuation of Trail Therapy sessions and the Young Offenders Programme, as well as working to deliver Family Cycle Sessions for HMP Perth and assisting in delivering Energy Fest 2025.
- PKC's Traffic and Network team will utilise new traffic detectors to identify vehicle types and use this information for phasing/timing changes, with this new method of control being trialled in Atholl Street/Bridgend initially.
- PKC Environmental Health will continue to regularly assess planning applications for to ensure that the air quality impact of future development across Perth and Kinross is kept to a minimum.

Table 2.2 – PKC's Three Key Actions, and Progress on Perth AQAP 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.	<p>Assess Air Quality Impact of the Cross Tay Link Road –</p> <p>PKC will investigate changes in Perth's air quality monitoring and traffic data, pre and post Cross Tay Link Road opening.</p>	Transport planning and infrastructure	2026	PKC Environmental Health, Transport & Development	In Progress	<p>Fully Funded (Annual funding source, SG AQ Grant)</p>	<p>2024 – Monitoring increased in surrounding towns in advance of CTLR opening</p> <p>2025 – CTLR opened in March 2025</p> <p>2025 – Funding granted by SG to carry out modelling and monitoring work to assess impact of CTLR on local air quality</p>	<p>In advance of the CTLR opening in March 2025, PKC's Environmental Health team deployed additional diffusion tube monitoring in late 2024 to surrounding towns/villages likely to see changes in traffic when the road opened, to establish baseline air quality levels pre-CTLR.</p> <p>Air quality monitoring data and traffic data will be gathered throughout 2025 and will be analysed in 2026 to assess the initial impact of the new road.</p>	No barriers anticipated

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
2	<p>Public Transport Transformation Project –</p> <p>Review public transport delivery across P&K as well as enhance awareness and promotion of public transport in the area</p>	Alternatives to private vehicle use	2027	PKC Public Transport Unit	In Progress	<p>Fully Funded (Staff Time and PTTP funding, £325,000 over three years)</p>	<p>2024 - 38,042 used free bus travel days saving £108,000 in fares</p> <p>2024 – Public Transport Transformation Project underway</p>	<p>The PTTP was initiated in 2024 and will be delivered over three years. Works includes widespread consultation to assess current real need for transport, as well as reviewing school transport, transport for those using Health and Social Care Partnership services and developing an effective communication and engagement strategy. The overall goal of this work is to develop an outline business case proposing the</p>	<p>Continued increasing costs of operating public transport services and bus driver shortages present challenges</p>

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								<p>recommended PKC transport model to meet the needs of residents, visitors and to future proof transport provision in the P&K area</p> <p>Part of this work also includes the continuation of the council's Free Bus Saturdays on the first Saturday of each month, with the aim of encouraging residents, shoppers and visitors to use their local bus. In 2024, 38042 people took advantage of the offer, saving over £108,000 in fares.</p>	

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
3	<p>PKC Fleet Transition to Hydrotreated Vegetable Oil (HVO) Fuel –</p> <p>Following a successful trial in 2024, PKC will transition 18 additional refuse vehicles to HVO fuel to reduce vehicle emissions</p>	Promoting Low Emission Transport	2025/26	PKC Fleet	In Progress	Fully Funded (PKC Fleet Revenue Budget)	2024 – 6 refuse vehicles trialled on HVO fuel, CO ₂ reduction of 87 tonnes	In 2024, PKC Fleet trialled 6 of its refuse vehicle on HVO fuel to reduce emissions. This trial resulted in a reduction of CO ₂ emissions of 87 tonnes. As well as reducing CO ₂ , switching from diesel to HVO fuel can result in a 75% reduction in PM emissions and 10% reduction in NOx emissions, particularly in heavy vehicles. In response to this success and as part of a wider Fleet Decarbonisation Strategy a further 18 refuse vehicles will	No barriers predicted

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								be moved to HVO in 2025.	
A.1	Improve Links with Regional Transport Strategy	Policy guidance and development control	2025	TACTRAN PKC (Transportation & Development and Environmental Health)	Complete	Fully Funded (Staff Time)	2024 - Completion of RTS	The regional transport strategy was published in June 2024, with PKC being included in its development process. PKC will continue to work with TACTRAN to deliver the RTS with particular focus on areas improving air quality	No barriers predicted
A.2	Ensure Mobility Strategy created in line with CAFS2	Policy guidance and development control	2025	PKC (Transport & Development)	Complete	Fully Funded (Staff Time)	2024 - Completion of PKC's Mobility Strategy	PKCs Mobility Strategy was approved in October 2024 and a Lead Officer was employed in June 2025 to take the project forward.	No barriers predicted
A.3	Ensure Integration of Air Quality with Other Council Strategies and Policies	Policy guidance and development control	Ongoing	PKC	In progress	Fully Funded (Staff Time)	2024 – AQ close involvement in Climate Change,	Alongside the above-mentioned Mobility Strategy, air	No barriers predicted

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							Mobility, LDP and Transport Planning projects	quality is closely involved in various Council Strategies/Pol icies, including a presence on the Climate Change Working Group and close collaboration with the creation of the next Local Development Plan. Following the completion of the Cross Tay Link Road, works are underway to reallocate the newly available road space within Perth City to more sustainable travel (bus, walking, cycling). These works may have a significant impact on air	

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								quality, and as such we will be involved closely in the planning of this project	
A.4	Planning and AQ	Policy guidance and development control	Ongoing	PKC (Planning and Environmental Health	In Progress	Fully Funded (Staff Time)	2020 - Statutory AQ Supplementary Planning Guidance adopted in March 2020 and is linked with the LDP	Environmental Health continue to check the weekly planning list and comment on applications which may adversely impact on local air quality. The AEA/EPUK screening tools are used to assess applications. The other new aspects of this measure will be progressed following publication of the Perth AQAP in August 2025	Staff resource for assessing approach to development green travel plans and use of AQ supplementary guidance

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
B.1	Cross Tay Link Road	Transport planning and infrastructure	2025	Transport Scotland PKC (Traffic & Network and Transportation & Development)	In Progress	Fully Funded (PKC Capital Funding & SG Funding (£110.5M PKC + £40M SG))	2021 - Contract for the CTLR design and construction was awarded on 23 June 2021. 2022 – Groundworks on CTLR began 2023 – Realigned A9 opened in August, part of link road opened in October, construction of the Destiny Bridge underway 2025 - Completion of the Cross Tay Link Road in March	The Cross Tay Link Road opened in March 2025 after three years of construction. The change in traffic movements and the impact the new road will have on air quality will now be assessed over the coming months and years, alongside work within Perth City Centre to improve active and sustainable travel following the expected reduction in city centre traffic as a result of the new road.	No barriers predicted
B.2	Incentivise parking out with City Centre hotspots	Transport planning and infrastructure	N/A	PKC (Parking)	Planned	Not Funded	2024 - Completion of Perth Parking Survey to assess usage	Perth City parking survey carried out in 2024. Survey found	-Staff resource and funding to investigate parking options

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								overall maximum occupancy of 56%, a reduction from 2018. Short stays have also increased. This survey will be used to inform changes to Perth City Parking and a planned Parking Strategy	- Changes to parking will likely be received negatively by the public, significant public consultation will be required before any changes are implemented
B.3	Encourage Low-Car Development	Alternatives to private vehicle use	N/A	PKC (Planning)	Planned	Not Funded	N/A	No progress as this is a new measure within the updated Perth AQAP. Measure will be progressed following publication of the Perth AQAP in August 2025	PKC's LDP3 will not be published until 2027 and will be subject to various public consultation exercises. Measure's inclusion in LDP3 will be dependent on public feedback.
C.1	Continued improvement of UTMC system	Traffic management	Ongoing	PKC (Traffic & Network and Transportation & Development)	In Progress	Fully Funded (PKC UTC Revenue Budget)	21/22 - Reviewed and Validated the traffic signal operation, phasing and timings of the Dunkeld Road/Atholl	At the time of writing, CTLR has now been completed (March 2025). Changes to traffic flows through the city centre will	Staff resource may limit progress – Traffic and Network team have a wide remit

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							<p>Street Corridor and Bridgend/Perth Bridge Corridor to try and improve traffic flow through the corridors.</p> <p>2022 – Two new signal sites installed to support school active travel</p> <p>2023 – T&N Zephyr monitor trial began, but has been postponed until 2025 due to communication issues with traffic signals and the upcoming CTLR completion</p> <p>2024 – New variable messaging signs installed as part of CTLR project</p>	<p>be assessed late 2025 once the new normal has been established, after which point any reviews of traffic management will be carried out.</p> <p>The Zephyr trial was also postponed until CTLR was completed and will operate on a similar timescale to the above.</p> <p>As part of the CTLR project, new variable messaging signs have been installed and will inform drivers of congested routes, redirecting them and allowing for a further reduction in</p>	

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								city centre congestion	
C.2	Anti-Idling Scheme	Traffic Management	Ongoing	PKC (Parking and Environmental Health)	In Progress	Fully Funded (Staff Time)	2022 - Anti-Idling enforcement approved by Committee 2023 – Anti-Idling Enforcement Began 2024 – Anti-idling messaging installed outside schools and at an idling hotspot	Anti-idling enforcement continued within PKC for second year, alongside deployment of anti-idling messaging in the form of lamppost wraps around several schools and targeted road signs at a known idling hotspot. One idling fine has been issued at the time of writing	No barriers predicted
C.3	Traffic Monitoring	Traffic management	N/A	PKC (Transportation & Development)	Planned	Not Funded	N/A	No progress as this is a new measure within the updated Perth AQAP. Measure will be progressed following publication of the Perth AQAP in August 2025	Measure progress reliant on sourcing funding

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
D.1	Encourage local fleet operators to pursue cleaner vehicles	Promoting low emission transport	N/A	ECO Stars PKC (Environmental Health)	Delayed	Not Funded	2023 - 208 members recruited covering over 7,228 vehicles	No further progress due to SG funding reductions	Measure progress reliant on sourcing funding or SG choosing to run ECO Stars centrally in future
D.2	Freight Improvements	Freight and delivery management	Ongoing	TACTRAN PKC (Transportation & Development)	In Progress	Part Funded (Staff Time)	N/A	No progress as this is a new measure within the updated Perth AQAP. Measure will be progressed following publication of the Perth AQAP in August 2025	Staff and financial resource required to assess freight consolidation centre, renewable charging options etc
D.3	Public transport improvements	Transport Planning and Infrastructure	Ongoing	PKC (Public Transport Unit and Environmental Health)	In Progress	Fully Funded (Staff Time and PTTP funding, £325,000 over three years)	2024 - 38,042 used free bus travel days saving £108,000 in fares 2024 – Public Transport Transformation Project underway 2024 - Minibuses donated to three community groups, Public Transport Transformation Project is now also	PKC funded free bus travel on the first Saturday of every month in 2024. 38,042 people took advantage of the offer, saving almost £108,000 in fares. Public Transport Transformation Project is now also	-Staff resource to progress BSIP development -Bus operator buy-in and cooperation necessary for measure success

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								<p>underway, aiming to review public transport delivery and enhance awareness and promotion of public transport in Perth & Kinross</p> <p>PKC Minibuses were donated to three community groups: Royal Voluntary Service, Perthshire Welfare Society, and Mantalk</p>	
D.4	Continue to evaluate the need for an LEZ in the AQMA	Promoting Low Emission Transport	Ongoing	PKC (Environmental Health)	In Progress	Fully Funded (Staff Time)	2020 - NLEF Stage 1 Screening complete and LEZ found not necessary in Perth	NLEF Stage 1 Screening Appraisal was carried out by PKC for both the Perth and Crieff AQMAs as part of the 2020 APR. Screening assessment found that the measures within the Perth AQAP	No barriers predicted

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								were sufficient to reduce air pollution within Perth AQMA without the need of an LEZ.	
D.5	PKC Fleet Improvement	Promoting Low Emission Transport	Ongoing	PKC (Fleet and Transportation & Development)	In Progress	Fully Funded (PKC Fleet Revenue Budget)	2023 - 17 EVs in PKC Fleet, chargers at 15 locations available for Fleet use 2024 – 19 EVs in PKC Fleet, 25 chargers available for Fleet use at 12 sites 2024 – HVO trial for 6 PKC refuse vehicles	PKC continue to replace Euro Standard vehicles with newer Euro 6 vehicles or EVs where appropriate. Currently PKC has a total of 19 EVs in its fleet. PKC continue to expand electric charging point network to accommodate a more electric fleet. PKC Fleet now have 25 EV charge points installed at 12 locations across P&K	-PKC EV charging infrastructure key bottleneck for moving fleet to electric -EV infrastructure reliant on sourcing funding and suppliers

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								In 2024, PKC Fleet trialled 6 of its refuse vehicle on HVO fuel to reduce emissions. Following a successful trial, as part of a wider Fleet Decarbonisation Strategy a further 18 refuse vehicles will be moved to HVO in 2025	
D.6	PKC Fleet Management	Vehicle fleet efficiency	N/A	PKC (Fleet)	Planned	Part Funded (Staff Time)	N/A	No progress as this is a new measure within the updated Perth AQAP. Measure will be progressed following publication of the Perth AQAP in August 2025	Sourcing funding and supplier for staff driver training
D.7	EV Charging Infrastructure	Promoting low emission transport	Ongoing	PKC (Transportation & Development)	In Progress	Fully Funded (EV Infrastructure Fund Grant Award of £1.925M for Angus & PKC)	2024 - EV Infrastructure Fund Grant Award of £1.925M commissioned across P&K	PKC and Angus Council received £1.925 million from the EV Infrastructure Fund Grant in	Significant funding required for rollout of EV infrastructure. Chargepoint Scotland ceases in 2025,

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							2024 to enhance the charging network across the two areas, with PKC being the lead authority for delivery of the project. The contract will span 15-20 years, involving supply, installation, and maintenance of new and existing EV chargers across the areas. Alongside this work, as of the time of writing, all chargers across the PKC network are now contactless compliant.	meaning a new back office solution will need to be procured for all PKC chargers. Significant procurement exercise, may delay expansion of the network	

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
D.8	School Travel Plans	Promoting Travel Alternatives	N/A	PKC (Public Transport Unit, Environmental Health and Traffic & Network)	Planned	Not Funded	2023/24 – Funding applied for in partnership with Living Streets for the creation/update of school travel plans 2024/25 – Funding application with Living Streets was unsuccessful, as was SG AQ Grant application. Alternative funding sources being identified	Unfortunately, PKC's funding application in partnership with Living Streets to carry out the creation and/or update to Perth and Kinross school travel plans was unsuccessful, as was a subsequent application to Scottish Government for funding. PKC are currently seeking alternative forms of funding to take this project forward	Staff resource required for reviewing and updating of travel plans Sourcing funding for this resource proving difficult
D.9	Domestic Emissions	Domestic solid fuel burning	N/A	PKC	Planned	Fully Funded (Staff Time)	N/A	No progress as this is a new measure within the updated Perth AQAP. Measure will be progressed following publication of	Staff resource required for assessing distribution of domestic burning sources

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								the Perth AQAP in August 2025	
E.1	Promotion and Development of car clubs	Alternatives to private vehicle use	N/A	PKC	Planned	Not Funded	N/A	No progress as this is a new measure within the updated Perth AQAP. Measure will be progressed following publication of the Perth AQAP in August 2025	Unknown, will be determined as the measure is progressed following AQAP publication
E.2	Park and Rides	Alternatives to private vehicle use	Ongoing	PKC (Public Transport Unit, Transportation & Development and Environmental Health)	In Progress	Fully Funded Annual funding source, Smarter Choices Smarter Places (RTPI Boards) Local Authority Investment Programme (Scone EV Charger) Tay Cities Deal (Low Carbon Transport Hub)	2022 – Fast EV Charger installed at Scone P&R, additional RTPI board installed at Broxden P&R 2023/24 – Various site improvements to Broxden P&R including accessibility improvements and two more bus/coach bays 2024 – Double sided totem	In 2023/24 various site improvements to the value of approximately £80k were carried out at Broxden P&R to account for increased express coach & passenger usage. This included bus/coach & passenger accessibility improvements along with provision of	Walnut Grove P&R progress reliant on developer collaboration. Further P&R improvement reliant on sourcing funding Smarter Choices Smarter Places funding has ceased, meaning alternative funding methods will be required for work previously

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							TFT display installed at Kinross P&R A double-sided totem TFT display was also installed at Kinross P&R. No further progress regarding the proposed Walnut Grove P&R, discussion between PKC and the developer/landowner re the Section 75 legal agreement are ongoing	2x bus/coach bays. A double-sided totem TFT display was also installed at Kinross P&R. No further progress regarding the proposed Walnut Grove P&R, discussion between PKC and the developer/landowner re the Section 75 legal agreement are ongoing	funded from this source
F.1	Promotion of active travel	Promoting low emission transport	Ongoing	TACTRAN PKC	In Progress	Fully Funded (Annual funding, 50% SG AQ Grant funding 50% Sustrans funding (iBike Officer)) (Annual funding, Bikeability Scotland Support Plus	2023/24 – 2816 Bikeability participants across 85 primary schools 2023/24 – 2702 pupils, 209 staff and 19 parents attended iBike activities	SG funding was attained again this year to match fund the iBike Officer. Various activities such as bikeability training, bike maintenance sessions etc. were carried out, with 2702 participants in 2024	Both Sustrans and SG AQ Grant funding has been cut from 2024 onwards, which may restrict future iBike project work

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
						Fund (Bikeability)) (Annual funding, Cycling Scotland/Transport Scotland (Cycle Parking)) (Annual funding, 70% Paths for All, 30% PKC internal funding (Shared use footway)) (Annual funding Transport Scotland (Tay Street Feasibility work))	carried out in 23/24 2024/25 – Cycle parking installed at 27 new locations, totalling 208 new cycle parking spaces. New shared use footway in North Muirton, feasibility study carried out for Tay Street cycle infrastructure	PKC's Safer Communities Team continued to deliver Bikeability training across the region, with 2816 participants across 85 schools at all three skill levels of Bikeability. Active travel infrastructure continued to be delivered across Perth and Kinross, with a further 208 cycle parking spaces installed across 27 new locations in 2024. Furthermore, a new shared use footway was installed in North Muirton, and feasibility design study for cycling	

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							infrastructure on Tay Street Perth was carried out. Ongoing installation of dropped kerbs and continuous footways were also carried out in 2024 to improve accessibility.	PKC collaborates with TACTRAN's Get On The Go, Perth & Kinross Countryside Trust, Liftshare and other partners to promote active travel across the region.	
F.2	Provision of travel information	Public information	Ongoing	TACTRAN PKC (Public Transport Unit)	In Progress	Fully Funded (PKC PTU Revenue Budget (RTPI Displays))	2024 – Perth and Kinross On The Go website terminated due to funding cut 2024 – 7 new RTPI displays	Due to the existing Smarter Choices Smarter Places coming to an end, the former Perth	SCSP Funding has come to an end, affecting former ongoing projects

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							installed in Perth, as well as a double-sided display at Kinross Park and Ride	and Kinross On The Go website which advertised various travel information was terminated. Alternative funding will need to be sourced to continue this project or similar projects. 7 new real time passenger information (RTPI) displays were installed in Perth City, with the majority being installed alongside refurbishment of existing bus shelters. A further double-sided totem display was installed at Kinross Park and Ride	

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
F.3	Awareness raising and education	Public information	Ongoing	PKC (Environmental Health)	In Progress	Fully Funded (Annual funding source, SG AQ Grant funding (Clean Air Day))	2024 – Clean Air Day activities carried out at seven schools in P&K	Alongside social media content, Clean Air Day activities were carried out at seven Perth and Kinross primary schools in 2024, promoting active and sustainable travel as well as informing the public on AQ issues. In 2024 educational activities once again had a focus on vehicle idling to coincide with ongoing anti-idling enforcement within P&K. While social media work was carried out in time for Clean Air Day, school activities were carried out in late Autumn for better school participation	SG Air Quality Grant reduced in recent years, alternative funding sources required to continue work

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
F.4	Encourage move to EV	Promoting low emission transport	N/A	PKC (Transportation & Development and Environmental Health)	Planned	Not Funded (will be staff led)	N/A	No progress as this is a new measure within the updated Perth AQAP. Measure will be progressed following publication of the Perth AQAP in August 2025	Staff resource to progress measure
F.5	Improve Council's provision of AQ information	Public information	Ongoing	PKC (Environmental Health)	In Progress	Fully Funded (Staff Time)	2023 – PKC AQ Website updated	No further progress as this is a new measure within the updated Perth AQAP. Measure will be progressed following publication of the Perth AQAP in August 2025	No barriers predicted
G.1	Increase AQ Monitoring Network	Other	N/A	PKC (Environmental Health)	Planned	Not Funded	N/A	No progress as this is a new measure within the updated Perth AQAP. Measure will be progressed following publication of the Perth	Sourcing funding for expansion of monitoring network

