CYNGOR BWRDEISTREF SIROL RHONDDA CYNON TAF

RHONNDA CYNON TAF COUNTY BOROUGH

2025 Adroddiad Cynnydd o Ansawdd Aer

Medi 2025

2025 Air Quality Progress Report

September 2025

Wrth gyflawni Rhan IV o Ddeddf yr Amgylchedd 1995
Rheoli Ansawdd Aer Lleol

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

Mae'r Adroddiad ar Gynnydd 2025 wedi ei baratoi a'i gyhoeddi gan Gyngor Bwrdeistref Sirol Rhondda Cynon Taf yn unol â'i ddyletswyddau o dan Adran IV o Ddeddf yr Amgylchedd 1995 fel y'i diwygiwyd gan Ddeddf yr Amgylchedd (Ansawdd Aer a Seinweddau) (Cymru) 2024. Oni nodir fel arall, barn a sylwadau Cyngor Bwrdeistref Sirol Rhondda Cynon Taf sy'n cael eu mynegi yn yr Adroddiad ar Gynnydd 2025.

Yn unol â Chynllun y Gymraeg 2025, ystyrir y ddogfen yma'n un dechnegol a fyddai o ddiddordeb i gynulleidfa fach o bobl yn unig, ac felly mae'i chyhoeddi yn y Saesneg. Fodd bynnag, bydd modd gofyn am fersiwn Gymraeg ohoni.

The 2025 Progress Report has been produced and issued by Rhondda Cynon Taff County Borough Council in fulfilment of its duties under Part IV of the Environment Act 1995, as amended by the Environment (Air Quality and Soundscapes) (Wales) Act 2024. Unless otherwise stated all opinions and views contained within the 2025 Progress Report are that of Rhondda Cynon Taff County Borough Council only.

In accordance with Rhondda Cynon Taff's Welsh Language Scheme, the 2025 Progress Report is deemed to be a technical document of limited public interest and has therefore been produced in English. A Welsh version, however, can be made available on request.

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Report Ref. No.:	2025PR
Date:	17th September 2025

1. Crynodeb Gweithredol: Ansawdd Aer yn Ein Hardal

1.1 Ansawdd Aer yn Rhondda Cynon Taf

Mae Cyngor Bwrdeistref Sirol Rhondda Cynon Taf [yr Awdurdod Lleol] yn cydnabod bod modd i ansawdd aer gwael effeithio ar iechyd pobl a bod modd i ansawdd aer da fod yn bwysig o ran gwella hyd ac ansawdd bywyd, amwynder y gymuned leol a'r amgylchedd yn ehangach.

Yn ôl y gyfraith, mae angen i'r Awdurdod Lleol fesur ansawdd aer yn rheolaidd yn ei ardal mewn perthynas â'r Amcanion Ansawdd Aer. Wrth wneud hynny, mae'r Awdurdod Lleol wedi amlygu dau lygrydd aer perthnasol – nitrogen deuocsid [NO_2] a deunydd gronynnol [PM_{10}] – y mae angen edrych arnyn nhw'n fwy manwl. Mae Adroddiad Cynnydd Ansawdd yr Aer 2025 yn cynnwys asesiad o ddata monitro ansawdd aer a gafodd eu casglu yn ystod 2024, yn ogystal ag adolygiad o ddatblygiadau wedi eu caniatáu yn ddiweddar, mannau o ddiddordeb parhaus a newydd, a pholisïau penodol sydd efallai wedi cael dylanwad ar ansawdd aer lleol.

Mae wedi cael ei ddangos bod gan y rhan fwyaf o sir Rhondda Cynon Taf ansawdd aer sy'n cydymffurfio ac mae hynny'n debygol o barhau yn y dyfodol. Gyda'r disgwyliad y gallai ansawdd aer barhau i wella ychydig yn y dyfodol agos, ac wrth i dechnolegau trafnidiaeth newydd gael eu mabwysiadu'n raddol, mae potensial i gael gwelliant cynaliadwy pellach i lefelau o leiaf rhai llygryddion aer yn y tymor hwy.

O edrych ar amgylchiadau lleol, gan gynnwys canlyniadau monitro, dros gyfnod estynedig, deellir mai dim ond rhai ardaloedd bach sy'n gysylltiedig â chyffyrdd ffyrdd trefol prysur, y rhwydwaith ffyrdd rhanbarthol neu ffynonellau lleol penodol sy'n debygol o gael ansawdd aer sydd ddim yn cydymffurfio yn ardal Rhondda Cynon Taf. Credir bod yr ardaloedd sydd mewn perygl – ardaloedd sydd yn hanesyddol yn gysylltiedig â lefelau uchel o NO_2 – eisoes wedi cael eu cynnwys yn rhan o Ardaloedd Rheoli Ansawdd Aer [ARhAA] ac, yn wahanol i'r rhan fwyaf o leoliadau, mae'n bosibl fydd ansawdd aer yn yr ardaloedd yma ddim yn gwella mor gyflym ag ardaloedd eraill yn y tymor byr. Mae gyda Rhondda Cynon Taf 6 ARhAA ar hyn o bryd, fel sydd wedi'u rhestru yn Appendix D1: Current AQMA Boundary Maps, sydd i gyd yn ymwneud ag achosion o dorri Amcanion Ansawdd Aer ar gyfer NO_2.

Yn 2024 roedd modd i'r Awdurdod Lleol fonitro $PM_{2.5}$ a PM_{10} yng Nglyn-coch, Pontypridd. Mae dadansoddiad o'r canlyniadau'n sail i'r dylanwad sylweddol tebygol y gallai gwahanol weithrediadau yn Chwarel Craig Yr Hesg ei gael ar PM_{10} yr arsylwyd arno yn lleol, er y gallai canlyniadau $PM_{2.5}$ fod yn fwy annibynnol o ddylanwadau lleol. Er ei bod hi'n parhau i fod yn anodd rhagweld tuedd yn y dyfodol yng Nglyn-coch, ymddengys, ar hyn o bryd, fod y lleoliad yn parhau i gydymffurfio â'r cymedr blynyddol a'r cymedr dyddiol 24 awr o ran Amcanion Ansawdd Aer ar gyfer PM_{10}. Serch hynny, gallai digwyddiad hinsoddol parhaus neu newid andwyol i ffynonellau deunydd gronynnol lleol fygwth y ddealltwriaeth yma. Felly, efallai y bydd angen monitro parhaus i sicrhau bod modd ystyried yn llawn unrhyw newidiadau yn y dyfodol, a allai effeithio ar lefelau PM_{10} yn lleol.

1.2 Camau i Wella Ansawdd Aer

Yn ogystal ag adolygu dealltwriaeth gyfredol o ansawdd aer lleol, efallai bydd yr Awdurdod Lleol hefyd yn cymryd camau a fydd, gobeithio, yn gweithio tuag at wella ansawdd aer mewn Ardal Rheoli Ansawdd Aer, neu'n fwy eang ledled y Fwrdeistref Sirol. Os nad oes gweithredu, mae'n amlwg nad yw'r ansawdd aer lleol yn yr ardaloedd sy'n cael eu heffeithio fwyaf yn

Rhondda Cynon Taf yn debygol o wella unrhyw bryd yn fuan. O ganlyniad i hyn, mae'r Awdurdod Lleol wedi mabwysiadu Cynlluniau Gweithredu Ansawdd Aer ar gyfer pob ARhAA, sydd i'w gweld yn Appendix E2: Current Air Quality Action Plans. Mae'r Cynlluniau Gweithredu Ansawdd Aer yma yn cefnogi nifer o gamau gweithredu lleol a chamau gweithredu'r Fwrdeistref Sirol gyfan, a hynny er mwyn parhau â gwaith yr Awdurdod Lleol tuag at sicrhau cydymffurfiaeth barhaus ym mhob ARhAA.

Mae'r Awdurdod Lleol yn parhau, pan fo'n bosibl, i weithredu neu i ddylanwadu ar weithredu camau yn ei Gynlluniau Gweithredu Ansawdd Aer, yn ogystal â chamau eraill a all wella ansawdd aer lleol yn gyffredinol. Serch hynny, oherwydd adnoddau cyfyngedig, ni fu'n bosibl gweithredu'r holl gamau gwella ansawdd aer ar unwaith. Serch hynny, mae'r camau gwella a gyflawnwyd yn ddiweddar yn cynnwys datblygu Metro De Cymru a chyflwyno tocynnau 'tapio a mynd', cwblhau Cynllun Deuoli'r A4119 Coed-elái, gosod mannau gwefru cerbydau trydan pwrpasol ychwanegol mewn meysydd parcio cyhoeddus, cyflwyno tocynnau bws rhatach (uchafswm o £1.50) ar gyfer teithiau o fewn Rhondda Cynon Taf yn ystod adegau penodol o'r flwyddyn, yn ogystal â chludiant addysg ôl-16-19 oed am ddim i unigolion cymwys, datblygu rhaglen waith fesul cam gwerth miliynau o bunnoedd i uwchraddio a gwella nifer o lwybrau teithio llesol a gosod rhwystrau rhannol gan ddefnyddio seilwaith gwyrdd (gwrychoedd a choed) yn Ysgol Gyfun Aberpennar.

Wrth edrych i'r dyfodol bydd yr Awdurdod Lleol yn parhau i symud ymlaen ag ystod o gamau gweithredu a mentrau. Mae'r rhain yn cynnwys dylunio a gweithredu sawl gwelliant arfaethedig posibl i wella priffyrdd er mwyn gwella'r sefyllfa wrth 'fannau cyfyng problemus', a phrosiectau i gynyddu defnyddioldeb ac ymwybyddiaeth o lwybrau teithio llesol ac opsiynau trafnidiaeth gynaliadwy leol. Wrth gydnabod effeithiau posibl newid yn yr hinsawdd, a'r manteision y byddai modd eu gwireddu o roi dull cyfannol o ymdrin â materion amgylcheddol ar waith, mae'r Awdurdod Lleol yn parhau i ddatblygu strategaethau a rhaglenni newid hinsawdd lleol allweddol. Mae hyn wedi cynnwys datblygu Strategaeth Gwefru Cerbydau Trydan a rhaglen cynhyrchu ynni adnewyddadwy uchelgeisiol.

Bydd yr Awdurdod Lleol yn parhau i gynnal y Cynlluniau Gweithredu Ansawdd Aer fel dogfennau byw ac yn anelu at eu hadolygu nhw eto yn 2027, gan ystyried y cynnydd sydd wedi'i wneud a natur gyfnewidiol ansawdd aer lleol.

Mae'r gallu i ddod o hyd i adnoddau digonol yn hanfodol i ddatblygiad tymor hir y camau i wella ansawdd aer lleol. Gall hyn fod yn heriol, ac mae'n galw am ddulliau cyfannol creadigol i ddatblygu camau gweithredu gwella ansawdd aer lleol. O ganlyniad i hyn, er bod buddion aml-agenda yn aml yn cael eu gwireddu, mae modd i'r dull yma ddod ar draws ansicrwydd a phrosesau gwneud penderfyniadau hirach wrth geisio datblygu rhai camau gweithredu.

1.3 Blaenoriaethau a Heriau Lleol

Mae'r Awdurdod Lleol yn cydnabod bod lefelau ansawdd aer sy'n cydymffurfio yn bwysig iawn wrth gyflawni ei flaenoriaethau. O ganlyniad i hyn, mae wedi ymgorffori'r gydnabyddiaeth yma'n flaenoriaeth o dan 'Natur ac Amgylchedd' yn y fersiwn diweddaraf o'i Gynllun Corfforaethol [1]. Bydd yr Awdurdod Lleol yn parhau i geisio datblygu ei Gynlluniau Gweithredu Ansawdd Aer sydd wedi'u mabwysiadu, gweithredu camau gwella ansawdd aer cyfannol cyraeddadwy, anelu at gyflawni'r gofynion monitro ac adrodd disgwyliedig a pharhau i adeiladu ar berthnasoedd gwaith agos gyda phartneriaid a rhanddeiliaid amrywiol.

Mae'r Awdurdod Lleol hefyd yn cydnabod nifer o heriau er mwyn darparu ansawdd aer lleol da. Y rhai mwyaf amlwg yw:-

- Dyfalbarhad tebygol amgylchedd lle mae'r adnoddau sydd wedi'u dyrannu ar hyn o bryd o dan bwysau sylweddol, ac yn wynebu cystadleuaeth barhaus o agendâu eraill â blaenoriaeth.

- Gallai rhoi Deddf yr Amgylchedd (Ansawdd Aer a Seinweddau) (Cymru) 2024 [2] ar waith, ac yn benodol yr adolygiad o rai Amcanion Ansawdd Aer, olygu bod angen ailystyried sut mae'r Awdurdod Lleol yn ymgymryd â'i ddyletswyddau ansawdd aer lleol ac yn darparu adnoddau i gyflawni hyn.

- Datblygu dealltwriaeth o lefelau deunydd gronynnol yn yr aer yng nghymuned Glyn-coch a'r angen posibl i gynnal trafodaethau gyda rhanddeiliaid a phartïon â diddordeb.

Trefoli parhaus, a'r rhwystrau cenedlaethol a lleol posibl sy'n wynebu mabwysiadu datrysiadau cludiant glanach newydd yn gyflym.

1.4 Sut i Gymryd Rhan

Mae rhagor o wybodaeth ar ansawdd aer lleol yn Rhondda Cynon Taf, gan gynnwys y canlyniadau monitro diweddaraf, ar gael ar wefan Ansawdd Aer Cymru [3].

2. Executive Summary: Air Quality in Our Area

2.1 Air Quality in Rhondda Cynon Taf

Rhondda Cynon Taff County Borough Council [the Local Authority] recognises poor air quality can affect people's health and that good air quality can be important in improving the length and quality of people's lives, the amenity of their local community and the wider environment.

The law requires the Local Authority to regularly check air quality in its area against Air Quality Objectives [AQO]. In doing so, the Local Authority has identified two relevant air pollutants, Nitrogen Dioxide [NO_2] and Particulate Matter [PM_{10}], that may require closer examination. The 2025 Air Quality Progress Report contains an assessment of air quality monitoring data collected during 2024, as well as a review of newly consented developments, new and ongoing areas of interest and certain policies that may have an influence upon local air quality.

It has been shown that the vast majority of Rhondda Cynon Taf experiences compliant air quality, which is likely to remain so into the future. With the expectation that air quality may continue to marginally improve into the near future and, with the gradual adoption of new transport technologies, there is the potential for further sustained improvement to at least some air pollutants in the longer-term.

From examination of local circumstances, including monitoring results, over an extended period of time, it is understood that only some small areas associated with busy urban local roads or the regional trunk road network are likely to be vulnerable to non-compliant air quality within Rhondda Cynon Taf. It is believed these vulnerable areas, linked to historically high levels of NO_2, have already been included within several Air Quality Management Areas [AQMAs] and, in contrast to most locations, the air quality in these vulnerable areas may not improve as rapidly as elsewhere over the nearer-term. Currently Rhondda Cynon Taf has six AQMAs, listed in Appendix D1: Current AQMA Boundary Maps, all of which are in respect of breaches of AQOs for NO_2.

In 2024 the Local Authority was able to undertake the monitoring of both $PM_{2.5}$ and PM_{10} within Glyncoch, Pontypridd. Analysis of the results underlies the likely significant influence that various operations at Craig Yr Hesg Quarry may have on locally observed PM_{10}, albeit $PM_{2.5}$ may observe a greater degree of independence from local influences. Although it remains difficult to predict a future trend at Glyncoch it appears that, at present the location remains compliant to the annual mean and the 24-hour daily mean AQOs for PM_{10}. Nonetheless, a sustained climatic event or an adverse change to local sources of particulate matter could threaten this understanding. Therefore, continued monitoring may be necessary to ensure any future changes, which have the potential to impact on the local prevalence of PM_{10}, can be fully considered.

2.2 Actions to Improve Air Quality

In addition to reviewing current understanding of local air quality the Local Authority may also take actions that hopefully work towards improving air quality within an AQMA or more broadly throughout the County Borough. It is clear without action, local air quality within the most vulnerable areas of Rhondda Cynon Taf is unlikely to improve as quickly as possible. As a result, the Local Authority has adopted Air Quality Action Plans [AQAPs] for each of its AQMAs, published in Appendix E2: Current Air Quality Action Plans. These AQAPs, advocate

a number of locally targeted as well as County Borough wide actions, so as to continue the Local Authority's work towards achieving sustained compliance within each AQMA.

The Local Authority continues, where possible, to implement or influence the implementation of actions within its AQAPs as well as other actions that may more generally improve local air quality. However, due to limited resources, it has not been possible to immediately implement all air quality improvement actions. However, improvement actions undertaken recently include progression of the South Wales Metro and introduction of 'tap and go' ticketing, completion of the A4119 Coed Ely Dualling Scheme, installation of additional dedicated electrical vehicle charging points at public car parks, subsidised (£1.50 max fare) bus travel within Rhondda Cynon Taf during certain parts of the year as well as defined free post-16 to 19 education travel, progressing a multimillion pound phased works programme to upgrade and improve a number of active travel routes and installing partial barriers using green infrastructure (hedging and trees) at Mountain Ash Comprehensive School.

Looking to the future, the Local Authority is continuing to progress a range of actions and initiatives. These include the design and potential implementation of several proposed highway improvements to improve 'pinch-points' and projects to increase usability and awareness of active travel routes and local sustainable transport options. In recognising the potential effects of climate change and the 'win win' which may be realised by an holistic approach to environmental issues, the Local Authority continues to advance key local climate change strategies and programmes. This has included, progressing its Electric Vehicle Charging Strategy and an ambitious renewable energy generation programme.

The Local Authority will continue to maintain the AQAPs as living documents and will aim to review them again in 2027, to take account of progress made and the ever-changing nature of local air quality.

Fundamental to the longer-term progression of actions to improve local air quality is the ability to obtain sufficient resources. This can be challenging and invariably requires creative holistic approaches to the advancement of local air quality improvement actions. As a consequence, although multi-agenda benefits are often realised, this approach can encounter greater uncertainty and longer decision-making processes when trying to advance certain actions.

2.3 Local Priorities and Challenges

The Local Authority recognises that compliant air quality has significant importance in the delivery of its priorities, in doing so it has incorporated this recognition as a priority of the "Nature and Environment" theme within its updated Corporate Plan [1]. The Local Authority will continue to seek to progress its adopted AQAPs, implement achievable holistic air quality improvement actions, aspire to fulfil expected monitoring and reporting requirements and build-upon close working relationships with various partners and stake-holders.

The Local Authority also recognises a number of challenges to the delivery of good local air quality, most notably: -

- The likely persistence of an environment where currently allocated resources are significantly under pressure and will face continued competition from other priority agendas.

- The implementation of the Environment (Air Quality and Soundscapes) (Wales) Act 2024 [2], and in particular the review of certain Air Quality Objectives, could require reconsideration as to how the Local Authority undertakes and resources its local air quality duties.

- Evolving understanding of the levels of particulate matter in the air within the community of Glyncoch and the potential need to support dialogue with stakeholders and interested parties.

- Continued urbanisation and the potential national and local obstacles faced with the rapid adoption of emergent cleaner transport solutions.

2.4 How to Get Involved

Further information on local air quality within Rhondda Cynon Taf, including up-to-date monitoring results, can be obtained from the "Air Quality In Wales" website [3].

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3. Actions to Improve Air Quality

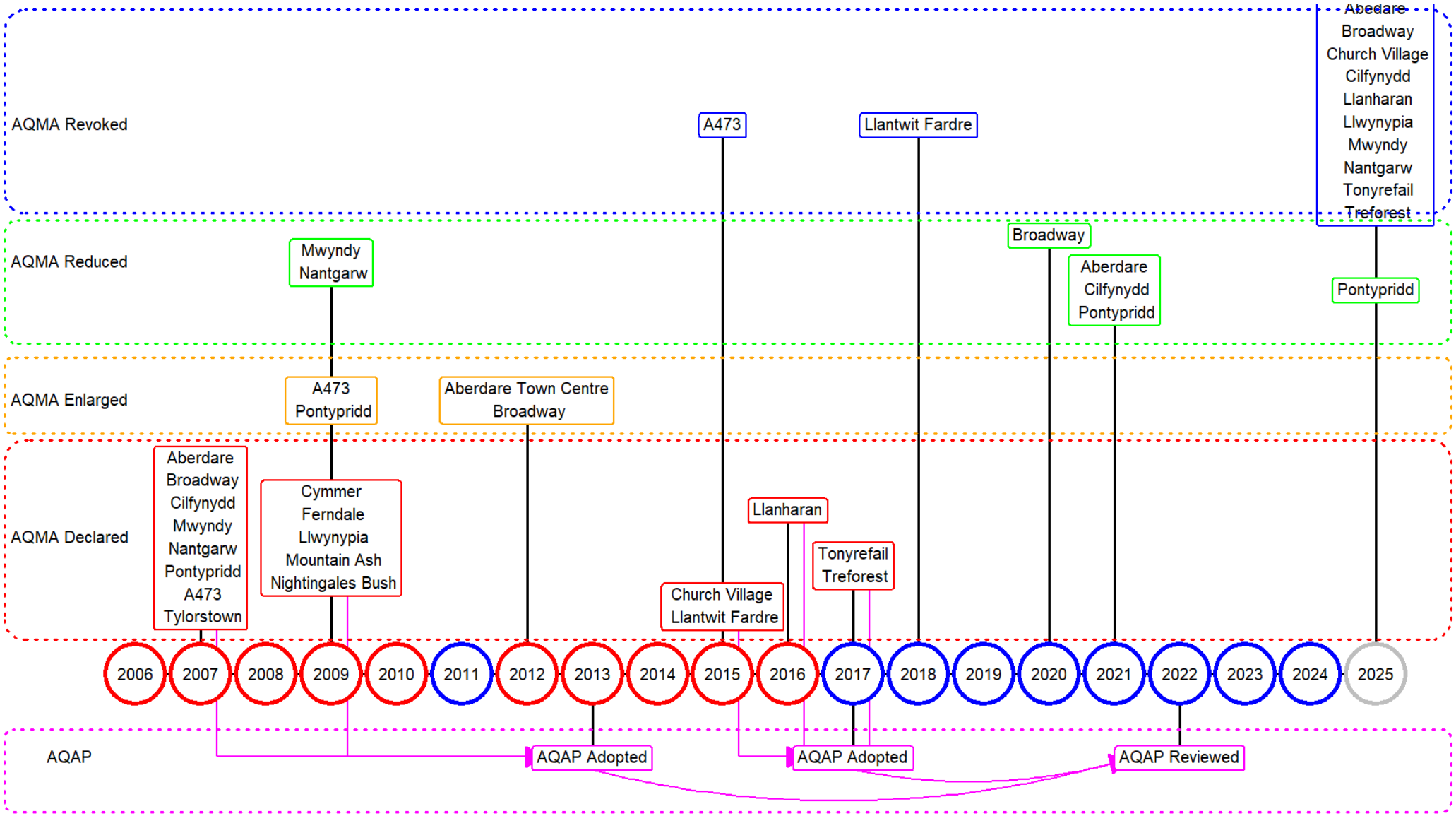
3.1 Previous Work in Relation to Air Quality

Since the late 90s the Local Authority has periodically reviewed local air quality management within Rhondda Cynon Taf and since 2003 has produced an annual progress report on its latest findings. These progress reports often include consideration of the current air quality monitoring results, trends and developments that may influence local air quality.

When necessary, progress reports have included the identification of relevant locations, that may not comply with statutory Air Quality Objectives [AQOs], designated as Air Quality Management Areas [AQMAs] and the assessment of cost-effective actions, adopted within Air Quality Actions Plans [AQAPs], that may be necessary to advance as quickly as reasonably possible local air quality improvement.

To provide an illustration of local air quality management in Rhondda Cynon Taf, Figure 3-1 below provides a timeline of recent important events. In addition, the years circled in red indicate those occasions when the locally observed levels of NO_2 were above the historic average and those in blue when it was below.

Figure 3-1: Timeline of Air Quality Management in Rhondda Cynon Taf



3.2 Air Quality Management Areas

AQMAs are declared when air quality is close to or above a threshold of pollution known as the Air Quality Objective [AQO], see Appendix B10.2. After declaring an AQMA the Local Authority should prepare an AQAP within eighteen months, setting out measures it intends to put in place to improve air quality to at least the AQO, if not better. AQMAs are seen as the focal points to channel resources into the most pressing areas of air pollution as a priority.

Within Rhondda Cynon Taf there are currently six AQMAs. Although they may vary in size and characteristics, each AQMA has been designated with respect to a breach of a relevant AQO for NO_2. Each AQMA is subject to a corresponding AQAP, with each extant AQAP reproduced in Appendix E2: Current Air Quality Action Plans.

The following tables provide information with respect of each extant AQMA within Rhondda Cynon Taf. Further information related to declared or revoked AQMAs, including maps of AQMA boundaries are available online at the relevant Defra webpage [4]; with maps of extant AQMAs having also been reproduced in Appendix D1: Current AQMA Boundary Maps and information on their NO_2 trends in Appendix D2: AQMA Trends.

Table 3-1 below contains descriptive information on each AQMA, including if the community associated with the AQMA has also been identified by the ‘Health and Air Pollution Risk Assessment Area Prioritisation’ [HAP-RAP] tool [5]. The HAP-RAP tool has been designed by Public Health Wales to identify communities where improvement actions may have the most overall benefit to public health. Having regard to the potential disproportionate impacts of air quality upon deprived communities and the burden reduction approach. In addition, Table 3-1 also indicates if the AQMA lies within a Noise Action Plan Priority Area [NAPPA] identified by Welsh Government [6]. NAPPAs are locations, identified via noise mapping undertaken by Welsh Government, which may experience adverse levels of environmental noise. There are often close relationships between the underlying causes of non-compliant air quality and adverse soundscapes, as a result the presence of NAPPAs may be relevant to local air quality management considerations.

Table 3-1: General Information on current AQMAs within Rhondda Cynon Taf

RCT Area	AQMA	Community	Relevant AQO(s) for NO_2	Description[1]	No. of Properties[2]	HAP-RAP Priority[3]	NAPPA[4]	Five-Year NO_2 Trend (%)
Rhondda	Cymmer	Trebanog	1-hour & annual mean	All properties from High St to Trebanog Rd	278	✓	✓	-4.8
	Ferndale	Ferndale	annual mean	Certain properties from The Strand via High St to Dyffryn St	143	✓	✓	-2.9
	Tylorstown	Tylorstown	annual mean	Certain properties at East Rd	68	✓	✓	-1.5
Cynon	Mountain Ash Town Centre	Mountain Ash	annual mean	Certain properties from Oxford St to Ffrwyd Cres and Seymour St	63	✓	+	-5.9
Taf	Nightingales Bush	Pontypridd	annual mean	All properties at Nightingales Bush to Pentrebach Rd	10	×	✓	-6.1
	Pontypridd Town Centre	Pontypridd	annual mean	Certain properties along Gelliwastad Rd and Morgan St	88	×	+	-2.3

Table Notes

(1) AQMA boundary maps and corresponding AQAPs within Rhondda Cynon Taf CBC can be viewed on the relevant Defra webpage [4], with maps of extant AQMAs also reproduced in Appendix D1: Current AQMA Boundary Maps.

(2) The No. of Properties is an estimate utilising relevant GIS information at the time of publication, this number may not reflect the nature of the property, its level of occupancy or changes as a consequence of continued development.

(3) Health and Air Pollution Risk Assessment/Area Prioritisation [HAP-RAP] tool [5] outcome for each community associated with the AQMA. The HAP-RAP tool has been designed (see Section 6.6) to identify communities where improvement actions may have the most overall benefit to public health, with regards to the potential disproportionate impacts of air quality and the burden reduction approach.

(4) ✓ indicates AQMA lies within a Noise Action Plan Priority Area (road), **+** indicates Proximity Area (road) [NAPPA] identified by Welsh Government.

Each AQMA is subject to a corresponding AQAP, with each extant AQAP reproduced in Appendix E2: Current Air Quality Action Plans.

Table 3-2 below, contains information on the importance of certain characteristics that are relevant to each AQMA and that may have a cause in or exacerbate the need for the AQMA. These characteristics can be relevant when considering actions that may be cost-effective in achieving future compliance to the relevant AQOs

Table 3-2: Information on the Characteristics of each AQMA

Area	AQMA	Traffic Volume	Buses	HGVs	Road Incline	Network Congestion	Road Narrowness	Controlled Traffic	Pedestrian Crossing	Parked Vehicles	Loading Vehicles	In-road Bus Stop	Traffic Calming	Street Canyon	Steep Sided Valley	Dwellings Near Road
Rhondda	Cymmer	**	**		***		***	***	*	***	**			***	*	***
	Ferndale	**	**				**		*	***	***			***	**	**
	Tylorstown	**	**		*		***		*	***		**		***	**	**
Cynon	Mountain Ash	***	*	*	*			***	*					**	*	***
Taf	Nightingales Bush	***		*		***									*	
	Pontypridd	**	**			*		***	*						*	

Table Notes

* = slight importance, ** = moderate importance, *** = substantial importance

3.3 Implementation of Actions to Improve Air Quality

The Local Authority, its partners and other organisations have taken forward a number of actions in pursuit of improving local air quality. Notable actions and other measures, that may look to improve local air quality within the current AQMA's or more generally in Rhondda Cynon Taf, that have been recently significantly progressed or completed are:

- The completion and opening of the of the A4119 Coed Ely Dualling Scheme.
- Progression of Metro Infrastructure, to provide future support in the operation of the South Wales Metro.
- The continued installation of public accessible electric vehicle charging infrastructure throughout Rhondda Cynon Taf, further information available on the 'Electric Vehicle Charging Points – update on installations' RCTCBC webpage
- Introduction of 'tap and go' ticket payment system along the South Wales's Core Valley Lines Railway
- Introduction of the 'Rhondda Fach Connector Ticket' integrated bus and train tickets (one ticket useable across multiple journey providers and multi-leg journeys) for journeys originating or terminating in the Rhondda Fach
- Increasing rail services from six to eight trains per hour, daytime Monday to Saturday, between Pontypridd to Cardiff and introducing a new direct Pontypridd to Cardiff Bay service along the South Wales's Core Valley Lines Railway.
- Continuing subsidised (£1.50 max fare) within County Borough bus travel during certain parts of the year as well as defined free post-16 to 19 education bus travel.
- In regards to the Cymmer, Ferndale and Tylorstown AQMAs, commencement of the Porth Bus Interchange to support connected public transport within the Rhondda Fach and Fawr.
- Installing partial barriers using green infrastructure (hedging and trees) at Mountain Ash Comprehensive School to attempt to reduce the influence of traffic related emissions, at the school, from the nearby A4059.
- In regards to Aberdare Town Centre, Mountain Ash, Pontypridd Town Centre AQMAs, progression of £1.05 million active travel network improvement scheme
- In regards to the Ferndale and Tylorstown AQMAs, progression of £2.2 million works upgrading, to active travel standards, an existing path in the Maerdy area and construction of a new route southwards along the alignment of the former railway line towards Ferndale.

Due to a challenging resource environment, there may be some uncertainty as to the expected completion timeframes of various future improvement actions, however, the Local Authority considers the following measures may be potentially progressed or completed over the course of the next reporting year:

- In regards to the Mt Ash Town Centre, Nightingales Bush and Pontypridd Town Centre AQMAs, continued progress in delivery of the South Wales Metro.

- In regards to the Ferndale and Tylorstown AQMAs, the completion of phase 3 and 4 of the Rhondda Fach Active Travel Route providing a segregated quality walking and cycling route between Maerdy and Stanelytown and including potential dedicated access to Ferndale Community School in the Rhondda Fach.

- The progression of approval to deliver the Llanharan Sustainable Transport Corridor, including an associated increase in local bus frequency.

- The further delivery of public accessible dedicated electrical vehicle charging points at selected locations.

- Improvement of railway services within the Rhondda Fawr by introducing up to four trains per hour to Treherbert.

- Consideration of additional Treforest Industrial Estate train stations, on the South Wales Valleys Railway, at location(s) that may increase service to the local area.

- Introduction of county borough wide integrated public transport ticketing enabling one ticket local bus to local train travel.

- Consideration of additional green infrastructure related barriers at various schools.

Details of all actions planned, in progress or completed are set out in Table 3-3 below, with the actions listed in order of most likely impact.

Table 3-3: Progress on Measures to Improve Air Quality

No.	Measure & Focus	Area of Potential Effect	Measure		Lead Authority (Primary Funding Source(s))	Planning & Implementation Phase	Completion	Annual Emission Reduction in the AQMAs & Indicators	Progress & Comment
			Category	Classification					
1	Electric Vehicle Charging To advance local electric charging infrastructure so as to reduce the practical barriers to the adoption of LEVs	RCT	Promoting Low Emission Transport	Alternative Refuelling Infrastructure to Promote Electric Vehicle Recharging	RCT	Ongoing	Ongoing	TBC	Delivery of EV strategy. Emphasis on establishing a charging network at community destinations. Currently prioritising public car parking provision.
2	A473/B4595 Corridor Church Village Bypass To relieve traffic from existing local roads	B4595 (inc. Church Village AQMA)	Traffic Management	Strategic Highway Improvements	RCT (RCT+WG)	2008	2010	20% to 36% reduction in NO_2	Construction and operation of new 7km A473, providing relief to B4595. Changes to traffic flow from relief road fully manifested

No.	Measure & Focus	Area of Potential Effect	Measure		Lead Authority (Primary Funding Source(s))	Planning & Implementation Phase	Completion	Annual Emission Reduction in the AQMAs & Indicators	Progress & Comment
			Category	Classification					
3	A4233 Porth-Lower Rhondda Fach Relief Road To relieve traffic from existing local roads	Porth & Lower Rhondda Fach	Traffic Management	Strategic Highway Improvements	RCT (RCT+WG)	2005	2007	NA	Construction and operation of new 8km A4233, providing relief to local roads. Changes to traffic flow from relief road fully manifested
4	South Wales Metro The construction and operation of an integrated metro to relieve traffic congestion from the existing local and regional roads	RCT	Transport Planning and Infrastructure	Other	TfW (WG)	Ongoing	Ongoing	TBC	Electrification of core Valley Lines completed, diesel locomotive removed from routine duties. Phase 2 Implementation including modernisation of core Valley Lines with the aim to attract higher patronage and a reduction in car commuting.

No.	Measure & Focus	Area of Potential Effect	Measure		Lead Authority (Primary Funding Source(s))	Planning & Implementation Phase	Completion	Annual Emission Reduction in the AQMAs & Indicators	Progress & Comment
			Category	Classification					
5	A470 Speed Reduction Preservation of existing green barriers and reduction in speed limit to 50mph along designated length of the A470	Taf Valley	Traffic Management	Reduction of Speed Limits	WG (WG)	2018	2018 (further expansion under review)	Overall ~2.8µgm^{-3} NO_2 reduction in nearby areas	Permanent speed reduction in combination with fixed enforcement and in-site information dissemination. Possible further expansion of intervention to the south.
6	Llanharan Sustainable Transport Corridor To relieve traffic from the existing local roads	Llanharan	Traffic Management	Strategic Highway Improvements	RCT (RCT+WG)	Ongoing	TBC	TBC	Preferred route (Route No.2) determined, planning and design phase progressing [7].

No.	Measure & Focus	Area of Potential Effect	Measure		Lead Authority (Primary Funding Source(s))	Planning & Implementation Phase	Completion	Annual Emission Reduction in the AQMAs & Indicators	Progress & Comment
			Category	Classification					
7	Fee-Charging Public Bus Support To support mass public transit use	RCT	Transport Planning and Infrastructure	Other	RCT	2020	Ongoing	Initial 7% increase in journey uptake for parts of year promoted	Subsidised (max £1.50 fare) travel during certain parts of the year and defined free post 16 school transport to encourage sustained uptake.
8	RCT Staff Hybrid Homeworking Initiative ICT systems to enable wide scale hybrid homeworking	RCT	Promoting Travel Alternatives	Encourage / Facilitate Homeworking	RCT (RCT)	2019	2020	Significant uptake in home working and reduction in associated commuting	Mass role-out of ICT systems and support to enable as wide as possible uptake by RCT staff, minimising the need for commuting.

No.	Measure & Focus	Area of Potential Effect	Measure		Lead Authority (Primary Funding Source(s))	Planning & Implementation Phase	Completion	Annual Emission Reduction in the AQMAs & Indicators	Progress & Comment
			Category	Classification					
9	Hackney Carriage and Private Hire Vehicle Licensing Policy To consider regional vehicle emission standards	RCT	Promoting Low Emission Transport	Taxi Licensing Incentives and Conditions	RCT (CCR)	Ongoing	TBC	TBC	Collaborative review supported by evidence provided by CCR commissioned 'cenex' report [8]. Work ongoing to determine viability of regional approach as well as to consider any potential WG intervention Expectation of alignment to WG policy of mostly ZEV fleet by 2028 or earlier
10	Local Authority Vehicle Procurement To consider Local Authority vehicle emission standards	RCT	Promoting Low Emission Transport	Public Vehicle Procurement	RCT (RCT)	Ongoing	TBC	TBC	Rollout of LEV (Light Electric Vehicle) and ZEVs progressing with approximately 15% of fleet currently LEV. Expectation of alignment to WG policy of mostly ZEV fleet by 2028 or earlier

No.	Measure & Focus	Area of Potential Effect	Measure		Lead Authority (Primary Funding Source(s))	Planning & Implementation Phase	Completion	Annual Emission Reduction in the AQMAs & Indicators	Progress & Comment
			Category	Classification					
11	Urban 20mph Speed Limit Introduction of WG 30mph to 20mph general urban speed limit	RCT	Traffic Management	20mph Zones	RCT	2020	2023	No material impact to local levels of NO_2 observed at present	The national policy has largely been implemented, review being completed into the possible return of some specific roads to 30 mph.
12	Pontypridd Town Centre Junction (Morgan St & Berw Rd) Improvement Increasing the junction capacity and maximising efficiency	Pontypridd	Traffic Management	Strategic Highway Improvements	RCT	-	2014	-	Works undertaken, with resultant re-programming of traffic light controlled junction to accommodate greater vehicle capacity and junction efficiency Reduction in congestion from traffic queuing within and near Pontypridd Town Centre AQMA

No.	Measure & Focus	Area of Potential Effect	Measure		Lead Authority (Primary Funding Source(s))	Planning & Implementation Phase	Completion	Annual Emission Reduction in the AQMAs & Indicators	Progress & Comment
			Category	Classification					
13	Aberdare Town Centre Junction (Cardiff Rd & Cross St) Improvement Phase 1 & 2 modification of existing traffic light controlled junction within the AQMA	Aberdare	Traffic Management	Congestion Management	RCT (WG)	2013 & 2015	2014 & 2016	Reduction at Cardiff St (North) of ~1.6% NO_2; increase at Cardiff St (South) of ~0.2% NO_2	Reprogramming to favour traffic flow within the Aberdare AQMA above traffic queuing to enter or cross the AQMA and to enable wait detection and pedestrian use to improve traffic light sequence efficiency.
14	Broadway Junction (A4058) Improvement Increasing the number of carriageways turning right from Broadway onto the A4058	Broadway	Traffic Management	Strategic Highway Improvements	RCT (RCT)	2016	2017	-	Works undertaken, with resultant re-programming of traffic light controlled junction to accommodate the greater vehicle capacity Significant reduction in congestion from traffic queuing within Broadway AQMA

No.	Measure & Focus	Area of Potential Effect	Measure		Lead Authority (Primary Funding Source(s))	Planning & Implementation Phase	Completion	Annual Emission Reduction in the AQMAs & Indicators	Progress & Comment
			Category	Classification					
15	Mt Ash Town Centre Junctions (New Rd, Oxford St, Bridge St Complex) Improvement Modification of existing traffic light controlled junction within the AQMA	Mt Ash	Traffic Management	Congestion Management	RCT (RCT)	2013	2014	Insignificant change at New Rd and Oxford St	Reprogramming of traffic light controlled junctions to favour traffic flow within the Mt Ash AQMA above traffic queuing to enter or cross the AQMA.
16	Mountain Ash Cross Valley Link (south) To relieve traffic from the existing local roads	Mt Ash	Traffic Management	Strategic Highway Improvements	RCT (RCT+WG)	2018 - 2020	2020	Est. 10.4% reduction in NO_2 south of AQMA	Improvement of existing A4059 Jct and southern bridge completed.

No.	Measure & Focus	Area of Potential Effect	Measure		Lead Authority (Primary Funding Source(s))	Planning & Implementation Phase	Completion	Annual Emission Reduction in the AQMAs & Indicators	Progress & Comment
			Category	Classification					
17	Abercynon and Abercynon Park & Ride to support existing public mass transit relieve traffic congestion from the existing local road infrastructure	Taf Valley	Alternatives to Private Vehicle Use	Rail Based Park & Ride	RCT (RCT+WG)	2018	2019	-	Construction of additional 310 vehicle parking spaces associated with core valley-lines railway station. Expectation of minor reduction to NO_2 within Taf Valley
18	Aberdare Relief Rd Extension To relieve traffic from the existing local roads	Aberdare	Traffic Management	Strategic Highway Improvements	RCT	Ongoing	TBC	TBC	Preliminary investigation of feasibility and potential options supported by undertaking WelTag Stage 1 assessment.
19	Gelli/Treorchy Bypass To relieve traffic from the existing local roads	Rhondda Fawr	Traffic Management	Strategic Highway Improvements	RCT	Ongoing	TBC	TBC	Preliminary investigation of feasibility and potential options supported by undertaking WelTag Stage 1 assessment.

No.	Measure & Focus	Area of Potential Effect	Measure		Lead Authority (Primary Funding Source(s))	Planning & Implementation Phase	Completion	Annual Emission Reduction in the AQMAs & Indicators	Progress & Comment
			Category	Classification					
20	Highway Improvement Ely Valley Road Dualing to relieve traffic congestion from the existing local road infrastructure	Tonyrefail	Traffic Management	Strategic Highway Improvements	RCT (RCT+WG)	2019 - 2024	2024	-	Construction works completed. Expectation of minor effect on NO_2 within Tonyrefail
21	Improved Green Infrastructure Barriers at Mt Ash Secondary School Use of vegetation to reduce influence of road traffic emissions at relevant population	Mt Ash	Other	Other	RCT	2024	2025	TBC	Tree and shrub planting between A4059 and parts of school to form a partial barrier that should establish in time.