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								AQAP in August 2025	
G.2	Increased AQ Modelling	Traffic Management	N/A	PKC (Environmental Health) AQ consultant/ Systra	Planned	Fully Funded (SG AQ Grant)	N/A	Funding has been granted in 2025 to carry out air quality modelling of Perth City Centre to assess the impact of the Cross Tay Link Road opening on pollution hotspots	Sourcing funding for increased traffic and AQ funding
G.3	Scenario Modelling	Traffic Management	N/A	PKC (Transportation & Development and Environmental Health) AQ consultant/ Systra	Planned	Not Funded	N/A	No progress as this is a new measure within the updated Perth AQAP. Measure will be progressed following publication of the Perth AQAP in August 2025	Sourcing of funding for AQ modelling of future Perth road changes

Table 2.3 – Progress on Crieff AQAP 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
A.1	Liaise with the Scottish Government re. the consideration of national measures to reduce background concentrations of PM	Policy guidance and development control	N/A	Scottish Government & PKC	Delayed	N/A	N/A	Information awaited from SG to progress further	Awaiting direction from Scottish Government
A.2	Improving Links with Local Transport Policies	Policy guidance and development control	N/A	PKC Transport Planning	In Progress	N/A	2023 – PKC Mobility Strategy drafted, Air Quality a key consideration 2024 – PKC Mobility Strategy published	PKCs Mobility Strategy was approved in October 2024. AQ is a key factor within the strategy, and EH were closely consulted during its development. A Lead Officer was employed in June 2025 to take the Mobility Strategy forward.	No barriers predicted
A.3	Improve Links with Regional Transport Strategy	Policy guidance and development control	N/A	PKC Transport Planning & TACTRAN	Complete	N/A	2023 – Public consultation on the new TACTRAN RTS carried out between July and November	The regional transport strategy was published in June 2024, with PKC being included in its	No barriers predicted

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							2023, and a final draft submitted to the Minister of Transport for approval 2024 – New Regional Transport Strategy published in June 2024	development process. PKC will continue to work with TACTRAN to deliver the RTS with particular focus on areas improving air quality	
A.4	Ensure Integration of Air Quality with Other Council Strategies and Policies	Policy guidance and development control	N/A	PKC Planning	In Progress	N/A	2019 - LDP considered AQ within the plan for the whole region, not just AQMAs, and was in line with CAFS. 2021 - Air Quality a key consideration within the PKC Climate Action Plan 2023 – PKC Mobility Strategy drafted, Air Quality a key consideration 2024 -PKC Mobility Strategy Published	PKCs Mobility Strategy was approved in October 2024. AQ is a key factor within the strategy, and EH were closely consulted during its development. A Lead Officer was employed in June 2025 to take the Mobility Strategy forward. EH is regularly consulted on upcoming Council plans and strategies regarding Air	No barriers predicted

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								Quality integration	
A.5	LDP – Assess Merit of further development in Crieff	Policy guidance and development control	2019	PKC Planning	Completed	N/A	2019 - Further development in Crieff considered in 2019 LDP, no increases beyond existing proposals until 2024	The Local Development Plan was reviewed and a new LDP was adopted in 2019. During the review, the environmental impacts of directing future development towards or away from Crieff was assessed. The outcome was that the plan should not propose an increase in development – beyond existing proposals – in Crieff for the next five-year plan period (2019-24).	N/A
B.1	Redirect local road traffic movements away from A85	Traffic management	N/A	PKC Traffic & Network & Transport Scotland	Delayed	Not Funded	N/A	Limited alternatives without significant investment	Lack of resource available to progress

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
B.2	Incentivise parking out with AQMA	Transport planning and infrastructure	Unknown	PKC	Delayed	Not Funded	N/A	<p>EH is working with PKCs Transport & Network team to remove 6 parking spaces on West High Street responsible for significant narrowing of road space at this point, causing congesting and increased vehicle emissions.</p> <p>Due to Traffic & Network's high workload across P&K, there is currently no predicted timescale for this project</p>	<p>Lack of available Traffic & Network staff resource due to increased demand on the service</p>
C.1	Possible provision of SMART parking in Crieff	Transport planning and infrastructure	Unknown	PKC Transport Planning	Delayed	Not Funded	N/A	No Progress	Reduced officer capacity & ongoing/annual projects
C.2	Urban Traffic Control Systems congestion management	Traffic management	Unknown	Transport Scotland & PKC Traffic & Network	Delayed	Not Funded	N/A	No Progress	Reduced officer capacity & ongoing/annual projects

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
C.3	Anti-Idling Enforcement	Policy guidance and development control	2023	PKC	Completed	Fully Funded (Staff Time)	2022 - Anti-Idling enforcement approved by Committee 2023 – Anti Idling Enforcement Began 2024 – Anti-idling messaging installed outside schools and at an idling hotspot	Anti-idling enforcement continued within PKC for second year, alongside deployment of anti-idling messaging in the form of lamppost wraps around several schools and targeted road signs at a known idling hotspot. One idling fine has been issued at the time of writing	No barriers predicted
C.4	Undertake a review of the current locations of pedestrian crossings	Transport planning and infrastructure	Unknown	Transport Scotland and PKC Traffic & Network	Delayed	Not Funded	N/A	No Progress	Reduced officer capacity & ongoing/annual projects
C.5	Limit or prioritise traffic turning right onto High Street	Traffic management	Unknown	Transport Scotland and PKC Traffic & Network	Delayed	Not Funded	N/A	No Progress	Reduced officer capacity & ongoing/annual projects
D.1	Encourage private and public operators to pursue cleaner vehicles	Vehicle fleet efficiency	N/A	PKC	In Progress	Not Funded	2019 – PKC ECO Stars Scheme launched 2022 – EV chargers now installed in all Crieff PKC car	No further ECO Stars progress due to reduction in Scottish Government funding.	Measure progress reliant on sourcing funding or SG choosing to run ECO Stars centrally in future

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							parks & Community Campus 2023 – PKC ECO Stars 208 members recruited covering over 7,228 vehicles		
D.2	Maintenance of the Local/Voluntary Bus Quality Partnership -	Promoting travel alternatives	Unknown	PKC Public Transportation Unit	Delayed	N/A	N/A	No Progress	Lack of PKC Public Transport staff resource to pursue
D.3	School Travel Plans	Promoting travel alternatives	N/A	PKC Traffic & Network & Public Transport Unit	In Progress	N/A	2023/24 – Funding applied for in partnership with Living Streets for the creation/update of school travel plans 2024/25 – Funding application with Living Streets was unsuccessful, as was SG AQ Grant application. Alternative funding sources being identified A review of all school travel plans is a new measure included within the updated Perth AQAP. Unfortunately, PKC's funding application in		Staff resource required for reviewing and updating of travel plans Sourcing funding for this resource proving difficult

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								partnership with Living Streets to carry out the creation and/or update to Perth and Kinross school travel plans was unsuccessful, as was a subsequent application to Scottish Government for funding. PKC are currently seeking alternative forms of funding to take this project forward	
D.4	Public transport improvements	Promoting travel alternatives	N/A	PKC Public Transport Unit	In Progress	Fully Funded (Staff Time and PTTP funding, £325,000 over three years)	2021 - RTPI screens installed in two locations within Methven in 20/21, & power supply installed at a bus shelter in Comrie in preparation for a RTPI. 2022 - Two electronic ticket	PKC funded free bus travel on the first Saturday of every month in 2024. 38,042 people took advantage of the offer, saving almost £108,000 in fares.	No barriers predicted

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							<p>machines with contactless payment facilities installed at Sweeneys Garage in Muthill, who operate in the Crieff area</p> <p>2024 – Public Transport Transformation Project underway</p> <p>2024 - 38,042 used free bus travel saving £108,000 in fares</p>	<p>Public Transport Transformation Project is now also underway, aiming to review public transport delivery and enhance awareness and promotion of public transport in Perth & Kinross</p>	
D.5	Restrict access for polluting vehicles within AQMA	Traffic management	2020	Transport Scotland & PKC	Completed	N/A	<p>2020 - NLEF Stage 1 Screening complete and LEZ found not necessary in Crieff</p>	<p>NLEF Stage 1 Screening Appraisal was carried out by PKC for both the Perth and Crieff AQMAs as part of the 2020 APR. Due to the Crieff AQMA covering essentially a single street, in line with the guidance provided for carrying out</p>	N/A

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								the NLEF assessment a low emission zone was not thought to be a proportionate measure in this situation.	
D.6	Implement ECO Stars scheme for HGV and bus operators	Vehicle fleet efficiency	2019	PKC	Completed	Not Funded	2019 – PKC ECO Stars Scheme Launched 2023 - 208 members recruited covering over 7,228 vehicles	No further progress due to SG funding reductions.	Measure progress reliant on sourcing funding or SG choosing to run ECO Stars centrally in future
E.1	Promotion of lift sharing and development of car clubs	Alternatives to private vehicle use	N/A	PKC & TACTRAN	In Progress	Not Funded	2022 - PKCs Liftshare platform no longer has the engagement or membership to make the licence cost economically viable moving forward. PKC Liftshare members have been transferred to the Perth & Kinross regional Liftshare platform, which	Continued promotion of Lift share including PKC and PRI, SSE and Aviva with stalls within workplaces New measure within the updated Perth AQAP focuses more on development of car share scheme than liftshare (this is PKC wide)	No barriers predicted

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
							is paid for by TACTRAN.	and will include Crieff)	
E.2	Travel plans for large institutions and businesses	Promoting travel alternatives	N/A	PKC Planning & TACTRAN	In Progress	N/A	N/A	TACTRAN utilises Transport Scotland funding to provide travel planning advice for businesses across Scotland under the guises of the TravelKnowHow programme. This is through both online tools and direct 1-1 support	No barriers predicted
E.3	Create and implement PKC Corporate Travel Plan	Promoting travel alternatives	Unknown	PKC & TACTRAN	In Progress	N/A	2019 - Baseline staff travel survey carried out. 2021 - Staff travel report went to Senior Management with recommendations of focus for the Corporate Travel plan. Travel Plan	Employee commuting and homeworking emissions were included within the Council's annual Public Bodies Climate Change Duties Reporting (PPCCDR)	No barriers predicted

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation	
							<p>was to be integrated into Council Remobilisation strategy post Covid-19</p> <p>2023 – Yearly staff travel surveys began as part of Climate Change yearly report</p> <p>2024 – Second year of staff travel survey, increase in active travel and public transport usage, and decrease of 753 tCO₂e</p>	<p>2023 – Yearly staff travel surveys began as part of Climate Change yearly report</p> <p>2024 – Second year of staff travel survey, increase in active travel and public transport usage, and decrease of 753 tCO₂e</p>	<p>submission for the first time in 2023, calculated from staff travel survey data gathered in mid-2023.</p> <p>In 2024, the travel breakdown was 74.9% by car, 13.7% by walking/cycling and 8.4% by bus and 2.7% by train, producing an estimated 4617 tonnes CO₂e annually. This is a reduction of 753 tCO₂e from the previous year.</p> <p>PKC currently promotes a car hire salary sacrifice scheme (Tusker) to staff which only provides LEV or ULEVs to encourage a reduction in</p>	

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								staff vehicle emissions.	
E.4	Promotion of active travel	Promoting travel alternatives	N/A	PKC & TACTRAN	In Progress	Fully Funded (Annual funding, 50% SG AQ Grant funding 50% Sustrans funding (iBike Officer)) (Annual funding, Bikeability Scotland Support Plus Fund (Bikeability))	2023/24 – 2702 pupils, 209 staff and 19 parents attended iBike activities carried out in 23/24 2023/23 – 2816 Bikeability participants across 85 primary schools	SG funding was attained again this year to match fund the iBike Officer. Various activities such as bikeability training, bike maintenance sessions etc. were carried out, with 2702 participants in 2024 PKC's Safer Communities Team continued to deliver Bikeability training across the region, with 2816 participants across 85 schools at all three skill levels of Bikeability PKC collaborates	Both Sustrans and SG AQ Grant funding has been cut from 2024 onwards, which may restrict future iBike project work

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								with TACTRAN's Get On The Go, Perth & Kinross Countryside Trust, Liftshare and other partners to promote active travel across the region.	
E.5	Awareness raising and education, presentations at local schools/communit y meetings	Public information	N/A	PKC	In Progress	Fully Funded Annual funding source, SG AQ Grant funding (Clean Air Day)	2020 - A community event focussed on air quality and road safety was held in February 2020 2023- Clean Air Day 2023 activities carried out as six schools in P&K including St Dominics RC Primary in Crieff 2024 – St Dominics in Crieff once again took part in Clean Air Day activities alongside six other schools	Alongside social media content, Clean Air Day activities were carried out at seven Perth and Kinross primary schools in 2024 including St Dominics RC Primary School, promoting active and sustainable travel as well as informing the public on AQ issues. SG AQ Grant funding was utilised to procure	Reduced officer capacity & ongoing/annual projects

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								consultant assistance with delivering school CAD activities	
E.6	Cycling and walking routes to be routed to link in with the campus for sport.	Promoting travel alternatives	N/A	PKC	In Progress	N/A	N/A	Planning proposals for upcoming major developments along south side of Broich Road, Crieff will be required to include a multi-user path to link the sites to the Strathearn Community Campus	No barriers predicted
E.7	Provision of PKC "Champions" for transportation methods	Promoting travel alternatives	Unknown	PKC	Delayed	N/A	N/A	No Progress	Reduced officer capacity & ongoing/annual projects
F.1	Biomass installations and other developments likely to cause pollution – review developments which may cause pollution	Policy guidance and development control	N/A	PKC Planning	In Progress	N/A	N/A	Environmental Health continue to check the weekly planning list and comment on applications which may adversely impact on local air quality. The	No barriers predicted

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								AEA/EPUK screening tools are used to assess applications	
G.1	Increase AQ monitoring network	Policy guidance and development control	N/A	PKC	Completed	Fully Funded Annual Funding, SG AQ Grant	2022/23 – Zephyr monitoring study carried out in West High Street	NO ₂ tube network increased since AQAP was published to increase reliability of results. A Zephyr monitor was installed in West High St in April 2022 for a 12-month study to assess whether RTM readings are representative of street canyon pollution levels, both for NO ₂ and PM ₁₀ . Study results confirmed that the Crieff RTM is representative of High Street NO ₂ and PM ₁₀ concentrations and that levels are well	No barriers predicted

Measure No.	Measure	Category	Expected/Actual Completion year	Organisations Involved	Measure Status	Funding Status	Key Milestones	Progress	Barriers to implementation
								below objectives, allowing PKC to progress with the revocation of the Crieff AQMA	
G.2	Regional AQ modelling study	Policy guidance and development control	2020	PKC & AQ Consultant	Completed	N/A	2020 - Crieff baseline dispersion model completed	Crieff baseline dispersion model was completed in 2020 by Sweco UK Ltd	N/A
G.3	Cycling and walking routes to be incorporated into transport model	Public information	Unknown	PKC	Delayed	N/A	N/A	No Progress	It is not possible to add cycling and walking routes to the current Microsimulation model
G.4	Transport assessments for developments to be required as part of planning process	Policy guidance and development control	N/A	PKC Transport Planning	In Progress	N/A	N/A	This is a continual process through planning and is requested by Transport Planning Team who are internal consultees for planning.	No barriers predicted

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.

Perth and Kinross Council undertook automatic (continuous) monitoring at 4 sites during 2024. Table A.1 in Appendix A shows the details of the sites. National monitoring results are available at <https://www.scottishairquality.scot/latest>.

Maps showing the location of the monitoring sites are provided at the above link. 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

Perth and Kinross Council undertook non- automatic (passive) monitoring of NO₂ at 73 sites during 2024. Table A.2 in Appendix A shows the details of the sites.

Maps showing the location of the monitoring sites are provided in <https://www.scottishairquality.scot/latest> as well as in Figure 3.1, Figure 3.2, Figure 3.3, Figure 3.4 and Figure 3.5.

Further details on Quality Assurance/Quality Control (QA/QC) and bias adjustment for the diffusion tubes are included in Appendix C.

Note: In Figure 3.1, 3.2, 3.3 and 3.4 below, diffusion tubes which 2024 levels are lower than those in 2023 are shown in green, those with levels that have stayed the same as 2023 in orange and those with levels higher than 2023 are shown in red.

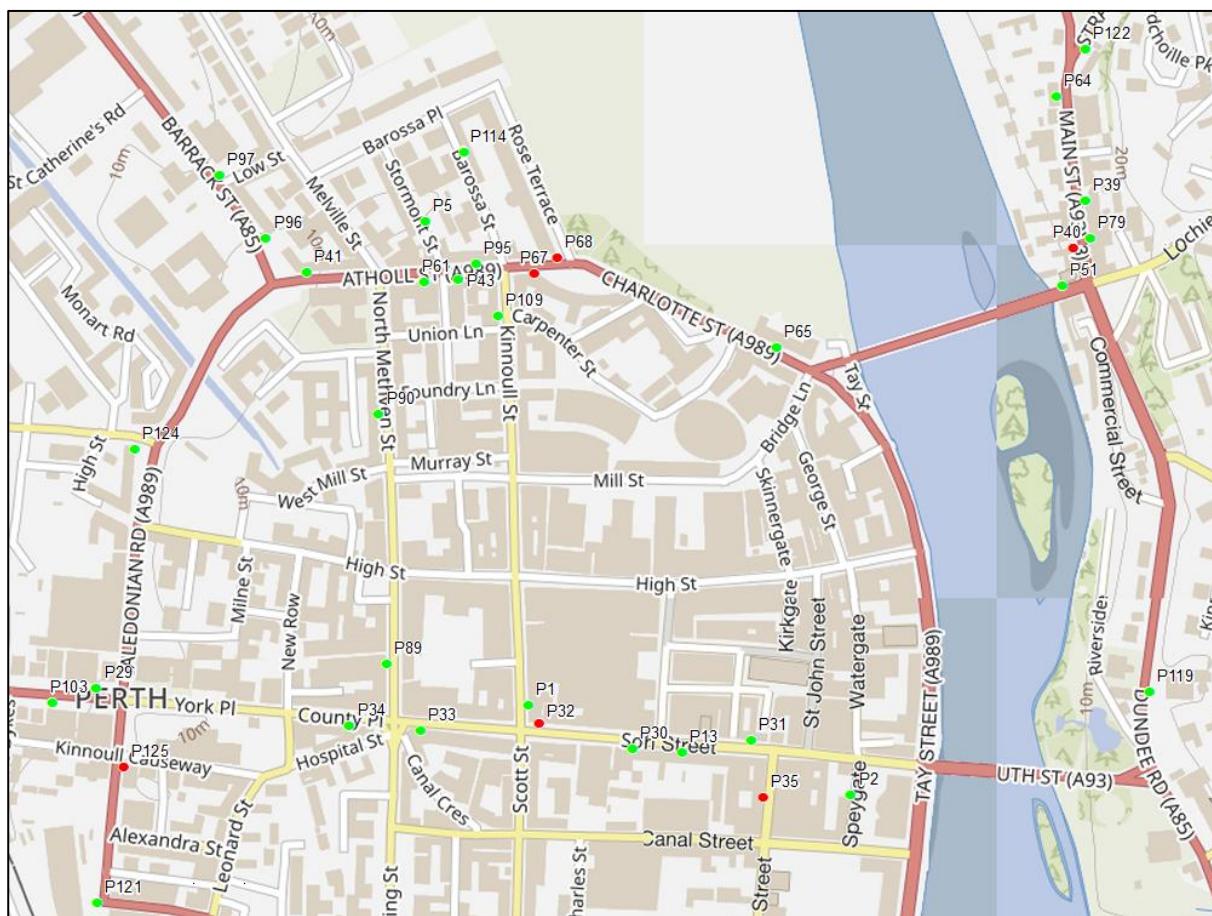


Figure 3.1: Perth City Centre NO₂ Diffusion Tube Locations

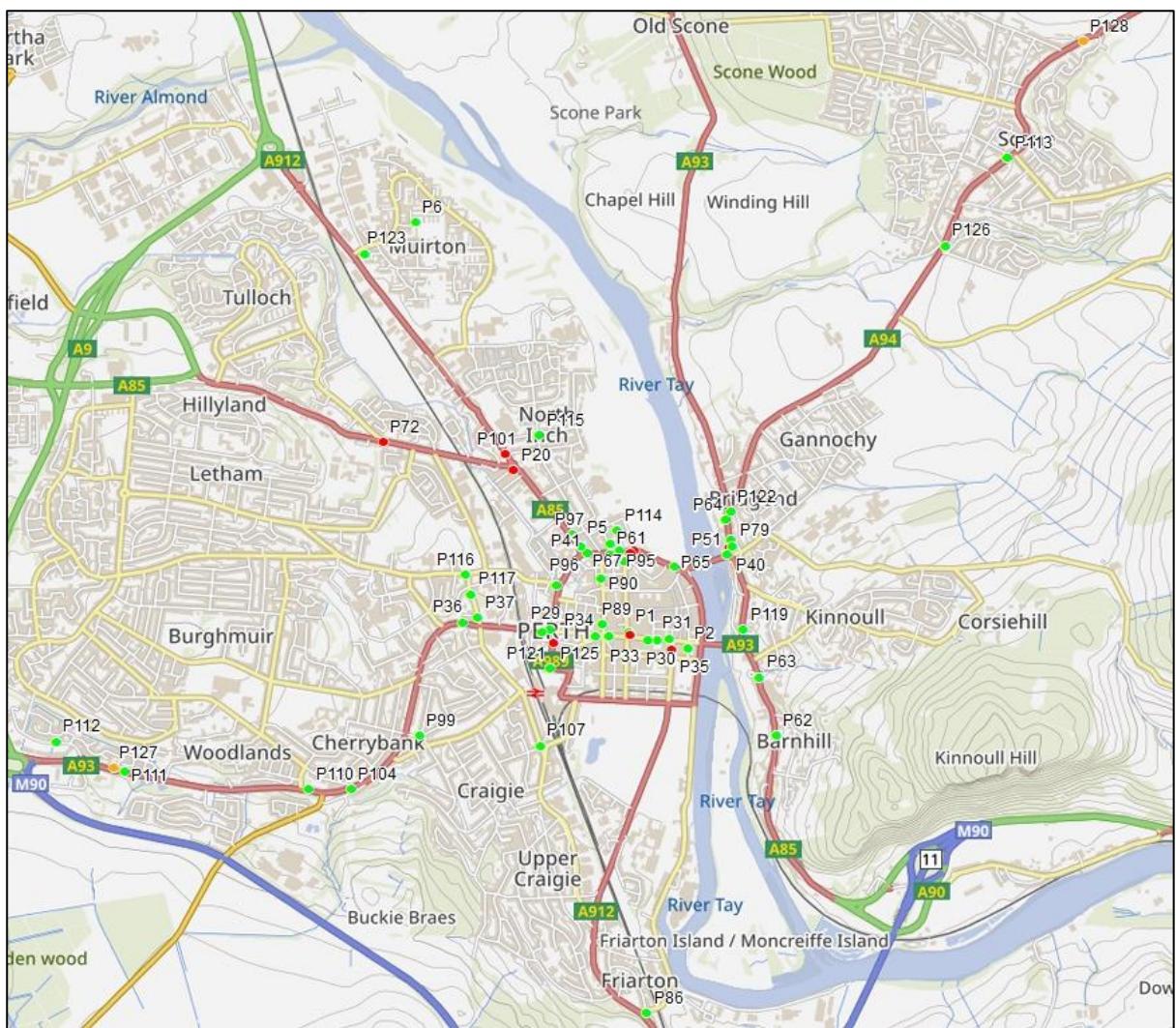


Figure 3.2: Perth Area NO₂ Diffusion Tube Locations

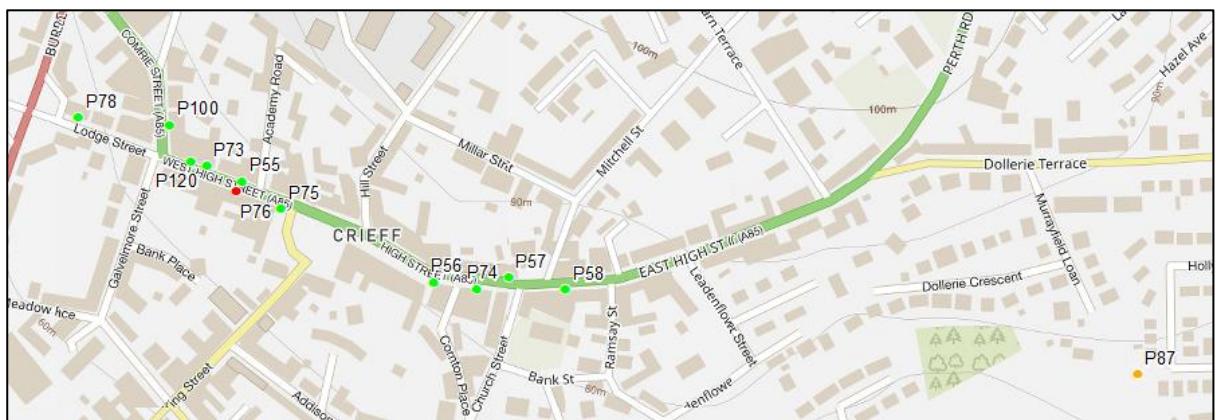


Figure 3.3: Crieff NO₂ Diffusion Tube Locations

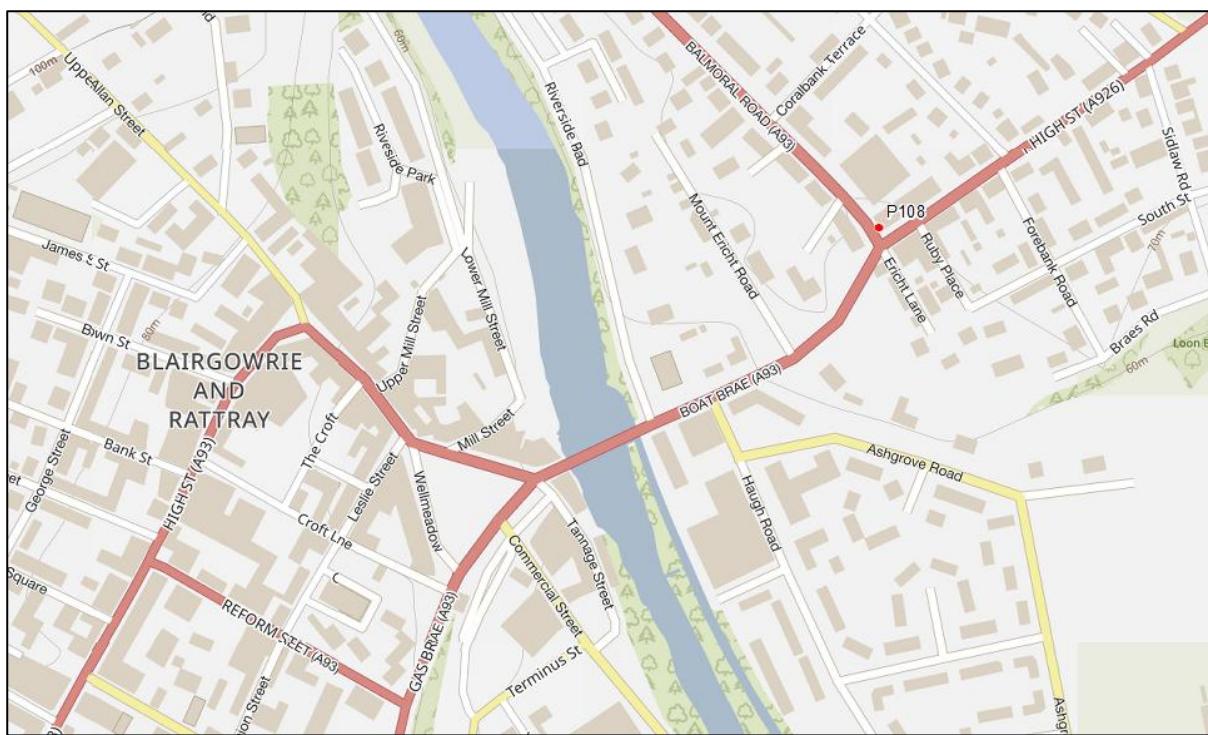


Figure 3.4: Blairgowrie NO₂ Diffusion Tube Location



Figure 3.5: Auchterarder NO₂ Diffusion Tube Location

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 (NO₂)

Table A.3 in Appendix A compares the ratified monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 µg/m³ at automatic monitoring sites.

Table A.4 in Appendix A compares the adjusted monitored NO₂ annual mean concentrations for the past five years with the air quality objective of 40 µg/m³ 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 NO₂ hourly mean concentrations for the past five years with the air quality objective of 200 µg/m³, not to be exceeded more than 18 times per year.

No exceedances of either the annual mean objective level or the hourly mean objective level were observed during 2024 at any of the four automatic monitoring sites where NO₂ levels are monitored. This follows on from no exceedances at these locations since 2017. NO₂ levels at both the Atholl Street and Bridgend Real Time Monitors (RTM) fell to their lowest ever recorded levels, however it should be noted in Atholl Streets case that data capture was 75% in 2024 and annualisation was required at this site. This low data capture was due to electrical issues following replacement on the RTM cabinets in 2024, and was experienced at Crieff and Glasgow Road RTMs as well to a lesser extent.

Elsewhere in Perth and Kinross, levels at the Crieff RTM saw a slight increase from 2023 but were still well below objective levels. An NO₂ analyser was installed at the Glasgow Road RTM in September 2024 resulting in data capture of 27% and data therefore required annualisation, however the first few months of data show concentrations are below objective levels at this site as well. It should be noted that the Glasgow Road RTM is now also a part of the AURN network as of 2024. Graphs showing trends in NO₂ concentrations at the RTMs are shown in Figure A.2 - Figure A.4 in Appendix A.

Diffusion tube monitoring also indicated no exceedances of NO₂ at any locations across the monitoring network. Across the region all areas saw decreasing diffusion tube levels in general compared to those recorded in 2023, with 58 tubes decreasing, 3 remaining at the same levels as 2023 or it being their first year exposed, and 11 seeing an increase in NO₂. The majority of these increases were small (>0.5 µg/m³), however there were a number of larger increases which should be monitored in future years: P67 and P68 on Atholl Street, P40 in Bridgend, and P20 on Crieff Road.

P67 and P68 are in close proximity to each other on either side of a traffic lighted junction. While these two tubes annual mean increased in 2024 (P67 from 18.9 to 20.6 and P68 from 16.6 to 17.1), all other tubes along Atholl Street decreased. This suggests the increase may have been due to an increase in queuing of westbound traffic on Atholl Street at the traffic lights near their location. Though the means of these tubes are higher than those of the previous year, they are below that of readings from 2022, 2021 and even 2020 when most diffusion tube levels were at their lowest recorded level. The completion of the Cross Tay Link Road is expected to have a positive impact on traffic and air quality along Atholl Street, and as such the NO₂ concentration at these tubes locations is likely to decrease once more in the coming years.

P40 is located within Bridgend, to the west of the previous tubes along the same busy street corridor running through Perth. The annual mean in 2024 increased to 24.3 from 21.2 the previous year, the highest since 2021. As with the previous discussed tubes, this area is expected to see a positive impact from the newly completed Cross Tay Link Road and as such levels are expected to reduce at this tube's location, however this should be monitored closely to watch for any continued increase in NO₂ concentrations.

P20 is located close to the main roundabout linking Dunkeld Road and Crieff Road, traveling north from central Perth. The annual mean at this location increased to 17.6 in 2024 from 16.8 in 2023, however is below the levels recorded in 2022 and 2021. A nearby tube at the other side of the roundabout (P101) also saw a slight increase, but both remain well below objectives.

The remainder of diffusion tubes across Perth and Kinross have seen gradual decreases over the past 5 years, in many cases reducing to levels below that of the previous minimums measured during 2020. These trends can be seen in the graphs in Figure A.1 in Appendix A. It should be noted that where two tubes had very similar results in within

these graphs, only one set of results was displayed within the graph to reduce overlap and improve readability. Full data can be found in Table A.4.

The bias adjustment factor for our 2024 diffusion tubes was slightly less than in 2023: 0.83 compared to the previous year's 0.8. The use of the local adjustment factor is consistent with our approach in previous years and is also more conservative than the relevant national adjustment factor (0.754, SOCOTEC Didcot, 20% TEA in water). However, due to poor data capture on three of the four co-located monitors in 2024 due to refurbishment works, only the data from Bridgend was used in the local bias adjustment factor calculations this year.

3.2.2 Particulate Matter (PM₁₀)

Table A.6 in Appendix A compares the ratified and adjusted monitored PM₁₀ annual mean concentrations for the past five years with the air quality objective of 18 µg/m³.

Table A.8 in Appendix A compares the ratified continuous monitored PM₁₀ daily mean concentrations for the past five years with the air quality objective of 50 µg/m³, not to be exceeded more than seven times per year.

In 2024 there were no exceedances of the annual mean level and no exceedance of the overall PM₁₀ 24-Hour Mean national objective. There was one exceedance of the 50 µg/m³ 24-Hour Mean at the Glasgow Road RTM in 2023 and none at any other monitoring station. Overall, PM₁₀ levels remained reasonably steady at Crieff and Bridgend RTMs compared to previous years, and a slight increase was seen at Glasgow Road. However there was a sharp reduction seen at the Atholl Street RTM compared to 2023, with levels reducing from 23.4 µg/m³ to 13 µg/m³ (FIDAS adjusted values).

This is a marked difference from the previous year where PKC also recorded 15 exceedances of the 50 µg/m³ 24-Hour Mean at Atholl Street, and is thought to be a direct result of the conclusion of building works previously carried out behind the Atholl Street monitor between 2021 and 2023. This confirms that the high PM₁₀ levels recorded at the site over the past three years were largely due to these building works rather than an increase from road traffic emissions, however it will take a number of years for the true trend of PM₁₀ emissions at this site to reemerge due to this long period of influenced results.

PM₁₀ trends for Atholl Street, Bridgend and Crieff can be seen in Figure A.5 - Figure A.7 in Appendix A.

The Muirton RTM was relocated from North Muirton to Glasgow Road in late 2023, however a PM₁₀ trend has yet to be established at this location due to the short monitoring period so far.

FIDAS 200 PM₁₀ Correction

Following the [Scottish Government Pilot Research Study to investigate Particulate Matter Monitoring Techniques in Scotland](#), Scottish Government recommended PM₁₀ and PM_{2.5} data recorded on Fidas 200 analysers require a correction be applied. In the case of PM₁₀ data, all data should be divided by 0.909.

The results of this correction can be seen in Table A.7 and Table A.9. The correction factor caused an increase in recorded PM₁₀ levels, though not enough to result in an exceedance of the annual mean or 50 µg/m³ 24-Hour Mean objective.

3.2.3 Particulate Matter (PM_{2.5})

Table A.10 in Appendix A compares the ratified and adjusted monitored PM_{2.5} annual mean concentrations for the past five years with the air quality objective of 10 µg/m³.

Monitoring of PM_{2.5} began at three locations within Perth and Kinross in late 2017 – Atholl Street (Perth), Perth High Street and Crieff. Monitoring at the fourth continuous monitoring site at Muirton (Perth) began in late January 2019. Perth High Street RTM was moved to Bridgend in 2021, where PM_{2.5} monitoring has continued. The Muirton RTM was moved to Glasgow Road (Perth) in 2023 where PM_{2.5} monitoring has also continued.

There were once again no exceedances of the objectives at any of these locations during 2024, with levels remaining at similar levels to 2023 and well below the objective level. Concentrations at Crieff and Bridgend RTMs saw a slight increase compared to previous years, while Atholl Street saw a slight decrease. Glasgow Road also saw an increase in PM_{2.5} from 2023 levels, however as the RTM was installed in late 2023 monitoring data from this year was incomplete and less reliable.

PM_{2.5} trends for Atholl Street, Bridgend and Crieff can be seen in Figure A.8 - Figure A.10 in Appendix A. Levels have continued to remained fairly steady since monitoring began, with no significant increasing or decreasing trend.

FIDAS 200 PM_{2.5} Correction

As set out above, Scottish Government recommended PM_{2.5} data recorded on Fidas 200 analysers require a correction be applied. In the case of PM_{2.5} data, all data should be multiplied by 1.06.

The results of this correction can be seen in Table A.11. The correction factor caused an increase in recorded PM_{2.5} levels, though there is still no exceedance of the annual mean.

3.2.4 Sulphur Dioxide (SO₂)

PKC do not currently monitor SO₂ as there are no significant sources within Perth & Kinross

3.2.5 Carbon Monoxide, Lead and 1,3-Butadiene

PKC do not currently monitor carbon monoxide, lead or 1,3-butadiene as there are no significant sources within Perth & Kinross.

4 New Local Developments

4.1 Road Traffic Sources

24/01303/AMM - Construction of bertha park link road between phase 1 at Bertha Park high school and phase 2 new A9 west roundabout and associated works (approval of matters specified in conditions of 18/01800/IPM) Land at Bertha Park Perth for Perth and Kinross Council. (Application Approved)

This application relates to the construction of a link road connecting Phase 1: A9/A85 Junction Improvement and Link Road (B9993) to Bertha Park (completed) and Phase 2: Phase 2: Cross Tay Link Road (CTLR now operational 2025).

The Air Quality Impact Assessment undertaken at the 15/01109/FLM application stage considered the cumulative effects with the CTRL which saw a negligible increase for both NO₂ and Particulate Matter.

An Environmental Management Plan was submitted with the application which includes methods on how dust and noise will be controlled during the construction phase to ensure the residential amenity of existing properties is not adversely affected.

4.2 Other Transport Sources

No new sources within Perth and Kinross have been identified

4.3 Industrial Sources

Table 4.1 - Perth & Kinross Industrial Sites Permitted by SEPA 2024

Authorisation Level	Authorisation No.	Application Type	Authorisation Activity	Auth Status Date	Site
WML	WML/E/0220286	Operator Technical (Substantial)	Waste - Other Waste	26/01/2024	Binn Skips, Binn Eco Park, Binn

Perth and Kinross Council

		Variation to existing Authorisation	Management Activities		Farm, Glenfarg, PH2 9PX
PPC/B	PPC/B/5005616	New Licence	PPC(B) - Combustion of Fuels	15/02/2024	MCP Blair Athol Distillery, Perth Road, Pitlochry, PH16 5LY
PPC/B	PPC/B/1008969	Operator Technical (Substantial) Variation to existing Authorisation	PPC(B) - Timber Activities	15/02/2024	Glenalmond Timber Company, Station Road, Methven, Perthshire, PH1 3QF
PPC/B	PPC/B/1004392	Operator Technical (Substantial) Variation to existing Authorisation	PPC(B) - Mining and Quarrying	03/04/2024	Shierglas Quarry, killiecrankie, By Pitlochry, Perth and Kinross, PH16 5LL
PPC/A	PPC/A/5009290	New Licence	PPC(A) - Disposal and Recovery or Mix Disposal and Recovery of Hazardous or Non Hazardous	27/09/2024	Binn Waste SRF Plant, Binn Farm, Glenfarg, Perth, PH2 9PX

			Waste Sections 5.3 and 5.4		
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4.4 Commercial and Domestic Sources

No CHP or Biomass combustion plant applications in 2024.

In 2024 PKC had 102 planning application for small domestic stoves throughout the P&K area, with 4 within Perth's AQMA. Two applications were associated with commercial properties, one for a woodfired hot tub and one for a fire-pit building.

4.5 New Developments with Fugitive or Uncontrolled Sources

No new sources within Perth and Kinross have been identified

5 Planning Applications

24/00010/PREAPM - Demolition and rebuild of poultry units and associated infrastructure, Balado Bridge Poultry Farm, Balado.

This pre-application was for the demolition and rebuild of poultry units. The existing poultry farm at Balado is regulated by a licence under the Pollution Prevention & Control (Scotland) Regulations 2012 which is permitted by SEPA as an existing installation of more than 40,000 birds.

The proposal is to redevelop the site which has at present a total of 20 buildings to 38 buildings with a total productive area of 1,033,600sqft (96,021sqm) with a total production capacity of around 1,600,000 bird places.

The applicant was advised to submit a detailed Air Quality Assessment with any future application for point and fugitive emissions on human health which should include PM₁₀ and PM_{2.5}.

24/01330/FLL - Erection of 37 dwellinghouses and associated works (change of house type) (Allocated site H14), Land 150 metres Southwest of Kintillo Cemetery (H14), Bridge of Earn. (Application Refused)

The site has planning approval for 110 dwellinghouse (planning application 22/00817/FLL). This application was for a change of house types for 37 of the 110 dwellinghouses and did not result in the change to overall unit numbers. Therefore, EH concluded that the conclusions of the Air Quality Assessment submitted for the 22/00817/FLL application were still valid for this application and reiterated their comments and conditions from previous memorandum dated 27 July 2022. Recommending a condition for a Construction Dust Management Plan as the AQIA has not assessed the impacts of dust from the groundworks and construction operations for the development. However, Appendix 3 of the report gave recommended mitigation measures to prevent or minimise the release of dust during the construction or groundwork phases of the development.