No.	Measure & Focus	Area of Potential Effect	Measure		Lead Authority (Primary Funding Source(s))	Planning & Implementation Phase	Completion	Annual Emission Reduction in the AQMAs & Indicators	Progress & Comment
			Category	Classification					
22	Travel Information Leaflets for Ferndale, Pontypridd and Porth Public and active travel advice leaflets relevant to the area.	RCT	Public Information	Via Leaflets	RCT (RCT)	2015	2018	Leaflet uptake by partners and service user gateways strong with positive feedback	Hard and electronic travel and active travel information leaflets reproduced and distributed to service user gateways and other relevant stakeholders [9].
22	Support of National 'Clean Air Day' 2020	RCT	Public Information	Other	RCT (RCT)	2020	Ongoing	Limited engagement	Poster displays at some service user gateways.

No.	Measure & Focus	Area of Potential Effect	Measure		Lead Authority (Primary Funding Source(s))	Planning & Implementation Phase	Completion	Annual Emission Reduction in the AQMAs & Indicators	Progress & Comment
			Category	Classification					
23	Tax Incentivised Bicycle Purchase Scheme Government approved salary sacrifice scheme to offer bicycles to RCTCBC employees via “Cycle 2 Work” scheme	RCT	Promoting Travel Alternatives	Promotion of cycling	RCT (indirect)	2015	Ongoing	-	Cycle 2 Work scheme active with employee uptake facilitated via payroll. Advertisement of the scheme via pay slips and RCTCBC intranet. Scheme delivered as part of ongoing staff welfare package

3.4 Review of Air Quality Action Plans

AQAPs are 'living' plans that are required to be regularly reviewed and updated whenever deemed necessary, normally at least once every five years, to ensure they remain relevant to ever changing local, regional and national circumstances. As part of this schedule the Local Authority formally reviewed and re-adopted revised AQAPSs for all extant AQMAs in 2022; these current AQAPs are reproduced within Appendix E2: Current Air Quality Action Plans. The next scheduled review of all the Local Authority's AQAPs is expected in 2027.

3.5 Prioritisation of Air Quality Action Plans

It is recognised in the current financial climate for Local Government, it may not be possible to implement all actions within all the proposed revised AQAPs immediately. Therefore, it is believed appropriate to target resources where they achieve the maximum benefit. In this regard, it is possible to prioritise the current AQAPs into a hierarchy which allows focused direction from the Local Authority and its partners. In acknowledgment of the Local Authority's use of the HAP-RAP tool, Table 3-4 provides the prioritisation of the revised AQAPs. This will ensure that the location with the greatest need will receive the highest priority.

Table 3-4: AQAP Prioritisation Order

AQAP	Priority
Cymmer	1
Ferndale	
Tylorstown	
Mt Ash Town Centre	
Nightingales Bush	2
Pontypridd Town Centre	3

3.6 Monitoring of Air Quality Action Plans

The current AQAPs contain monitoring indicators to demonstrate any progress in their delivery. Where appropriate, these indicators can involve the direct or proxy measurement of an expected effect. Table 3-5 below, provides a description of the monitoring associated with each current AQAP action and an update on progress.

Table 3-5: AQAP Action Monitoring

AQAP Action		Monitoring	Update
Ref	Description		2024
AT1	Active travel routes	The total of length of new or improved relevant Active Travel Routes	New: 3.6 km Improved: 1.78 km
		The amount of investment in new or improved Active Travel Routes	~ £10,426,500 (aggregate of multi year project spending)
AT3	Behavioural influences	Delivery of schemes to increase travel information	Updated RCT active travel webpages with latest updates on improvement works
		Favourable perspective of current public transport operators	NA
		Delivery of schemes to increase modal shift	Continuation of reduced fare (certain periods within 2024) public bus journeys. Continuation of free bus journeys undertaken for defined post 16 to 19 education.
		Opportunities undertaken to encourage active travel route usage	Delivered National Standards cycle training to 617 pupils. Delivered Kerbcraft / Child Pedestrian Training to 1,135 pupils. Initiatives to promote RCT as a tourist destination for walking and cycling.
LP1	Dedicated SPG	Production of an SPG to guide applicants about relevant air quality considerations	Current review of LDP progressing
MT1	Light-rail (Metro) system	Achievement of phased development scheme in accordance with published schedule	Phase 1 completed with Phase 2 being progressed
MT2	Improvement of public bus frequency	No. of additional or enhanced relevant bus routes	Nil
MT4.NB	Park and Ride Scheme	No. of additional park and ride spaces in the Cynon, Merthyr and Rhondda areas, based on a 2022 baseline	Creating additional 52 car parking spaces at Treorchy Station
OP1.Cy	Green Infrastructure	Total length of green barrier at Cymmer	Nil

OP1.NB	Green Infrastructure	Total length green barrier at Nightingales Bush	Nil
OP2	Green Synchronism	Delivery of green infrastructure and biodiversity policies	Progression of urban tree planting as green barriers at Mt Ash Comprehensive School
RF4	Alternative Vehicle Fuel Provision	Delivery of the RCTCBC EV strategy in accordance with published schedule	Strategy being progressed
RF6	LA fleet improvement	Delivery of the RCTCBC EV strategy in accordance with published schedule	Strategy being progressed
RF7	Contracted fleet improvement	Delivery of the RCTCBC EV strategy in accordance with published schedule	Strategy being progressed
RF8	Public transport fleet improvement	Delivery of the RCTCBC EV strategy in accordance with published schedule	Strategy being progressed
RI7.Cy	Local off-street parking	No. of additional local off-street parking spaces provided in Cymmer	Nil
RM2.Cy	Traffic management: increase traffic flow	% relevant bias adjustment made	NA
		% change in average speed within Cymmer AQMA	NA
RM2.Po	Traffic management: increase traffic flow	% relevant bias adjustment made	NA
		% change in average speed within Pontypridd AQMA	NA
RM5	Increased parking enforcement	No. of additional hours spent patrolling relevant areas	Nil

4. Air Quality Monitoring Data and Comparisons

4.1 Summary of Monitoring Undertaken in 2024

This section sets out the automatic and non-automatic monitoring of air quality undertaken by the Local Authority in respect of its local air quality management duties. It provides details of monitoring locations, both those that were actively monitored in 2024 and other locations where monitoring has recently commenced but results are not available yet.

In accordance with best practice the Local Authority annually reviews, in December, the scope and extent of the Local Authority's local air quality monitoring network. Where changes have been made to the local air quality monitoring network, the reasoning is also provided in this subsection.

4.1.1 Automatic Monitoring Sites

The Local Authority undertook automatic monitoring at four sites during 2024, with three automatic monitoring locations examining NO_2 and one automatic monitoring location examining $PM_{2.5}$ and PM_{10}. Table 4-1 presents the details of the sites with further information available via the Air Quality in Wales website [3].

It is understood that, as part of its ongoing investigation and assessment of the A470 as it passes through part of Rhondda Cynon Taf, an NO_2 automatic monitoring site was commissioned and is being operated on behalf of Welsh Government. The monitoring site, which commenced monitoring on the 4th March 2020, has been positioned along the verge of the A470 as it passes through Rhydyfelin. Collected results have now become available on the Air Quality in Wales website, however, as the site does not, due to the absence of an immediate relevant population, reflect the purpose of local air quality management its results are not considered within this Report.

No new automatic monitoring sites were commenced or existing automatic monitoring sites discontinued in 2024 by the Local Authority.

A map showing the location of the monitoring sites is provided in Figure 4-1, with higher resolution area maps of extant automatic monitoring sites in Appendix C2: Monitoring Location Maps. Further details on how the monitors are calibrated and how the data has been adjusted, validated and ratified are included in Appendix C1: Air Quality Monitoring Data QA/QC.

4.1.2 Non-Automatic Monitoring Sites

Rhondda Cynon Taf CBC undertook non-automatic (passive) monitoring of NO_2 at fifty-four sites (utilising fifty-six NO_2 passive diffusion tubes) during 2024.

No existing non-automatic monitoring sites were discontinued and no new non-automatic monitoring sites for NO_2 were commenced in 2024.

Table 4-2 presents the details of these sites, with higher resolution area maps of extant non-automatic monitoring sites in Appendix C2: Monitoring Location Maps. Further details on how the NO_2 passive diffusion tubes are bias adjusted, annualisation and distance corrected, are included in Appendix C1: Air Quality Monitoring Data QA/QC.

Table 4-1: Details of Automatic Monitoring Sites

Site ID	Site Name	Start	Site Type	Associated AQMA	OS Grid Reference		Pollutants Monitored	Monitoring Technique	Inlet Height (m)	Monitor to Nearest Relevant Exposure(1) (m)	Kerb to Nearest Relevant Exposure (m)	Kerb to Monitor (m)
					X	Y						
70	Broadway	2006	Roadside	Broadway	307839	189619	Nitrogen Dioxide	Chemi	2.5	-2.1	3.1	5.2
120	Pontypridd	2011	Roadside	Pontypridd	307286	190433	Nitrogen Dioxide	Chemi	1.5	-5.9	2.1	8
130	Upper Garth Avenue	2023[1]	Industrial	N/A	307861	192046	Particulate Matter PM_{10} & $PM_{2.5}$	Optical	3.5	NA	NA	NA
131	Mt Ash	2014	Roadside	Mt Ash	304772	199307	Nitrogen Dioxide	Chemi	1.5	-0.5	0.5	1

Table Notes:

(1) Where the difference is <1m, indicates that the sited monitor represents exposure and as such no subsequent distance calculation is required.

[1] Previous Upper Garth Avenues TEOM FDMS monitoring undertaken at same location from 2014

Figure 4-1: Map of Automatic Monitoring Sites

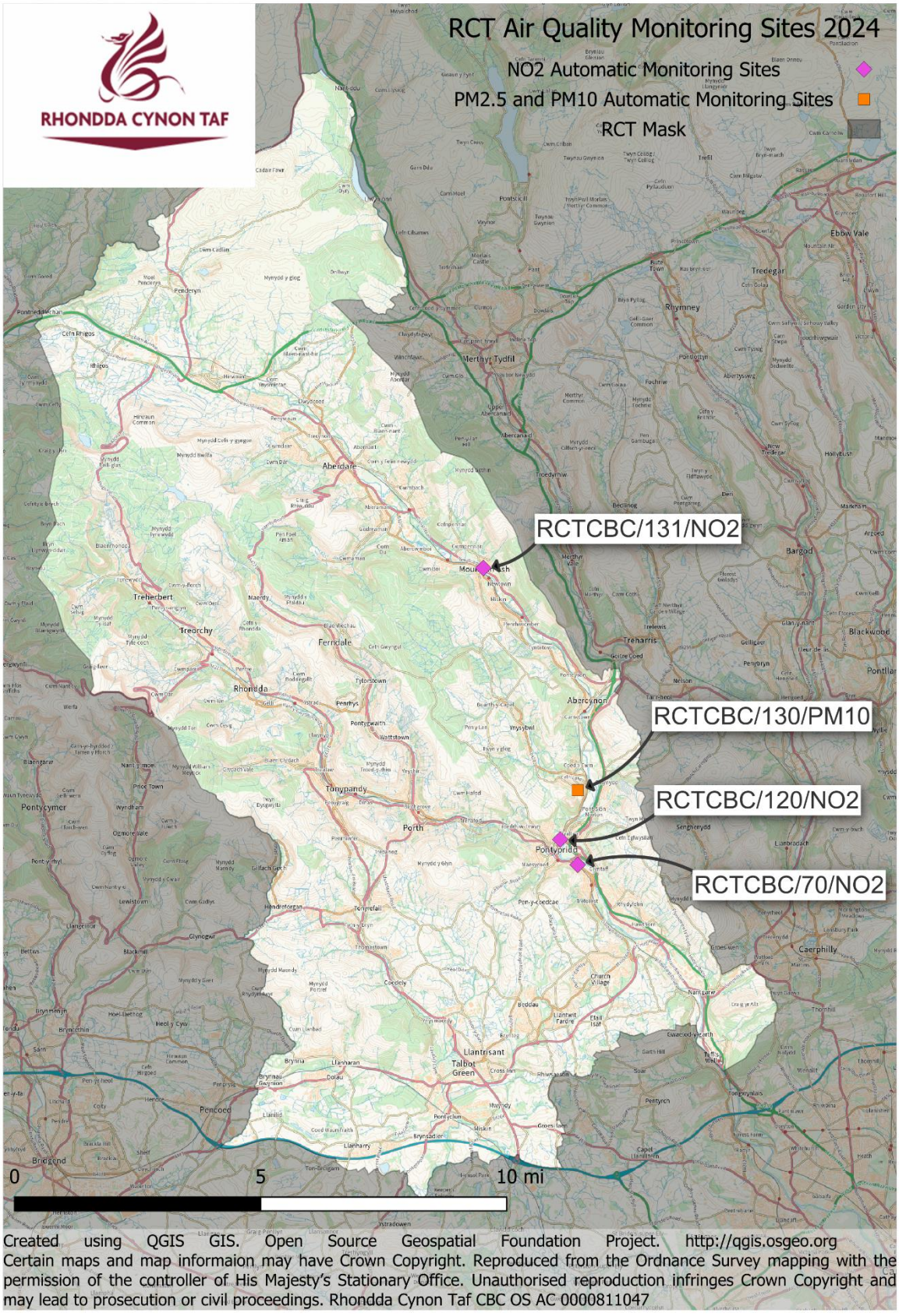


Table 4-2: Details of Non-Automatic Monitoring Sites

Site ID	Site Name	Start	Site Type	Associated AQMA	OS Grid Reference		Site Height (m)	Co-located	Monitor to Nearest Relevant Exposure[(1)] (m)	Kerb to Nearest Relevant Exposure (m)	Kerb to Monitor (m)
					X	Y					
4	Lanelay Terrace, Maesycoed	2001	Urban Background	N/A	306587	189833	3.5	No	<0.1	2.3	2.3
8	Parc y Nant, Nantgarw	2001	Roadside	Nantgarw	312629	185612	3.5	No	0.8	7.4	6.6
21	Woodland Park, Penderyn	2001	Urban Background	N/A	294867	207733	3.5	No	10.5	11.8	1.3
37	Lakeside Court, A4119	2003	Roadside	Mwyndy	305442	181579	3.5	No	1.9	4.1	2.2
41	East Rd, Tylorstown	2003	Roadside	Tylorstown	300953	195129	3.5	No	1.2	1.8	0.6
44	Coronation Terrace, Pontypridd	2003	Roadside	Cilfynydd	308205	191053	3.5	No	-5.4	3.8	9.2
47	Broadway Co-Sampling	2004	Roadside	Broadway	307839	189619	3.5	Yes	-2.1	3.1	5.2
48	Broadway Co-Sampling	2004	Roadside	Broadway	307839	189619	3.5	Yes	-2.1	3.1	5.2
50	Broadway Co-Sampling	2004	Roadside	Broadway	307839	189619	3.5	Yes	-2.1	3.1	5.2
51	Broadway, Treforest	2005	Roadside	Broadway	307762	189680	3.5	No	5	5.5	0.5
52	Oxford St, Mountain Ash	2005	Roadside	Mt Ash	304721	199179	3.5	No	<0.1	1.6	1.6
53	Cardiff St, Aberdare	2005	Roadside	Aberdare	300359	202539	3.5	No	1.1	1.8	0.7
55	Cilfynydd Rd, Cilfynydd	2005	Roadside	Cilfynydd	308457	191595	3.5	No	1.8	4	2.2

Site ID	Site Name	Start	Site Type	Associated AQMA	OS Grid Reference		Site Height (m)	Co-located	Monitor to Nearest Relevant Exposure[(1)] (m)	Kerb to Nearest Relevant Exposure (m)	Kerb to Monitor (m)
					X	Y					
56	Broadway, Treforest	2005	Roadside	Broadway	308236	189344	3.5	No	1.2	2	0.8
66	Broadway, Treforest	2006	Roadside	Broadway	307990	189538	3.5	No	1.8	2.5	0.7
68	Canon Street, Aberdare	2006	Roadside	Aberdare	300159	202644	3.5	No	<0.1	2.2	2.2
69	Cardiff St, Aberdare.	2006	Roadside	Aberdare	300485	202437	3.5	No	0.4	2.9	2.5
76	Heol-y-Gors, Nantgarw	2006	Roadside	Nantgarw	312620	185619	3.5	No	<0.1	2.4	2.4
79	High St, Pontypridd	2007	Roadside	Pontypridd	307201	189887	3.5	No	<0.1	3.7	3.7
80	Morgan St, Pontypridd	2007	Roadside	Pontypridd	307345	190531	3.5	No	2.7	3.2	0.5
81	Sardis Bridge Pontypridd	2007	Roadside	Pontypridd	307123	190022	3.5	No	<0.1	2	2
82	Main Rd, Llantwit Fardre	2007	Roadside	N/A	307281	184886	3.5	No	1.6	3.2	1.6
83	Ceridwen Terrace	2007	Roadside	Pontypridd	307481	190369	3.5	No	<0.1	2.4	2.4
84	Gelliwastad Rd	2007	Roadside	Pontypridd	307264	190403	3.5	No	<0.1	1.5	1.5
85	Efail Isaf Junction	2007	Roadside	Church Village	308579	185863	3.5	No	0.7	2.4	1.7
88	Victoria Square, Aberdare	2007	Roadside	Aberdare	300320	202564	3.5	No	<0.1	2.2	2.2
90	Cymmer Rd, Dinas	2007	Roadside	N/A	302169	191535	3.5	No	0.3	1.5	1.2
91	High St, Cymmer	2007	Roadside	Cymmer	302494	190868	3.5	No	<0.1	1.5	1.5

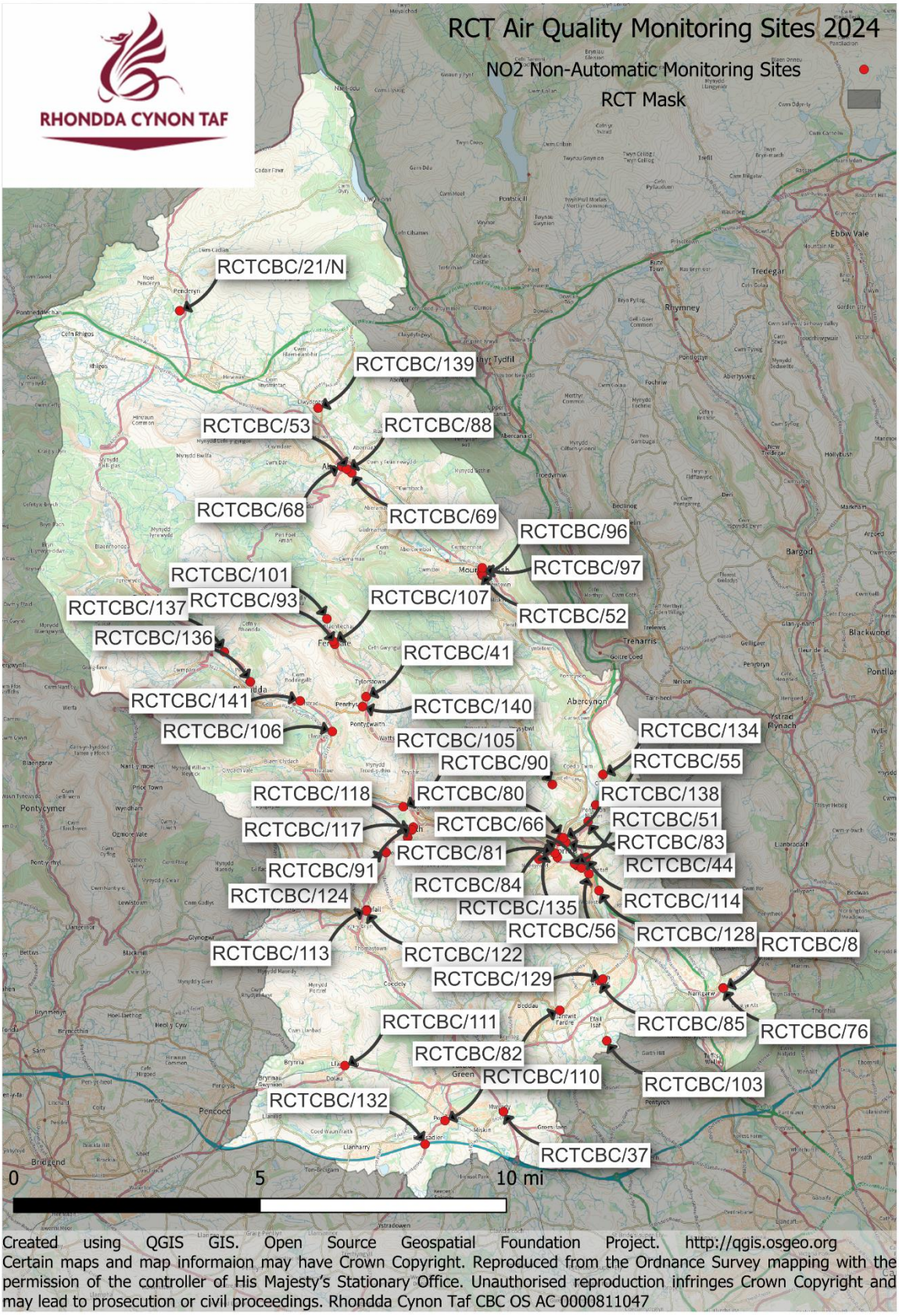
Site ID	Site Name	Start	Site Type	Associated AQMA	OS Grid Reference		Site Height (m)	Co-located	Monitor to Nearest Relevant Exposure[(1)] (m)	Kerb to Nearest Relevant Exposure (m)	Kerb to Monitor (m)
					X	Y					
93	High Street, Ferndale	2007	Roadside	Ferndale	299931	196843	3.5	No	<0.1	2.1	2.1
96	Oxford St, Mountain Ash	2008	Roadside	Mt Ash	304757	199091	3.5	No	<0.1	1.5	1.5
97	New Rd, Mountain Ash	2008	Roadside	Mt Ash	304751	199336	3.5	No	0.4	2.9	2.5
101	Long Row, Blaenllechau	2008	Rural Background	N/A	299674	197673	3.5	No	NA	N/A	N/A
103	Ty Mawr Farm, Efail Isaf	2008	Rural Background	N/A	308817	183891	3.5	No	NA	N/A	N/A
105	Greenfield Ave, Glyncoch	2008	Rural Background	N/A	307038	192263	3.5	No	NA	N/A	N/A
106	Partridge Rd, Llwynypia	2008	Roadside	Llwynypia	299851	193991	3.5	No	<0.1	1.7	1.7
107	High Street, Ferndale	2008	Roadside	Ferndale	299880	196937	3.5	No	<0.1	1.8	1.8
108	Nightingales Bush, Pontypridd	2008	Roadside	Pontypridd	308101	189853	3.5	No	6.3	9.6	3.3
110	Cowbridge Rd	2009	Roadside	N/A	303533	181287	3.5	No	0.4	2	1.6
111	Bridgend Rd, Llanharan	2009	Roadside	Llanharan	300259	183082	3.5	No	<0.1	0.5	0.5
113	Mill St, Tonyrefail	2009	Roadside	Tonyrefail	300976	188165	3.5	No	0.4	1	0.6
114	Pentrebach Rd	2009	Roadside	Nightingales Bush	308146	189882	3.5	No	3.4	5.1	1.7
117	High St, Cymmer	2009	Roadside	Cymmer	302452	190778	3.5	No	0.9	1.5	0.6
118	High St, Cymmer	2009	Roadside	Cymmer	302312	190531	3.5	No	1.7	3	1.3

Site ID	Site Name	Start	Site Type	Associated AQMA	OS Grid Reference		Site Height (m)	Co-located	Monitor to Nearest Relevant Exposure[(1)] (m)	Kerb to Nearest Relevant Exposure (m)	Kerb to Monitor (m)
					X	Y					
122	Mill St, Tonyrefail	2011	Roadside	Tonyrefail	300966	188131	3.5	No	0.6	2.6	2
124	Trebanog Rd, Trebanog	2011	Roadside	Cymmer	301606	190042	3.5	No	<0.1	1.6	1.6
128	Cardiff Rd, Treforest	2013	Roadside	Treforest	308561	188796	3.5	No	0.4	1.9	1.5
129	Main Rd, Church Village	2014	Roadside	Church Village	308687	185905	3.5	No	1.1	3.2	2.1
132	Cowbridge Rd, Talygarn	2016	Roadside	N/A	302880	180517	3.5	No	0.7	23.2	22.5
134	Pontypridd High School, Pontypridd	2019	Other	N/A	308690	192589	3.5	No	13.9	33.7	19.8
135	Ysgol Evan James, Pontypridd	2020	Roadside	N/A	306875	190098	3.5	No	4.4	6.5	2.1
136	Ystrad Rd, Pentre	2020	Roadside	N/A	297171	195616	3.5	No	<0.1	1.8	1.8
137	High St, Treorchy	2020	Roadside	N/A	296321	196594	3.5	No	1.3	1.9	0.6
138	Berw Rd, Pontypridd	2021	Roadside	Pontypridd	307401	190525	3.5	No	<0.1	2.1	2.1
139	Llwydcoed Rd, Llwydcoed	2022	Roadside	N/A	299388	204555	3.0	No	2.3	4.2	1.9
140	Penrhys Rd, Tylorstown	2022	Roadside	N/A	300840	194805	3.0	No	1.5	1.8	0.3
141	Gelligaled Rd, Ystrad	2022	Roadside	N/A	298799	194989	3.0	No	0.3	1.6	1.3

Table Notes

(1) Where the difference is <1m, indicates that the sited monitor represents exposure and as such no subsequent distance calculation is required.
(2) Where a row has been ‘greyed’ monitoring has commenced at the end of the calendar year and results are not yet available.

Figure 4-2: Map of Non-Automatic Monitoring Sites



4.2 Air Quality Monitoring Results in 2024

This subsection presents the results of air quality monitoring undertaken in 2024 by the Council with respect to its local air quality management duties. Table 4-3 provides the results for the annual mean NO_2 at all relevant monitoring sites, both automatic and non-automatic, whilst Table 4-4 provides the results of the 1-hour mean NO_2, and associated statistics, at relevant automatic monitoring sites. Table 4-5 provides the results of the annual mean PM_{10} and Table 4-6 the results of the 24-hour Mean PM_{10}, and associated statistics, at relevant automatic monitoring sites.

Unless specifically stated all non-automatic Nitrogen Dioxide results have been corrected using the local bias factor [Bias A] for the respective year, see Appendix C1: Air Quality Monitoring Data QA/QC. Users of this data should not re-correct the data.

Table 4-3: Annual Mean NO_2 Monitoring Results

Site ID	Site Name	Site Type	Monitoring Type	NO_2 Fall-Off (1)	Valid Data Capture Period (%) (2)	Valid Data Capture 2024 (%) (3)	NO_2 Annual Mean Concentration (μgm^{-3}) (4)				
							2020	2021	2022	2023	2024
4	Lanelay Terrace, Maesycoed	Suburban	Non-Automatic	-	91.7	91.7	10.3	11.5	11.9	11.6	9.6
8	Parc y Nant, Nantgarw	Roadside	Non-Automatic	NA	66.7	66.7	24.7	31.8	35.4	31.1	30.1
21	Woodland Park, Penderyn	Urban Background	Non-Automatic	NA	91.7	91.7	3.9	5.3	5.1	4.9	4.2
37	Lakeside Court, A4119	Roadside	Non-Automatic	Y	91.7	91.7	22.7 {21.2}	27.8 {25.5}	28.0 {25.3}	26.5 {24.0}	23 {20.7}
41	East Rd, Tylorstown	Roadside	Non-Automatic	NA	91.7	91.7	31.0	40.6	39.8	41.3	38.2
44	Coronation Tr, Pontypridd	Roadside	Non-Automatic	Y	83.3	83.3	21.7 {25.2}	24.7 {29.3}	24.7 {29.6}	24.0 {28.8}	22 {26.8}
47	Broadway Co-Sampling	Roadside	Non-Automatic	NA	91.7	91.7	20.3	21.4	22.9	20.6	22.4
48	Broadway Co-Sampling	Roadside	Non-Automatic	NA	83.3	83.3	19.4	21.2	22.9	23.2	22.8
50	Broadway Co-Sampling	Roadside	Non-Automatic	NA	91.7	91.7	18.9	22.1	24.5	22.2	21.9
51	Broadway, Treforest	Roadside	Non-Automatic	NA	91.7	91.7	24.7	31.0	31.2	28.6	26.8

Site ID	Site Name	Site Type	Monitoring Type	NO_2 Fall-Off (1)	Valid Data Capture Period (%) (2)	Valid Data Capture 2024 (%) (3)	NO_2 Annual Mean Concentration (μgm^{-3}) (4)				
							2020	2021	2022	2023	2024
52	Oxford St, Mt Ash	Roadside	Non-Automatic	-	75	75	32.1	31.7	33.2	36.4	34.8
53	Cardiff St, Aberdare	Roadside	Non-Automatic	NA	83.3	83.3	24.4	29.5	29.3	30.4	26.7
55	Cilfynydd Rd, Cilfynydd	Roadside	Non-Automatic	NA	91.7	91.7	21.9	26.6	26.4	25.1	23.2
56	Broadway, Treforest	Roadside	Non-Automatic	NA	75	75	26.8	33.3	33.1	33.5	30.4
66	Broadway, Treforest	Roadside	Non-Automatic	NA	91.7	91.7	23.2	29.4	30.5	29.4	26.3
68	Canon Street, Aberdare	Roadside	Non-Automatic	-	91.7	91.7	21.5	27.1	25.3	26.2	23.7
69	Cardiff St, Aberdare.	Roadside	Non-Automatic	NA	91.7	91.7	21.3	25.5	27.0	25.3	20.7
70	Broadway	Roadside	Automatic	Y	84.3	84.3	20.4 {22.1}	21.7 {24.1}	22.8 {25.0}	20.1 {22.0}	21.8 {24.0}
76	Heol-y-Gors, Nantgarw	Roadside	Non-Automatic	-	91.7	91.7	20.8	25.2	26.1	26.1	21.7
79	High St, Pontypridd	Roadside	Non-Automatic	-	91.7	91.7	22.8	25.3	26.6	28.0	22
80	Morgan St, Pontypridd	Roadside	Non-Automatic	NA	91.7	91.7	20.1	23.2	24.4	25.2	21
81	Sardis Bridge Pontypridd	Roadside	Non-Automatic	-	91.7	91.7	21.4	25.7	27.1	27.5	25.7
82	Main Rd, Llantwit Fardre	Roadside	Non-Automatic	Y	91.7	91.7	19.4 {18.0}	22.9 {20.3}	23.4 {21.2}	22.8 {20.6}	19.5 {17.6}
83	Ceridwen Terrace	Roadside	Non-Automatic	-	75	75	26.4‡	26.6	27.0	28.6	26.7
84	Gelliwastad Rd	Roadside	Non-Automatic	-	83.3	83.3	31.4	39.1	38.5	40.8	36.1
85	Efail Isaf Junction (West)	Roadside	Non-Automatic	NA	91.7	91.7	22.7	29.4	27.6	27.2	21.8
88	Victoria Sq, Aberdare	Roadside	Non-Automatic	-	83.3	83.3	21.0	26.5	27.0	26.0	21.9
90	Cymmer Rd, Dinas	Roadside	Non-Automatic	NA	91.7	91.7	24.3	33.5	30.4	32.3	26.8
91	High St, Cymmer	Roadside	Non-Automatic	-	83.3	83.3	37.8	43.8	43.6	45.0	37.7
93	High Street, Ferndale	Roadside	Non-Automatic	-	91.7	91.7	29.0	40.3	37.6	39.8	37.8
96	Oxford St, Mt Ash	Roadside	Non-Automatic	-	83.3	83.3	27.4‡	26.0	28.2	29.5	27.7
97	New Rd, Mt Ash	Roadside	Non-Automatic	NA	91.7	91.7	45.7	38.2	39.5	41.5	34

Site ID	Site Name	Site Type	Monitoring Type	NO_2 Fall-Off (1)	Valid Data Capture Period (%) (2)	Valid Data Capture 2024 (%) (3)	NO_2 Annual Mean Concentration (μgm^{-3}) (4)				
							2020	2021	2022	2023	2024
101	Long Row, Blaenllechau	Urban Background	Non-Automatic	NA	91.7	91.7	5.0‡	5.9	5.1	5.8	4.8
103	Ty Mawr Farm, Efail Isaf	Urban Background	Non-Automatic	NA	91.7	91.7	5.6	7.4	6.3	7.0	5.1
105	Greenfield Ave, Glyncoch	Urban Background	Non-Automatic	NA	91.7	91.7	5.9	7.6	7.3	7.0	5.8
106	Partridge Road, Llwynypia	Roadside	Non-Automatic	-	83.3	83.3	26.8	34.3	31.4	30.5	28.5
107	High St, Ferndale	Roadside	Non-Automatic	-	91.7	91.7	22.9	28.5	27.7	28.1	25.4
108	Nightingales Bush(6)	Roadside	Non-Automatic	NA	91.7	91.7	33.7‡	38.1	39.0	37.9	34.8
110	Cowbridge Rd	Roadside	Non-Automatic	NA	91.7	91.7	18.6	23.2	23.2	23.4	18
111	Bridgend Rd, Llanharan	Roadside	Non-Automatic	-	66.7	66.7	26.9	32.4	27.3	27.3	26.6
113	Mill St, Tonyrefail	Roadside	Non-Automatic	NA	91.7	91.7	25.1‡	28.3	27.8‡	29.9	24.6
114	Pentrebach Rd	Roadside	Non-Automatic	NA	83.3	83.3	18.4	23.5	22.2	22.5	20
117	**High St, Cymmer**	Roadside	Non-Automatic	NA	66.7	66.7	35.6	44.0	43.9	45.0	**40.9**
118	**High St, Cymmer**	Roadside	Non-Automatic	NA	91.7	91.7	45.1	52.9	52.2	52.7	**40.6**
120	Pontypridd	Roadside	Automatic	NA	91.8	91.8	25.1	28.3	28.4	27.2	23.5
122	Mill St, Tonyrefail	Roadside	Non-Automatic	NA	91.7	91.7	22.5	29.0	28.0	24.1‡	20.3
124	Trebanog Rd, Trebanog	Roadside	Non-Automatic	-	91.7	91.7	17.4	23.1	20.9	23.3	19.3
128	Cardiff Rd, Treforest	Roadside	Non-Automatic	NA	91.7	91.7	20.8	25.5	27.4	28.4	23.6
129	Main Rd, Church Village	Roadside	Non-Automatic	Y	91.7	91.7	18.1‡ {17.3}	20.9 {19.8}	20.4 {19.2}	21.8 {20.5}	15.4 {14.5}
131	Mt Ash	Roadside	Automatic	NA	84.6	84.6	34.2	33.2	31.6	31.6	30
132	Cowbridge Rd, Talygarn	Roadside	Non-Automatic	NA	91.7	91.7	19.6‡	24.4	22.8	22.4	18.7
134	Pontypridd High School	Other	Non-Automatic	Y	83.3	83.3	13.1‡ {11.6}	15.1 {13.0}	16.4 {14.5}	16.3 {14.3}	13.7 {11.9}

Site ID	Site Name	Site Type	Monitoring Type	NO_2 Fall-Off (1)	Valid Data Capture Period (%) (2)	Valid Data Capture 2024 (%) (3)	NO_2 Annual Mean Concentration (μgm^{-3}) (4)				
							2020	2021	2022	2023	2024
135	Ysgol Evan James	Roadside	Non-Automatic	Y	91.7	91.7	16.7 {13.8}	22.9 {18.3}	23.5 {19.6}	22.2 {18.6}	18.9 {15.9}
136	Ystrad Rd, Pentre	Roadside	Non-Automatic	-	91.7	91.7	28.1	33.7	36.2	34.4	26.8
137	High St, Treorchy	Roadside	Non-Automatic	NA	91.7	91.7	22.2	27.0	25.7	27.9	22.7
138	Berw Rd, Pontypridd	Roadside	Non-Automatic	-	91.7	91.7	-	31.7	31.1	32.1	25.9
139	Llwydcoed Rd, Llwydcoed	Roadside	Non-Automatic	Y	91.7	91.7	-	-	15.8 {14.0}	16.5 {14.5}	13.3 {11.8}
140	Penrhys Rd, Tylorstown	Roadside	Non-Automatic	NA	83.3	83.3	-	-	30.0	30.6	26.7
141	Gelligaled Rd, Ystrad	Roadside	Non-Automatic	Y	91.7	91.7	-	-	25.2 {24.4}	24.9 {24.1}	20.9 {20.2}

Table 4-4: 1-Hour Mean NO_2 Monitoring Results

Site ID	Site Name	Site Type	Monitoring Type	Valid Data Capture for Monitoring Period (%) (2)	Valid Data Capture 2024 (%) (3)	NO_2 1-Hour Means > $200\mu gm^{-3}$ (5)				
						2020	2021	2022	2023	2024
70	Broadway	Roadside	Continuous	84.3	84.3	0 (72.0)	0 (64)	0 (76)	0 (62.9)	0 (64.3)
120	Pontypridd	Roadside	Continuous	91.8	91.8	0 (102.0)	0 (100)	0 (118)	0 (86.2)	0 (79.0)
131	Mt Ash	Roadside	Continuous	84.6	84.6	0 (124.0)	0 (108.5)	0 (106)	0 (101.5)	0 (91.0)

Table Notes

Exceedances of the NO_2 annual mean objective of 40 μgm^{-3} are shown in bold.

Exceedances of the NO_2 1-hour mean objective (200 μgm^{-3} not to be exceeded more than 18 times per year) or otherwise NO_2 annual means exceeding 60 μgm^{-3}, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in bold and underlined.

(1) Monitoring locations indicated with 'Y' have met the NO_2 'fall-off' correction criteria and the corrected predicted mean at the receptor is provided in curly brackets '{ }', monitoring locations indicated with 'NA' experience location specific reasons which would suggest it is not appropriate to undertake NO_2 'fall-off' correction, monitoring locations indicated with '-' are located at the relevant population and do not require correction.

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

(3) 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%).

(4) Means for diffusion tubes have been corrected for bias with means labelled with a ‡ having been "annualised" as per Boxes 7.9 and 7.10 in LAQM.TG22, as their valid data capture for the full calendar year is less than 75%. See Appendix C1: Air Quality Monitoring Data QA/QC for details.

(5) The 99.8th percentile of 1-hour means is provided in parenthesis and should be considered where data capture is less than 85%

Table 4-5: Annual Mean PM_{10} Monitoring Results

Site ID	Site Name	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	PM_{10} Annual Mean Concentration (μgm^{-3}) (3)				
					2020	2021	2022	2023	2024
130	Upper Garth Avenue	Industrial	99.9	99.9	14.4	11.5	16.4	13.8	14.7

Table 4-6: 24-Hour Mean PM_{10} Monitoring Results

Site ID	Site Name	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	PM_{10} 24-Hour Means > 50 μgm^{-3} (3)(4)				
					2020	2021	2022	2023	2024
130	Upper Garth Avenue	Industrial	99.9	99.9	4 (28.7)	2 (19.9)	3 (28.7)	1 (28.0)	9 (29.6)

Table Notes:

Exceedances of the PM_{10} annual mean objective of 40 μgm^{-3} are shown in bold.
Exceedances of the PM_{10} 24-hour mean objective (50 μgm^{-3} not to be exceeded more than 35 times per year) are shown in bold and underlined.

(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) Due to local specific influences means <u>have not</u> been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG22
(4) The 90.4th percentile of daily means is provided in brackets and should be considered where data capture is less than 85%

Table 4-7: Annual Mean $PM_{2.5}$ Monitoring Results

Site ID	Site Name	Site Type	Valid Data Capture for Monitoring Period (%) (1)	Valid Data Capture 2024 (%) (2)	$PM_{2.5}$ Annual Mean Concentration (μgm^{-3}) (3)				
					2020	2021	2022	2023	2024
130	Upper Garth Avenue	Industrial	99.9	99.9	-	-	-	5.7	6.9

Table Notes:

(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) Due to local specific influences means have not been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG22

4.3 Comparison of 2024 Monitoring Results with AQOs

This section details the Local Authority's consideration of air quality monitoring data collected in 2024, its context to previous years and its relation to relevant Air Quality Objectives.

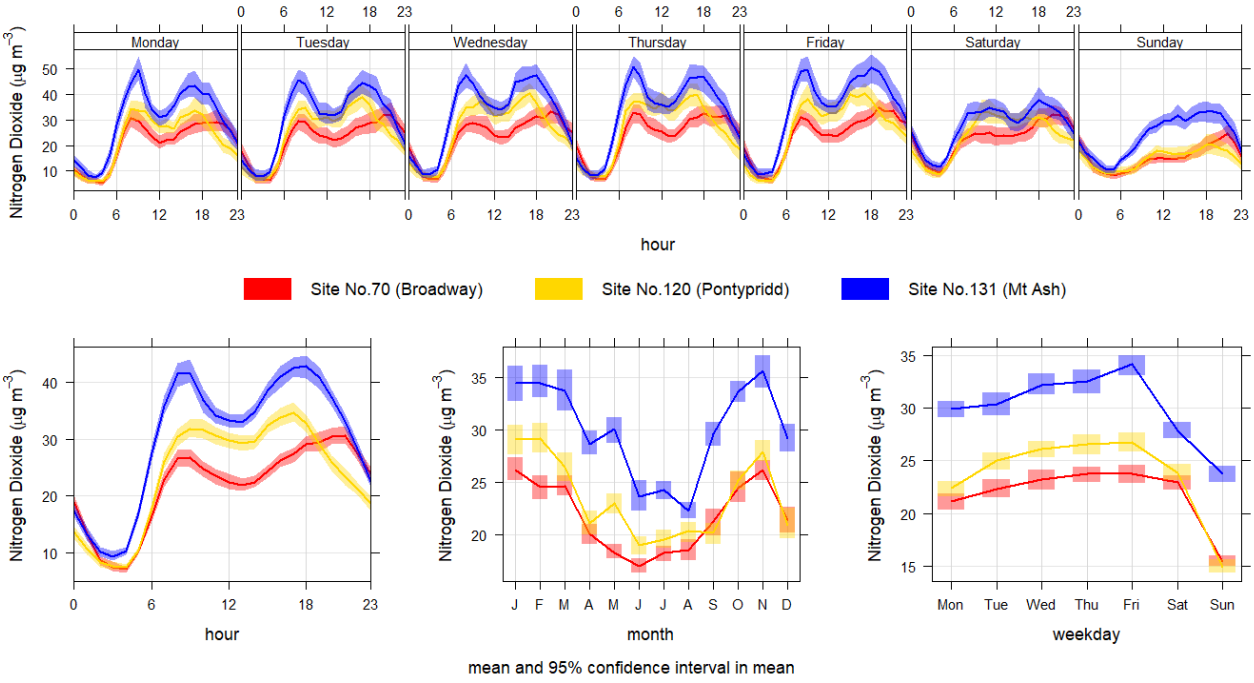
4.3.1 Nitrogen Dioxide [NO_2]

It has been reported [10] that, based on a measured assessment in 2023 and being the most recently available, the South Wales Non-agglomeration Zone, which includes Rhondda Cynon Taf, was compliant with the 1-hour EU Limit Value for NO_2 and the annual mean EU Limit Value for NO_2 and is likely to remain so. Published UK wide statistics [11] indicate the annual mean concentration of NO_2 at national urban background sites decreased by 8% since 2023 and "the annual mean concentration of NO_2 at urban background sites has decreased over the time it has been monitored to … the lowest point [since at least 1990]". With the improvement attributed to "newer road vehicles subject to stricter emission standards [entering] the fleet and power generation [moved] away from the use of coal". It has also been reported [12] that Rhondda Cynon Taf, in comparison with other Welsh Local Authorities, has been ranked[2] (lower the better) 4th out of 8 for NO_2.

To help consider the relevance and context of the latest NO_2 monitoring data, from 2024, it is possible to examine it in a number of ways. Figure 4-3 below contains time variation plots of the 2024 absolute hourly mean NO_2 measurements collected and assessed against time of the day, day of the week and month of the year, for each NO_2 automatic monitoring location in 2024.

[2] Although there are currently twenty-two Local Authorities in Wales, some may be ranked equally

Figure 4-3: Time Variation Plot of NO_2 Automatic Monitoring Data during 2024 at Site No. 70 (Broadway), Site No. 120 (Pontypridd) and Site No. 131 (Mt Ash)



The time variation plots clearly illustrate, at all three NO_2 automatic monitoring sites, several relationships that are widely observed within Wales. These observed relationships often underline the anthropogenic nature of NO_2 within a local air quality context and yet also with its relationship with naturally occurring cyclical events and regional influences:

- Diurnal Relationship

  This day/night relationship can be observed with the steep relative increases in NO_2 at ~6 am and then a more gradual decline at ~6 pm. This relationship is closely associated to human activity, notably commuter linked transportation, giving rise to NO_2 and its precursors, and also the natural influence of sunlight on the prevalence of NO_2, with respect to its interaction with day-light dependant associative pollutants.

- Hebdomadal Relationship

  This through-the-week relationship can be strongly correlated to human activity and is often observed as a pronounced reduction in levels of NO_2 on the weekend, particularly Sunday, when transportation and industrial activity may be subdued.

- Biannual Relationship

  This summer/winter relationship can be influenced by human activity, for instance the greater use of domestic heating and transport during the winter, resulting in greater emissions of NO_2 and its precursors. Natural phenomena can also be influential, such as winter weather patterns that are more likely to give rise to conditions that reduce the local dispersion of air pollutants, allowing them to build-up more readily. Whereas,

summer conditions may, at certain times, result in greater levels of tropospheric Ozone [O_3] that can incidentally reduce NO_2 stability.

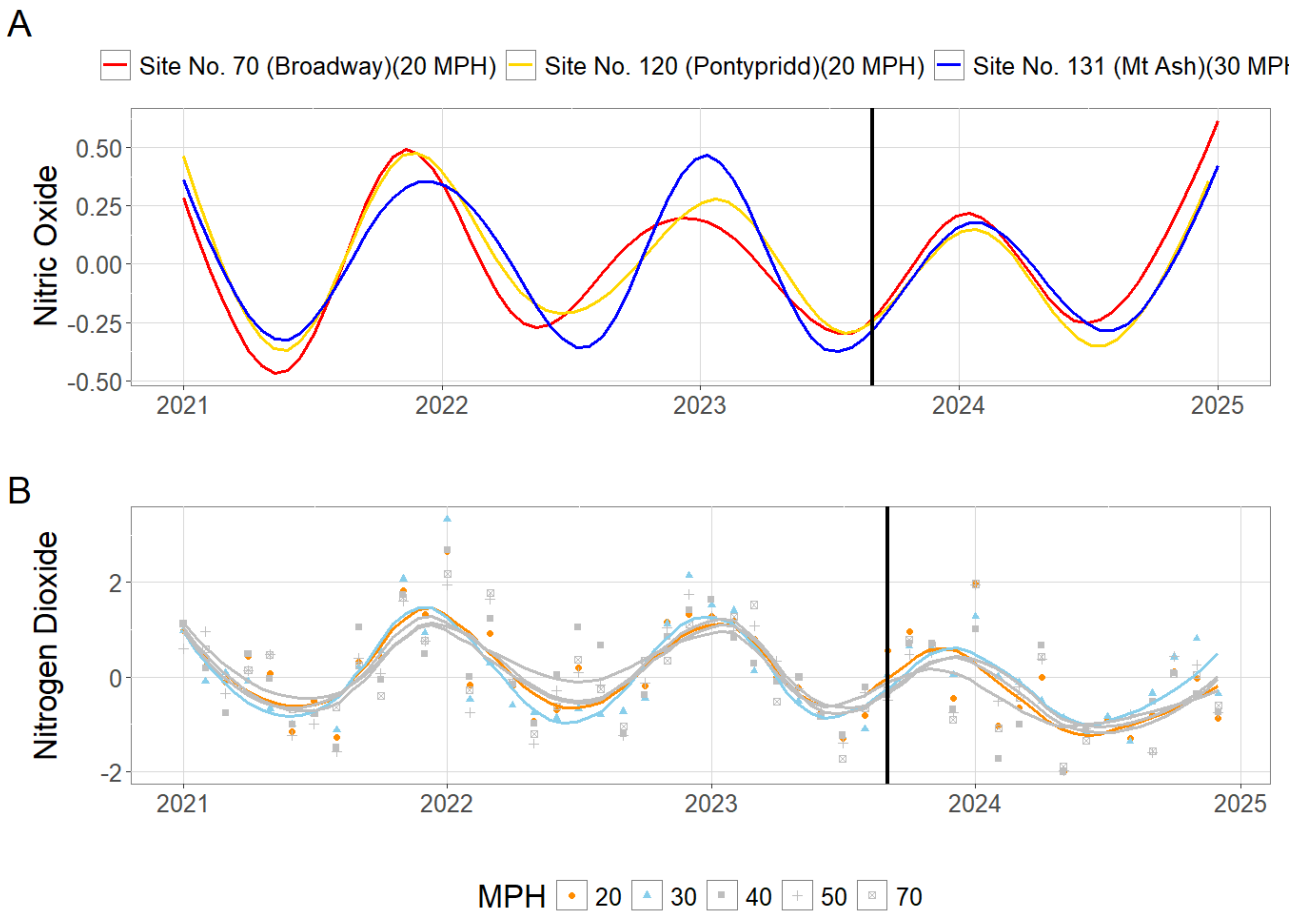
Although very similar patterns in the occurrence of NO_2 are observed at all three automatic sites, for instance the similar levels of NO_2 observed late at night, reflective of the regional background experienced to a similar degree by all three sites. It is also the case that specific circumstances at each location are likely reflected in the observations. The comparatively reduced levels of NO_2 at Site No. 70 (Broadway) is likely reflective of the locations suburban characteristics. Whereas the greater emphasis of peak levels of NO_2 at 8 am and 6 pm at Site No. 131 (Mt Ash) may reflect the large degree of regionally related commuting traffic traversing the local road network at this location. Although also observed to an extent at Site No. 120 (Pontypridd), this location also seems to experience comparatively less of a reduction in NO_2 on Saturdays, which may reflect road traffic related to the location being part of a local commercial hub.

Both human factors and natural phenomena can be heavily influenced by changeable weather conditions, which themselves maybe cyclical. These weather conditions can result in significant variability in observed air quality from year to year. For instance, a protracted dry and cold winter may increase the emission of NO_2 and its precursors, from domestic heating activities, or increase the likelihood of weather phenomena that may reduce the dispersion of local pollution. Significant unusual events as well as a globally changing environment can also influence local air quality either in the short-term or have more longer term implications.

In September 2023, as part of a national initiative many 30 mph urban roads within Rhondda Cynon Taf had the default speed limit reduced to 20 mph. Although primarily undertaken to improve highway safety, it had been speculated that the measure could also have an improving effect on local air quality, as well as other environmental themes. Both Site No. 70 (Broadway) and Site No. 120 (Pontypridd) are associated with roads that were affected by the change, whereas Site No. 131 (Mt Ash) is believed to be primarily affected by a highway that remained with a 30 mph speed limit. Although enforcement of the changed default speed limit has been phased, it has been stated [13] that, at designated speed monitored locations that are believed to be representative of the general change throughout Wales, the average speed of traffic along these redesignated roads has reduced by 4.3 mph.

This change could be expected to have an effect on the vehicle related local emission of oxides of nitrogen and consequently locally observed levels of NO_2. However, at lower speeds the interaction between speed and the influence on local levels of NO_2 can be very complicated and dependent upon a number of factors, not just the mean speed of the vehicle. Plot A contains a normalised smooth trend plot of Nitric Oxide, from 2021 to the end of 2024, at each automatic monitoring site. Nitric Oxide is often a significant precursor of NO_2 and will have a very significant influence on the local levels of NO_2. Due to its nature, the observed levels of Nitric Oxide are likely to be influenced by its local sources and as such can be expected to more readily observe any underlying changes in the local sources of NO_2. As very local conditions can often have a significant influence, Plot B in Figure 4-3 below contains a normalised smooth trend plot of NO_2, from 2021 to the end of 2024, at all relevant NO_2 monitoring locations within Rhondda Cynon Taf grouped to associated primary road speed limit.

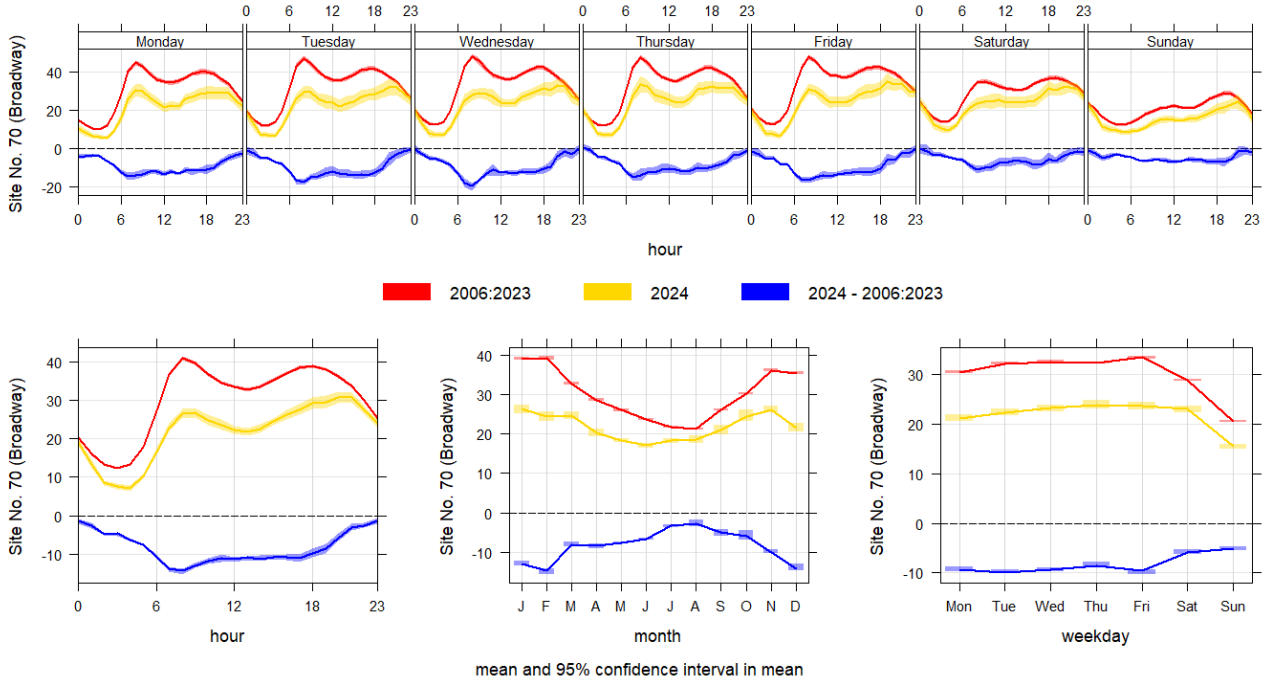
Figure 4-4: Normalised Time Plot(s) of NO at automatic monitoring sites and NO_2 at all sites aggregated to speed limit for relevant road.



In reviewing the above monitoring data, it appears historically that the nitric oxide profile associated with the 20 mph automatic monitoring locations are both similar and offset from that experienced at the 30 mph automatic monitoring location. It is also the case that nitric oxide levels initially reduced since late 2023 at all locations, although this may have reversed somewhat towards the end of 2024. However, the alignment between 20 mph and 30 mph nitric oxide levels in 2024 and the subsequent rise towards 2024 may suggest other regional influence on nitric oxide levels. Although NO2 levels have reduced in 2024, again this experience is largely across the board with 20 mph monitoring locations appearing to maintain a consistent relationship across before and after implementation. Given the available monitoring results so far,at present it does not appear possible to identify a material effect on local air quality from the default speed limit change. However, only a limited period of time has passed since the implementation of the change and it may be sometime before a definitive determination of any impact, one way or the other, can be established. This understanding is in keeping with assessments undertaken more broadly throughout Wales [13].

At Site No. 70 (Broadway) where monitoring data has been consistently collected since 2006 it is possible to compare the hourly mean monitoring data from 2024 with the historic average, between 2006 and 2023. Figure 4-5 provides normalised time variation plots of this comparison and the calculated difference between the current and historic measurements.

Figure 4-5: Normalised Time Variation Plot of NO_2 at Site No. 70 (Broadway) from 2006

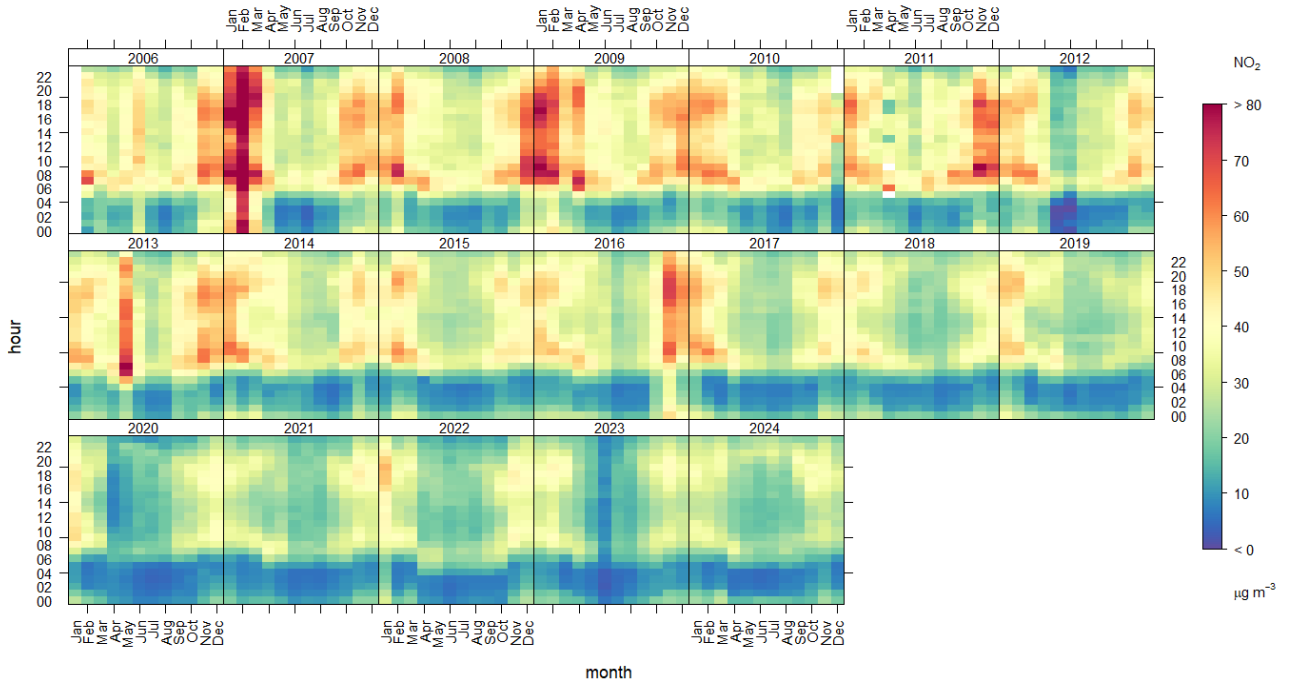


The above normalised time variation plots of current and historic NO_2 measurements shows that the pattern associated with the occurrence of NO_2 at Broadway have historically (results from 2006 to 2023) been consistent (the narrowness of the plotted red line). Both the latest 2024 results (the plotted gold line) and the historic results (the plotted red line) show very similar patterns, associated with peak NO_2 during the day, the week and the year, albeit with levels of NO_2 in 2024 generally 10 μgm^{-3} lower than the longer-term average.

The lower than longer-term average levels of NO_2 apparent in 2024 appear to be relatively stable throughout 2024, suggesting the possibility of an ongoing improving trend in NO_2 that has continued into and throughout 2024. The less obvious improvement (the levels of NO_2 being similar rather than markedly lower than the long term trend) during the summer of 2024 could be as a result of less sunshine and cooler conditions being observed in comparison with the recent past [14], which in turn could of reduced topographic O_3 levels that could of otherwise depressed local NO_2 levels.

The trend level plot of hourly mean NO_2 at Site No. 70 (Broadway) produced in Figure 4-6 below, is another useful way of examining the relationship of NO_2 over each year between 2006 and 2024. The trend level plot demonstrates that most years have comparable distributions in the occurrence of NO_2, although certain years (2007, 2009, 2011 & 2013) potentially show emphasised winter periods of elevated levels of NO_2, albeit within the same consistent pattern. Beyond 2016 the occurrence of the highest elevated levels of NO_2 appear reduced, in comparison to the preceding period, potentially indicating a change in the trend in locally observed levels of NO_2. Given the known disruption attributed to COVID-19, with a substantial decrease in local travel and some industrial activity during parts of 2020, it is unsurprising that this year appears distinctly more muted than the historic record, with NO_2 levels most noticeably depressed (prevalence of blue shades throughout the day in the 2020 plot) during the spring and summer of 2020. The levels of NO_2 during 2024 appear comparable to the recent past.

Figure 4-6: Trend Level Plot for NO_2 at Site No. 70 (Broadway)



Years showing particularly elevated or depressed levels of NO_2 may, in part, be the result of regular cyclic variation in weather, albeit climatic change may make these changes more or less common. This observed cyclic pattern in air quality can also often be influenced by local human derived events, for instance Bonfire Night, resulting in emissions not normally experienced at any other time of year. In addition, routinely observed transient transboundary events in which air pollution can be transported great distances from its source, such as Saharan sand winds, can have an important influence on locally observed levels of air pollution. Occasionally, certain ad hoc events, for instance the Eyafjallajökull [15], Grímsvötn [16], Bárðarbunga [17] and Sundhnúksgígar volcanic eruptions can have an effect on regional UK air quality.

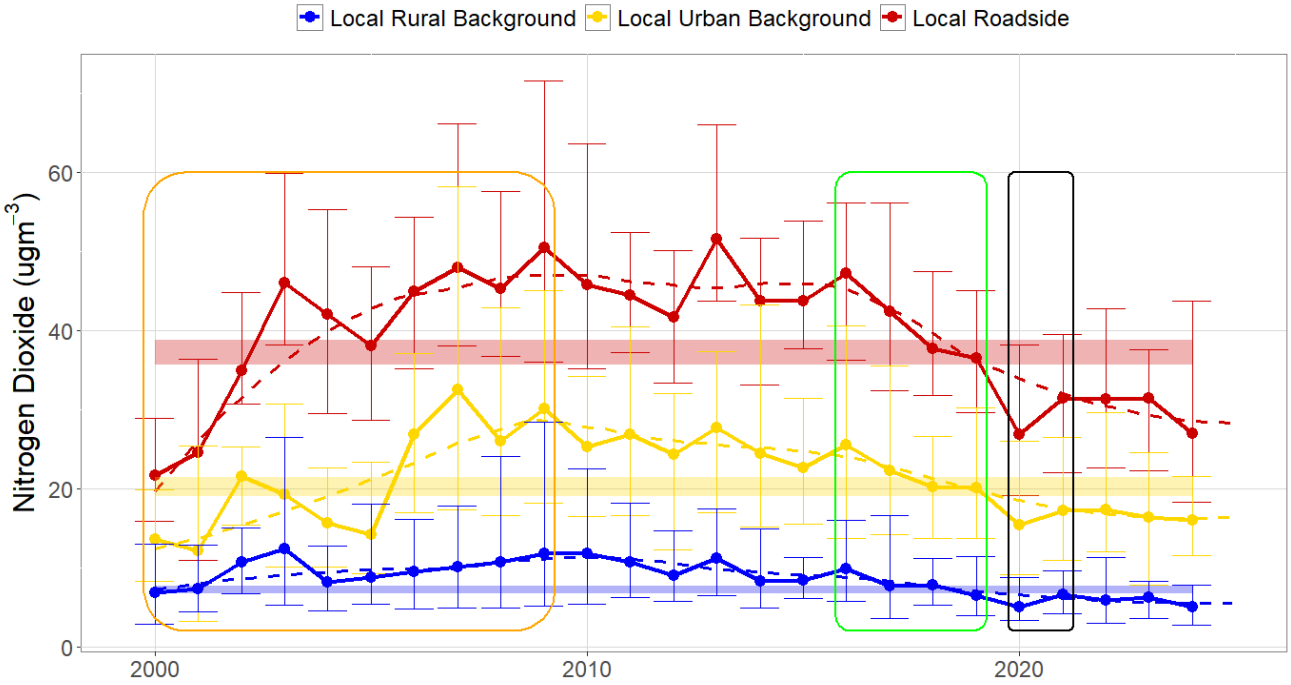
As any individual monitoring site can be influenced by very local circumstances, it can be of benefit to consider a collection of similar monitoring locations when assessing general influences upon local air quality. It has been possible to collate monitoring data from locations where monitoring has been maintained for some time and influences from new developments or abnormal events are expected to have been minimal. These locations have been categorised with regards to their representation of the 'local rural background'[3] environment, the 'local urban background'[4] environment and the 'roadside'[5] environment within Rhondda Cynon Taf. The local rural background may help to illustrate wide-scale regional influences.

[3] rural or sub-urban locations where there is an absence of local busy roads or industry and it most closely reflects the regional background such as isolated and peri-urban residential areas.
[4] urbanised residential areas at a distance from the kerb of major roads and an absence of local industry such as residential areas of most townships and the suburbs of strategic towns
[5] roadside urban locations often within current and former Air Quality Management Areas and associated with commercial centres or strategic roads, where it is believed that the sources of NO_2 have not markedly changed such as residential areas in close proximity to busy urban roads

The local urban background environment likely represents the vast majority of areas within Rhondda Cynon Taf where people live. The local roadside environment tends to be reflective of small parts of various communities that may be more at risk of experiencing elevated levels of NO_2, often due to the close proximity of major or strategic roads.

Figure 4-7 produces a time plot of the local rural background (blue), local urban background (gold) and local roadside (red) environments, with the respective NO_2 annual mean (solid line with solid dots), the associated trend line[6] (dashed line), the 10-year mean Confidence Interval (shaded zone) and the intra-year monthly mean spread (whiskers). Due to the exceptional events of 2020, the 10-year mean Confidence Interval (shaded zone) has been determined with respect to a 10-year period excluding 2020.

Figure 4-7: Time Plot of the annual mean for NO_2 at the local rural background (blue), local urban background (gold) and roadside (red) environments



When compared to nationally produced datasets, the local rural background (solid blue line) shows strong consistency with published background levels and, as with the local urban background (solid gold line), demonstrate current and historic levels of NO_2 within most of Rhondda Cynon Taf that are well below the 40µgm^{-3} annual mean AQO for NO_2. This understanding is in keeping with Rhondda Cynon Taff's layout of linear settlements, which observe a generally suburban character, interposed with large rural spaces, which would be conducive to reducing general exposure to elevated levels of NO_2. Given that the rural and local urban backgrounds are likely to represent, by area and population, most of Rhondda Cynon Taf, it is very likely that the vast majority will experience levels of NO_2 well below the current annual mean AQO for NO_2. However, the local roadside (solid red line) environment

[6] produced by Local Polynomial Regression Fitting with α of 0.5

does historically illustrate that where certain circumstances manifest, which are often limited to relatively small specific areas, a risk of elevated levels of NO_2 may become apparent.

Air quality can generally fluctuate over time as the significance of various sources and interactions change. For instance, 2007, 2009 and 2013 appear to demonstrate all three environments having respective annual means clearly above the ten-year mean confidence interval (shaded areas), potentially indicating unusually 'poor' air quality years. Over-time the degree of fluctuation may change as underlying trends evolve, examination of the intra-year monthly mean spread (whiskers) indicates a relatively consistent spread of results in years not considered as observing unusually 'poor' air quality and with the spread potentially reducing in range from 2018 onwards. The monthly mean spread also suggests that, since 2009, those years experiencing comparatively elevated levels of NO_2 may be as a result of specific limited periods of time within the year when the levels of NO_2 were particularly elevated as opposed to a general uplift in NO_2 throughout the year. This could suggest, post 2009, specific influences upon (for instance weather conditions) rather than the underlying trend in the sources of NO_2 may be more significant, in increasing the likelihood of any one year experiencing comparatively elevated levels of NO_2.

After a period of rising NO_2 levels between 2000 to 2009 (orange boxed area) followed by a period of fluctuation between 2010 and 2015, the trend (dotted lines), from 2016 to 2019 (green boxed area), is of significantly reducing levels of NO_2 in all three environments. A similar evolution of the prevailing trend in NO_2 has also been reported [11] with respect to the UK as a whole. It is borne in mind that COVID-19 related disruption (black boxed area) appears associated with markedly lower levels of NO_2, during 2020, than the underlying trend would have suggested. This exceptional impact has appeared to have initially ebbed to some extent, as society re-establishes prevailing practices, resulting in a somewhat expected uplift in NO_2 subsequently. However, from the period after 2020 and its initial rebound, an apparent stabilisation in levels may have been reached with a more recent slight improving trend potentially being reestablished, with 2024 experiencing the lowest levels of NO_2 since 2021.

To further understand the currently observed trend, examination can be made of the five year trend, which is considered[7] the likely minimum time period to examine a trend in NO_2. However, it is acknowledged that the five year trend can be influenced by data outliers or cyclical effects that have a similar or longer timeframe, potentially distorting the trends interpretation if considered in isolation. For instance, it can capture the recent impact of COVID-19 related disruption considered at its nadir in 2020. To reduce this exceptional influence skewing understanding, Table 4-8 provides quantification of the respective trends, for each environment, without inclusion of monitoring results from 2020.

[7] Paragraph 4.18 of LAQM.TG(22)

Table 4-8: Estimation of the five-year trend in NO_2 at each RCT Environment

Environment	Trend (% yr^{-1} five-year trend)
Local Background	-4.25
Local Urban	-3.58
Local Roadside	-4.72

Given the similarity of the improvement in the five-year trend in NO_2 within each local environment, its cause may be associated with factors widely experienced throughout Rhondda Cynon Taf over an extended period of time. Although prolonged conducive weather conditions may play a part, given the length of consistent improvement within the local background and local urban environments and a similar experience reported [18] to some extent throughout Wales, human factors are likely to be strongly relevant.

The current and likely future trend in NO_2 may be influenced by a range of factors. At the national level it has been suggested that the increase and subsequent stability in the occurrence of NO_2 observed from the early 2000s to mid 2010s may "likely [be] as a result of the increased ownership of diesel-fuelled vehicles which historically emitted far more nitrogen oxides compared to equivalent petrol-fuelled vehicles" potentially "offsetting the impact of reduced emissions from other sources" [11]. At the local level, renewed urbanisation in the south of Rhondda Cynon Taf, during the 2000s and 2010s, may have also contributed to significant local traffic growth and subsequently an increase in the local emission of NO_2.

Since that period, continued overall reductions in national emission inventories of certain air pollutants as well as the adoption of "newer vehicles subject to stricter emissions standards" and certain local transport network improvements may of, in part, helped to sustain a local reducing trend in NO_2 [11]. It is also understood that the winter periods of 2017 to 2019 experienced prevailing metrological conditions that may have been benign to minimising the local occurrence of NO_2.

It is the case that the dramatic reductions in NO_2 in 2020 had been initially reversed to some extent, which has been attributed to being "likely as a result of the reduction in COVID-19 related disruption". However, across the UK in 2024 levels of NO_2 still remain substantially lower in comparison to the recent past [11] and in many locations are their lowest since 2001. The potential stabilisation of the trend in 2024 could indicate the possibility that the recent improving trend has waned somewhat and instead stabilised to a less dramatic yet still incrementally improving position. However, it remains difficult to determine if future continued cultural and economic changes, such as the continuation of home-working and non-traditional commuting times by some, could significantly increase the improving trend in the near-term. Alternatively, there is an apparent risk that the trend may have slowed, with potential future economic conditions challenging the adoption of new transport technology. Nonetheless, it is expected in the longer-term that NO_2 levels should continue to decrease, potentially dramatically, in time.

It is believed that improvements to the local background and local urban environments are likely being sustained by various national and broader local policies and actions which are having a wide geographical effect, possibly in combination with underlying longer-term cyclic

climatic changes. These measures would also be expected to have an impact upon the local roadside environment but due to local circumstances their effects may have historically been more muted and slower to fully manifest. Nonetheless, a combination of broader measures in association with locally targeted intervention at several AQMAs, may have helped to support improvement within the local roadside environment, albeit this improvement may slow or shift to a stabilised environment in the near term at some locations.

4.3.2 Comparison with the 1-hour AQO for NO_2

The automatic monitoring data for NO_2 from 2024, which can be directly compared to the 1-hour AQO for NO_2, demonstrates that Broadway (Site No. 70), Pontypridd (Site No. 120) and Mt Ash (Site No. 131) did not exceed the 1-hour mean AQO for NO_2. Due to the logistical complexity of automatic monitoring, it has not been possible to locate these monitoring instruments at all relevant locations. Fortunately, inference can also be drawn from the annual mean, which can be monitored more readily using non-automatic methods, with locations showing an annual mean greater than 60 μgm^{-3} potentially likely to be in breach of the 1-hour AQO for NO_2. As the annual mean for NO_2 can fluctuate from one year to the next, without there necessarily being an underlying change in circumstances, it can be appropriate to examine monitoring sites that have shown an NO_2 annual mean greater than 54 μgm^{-3} during the recent past. As these locations may require further consideration to assess if they are at risk of experiencing an annual mean for NO_2 greater than 60 μgm^{-3}, in the near future.

Within Rhondda Cynon Taf, it is apparent that in 2024, no locations experienced sufficiently elevated levels of NO_2, above 60 μgm^{-3}, that would likely have resulted in a breach of the 1-hour mean AQO for NO_2 and there are no relevant monitoring locations within Rhondda Cynon Taff which observed an annual mean for NO_2 that was greater than 54 μgm^{-3} in any of the past five years (including 2024). As such it is expected that all relevant locations within Rhondda Cynon Taf will likely be compliant to the 1-hour mean AQO for NO_2.

4.3.3 Comparison with the annual mean AQO for NO_2

Figure 4-8 displays a map of Rhondda Cynon Taf and the annual mean NO_2 at each active monitoring site in 2024; the blueness in hue of each circle indicates a lower annual mean and conversely the orange to redness in hue of each circle indicates a higher annual mean for NO_2. As expected, the map clearly shows that the varying communities within Rhondda Cynon Taf have experienced differing levels of NO_2 in 2024. This will be for a wide range of reasons both local and regional. For instance, Figure 4-8 highlights the importance of the local and regional arterial road network and the pattern of local urbanisation and regional valley topography, as important factors in the likelihood of a location experiencing elevated levels of NO_2.

Figure 4-8: Map of Rhondda Cynon Taf displaying the annual mean for NO_2, in 2024, at each monitoring site.

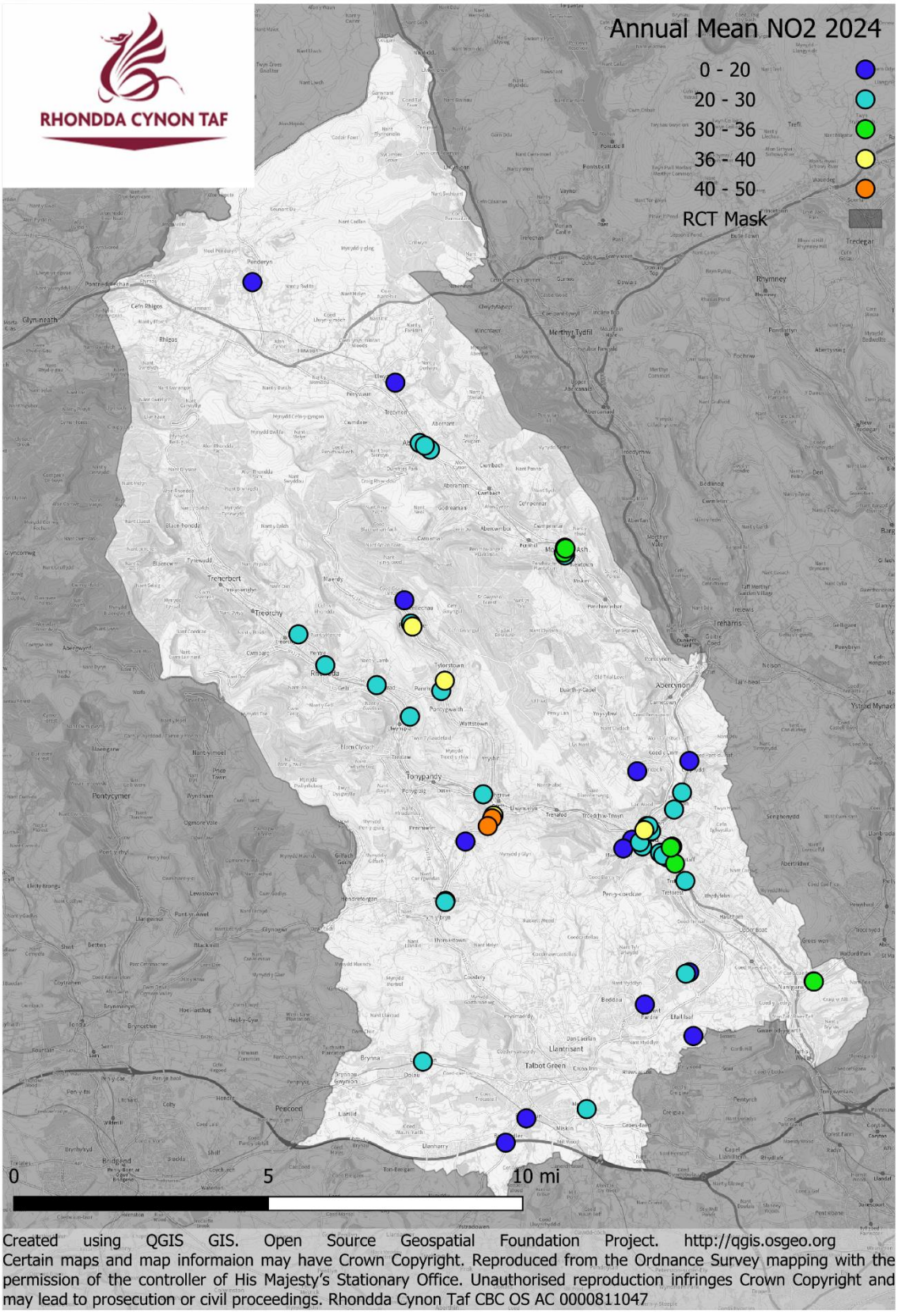


Table 4-9 collates each monitoring site to its region and associated local community. Where the community is in bold, the community is also associated with an AQMA that has been declared for a breach of the annual mean AQO for NO_2, and where underlined the AQMA has in addition been declared for a breach of the 1-hour AQO for NO_2.

Table 4-9: Annual mean NO_2, in 2024, collated to region and each local community.

Region	Community (1)(2)	Site No.	2024 $N0_2$ Annual Mean (3)(4)(5)(6)
Background	Rhondda	101	4.8
	Cynon	21	4.2
	Taf	4	9.6
		103	5.1
		105	5.8
Rhondda	**Cymmer**	91	37.7
		117	**40.9**
		118	**40.6**
	Dinas	90	26.8
	Ferndale	93	37.8
		107	25.4
	Llwynypia	106	28.5
	Pentre	136	26.8
	Tonyrefail	113	24.6
		122	20.3
	Trebanog	124	19.3
	Treorchy	137	22.7
	Tylorstown	41	38.2
		140	26.7
	Ystrad	141	20.9 {20.2}
Cynon	Aberdare	53	26.7
		68	23.7
		69	20.7
		88	21.9
	Llwydcoed	139	13.3 {11.8}
	Mountain Ash	52	34.8
		96	27.7
		97	34
		131	30
Taf	Broadway	51	26.8
		56	30.4
		66	26.3
		70	21.8 {24.0}
	Church Village	85	21.8
		129	15.4

Region	Community (1)(2)	Site No.	2024 $N0_2$ Annual Mean (3)(4)(5)(6)
			{14.5}
	Cilfynydd	44	22 {26.8}
		55	23.2
		134	13.7 {11.9}
	Llanharan	111	26.6
	Llantwit Fardre	82	19.5 {17.6}
	Mwyndy	37	23 {20.7}
	Nantgarw	8	30.1
		76	21.7
	Nightingales Bush	108	34.8
		114	20
	Pontyclun	110	18
	Pontypridd	79	22
		80	21
		81	25.7
		83	26.7
		84	36.1
		120	23.5
		135	18.9 {15.9}
		138	25.9
	Talygarn	132	18.7
	Treforest	128	23.6

Table Notes

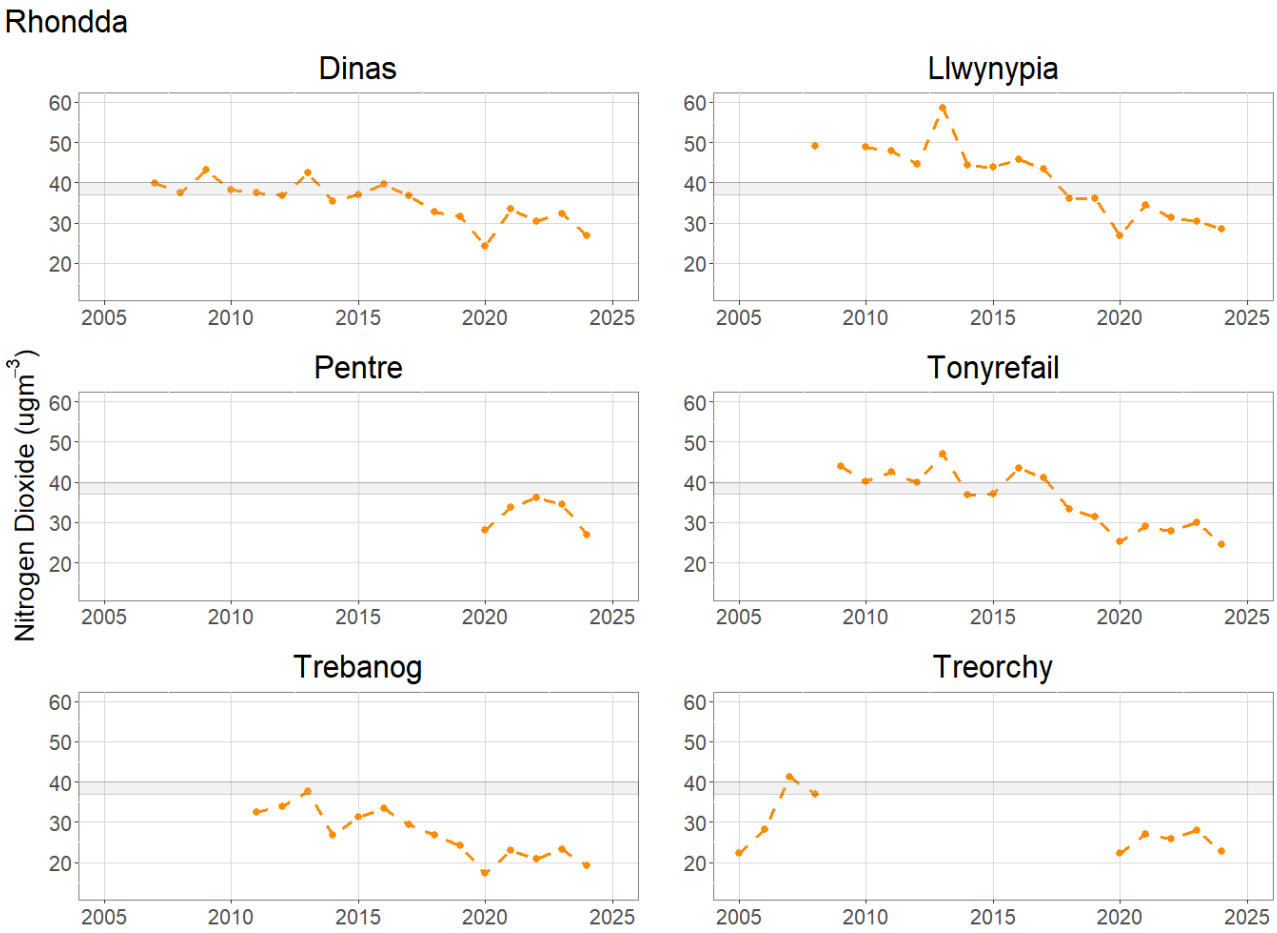
(1) Communities highlighted in bold have within them an Air Quality Management Area declared in respect of an exceedances of the NO_2 annual mean objective
(2) Communities that are underlined and highlighted in bold have within them an Air Quality Management Area declared in respect of an exceedances of the annual mean 1-hour mean objectives for NO_2.
(3) Exceedances of the NO_2 annual mean objective of 40 μgm^{-3} are shown in bold.
(4) Exceedances of the NO_2 1-hour mean objective (200 μgm^{-3} not to be exceeded more than 18 times per year) or otherwise NO_2 annual means exceeding 60 μgm^{-3}, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in bold and underlined.
(5) Annual means have been corrected for bias with means labelled with a ‡ having been “annualised” as per Boxes 7-9 and 7-10 in LAQM.TG22, as their valid data capture for the full calendar year is less than 75%. See Appendix C1: Air Quality Monitoring Data QA/QC for details.
(6) Where the NO_2 ‘fall-off’ corrected predicted mean has been determined it is has been reported in curly brackets ‘{ }’

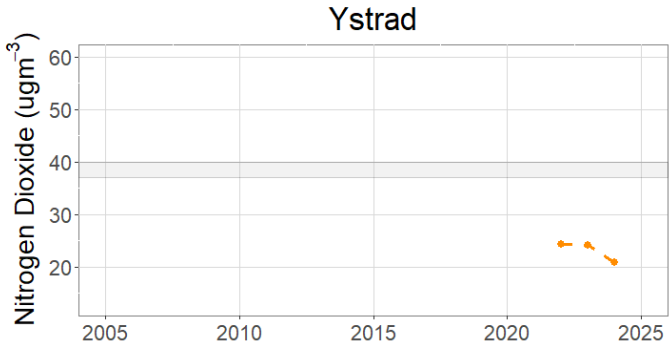
4.3.3.1 Areas not associated with an AQMA

It has not been possible to monitor, at all times, every community within Rhondda Cynon Taf. However, it is believed, as discussed in Section 4.3.1 that most communities have experienced relatively low NO_2 annual means, consistently over the recent past, and are likely to continue to do so. To remain vigilant to potential change, facilitate better geographical understanding of the local levels of NO_2 and provide community reassurance, the Local Authority has monitored a range of locations that are not currently associated with an AQMA.