24/00731/FLM - Change of use, alterations and extension to stables to form visitor centre comprising café, ticket office and shop, erection of office building and

installation of solar array, formation of outdoor play area, vehicular access, parking areas and associated works, Scone Palace Queen's Drive Old Scone Perth PH2 6BE. (Application Pending Consideration)

An air quality screening assessment had been included with the application. It was noted that the biomass system which was initially included in the plans was removed from the development.

In relation to traffic flow on local roads, based on the transport report the consultant concluded that it is unlikely that the thresholds for LDV and HDV would be exceeded and as such an air quality assessment is not required. Due to the completion of the CTLR prior to this development being brought into use, it is expected that access to Scone Palace from the North will be via the CTLR, avoiding Perth and Bridgend and as such the development will not have an adverse impact on air quality.

24/01421/IPM - Reconfiguration of existing golf course and club house from 18 holes to 9 holes, and a community hub building and associated sports courts and bike trails, walking and cycling paths and car parking area. Erection of up to 175 residential dwellings, open/amenity space, landscaping, drainage, upgraded site access and associated works, Craigie Hill Golf Course. (Application Pending Consideration)

The development is within Perth's Air Quality Management (AQMA) area and the applicant had submitted an air quality screening assessment.

The assessment summary stated that “The proposed development has been assessed against the Stage 1 and 2 screening criteria set out within the Supplementary Guidance. The proposed development does not meet the requirements that would trigger the need for an Air Quality Impact Assessment set out in Stage 2.”

The summary then stated that “It is therefore considered that an Air Quality Impact Assessment is not required for this proposed development.”

This conclusion was based on the Stage 2 Criteria requirement of a change of Light Duty Vehicles (LVD) (cars and small vans <3.5 t gross weight) flows of: - More than 100 Annual Average Daily Traffic (AADT) within or adjacent to an AQMA/LEZ.

The assessment stated in the stage 2 criteria table “A Transport Assessment has been undertaken for the proposed development. This has assessed that the proposal will generate 86 daily vehicular trips (two-ways). As this is below the criteria threshold, an Air Quality Impact Assessment would not be required.”

On reviewing the Transport Statement dated September 2024 submitted with the application the 86 daily vehicular trips (two way) stated above which was found in section 7.3.1 and table 7.5 Estimation of people trips (using People Trip Rates) for weekday AM peak hour only. It went on to state the PM peak hour for weekday trips was a further 68 Vehicle trips.

Section 7.3.2 Estimation of Vehicle Trips (using Surveyed Vehicle Trip Rates) stated that “The predicted vehicle trips to the proposed residential development of the 175 residential homes during the weekday AM and PM peak hours, using the surveyed vehicle trip rates from Table 7.4 and are shown in Table 7.6 which indicates that 107 vehicular (car) trips (two-way) are predicted during the weekday AM peak hour and 105 vehicular trips during the weekday PM peak hour.

The above predictions were for the 175 residential properties only and the other vehicle movements associated with the community hub operations such as retail and preschool nursery had not been predicted.

Based on the information stated above from the Transport Assessment submitted with the application EH concluded that the Stage two criteria of a change of LDV flows > 100 AADT within an AQMA would be met and therefore, a detailed Air Quality Impact Assessment (AQIA) was required for this development.

24/01023/AMM - Erection of 292 dwellinghouses, 48 flats, 28 detached garages, 3 retail units, a refuse/bike store and a sport changing pavilion, formation of leisure facilities, SUDS ponds, parking areas, landscaping and associated works, (Phase 1) (allocated site MU73) (approval of matters specified in conditions 21/00383/IPM), Land Adjacent to Huntingtowerfield and Ruthvenfield Huntingtowerfield. (Application Approved).

Phase 1 is the first phasing of the Almond Valley Masterplan and previous Air Quality Assessment undertaken doc ref AIR6478042 dated June 2020 was undertaken by Bureau Veritas.

The AQA concluded that the impacts from traffic flow because of Phase 1 were found to be negligible at all receptors and impacts considered not significant and an AQA shall be submitted before the commencement of any future phase. It also stated that due to the existing elevated annual mean concentrations within Perth, operational mitigation measures should be implemented to ensure that the predicted insignificant impact from phase 1 development remains as such.

Condition 45 of 21/00383/IPM states.

'A scheme of mitigation to minimise impact on air quality shall be submitted to the Planning Authority as part of any application for the Approval of Matters Specified in Conditions. The approved scheme shall be implemented before the occupation of that phase of the development all to the satisfaction of the Council as Planning Authority.'

Reason: In the interests of public health and to prevent pollution.

No submission with this application, therefore EH was unable to complete appraisal with regards to air quality until provided by applicant.

24/0123/COND2 - Further information was submitted with regards to meeting the requirement of the condition.

24/01068/FLL - Demolition of building, erection of 12 flats, formation of communal courtyard and associated works, 15-17 Canal Street Perth. (Application Approved)

The development site is within Perth's Air Quality Management Area for the erection of 12 flats with no designated parking areas, therefore an AQIA was not required. However, EH advised that the applicant could install cycle shelter provisions to encourage active travel.

EH conditioned that prior to commencement of development a Construction Management Plan shall be submit which shall include monitoring and mitigation measures to control noise and dust for the further written agreement of the Council as Planning Authority. The plan as subsequently agreed shall be implemented throughout the demolition and construction stage of the development.

24/00562/FLL - Change of use from storage and distribution (Class 6) to general industrial (Class 5), 57-61 Crieff Road, Perth. (Application Approved)

The application site is within Perth's Air Quality Management Area.

EH requested further information, an air quality screening assessment and details of any process that emits, fumes and/or dust/particulate matter that can affect air quality such as grinding, sanding, spray painting etc and what controls will be in place to mitigate/control any such emissions.

Information provided in an air quality screening assessment reference R24.12405/1JH dated 20 November 2024 which was undertaken by Vibrock.

The assessment was undertaken to assess the operational impacts at the site and determine the impacts on air quality in line with relevant air quality guidance, methodology and criteria.

The report states that there would be no requirement for demolition, earthworks or construction works related to this application site and has been scoped out of this assessment.

The report stated that there are two domestic wood burning stoves on site, a small diesel forklift and dust producing activities such as static timber cutting saws and CNC plasma cutter etc and that appropriate mitigation measures are in place such as local exhaust ventilation systems are installed on/at the relevant equipment and activities. The report concluded that due to the good practice measures being implemented that there is no significant impact.

An assessment of traffic change due to the application was undertaken and vehicle movements have been estimated based on discussions with the site occupiers; observation made on site and knowledge of similar operations at other locations. The daily traffic flow for the site was estimated as 12 Annual Average Daily Traffic (AADT) of which 2 Heavy-duty Vehicles (HDVs).

The report also stated that previous usage of the site the vehicle movements was greater with an estimated average daily flow of 25 AADT with half of this potentially being HDVs.

The AADT criteria to determine if a full detailed Air Quality Assessment is required within an Air Quality Management Area is 100 AADT given that the estimated increase in traffic because of the development is considerably less 12 ADDT on any given road.

Given the minimal traffic increase and potential decrease from previous site operations and, the low background annual mean for pollutant concentration within the area that the change in air quality because of traffic associated with the development would not be significant and the requirement for a detailed assessment was not considered necessary.

24/00108/PREAPL - Adaptive reuse of building into a hotel, 3-5 High Street, Perth for Lock Terrace Ltd.

The proposed hotel is within Perth's Air Quality Management Area. The applicant was advised that an Air Quality Screening Assessment would be required to determine if a full Air Quality Assessment was required as well as a Dust Management Plan for the control of dust during the construction/renovation stage of the development.

24/00474/FLL - Change of use of flat to form extension to restaurant, 26 James Square Crieff for Leishman Catering Ltd. (Application Approved)

The application is within Crieff's Air Quality Management Area and as the development is for staff break out area the impact on air quality is going to be negligible, as there will be no additional traffic generated, and no other emissions generated from wood burning stoves. EH had no adverse comment to make in relation to air quality.

23/02122/FLL - Extension to industrial units, alterations to car parking provision and layout, landscaping, and associated works, Kanthal Ltd, Ruthvenfield Road, Inveralmond Industrial Estate, Perth for Alleima Ltd T/A Kanthal. (Application Approved)

The application site is within Perth's Air Quality Management area. The parking provision saw an additional 9 car parking spaces at the site, therefore the increase in LDV and HDV vehicle movements due to the development would not cause any significant change to traffic flow on roads with relevant receptors. Therefore, EH had no adverse comments to make with regards to air quality.

23/02134/IPM - Mixed use development comprising of the erection of a poultry processing facility and demolition of existing poultry processing facility for residential, commercial, industrial uses including parking areas, vehicular access, landscaping and associated works 2 Sisters Food Group George Street Coupar Angus Blairgowrie PH13 9LU for Amber (REI) Holdings Ltd. (Application Approved)

AQA air quality has been assessed for traffic emissions associated with the development once operational. This has been assessed for NO₂, PM₁₀ and PM_{2.5}. Results are given in Appendix 12.1, Annex 6, Volume 4. For all pollutants at the worse affected receptor (R10 – Queen Street), it is concluded that all concentrations will be negligible, with these being 0.15 µg/m³ (0.4% of the AQS), 0.04 µg/m³ (0.3% of the AQS) and 0.03 µg/m³ (0.3% of the AQS) respectively.

Construction Management Plan condition requested detailing environmental mitigation measures, including the control of dust and noise, shall be submitted for the further written agreement of the Council Planning Authority.

**24/00161/FLL - Erection of cinema, cafe and community radio hub and associated works,
47 - 49 East High Street, Crieff for Creative Crieff. (Application Approved)**

The application site is within Crieff's Air Quality Management Area. The development was not introducing any new parking spaces and patron visiting the cinema will utilise the existing parking at Leadenflower car park.

The Environmental Protection UK and Institute of Air Quality Management's current Guidance on Planning for Air Quality Development requiring assessment is defined in the Environmental Health consultation criteria and includes any large commercial proposal (with 50+ parking spaces) within, or up to 1km of, an AQMA. Therefore, EH no adverse comments to make with regards to air quality from the operational stage of the development.

Dust Management Plan conditioned for construction and demolition stage of development.

6 Conclusions and Proposed Actions

6.1 Conclusions from New Monitoring Data

No exceedances for NO_2 objectives were identified at any location across Perth and Kinross, and in general levels decreased in 2024, in many instances to the lowest recorded levels (e.g. Atholl Street and Bridgend RTMs). There were also no exceedances for PM_{10} or $\text{PM}_{2.5}$ annual mean objectives identified in Perth & Kinross. When PM data from Fidas 200 Analysers were corrected as per Scottish Government guidelines, PM_{10} and $\text{PM}_{2.5}$ levels were increased, however there remained no exceedances.

Following conclusion of the ongoing building works behind the Atholl Street RTM in 2024, a significant reduction in PM_{10} concentrations was observed. This further proves that the high levels recorded at this site over the past three years were likely due to the building works rather than roadside traffic. Although all other sites within the Perth AQMA have PM_{10} levels consistently below objectives, as there has been a significant period of uncertainty in the results at Atholl Street a number of years of monitoring data will be required to reestablish a PM_{10} trend at this location. We would therefore not seek to revoke PM_{10} within the Perth AQMA this year.

This is the sixth consecutive year without an NO_2 exceedance within the Perth AQMA, and the third year of data unaffected by Covid-19 restrictions, with traffic returning to a new normal. Though there has been fluctuations over recent years, we have observed a predominantly downward trend in NO_2 within the Perth, and this is likely to continue with the newly opened Cross Tay Link Road expected to reduce city centre traffic. In light of these factors, PKC will seek to carry out a detailed assessment to determine the feasibility of revoking the Perth AQMA for NO_2 in the near future.

6.2 Conclusions relating to New Local Developments

Twelve proposed new developments were consulted on for the potential impacts on air quality in 2024, with four of these being within the Perth AQMA. Of these four, one required a further detailed Air Quality Impact Assessment to be carried out and one was requested to carry out an Air Quality Screening assessment to determine whether a full

AQA was required as well as provide a Dust Management Plan. Environmental Health had no adverse comment to make in relation to air quality for the remaining two developments.

Two of the developments assessed for air quality were within Crieff. Environmental Health did not have any adverse comments to make with regards to air quality for these developments as they will not result in increasing in traffic or emissions generated from wood burning stoves.

The revocation of Crieff's AQMA was concluded in 2024, however PKC will continue to consult on planning applications for any new developments that have the potential to impact Crieff's air quality.

There were two Pre-Applications for proposed new developments which could impact upon air quality within the PKC area, one was within Perth's AQMA and the other out-with. PKC through consultee responses has advised that AQ Screening Assessments and/or AQIA are required for both applications at the full application stages.

In 2024, PKC had 102 planning application for small domestic stoves throughout the P&K area, however only 4 were within Perth's AQMA.

6.3 Proposed Actions

- Based on the monitoring data gathered in 2024, we do not intend to revoke the Perth AQMA for PM₁₀, due to the uncertainty around levels at Atholl Street following exceedances in recent years. PKC will however consider the revocation of the AQMA for NO₂ in the coming year and will seek to carry out a detailed assessment to determine the feasibility of this.
- The updated Perth AQAP will be published following Committee approval in August 2025, after which PKC will begin delivering the improvement measures within the new plan.
- Following the completion of the Cross Tay Link Road in March 2025, PKC will carry out a monitoring and modelling study to assess the initial impact the opening of the road has had on air quality within Perth City

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)
Perth 1	Bridgend	Roadside	312254	724159	NO ₂ ; PM ₁₀ ; PM _{2.5} ; PM ₁	Yes	Perth AQMA	Chemiluminescent; FIDAS	2.90	2.92	1.8
Perth 2	Atholl Street	Roadside	311577	723931	NO ₂ ; PM ₁₀ ; PM _{2.5} ; PM ₁	Yes	Perth AQMA	Chemiluminescent; FIDAS	22.3	2.3	1.5
Perth 3	Glasgow Road	Roadside	308843	722754	NO ₂ ; PM ₁₀ ; PM _{2.5} ; PM ₁	Yes	Perth AQMA	Chemiluminescent; FIDAS	26	4.4	1.5
Crieff 1	James Square	Roadside	286363	721614	NO ₂ ; PM ₁₀ ; PM _{2.5} ; PM ₁	Yes	Crieff AQMA	Chemiluminescent FIDAS	9.5	5.3	1.5

Notes:

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

(2) N/A if not applicable.

Table A.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?	Tube Height (m)
P1C, P1L, P1R	42 Scott St Perth	Roadside	311674	723501	NO ₂	Yes, Perth City	0.6	2.3	No	2.7
P2	17 Speygate Perth	Roadside	312018	723411	NO ₂	Yes, Perth City	3.8	1.2	No	2.3
P5	8 Stormont Street	Urban Centre	311584	723993	NO ₂	Yes, Perth City	13.6	1.3	No	2.5
P6	41 Mull Place	Urban Background	310501	725764	NO ₂	Yes, Perth City	6.6	1.6	No	2.4
P13	86 South Street	Roadside	311846	723454	NO ₂	Yes, Perth City	0.0	2.6	No	2.9
P20	2 Crieff Road	Roadside	311058	724395	NO ₂	Yes, Perth City	0.3	4.4	No	2.3
P29	37 York Place	Roadside	311252	723518	NO ₂	Yes, Perth City	2.8	4.9	No	2.8
P30C, P30L, P30R	114 South Street	Roadside	311797	723457	NO ₂	Yes, Perth City	0.0	2.5	No	2.9

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?	Tube Height (m)
P31	45-47 South Street	Roadside	311925	723465	NO ₂	Yes, Perth City	0.0	3.6	No	2.8
P32	135 South Street	Roadside	311704	723483	NO ₂	Yes, Perth City	0.0	5.3	No	2.7
P33	216 South Street	Roadside	311587	723475	NO ₂	Yes, Perth City	0.0	2.2	No	3.0
P34	10 County Place	Roadside	311503	723480	NO ₂	Yes, Perth City	0.0	2.1	No	2.9
P35	17 Princes Street	Roadside	311930	723416	NO ₂	Yes, Perth City	7.2	1.5	No	2.7
P36	51 Glasgow Road	Roadside	310773	723557	NO ₂	Yes, Perth City	12.4	1.6	No	2.4
P37	Riggs Road	Roadside	310857	723577	NO ₂	Yes, Perth City	0.0	7.6	No	2.7
P39	39 Main Street	Roadside	312257	724013	NO ₂	Yes, Perth City	2.0	2.6	No	2.4

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?	Tube Height (m)
P40	18 Main Street	Roadside	312245	723965	NO ₂	Yes, Perth City	0.1	2.2	No	2.6
P41	76 Atholl Street	Roadside	311462	723941	NO ₂	Yes, Perth City	0.5	2.2	No	2.9
P43C, P43L, P43R	17 Atholl Street	Roadside	311619	723933	NO ₂	Yes, Perth City	0.0	2.3	No	2.9
P51	2 West Bridge St	Roadside	312233	723921	NO ₂	Yes, Perth City	2.5	1.9	No	2.5
P55	7 West High Street, Crieff,	Roadside	286334	721640	NO ₂	Yes, Crieff	1.8	0.4	No	2.4
P56	39 High Street, Crieff,	Urban Centre	286541	721559	NO ₂	Yes, Crieff	0.0	1.3	No	2.4
P57	62 High Street, Crieff,	Urban Centre	286541	721563	NO ₂	Yes, Crieff	0.6	1.6	No	2.5
P58	9 East High Street, Crieff,	Urban Centre	286582	721553	NO ₂	Yes, Crieff	0.5	1.2	No	2.5

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?	Tube Height (m)
P61C, P61L, P61R	RTM, Atholl Street	Roadside	311584	723931	NO ₂	Yes, Perth City	0.6	2.2	Yes	1.8
P62	84 Dundee Road	Roadside	312503	722930	NO ₂	Yes, Perth City	0.8	1.6	No	2.6
P63	30 Dundee Road	Roadside	312413	723252	NO ₂	Yes, Perth City	1.2	1.2	No	2.6
P64	Isla Road	Roadside	312228	724120	NO ₂	Yes, Perth City	0.2	2.6	No	2.6
P65	5 Charlotte Street	Roadside	311943	723864	NO ₂	Yes, Perth City	2.4	2.0	No	2.5
P67	1 Atholl Street	Roadside	311697	723939	NO ₂	Yes, Perth City	0.3	2.4	No	2.5
P68	2 Atholl Street	Roadside	311720	723955	NO ₂	Yes, Perth City	6.6	1.3	No	2.1
P72	82 Crieff Road	Roadside	310335	724550	NO ₂	Yes, Perth City	11.1	2.4	No	2.4

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?	Tube Height (m)
P73	19 West High Street, Crieff	Urban Centre	286302	721651	NO ₂	Yes, Crieff	0.0	1.6	No	2.4
P74	43 High Street, Crieff	Urban Centre	286517	721559	NO ₂	Yes, Crieff	2.4	1.5	No	2.4
P75C, P75L, P75R	RTM, Crieff	Roadside	286360	721617	NO ₂	Yes, Crieff	5.1	3.7	Yes	1.6
P76	10/12 West High Street, Crieff	Urban Centre	286324	721632	NO ₂	Yes, Crieff	0.0	1.4	No	3.2
P78	1 Lodge Street, Crieff	Urban Centre	286194	721692	NO ₂	Yes, Crieff	0.0	1.7	No	3.1
P79C, P79R, P79L	17 Main Street	Roadside	312262	723976	NO ₂	Yes, Perth City	0.0	3.0	No	2.5
P82	66 High Street, Auchterarder	Roadside	294569	712888	NO ₂	No	1.7	0.5	No	3.1
P86	2 Friarton Road	Roadside	311788	721397	NO ₂	Yes, Perth City	3.7	1.2	No	2.1

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?	Tube Height (m)
P87	Hollybush Road	Suburban	287043	721486	NO ₂	No	17.0	7.0	No	2.6
P89	59 South Methven St	Roadside	311546	723544	NO ₂	Yes, Perth City	0.0	3.0	No	2.2
P90	22 North Methven St	Roadside	311539	723798	NO ₂	Yes, Perth City	0.0	3.0	No	2.6
P95	26-28 Atholl Street	Kerbside	311636	723950	NO ₂	Yes, Perth City	1.7	0.9	No	2.4
P96	22 Barrack St	Kerbside	311424	723976	NO ₂	Yes, Perth City	3.0	0.5	No	2.6
P97	St Ninians School,	Roadside	311370	724040	NO ₂	Yes, Perth City	7.0	1.9	No	2.4
P99	15 Murray Cr Perth	Roadside	310536	722928	NO ₂	Yes, Perth City	6.8	1.6	No	2.3
P100	9 Comrie Street, Crieff	Urban Centre	286271	721684	NO ₂	Yes, Crieff	0.0	2.0	No	2.3