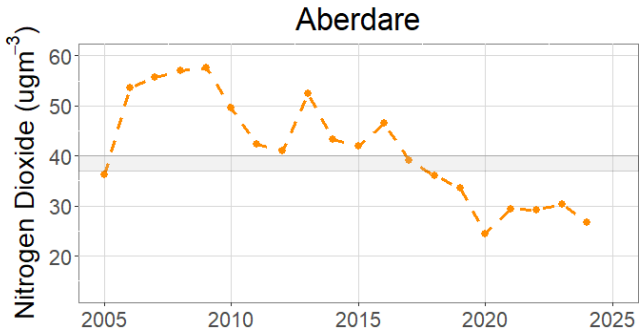
The annual mean for NO_2 can fluctuate from one year to the next, without there necessarily being an underlying change in circumstances. As such it may be appropriate to further examine monitoring sites that have shown an NO_2 annual mean greater than 36 μgm^{-3} during the recent past. As these locations may require consideration to assess if they are at risk of experiencing an annual mean for NO_2 greater than 40 μgm^{-3}. Figure 4-9 below provides time plots of the maximum levels of NO_2 monitored within each relevant community not currently associated with an AQMA.

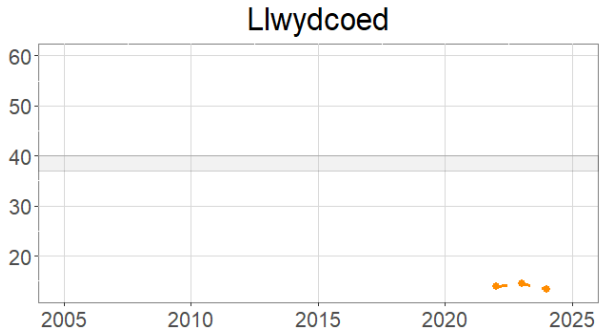
Figure 4-9: Time Plots of the maximum annual mean NO_2, from 2006 to 2024, collated to each relevant community not currently associated with an AQMA.



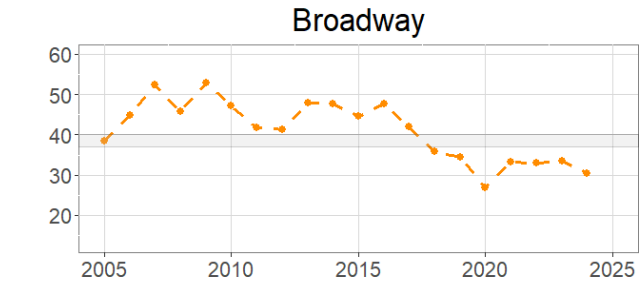

Ystrad
Nitrogen Dioxide (ugm-3)
60
50
40
30
20
2005
2010
2015
2020
2025

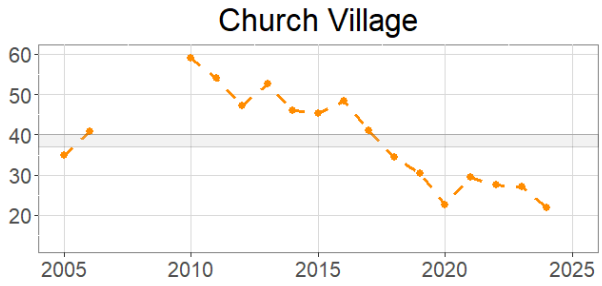
Cynon

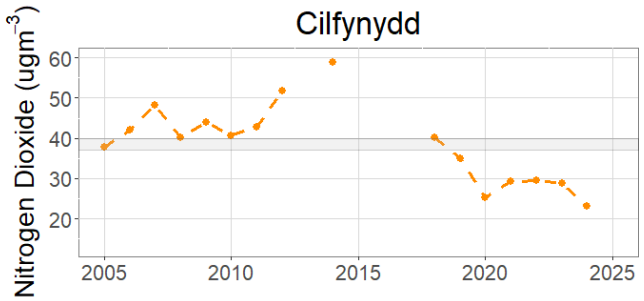

Aberdare
Nitrogen Dioxide (ugm-3)
60
50
40
30
20
2005
2010
2015
2020
2025

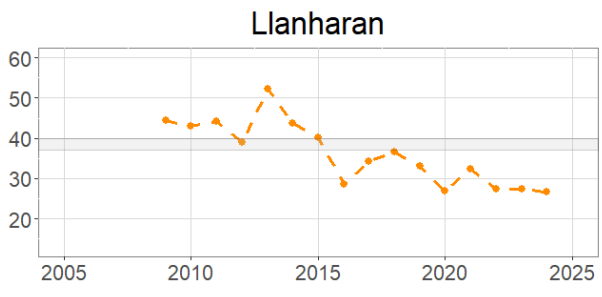

Llwydcoed
60
50
40
30
20
2005
2010
2015
2020
2025

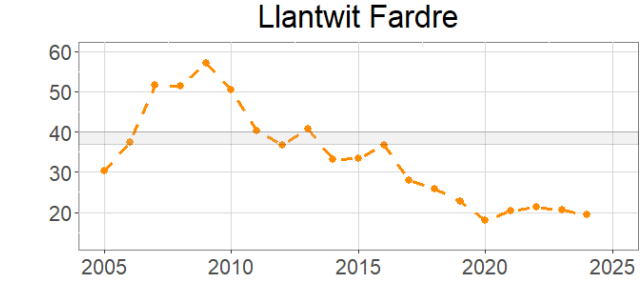
Taf

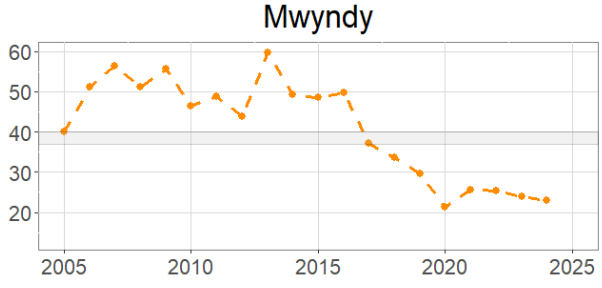

Broadway
60
50
40
30
20
2005
2010
2015
2020
2025

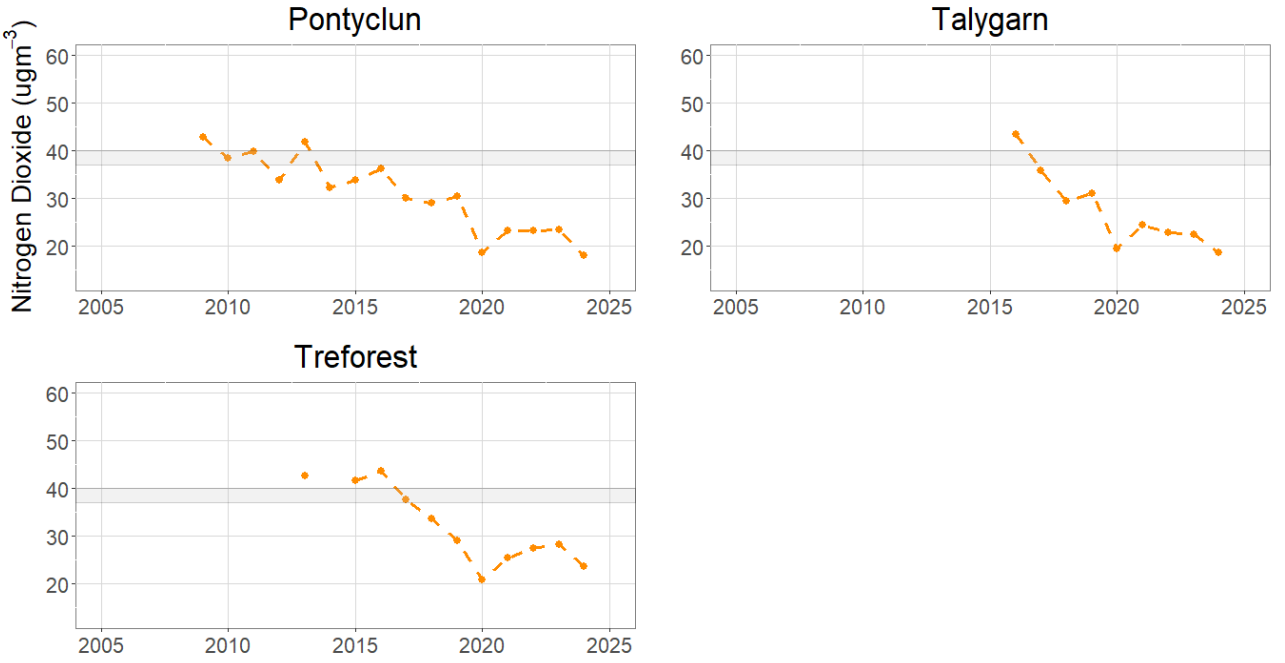

Church Village
60
50
40
30
20
2005
2010
2015
2020
2025


Cilfynydd
Nitrogen Dioxide (ugm-3)
60
50
40
30
20
2005
2010
2015
2020
2025


Llanharan
60
50
40
30
20
2005
2010
2015
2020
2025


Llantwit Fardre
60
50
40
30
20
2005
2010
2015
2020
2025


Mwyndy
60
50
40
30
20
2005
2010
2015
2020
2025



As can be seen, mostly relatively low NO_2 annual means have been experienced over the recent past. In addition, none of the communities monitored are considered currently to be at risk of experiencing an annual mean for NO_2 greater than 36 μgm^{-3} and will be expected, unless circumstances were to dramatically change, to remain compliant with the annual mean AQO for NO_2 of 40 μgm^{-3}, into the future.

4.3.4 Areas associated with AQMAs

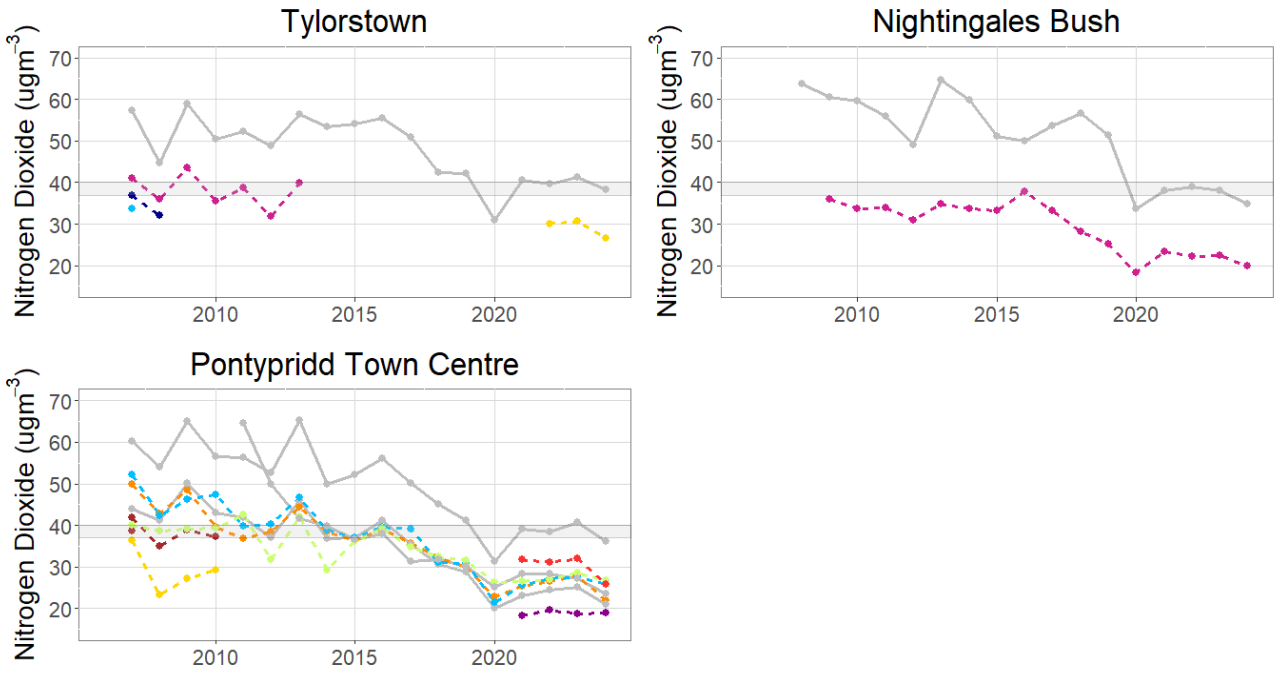
Currently there are six AQMAs within Rhondda Cynon Taf, all of which are in respect of breaches of AQOs for NO_2. These AQMAs are of limited size, are distributed throughout the County Borough and all are significantly associated with road transport emissions, Section 3.2 provides further information on each AQMA and Appendix D1: Current AQMA Boundary Maps provides detailed maps of the AQMAs and associated monitoring locations.

As local air quality can change over time due to national, regional and local changes as well as due to the progression of targeted actions that may improve local air quality. It can be appropriate to examine existing AQMAs to ensure they remain pertinent and continue to reflect any area of non-compliance to an AQO. Where local air quality near an AQMA has or is likely to deteriorate it can be appropriate to consider amending an AQMA to increase its geographical coverage. Conversely, where sustained compliance to an AQO has been achieved within the AQMA or part thereof, it may be appropriate to reduce or even revoke the AQMA.

It is acknowledged that certain areas in proximity to some extant AQMAs may be vulnerable to elevated levels of NO_2. Not all areas adjacent to every AQMA will have a relevant population present or, even if present, they may observe markedly different characteristics which would mean elevated levels of NO_2 would be unlikely. The Nightingales Bush, Pontypridd Town Centre and Tylorstown AQMAs have potentially relevant areas proximate to them which may require continued monitoring to confirm the associated AQMA boundary includes all areas that may be non-compliant to the annual mean AQO for NO_2. Figure 4-10

provides time plots of the monitored annual means for NO_2 at each relevant monitoring location and collated to each AQMA; NO_2 monitoring locations denoted in grey solid lines are located within the respective AQMA, whereby monitoring locations in colour dashed lines are located in relevant areas adjacent to the respective AQMA.

Figure 4-10: Time Plots of the annual mean NO_2, from 2006 to 2024, collated to each relevant AQMA.



As can be seen, none of the monitored locations within adjacent areas to an AQMA (colour dashed lines) have observed levels of NO_2 that are above 36 μgm^{-3} during the recent past. As such these adjacent areas are expected, unless circumstances were to dramatically change, to remain compliant with the annual mean AQO for NO_2, into the near future.

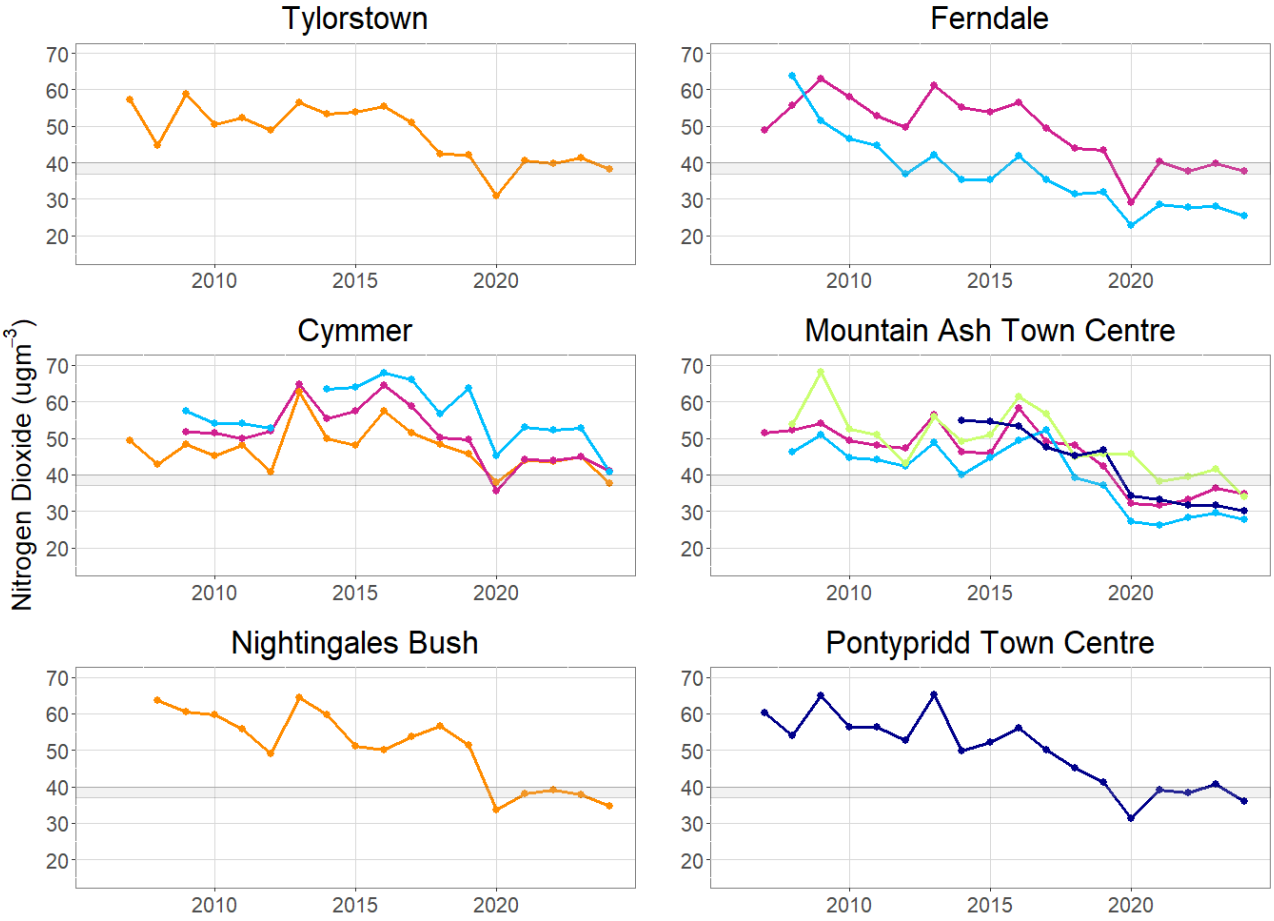
In addition to areas adjacent to an existing AQMA, it is also important to examine if sustained compliance to an AQO has been achieved within an AQMA or part thereof, as it may be appropriate to amend or even revoke the AQMA. Although an AQMA, or part thereof, may show compliance to the annual mean AQO for NO_2 in any particular year, it may not mean that this would always be sufficient justification to review the AQMAs designation. Instead, consideration must first be made to the likely future sustainability of the compliance, as well as any other factors which could support maintaining the AQMA as it currently is.

To maintain an efficient approach to its local air quality management duties initial consideration can be undertaken with available monitoring data and the examination of local trends and understanding. Where this approach identifies a need for further assessment, prior to determining any necessary changes to an AQMA, this can then be carried out accordingly.

It can be helpful to consider the previous year's monitoring results to examine the past consistency of any current improvement. However, this approach can still be influenced by specific events, for instance COVID-19 related disruption has meant that the representative

nature of some recent years of monitoring data may be difficult to determine. This may be most relevant to 2020 when socio-economic restrictions were at their height. Figure 4-11 below produces time plots of the most recent annual mean NO_2 monitoring results collated to each AQMA, and a dot dash horizontal grey reference bar indicating the NO_2 level between 36 μgm^{-3} and the annual mean AQO for NO_2 level at 40 μgm^{-3}.

Figure 4-11: Time Plots of the annual mean NO_2 from 2006 to 2024, collated to each AQMA.



Consideration of the available monitoring data, within each AQMA, has been undertaken to examine the likelihood of current compliance or non-compliance within each AQMA, or part thereof, and has been summarised in Table 4-10 below.

Table 4-10: Screening Review of current AQMAs

Region	AQMA	Initial Assessment				Further Review
		Non-Compliant (1)	Possibly Non-Compliant (2)	Probably Compliant (3)	Compliant (4)	
Rhondda	Cymmer	In Part	In Part	-	-	No
	Ferndale	-	In Part	-	In Part	No
	Tylorstown	-	In Full	-	-	No
Cynon	Mountain Ash Town Centre	-	In Part	In Part	In Part	No
Taf	Nightingales Bush	-	In Full	-	-	No
	Pontypridd Town Centre	-	In Part	-	-	No

Table Notes

(1) "Compliant" means the monitoring locations annual mean for NO_2 was less than 36 μgm^{-3} in all the most recent three years and less than 40 μgm^{-3} in all the most recent five years, excluding 2020, and since 2021 the monitored level of NO_2 is not significantly increasing;
(2) "Probably Compliant" means the monitoring locations annual mean was less than 36 μgm^{-3} in all the most recent three years, excluding 2020.
(3) "Possibly Non-Compliant" means the monitoring locations annual mean greater than 36 μgm^{-3} in at least one of the most recent three years;
(4) "Non-Compliant" means the monitoring locations annual mean was 40 μgm^{-3} or greater in 2024.

As observed in Figure 4-11 above and further illustrated in Appendix D2, all the current AQMAs in Rhondda Cynon Taf observe, to varying degrees, a notable medium-term reducing trend in the monitored levels of NO_2. Although COVID-19 related disruption may have disproportionately emphasised this, it is apparent that a locally downward trend in NO_2 was well established before 2020. Given understanding of the recent past as well as current national policy interventions, it is expected that, in the near-term, the trend in NO_2 within each AQMA will continue to reduce incrementally to some extent.

When considering if there is a need to further assess an AQMA, it is not only necessary to consider available monitoring data, which can inherently reflect the past, but also to consider likely future national, regional and local circumstances. As discussed in Section 4.3.1, at the national and regional scale, the levels of NO_2 are expected, in the medium to longer-term, to decrease as wide-scale policy interventions, regional public transport improvements and road vehicle fleet modernisation takes effect. In respect of new local developments, all of the AQMAs are not expected to experience a substantive change in local circumstance that could be expected to significantly influence current understanding of them.

above indicates that the Ferndale and Mountain Ash Town Centre Town Centre AQMAs may contain relevant areas within them[8] that may now be compliant with the annual mean AQO for NO_2.

In respect of Ferndale AQMA, the area in compliance is associated with a monitoring location, Site No.107 (Ferndale), which is located within the southern half of the AQMA. The Ferndale AQMA is geographically confined within part of a single street that is within a suburban environment that appears reasonably homogonous. The northern half of the AQMA has both significantly more part commercial premises and a greater occurrence of road traffic congestion, due to localised highway infrastructure and available carriageway variation. The boundary of these local structural variations and the likely associated boundary of possible non-compliance to the annual mean AQO for NO_2 would be challenging to definitively set. To ensure a precautionary approach, it is considered that the current boundary of the Ferndale AQMA, even though it will retain an area of compliance, remains a pragmatic designation. As such it is not considered appropriate, at this time, to reduce the geographical extent of the Ferndale AQMA.

In respect of Mountain Ash Town Centre AQMA, the area in compliance is associated with a monitoring locations Site No. 52 (Mt Ash) and Site No. 96 (Mt Ash), which is located within the western half of the AQMA. The western half of the Mountain Ash Town Centre AQMA, which incorporates the single road known as Oxford St, observes a number of specific characteristics that differentiates itself from its eastern half, which incorporates New Rd, albeit both are connected by a semi-shared local highway network. Oxford St, is within a suburban environment that appears reasonably homogonous and includes a number of part commercial premises. The street has, in parts, a narrow width and likely observes a street-canyon effect due to abutting terraced buildings. Oxford St also observes an incline at its northern half which leads to a traffic-lights managed junction. It is understood the combination of traffic volume, inclined road, likely street-canyon effect and inherent road traffic congestion associated with its northern junction, are all significant factors influencing the observed levels of NO_2. With regard to Site No. 52 (Mt Ash), the recent trend in NO_2 may not be clearly improving, in the near-term, with early increases in NO_2 since the nadir associated with 2020 and the peak of coronavirus related disruption. Given the uncertainty and the difficulty in delineating the area of probable compliance within the western half of the AQMA, it is considered that the current boundary of the Mountain Ash Town Centre AQMA, even though it will retain an area of compliance, remains a pragmatic designation. In any event, given the current regionally improving trend in NO_2 it may be possible that the entire western half of the AQMA will be reviewed in the medium-term. As such it is not considered appropriate at this time to reduce the geographical extent of the Mountain Ash Town Centre AQMA.

At this time it is also not considered necessary to undertake a further review of Cymmer, Tylorstown, Nightingales Bush and Pontypridd Town Centre AQMAs as they continue to demonstrate either non-compliance or a risk of non-compliance to the annual mean AQO for NO_2 in the short-term and in respect of the Cymmer AQMA potentially the longer-term, unless

8 that were not otherwise included for administrative purposes

future targeted improvement actions have a desired effect. Nonetheless, all the AQMAs continue to show either a local improving or at least stabilising near-term trend in NO_2.

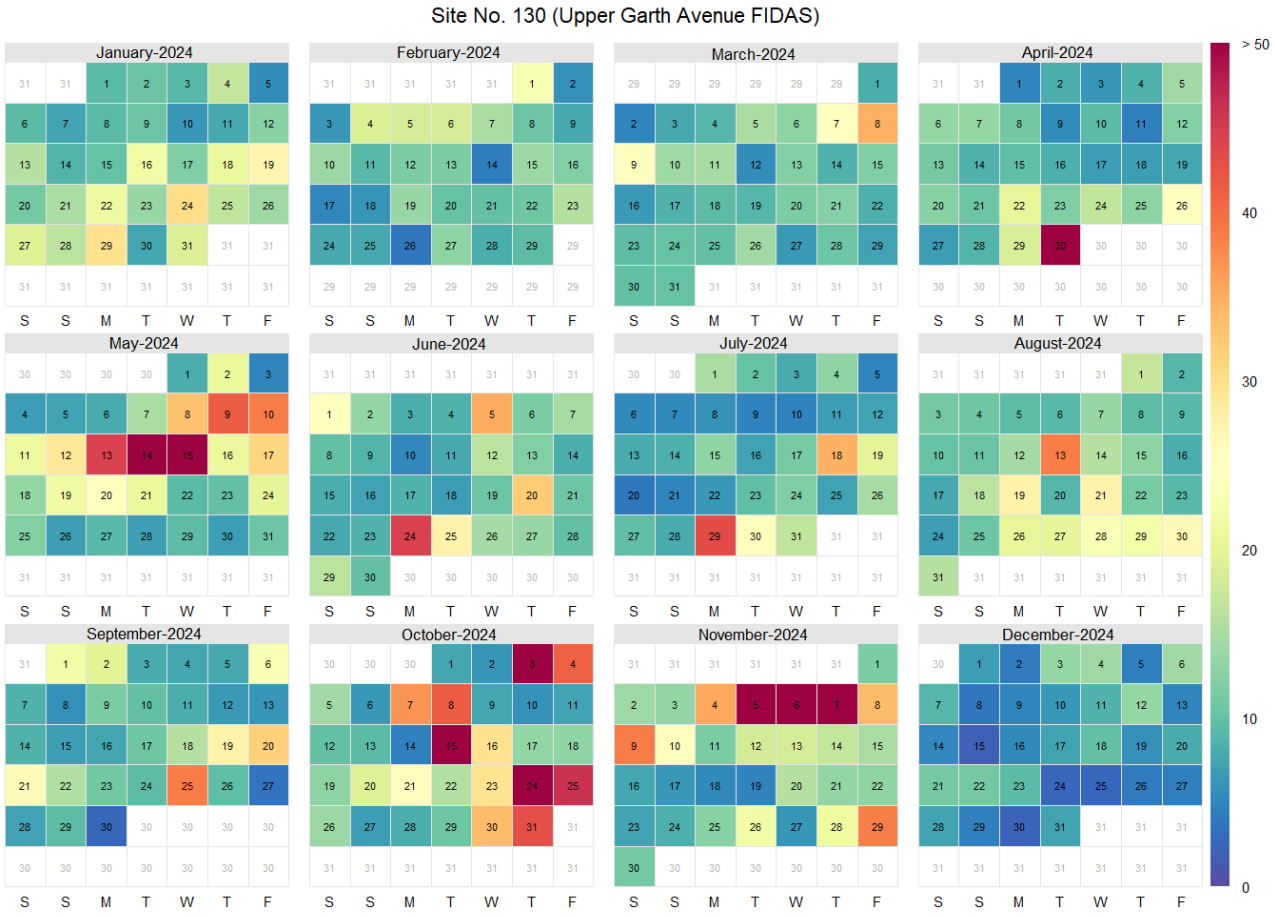
4.3.5 Particulate Matter [PM_{10}]

It has been reported [10] that, based upon modelled assessment, the South Wales Non-agglomeration Zone, which includes Rhondda Cynon Taf, is compliant with both the annual mean EU Limit Value for PM_{10} and the 24-hour daily mean EU Limit Value for PM_{10}. It has also been reported [12] that Rhondda Cynon Taf, in comparison with other Welsh Local Authorities, has been ranked[9] (lower the better) 3rd out of 5 for PM_{10}.

The Local Authority undertook PM_{10} monitoring, in simultaneous combination with $PM_{2.5}$ monitoring, within Glyncoch at Site No. 130 (Upper Garth Avenue). Glyncoch is a suburban community, within the Taf Valley, which is in close proximity to the active Craig Yr Hesg Quarry. Craig Yr Hesg Quarry is a Pennant Sandstone mineral extraction activity making use of fixed plant within a 36.7 hectare site and has been in operation for a number of years. Given the nature, size and geographical position of Craig Yr Hesg Quarry it is expected to have a material effect on locally observed levels of particulate matter. Apart from variation in the production level and occasional adhoc short-term temporary pausing of works at Craig Yr Hesg Quarry, it is believed that during 2024, Glyncoch was not subject to any unexpected influences derived from a significant change in local circumstance or a locally transient specific event. To consider the 2024 results, Figure 4-12 provides a calendar plot identifying the 24-hour daily means of PM_{10} in 2024 at Site No. 130 (Upper Garth Avenue).

[9] Although there are currently twenty-two Local Authorities in Wales, some may be ranked equally

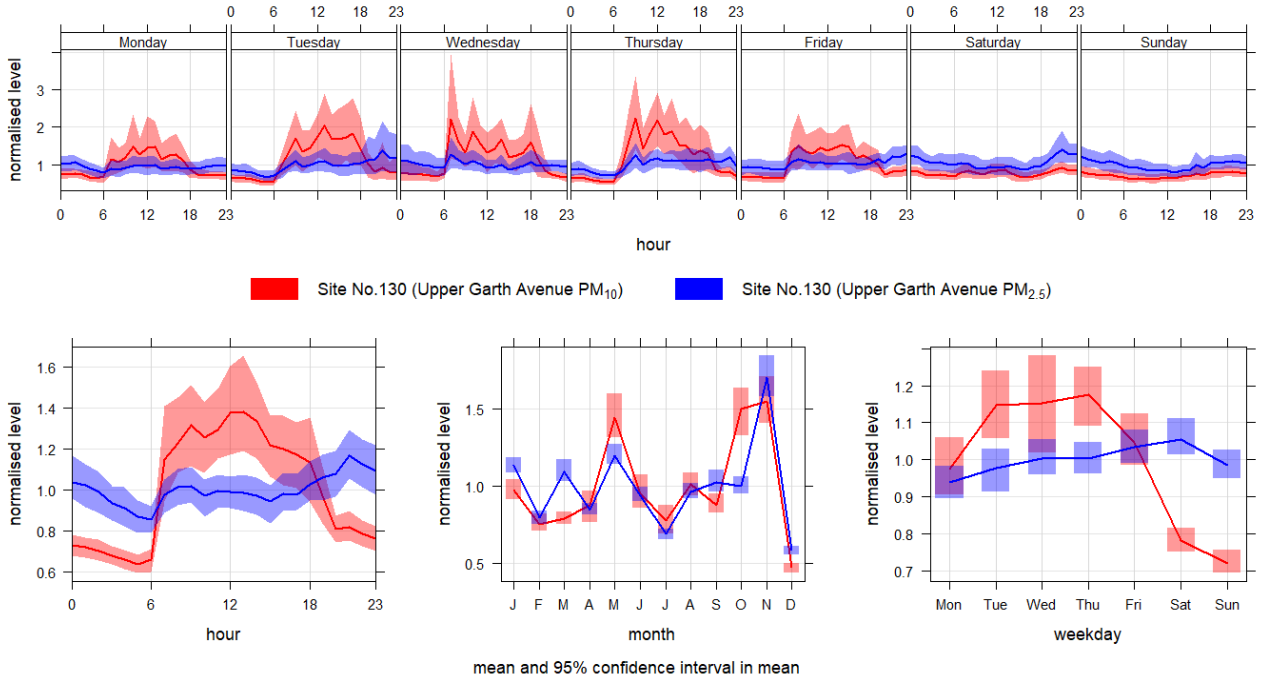
Figure 4-12: Calendar Plot of the 24-hour daily means of PM_{10} at Site No. 130 (Upper Garth Avenue) in 2024



The calendar plot illustrates that, in general, occasions of elevated PM_{10} levels at Site No. 130 (Upper Garth Avenue) were relatively infrequent. Nonetheless, it also suggests that occasional elevated levels of PM_{10} can be experienced, often appearing to be clustered to several consecutive days at a time, as evident in May, October and November 2024.

As Particulate Matter can be influenced in a number of ways, it can also be useful to consider the relationship of PM_{10} to itself and $PM_{2.5}$. Figure 4-13 provides time variation plots of the normalised PM_{10} (red) and $PM_{2.5}$ (blue) at Site No. 130 (Upper Garth Avenue) in 2024.

Figure 4-13: Time Variation Plot of PM10 and PM2.5 measured at Site No. 130 (Upper Garth Avenue) in 2024.

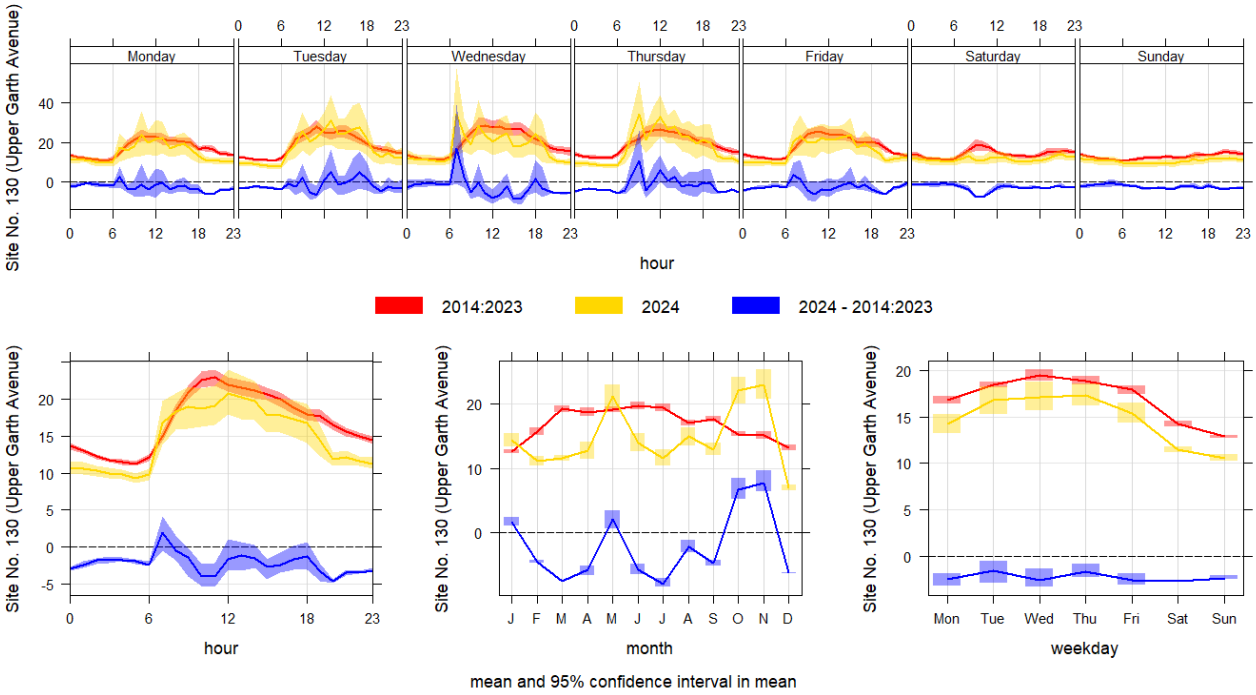


Site No. 130 (Upper Garth Avenue) demonstrates consistently elevated levels of PM_{10} (red line) during Monday to Friday with noticeable reductions in the levels of PM_{10} at the weekend. PM_{10} levels are most elevated between 7 am to 6 pm with elevated levels of PM_{10} also showing a consistently strong diurnal and hebdomadal relationship. However, PM_{10} data from 2024 appears to show no specific biannual relationship, with PM_{10} peaking at various points throughout 2024.

The PM_{10} daily and weekday patterns appear partially unrelated to $PM_{2.5}$ (blue line), although, there appears to be more obvious correlation between the monthly change in PM_{10} and $PM_{2.5}$. Overall, the degree of correlation between PM_{10} and $PM_{2.5}$ during 2024 has been estimated at r = 0.68, which suggests both a moderate degree of correlation, most clearly observed at nighttime and weekends, but also a noticeable level of independence. This is most clearly observed when PM_{10} levels become elevated during the week-day day, whereas $PM_{2.5}$ show less of a relative increase during the day but does appear to show a more pronounced increase in the evenings. This could indicate that the two pollutants may share the same or similar sources to a varying extent at certain times, but also may be arising, in different ways, whilst also still being potentially affected by shared influences, such as seasonal environmental changes.

It is also possible to compare the latest PM_{10} monitoring data with the historic average. Figure 4-14 provides time variation plots of the 2024 PM_{10} monitoring results (gold), the historic aggregated results from 2014 to 2023 (red) and the difference in comparison (blue).

Figure 4-14: Time Variation Plot of PM_{10} measured at Site No. 130 (Upper Garth Avenue) in 2014 to 2023 and 2024.

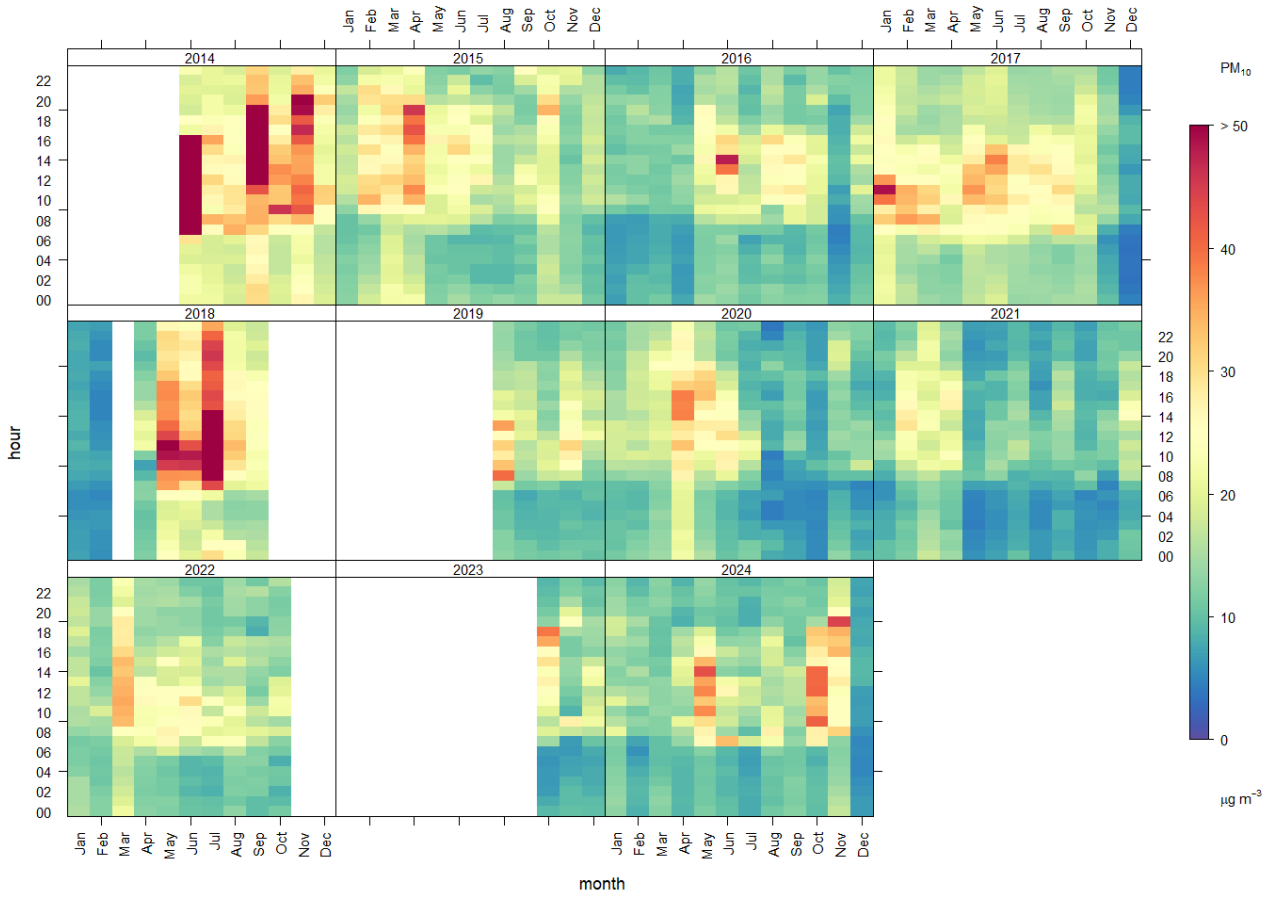


The 2024 and historic PM_{10} results show some consistency across both the hour of the day and day of the week, although it also shows noticeable differences in comparison with month of the year. This pattern may be in keeping with the understanding of relatively consistent sources of PM_{10} being affected by variable environmental factors that may change from one year to the next. It is also apparent that the levels of PM_{10} appeared to have overall reduced slightly in 2024 when compared to previous years.

Nationally levels of PM_{10} have been persistently declining in the long-term, despite a period of stability between 2015 and 2019, with "Concentrations in 2024 were … the lowest recorded [at qualifying national monitoring locations]" [19]. It is also recognised that weather conditions, both locally and more widely, can be highly influential in the levels of PM_{10} observed.

The trend level plot for PM_{10} at Site No. 130 (Upper Garth Avenue) produced in Figure 4-15 below, is a useful way of examining the temporal relationship of the trend in PM_{10} over each year between 2014 and 2024. The trend level plot does show some year to year variation, possibly as a result of cyclical climatic affects. For instance, the sustained dry summer in 2018 or the wetter than normal winter of 2019 and in December 2024 with a marked reduction in observed PM_{10}, coinciding with a series of significant inclement weather. These cyclical climatic effects can often result in some years being more or less prone to elevated levels of PM_{10} when compared to the longer-term average, even where the underlying sources of PM_{10} may remain consistent or are only changing incrementally.

Figure 4-15: Trend Level Plot of PM_{10} measured at Site No. 130 (Upper Garth Avenue) from 2014 to 2024.



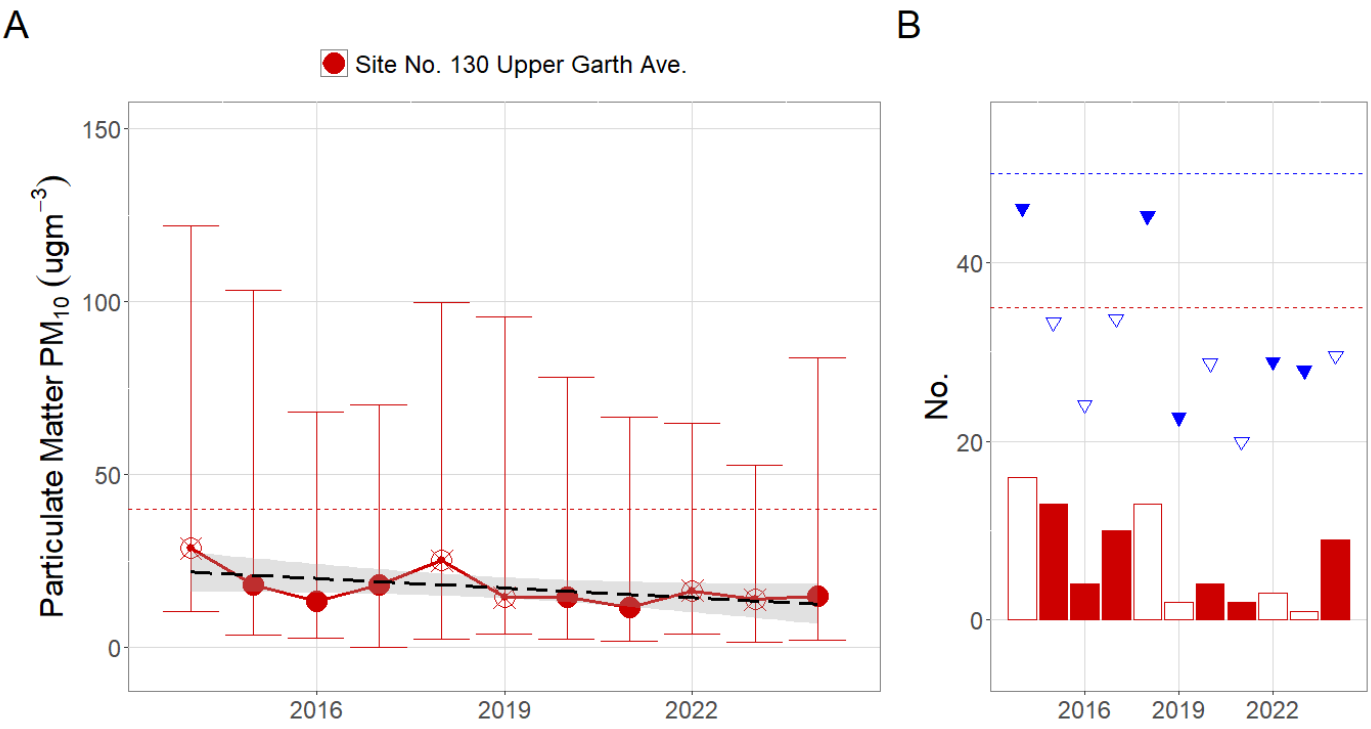
In considering the recent levels of PM_{10} at Glyncoch it can be useful to have regard to the local PM_{10} trend, however, it should be noted that the assessment of local PM_{10} trends can be fickle, due to the multitude of influences that can impact upon observed PM_{10}, and ideally effective analysis requires long duration data sets. Figure 4-16 below produces time plots of Site No. 130 (Upper Garth Avenue). Plot A displays the PM_{10} annual mean (solid red line with solid dots (when the corresponding data capture is 75% or greater) or empty dots (when the corresponding data capture is less than 75%), the associated straight-fit trendline[10] (dashed black line and associated grey shaded area), the intra-year 24-hour daily mean spread (red vertical bars and whiskers) and a reference line corresponding to the annual mean AQO for PM_{10} of 40 μgm^{-3} (dashed red line).

Plot B displays a 'bar and points' showing the number of occasions the daily mean was greater than 50 μgm^{-3} (the red filled bars when the corresponding capture was 85% or greater and outlined bars when the corresponding capture is less than 85%) and the 90.4th Percentile of 24-hour daily means (filled blue triangles when the corresponding capture is less than 85% and outlined triangles when the corresponding capture was 85% or greater), with a reference line corresponding to the 24-hour daily mean AQO for PM_{10} of no more than 35 times in a

[10] produced by Local Polynomial Regression Fitting with α of 0.5

year (dashed red line) and a reference line corresponding to the 90.4th percentile of the 24-hour daily mean AQO for PM_{10} (dashed blue line).

Figure 4-16: Time Plot of the annual mean PM_{10} and Bar Plot of the number of occasions the daily mean was greater than 50 µgm-3 from 2014 to 2024 at Site No. 130 (Upper Garth Avenue).



It is apparent from the above that Site No. 130 (Upper Garth Avenue) continues to experience an undulating annual mean (red line in Plot A), subject to a degree of oscillation (range of 4.9 μgm^{-3}, 35% relative to the mean, over the most recent five-year period) around a relatively consistent declining long-term average (shaded grey area in Plot A). Historically, it is also apparent that the 24-hour daily mean spreads (the red whiskers in Plot A) can be subject to some year-to-year change, with 2024 showing a greater variation than the preceding four years.

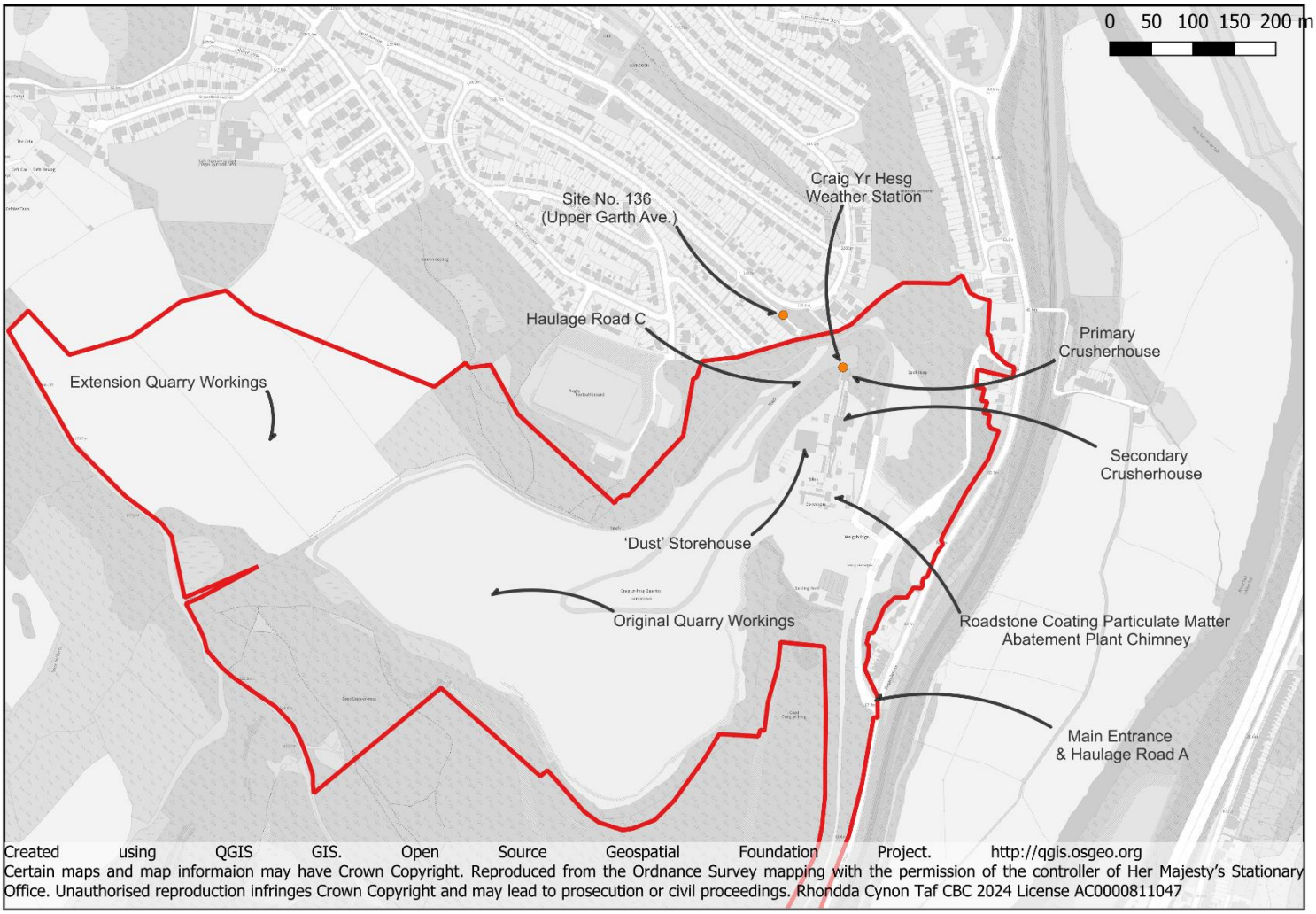
The number of occasions the 24-hour daily mean AQO for PM_{10} is greater than 50 μgm^{-3} (Plot B) has also increased in comparison to the recent past, which again observes a degree of variability. However, this may be overly emphasised by lower data capture associated with the preceding couple of years, as the 90.4th percentile (blue triangles) is possibly more consistent from one year to the next.

The PM_{10} results from 2024, in alignment with the past, continues to indicate that Site No. 130 (Upper Garth Avenue) is likely to be compliant to both the annual mean and the 24-hour daily mean AQOs for PM_{10}.

It is expected that local influences, including potential sources of PM_{10} from various activities at Craig Yr Hesg Quarry, may have particular relevance to the levels of PM_{10} experienced at

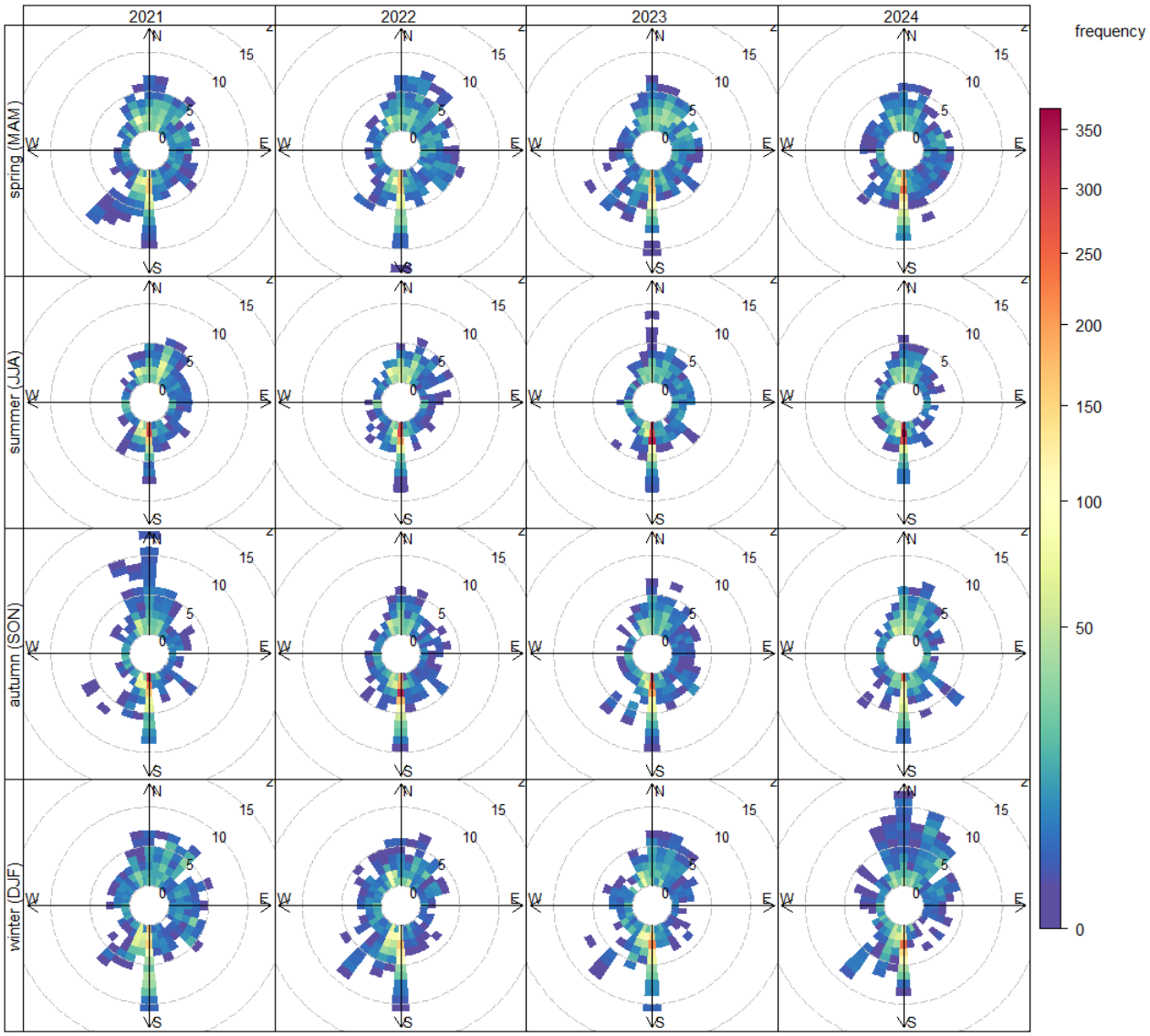
Site No. 130 (Upper Garth Avenue). For reference, Figure 4-17 below provides an annotated map of the local environment and points of potential interest.

Figure 4-17: Map of Glyncoch annotated with points of potential interest



To assist with the consideration of the PM_{10} monitoring data, it has been possible to obtain local weather monitoring data from the Craig Yr Hesg Quarry Weather Station, located at the primary crusher production building at Craig Yr Hesg Quarry, Glyncoch and considered likely to be reflective of local weather conditions. Figure 4-18 provides a series of Polar Frequency Plots, utilising 10-minute averaged data for the last four years and split by season, at the Craig Yr Hesg Quarry Weather Station. It can be observed that the location is consistently predominated by relatively slow to moderate strength winds from the south. There is also a smaller yet discernible counter influence of slow to occasionally moderate strength winds from the north. In addition, both the south-west and north-east show some influence but it is noticeable that winds from the west appear to lack general significance at this location. As expected, wind strength appears greater in the winter in comparison to the summer.

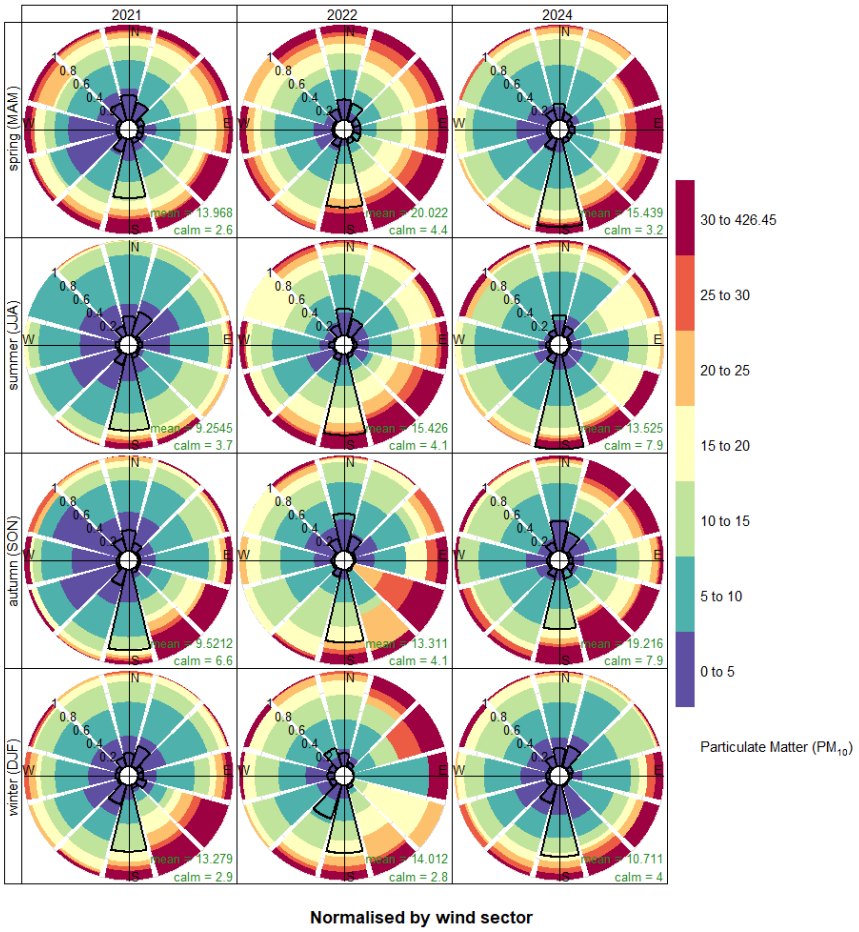
Figure 4-18: Polar Frequency Plots of wind speed and direction for the last four years and split by season, at the Craig Yr Hesg Quarry Weather Station



The observed predominant wind direction is consistent with an understanding of regionally predominant southwest winds adjusting to the locally defining north-south Taf Valley topography and with Glyncoch being on the western side of the valley. The wind distribution appears reasonably stable throughout the seasons across the four year period, albeit a more stable wind pattern is observed in the summer, as expected given regional weather patterns.

To consider the importance of local weather conditions upon PM_{10} levels monitored at Site No. 130 (Upper Garth Avenue). It is possible to consider the relationship between the observed levels of PM_{10} and local wind direction. Figure 4-19 provides normalised pollution rose plots, split by season, for the past three years of monitoring data at Site No. 130 (Upper Garth Avenue), 2023 data has not been illustrated due to the small data set available for that year.

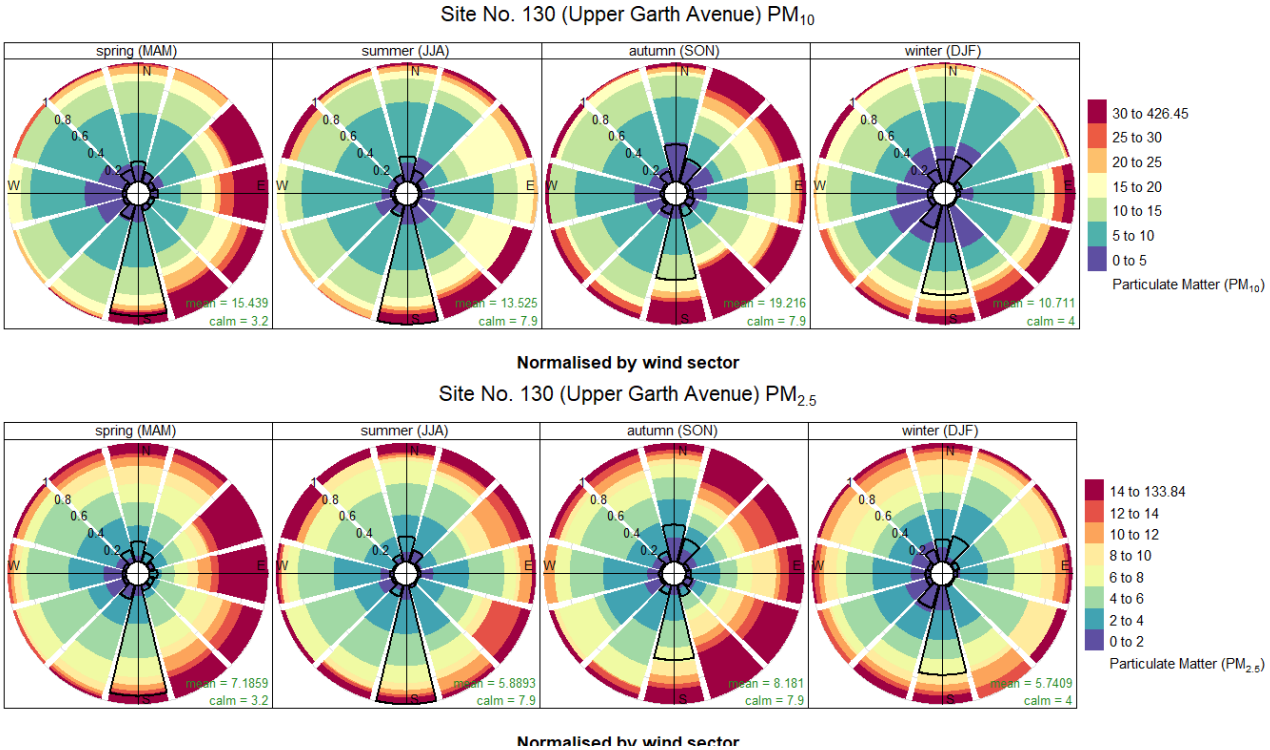
Figure 4-19: Pollution Rose Plot, by season and normalised, of PM_{10} measured at Site No. 130 (Upper Garth Avenue TEOM FDMS) in 2021, 2022 and 2024



The normalised plot helps to illustrate that wind directions from the south through southeast to east show a significant relationship with observed higher levels of PM_{10} (the depth and intensity of red of each segment). This pattern has been moderately consistent for several years and is apparent through all seasons.

Considering the relationship between PM_{10} and $PM_{2.5}$ can further assist understanding the importance of potential sources that may be both shared between these pollutants or more independent of each other. Figure 4-20 provides a comparison, in the same format as used above, of the 2024 results for PM10 and PM2.5.

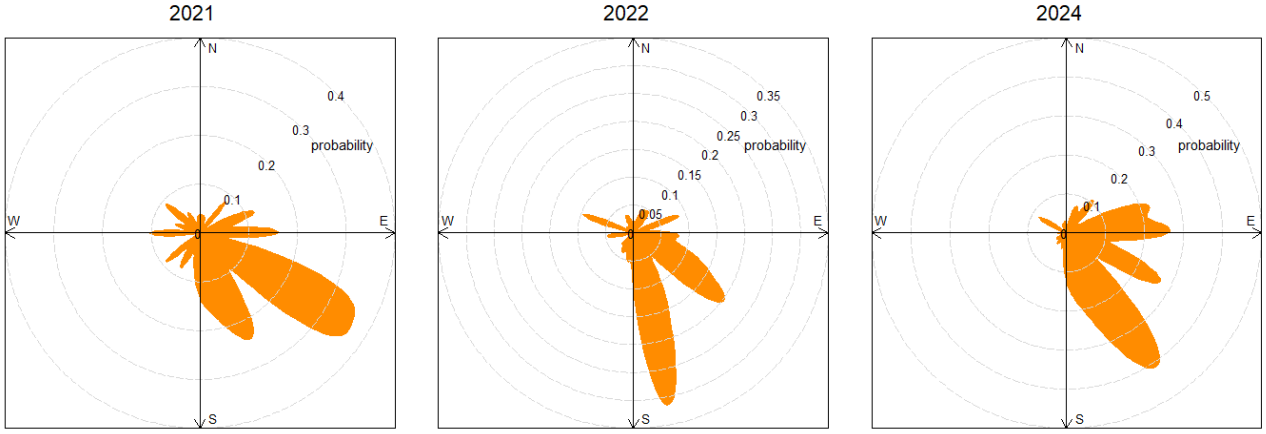
Figure 4-20: Pollution Rose Plot, by season and normalised, of PM_{10} and $PM_{2.5}$ measured at Site No. 130 (Upper Garth Avenue TEOM FDMS) in 2024



The above plots indicate some similarity between PM_{10} and $PM_{2.5}$ with winds from the south to south-east being important to the occurrence of both. It may also be the case that winds from the north to east have a greater influence on the observed levels of $PM_{2.5}$, albeit wind direction appears less influential to $PM_{2.5}$, than it is to PM_{10} at Site No. 130 (Upper Garth Avenue). This could indicate that although local sources of $PM_{2.5}$ are likely to be of relevance and be shared with the emission of PM_{10}, other sources more broadly distributed within the Taf Valley and the region may also have an impact on the observed levels of $PM_{2.5}$.

It can be useful to understand the association with wind direction when PM_{10} levels are at their highest, as this will likely relate to occasions which may challenge compliance to the 24-hour mean AQO for PM_{10}. To emphasise the association between wind direction and occasions when PM_{10} levels are observed at their highest at Glyncoch, Figure 4-21 provides a 90.4th percentile conditional probability function rose plot of PM_{10} levels measured in 2021, 2022 and 2024 at Site No. 130 (Upper Garth Avenue), 2023 data has not been illustrated due to the small data set available for that year.

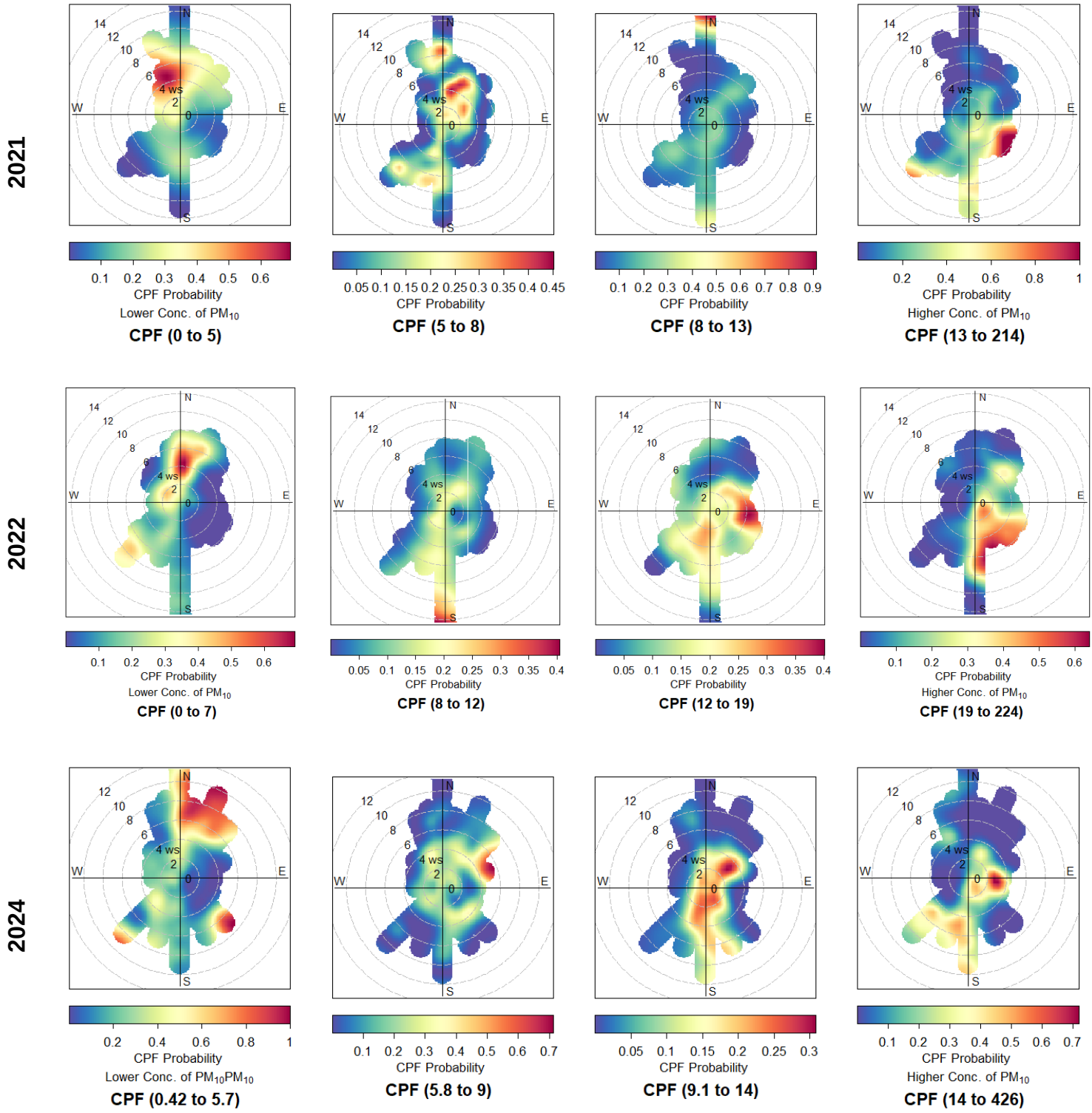
Figure 4-21: 90.4th Percentile Rose Plot of PM_{10} measured at Site No. 130 (Upper Garth Avenue TEOM FDMS) in 2021, 2022 and 2024



The 90.4th percentile rose Plot confirms that, in 2024, the very highest levels of PM_{10} were most likely to be associated with wind from the southeast. In this respect the 2024 data appears very similar to that experienced in the recent past, indicating that the sources of PM_{10} from this direction maybe both persistent, consistent and of importance when considering circumstances that may support continued compliance with the 24-hour mean AQO for PM_{10}.

Although wind direction is likely to be the primary factor in influencing local levels of PM_{10} at Site No. 130 (Upper Garth Avenue), wind speed in combination with wind direction may also be important in understanding various influences. To help further illustrate the possible connections between the observed levels of PM_{10} and local wind direction and measured ten-minute average wind speed, Figure 4-22 provides conditional probability function polar plots of PM_{10} levels measured in 2021, 2022 and 20224 at Site No. 130 (Upper Garth Avenue).

Figure 4-22: CPF Polar Plot of PM_{10} measured at Site No. 130 (Upper Garth Avenue) in 2021, 2022 and 2024.

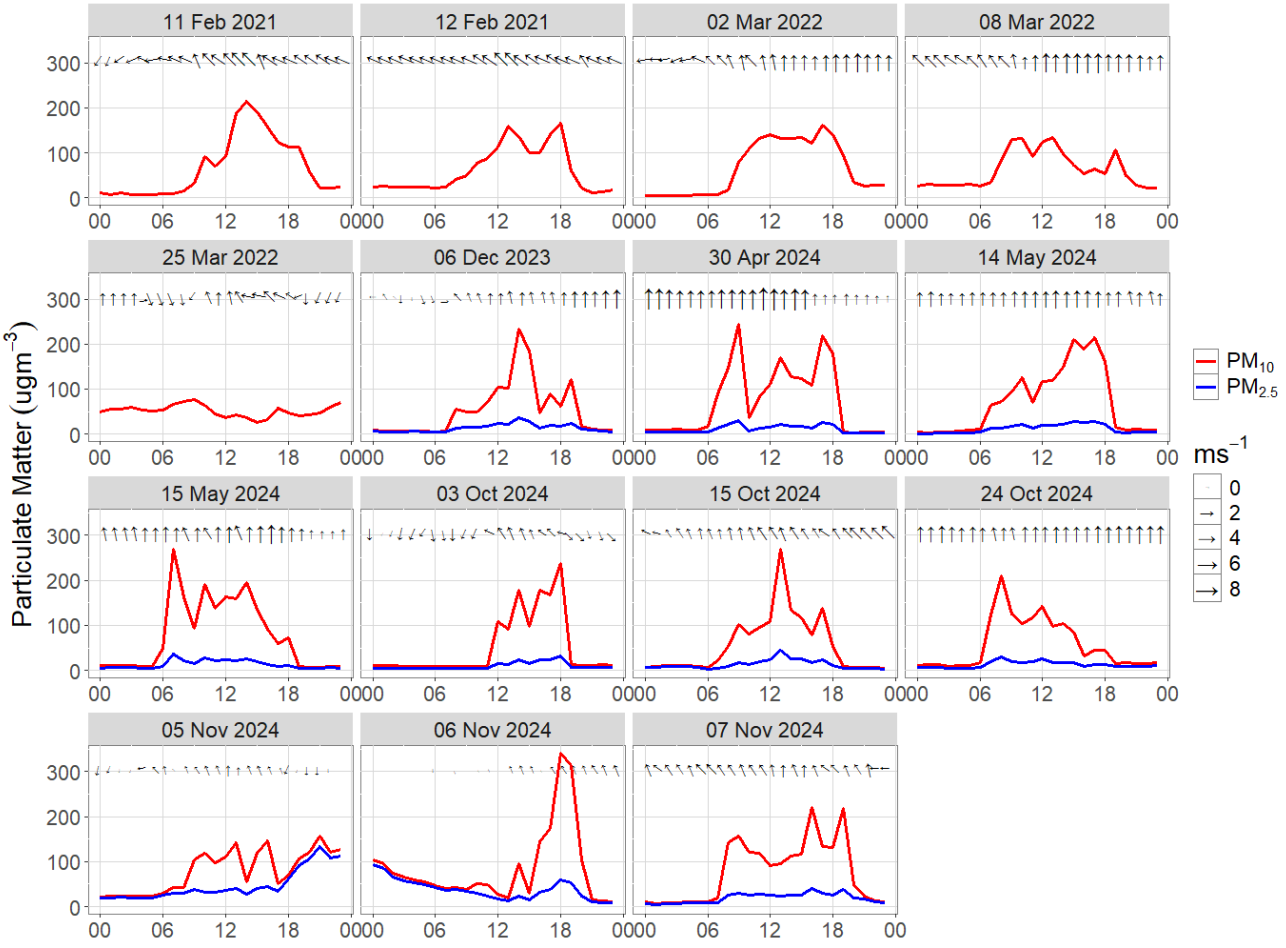


The above CPF polar plots help to demonstrate if specific wind directions and wind speeds are associated with differing observed levels of PM_{10}, for each calendar year displayed. The plots to the left are associated with the lowest observed levels of PM_{10} (< 5-7 μgm^{-3}) whilst the plots to the right are associated with the highest observed levels of PM_{10} (> 13-19 μgm^{-}

^{3}). The above CPF polar plots consistently illustrate that occasions of lower levels of PM_{10} tend to be associated with relatively moderate to strong north winds. In contrast, occasions of moderate to higher levels of PM_{10} are often associated with either moderate strength winds blowing from the south-west to south-east or calmer winds generally from the east.

To help further illustrate the possible connections between the observed hourly levels of PM_{10}, for each day when the 24-hour mean is above 50 μgm^{-3} since 2021, and local wind direction and speed, Figure 4-23 provides time plots of PM_{10} (red line) and where available $PM_{2.5}$ (blue line) measurements for each day since 1st January 2021 which exceeded the 24-hour mean of 50 μgm^{-3} at Site No. 130 (Upper Garth Avenue). In addition, the hourly average wind direction (black arrow direction) and speed (black arrow length) is also indicated.

Figure 4-23: Time Plot of PM_{10} measured at Site No. 130 (Upper Garth Avenue) for each day when the 24-hour mean is above 50 μgm^{-3} since 2021

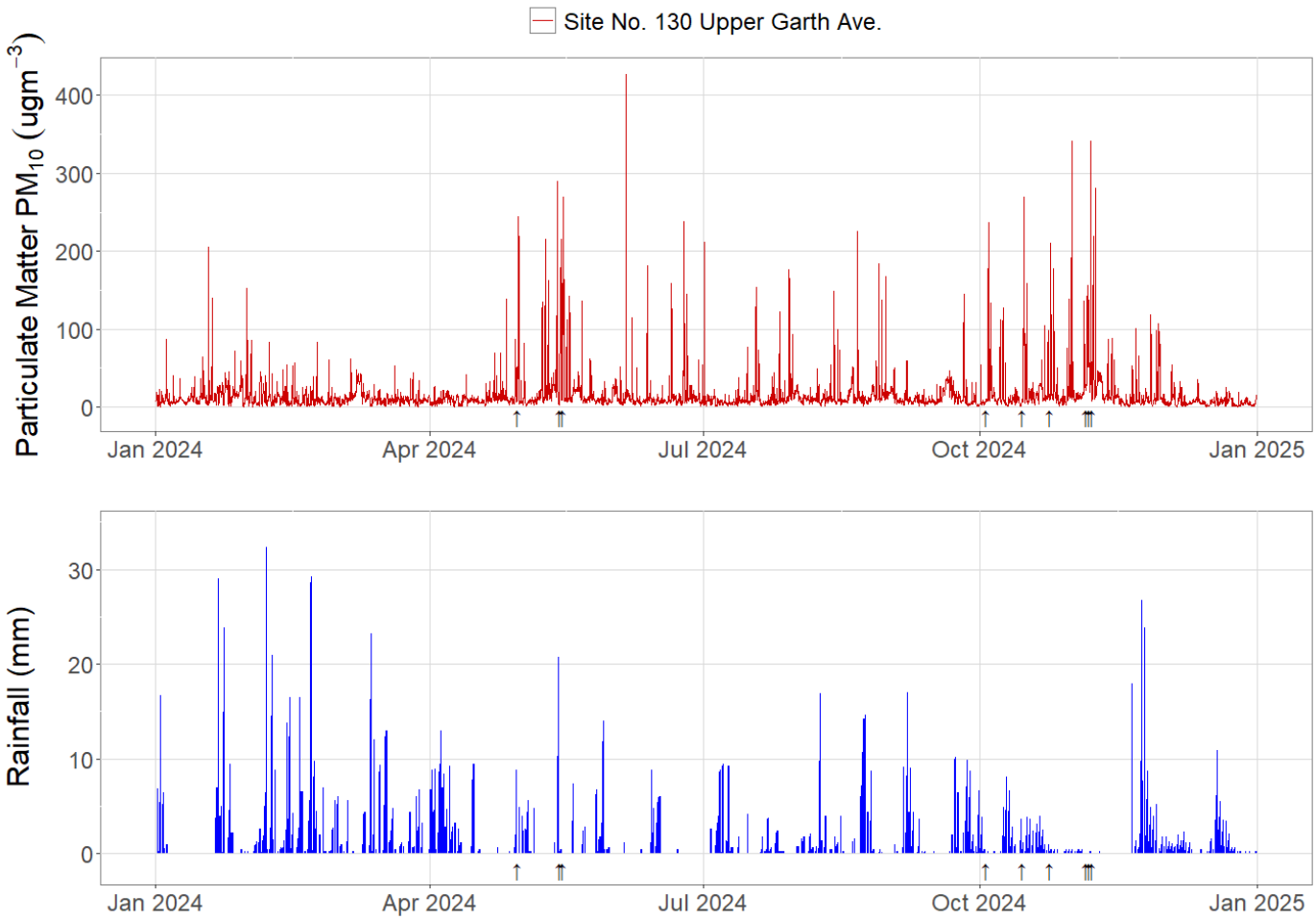


A large majority of the above identified occasions arise in the same reported pattern of elevated levels of PM_{10}, on a weekday between 7 am to 6 pm, and with a broadly south-east to south wind direction and moderate wind speed. Although the levels of $PM_{2.5}$ correspondingly increase, it is apparent that a significant composition of PM_{10}, during day-time peak concentrations, is likely comprised from particle sizes greater than $PM_{2.5}$, as opposed lower concentration at night-time when the PM_{10} and $PM_{2.5}$ concentrations are much closer in alignment.

There are a few occasions which don't align with the majority, notably 25th March 2022 which appears more consistent with a persistent regional pollution event and the evening of the 5th November 2024, with the close alignment of PM_{10} and $PM_{2.5}$ at elevated levels into the late evening, likely as a result of Bonfire Night activity. The Bonfire Night occasion highlights the different emissions profiles that can arise depending upon which types of sources are dominating. With a close alignment of PM_{10} and $PM_{2.5.}$ during elevated occasions such as the 5th November possibly indicative of combustion related or physio-chemical sources which tend to produce smaller particulate matter fractions. As opposed to occasions of clear dissonance, between PM_{10} and $PM_{2.5}$ concentrations, that may relate to a predominance of mechanical or entrainment sources, that can sometimes relate to sources of larger particulate fractions like PM_5 and PM_{10} and above. On the whole, these occasions highlight the differences with the relationship between PM_{10} and $PM_{2.5}$ and supports the belief of the importance of local sources of particulate matter that are not necessarily combustion related.

Aside from wind speed and direction, precipitation (rainfall) could be reasonably believed to have influence on the emission of particulate matter from fugitive sources and in the regional transportation of particulate matter emissions. Figure 4-24 provide a time plot of hourly PM_{10} levels (red line) in 2024 at Site No. 130 (Upper Garth Avenue) and a bar plot of hourly rainfall (blue bars), both plots have been annotated with under-arrows (black arrows) identifying the days in 2024 which exceeded the 24-hour mean of 50 μgm^{-3}.