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?	Tube Height (m)
P101	28 Dunkeld Road	Roadside	311012	724483	NO ₂	Yes, Perth City	4.1	3.1	No	2.4
P103	28 York Place	Roadside	311207	723504	NO ₂	Yes, Perth City	8.0	2.1	No	2.6
P104	202 Glasgow Road	Roadside	310157	722634	NO ₂	Yes, Perth City	5.6	1.5	No	2.4
P107	1 Glover Street Perth	Roadside	311201	722871	NO ₂	Yes, Perth City	3.5	1.0	No	2.6
P108	Balmoral Road, Blairgowrie	Roadside	318293	745415	NO ₂	No	0.2	1.8	No	2.3
P109	44 Kinnoull Street, Perth	Roadside	311660	723897	NO ₂	Yes, Perth City	2.8	2.4	No	2.4
P110	231 Glasgow Road, Perth	Roadside	309922	722633	NO ₂	Yes, Perth City	2.8	2.4	No	2.3
P111	Glasgow Road nr Lamberkine Road, Perth	Roadside	308904	722731	NO ₂	Yes, Perth City	0.9	1.0	No	2.6

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?	Tube Height (m)
P112	Lamberkine Drive, Perth	Roadside	308528	722895	NO ₂	Yes, Perth City	20.3	1.8	No	2.9
P113	38 Perth Road, Sccone	Roadside	313781	726119	NO ₂	No	4.7	1.8	No	2.5
P114	Barossa Street, Perth	Roadside	311625	724063	NO ₂	Yes, Perth City	0.0	1.3	No	2.6
P115	Balhousie Street, Perth	Roadside	311197	724857	NO ₂	Yes, Perth City	5.0	3.2	No	2.4
P116	Jeanfield Road, Perth	Roadside	310791	723817	NO ₂	Yes, Perth City	8.0	1.6	No	2.6
P117	19 Riggs Rd, Perth	Roadside	310791	723817	NO ₂	Yes, Perth City	6.0	1.7	No	2.6
P119	Kinnoull PS, Dundee Rd	Roadside	312322	723515	NO ₂	Yes, Perth City	18.0	2.3	No	2.5
P120	25 West High St, Crieff	Roadside	286286	721656	NO ₂	Yes, Crieff	4.0	1.8	No	2.5

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?	Tube Height (m)
P121	Railway Sidings, Caledonia Rd	Roadside	311252	723301	NO ₂	Yes, Perth City	16.0	2.2	No	2.6
P122C, P122L, P122R	Bridgend RTM	Roadside	312260	724170	NO ₂	Yes, Perth City	5.0	2.5	Yes	1.8
P123	9 Lismore Court, Perth	Roadside	310231	725590	NO ₂	Yes, Perth City	5.5	24.0	No	2.4
P124	12 St Catherine's Road	Roadside	311290	723761	NO ₂	Yes, Perth City	0.0	5.1	No	2.4
P125	Andrew Heiton Court, Perth	Roadside	311279	723437	NO ₂	Yes, Perth City	0.0	2.9	No	2.9
P126	131 Perth Road, Scone	Roadside	313438	725637	NO ₂	No	2.9	1.8	No	2.4
P127C, P127L, P127R	Glasgow Road RTM	Roadside	308847	722750	NO ₂	Yes, Perth City	26.0	4.4	Yes	1.5
P128	188 Angus Road, Scone	Roadside	314200	726765	NO ₂	No	9.8	2.6	No	2.4

Notes:

(1) 0m if the monitoring site is at a location of exposure (e.g. installed on/adjacent to the façade of a residential property).
(2) N/A if not applicable.

Table A.3 – Annual Mean NO₂ Monitoring Results: Automatic Monitoring (µg/m³)

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
Perth 1 (Bridgend)	312254	724159	Roadside	100	100	N/A	19.0	18.2	17.8	16.2
Perth 2 (Atholl Street)	311577	723931	Roadside	90	75	27.6	31.1	30.0	32.9	25.6
Perth 3 (Glasgow Road)	308843	722754	Roadside	100	27	N/A	N/A	N/A	N/A	13.5
Crieff (James Square)	286363	721614	Roadside	98	82	12.8	13.2	12.4	11.3	12.7

Notes:

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

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

Means for diffusion tubes have been corrected for bias. All means have been “annualised” as per LAQM.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 NO₂ Monitoring Results: Non-Automatic Monitoring (µg/m³)

Diffusion Tube ID	X OS Grid Ref (Easting)	Y OS Grid Ref (Northing)	Site Type	Valid Data Capture for Monitoring Period (%) ⁽¹⁾	Valid Data Capture 2024 (%) ⁽²⁾	2020	2021	2022	2023	2024
P1C, P1L, P1R	311674	723501	Roadside	100.0	100.0	26.0	28.6	23.3	22.9	21.0
P2	312018	723411	Roadside	100.0	100.0	13.0	12.8	13.0	12.3	12.2
P5	311584	723993	Urban Centre	100.0	100.0	13.0	13.6	12.8	11.3	11.2
P6	310501	725764	Urban Background	100.0	100.0	8.0	8.6	7.2	7.0	6.9
P13	311846	723454	Roadside	84.9	84.9	22.0	22.3	17.5	18.2	17.0
P20	311058	724395	Roadside	90.6	90.6	16.0	19.7	17.8	16.8	17.6
P29	311252	723518	Roadside	100.0	100.0	19.0	25.9	19.5	19.2	18.4
P30C, P30L, P30R	311797	723457	Roadside	100.0	100.0	24.0	23.6	20.8	18.8	18.1
P31	311925	723465	Roadside	100.0	100.0	18.0	19.1	17.9	17.3	15.7
P32	311704	723483	Roadside	100.0	100.0	22.0	24.7	19.9	18.8	18.9
P33	311587	723475	Roadside	100.0	100.0	23.0	26.7	23.2	23.0	20.2

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
P34	311503	723480	Roadside	100.0	100.0	30.0	32.3	27.0	24.7	23.9
P35	311930	723416	Roadside	100.0	100.0	16.0	16.5	14.1	14.8	16.2
P36	310773	723557	Roadside	100.0	100.0	18.0	21.7	18.2	17.1	16.0
P37	310857	723577	Roadside	100.0	100.0	16.0	18.5	16.0	15.5	14.8
P39	312257	724013	Roadside	100.0	100.0	25.0	28.0	23.2	22.8	22.4
P40	312245	723965	Roadside	100.0	100.0	27.0	27.1	24.0	21.2	24.3
P41	311462	723941	Roadside	100.0	100.0	24.0	28.4	22.8	22.8	21.8
P43C, P43L, P43R	311619	723933	Roadside	100.0	100.0	32.0	34.9	32.7	31.4	30.2
P51	312233	723921	Roadside	100.0	100.0	18.0	19.0	15.7	15.5	14.4
P55	286334	721640	Roadside	90.6	90.6	23.0	28.3	23.8	23.5	22.4
P56	286541	721559	Urban Centre	100.0	100.0	16.0	18.0	14.3	14.1	14.0

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
P57	286541	721563	Urban Centre	100.0	100.0	18.0	18.8	16.9	15.8	14.9
P58	286582	721553	Urban Centre	100.0	100.0	23.0	27.1	22.4	21.8	20.9
P61C, P61L, P61R	311584	723931	Roadside	100.0	100.0	28.0	31.4	30.1	31.7	27.0
P62	312503	722930	Roadside	100.0	100.0	16.0	19.0	16.1	17.6	17.3
P63	312413	723252	Roadside	100.0	100.0	22.0	25.3	22.0	21.0	20.2
P64	312228	724120	Roadside	100.0	100.0	28.0	31.7	28.0	27.3	26.8
P65	311943	723864	Roadside	92.5	92.5	18.0	18.2	15.5	15.3	15.1
P67	311697	723939	Roadside	100.0	100.0	23.0	24.3	22.3	18.9	20.6
P68	311720	723955	Roadside	100.0	100.0	23.0	20.9	19.9	16.6	17.1
P72	310335	724550	Roadside	100.0	100.0	24.0	25.6	22.5	21.3	21.5
P73	286302	721651	Urban Centre	100.0	100.0	24.0	28.8	24.0	23.5	21.9

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
P74	286517	721559	Urban Centre	100.0	100.0	15.0	20.4	16.4	16.8	16.5
P75C, P75L, P75R	286360	721617	Roadside	100.0	100.0	14.0	13.7	12.4	11.4	11.3
P76	286324	721632	Urban Centre	100.0	100.0	21.0	24.4	21.6	18.8	19.1
P78	286194	721692	Urban Centre	100.0	100.0	16.0	17.7	12.9	14.5	12.4
P79C, P79R, P79L	312262	723976	Roadside	100.0	100.0	24.0	26.4	22.6	22.9	21.1
P82	294569	712888	Roadside	100.0	100.0	17.0	16.4	14.9	15.5	13.0
P86	311788	721397	Roadside	100.0	100.0	15.0	16.9	15.3	16.9	16.5
P87	287043	721486	Suburban	100.0	100.0	4.0	5.2	3.8	4.2	4.2
P89	311546	723544	Roadside	100.0	100.0	23.0	24.9	21.6	19.6	17.8
P90	311539	723798	Roadside	100.0	100.0	21.0	20.6	17.6	16.2	15.0
P95	311636	723950	Kerbside	100.0	100.0	26.0	31.6	26.7	29.5	25.0

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
P96	311424	723976	Kerbside	100.0	100.0	24.0	27.7	22.6	22.8	19.6
P97	311370	724040	Roadside	100.0	100.0	24.0	26.4	19.9	19.1	18.2
P99	310536	722928	Roadside	92.5	92.5	11.0	11.8	9.4	11.1	8.8
P100	286271	721684	Urban Centre	100.0	75.0	11.0	14.3	10.9	10.9	10.6
P101	311012	724483	Roadside	84.9	84.9	22.0	22.6	19.8	17.3	17.6
P103	311207	723504	Roadside	100.0	100.0	22.0	29.5	25.8	23.9	22.3
P104	310157	722634	Roadside	90.6	90.6	18.0	19.0	15.4	16.5	14.6
P107	311201	722871	Roadside	100.0	100.0	21.0	23.5	19.8	20.0	19.7
P108	318293	745415	Roadside	100.0	100.0	17.0	18.8	17.3	16.8	17.1
P109	311660	723897	Roadside	100.0	75.0	20.0	20.6	18.5	17.1	16.5
P110	309922	722633	Roadside	100.0	100.0	16.0	17.4	13.8	13.5	13.2

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
P111	308904	722731	Roadside	100.0	100.0	19.0	21.2	17.8	16.1	15.1
P112	308528	722895	Roadside	100.0	100.0	13.0	15.6	13.9	13.2	12.5
P113	313781	726119	Roadside	90.6	90.6	17.0	17.8	15.1	15.1	13.5
P114	311625	724063	Roadside	100.0	100.0	13.0	10.8	10.1	9.7	9.6
P115	311197	724857	Roadside	100.0	100.0	14.0	13.6	11.1	10.7	10.6
P116	310791	723817	Roadside	100.0	100.0	22.0	21.3	16.3	17.9	17.3
P117	310791	723817	Roadside	100.0	100.0	16.0	16.0	13.5	14.4	14.2
P119	312322	723515	Roadside	84.9	84.9	13.0	19.0	16.6	14.2	13.7
P120	286286	721656	Roadside	100.0	100.0	20.0	23.7	18.9	19.2	18.7
P121	311252	723301	Roadside	100.0	100.0	25.0	29.8	23.8	22.7	21.7
P122C, P122L, P122R	312260	724170	Roadside	100.0	100.0	N/A	19.4	18.5	17.1	16.2

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
P123	310231	725590	Roadside	100.0	100.0	N/A	12.7	11.8	12.0	11.2
P124	311290	723761	Roadside	100.0	100.0	N/A	N/A	18.5	17.3	17.1
P125	311279	723437	Roadside	100.0	100.0	N/A	N/A	20.9	19.1	19.4
P126	313438	725637	Roadside	84.9	84.9	N/A	N/A	10.5	12.6	12.3
P127C, P127L, P127R	308847	722750	Roadside	100.0	100.0	N/A	N/A	N/A	N/A	13.4
P128	314200	726765	Roadside	100.0	25.0	N/A	N/A	N/A	N/A	10.0

- 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:

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

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

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

- (3) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
- (4) 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 – NO₂ Diffusion Tube Annual Mean Trends across P&K (2020-2024)

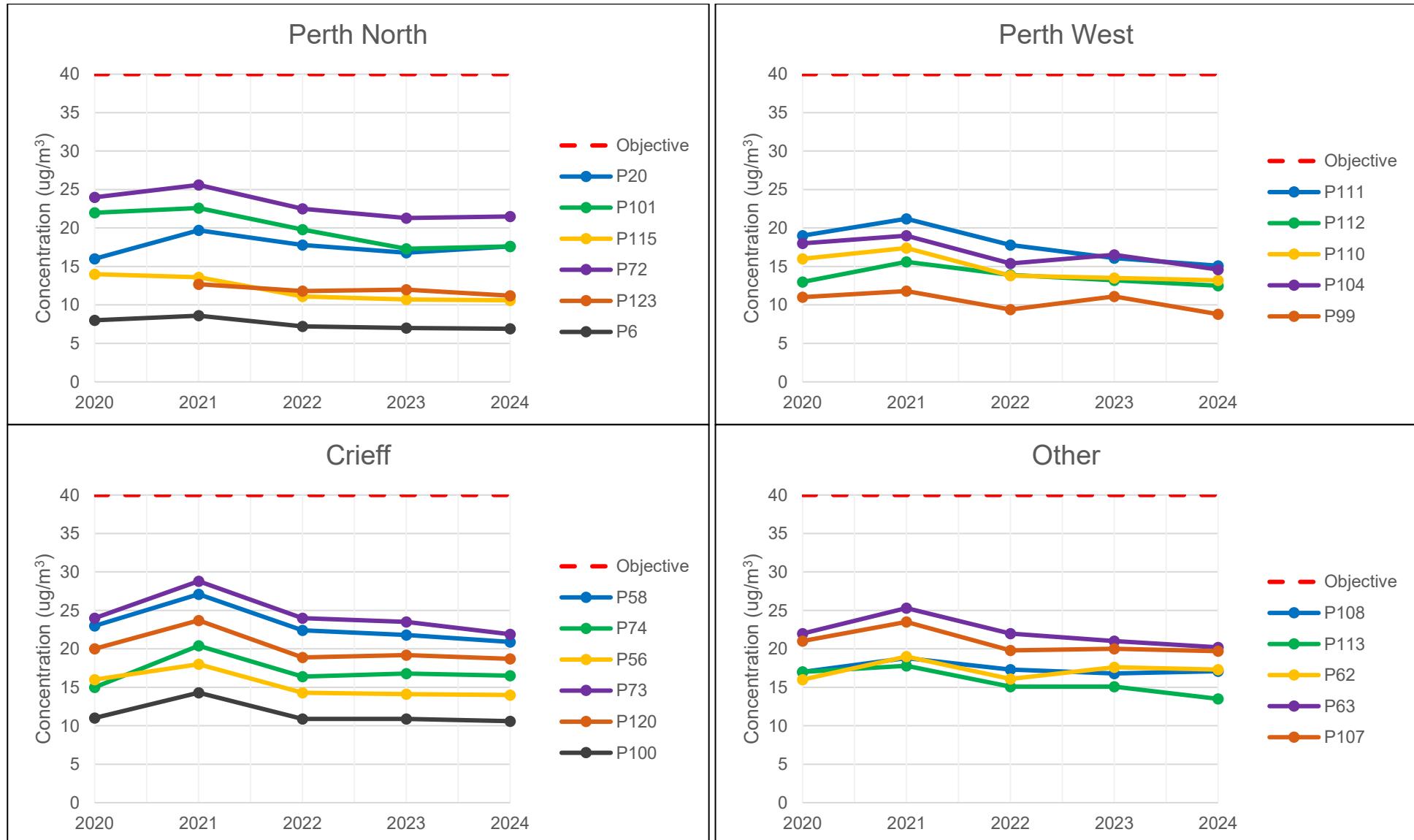


Table A.5 – 1-Hour Mean NO₂ Monitoring Results, Number of 1-Hour Means > 200 µg/m³

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
Perth 1 (Bridgend)	312254	724159	Roadside	100	100	N/A	0	0	0	0
Perth 2 (Atholl Street)	311577	723931	Roadside	90	75	0	0	0	0	0
Perth 3 (Glasgow Road)	308843	722754	Roadside	100	27	N/A	N/A	N/A	N/A	0
Crieff (James Square)	286363	721614	Roadside	98	82	0	0	0	0	1

Notes:

Exceedances of the NO₂ 1-hour mean objective (200 µg/m³ 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%).

Figure A.2 – Annual Mean Trend for NO₂ at Atholl Street

De-seasonalised Data trend at Perth Atholl Street for the period 01/01/2005 to 31/12/2024

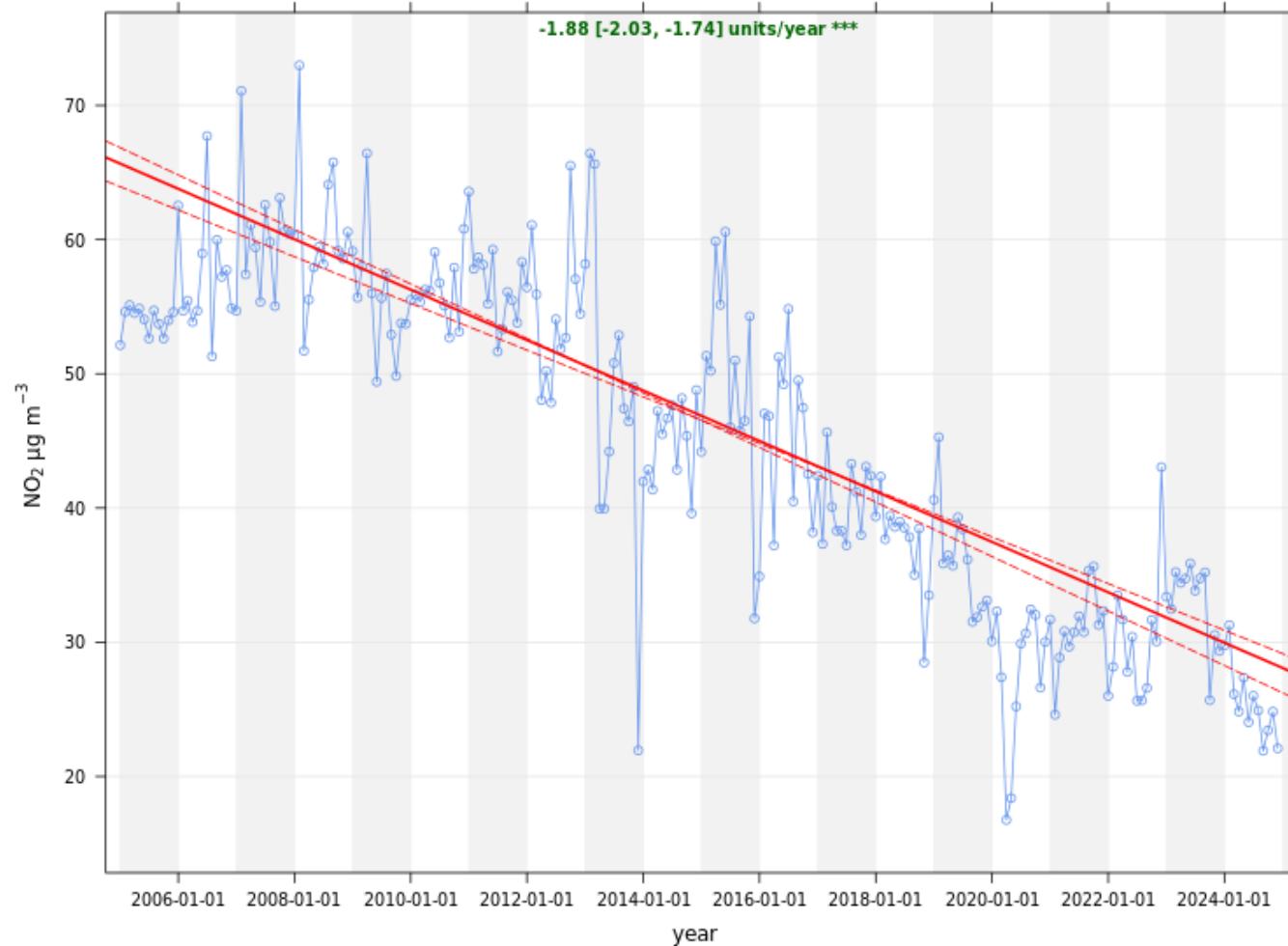


Figure A.3 – Annual Mean Trend for NO₂ at Crieff

De-seasonalised Data trend at Perth Crieff for the period 01/04/2010 to 31/12/2024