Figure 4-24: Time Plot of PM_{10} measured at Site No. 130 (Upper Garth Avenue) with Bar Plot of precipitation [rainfall] in 2024



Analysis does not indicate any significant correlation between days experiencing rainfall and locally experienced levels of PM_{10} at Site No. 130 (Upper Glyncoch Avenue) (either for rainfall generally (r = -0.08) or with rainfall associated with a southerly wind direction (r = -0.13)). However, it can be observed that sustained periods of less frequent rainfall tend to experience occasions when the 24-hour mean of 50 μgm^{-3} was exceeded. In general, rainfall can be known to cause an effect called 'wet scavenging', which is where the rain droplets either absorb or 'knock out' air borne particulates, reducing the concentration of particulate matter. However, wet scavenging tends to have a greater influence if the rainfall is both heavy and persistent and where PM_{10} is travelling at distance from its source, which increases the time for the wet scavenging to materially reduce the PM_{10} concentration. As can be seen at Site No. 130 (Upper Glyncoch Avenue) more local sources of PM_{10} are likely to be more influenced by sustained periods of rainfall, possibly because these sources may be conditioned, so reducing some of their influence, in combination with wet scavenging reducing regional levels of PM_{10}.

The combination of the above analysis reinforces the longstanding awareness of the likely significant influences that a range of sources of PM_{10} have at Site No. 130 (Upper Garth Avenue) being very local, intermediate and at distance from the monitoring location. In addition, environmental influences may affect the transport of PM_{10} to and its dispersion

within the locality, influencing the locally experienced levels of PM_{10}. It is known that sources of PM_{10} can be extremely variable, however, it is currently believed that the patterns identified at Site No. 130 (Upper Garth Avenue) would likely be associated, in the main, to anthropogenic sources. The above analysis, supported by understanding reported in previous reviews, would suggest that the sources of PM_{10} experienced at Garth Avenue that are most relevant during periods of elevated levels of PM_{10} are likely to be specific to the immediate locality, repetitive and predominated by an activity largely undertaken during 'working hours'. Furthermore, the influence of the activity's emissions is variable, possibly in part due to the importance of cyclical climatic conditions and specific prevailing weather affecting its emission and subsequent transportation. This analysis continues to support the conclusion that various operations at Craig Yr Hesg Quarry remain a significant source of locally observed PM_{10}.

Although it remains difficult to predict a future trend at Glyncoch it appears that, at present the location remains compliant to the annual mean and the 24-hour daily mean AQOs for PM_{10}. Furthermore, the available evidence may suggest that the levels of PM_{10} have improved gradually since 2014, potentially corresponding to known improvements to the control of particulate matter emissions from Craig Yr Hesg Quarry as well as more broadly. Nonetheless, sustained climatic events, for instance a protracted and stable dry period, may threaten continued improvement. Therefore, continued monitoring may be necessary to ensure any future changes that could impact the local prevalence of PM_{10}, can be fully considered.

4.3.6 Particulate Matter [$PM_{2.5}$]

In looking to support understanding and further inform the local community, the Local Authority has implemented the monitoring of $PM_{2.5}$ at Site No. 130 (Upper Garth Avenue) in Glyncoch.

With respect to the assignment of responsibility, the Local Authority does not assess compliance to a limit value for $PM_{2.5}$. However, for conciseness the consideration of $PM_{2.5}$, as it relates to the overall understanding of PM_{10}, has been included within Section 4.3.5 above.

4.4 Summary of Compliance with AQOs as of 2024

Rhondda Cynon Taf County Borough Council has examined the results from monitoring within its area. It has determined, on the basis of consistent monitoring results and understanding over a number of years, that each extant AQMA within its area continues to exceed or may be at risk of exceeding the annual mean AQO for NO_2. Therefore, the following AQMAs shall remain as is:

- Cymmer Air Quality Management Area
- Ferndale Air Quality Management Area
- Tylorstown Air Quality Management Area
- Mountain Ash Town Centre Air Quality Management Area

- Nightingales Bush Air Quality Management Area
- Pontypridd Town Centre Air Quality Management Area

The level of NO_2 outside of the current AQMAs and levels of PM_{10} throughout Rhondda Cynon Taf are likely to be below their relevant AQOs, therefore **no additional action is required at this time**.

5. New Local Developments

The Local Authority is the Highway Authority for all of its area other than for those roads which are the responsibility of Welsh Government, as managed by its South Wales Trunk Road Agent.

The Local Authority is the Regulator of certain provisions of the Environmental Permitting (England and Wales) Regulations 2016 and the Clean Air Act 1993.

The Local Authority is the Local Planning Authority for all of its area other than that which forms part of the Bannau Brycheiniog National Park Authority, where that Authority is the Local Planning Authority.

5.1 Road Traffic Sources (and Other Transport)

Transport can be a source of air pollution, for instance road vehicles can give rise to Particulate Matter and, in the case of internal combustion engines, Nitrogen Dioxide as well as other air pollutants. Consequently, transport management is a viable solution in improving local air quality, for instance mass transit increasing the efficiency of travel or the adoption of new technologies providing less polluting vehicles.

5.1.1 Trunk Road Traffic Sources

Certain parts of Rhondda Cynon Taf's strategic road network (M4 and A470) is separately managed by the South Wales Trunk Road Agent [SWTRA] on behalf of Welsh Government, so as to facilitate national interconnectivity.

In response to an understanding that parts of the A470 may be non-compliant to the respective Limit Value for NO_2, the Welsh Government determined that parts of the A470 should be subject to a reduction in the speed limit from 70mph to 50mph. This action being assessed as the most cost-effective option to improve local air quality [20].

The intervention was primarily pursued by Welsh Government with the stated aim of working towards achieving compliance to Limit Values for NO_2 within the South Wales Non-Agglomeration Zone. However, it is acknowledged that this action, which has affected communities between the Upper Boat & Pontypridd Junctions, has likely had significant consequences, in reducing the impact of air pollution from the A470, to the nearby Nightingales Bush and Pontypridd Town Centre AQMAs, as well as more widely in the region. Further details of the area affected and actions taken are available on the Welsh Government website.

Regular review of this action has been undertaken on behalf of Welsh Government, with the latest findings [21] suggesting "the success of the 50 mph speed limits in achieving compliance" to the relevant Limit Values for NO_2 within the A470 Pontypridd to Upper Boat intervention area. Although it is expected that dedicated air quality monitoring will continue to confirm likely continued compliance, it has been stated that "the precautionary retained measures are also unlikely to be required and can be discounted" and an eventual exit strategy considered.

Given the beneficial impact of this measure on local air quality the Local Authority will advocate for its retention until such time as compliance to the annual mean AQO for NO_2 has been sustainably achieved within the Nightingales Bush AQMA.

5.1.2 Non-Trunk Road Traffic Sources

The A4119 Coed Ely dualling scheme was substantively completed by the 3rd March 2025, albeit the road has been in operation throughout the period of improvement works. The newly improved road has resulted in the approximate dualling of a 1.2 km part of the A4119 between Ynysmaerdy and Coed Ely, observing a 50 mph speed limit.

Given the relatively rural nature of the road in this area, the scheme has not resulted in any new relevant population that required assessment either within the improvement works area or associated with potential traffic growth along the local traffic network.

It is believed that there have been no other newly built local roads or related transport developments, in 2024, that would likely significantly elevate levels of air pollution within a relevant population.

With regard to non-trunk roads, Rhondda Cynon Taf CBC as the local Highways Authority continues to make significant investment in local transport provision and has published updates (on the RCTCBC website) on a number of major highways projects that are currently being advanced and which may have an effect on local air quality. Table 5-1 provides some brief details on these schemes and a provisional qualitative assessment of their impact.

Table 5-1: Proposed and advanced road schemes which have the potential to impact local air quality.

Project	Description	Status	Affected AQMA	Qualitative Impact
Llanharan Sustainable Transport Corridor	New through road network associated with multi-phase housing development, which is planned to relieve traffic from the existing A473 as it runs through Llanharan centre	The scheme has been redesigned to incorporate public transport and additional active travel features. Initial £5.05M funding provided to support the scheme as it progresses through the preliminary design and planning stages	-	Potential major improvement within parts of Llanharan
Core-Valleylines Railway Park & Ride	Providing additional and improved park & ride capacity at strategic railways stations to increase public transport use. Several Park & ride schemes have already been advanced.	£734M WG allocation for continuous improvement programme of works having regard to Metro delivery	Mt Ash Nightingales Bush Pontypridd	Potential minor improvement within AQMAs due to reduction in longer-distance road journeys.
Gelli/Treorchy Relief Rd	New road network to relieve traffic from Stagg Jct, Treorchy and associated road netwrok within the Rhondda Fawr	£0.38M allocated to advance further study and consideration	-	Uncertain impact dependent upon desired scheme
North West Cardiff Corridor	Improvements to bus infrastructure, junction capacity and traffic management to reduce existing congestion points for public bus transport between RCT and Cardiff	£0.2M granted to Cardiff CC to advance improvement works	-	Effects unclear but potential moderate improvement within area from Talbot Green to Mwyndy
A465 Cynon Valley Gateway	Extension of Aberdare bypass to the dualled A465 Heads of the Valley road and potential other local road network modifications combined with possible mass transit improvements	The Local Authority has been working closely with Welsh Government and Transport for Wales to review options of any scheme which is currently being	-	Potential moderate improvement within AQMA and surrounding suburban area.

Project	Description	Status	Affected AQMA	Qualitative Impact
		refined with Welsh Government. £1.14M (+ £0.513M WG Grant if provided) funding provided to support the scheme as it progresses through initial consideration.		
Park and Ride Programme	Create additional parking capacity at rail stations across RCT	£0.5M allocated to create parking capacity at railway stations alongside the Metro	All	Potential minor improvement within surrounding suburban area.
Making Better Use Programme	Identify low cost, high value improvements for congested sections of the local highway network.	£0.878M allocated to progress ongoing works	All	Potential improvement within areas targeted due to improved traffic management and reducing road traffic congestion causing factors.

5.1.3 Other Transport Sources

The Local Authority continues to work closely with the Welsh Government Transport Company and other partner organisations in the development and delivery of the South Wales Metro. It is likely that the phased operation of the South Wales Metro will have a significant improving impact upon air quality throughout a large area of Rhondda Cynon Taf and specifically those communities in the Taf Valley that are associated with the A470.

5.2 Industrial / Fugitive or Uncontrolled Sources / Commercial Sources

Although the degree of industrialisation of Rhondda Cynon Taf has significantly reduced compared to historic levels, there are still a number of industrial premises present which could impact upon local air quality.

5.2.1 Environmental Permitting (England and Wales) Regulations 2016

Under Regulation 13(1) of the Environmental Permitting (England and Wales) Regulations 2016, the Local Authority can grant Environmental Permits to operate various permitted activities, further details about this regime are available on the Local Authority's website [22]. Further details of the Regulated Facilities within Rhondda Cynon Taf are available on the Environmental Permitting Public Register held by the Local Authority, the index of which is also available on its webpage [22].Table 5-2 identifies that there were no new or substantially changed stationary Regulated Facilities, within Rhondda Cynon Taf, in 2024.

Table 5-2: New or Substantially Changed Environmental Permits granted by the Local Authority in 2023

Permit Ref.	Operator	Activity	Relevant Pollutants	Area	Affecting LAQM
Nil	Nil	Nil	Nil	Nil	Nil

5.2.2 Clean Air Act 1993

The Clean Air Act 1993 requires that the occupiers of premises utilising certain 'furnaces', to notify the Local Authority of their installation or modification, further details about this regime is available on the Local Authority's website [23]. Table 5-3 identifies no new or significantly changed relevant furnaces and their chimneys, within Rhondda Cynon Taf, which have been granted consent under the Clean Air Act in 2024.

Table 5-3: New or modified relevant furnaces notified to the Local Authority in 2023.

Ref.	Operator	Rating	Fuel	Chimney Height	Relevant Pollutants	Area	Affecting LAQM
Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil

5.3 Planning Applications

In accordance with Planning Policy Wales [24] and the Local Development Plan [25], the Local Authority considers air quality a material planning consideration. The Local Authority will, when necessary, take account of the implications of any development upon local air quality during the planning consent decision making process. The Local Authority will attempt to ensure that, if necessary, future developments will negate or mitigate any impacts on local

air quality whilst continuing to treat each application for planning consent on its individual merits.

The Local Authority has produced informal guidance criteria [26] used by it to identify, in a consistent and proportional way, applications for proposed developments which could either have the potential to adversely impact upon local air quality or introduce a relevant population to an existing area of potentially poor local air quality. Should a development meet the criteria and it is proportionate to do so, the Local Authority will seek to require an Air Quality Assessment [AQA]. An AQA will look to objectively examine the air quality implications of the proposed development and provide sufficient information to allow the Local Planning Authority to evaluate the material planning consideration.

Table 5-4 details the planning applications in 2024 initially considered as having the potential to impact local air quality management and, where appropriate, an Air Quality Assessment was desired or was otherwise assessed for its air quality impact.

Table 5-4: Planning Applications under consideration or approved in 2024 where an AQA was desired

Application Number	Location	Description	Affecting LAQM or AQMA
24/5083/PRE	Ely Meadow, Talbot Green	Primary healthcare related services and UHB facilities	-

Application 24/5083/PRE was a pre-application submission for future development, accordingly comments have been provided of the possible need to asses local air quality impacts should a full application be submitted.

No other relevant proposed developments have been identified which would be expected to materially affect or be affected by local air quality management considerations.

5.4 Other Sources

The Local Authority appreciates that certain pollution incidents as well as wide scale bonfire activity, large firework displays, wildfires and domestic solid-fuel burning can have the potential to impact upon local air quality.

Rhondda Cynon Taff has in the past experienced a large number of intentional wildfires; over the last 20 years there have been more than 76,000 reported wildfires, of which 96% were intentionally set, in the South Wales Valleys area with 297 wildfires reported within Rhondda Cynon Taf in 2020/21 alone" [27] and another 500 incidents reported in the first six months of 2025. The incidence of intentional wildfires has varied, being dependent upon dry weather aligning with school term breaks, which has resulted in occasions of wide-scale wildfires affecting large areas of the Rhondda and Cynon valleys. Although these wildfires are usually associated with rural open mountainside locations they can still, on occasion, arise in close proximity to some residential areas. These wildfires normally involve the burning of large areas of bracken and other vegetation, in an uncontrolled manner, with significant amounts of black smoke being produced, occasionally for extended periods of time.

Although these wildfires are unlikely, in themselves, to pose a risk of compliance to a relevant AQO, the Local Authority considers that the prevalence of intentional wildfires can, dependent

upon circumstances, have a significant short-term effect on local air quality by potentially elevating local levels of particulate matter and black carbon. Anecdotal reports suggest these incidents could have a direct effect on public health as well as causing anxiety and concern within the communities affected.

Although, the Local Authority has not got the resources to directly quantify the air quality impact of wildfires within or in proximity to its area, in recognising the potential impact of such wildfires the Local Authority will continue to work with its partners to deter their occurrence. This work involves playing an important role in the delivery of the Healthy Hillsides Initiative, which includes a goal of “providing opportunities and education in land management so that together, [Rhondda Cynon Taf] can become a wildfire-wise county borough”. In this regard the Health Hillsides partnership is engaging with the community of Llantrisant to pilot ways to help reduce the occurrence and risk of wildfires.

It is hoped that targeted holistic interventions. involving a range of stakeholders and the communities effected, will result in a reduction in the occurrence of intentional wildfires, whilst acknowledging that climatic change may otherwise increase their prevalence and extent. In addition, the Local Authority will also continue to monitor emerging understanding upon the public health impact of wildfires and, where necessary, will react accordingly.

The Local Authority recognises the impact of bonfires, firework displays and domestic solid-fuel burning within its area could have on local air quality. As such it continues to enforce a range of statutory provisions, including building regulations and the statutory nuisance regime, to deter or otherwise minimise these activities where they are shown to cause a significant negative impact.

It is also recognised in certain circumstances, there can be a potential association between the domestic use of solid fuels and fuel poverty. As a result, it is acknowledged that the potential for future economic challenges may result in an increased use of solid fuels in the near term. The Local Authority is working to tackle this in a number of ways including raising awareness, signposting eligible households to available grants, encouraging the installation of energy efficiency measures in domestic settings while also encouraging more energy efficient behaviour, maximising the income of low-income households and providing support for vulnerable people.

The Local Authority does not maintain sufficient information to evaluate the likely prevalence or combined impact of the above activities, however, it is believed that at present it is unlikely that they would significantly threaten compliance to a relevant AQO within Rhondda Cynon Taf.

5.5 Summary of Local Developments

Rhondda Cynon Taf County Borough Council confirms that there are **no new or newly identified local transport or other developments which may have a single significant impact on air quality** within the Local Authority area.

Rhondda Cynon Taff County Borough Council confirms that all the following have been considered:

- Road traffic sources
- Other transport sources
- Industrial sources
- Commercial and domestic sources
- New developments with fugitive or uncontrolled sources.

6. Policies and Strategies Affecting Airborne Pollution

A diverse range of activities and interests can have a material effect on local air quality management, including a number of policy areas where the Local Authority may have adopted formal strategies, polices or positions or otherwise has an interest.

6.1 Clean Air Plan for Wales

The Welsh Government's Clean Air Plan for Wales [28] provides an overarching plan, highlighting a number of possible future changes to not only Local Air Quality Management but also more widely as to how air pollution can be locally and nationally improved. This has culminated into the Environment (Air Quality and Soundscapes)(Wales) Act 2024 [2] which includes a range of new or enhanced measures to help realise the policy objectives as outlined within the Clean Air Plan for Wales.

The Local Authority awaits the adoption of guidance for this new legislation, which could result in operational implications regarding how it resources and performs its Local Air Quality Management duties. As further clarity as to any statutory implications become apparent, the Local Authority may undertake a review of how it delivers its local air quality management duties into the future. Any likely significant resource constraints, competing priorities and the potential desire to minimise duplication of work with any future centralised monitoring or management of air quality, may need to be taken in to account.

6.2 Local / Regional Air Quality Strategy

At present the Local Authority has not determined to produce a local air quality strategy and is not a member of any local government produced regional air quality strategy. However, it is expected that the extant AQAPs adopted by the Local Authority, will have a co-ordinating role with regards to the delivery of air quality improvement.

6.3 Development Control Policies

The Local Authority is the Local Planning Authority for that part of its area not within the Bannau Brycheiniog National Park. In accordance with guidance the Local Authority has adopted a Local Development Plan [25] for the period 2006-2021. The Local Planning Authority has also commenced the process for formulating a future Local Development Plan for the period after 2021. It is currently expected that a revised Local Development Plan 2022-2037 will be adopted by May 2026. During the interim period, the existing Local Development Plan 2006-2021 will continue to be the mechanism for determining planning applications until it is formally replaced.

The Local Development Plan references several policies which are designed to protect the environment and human health. A key policy is "Policy AW10 – Environmental Protection and Public Health", reproduced in Table 6-1, which provides a clear indication on how proposed developments which adversely affect air quality will be catered for.

Table 6-1: "Policy AW 10 Environmental Protection and Public Health".

Development proposals will not be permitted where they would cause or result in an unacceptable risk of harm to health and/or local amenity because of: -

1. Air Pollution
2. Noise Pollution
3. Light Pollution
4. Contamination
5. Landfill Gas
6. Land Instability
7. Water Pollution
8. Flooding
9. Or any other identified risk to public health

Unless it can be demonstrated that measures can be taken to overcome any significant adverse risk to public health and / or impact upon local amenity.

The Local Planning Authority has not yet proposed to adopt any Special Planning Guidance with regard to air quality but will continue to strive to harmonise treatment of planning applications and ensure transparency where air quality is a material consideration.

6.4 Local & Regional Transport Plans and Strategies

As a result of a transfer of powers[11] the Local Authority is no longer required to maintain a Local Transport Plan, instead the Local Authority is a member of the Cardiff Capital Region Corporate Joint Committee which is seeking to adopt a South East Wales Regional Transport Plan [29], that would include the entirety of Rhondda Cynon Taf. A number of transport related Local Authority polices and strategies as well as other transport authority's goals and projects may also influence local air quality within Rhondda Cynon Taf.

6.4.1 Regional Transport Plan

It is expected the future South East Wales Regional Transport Plan [RTP] will cover the period 2025 to 2030 and will include a number of objectives, several of which may be relevant to local air quality management. Table 6-3 provides an overview of schemes that maybe advocated by the RTP that are specific to Rhondda Cynon Taf, with further detailed provided at the Cardiff Capital Region Regional Transport Plan website (external link).

Table 6-2: Overview of other RCT specific schemes within draft South East Wales Regional Transport Plan

Theme	Description	Relevant AQMA or area of interest
Active Travel	To develop and deliver active travel infrastructure to support the proposed development of the Llanharan Sustainable Transport Corridor (STC)	Llanharan
Bus	To further develop and deliver Pontypridd Bus Station enhancements to enable additional regional and local services	Pontypridd Taf Vale Region

[11] Pursuant to the Local Government and Elections (Wales) Act 2021

Theme	Description	Relevant AQMA or area of interest
	A4119 improvements to improve bus connectivity between RCT, Cardiff and the M4	Taf Vale Region
Interchange	To develop and deliver increased capacity of park and ride sites at Porth and Llwynypia railway stations	Rhondda Region
	To develop and deliver increased capacity of park and ride sites at Pontyclun and Llanharan railway stations	Taf Vale Region
Road	To develop and deliver improvements that enable better connectivity between Upper Cynon Valley, the Heads of the Valleys region and further beyond	Cynon Region

It is recognised that certain transport related policy interventions can also have an important role in Local Air Quality Management. Table 6-3 provides an overview of other key policy and project related developments and potential implications to local air quality management.

Table 6-3: Overview of other key policy related developments

Policy	Description
Hackney Carriage (Taxi) & Private Hire Vehicle Fleet	The Local Authority currently stipulates vehicle technical standards, including proscriptions on the maximum age of a vehicle, for licensed vehicles. In doing so the Local Authority has regard to the Cardiff Capital Region CJC ULEV Taxi Strategy. This strategy provides the framework required to achieve a zero-tailpipe emissions fleet by 2028 having regard to the standardisation of vehicle licensing conditions alongside a significant regional package of incentive measures to support the early phased introduction of plug-in grant eligible ultra low emission vehicles.
Local Authority Low or Zero Emission Vehicle Fleet	Local Authority early adoption of Zero or Low Emission Vehicles, where practical, as ongoing replacement of existing petrol or diesel powered vehicles. Historically, the Council's fleet is predominantly diesel based. However, the Council have been trialling Hybrid and EV vehicle options, as well as alternative fuel options, with the intention of moving towards the use of more sustainable forms of fuel for many of its vehicles by 2025 and for certain HDVs by 2030 where practical. The Council are in the process of evolving its fleet to transition to a low emission vehicle fleet as well as adopting practices, such as standardised refuse collection, that enables the maximisation of vehicles. In time this may bring forward vehicle emissions improvements, especially with respect to NOx emissions, emitted by the Local Authority.

Policy	Description
Fare-Charging Low or Zero Emission Bus Fleet	Proposed requirement for Operators' early adoption of Zero or Low Emission Vehicles, where practical, as ongoing replacement of existing petrol or diesel powered vehicles. In time this may bring forward vehicle emissions improvements, especially with respect to NOx emissions, produced by Operators. Depending upon support mechanisms this could also have the potential to impact, in the short term, on the viability of some currently marginal bus routes.
School Bus Transport	Requirement for Operators to ensure full accessibility of vehicles providing the service. This may result in the early phase out of older, potentially more polluting, vehicles which may also not be compatible with modern access standards.
General Urban Road 20mph Speed Limit	Substantial parts of the urban road network has now been reclassified from 30mph to 20mph vehicle speed limit. Although challenging to predict, this may not universally have a significant[12] direct impact on NO_x emissions [30] [31], albeit each location will experience its own specific circumstances. However, careful consideration [32] of any engineered street speed reduction measures, especially along streets that may otherwise be vulnerable to elevated levels of NO_2, may be necessary to avoid potential adverse side-effects.
Prohibition on Informal Pavement Parking	Proposed requirement to prohibit the informal parking of road vehicles on pavement associated with the Highway. Pavement parking can be particularly prevalent in many communities within Rhondda Cynon Taf due to the legacy of limited off-street parking options and narrow carriageways. Pavement parking can, in certain circumstances, result in localised traffic congestion and an associated increase in NO_x emissions. Its prohibition may enable smoother traffic flow and subsequently less polluting journeys. Contrastingly should parked cars further encroach the carriageway, as a consequence of not being able to use pavement space, then the likelihood of additional traffic congestion may increase.

6.4.2 Transport for Wales Authority

Complimentary to the South East Wales Regional Transport Plan, Transport for Wales are advancing a number of potential local and regional transport improvement projects. Regular updates on the progress made delivering them are available via the Transport for Wales Projects webpage (external website). Some of these projects may have direct relevance to Rhondda Cynon Taf and have been outlined below in

[12] Significance, in relation to NO_x emissions, may depend on the composition of Petrol to Diesel vehicles within the local vehicle fleet.

Table 6-4.

Table 6-4: Transport for Wales Authority Projects impacting Rhondda Cynon Taf.

Transport for Wales Rail Schemes		Relevant AQMA or area of interest
1	WelTAG assessment of the extension of the core valley lines from Aberdare to Hirwaun, making use of existing freight railway line infrastructure to provide an additional mass public transit alternative for the community of Hirwaun	Aberdare
2	Advocated extension of mainline electrification, and the use of electric locomotives, between Cardiff and Swansea	Llanharan
3.	Development of active travel station network plan for Pontypridd Railway Station	Pontypridd

In addition, Transport for Wales has recently introduced 'pay as you go' ticketing utilising a contactless payment system across the South Wales Metro network. This is expected to increase the desirability of sustainable travel on the railway (Metro) network by reducing the complexity of train ticketing whilst looking to provide the 'best value' fare for the journey.

Transport for Wales in partnership with a private public bus provider has also established a new Rhondda Fach bus and rail integrated ticket. It allows for a single ticket, purchasable at the commencement of the journey, that enables travel on a mix of both bus and train from Maerdy and the Rhondda Fach to Taf Vale and Cardiff. This integrated travel approach is expected to increase patronage of public transport within the Rhondda Fach, an area not served by current railway options and the rapid transit it can offer.

The Local Authority will monitor the impact of the above schemes on local air quality and where necessary react accordingly.

6.4.3 Welsh Government Supplemental Plan

Parts of Rhondda Cynon Taf's strategic road network (M4 and A470) are separately managed by the South Wales Trunk Road Agent [SWTRA] on behalf of Welsh Government, so as to facilitate national interconnectivity. Welsh Government has acknowledged that certain parts of this national transport network may require additional intervention, to bring about improvements in air quality as quickly as reasonable. In doing so Welsh Government has adopted a supplemental plan [20] for tackling roadside NO_2.

Currently this supplemental plan specifically addresses targeted action to reduce the levels of NO_2 along a part of the A470 that runs between the Upper Boat and Pontypridd Junctions. A key supplemental plan intervention has been the implementation of enforced speed limit reduction, along relevant parts of the A470. The impact of this supplemental plan intervention is discussed in Section 5.1.

6.4.4 Electric Vehicle Charging Strategies

Both the Welsh Government and the Local Authority have adopted their own strategies in respect of Electric Vehicle (EV) Charging. With the Welsh Governments overarching Electric Vehicle Charging Strategy [33] acknowledging the need for a significant increase in both private and public charging infrastructure incorporating a mix of provision to support all road users as they transition to Low Emission Vehicles. With this aim in mind, the strategy

advocates measures to require certain new homes to have electric vehicle charging capabilities whilst also supporting households without off-street parking provision. In addition, the availability of appropriate charging capacity to hackney carriage and bus operators is recognised as a priority.

The Local Authority has adopted its own complimentary 'Electric Vehicle (EV) Charging Strategy 2021 - 2030' [34]. The number one aim of the strategy is to "develop an Implementation Plan to roll out an electric vehicle charging infrastructure aligned to future demand". The strategy aims to further understand needs, capabilities and likely resourcing of future electric vehicle charging infrastructure across a range of likely users. It also highlights the current lack of public electric vehicle charging infrastructure in Rhondda Cynon Taf and advocates, at least initially, the targeting of 'destination charging' whilst continuing to evaluate best practice with respect to residential charging.

In further advancing the EV agenda, the Local Authority has produced the 'Electric Vehicle (EV) Charging Implementation Plan' [35], under the auspices of the Cardiff Capital Region Transport Authority. The Implementation Plan consider several infrastructure related actions that could help support EV uptake, and in particular has identified the provision of EV charging infrastructure at Local Authority owned locations, particularly public car parks.

6.5 Active Travel Plans and Strategies

The Local Authority maintains a number of maps [36] showing the Active Travel routes within its area. In doing so the Local Authority has designated eleven 'Walking Routes' and nineteen 'Shared Routes' as reportable active travel routes. The Local Authority has also produced a proposed prioritisation of improvement works [37] relevant to maintaining and improving the local active travel network. It is expected that these works will have a generally geographically broad effect in helping to improve local air quality by continuing to facilitate active travel as an alternative or otherwise be complementary to many road vehicle journeys. As part of the active travel remit, the Local Authority has also produced an Active Travel Annual Report [38], which provides details on identified goals and progress made in promoting the active travel agenda.

In line with national policy expectations, it is expected that the Local Authority will continue to build upon and improve local infrastructure for walking and cycling. In addition, the Local Authority will aim to consider the needs of walkers and cyclists during its decision processes and, where appropriate to do so, make better provision for them. It will also look to promote, where practical, walking and cycling as a mode of transport.

It is envisaged that the potential for collaborative working to further this mutually conducive agenda could deliver local air quality improvement in a "win win" scenario.

6.6 Local Authority's Corporate Plan & Well-being Objectives

Having regard to statutory requirements and the overarching themes presented by the Well-being of Future Generations (Wales) Act 2015 the Local Authority has adopted a Corporate Plan, to shape its intent on further improving Rhondda Cynon Taf. The Local Authority, in partnership with various partners and stakeholders, is a member of the Cwm Taf Morgannwg Public Service Board and also shares its well-being objectives.

6.6.1 Corporate Plan

The Rhondda Cynon Taf CBC Corporate Plan [1] provides a framework in which the Local Authority has set out its core objectives. It is expected that all actions taken by the Local Authority will at least have regard to these and should, where it is reasonable to do so, aim to advance them. Table 6-5 provides a description of the Local Authority's overarching themes and associated core objectives.

Table 6-5: The Local Authority's Themes and Core Objectives

People & Communities Supporting and empowering RCT residents and communities to live safe, healthy and fulfilling lives	Children and young people have the best start in life and can learn and grow safely
	Residents can take care of their health & well-being so they can live healthy, independent, and fulfilling lives
	Safeguarding our most vulnerable residents of all ages, providing protection, care and support when they need it most so that they can maximise their potential
	Residents will have access to affordable, good quality and energy efficient homes
Work & Business Helping to strengthen and grow RCT's economy	Supporting people into rewarding career pathways, skilled and secure work
	Supporting businesses to prosper and be sustainable
	Thriving town centres
	A well-connected County Borough
Nature & the Environment A green and clean RCT that improves and protects RCT's environment and nature	Protecting and enhancing the natural environment
	Clean, safe and sustainable RCT
	Using nature assets to benefit people and communities
Culture, Heritage & Welsh Language Recognising and celebrating RCT' past, present and future	A RCT where culture and heritage is vibrant and difference is celebrated in strong communities that enhance well-being
	Celebrating and preserving the historical, cultural, industrial & sporting heritage of Rhondda Cynon Taf

Each Objective contains a number of priorities and aspired to outcomes. Of particular note to Local Air Quality Management is that within the "Nature and Environment" theme, a specific priority is referenced as "improving air quality through traffic management, encouraging the use of low carbon travel options and implementing the Environment (Air Quality and Soundscapes)(Wales) Act 2024" and an associated outcome is described as "improved air quality across the County Borough".

6.6.2 Well-being Objectives

In addition to the Priorities within its Corporate Plan, the Cwm Taff Morgannwg Well-Being Plan [39] has the following Well-being Objectives:

- Healthy Local Neighbourhoods that are inclusive and feel cohesive and people feel safe, supported, and valued.

- Sustainable & Resilient Local Neighbourhoods where we understand and respond to the risk of climate change to our communities.

As part of the delivery of these well-being objectives, National Indicators and Milestones have been produced, including one for air quality [40]. It is expected that this will also require consideration of air quality in the form of a broader 'pollution burden reduction approach'. This currently differs to that of the compliance approach enacted by the historic local air quality management regime, which targets levels of air pollution which has exceeded a defined level regardless of the number of people likely to be affected. Instead, the burden reduction approach considers that it can be beneficial to reduce pollution affecting a large number of people regardless of its absolute level. Even if the reduction is a small amount the overall benefit can be great if a large number of people are affected. Nonetheless, it is anticipated that both routes to air quality improvement will act in collaboration where possible.

To enable the evaluation of a burden reduction approach, the Welsh Government has made available rankings [12] of each Local Authority based upon the modelled background concentration for NO_2, PM_{10} and $PM_{2.5}$ for each $1km^2$, referenced to the number of dwelling associated within each km^2. The comparison to the most recently published data ranks is available at the start of Section 4.3.1 Nitrogen Dioxide [NO_2] and Section 4.3.5 Particulate Matter [PM_{10}] respectively.

It is acknowledged, that in a resource limited system it can be beneficial to focus actions to maximise the public health benefits of intervention. In considering the pollution burden reduction approach, it is often the case that disadvantaged communities are more likely to observe adverse health inequalities which could benefit from improvements in local air quality. Therefore, given similar population sizes, targeting action at communities which experience elevated levels of air pollution as well as deprivation would likely deliver greater public health benefit if compared to targeting action only at a more affluent community.

Collaborative work with Public Health Wales and Cwm Taf Morgannwg University Health Board enabled the consideration of various statistics which best highlight the communities which are most likely to be detrimentally affected by air quality in combination with known air quality data. This resulted in the production of a Health and Air Pollution Risk Assessment/Area Prioritisation (HAP-RAP) tool, which can help to identify locations where actions to improve air quality may have the greatest benefit to local communities. Provisional

use of the HAP-RAP tool potentially identified two clusters, one based around Mt Ash and Penrhiwceiber and the other based around Cymmer, Ferndale and Tylorstown, where air quality improvements may well have the greatest benefit to the community. Each current AQMA has been assessed against HAP-RAP prioritisation and where the AQMA and the MSOA (the zones used by HAP-RAP) match this has been highlighted (see Section 3.2).

It may become incumbent upon the members of Cwm Taf Morgannwg Public Service Board to consider their service delivery and the potential for positive action to be taken to holistically improve overall air quality. It may also be a requirement for partners to provide annual updates and reviews of progress in furthering achievement of the well-being objectives.

It is uncertain as to the practical extent of interaction between the work towards implementing the Cwm Taff Morgannwg Well-Being Plan and the current local air quality management regime. As a result, the Local Authority will, for the foreseeable future, continue to produce AQAPs as standalone statutory plans as well as separate local air quality management progress reports. This position will be reviewed should future statutory guidance require a harmonised approach to actions and reporting.

6.7 Green Infrastructure Plans and Strategies

The Local Authority recognises the importance of green infrastructure to public health and the environment, as well as it being an important potential resource in the improvement of local air quality or protecting communities from elevated levels of air pollutants. The Local Authority has adopted a Biodiversity Duty Action Plan [41] which outlines its goals, and how it will go about trying to achieve them, with respect to local Biodiversity within its area other than that which is also within the Bannau Brycheiniog National Park. It has also issued its ‘Action for Nature - Local Nature Recovery Action Plan for Rhondda Cynon Taf’ , which provides an assessment of the many habitats and ecologies within Rhondda Cynon Taf and the importance they may have in tackling a range of environmental concerns as well as the actions we can all take to help local nature recover and contribute to tackling the declared ‘nature emergency’ in Wales [42].

The Local Authority continues to assess ways in which recovery, protection and enhancement of green assets can bring real benefits to a diverse range of policy areas including flood prevention, active travel and climate change. As an example, the Local Authority engaged with the Queen’s Green Canopy Project with the aim to protect existing woodland areas whilst providing an enhanced role for urban tree planting. This may provide distinct opportunities in protecting or bringing forward green infrastructure that may have a role in assisting local air quality management.

The Local Authority also continues to consider the benefits of actions which could improve green infrastructure as part of its other activities. In doing so, the Local Authority will continue to build upon internal mechanisms to enable knowledge sharing and coordination between ecological & countryside management and local air quality management.

6.8 Climate Change Strategies

With the declaration of a ‘Climate Emergency’ by Welsh Government, the Local Authority is clear that it must play its’ part in taking urgent action. The Local Authority has regard to climate change both by actions it may undertake to reduce its contribution to climate change

and also the actions that maybe required to mitigate the impact of climate change upon service delivery. The Local Authority also recognises its dual role in leading and supporting people, business and the wider community in better understanding and contributing to efforts to tackle climate change.

To emphasise its part in taking action to tackle Climate Change, the Local Authority has adopted four ongoing 'Climate Commitments', reproduced in Table 6-6 below, that are to be achieved by 2030.

Table 6-6: Local Authority's Climate Commitments to be achieved by 2030

Commitments	
1.	The Local Authority will have become carbon neutral.
2.	Enable the whole County Borough to be as close as possible to carbon neutral.
3.	Working with partners to enable all public and private organisations that operate in the County Borough to become carbon neutral.
4.	Contribute to the Welsh Government's ambition of a Net Zero public sector by 2030.

The Local Authority recognises that it is making progress to tackle Climate Change, but we all need to do more, and faster, if we are to reduce carbon emissions, help to reverse the damage to the planet and adapt to the changes already happening within the county borough. To help realise its Climate Commitments and encourage others to also commit to real change, the Local Authority has adopted a Climate Change Strategy [43]. This strategy incorporates a number of specific goals, aligned to its Climate Commitments, to be achieved by 2030, as well as a range of actions that work towards achieving these goals.

The strategy recognises the potential synergistic effects actions to tackle climate change can have on other agendas, including local air quality management, and vice versa. Several of the climate change actions included within the strategy, as highlighted in Table 6-7 below, also have specific regard to improving local air quality, whilst many of the other climate change actions within the strategy are also likely to indirectly compliment local air quality management.

Table 6-7: Climate Change Actions and Local Air Quality Management

Complimentary Climate Change Actions	
1.	Contributing to safer roads and improvements in air quality by introducing default 20 mph speed as required by Welsh Government's commitment to support Active Travel as well as provisions that emerge from the proposed Clean Air legislation in Wales.
2.	Encouraging people to support improvements in air quality by promoting good driving behaviours including implementing no idling zones and reduced speed limits
3.	Using natural planting in public areas of our town centres to improve air quality and well-being, reduce flood risk, provide cooling during heatwaves and other climate benefits for residents
4.	Commitment to support active travel and sustainable public transport within and connecting to Rhondda Cynon Taf

The Local Authority will continue to provide strong community leadership and create a cleaner, greener environment for people and businesses to be independent, healthy and prosperous and for natural ecosystems to thrive. It will play its part in tackling climate change

and protecting the planet and also adapting our services and operations so that it is able to meet the climate challenges ahead.

7. Conclusions and Proposed Actions

7.1 Conclusions from New Monitoring Data

For more than a decade, a consistent improving trend in NO_2 throughout most parts of the County Borough reinforces the understanding that the vast majority of Rhondda Cynon Taf is expected to continue to show levels of NO_2 that are well within compliance to the relevant AQOs for NO_2. In 2024, levels of NO_2 continued to improve after a period of stability since 2020, continuing to build upon the considerable improvements in the levels of NO_2 observed between 2016 to 2019. With the expectation that levels of NO_2 may continue to marginally improve into the near future and with the hope that the gradual adoption of new transport technologies will significantly spur greater improvement in the longer-term future.

There are localised areas within Rhondda Cynon Taf which have observed elevated levels of NO_2, that were on occasion above or at risk of being above the relevant AQOs for NO_2, and as such have been included within an AQMA. Since the declaration of these AQMAs, overtime many of them have observed an improving air quality situation. It is acknowledged that although widespread improvement in the levels of NO_2 has been observed, it remains the case, these AQMAs may still observe a risk of non-compliance to the annual mean AQO for NO_2 in their entirety or at least parts thereof. As such, the Cymmer, Ferndale, Mt Ash Town Centre, Nightingales Bush, Pontypridd Town Centre and Tylorstown AQMAs, although having experienced significant improvement in recent years, are likely to potentially remain at risk of being non-compliant to the annual AQO for NO_2 into the near-term whilst future improvements continue to manifest.

Other pollutants of concern such as SO_2 and PM_{10}, which tend to be associated with emissions from heavy industry or large conurbations, are, in general, not considered to be as prominent any longer within Rhondda Cynon Taf. However, monitoring has previously identified the area of Glyncoch as experiencing levels of PM_{10} potentially incongruous to other areas of Rhondda Cynon Taf. After a break in monitoring during a large part of 2023, the Local Authority has established monitoring of both $PM_{2.5}$ and PM_{10} within Glyncoch.

Analysis of the monitoring of PM_{10} at Garth Avenue, Glyncoch from 2024, supports understanding that, local and wider environmental influences continue to have an important role in the local experience of elevated levels of PM_{10}. Although $PM_{2.5}$ remains relevant to the overall understanding of particulate matter at Garth Avenue, Glyncoch, it appears less aligned to the notable potential very local influences on PM_{10} when it is most elevated. This distinctive pattern further underlies the local situation at Garth Avenue, Glyncoch and the likely significant influence that various operations at Craig Yr Hesg Quarry may have on locally observed PM_{10}.

Although it is difficult to predict a future trend at Glyncoch, at present the location remains compliant to the annual mean and the 24-hour daily mean AQOs for PM_{10}. Furthermore, the available evidence suggests that the levels of PM_{10} have improved gradually since 2014, potentially corresponding to known improvements to the control of particulate matter emissions from Craig Yr Hesg Quarry as well as more broadly. The Local Authority will continue to engage with the operators of Craig Yr Hesg Quarry, to attempt to mitigate the

impact of the site activities on the surrounding community, so as to further understand concerns and examine ways of improvement. The continuation of monitoring is necessary to ensure any future changes, which have the potential to impact on the local prevalence of PM_{10}, can be fully considered.

In its consideration of local air quality, it has been necessary for the 2025 Air Quality Progress Report to rely upon extensive local air quality monitoring and analysis. The Local Authority will aim to continue as far as is reasonable to preserve its monitoring network and comply with the required reporting regime. However, the impact of continued financial uncertainty as well as the changing regulatory landscape will need to be considered and will influence the amount of funding available to carry out future local air quality management duties.

7.2 Conclusions relating to New Local Developments

The Local Authority considers air quality can be a material planning consideration. As such, the Local Authority will, when necessary, take account of the implications of any development upon local air quality during the planning consent decision making process. Consequently, the Local Authority will attempt to ensure that, if necessary, future developments will negate or mitigate any negative impacts on local air quality whilst continuing to treat each application for planning consent on its individual merits.