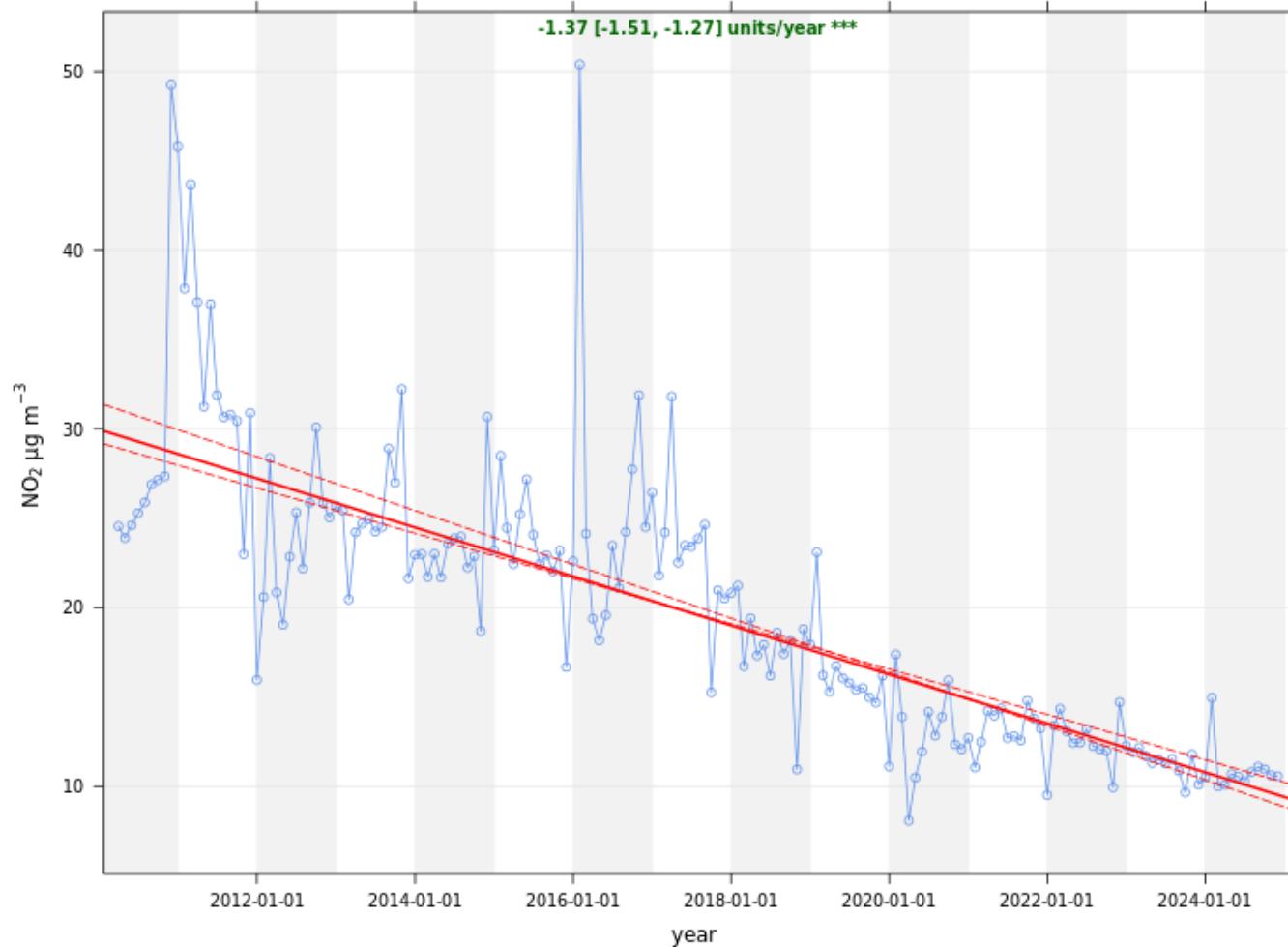


Figure A.4 – Annual Mean Trend for NO₂ at Bridgend

De-seasonalised Data trend at Perth Bridgend for the period 17/03/2021 to 31/12/2024

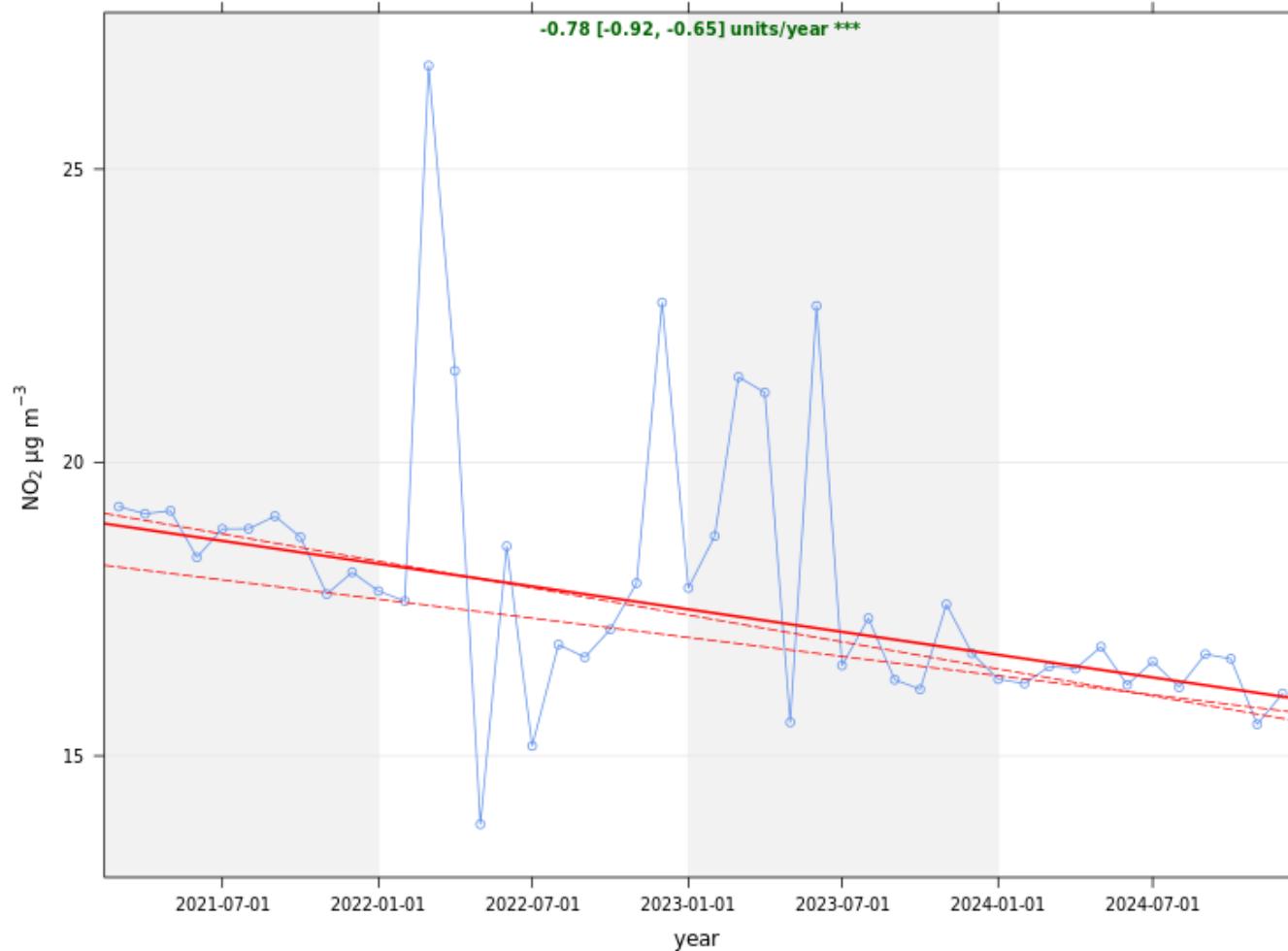


Table A.6 – Annual Mean PM₁₀ Monitoring Results (µg/m³)

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
Perth 1 (Bridgend)	312254	724159	Roadside	100	100	N/A	9.6	9.7	9.7	9.7
Perth 2 (Atholl Street)	311577	723931	Roadside	90	75	10.2	14.0	15.9	21.3	11.8
Perth 3 (Glasgow Road)	308843	722754	Roadside	100	83	N/A	N/A	N/A	(8.6) ⁽³⁾	12.5
Crieff (James Square)	286363	721614	Roadside	80	67	7.1	8.8	9.6	9.7	10.0

Notes:

Exceedances of the PM₁₀ annual mean objective of 18 µg/m³ 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%).

(3) Data capture period for Glasgow Road was >25%, in line with LAQM.TG22 annualisation could not be carried out for 2023.

Table A.7 – Annual Mean PM₁₀ Monitoring Results (µg/m³) - Corrected FIDAS 200 Data

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
Perth 1 (Bridgend)	312254	724159	Roadside	100	100	N/A	10.6	10.7	10.6	10.7
Perth 2 (Atholl Street)	311577	723931	Roadside	90	75	11.2	15.4	17.5	23.4	13.0
Perth 3 (Glasgow Road)	308843	722754	Roadside	100	83	N/A	N/A	N/A	(8.6) ⁽³⁾	12.5
Crieff (James Square)	286363	721614	Roadside	80	67	7.9	9.8	10.6	10.8	11.1

Notes:

Exceedances of the PM₁₀ annual mean objective of 18 µg/m³ are shown in bold.

The above data has also been corrected as per Scottish Government Guidance following the [Scottish Government Pilot Research Study to investigate Particulate Matter Monitoring Techniques in Scotland](#).

(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%).

(3) Data capture period for Glasgow Road was >25%, in line with LAQM.TG22 annualisation could not be carried out for 2023

Table A.8 – 24-Hour Mean PM₁₀ Monitoring Results, Number of PM₁₀ 24-Hour Means > 50 µg/m³

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
Perth 1 (Bridgend)	312254	724159	Roadside	100	100	N/A	0	2	0	0
Perth 2 (Atholl Street)	311577	723931	Roadside	90	75	0	7	7	15	0
Perth 3 (Glasgow Road)	308843	722754	Roadside	80	67	N/A	N/A	N/A	(0)	1
Crieff (James Square)	286363	721614	Roadside	100	100	0	0	0	1	0

Notes:

Exceedances of the PM₁₀ 24-hour mean objective (50 µg/m³ 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.9 – 24-Hour Mean PM₁₀ Monitoring Results, Number of PM₁₀ 24-Hour Means > 50µg/m³ - Corrected FIDAS 200 Data

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
Perth 1 (Bridgend)	312254	724159	Roadside	100	100	N/A	0	2	0	0
Perth 2 (Atholl Street)	311577	723931	Roadside	90	75	0	8	11	25	0
Perth 3 (Glasgow Road)	308843	722754	Roadside	80	67	N/A	N/A	N/A	(0)	1
Crieff (James Square)	286363	721614	Roadside	100	100	0	0	1	1	0

Notes:

Exceedances of the PM₁₀ 24-hour mean objective (50 µg/m³ 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. The above data has also been corrected as per Scottish Government Guidance following the [Scottish Government Pilot Research Study to investigate Particulate Matter Monitoring Techniques in Scotland](#).

- (1) Data capture for the monitoring period, in cases where monitoring was only carried out for part of the year.
- (2) Data capture for the full calendar year (e.g., if monitoring was carried out for 6 months, the maximum data capture for the full calendar year is 50%).

Figure A.5 – Annual Mean Trend for PM₁₀ at Atholl Street

De-seasonalised Data trend at Perth Atholl Street for the period 01/01/2005 to 31/12/2024

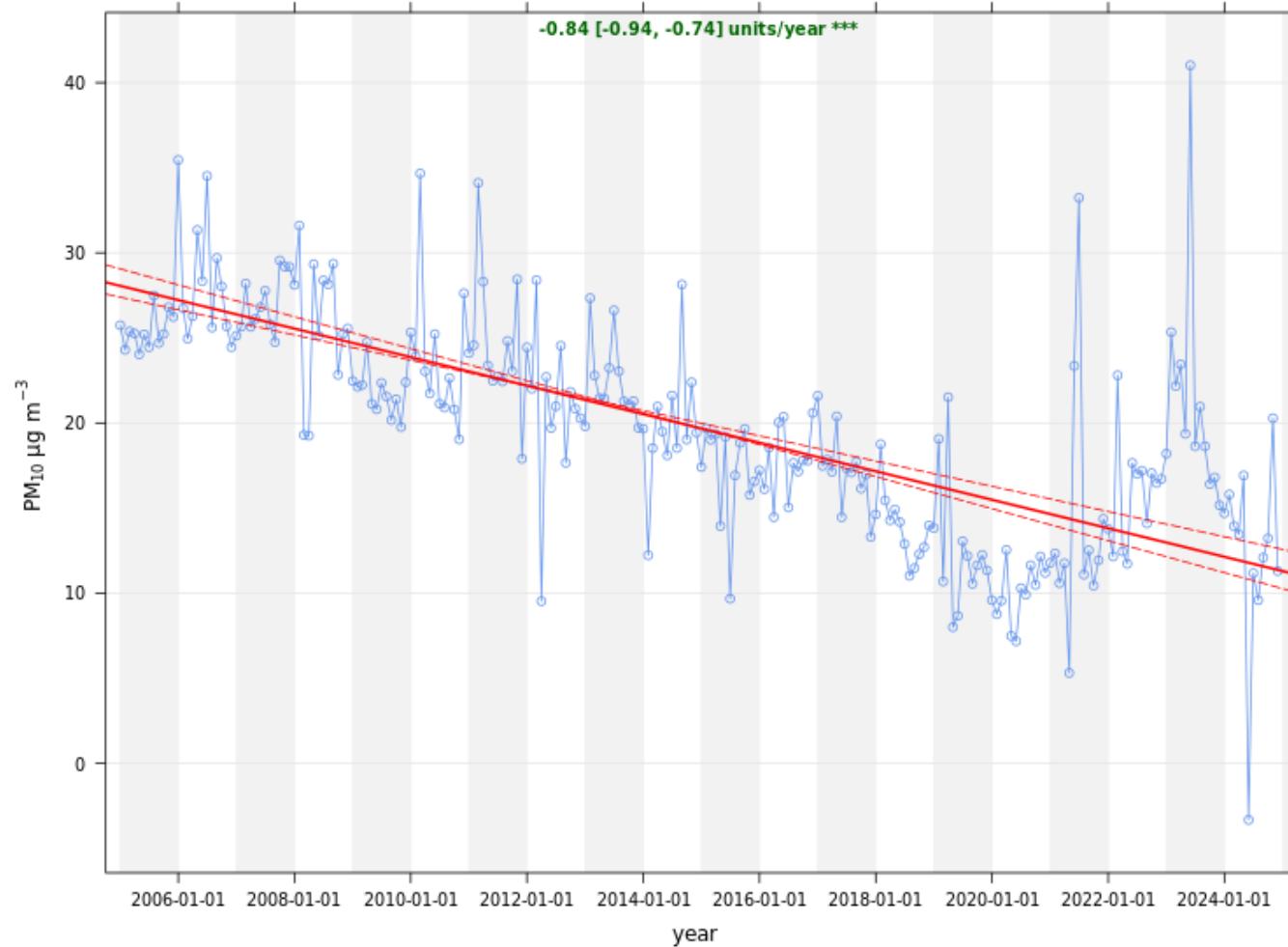


Figure A.6 – Annual Mean Trend for PM₁₀ at Crieff

De-seasonalised Data trend at Perth Crieff for the period 01/04/2010 to 31/12/2024

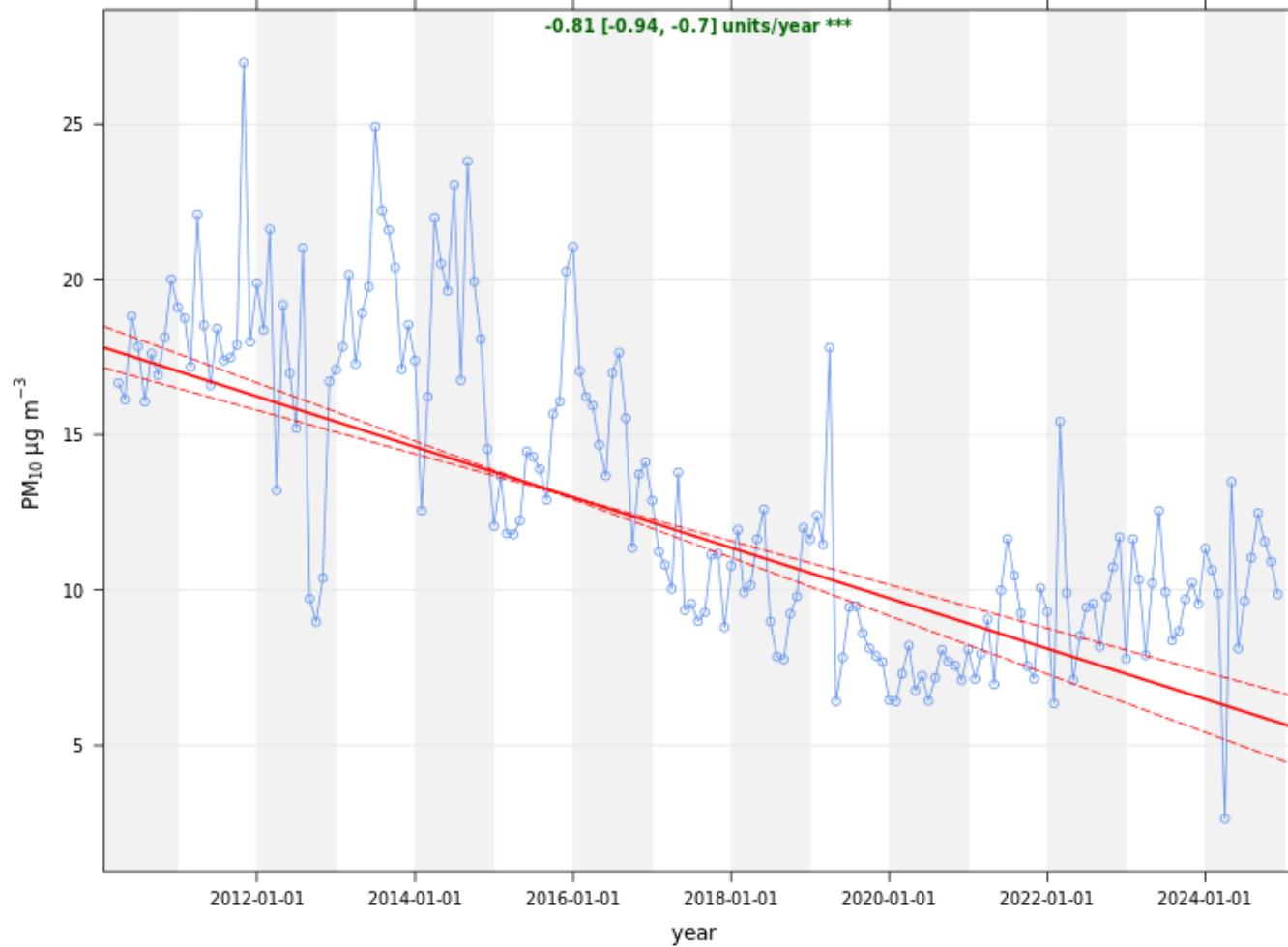


Figure A.7 – Annual Mean Trend for PM₁₀ at Bridgend

De-seasonalised Data trend at Perth Bridgend for the period 17/03/2021 to 31/12/2024