To help tackle the non-compliance of the NO_2 EU Limit Value associated with the A470, Welsh Government and its South Wales Trunk Road Agent implemented a major programme of air quality improvement measures. As part of this programme, the designated speed limit of parts of the A470 were reduced from 70mph to 50mph to help reduce vehicle traffic emissions. This intervention continues to have substantial impact upon reducing local levels of NO_2 and helping to work towards achieving sustainable compliance within the Nightingales Bush AQMA. Given the beneficial impact of this measure on local air quality the Local Authority will advocate for its retention until such time as compliance to the annual mean AQO for NO_2 has been sustainably achieved within the Nightingales Bush AQMA.

The full introduction, in September 2023, of the default 20 mph speed limit on restricted roads is expected to have reduced the speed of vehicles along a large number of roads within Rhondda Cynon Taf. Only some of the current AQMAs within Rhondda Cynon Taf are associated with roads that, due to this national change, now have a 20 mph speed limit. As expected, there does not initially appear to be, at this time, an observable impact on local air quality as a result of this change. Given the range of factors influencing local air quality and the possible potential minor influence of this action, it maybe challenging to discern any specific local impact.

It is the case that systemic regional transport infrastructure improvement, such as the electrification of the South Wales Core Valleys Railway electrification, or major local projects to relieve existing over-used road infrastructure, such as the Church Village Bypass, or changing the way existing road infrastructure is used, such as reducing the default speed limit to 50 mph along parts of the A470, can deliver significant improvements in local air quality. It is also the case that a wide range of local measures that support behavioural changes, such as £1.50 subsidised bus fares during parts of the year or information to support sustainable travel options in the Pontypridd area, can help to bring about important improvements to local air quality.

Underlying these improvement measures so far is how concerted action at all levels of society and the inclusion, as far as possible, of all parts of the community is vital in bringing about sustained improvement in local air quality.

7.3 Other Conclusions

The Local Authority acknowledges that many different policies and actions undertaken by it may have a direct or indirect effect on local air quality. The Local Authority will continue to take account, where necessary, of local air quality during any relevant decision making process. It will also aim, wherever possible, to promote policies and actions which will maintain or be conducive to good air quality and any synergistic effects such actions may have on other service deliveries.

Of particular note are that many issues underlining non-compliant air quality, are also significant in the broader Active Travel, Climate Change, Environmental Noise and Biodiversity Agendas. Effective solutions to improve air quality can supplement efforts in tackling climate change and environmental noise. Close integration with the Active Travel Agenda, Climate Change Agenda and Noise Action Plan Priority Areas will continue to be aspired to in future local air quality management. It is also clear that, without intervention, local air quality within the most vulnerable areas of Rhondda Cynon Taf may improve less quickly. As the Loca Authority updates strategic plans, for instance the Local Development Plan, it will use this opportunity to revise current provisions to ensure they remain pertinent and, where possible, maximise air quality improvement benefits.

The Local Authority has adopted individual AQAPs, see Appendix E2: Current Air Quality Action Plans, for each of its extant AQMAs. These AQAPs contain a range of recommended actions, both those that are locally targeted and those with a broader effect. Due to the availability of limited resources and competing agendas, it may not be possible to immediately implement all AQAP actions. However, the Local Authority continues, where possible, to implement or influence the implementation of actions within its AQAPs. This has included Welsh Government directed speed reductions along a part of the A470, progress in planning potential highway improvement projects and advancing a local strategy to support Electric Vehicle infrastructure. In addition, the Local Authority is progressing further actions to improve usability and awareness of active travel routes, plus encouraging the use of local sustainable transport options and continuing several significant road improvement schemes.

The Local Authority will continue to maintain the AQAPs as living documents and will aim to review them again in 2027, to take account of progress made and the ever-changing nature of local air quality.

The Local Authority is fully committed to openness and transparency in regard to its air quality duties. It will widely disseminate and consult upon the 2025 Air Quality Progress Report, with both interested parties and the public. The Local Authority will, resources and circumstances permitting, aim to ensure continuity of local air quality reporting by producing, in accordance with statutory requirements, an Air Quality Progress Report in 2026.

7.4 Proposed Actions

- The Local Authority will conduct an encompassing and transparent consultation into the findings of this report and all other key steps, in the local air quality management

process being undertaken; with all relevant parties and to respond where necessary to feedback given.

- The Local Authority recognises the enhanced benefits which can be brought about by collaboratively working, both within the Local Authority as well as with other interested parties, to deliver a multi-benefit agenda which can directly improve local air quality. The Local Authority will look to build upon existing and new partnerships to deliver coordinated action in the delivery of local air quality management and that of other related agendas.

- Whilst delivering local air quality management duties, the Local Authority will have regard to any noise action planning priority areas as well as other relevant agendas, such as Climate Change, Active Travel and Green Infrastructure. It will continue to work with relevant stakeholders to ensure close integration with other environmental agenda and aspire to “win win” solutions.

- The Local Authority will continue to utilise existing resources as effectively and efficiently as possible to provide a greater understanding of the causes of non-compliant air quality and its possible solution. To facilitate this, the Local Authority will periodically review its monitoring programmes in light of available resources and new information and changes in understanding, to aspire to ensure targeted comprehensive assessment of the most at risk locations. Where necessary, and resources permitting, it will consider repurposing or establishing new monitoring sites to provide enhanced understanding of any potentially affected area.

- Dependent upon the availability of resources, circumstances and future statutory guidance, in September 2026 the Local Authority will produce an Air Quality Progress Report, which will aim to maintain a level of continuity of air quality review and assessment based on the latest available data.

8. References

[1] Rhondda Cynon Taf CBC, “Working With Our Communities The Council's Corperate Plan 2024-2030,” April 2024.

[2] Senedd Cymru, “The Environment (Air Quality and Soundscapes) (Wales) Act 2024,” February 2024.

[3] Welsh Government, “Air Quality in Wales Website,” [Online]. Available: https://www.airquality.gov.wales/. [Accessed 2024].

[4] Defra, “UK Air: Air Information Service Website, Air Quality Management Areas (AQMAs) Webpage,” August 2025. [Online]. Available: https://uk-air.defra.gov.uk/aqma/list?la=R&country=wales&pollutant=all.

[5] H. Brunt and S. J. Jones, “Public health-driven air pollution risk assessment: A pragmatic approach to complement Local Air Quality Management implementation in Wales,” Public Health Wales, 2019.

[6] Exterium on behalf of, “Wales Noise and Air Quality Viewer,” Welsh Government, August 2023.

[7] Rhondda Cynon Taf CBC, “Update Statement: Llanharan Sustainable Transport Corridor to Progress,” 18th March 2024. [Online]. Available: https://www.rctcbc.gov.uk/EN/Newsroom/PressReleases/2024/March/LlanharanSustainableTransportCorridortoProgress.aspx.

[8] Cenex on behalf of, “Taxi Strategy for South East Wales,” The Office of the Cardiff Capital Region (CCR) City Deal, October 2019.

[9] Rhondda Cynon Taf CBC, “Ferndale, Pontypridd and Porth Sustainable Travel Guides,” 2020.

[10] Defra and the Devolved Administrations, “Air Pollution in the UK 2023 - Compliance Assessment Summary,” September 2024.

[11] Department for the Environment, Food & Rural Affairs, “Nitrogen dioxide (NO2),” Department for the Environment, Food & Rural Affairs, 26 April 2025. [Online]. Available: https://www.gov.uk/government/statistics/air-quality-statistics/ntrogen-dioxide#:~:text=The%20annual%20mean%20concentration%20of%20NO2%20at%20urban%20background%20sites,%C2%B5g%2Fm3%20each%20year..

[12] StatsWales, “Air Quality Indicators by Local Authority,” August 2025. [Online]. Available: https://statswales.gov.wales/Catalogue/Environment-and-Countryside/Air-Quality/airqualityindicators-by-localauthority. [Accessed August 2025].

[13] T. f. Wales, “Default 20mph speed limit on restricted roads National monitoring report (September 2023 – April 2024),” 26th September 2024.

[14] Met Office, “Seasonal Assessment – Summer 2024,” 2024.

[15] Netcen on behalf of, “Air Pollution in the UK 2019,” Defra and the Devolved Administrations, September 2011.

[16] AEA on behalf of, “Air Pollution in the UK 2011,” Defra and the Devolved Administrations, September 2012.

[17] Ricardo Energy & Environment on behalf of, “Air Pollution in the UK 2014,” Defra and the Devolved Administrations, September 2015.

[18] Ricardo Energy & Environment on behalf of, “Air Pollution in Wales 2022/23,” Welsh Government.

[19] Department for Environment, Food & Rural Affairs, “National Statistics: Concentrations of Particulate Matter (PM10 and PM2.5),” Updated 27 June 2025. [Online]. Available: https://www.gov.uk/government/statistics/air-quality-statistics/concentrations-of-particulate-matter-pm10-and-pm25.

[20] Welsh Government, “Welsh Government supplemental plan to the UK plan for tackling roadside nitrogen dioxide concentrations,” November 2018.

[21] Welsh Government, “Welsh Government Annual Data for NO2 Concentrations for the Motorway and Trunk Road Network: 2022 and 2023,” July 2024.

[22] Rhondda Cynon Taf CBC, “Environmental Permitting Webpage,” August 2025. [Online]. Available: https://www.rctcbc.gov.uk/EN/Business/LicencesandPermits/PollutionrelatedlicencesEnvironmentalPermitting.aspx.

[23] Rhondda Cynon Taf CBC, “Clean Air Act Approval Webpage,” August 2025. [Online]. Available: https://www.rctcbc.gov.uk/EN/Business/LicencesandPermits/PollutionrelatedlicencesCleanairactapproval.aspx.

[24] Rhondda Cynon Taf CBC, “Planning Policy Wales Edition 12,” February 2024.

[25] Rhondda Cynon Taf CBC, “Rhondda Cynon Taf Local Development Plan up to 2021,” March 2011.

[26] Rhondda Cynon Taf CBC, “Planning Assessment Criteria V1.02,” November 2017.

[27] S. W. F. a. R. Service, “Healthy Hillsides,” August 2023. [Online]. Available: https://www.southwales-fire.gov.uk/your-safety-wellbeing/your-community/healthy-hillsides/.

[28] Welsh Government, “Clean Air Plan for Wales,” August 2020. [Online]. Available: https://gov.wales/sites/default/files/publications/2020-08/clean-air-plan-for-wales-healthy-air-healthy-wales.pdf.

[29] Cardiff Capital Region Corporate Joint Committee, Transport for CCR Draft Regional Transport Plan for South East Wales, 7th January 2025.

[30] Transport for London, “Emissions & Health - The impact of vehicle speed on emissions & health: an evidence summary,” June 2018.

[31] Adrian Davies Associates on behalf of, “, The state of the evidence on 20mph speed limits with regards to road safety, active travel and air pollution impacts,” Welsh Government, August 2018.

[32] NICE, “Air pollution: outdoor air quality and health NICE guideline [NG70],” June 2017.

[33] Welsh Government, “Electric Vehicle Charging Strategy for Wales,” March 2021.

[34] Rhondda Cynon Taf CBC, “Electric Vehicle Charging Strategy 2021 - 2030,” 2021.

[35] Rhondda Cynon Taf County Borough Council, “Electric Vehicle (EV) Charging Implementation Plan,” 2023.

[36] Rhondda Cynon Taf CBC, “Active Travel Existing Route Maps,” [Online]. Available: https://datamap.gov.wales/maps/active-travel-network-maps/view?center=-3.4936103196589574,51.59394627224147&zoom=5#/. [Accessed August 2025].

[37] Rhondda Cynon Taf CBC, “Revised PRIORITISATION OF PROPOSED ACTIVE TRAVEL SCHEMES SHOWN IN RHONDDA CYNON TAF ACTIVE TRAVEL NETWORK MAP,” www.rctcbc.gov.uk/EN/Resident/ParkingRoadsandTravel/Travel/Relateddocuments/Activetravelmapdetails/PrioritisationofSchemesinATNM.pdf, April 2024.

[38] Rhondda Cynon Taf CBC, “Active Travel Annual Report,” 8th November 2024.

[39] Cwm Taff Public Service Board, “Cwm Taf Morgannwg Our Well-Being Plan 2023-2028,” March 2023.

[40] Welsh Government, “National Indicators for Wales - National Indicator 4,” September 2022.

[41] Rhondda Cynon Taf CBC, “Biodiversity Duty in Rhondda Cynon Taf,” 6th December 2022.

[42] Senedd Cymru, “Plenary Session: Motion to declare a Nature Emmergency inter alia,” June 2021.

[43] Rhondda Cynon Taf CBC, “Think Climate RCT: Making Rhondda Cynon Taf Carbon Neutral by 2030,” June 2022.

[44] D. C. Carslaw and J. Davison, “The openair book: A Guide to the Analysis of Air Pollution Data,” 2nd September 2025.

[45] RStudio Inc., “Windows 10/11 RSTUDIO-2025.05.1+513,” 2nd September 2025.

[46] R Core Team, “R: A language and environment for statistical computing,” R Foundation for Statistical Computing, 2025.

[47] QGIS Association, “QGIS Geographic Information System,” 2025.

[48] LAQM Helpdesk, “Summary of Laboratory Performance in AIR NO2 Proficiency Testing Scheme (February 2023 – February 2025),” Defra and the Devolved Administrations, February 2025.

[49] National Physics Laboratory, “National Bias Adjustment Facotrs Spreedsheet version no. 06/25,” Defra and the Devolved Administrations, September 2025.

[50] AEA Energy & Environment, “Checking Precision and Accuracy of Triplicate Tubes Version 4,” February 2011.

[51] B. V. U. o. b. o. The LAQM Support Helpdesk, “NO2 Fall-Off with Distance Calculator (Version 4.2),” The LAQM Support Helpdesk, March 2018.

[52] UK Air on behalf of Defra, “UK Approval of Particulate Matter Monitoring Instruments,” Defra and the Devolved Administraions, [Online]. Available: https://uk-air.defra.gov.uk/networks/monitoring-methods?view=mcerts-scheme. [Accessed August 2025].

[53] Rhondda Cynon Taf CBC, “CLIMATE CHANGE CABINET STEERING GROUP Minutes of the meeting of the Climate Change Cabinet Steering Group,” 28th January 2020.

[54] Met Office, “A Year in Review 2019,” December 2019.

[55] Rhondda Cynon Taf CBC, “Air Quality Action Plan Document,” August 2013.

[56] Office of Rail and Road, “TOC Key Statistics for Transport for Wales,” July 2020.

[57] Welsh Government, “Welsh Government supplemental plan to the UK plan for tackling roadside nitrogen dioxide concentrations,,” November 2018.

[58] Welsh Government, “Tackling roadside nitrogen dioxide concentrations in Wales,” September 2019.

[59] Rhondda Cynon Taf CBC, “Rhondda Cynon Taf Local Development Plan Annual Monitoring Report 2018-2019,” March 2019.

[60] The Five South East Wales Local Authorities, “South East Wales Valleys Local Transport Plan,” January 2015.

[61] Rhondda Cynon Taf CBC, “Active Travel Monitoring Report,” 2019.

[62] Rhondda Cynon Taf CBC, “Active Travel and Cycling Webpage,” August 2020.

[63] Rhondda Cynon Taf CBC, “Our Living Space’ Environmental Improvement Strategy,” April 2005.

[64] Rhondda Cynon Taf CBC, “Energy Management Webpage,” August 2020.

[65] D. Carslaw, “The Openair manual — open-source tools for analysing air pollution data, Manual for version 1.4-4,” Kings College London.

[66] Rhondda Cynon Taf, “A4119 ELY VALLEY ROAD DUALLING – LLANTRISANT BUSINESS Cabinet Report,” July 2019.

[67] Ricardo Energy and Environment on behalf of, “Provisional Analysis of Welsh Air Quality Monitoring Data – Impacts of Covid-19,” Welsh Government, July 2020.

[68] Rhondda Cynon Taf CBC, “What action can be taken in the Air Quality Management Areas, to ensure air quality improves across the County Borough,” January 2020.

[69] C. Trust, “RCTCBC Carbon Footprint Project 2019/20,” Rhondda Cynon Taf CBC, March 2021.

[70] Transport for Wales, “South Wales Metro Core Valley Lines Transformation,” September 2021. [Online]. Available: https://tfw.wales/projects/metro/south-wales-metro/work-progress.

[71] Cardiff Capital Region Cabinet, “Regional Transport Authority - Preparing for a New Future,” December 2020.

[72] Welsh Government, “White Paper on a Clean Air (Wales) Bill,” January 2021.

[73] Department for Communities and Local Government, “Multi-criteria analysis: a manual,” January 2009.

[74] QGIS Development Team, “QGIS Documentation User Guide/Manual,” August 2021.

[75] Department for Transport, “Road Traffic Statistics,” 2021. [Online]. Available: https://roadtraffic.dft.gov.uk/#6/55.254/-6.053/basemap-regions-countpoints. [Accessed 2022].

[76] Transport for Wales, “South Wales Metro Core Valley Lines Transformation,” [Online]. Available: https://tfw.wales/projects/metro/south-wales-metro/work-progress. [Accessed August 2023].

[77] Met Office, “provisional assessment of the weather experienced across the UK,” Met Office, 2023.

[78] Met Office, “UK annual climate summary 2023,” 2024. [Online]. Available: https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/weather/learn-about/uk-past-events/summaries/uk_climate_summary_calendar_year_2023.pdf.

[79] Cardiff Capital Region, “Cardiff Capital Region 'Project Hub',” [Online]. Available: https://www.cardiffcapitalregion.wales/project-hub/. [Accessed August 2024].

[80] Rhondda Cynon Taf CBC, “Highways, Transportation & Strategic Projects Supplementary Capital Programme Addendum,” September 2024.

[81] Rhondda Cynon Taf CBC, HIGHWAYS, TRANSPORTATION AND STRATEGIC PROJECTS CAPITAL PROGRAMME 2024/25, March 2024.

9. Appendix A1: Monthly Diffusion Tube Monitoring Results

Table A.9-1: Full Monthly Diffusion Tube Results for 2024

Site ID	NO_2 Mean Concentrations (μgm^{-3})														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (0.90 Factor) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
4	18.6	7.8	9.1	10.9	5.3	6.9	-	6.1	8.9	13.9	16.2	13.1	10.6	9.6	-
8	37.4	-	-	36.5	-	27.3	-	29.8	33.9	34.6	28.7	29.9	32.3	30.1	-
21	7.0	4.8	4.5	4.8	2.8	2.3	-	3.4	3.0	7.4	6.9	4.9	4.7	4.2	-
37	38.0	19.2	23.9	38.6	18.8	22.5	-	20.3	21.9	29.8	26.2	21.4	25.5	23	20.7
41	68.6	35.2	42.1	47.3	30.3	38.8	-	38.1	38.4	45.3	41.0	41.6	42.4	38.2	-
44	36.6	22.3	26.4	28.8	17.0	19.8	-	19.5	22.6	30.1	-	21.8	24.5	22	26.8
47	40.5	21.7	22.3	29.7	14.8	23.9	-	24.7	20.9	26.5	27.3	21.0	24.8	22.4	-
48	38.1	18.9	26.1	29.8	15.4	24.3	-	-	24.0	26.4	24.7	25.6	25.3	22.8	-
50	36.3	20.6	23.6	29.4	15.2	24.8	-	21.1	21.3	27.4	27.5	20.4	24.3	21.9	-
51	46.6	26.7	32.9	38.7	16.9	29.5	-	24.9	22.4	31.0	30.1	27.8	29.8	26.8	-
52	58.2	30.8	29.2	42.6	21.4	-	-	29.4	24.2	49.6	-	32.3	35.3	34.8	-
53	48.8	29.3	27.3	35.3	17.0	25.7	-	24.9	29.1	-	33.3	25.5	29.6	26.7	-
55	39.8	22.8	24.5	30.6	16.6	23.2	-	22.8	18.7	29.3	29.5	25.4	25.7	23.2	-
56	49.8	28.4	28.7	37.0	16.4	28.4	-	21.4	-	39.8	35.0	-	31.7	30.4	-
66	47.9	25.5	26.6	27.2	17.5	27.3	-	24.2	25.3	34.9	34.8	30.5	29.2	26.3	-
68	42.2	19.6	27.6	33.7	16.6	20.9	-	18.4	31.1	28.9	24.8	26.2	26.4	23.7	-
69	36.9	19.1	23.1	31.5	13.2	16.9	-	15.2	26.7	31.4	18.5	20.2	23.0	20.7	-

Site ID	NO_2 Mean Concentrations (μgm^{-3})														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (0.90 Factor) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
76	35.6	18.1	23.1	29.2	14.9	18.7	-	20.1	24.5	28.0	28.5	24.7	24.1	21.7	-
79	41.4	21.6	19.1	29.6	14.1	22.8	-	19.9	24.7	28.0	20.4	27.2	24.4	22	-
80	43.7	21.6	21.9	24.7	12.1	19.8	-	21.6	18.4	26.3	24.1	21.9	23.3	21	-
81	42.2	28.2	30.6	37.7	15.6	26.2	-	22.5	21.4	32.7	32.0	25.6	28.6	25.7	-
82	32.5	17.7	22.3	23.8	12.5	17.0	-	15.1	15.4	35.8	27.9	18.7	21.7	19.5	17.6
83	43.7	24.0	27.6	28.5	-	22.5	-	23.1	24.1	29.7	-	21.8	27.2	26.7	-
84	61.6	31.5	31.9	46.0	-	37.6	-	39.1	38.8	47.9	34.7	31.9	40.1	36.1	-
85	38.7	19.8	23.1	27.6	13.9	20.3	-	19.8	23.5	28.0	30.6	21.6	24.3	21.8	-
88	-	23.5	24.9	29.9	14.1	21.6	-	22.0	23.8	32.2	26.3	25.0	24.3	21.9	-
90	53.3	26.1	30.5	35.1	20.2	26.8	-	23.6	27.1	29.0	32.4	23.3	29.8	26.8	-
91	63.0	34.9	-	49.0	24.9	37.9	-	37.5	42.9	48.1	44.1	36.9	41.9	37.7	-
93	68.8	34.6	36.2	50.6	27.7	40.9	-	31.2	41.2	49.4	48.3	33.2	42.0	37.8	-
96	49.5	24.7	30.0	33.3	-	21.8	-	24.0	30.3	31.7	34.3	28.2	30.8	27.7	-
97	59.4	30.7	34.0	51.2	31.6	38.3	-	28.4	37.1	43.0	31.3	31.1	37.8	34	-
101	7.7	4.9	4.5	5.5	2.4	3.4	-	3.3	3.3	7.3	10.0	5.8	5.3	4.8	-
103	9.9	4.7	4.8	8.5	3.6	4.5	-	2.5	2.5	7.1	8.1	6.1	5.7	5.1	-
105	9.7	6.2	6.6	6.7	3.4	4.5	-	4.1	3.7	9.9	9.6	6.6	6.5	5.8	-
106	54.0	23.5	-	62.8	18.8	28.2	-	21.9	30.0	18.3	30.2	29.5	31.7	28.5	-
107	43.1	25.9	28.4	35.8	18.5	27.6	-	26.2	24.7	25.0	34.2	20.9	28.2	25.4	-
108	67.4	38.9	42.7	48.5	25.1	31.6	-	33.3	15.3	45.3	44.6	32.7	38.7	34.8	-
110	37.1	17.9	22.0	24.4	11.3	15.4	-	15.2	18.9	25.9	13.1	18.2	19.9	18	-

Site ID	NO_2 Mean Concentrations (μgm^{-3})														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (0.90 Factor) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
111	46.2	23.1	27.0	33.2	-	-	-	20.1	27.4	-	25.0	26.4	28.6	26.6	-
113	44.6	20.2	28.8	32.1	20.6	22.5	-	21.4	30.0	25.9	26.9	28.2	27.4	24.6	-
114	32.4	18.9	21.5	24.1	13.0	18.5	-	-	19.0	28.2	24.9	21.9	22.2	20	-
117	66.3	-	44.2	46.7	29.5	31.2	-	36.3	-	-	38.8	41.6	41.8	**40.9**	-
118	72.5	37.8	50.5	55.0	36.0	39.1	-	41.6	40.8	49.8	26.9	46.7	45.2	**40.6**	-
122	38.0	16.6	25.2	24.5	16.2	17.5	-	17.0	24.6	22.7	25.8	19.8	22.5	20.3	-
124	37.1	15.6	24.8	27.5	17.4	17.5	-	15.1	22.8	28.4	12.5	17.0	21.4	19.3	-
128	40.7	26.2	26.5	31.6	12.2	20.3	-	18.3	24.6	32.3	32.1	23.8	26.2	23.6	-
129	34.9	14.0	14.1	17.7	9.7	13.3	-	11.4	15.2	18.6	22.2	16.9	17.1	15.4	14.5
132	35.9	16.2	22.0	28.8	16.7	15.4	-	14.5	8.9	21.5	27.0	21.5	20.8	18.7	-
134	24.0	13.3	14.9	17.1	8.1	11.2	-	-	14.8	17.1	16.5	15.6	15.3	13.7	11.9
135	31.8	16.7	23.1	28.0	10.7	14.2	-	13.3	22.1	28.5	21.7	20.5	21.0	18.9	15.9
136	45.0	27.2	29.2	33.8	18.9	29.3	-	23.1	33.1	29.4	35.1	23.9	29.8	26.8	-
137	40.9	21.8	24.9	27.8	14.4	20.5	-	18.8	29.0	23.6	30.8	25.5	25.3	22.7	-
138	47.6	23.4	28.0	34.1	18.8	25.7	-	24.8	27.6	33.7	27.3	25.9	28.8	25.9	-
139	25.8	12.6	14.4	15.7	9.5	11.1	-	12.1	12.6	18.4	17.2	13.6	14.8	13.3	14.5
140	46.2	25.6	-	35.3	19.3	28.5	-	30.1	26.2	32.3	28.4	24.4	29.6	26.7	-
141	38.9	19.2	24.2	24.9	13.7	17.4	-	15.7	26.4	25.1	24.9	24.7	23.2	20.9	24.1

Table Notes

Exceedances of the NO_2 annual mean objective of 40 μgm^{-3} are shown in bold.
Exceedances of the NO_2 1-hour mean objective (200 μgm^{-3} not to be exceeded more than 18 times per year) or otherwise NO_2 annual means exceeding 60 μgm^{-3}, indicating a potential exceedance of the NO_2 1-hour mean objective are shown in bold and underlined.

(1) See Appendix C for detail on bias adjustment and annualisation
(2) Means for diffusion tubes have been corrected for bias with means labelled with a ‡ having been “annualised” as per Boxes 7.9 and 7-10 in LAQM.TG22, as their valid data capture for the full calendar year is less than 75%. See Appendix C for details.

10. Appendix B: Summary of Local Air Quality Management

10.1 Purpose of an Annual Air Quality Progress Report

This report fulfils the requirements of the Local Air Quality Management (LAQM) process as set out in the Environment Act 1995 and associated government guidance. 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 being achieved. Where exceedances occur, or are likely to occur, the local authority must then declare an Air Quality Management Area (AQMA) and prepare an Air Quality Action Plan (AQAP) within 18 months of declaration setting out the measures it intends to put in place in pursuit of the objectives. Action plans should then be reviewed and updated where necessary at least every 5 years.

For Local Authorities in Wales, an Annual Progress Report replaces all other formal reporting requirements and have a very clear purpose of updating the general public on air quality, including what ongoing actions are being taken locally to improve it if necessary.

10.2 Air Quality Objectives

The air quality objectives applicable to LAQM in Wales are set out in the Air Quality (Wales) Regulations 2000, No. 1940 (Wales 138), Air Quality (Amendment) (Wales) Regulations 2002, No 3182 (Wales 298), and are shown in Table B.1.

Table B.1: AQOs Included in Regulations for the purpose of LAQM in Wales

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
Nitrogen Dioxide (NO_2)	200µg/m^3 not to be exceeded more than 18 times a year	1-hour mean	31.12.2005
	40µg/m^3	Annual mean	31.12.2005
Particulate Matter (PM_{10})	50µg/m^3, not to be exceeded more than 35 times a year	24-hour mean	31.12.2010
	40µg/m^3	Annual mean	31.12.2010
Sulphur dioxide (SO_2)	350µg/m^3, not to be exceeded more than 24 times a year	1-hour mean	31.12.2004
	125µg/m^3, not to be exceeded more than 3 times a year	24-hour mean	31.12.2004
	266µg/m^3, not to be exceeded more than 35 times a year	15-minute mean	31.12.2005
Benzene	16.25µg/m^3	Running annual mean	31.12.2003
	5µg/m^3	Annual mean	31 12 2010

Pollutant	Air Quality Objective		Date to be achieved by
	Concentration	Measured as	
1,3 Butadiene	2.25µg/m^3	Running annual mean	31.12.2003
Carbon Monoxide	10.0mg/m^3	Maximum Daily Running 8-Hour mean	31.12.2003
Lead	0.25µg/m^3	Annual Mean	31.12.2008

The table shows the objectives in units of micrograms per cubic metre µg/m^3 (milligrammes per cubic metre, mg/m^3 for carbon monoxide) with the number of exceedances in each year that are permitted (where applicable).

11. Appendix C1: Air Quality Monitoring Data QA/QC

Air quality monitoring often produces a large amount of data which, due to its quantity, can be difficult to interpret. Therefore, it is essential to utilise accepted statistical techniques to process and interpret it. In line with current practice the Local Authority has made use of the 'Openair Package' [44], in combination with other significant R packages, within RStudio [45], version 2025.05.1+513, as operated within the open-source R-Programme [46] computational language for environmental statistical computing and graphics, version 4.5. In addition, the Local Authority has made use of the open-source PostgreSQL Database with postgis version 17. These utilities, with the aid of published literature, has enabled the Local Authority to undertake verification and validation of the monitoring data as well as various types of descriptive and inferential statistical analysis.

In addition to the statistical analysis and graphical representation mentioned above, the Local Authority has also made use, with the aid of published literature, of the GIS package QGIS version QGIS 3.44.2 'Solothurn' [47]. This has enabled the Local Authority to spatially assess and depict air quality monitoring data as well as associated geometries.

11.1 QA/QC of Diffusion Tube Monitoring

In 2024 the Local Authority made use of fifty-six Nitrogen Dioxide 'Palmes type' passive diffusion tubes which were exposed for a period of one month at a time, in accordance with the published 2023 NO_2 Diffusion Tube Monitoring Calendar, at fifty-four monitoring locations (one location being a triplicate collocation site).

Collected Nitrogen Dioxide passive diffusion tubes were analysed by SOCOTEC Ltd's Didcot Laboratory using in-house laboratory method ANU/SOP/1015, 20% TEA in water method. The analysis was in accordance with their United Kingdom Accreditation Service [UKAS] schedule, with laboratory performance evaluated via the AIR Proficiency Testing Scheme[13]; achieving the highest rank of "satisfactory" [48].

11.1.1 Diffusion Tube Bias Adjustment Factors

It has been shown that passive diffusion tubes require bias correction in accordance with guidance to maximise their accuracy. The quoted desired accuracy for the measurement of NO_2 is 15%; the use of a bias factor from a suitable co-location study ensures that passive diffusion tube measurements attempt to meet this requirement.

Table C.1 below provides the collated local bias adjustment factors derived and provided by other users of the Nitrogen Dioxide diffusion tube monitoring method and laboratory, as used by the Local Authority, as well as a statistically derived overall national bias adjustment factor [49].

[13] Formerly the Workplace Analysis Scheme for Proficiency [WASP]

Table C.1: National Diffusion Tube Bias Adjustment Spreadsheet for 2024

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

Follow the steps below **in the correct order** to show the results of **relevant** co-location studies
Data only apply to tubes exposed monthly and are not suitable for correcting individual short-term monitoring periods
Whenever presenting adjusted data, you should state the adjustment factor used and the version of the spreadsheet
This spreadsheet will be updated every few months: the factors may therefore be subject to change. This should not discourage their immediate use.

This spreadsheet will be updated at the end of September 2025

LAQM Helpdesk Website

The LAQM Helpdesk is operated on behalf of Defra and the Devolved Administrations by Bureau Veritas, in conjunction with contract partners AECOM and the National Physical Laboratory.

Spreadsheet maintained by the National Physical Laboratory. Original compiled by Air Quality Consultants Ltd.

Step 1:	Step 2:	Step 3:	Step 4:
Select the Laboratory that Analyses Your Tubes from the Drop-Down List	Select a Preparation Method from the Drop-Down List	Select a Year from the Drop-Down List	Where there is only one study for a chosen combination, you should use the adjustment factor shown with caution. Where there is more than one study, use the overall factor[3] shown in blue at the foot of the final column.
If a laboratory is not shown, we have no data for this laboratory.	If a preparation method is not shown, we have no data for this method at this laboratory.	If a year is not shown, we have no data[2]	If you have your own co-location study then see footnote[4]. If uncertain what to do then contact the Local Air Quality Management Helpdesk at LAQMHelpdesk@bureauveritas.com or 0800 0327953

Analysed By[1]	Method (To undo your selection, choose (All) from the pop-up list)	Year[2] (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision[5]	Bias Adjustment Factor (A) (Cm/Dm)
SOCOTEC Didcot	20% TEA in water	2024	KS	Marylebone Road Intercomparison	10	48	36	32.8%	G	0.75
SOCOTEC Didcot	20% TEA in water	2024	R	South Oxfordshire Distric Council	10	20	15	39.1%	P	0.72
SOCOTEC Didcot	20% TEA in water	2024		Overall Factor[3] (2 studies)				Use		0.74

11.1.2 Factor from Local Co-location Studies

A Local Co-location Bias factor has also been produced by co-locating three passive diffusion tubes at the automatic NO_2 monitoring site located at Site No. 70 (Broadway), for the length of the study period. It is believed that Site No. 70 (Broadway) reflects conditions commonly encountered across Rhondda Cynon Taf. The monitoring site is also maintained to standards observed within the AURN network and annually independently audited by consultants acting on behalf of the WAQF. The data set produced by the local co-location study, in 2024, has been described by the AEA_DifTPAB_vo4.xls spreadsheet [50] as good albeit with a less than desired data capture rate but which was still above 80%, with the completed spreadsheet reproduced in Table C.2 below.

Table C.2 – Spreadsheet checking precisions and accuracy of 2024 colocation study

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements										Automatic Method		Data Quality Check	
Period	Start Date dd/mm/yyyy	End Date dd/mm/yyyy	Tube 1 µgm^{-3}	Tube 2 µgm^{-3}	Tube 3 µgm^{-3}	Triplicate Mean	Standard Deviation	Coefficient of Variation (CV)	95% CI of mean	Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
1	03/01/2024	31/01/2024	40.5	38.1	36.3	38	2.1	6	5.2	26.95721	100	Good	Good
2	31/01/2024	06/03/2024	21.7	18.9	20.6	20	1.4	7	3.5	25.60302	99.76190476	Good	Good
3	06/03/2024	03/04/2024	22.3	26.1	23.6	24	1.9	8	4.8	23.76049	100	Good	Good
4	03/04/2024	01/05/2024	29.7	29.8	29.4	30	0.2	1	0.5	19.6028	99.85119048	Good	Good
5	01/05/2024	05/06/2024	14.8	15.4	15.2	15	0.3	2	0.8	18	98.80952381	Good	Good
6	05/06/2024	03/07/2024	23.9	24.3	24.8	24	0.5	2	1.1	17	99.70238095	Good	Good
7	03/07/2024	31/07/2024								18	99.85119048		Good
8	31/07/2024	04/09/2024	24.7		21.1	23	2.5	11	22.9	20	35.95238095	Good	or Data Captu
9	04/09/2024	02/10/2024	20.9	24.0	21.3	22	1.7	8	4.2	21	55.20833333	Good	or Data Captu
10	02/10/2024	06/11/2024	26.5	26.4	27.4	27	0.6	2	1.4	23	38.69047619	Good	or Data Captu
11	06/11/2024	04/12/2024	27.3	24.7	27.5	27	1.6	6	3.9	26.86775	99.85119048	Good	Good
12	04/12/2024	08/01/2025	21.0	25.6	20.4	22	2.8	13	7.1	22.45325	99.52324195	Good	Good
13													
										Overall survey -->		Good precision	Poor Overall DC

It is necessary to have results for at least two tubes in order to calculate the precision of the measurements

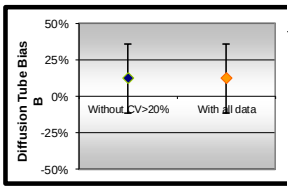
Site Name/ ID:	RCTCBC/070

Precision: 11 out of 11 periods have a CV smaller than 20%

(Check average CV & DC from Accuracy calculations)

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 8 periods of data	
Bias factor A	0.9 (0.74 - 1.14)
Bias B	11% (-12% - 35%)
Diffusion Tubes Mean:	25 µgm^{-3}
Mean CV (Precision):	5
Automatic Mean:	23 µgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	23 (19 - 29) µgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 8 periods of data	
Bias factor A	0.9 (0.74 - 1.14)
Bias B	11% (-12% - 35%)
Diffusion Tubes Mean:	25 µgm^{-3}
Mean CV (Precision):	5
Automatic Mean:	23 µgm^{-3}
Data Capture for periods used:	100%
Adjusted Tubes Mean:	23 (19 - 29) µgm^{-3}



Jaume Targa, for AEA
Version 04 - February 2011

11.1.3 Discussion of Choice of Factor to Use

Table C.3 lists the local bias factors [Bias A + B] derived from the local co-location study since 2004, as well as the nationally aggregated mean bias factors [49] and their range for comparison, with the factor used for each corresponding year in bold blue font.

Table C.3– Bias Correction Factors for NO_2 Passive Diffusion Tubes

Year	Local Bias Factor [Bias A]	Local Precision Bias [Bias B]	"Good" Data Description	National Bias	
				Factor	Range
2004	**1.04**	-	✓	0.91	(0.68 – 1.18)
2005	**0.98**	-	✓	0.97	(0.79 – 1.27)
2006	**1.08**	-	✓	0.98	(0.87 – 1.07)
2007	**1.10**	-9	✓	0.89	(0.74 – 1.00)
2008	**1.00**	0	✓	0.91	(0.79 – 1.00)
2009	**1.11**	-10	✓	0.90	(0.62 – 1.28)
2010	**1.00**	0	✓	0.92	(0.61 – 1.20)
2011	**1.06**	-6	✓	0.89	(0.62 – 1.12)
2012	**0.96**	4	✓	0.97	(0.58 – 1.32)
2013	**1.07**	-6	✓	0.85$^{\lambda}$	(0.75 – 1.07)
2014	**0.90**	11	✓	0.79$^{\lambda}$	(0.77 – 0.90)
2015	**0.96**	4	✓	0.81$^{\lambda}$	(0.73 – 0.96)
2016	**1.0**	0	✓	0.83$^{\lambda}$	(0.74 – 1.00)
2017	**0.91**	10	✓	0.74$^{\lambda}$	(0.65 – 0.91)

Year	Local Bias Factor [Bias A]	Local Precision Bias [Bias B]	"Good" Data Description	National Bias	
				Factor	Range
2018	**0.95**	18	✓	0.74[λ]	(0.59 – 0.95)
2019	**0.83**	20	✓	0.77	(0.66 – 0.86)
2020	**0.81**	23	✓	0.74	(0.61 – 0.88)
2021	**0.89**	12	✓	0.77	(0.66 – 0.89)
2022	**0.87**	15	✓	0.76	(0.62 – 0.91)
2023	**0.96**	4	✓	0.76	(0.67 – 0.96)
2024	**0.90**	11	✓	0.74[λ]	(0.72 – 0.75)

[λ] it is noted that only two comparative results are available, this very limited number would be expected to increase the uncertainty of the National Bias Factor.

In general terms, it may be considered that a national bias factor may be less influenced by certain types of non-fixed systematic error or otherwise may moderate aberrational errors that could highly influence one-off monitoring studies. However, a local bias factor may be more likely to reflect particular local climatic and regional influences, potentially improving the accuracy of the bias factor. In addition, the Local Authority has a number of years of local bias factors to draw upon, providing context to any particular year and helping to identify unusual results.

Historically only a very few studies made up the national bias factor, weakening its main advantage and leading to the routine use of the local bias factor. Given the importance of maintaining continuity with previous years and the fact the local bias factor for 2024 is comparable with the past. Although data capture was suboptimal in 2024 it was still above 80% and the local factor, in being higher, represents a precautionary approach to consideration of results. It has been determined that the local bias factor will be used to enable correction, as this may ensure the greatest accuracy and interpretability.

Unless specifically stated all passive diffusion tube results have been corrected using the local bias factor [Bias A] for the respective year. Users of this data should not re-correct the data.

11.2 Short-Term to Long-Term Data Adjustment

Data Capture is an important element in the interpretation of results. Guidance recommends that 90% data capture over a calendar year is required to facilitate the greatest accuracy in assessment of the concentration of the pollutant. In some instances it has not been possible to reach this threshold; nonetheless, where data capture is still proximal to 90% accurate inference can still be made. Where data capture is significantly less than 90% interpretation may still be possible with the use of mathematical techniques to extrapolate a more robust result. In circumstances where data capture is less than a specified percentage for the technique, the Extrapolated Annual Mean has been derived by interpolation in accordance with the methods detailed within LAQM.TG(22); where undertaken this data manipulation has been recorded in Table C.4 below.

Table C.4 – Short-Term to Long-Term Monitoring Data Adjustment in 2024

Site	Average Annualization Factor	Raw Data Annual Mean (µg/m^3)	Data Capture in 2024 (%)	Annualised Annual Mean (µg/m^3)
8	1.037524413	29.0	67	30.1
52	1.095193433	31.8	75	34.8
56	1.068487494	28.5	75	30.4
83	1.091321872	24.5	75	26.7
111	1.035415814	25.7	67	26.6
117	1.087152298	37.6	67	40.9

11.3 NO_2 Fall-off with Distance from the Road

It may not always be possible to measure NO_2 levels at the worst-case relevant population for a range of practical reasons. Wherever possible, the Local Authority has utilised monitoring locations that are representative of exposure, with 80% of the monitoring locations being <2.5 m away. However, where this is not possible, the NO_2 concentration at the nearest location relevant for exposure can sometimes be estimated, using the NO_2 fall-off with distance calculator [51], Table C.5 below provides the output of the calculator for 2024 NO_2 monitoring data.