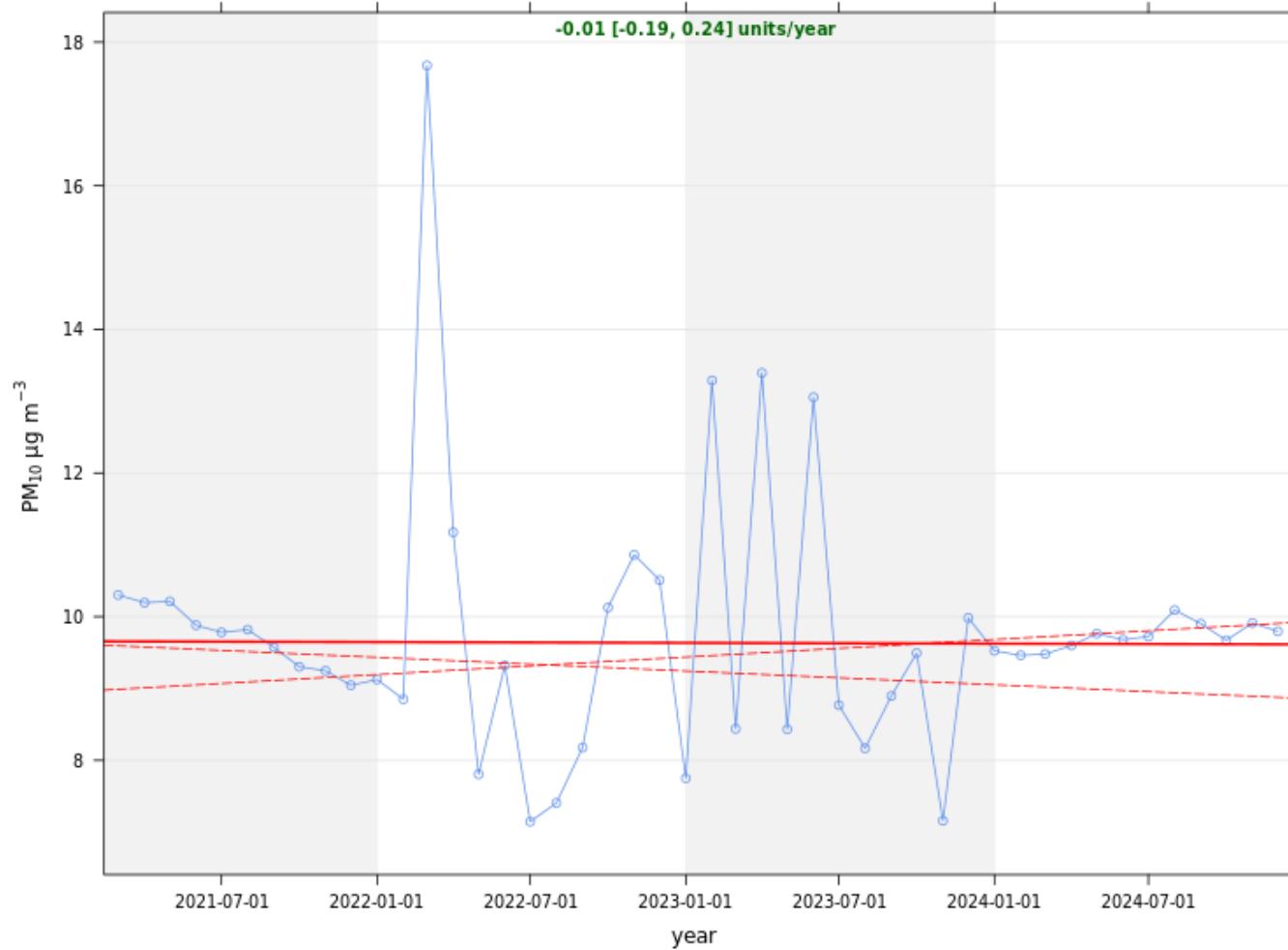


Table A.10 – Annual Mean PM_{2.5} Monitoring Results (µg/m³)

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
Perth 1 (Bridgend)	312254	724159	Roadside	98	98	N/A	4.9	5.7	5.0	5.4
Perth 2 (Atholl Street)	311577	723931	Roadside	90	75	5.6	6.4	6.9	6.9	6.0
Perth 3 (Glasgow Road)	308843	722754	Roadside	100	83	N/A	N/A	N/A	(4.5) ⁽³⁾	6.0
Crieff (James Square)	286363	721614	Roadside	80	66	3.9	4.8	5.2	5.1	5.7

Notes:

Exceedances of the PM_{2.5} annual mean objective of 10 µg/m³ 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%).

(3) Data capture period for Glasgow Road was >25%, in line with LAQM.TG22 annualisation could not be carried out for 2023.

Table A.11 – Annual Mean PM_{2.5} Monitoring Results (µg/m³) - Corrected FIDAS 200 Data

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
Perth 1 (Bridgend)	312254	724159	Roadside	98	98	N/A	5.2	5.7	5.3	5.7
Perth 2 (Atholl Street)	311577	723931	Roadside	90	75	6	6.8	7.4	7.3	6.3
Perth 3 (Glasgow Road)	308843	722754	Roadside	100	83	N/A	N/A	N/A	(4.5)	6.0
Crieff (James Square)	286363	721614	Roadside	80	66	4.2	5.1	5.5	5.4	5.8

Notes:

Exceedances of the PM_{2.5} annual mean objective of 10 µg/m³ are shown in bold.

The above data has also been corrected as per Scottish Government Guidance following the [Scottish Government Pilot Research Study to investigate Particulate Matter Monitoring Techniques in Scotland](#). 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.8 – Annual Mean Trend for PM_{2.5} at Atholl Street

De-seasonalised Data trend at Perth Atholl Street for the period 29/11/2017 to 31/12/2024

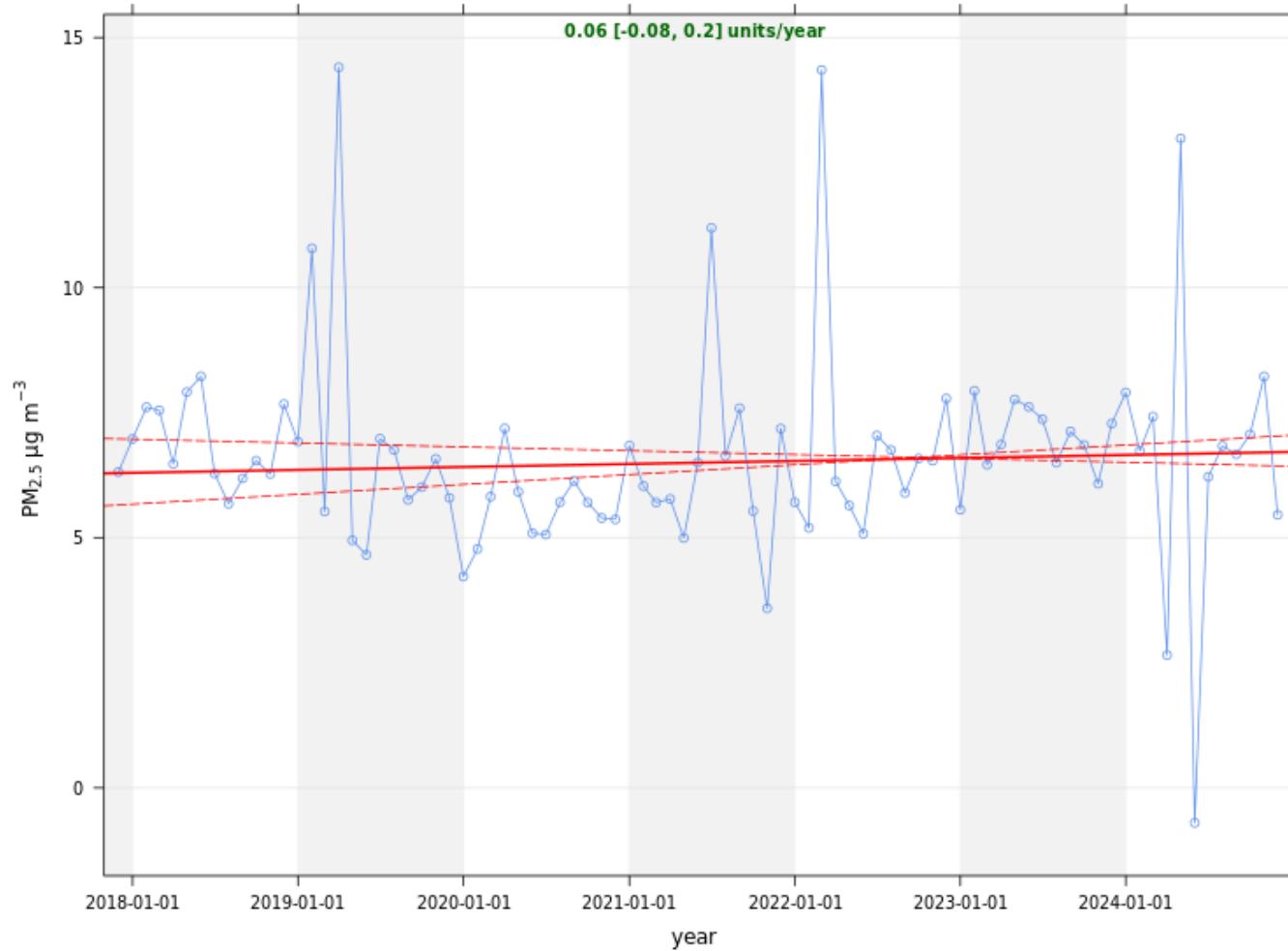


Figure A.9 – Annual Mean Trend for PM_{2.5} at Crieff

De-seasonalised Data trend at Perth Crieff for the period 01/12/2017 to 31/12/2024

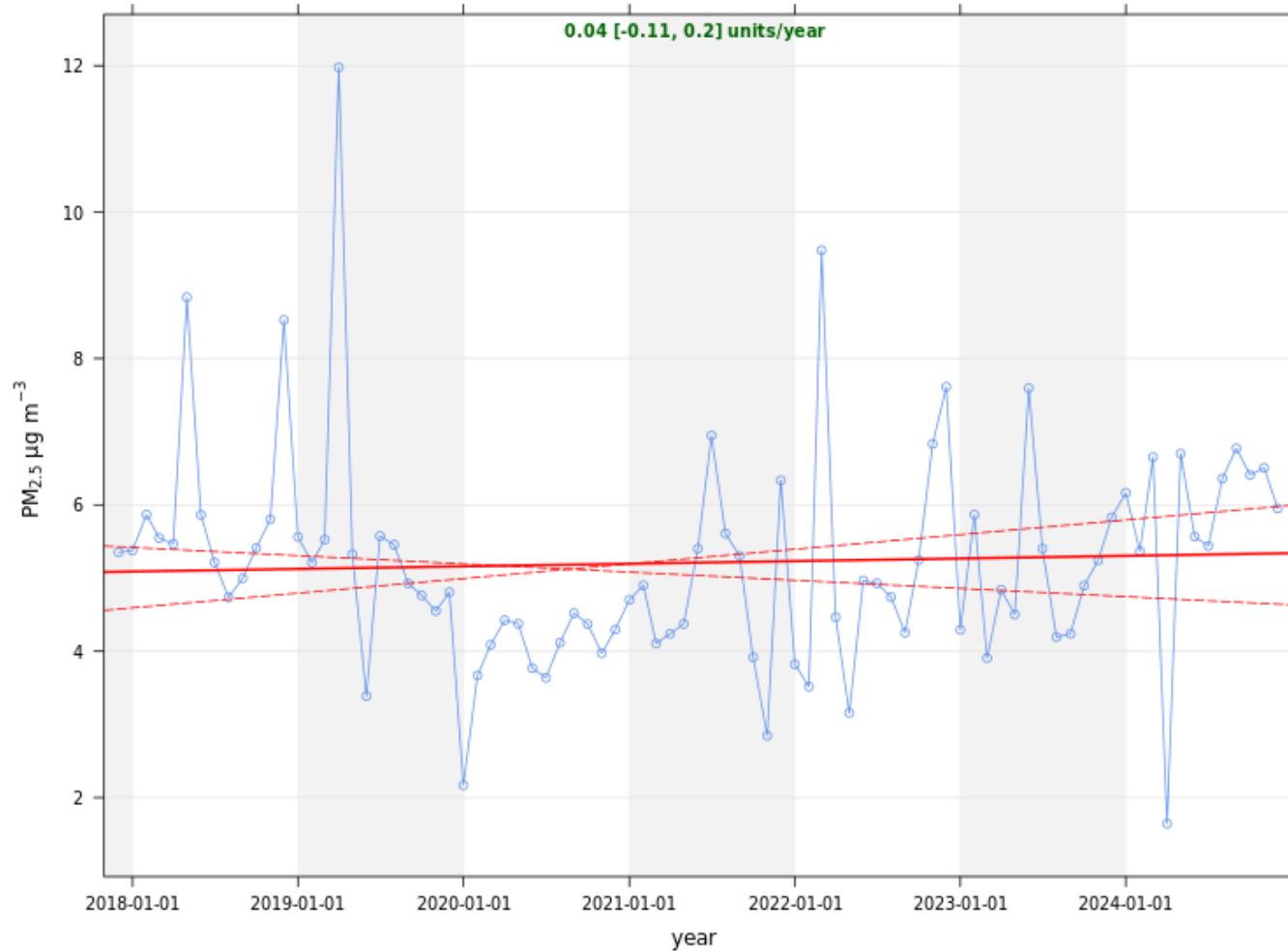
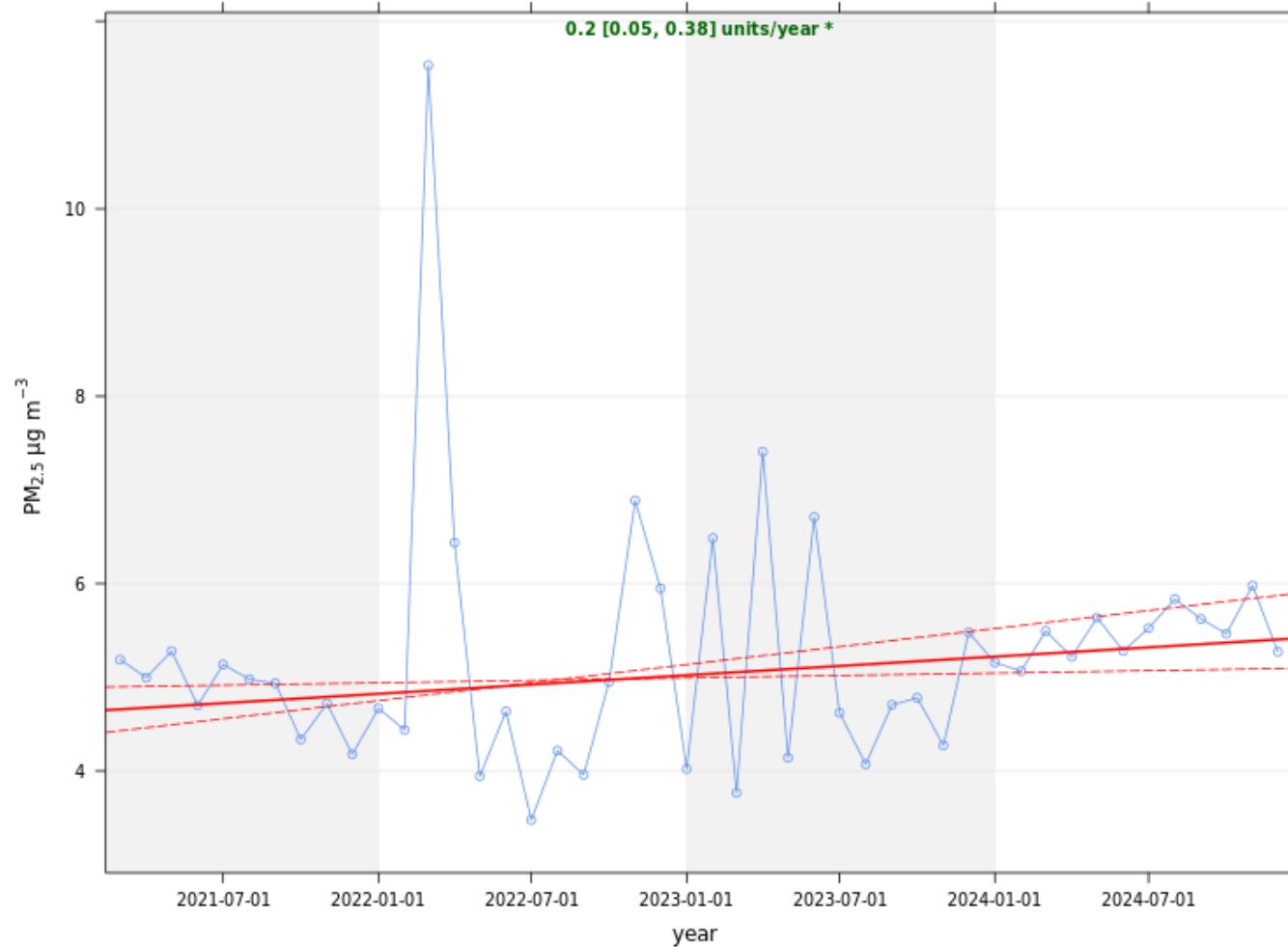


Figure A.10 – Annual Mean Trend for PM_{2.5} at Bridgend

De-seasonalised Data trend at Perth Bridgend for the period 17/03/2021 to 31/12/2024



Appendix B: Full Monthly Diffusion Tube Results for 2024

Table B.1 – NO₂ 2024 Monthly Diffusion Tube Results (µg/m³)

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
P1C	311674	723501	34.1	27.2	31.8		30.4	16.8	16.7	16.9	19.9	26.7	31.1	23.8	-	-		TriPLICATE SITE with P1C, P1L and P1R - Annual data provided for P1R only
P1L	311674	723501	33.0	30.9	30.9	27.1	23.9	17.5	17.6	18.7	27.5	19.7	34.0	24.0	-	-		TriPLICATE SITE with P1C, P1L and P1R - Annual data provided for P1R only
P1R	311674	723501	31.2	29.1	30.7	25.5	26.6	17.1	18.1	19.1	22.6	26.3	31.4	23.3	25.2	21.0		TriPLICATE SITE with P1C, P1L and P1R - Annual data provided for P1R only
P2	312018	723411	23.0	19.4	13.9	12.9	11.0	11.1	3.4	10.8	12.4	17.2	22.8	18.3	14.7	12.2		
P5	311584	723993	22.4	17.6	13.4	10.1	10.2	8.9	8.8	9.8	7.9	14.7	20.2	17.0	13.4	11.2		
P6	310501	725764	13.7	9.6	7.8	6.0	5.0	4.6	3.4	4.6	4.6	9.6	18.7	11.1	8.2	6.9		
P13	311846	723454	31.6	26.2	20.8	19.8	15.8	16.8		16.1	14.9	21.0		20.6	20.4	17.0		
P20	311058	724395	32.4	25.3	21.6	18.9	18.6	13.3	13.7	14.2	16.3	28.1	29.9		21.1	17.6		
P29	311252	723518	33.3	24.8	26.7	20.8	19.4	13.6	9.2	14.9	20.6	23.6	32.7	26.0	22.1	18.4		

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
P30C	311797	723457	30.8	27.1	22.4	21.4	17.4	16.2	15.0	16.2	16.1	21.3	28.6	24.1	-	-		TriPLICATE SITE with P30C, P30L and P30R - Annual data provided for P30R only
P30L	311797	723457	31.5	23.3	22.6	24.0	17.6	17.2	14.7	16.2	16.3	22.3	27.5	25.2	-	-		TriPLICATE SITE with P30C, P30L and P30R - Annual data provided for P30R only
P30R	311797	723457	32.9	28.4	24.6	22.3	18.5	17.2	14.5	16.4	15.8	21.5	29.7	24.1	21.7	18.1		TriPLICATE SITE with P30C, P30L and P30R - Annual data provided for P30R only
P31	311925	723465	28.3	23.6	22.4	18.9	14.8	12.1	11.2	11.6	17.6	19.4	26.3	20.4	18.9	15.7		
P32	311704	723483	27.7	26.9	27.9	24.7	19.4	16.8	15.7	15.5	19.8	23.7	30.4	23.9	22.7	18.9		
P33	311587	723475	30.5	29.1	26.4	24.9	26.9	16.9	14.6	17.4	19.1	25.3	31.9	27.3	24.2	20.2		
P34	311503	723480	37.4	37.6	30.6	28.6	27.1	23.5	22.1	23.7	22.0	28.2	35.2	28.4	28.7	23.9		
P35	311930	723416	26.9	22.5	19.8	19.3	15.3	12.6	13.1	13.7	18.2	19.4	29.3	22.7	19.4	16.2		
P36	310773	723557	22.1	25.0	22.2	14.3	18.3	12.4	13.6	14.2	13.3	23.3	29.1	22.2	19.2	16.0		
P37	310857	723577	23.1	19.9	22.3	16.4	17.5	11.3	10.8	12.1	17.1	18.1	26.1	18.3	17.8	14.8		
P39	312257	724013	26.8	28.0	37.4	30.6	31.8	19.9	21.7	20.0	24.4	25.5	32.6	23.7	26.9	22.4		

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
P40	312245	723965	57.2	29.5	26.6	23.7	24.2	24.4	22.5	20.3	23.8	25.1	33.5	38.7	29.1	24.3		
P41	311462	723941	30.4	29.6	34.6	26.6	28.6	17.0	19.2	19.5	27.2	23.0	32.7	25.1	26.1	21.8		
P43C	311619	723933	41.8	35.8	37.1	37.3	36.8	28.9	26.6	30.8	34.1	34.2	39.3	34.1	-	-		TriPLICATE SITE with P43C, P43L and P43R - Annual data provided for P43R only
P43L	311619	723933	46.6	42.0	35.1	35.6	37.8	28.8	25.6	29.7	32.1	58.1		42.1	-	-		TriPLICATE SITE with P43C, P43L and P43R - Annual data provided for P43R only
P43R	311619	723933	43.6	41.3	36.0	34.6	37.3	28.7	28.1	27.8	33.3	36.1	50.1	34.1	36.3	30.2		TriPLICATE SITE with P43C, P43L and P43R - Annual data provided for P43R only
P51	312233	723921	21.7	17.4	19.1	19.8	16.9	14.1	12.1	11.1	16.9	15.2	24.0	18.5	17.2	14.4		
P55	286334	721640	32.0	29.5	38.3	25.5		22.1	20.7	20.9	28.3	26.2	33.5	18.3	26.8	22.4		
P56	286541	721559	22.0	19.3	21.8	14.8	18.9	11.7	7.8	11.0	16.3	15.2	22.8	19.4	16.8	14.0		
P57	286541	721563	26.2	20.5	23.7	20.3	20.2	13.2	8.2	11.7	16.0	13.7	22.6	17.7	17.8	14.9		
P58	286582	721553	34.5	23.6	28.4	26.2	26.3	20.3	13.5	17.8	23.6	28.0	32.4	26.9	25.1	20.9		
P61C	311584	723931	47.3	43.5	44.2	32.1	34.5	27.7	20.6	28.4	22.3	30.0	34.5	31.3	-	-		TriPLICATE SITE with P61C, P61L and P61R - Annual data provided for P61R only

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
P61L	311584	723931	44.8	40.2	39.3	32.3	31.8	26.3	20.0	27.2	24.8	30.3	36.8	27.0	-	-		TriPLICATE SITE with P61C, P61L and P61R - Annual data provided for P61R only
P61R	311584	723931	46.3	49.0	37.4	34.2	32.3	25.8	17.4	27.1	25.0	26.7	36.4	31.8	32.4	27.0		TriPLICATE SITE with P61C, P61L and P61R - Annual data provided for P61R only
P62	312503	722930	23.5	21.9	33.1	23.4	21.6	16.0	10.9	15.2	19.1	19.2	27.7	17.9	20.8	17.3		
P63	312413	723252	26.7	26.4	28.9	24.9	29.0	20.4	15.0	19.5	25.0	23.1	30.8	21.1	24.2	20.2		
P64	312228	724120	38.5	35.0	34.2	33.2	30.4	27.8	27.7	26.3	32.2	29.9	37.7	32.7	32.1	26.8		
P65	311943	723864	22.4	18.7	21.5	19.9	21.5	12.5	10.9	12.2		16.8	24.7	18.7	18.2	15.1		
P67	311697	723939	35.6	30.5	21.4	22.4	18.9	21.9	17.0	21.1	17.1	23.8	38.4	28.5	24.7	20.6		
P68	311720	723955	35.4	23.5	19.3	18.0	16.4	17.0	12.4	14.7	18.8	17.4	27.8	25.4	20.5	17.1		
P72	310335	724550	34.4	28.4	27.6	25.2	23.8	21.6	17.8	22.4	21.9	26.6	32.8	27.6	25.8	21.5		
P73	286302	721651	26.8	28.9	37.6	23.8	33.5	19.9	18.7	20.3	23.9	28.7	30.2	23.4	26.3	21.9		
P74	286517	721559	24.4	23.5	28.3	10.9	21.9	16.0	12.9	17.3	15.2	19.7	24.2	22.8	19.8	16.5		

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
P75C	286360	721617	21.0	17.0	15.6	10.1	11.5	11.1	8.2	7.8	9.9	13.1	19.2	19.8	-	-		TriPLICATE SITE with P75C, P75L and P75R - Annual data provided for P75R only
P75L	286360	721617	19.7	16.2	15.2	11.0	11.2	11.2	9.0	8.2	10.3	14.1	19.9	17.0	-	-		TriPLICATE SITE with P75C, P75L and P75R - Annual data provided for P75R only
P75R	286360	721617	22.5	17.3	15.9	7.0	10.4	11.0	10.2	8.1	10.2	13.3	18.7	16.8	13.6	11.3		TriPLICATE SITE with P75C, P75L and P75R - Annual data provided for P75R only
P76	286324	721632	25.8	28.0	20.4	21.2	26.7	20.4	19.4	19.3	20.8	23.1	28.1	21.5	22.9	19.1		
P78	286194	721692	19.3	17.4	22.9	9.1	20.4	11.1	8.8	11.3	17.0	16.2	16.6	8.2	14.9	12.4		
P79C	312262	723976	28.0	29.5	32.8	24.7	34.0	18.4	19.1	19.4	19.5	24.5	31.1	24.2	-	-		TriPLICATE SITE with P79C, P79R and P79L - Annual data provided for P79L only
P79R	312262	723976	25.9	28.6	36.7	21.9	31.3	19.5	19.5	18.8	23.0	22.0	34.1	23.5	-	-		TriPLICATE SITE with P79C, P79R and P79L - Annual data provided for P79L only
P79L	312262	723976	28.7	30.2	36.0	23.2	26.8	19.3	17.8	20.6	24.7	23.1	29.0	22.5	25.3	21.1		TriPLICATE SITE with P79C, P79R and P79L - Annual data provided for P79L only
P82	294569	712888	19.5	18.8	16.1	14.8	15.4	14.8	10.1	12.2	14.5	13.2	22.3	15.6	15.6	13.0		
P86	311788	721397	25.9	24.5	23.1	14.5	22.8	13.9	13.5	15.0	14.9	22.3	27.3	19.6	19.8	16.5		

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
P87	287043	721486	8.9	6.4	6.4	4.3	3.8	3.2	2.3	2.6	2.1	4.0	9.4	6.5	5.0	4.2		
P89	311546	723544	28.6	28.5	20.9	16.4	18.6	16.5	11.9	17.7	16.5	23.8	30.5	26.7	21.4	17.8		
P90	311539	723798	25.8	23.2	20.4	10.8	15.1	14.8	11.0	12.8	13.8	19.3	26.5	23.1	18.1	15.0		
P95	311636	723950	37.4	35.9	36.9	27.4	34.0	25.4	16.0	20.8	31.2	26.0	37.7	31.3	30.0	25.0		
P96	311424	723976	31.4	28.7	25.0	19.0	21.3	16.4	12.9	17.8	25.8	27.5	29.9	26.8	23.5	19.6		
P97	311370	724040	35.1	26.5	22.0	14.9	19.4	18.5	8.0	16.6	17.3	27.3	30.2	26.8	21.9	18.2		
P99	310536	722928	15.5	14.1		3.3	9.4	6.3	6.2	6.6	8.4	11.3	21.4	13.7	10.6	8.8		
P100	286271	721684	19.9	13.2	18.8	12.1	15.4	8.6	8.4	8.9	9.0				12.7	10.6		
P101	311012	724483		29.6	24.1	15.7	20.7	18.6	15.0	16.0		22.9	25.5	23.6	21.2	17.6		
P103	311207	723504	37.0	30.6	29.8	21.7	27.7	19.8	20.2	21.4	23.1	26.7	33.3	30.3	26.8	22.3		
P104	310157	722634	28.7	22.9	22.8	10.7	16.7	11.2	11.3	11.6	11.0	17.8	28.0		17.5	14.6		
P107	311201	722871	32.7	26.7	30.0	19.4	22.9	15.2	16.4	18.2	23.0	25.2	29.9	23.5	23.6	19.7		

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
P108	318293	745415	24.7	24.2	25.6	16.9	24.6	15.8	16.6	17.4	19.3	22.2	22.4	16.3	20.5	17.1		
P109	311660	723897				16.0	17.0	17.6	14.9	14.7	21.2	20.7	30.3	25.3	19.7	16.5		
P110	309922	722633	22.2	19.5	19.7	9.5	13.5	9.2	10.1	9.0	15.0	14.0	27.6	20.6	15.8	13.2		
P111	308904	722731	26.6	21.5	16.8	10.2	17.4	15.0	13.5	11.6	16.2	17.4	29.5	21.1	18.1	15.1		
P112	308528	722895	18.1	20.0	16.0	8.6	15.8	11.3	11.6	10.1	11.6	17.9	22.4	16.6	15.0	12.5		
P113	313781	726119	24.1		16.5	10.7	15.6	11.7	10.7	12.9	13.8	14.8	26.2	20.9	16.2	13.5		
P114	311625	724063	18.4	14.6	12.0	9.1	8.6	7.3	6.7	7.9	6.8	13.1	19.7	14.4	11.6	9.6		
P115	311197	724857	19.2	16.2	13.1	10.2	13.3	8.1	7.5	8.1	7.2	13.1	21.5	14.7	12.7	10.6		
P116	310791	723817	23.5	24.8	26.1	14.3	20.4	14.5	15.3	14.8	19.4	23.9	30.1	22.2	20.8	17.3		
P117	310791	723817	21.5	21.6	19.4	14.4	16.1	10.2	12.3	13.2	11.9	20.5	25.5	18.0	17.1	14.2		
P119	312322	723515	22.0	20.1	18.7	10.4	16.0			12.7	8.2	15.5	21.4	19.5	16.5	13.7		
P120	286286	721656	24.7	24.6	32.3	16.4	30.9	16.5	14.4	15.0	23.2	22.0	26.7	21.9	22.4	18.7		

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
P121	311252	723301	39.1	33.3	31.1	26.0	21.9	21.3	18.1	20.1	20.1	18.7	34.5	28.7	26.1	21.7		
P122C	312260	724170	21.4	23.1	23.3	20.5	19.8	14.2	15.4	14.9	17.5	16.1	23.3	17.8	-	-		TriPLICATE SITE with P122C, P122L and P122R - Annual data provided for P122R only
P122L	312260	724170	20.4	23.0	24.7	22.9	23.5	13.8	15.7	14.6	18.7	19.3	23.6	17.1	-	-		TriPLICATE SITE with P122C, P122L and P122R - Annual data provided for P122R only
P122R	312260	724170	22.4	22.1	24.2	21.3	21.7	13.3	15.8	16.1	18.0	18.6	22.9	18.6	19.4	16.2		TriPLICATE SITE with P122C, P122L and P122R - Annual data provided for P122R only
P123	310231	725590	19.9	15.4	13.3	12.3	10.6	10.2	8.4	9.5	11.8	15.1	23.0	12.4	13.5	11.2		
P124	311290	723761	31.5	25.6	21.3	10.9	17.2	15.9	14.0	16.0	19.5	21.9	29.2	23.4	20.5	17.1		
P125	311279	723437	33.4	28.5	31.4	28.0	23.8	15.8	7.2	16.0	17.4	22.9	31.2	23.1	23.2	19.4		
P126	313438	725637	21.9	16.6			13.2	10.3	9.5	9.0	14.5	13.8	22.5	15.8	14.7	12.3		
P127C	308847	722750	25.3	19.9	16.2	13.9	13.4	11.3	10.5	11.2	13.8	16.6	23.2	18.5	-	-		TriPLICATE SITE with P127C, P127L and P127R - Annual data provided for P127R only
P127L	308847	722750	23.4	17.7	15.5	12.8	13.5	13.0	9.7	11.1	13.0	16.2	26.6	18.3	-	-		TriPLICATE SITE with P127C, P127L and P127R - Annual data provided for P127R only

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 <(x.x)>	Annual Mean: Distance Corrected to Nearest Exposure	Comment
P127R	308847	722750	25.0	20.2	16.7	12.8	12.1	12.2	10.2	11.2	13.3	16.7	27.3	17.9	16.1	13.4		Triplicate Site with P127C, P127L and P127R - Annual data provided for P127R only
P128	314200	726765										12.4	18.7	14.2	15.1	10.0		

- All erroneous data has been removed from the NO₂ 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.
- PKC confirm that all 2024 diffusion tube data has been uploaded to the Diffusion Tube Data Entry System.

Notes:

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

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

See Appendix C for details on bias adjustment and annualisation.

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

New or Changed Sources Identified Within PKC During 2024

PKC has not identified any new sources relating to air quality within the reporting year of 2024.

Additional Air Quality Works Undertaken by PKC During 2024

Perth and Kinross Council has not completed any additional works within the reporting year of 2024.

QA/QC of Diffusion Tube Monitoring

Analysis of diffusion tubes in 2024 was carried out by SOCOTEC at the Didcot lab. The method of preparation used was 20% TEA in water.

The analysis carried out by SOCOTEC on the diffusion tubes is covered within their UKAS schedule. SOCOTEC participate in the AIR-PT scheme in which they are rated a satisfactory laboratory.

Monitoring was carried out in line with the 2024 Diffusion Tube Monitoring calendar.

Diffusion Tube Annualisation

Annualisation is required for any site with data capture less than 75% but greater than 25%. As such, one site within Perth & Kinross required annualisation in 2024. This was conducted using the latest version of the [Diffusion Tube Data Processing Tool \(v4.0\)](#) utilising data from two automatic monitoring sites. These sites, alongside the details of the calculation method undertaken, are provided in Table C.2.

Diffusion Tube Bias Adjustment Factors

Perth and Kinross Council have applied a local bias adjustment factor of 0.83 to the 2024 monitoring data. A summary of bias adjustment factors used by Perth and Kinross Council over the past five years is presented in Table C.1.

Due to poor data capture on three of the four co-located monitors, only the data from Local Bias Adjustment Perth 1 (Bridgend) was used in the local bias adjustment factor calculations. Despite this, PKC chose to continue using the local bias adjustment factor to remain consistent with our approach in previous years, and as it is more conservative than the relevant national adjustment factor.

Table C.1 – Bias Adjustment Factor

Year	Local or National	If National, Version of National Spreadsheet	Adjustment Factor
2024	Local	-	0.83
2023	Local	-	0.8
2022	Local	-	0.79
2021	Local	-	0.88
2020	Local	-	0.8

NO₂ Fall-off with Distance from the Road

No diffusion tube NO₂ monitoring locations within Perth and Kinross required distance correction during 2024.

QA/QC of Automatic Monitoring

Ricardo E&E Ltd carries out the data management and Local Site Operator (LSO) duties for the automatic monitors in P&K.

The monitors are serviced on a six-monthly basis in coordination with Ricardo's QA/QC audits (i.e., service is carried out following the audit). During each site audit the performance of the analysers is checked, in addition to a traceable calibration to UK and international metrology standards for the on-site calibration gases. Site calibrations are also carried out on a three weekly basis using a traceable gas standard. Data is ratified on

a 3-monthly basis, the process for which consists of detailed review of calibrations, diagnostics, faults and engineer visits.

All data used within this report has been ratified. Live and historic data for the RTMs is available from <https://www.scottishairquality.scot/latest>

PM₁₀ and PM_{2.5} Monitoring Adjustment

Perth & Kinross Council uses Fidas 200 monitors to measure PM₁₀ and PM_{2.5} within our Local Authority area. Following the completion of the [Scottish Government Pilot Research Study to investigate Particulate Matter Monitoring Techniques in Scotland](#), Scottish Government issued the following guidance for local authorities on the reporting and use of PM data from Fidas 200 instruments within the SAQD network:

- Fidas 200 PM₁₀ data collected within the SAQD should be corrected by **dividing** ratified data by **0.909**
- Fidas 200 PM_{2.5} data collected within the SAQD should be corrected by **multiplying** ratified data by **1.06**
- For completeness, it is recommended that authorities report both the corrected and uncorrected ratified data statistics.

Following Scottish Government guidance, PKC has therefore reported both corrected and uncorrected ratified data statistics for PM₁₀ and PM_{2.5} in Table A.6 - Table A.11.

Automatic Monitoring Annualisation

Three of the automatic monitoring locations within Perth and Kinross recorded data capture below 75%: Atholl Street (Perth 2) and Glasgow Road (Perth 3) for NO₂ and James Square (Crieff 1) for PM₁₀ and PM_{2.5}.

Annualisation was carried out as per the guidance in LAQM TG.22 and the resultant data is provided in Table C.2, Table C.3 and Table C.4.

NO₂ Fall-off with Distance from the Road

No automatic NO₂ monitoring locations within Perth & Kinross required distance correction during 2024.

Table C.2 – NO₂ Annualisation Summary (concentrations presented in µg/m³)

Site ID	Annualisation Factor Perth 1 (Bridgend)	Annualisation Factor Dundee, Mains Loan	Annualisation Factor Site 3	Annualisation Factor Site 4	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
P128	0.8980	0.6934	-	-	0.7957	15.1	12.0	
Perth 2 (Atholl St)	0.940	0.891	-	-	0.916	27.9	25.6	
Perth 3 (Glasgow Rd)	0.911	0.729	-	-	0.820	16.5	13.5	

Table C.3 – PM₁₀ Annualisation Summary (concentrations presented in µg/m³)

Site ID	Annualisation Factor Perth 1 (Bridgend)	Annualisation Factor Dundee, Mains Loan	Annualisation Factor Site 3	Annualisation Factor Site 4	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
Crieff 1 (James Square)	0.986	0.998	-	-	0.992	10.1	10.0	

Table C.4 – PM_{2.5} Annualisation Summary (concentrations presented in µg/m³)

Site ID	Annualisation Factor Perth 1 (Bridgend)	Annualisation Factor Dundee, Mains Loan	Annualisation Factor Site 3	Annualisation Factor Site 4	Average Annualisation Factor	Raw Data Annual Mean	Annualised Annual Mean	Comments
Crieff 1 (James Square)	0.983	1.001	-	-	0.992	5.8	5.7	

Table C.5 – Local Bias Adjustment Calculations

	Local Bias Adjustment Perth 1 (Bridgend)	Local Bias Adjustment Perth 2 (Atholl St)	Local Bias Adjustment Perth 3 (Glasgow Rd)	Local Bias Adjustment Crieff 1 (James Sq)	Local Bias Adjustment Input 5
Periods used to calculate bias	12	8	8	3	-
Bias Factor A	0.83 (0.77 - 0.91)	0.89 (0.74 - 1.14)	0.82 (0.75 - 0.91)	0.86 (0.67 - 1.17)	-
Bias Factor B	20% (10% - 30%)	12% (-12% - 36%)	22% (10% - 34%)	17% (-14% - 48%)	-
Diffusion Tube Mean ($\mu\text{g}/\text{m}^3$)	19.4	15.8	35.6	20.1	-
Mean CV (Precision)	4.4%	4.3%	6.0%	3.9%	-
Automatic Mean ($\mu\text{g}/\text{m}^3$)	16.2	14.1	29.3	17.2	-
Data Capture	98%	80%	73%	26%	-
Adjusted Tube Mean ($\mu\text{g}/\text{m}^3$)	16 (15 - 18)	14 (12 - 18)	29 (27 - 32)	17 (13 - 24)	-
Overall Diffusion Tube Precision	Good Overall Precision	Good Overall Precision	Good Overall Precision	Good Overall Precision	-
Overall Continuous Monitor Data Capture	Good Overall Data Capture	Poor Overall Data Capture	Poor Overall Data Capture	Poor Overall Data Capture	-

Notes:

Due to poor data capture on three of the four co-located monitors, only the data from Local Bias Adjustment Perth 1 (Bridgend) was used in the local bias adjustment factor calculations. Therefore a single local bias adjustment factor of **0.83** has been used to bias adjust the 2024 diffusion tube results.

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
EH	Environmental Health
FDMS	Filter Dynamics Measurement System
LAQM	Local Air Quality Management
NO ₂	Nitrogen Dioxide
NOx	Nitrogen Oxides
PKC	Perth and Kinross Council
P&K	Perth and Kinross
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

Perth Air Quality Action Plan https://www.pkc.gov.uk/media/35448/2009-Air-Quality-Action-Plan/pdf/Perth_and_Kinross_Air_Quality_Action_Plan.pdf?m=636104961720700000

Crieff Air Quality Action Plan https://www.pkc.gov.uk/media/44879/2019-Crieff-Air-Quality-Action-Plan/pdf/2_2019_Perth_Kinross_Council_Crieff_Air_Quality_Action_Plan.pdf?m=637080263860030000

Perth Transport Futures <https://www.perthtransportfutures.co.uk/>

PKC Mobility Strategy https://www.pkc.gov.uk/media/53565/Mobility-Strategy/pdf/1_Mobility_Strategy.pdf?m=1734339585530

Regional Transport Strategy <https://tactran.gov.uk/projects/regional-transport-strategy/>

Perth & Kinross Council Local Development Plan adopted 2014

http://www.pkc.gov.uk/media/23633/Local-Development-Plan/pdf/Adopted_LDP_Web_Version.pdf?m=636099646768900000

Perth & Kinross Council Local Development Plan Review (2018 -2023)

<http://www.pkc.gov.uk/article/15042/Local-Development-Plan-Review-2018-2023>

Perth & Kinross Council's Climate Change Strategy and Action Plan

<https://www.pkclimateaction.co.uk/climate-change-strategy-and-action-plan>

Perth & Kinross Council Placemaking Guide 2020

https://www.pkc.gov.uk/media/45775/Adopted-SG-2020/pdf/Adopted_Placemaking_Guide.pdf?m=637195225081600000