Table C.5 – NO_2 Fall-off with Distance from the Road Adjustment in 2024

Enter data into the pink cells

Site Name/ID	Distance (m)		NO_2 Annual Mean Concentration (µg/m³)			Comment
	Monitoring Site to Kerb	Receptor to Kerb	Background	Monitored at Site	Predicted at Receptor	
RCTCBC/37	2.2	4.1	8.1	23.0	20.7	
RCTCBC/70/NO2	5.2	3.1	7.6	21.8	24.0	
RCTCBC/82	1.6	3.2	7.1	19.5	17.6	
RCTCBC/129	2.1	3.2	7.0	15.4	14.5	
RCTCBC/134	19.8	33.7	7.0	13.7	11.9	Warning: your receptor is more than 20m further from the kerb than your monitor - treat result with caution. Warning: your monitor is more than 10m further from the kerb than your receptor - treat result with caution.
RCTCBC/135	2.1	6.5	7.8	18.9	15.9	
RCTCBC/139	1.9	4.2	4.7	13.3	11.8	Warning: Background NO2 concentrations <5µg/m3 or >50µg/m3 are rare in the UK - this calculation will still work, but please check your data.
RCTCBC/141	1.3	1.6	5.5	20.9	20.2	

11.4 QA/QC of Automatic Monitoring

During 2024, the Local Authority undertook automatic monitoring at four sites, with three automatic monitoring locations examining NO_2 and one automatic monitoring location examining $PM_{2.5}$ and PM_{10}.

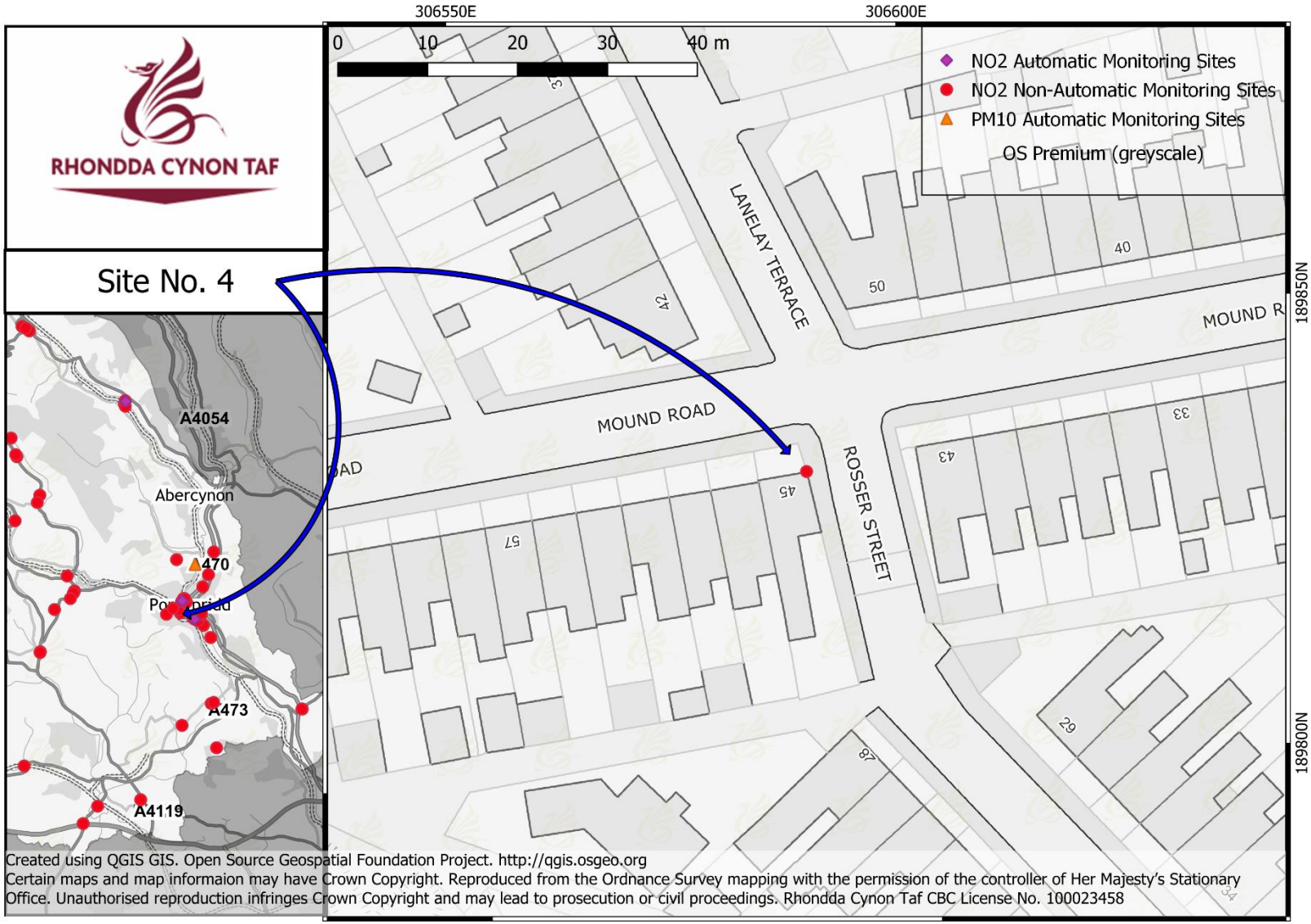
The three automatic monitoring sites for NO_2 each made use of a Model 200E Teledyne Chemiluminescence's Nitrogen Oxides Analysers. The instruments are directly owned and controlled by the Local Authority (Site No. 70 (Broadway), Site No. 120 (Pontypridd) & Site No. 131 (Mt Ash)). Each instrument was inspected by a trained officer on a fortnightly basis with the necessary calibration checks conducted. The fortnightly calibrations were conducted using UKAS accredited Nitric Oxide [NO] calibration gas mixtures at a nominal concentration of 500ppb. The calibration method used for the AURN network and validated by external consultants contracted by the Welsh Air Quality Forum [WAQF] was used as far as possible. These fortnightly calibrations were complemented with twice yearly services by the Local Authority's service contract engineers, Enviro Technology. Additionally the station at Site No. 70 (Broadway) was audited on an annual basis by consultants working on behalf of the Welsh Air Quality Forum. All data has been processed, validated and ratified by Officers of the Local Authority in accordance to procedures set out in Guidance.

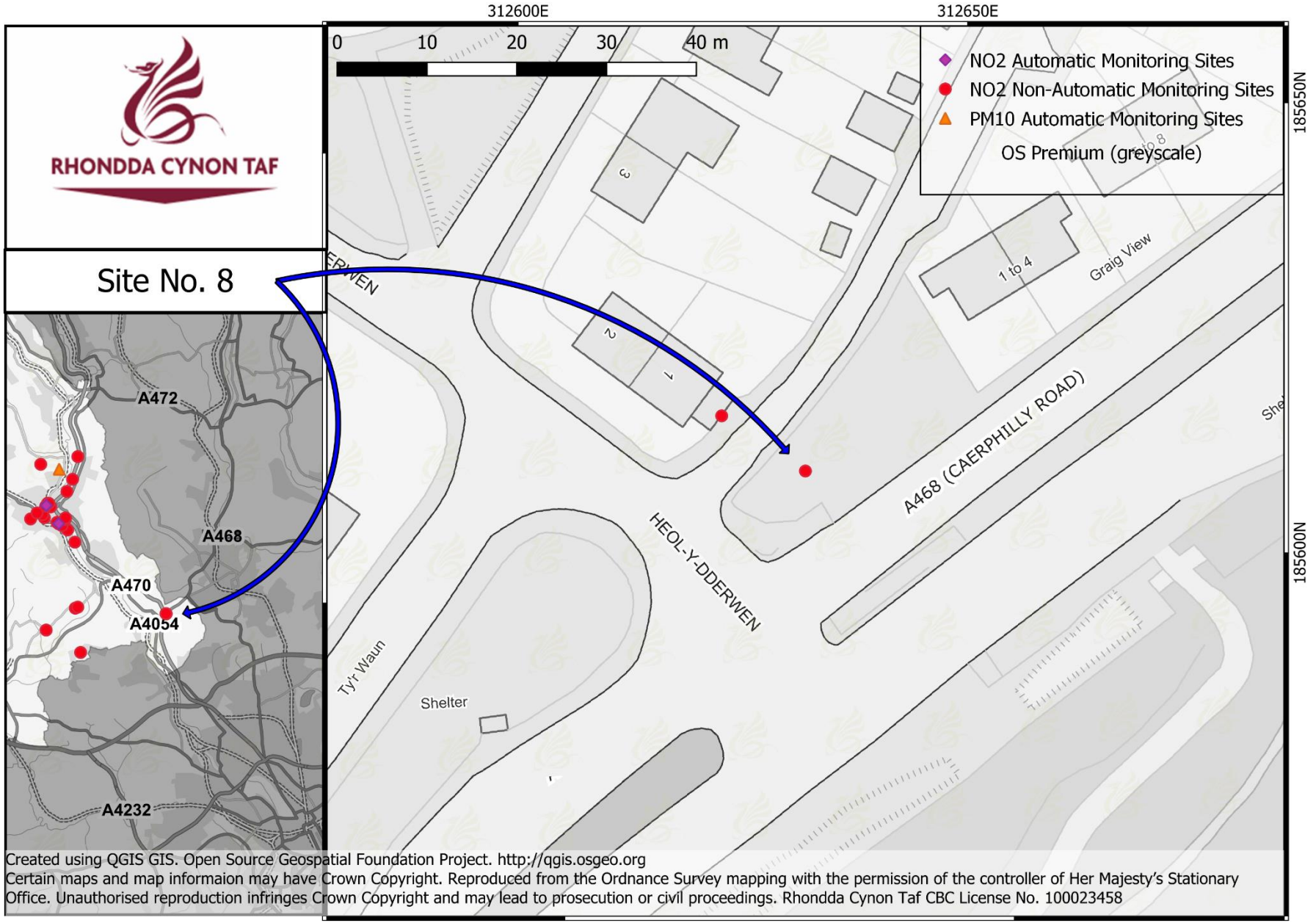
The one automatic monitoring site for $PM_{2.5}$ and PM_{10} made use of a MCERTS certified optical light scattering Palas FIDAS 200 Method 11 [Site No. 130 (Upper Garth Avenue)]. It is directly owned and controlled by the Local Authority and is periodically inspected by a trained officer. These inspections are complemented with twice yearly routine service by the Local Authority's service contract engineers, Air Monitors. All data gathered by Site No. 130 (Upper Garth Avenue) has been processed, validated and ratified in accordance with procedures, set out in guidance, by Officers of the Local Authority.

11.4.1 PM_{10} & $PM_{2.5}$ Monitoring Adjustment

The Local Authority operates a Palas FIDAS 200 Method 11 [Site No. 130 (Upper Garth Avenue)]. The method used involves sampling at ambient conditions, and has been formally considered [52] as an EU equivalent method without correction for PM_{10} and, with a simple linear adjustment factor (1.06) post data collection, for $PM_{2.5}$.

12. Appendix C2: Monitoring Location Maps




312600E
312650E
185650N
185600N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 8
A472
A468
A470
A4054
A4232
A468 (CAERPHILLY ROAD)
HEOL-Y-DDERWEN
Graig View
1 to 4
Tyr Waun
Shelter
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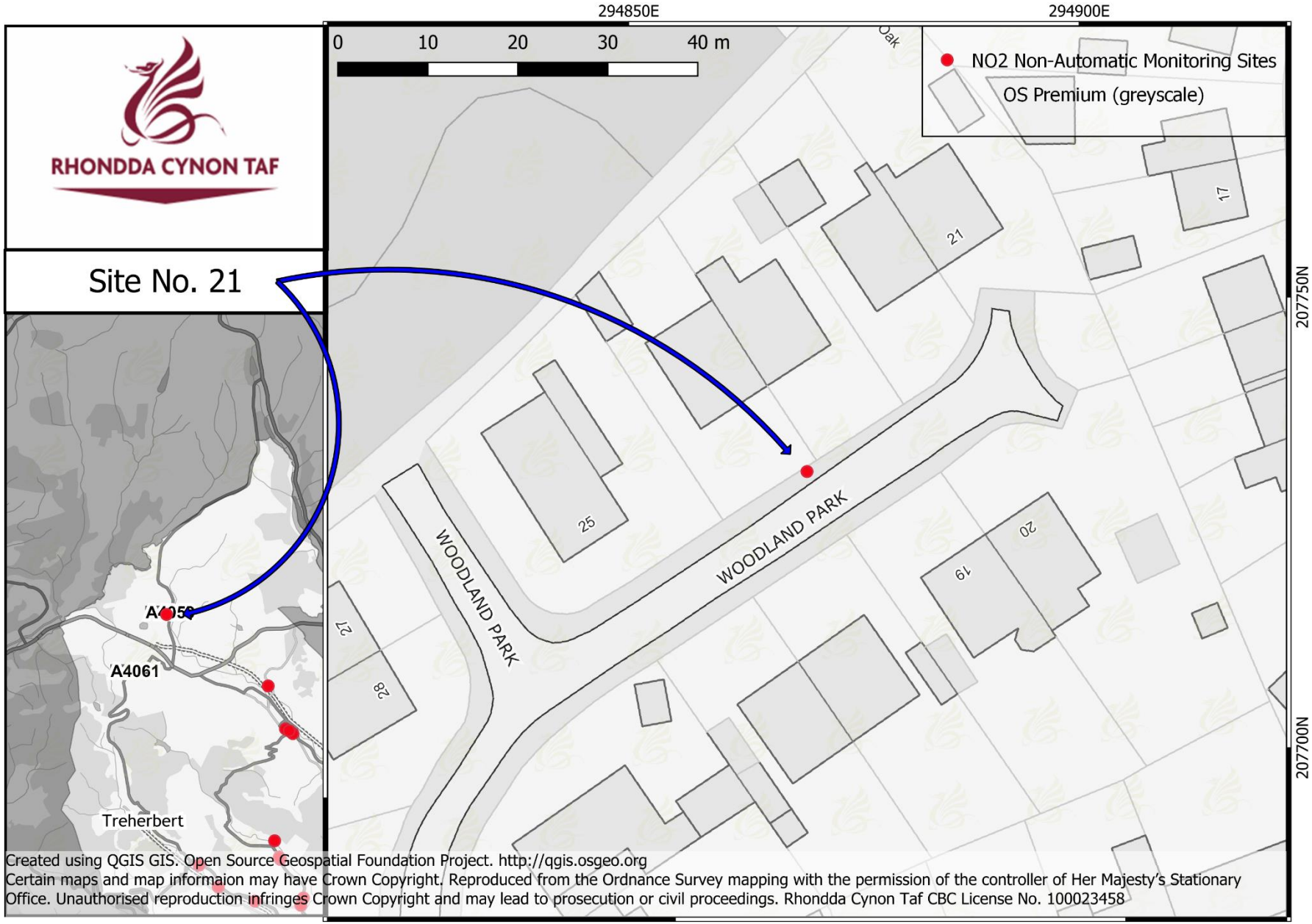
294850E
294900E
0
10
20
30
40 m
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 21
A4061
Treherbert
WOODLAND PARK
WOODLAND PARK
25
27
28
21
17
19
20
207750N
207700N
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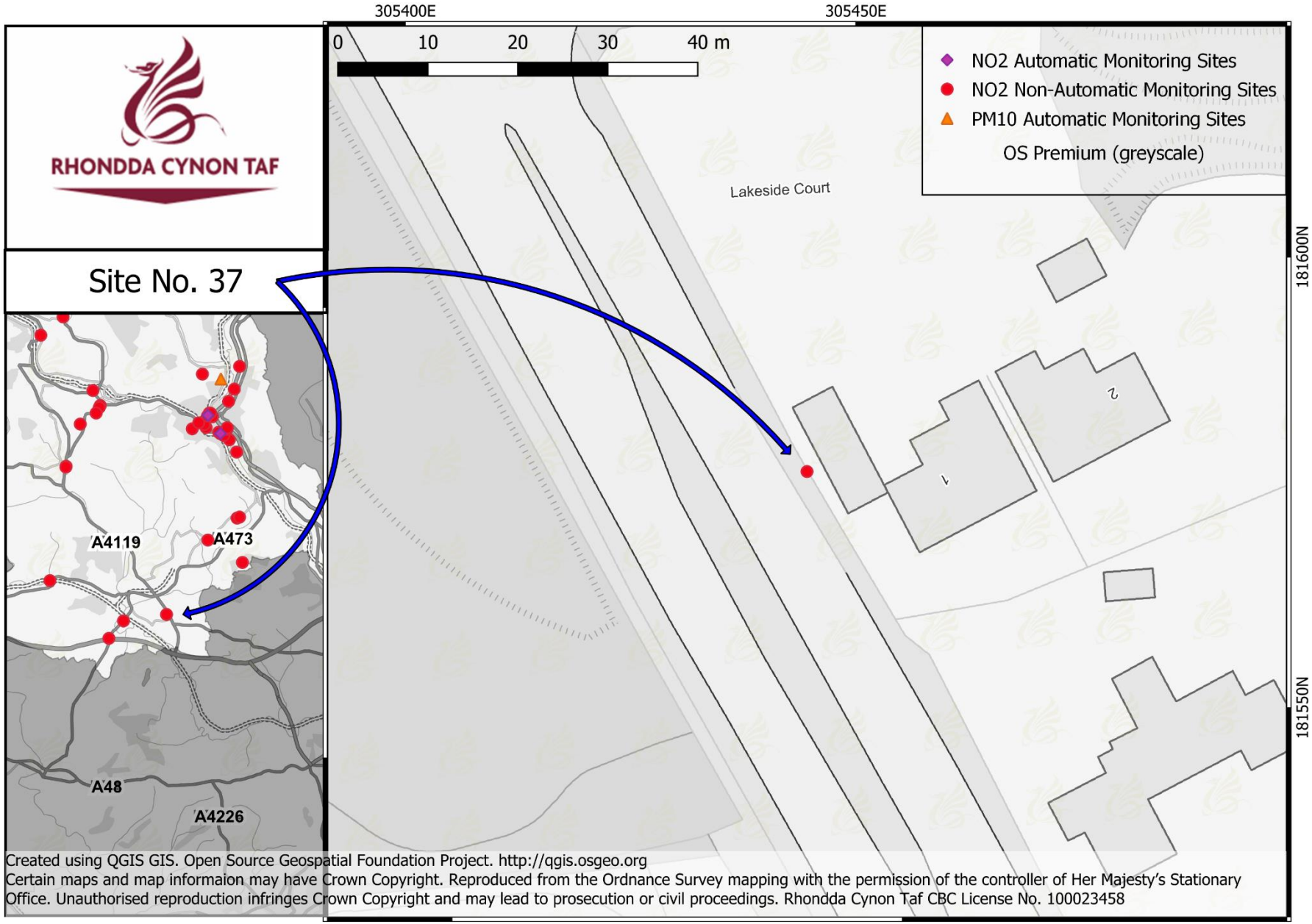
305400E
305450E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Lakeside Court
181600N
181550N
RHONDDA CYNON TAF
Site No. 37
A4119
A473
A48
A4226
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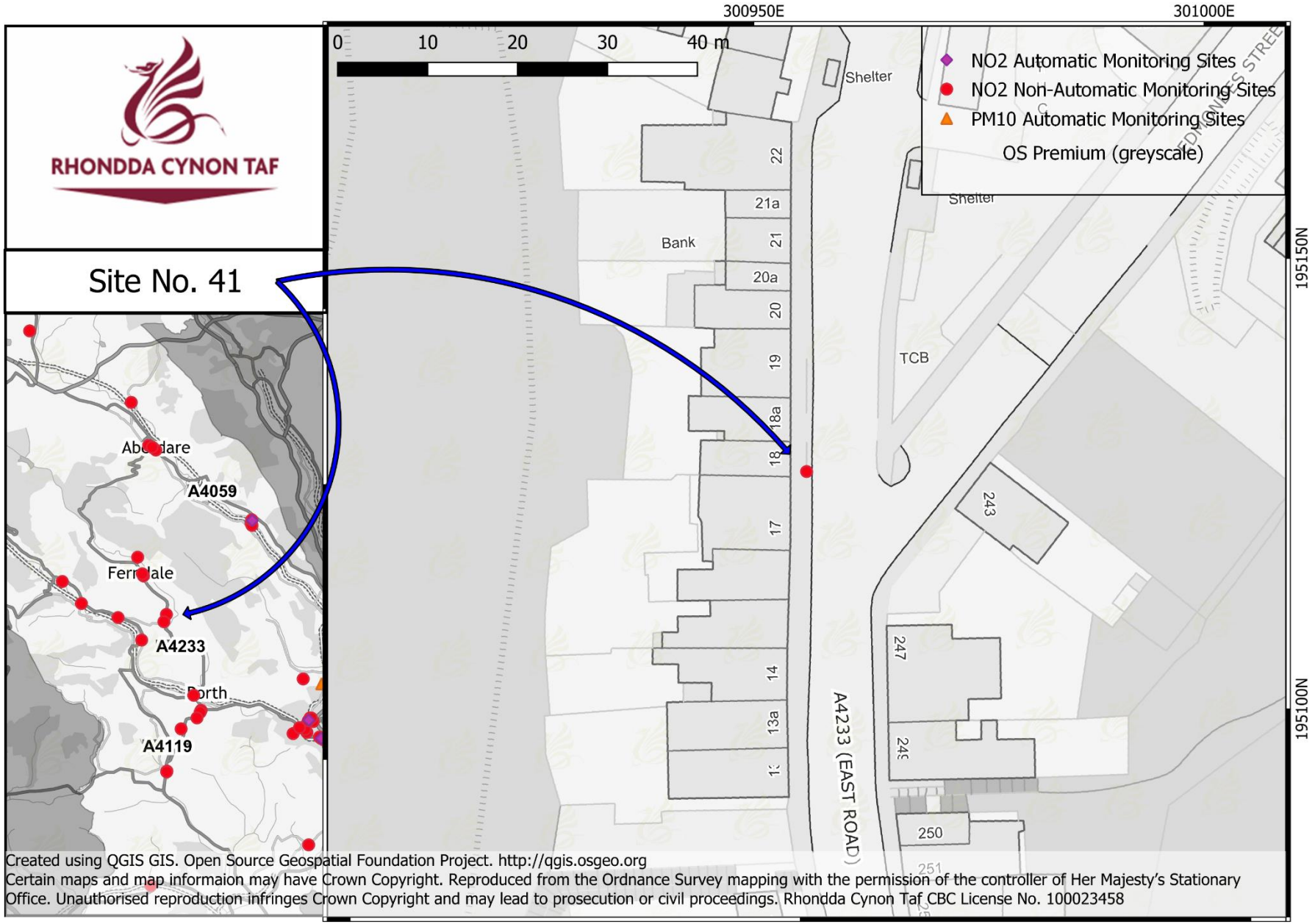
RHONDDA CYNON TAF
Site No. 41
300950E
301000E
195150N
195100N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Shelter
Bank
TCB
A4233 (EAST ROAD)
A4059
A4233
A4119
22
21a
21
20a
20
19
18a
18
17
14
13a
243
247
250
251
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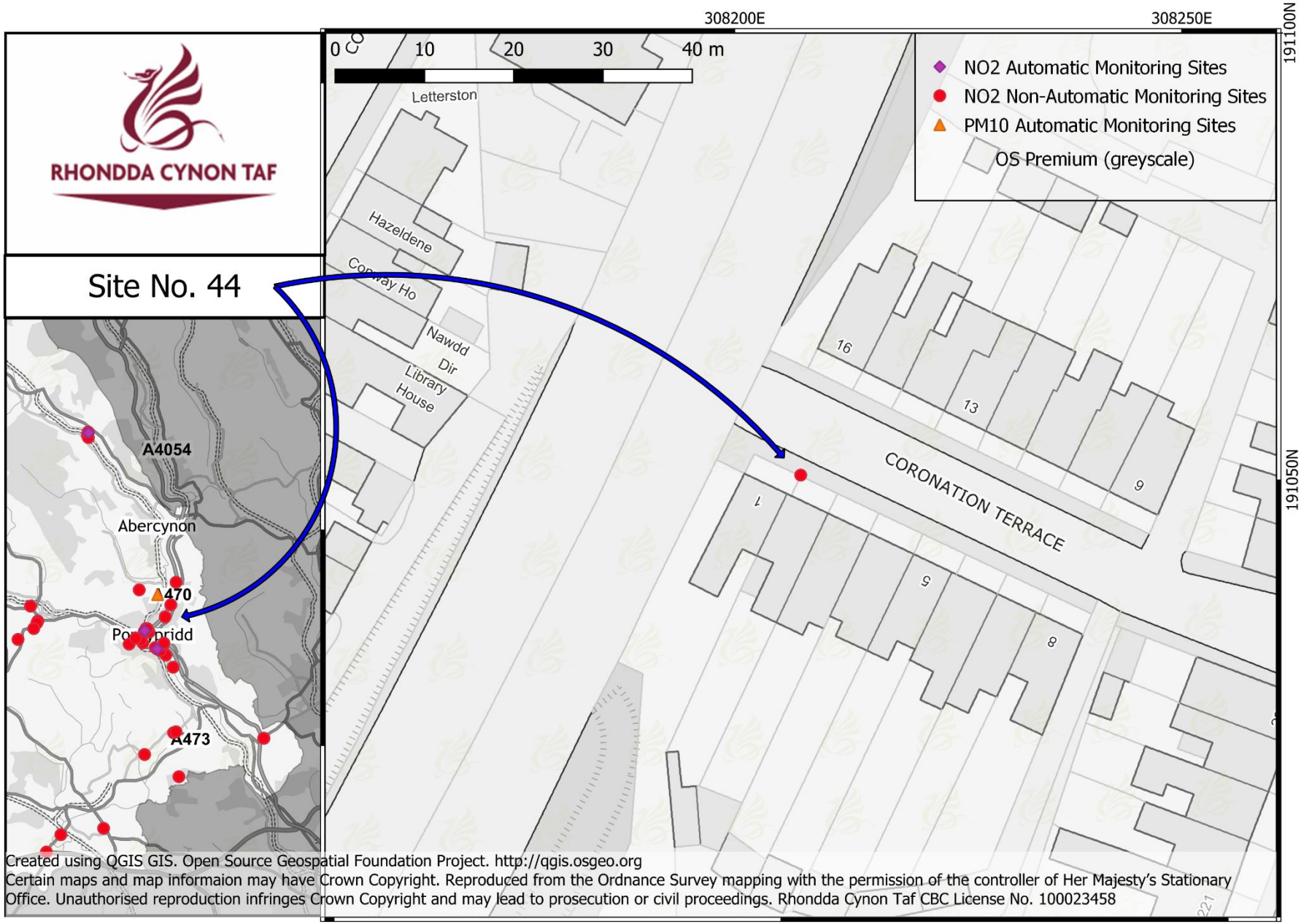
RHONDDA CYNON TAF
Site No. 44
308200E
308250E
191100N
191050N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Letterston
Hazeldene
Conway Ho
Nawdd Dir
Library House
CORONATION TERRACE
16
13
9
1
5
8
A4054
Abercynon
A470
A473
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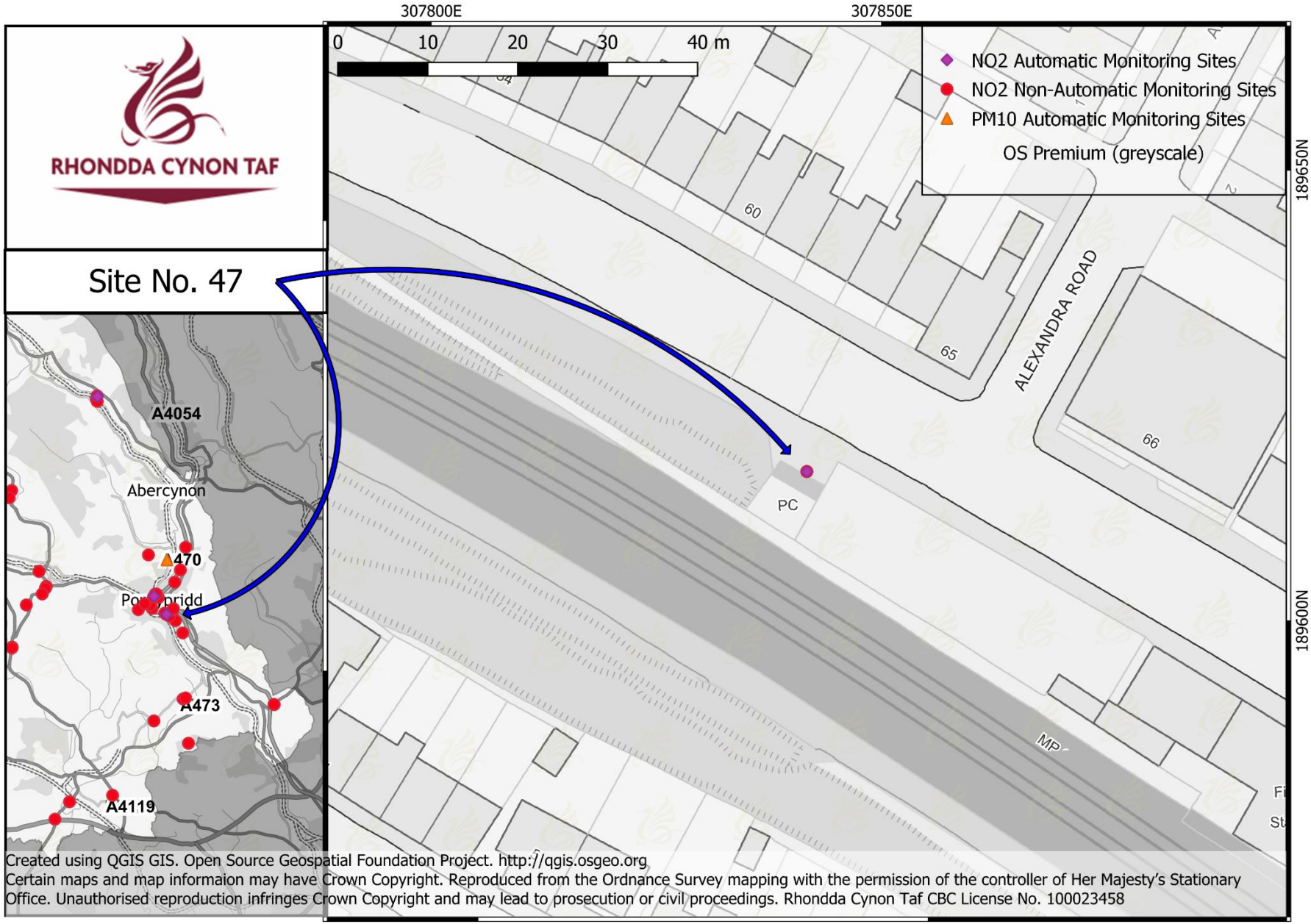
RHONDDA CYNON TAF
Site No. 47
307800E
307850E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189650N
189600N
ALEXANDRA ROAD
60
65
66
PC
A4054
Abercynon
A470
A473
A4119
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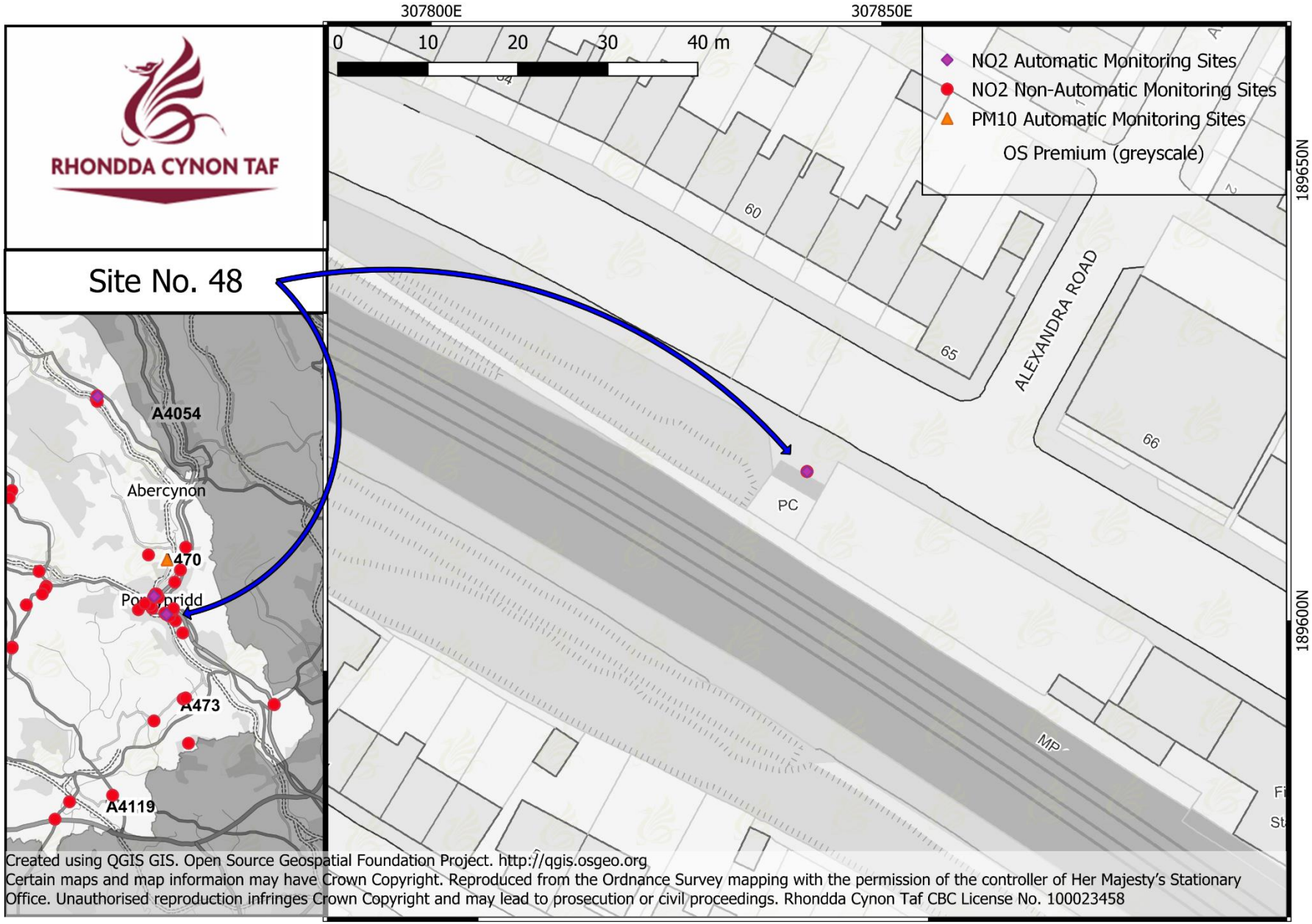
307800E
307850E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189650N
189600N
ALEXANDRA ROAD
60
65
66
PC
MP
RHONDDA CYNON TAF
Site No. 48
A4054
Abercynon
A470
A473
A4119
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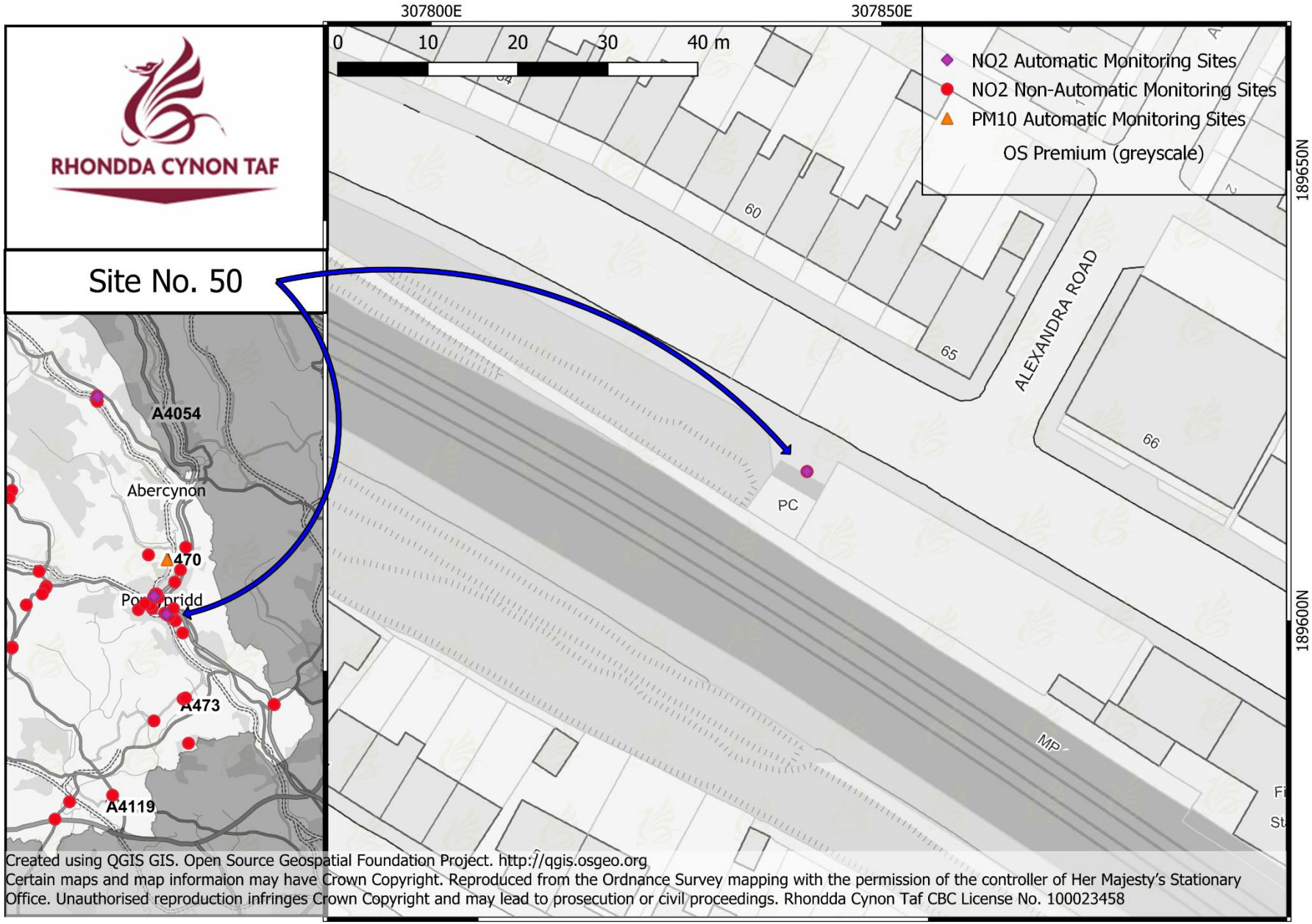
307800E
307850E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189650N
189600N
ALEXANDRA ROAD
60
65
66
PC
MP
RHONDDA CYNON TAF
Site No. 50
A4054
Abercynon
A470
A473
A4119
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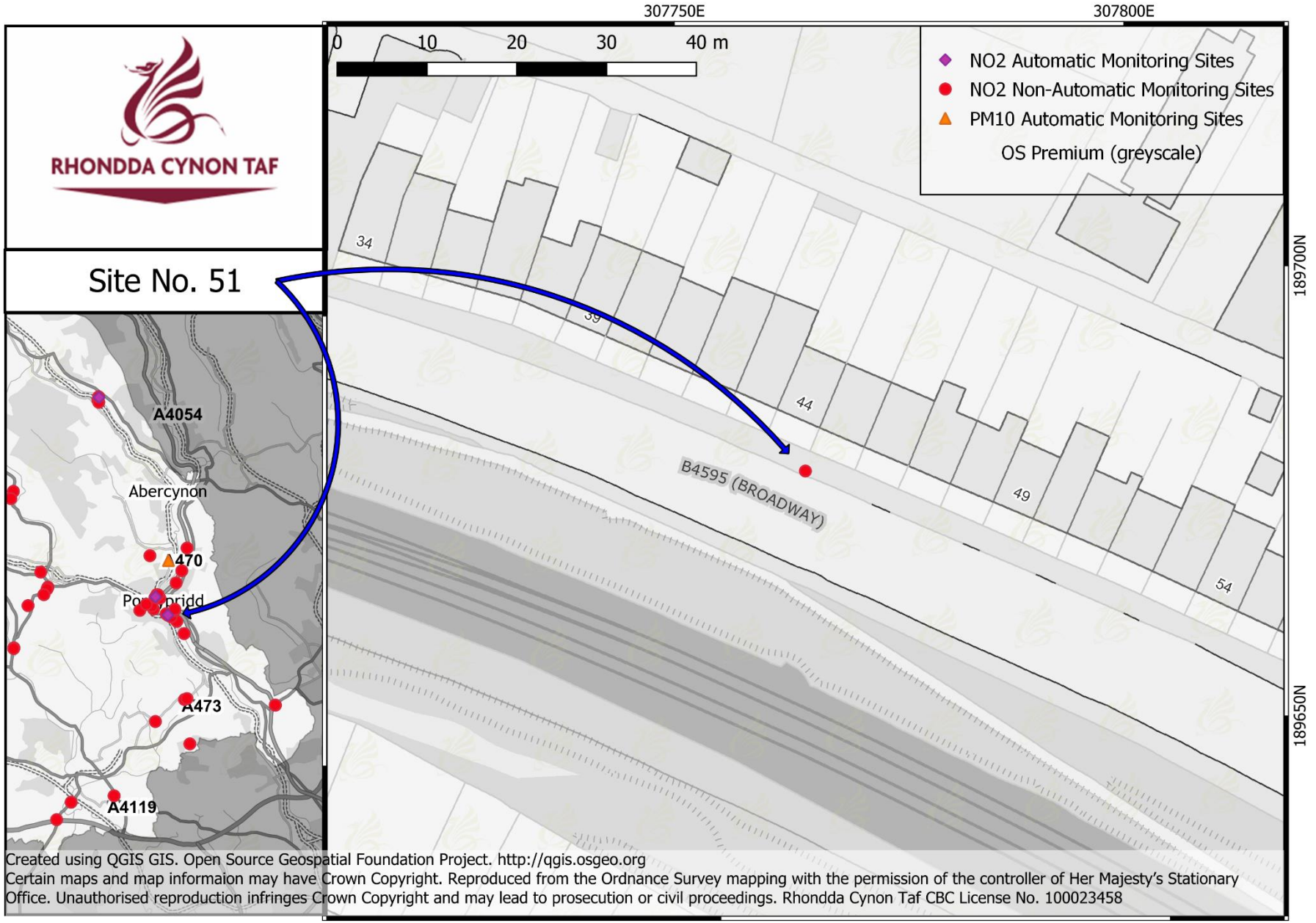
RHONDDA CYNON TAF
Site No. 51
307750E
307800E
189700N
189650N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
34
39
44
49
54
B4595 (BROADWAY)
A4054
Abercynon
A470
A473
A4119
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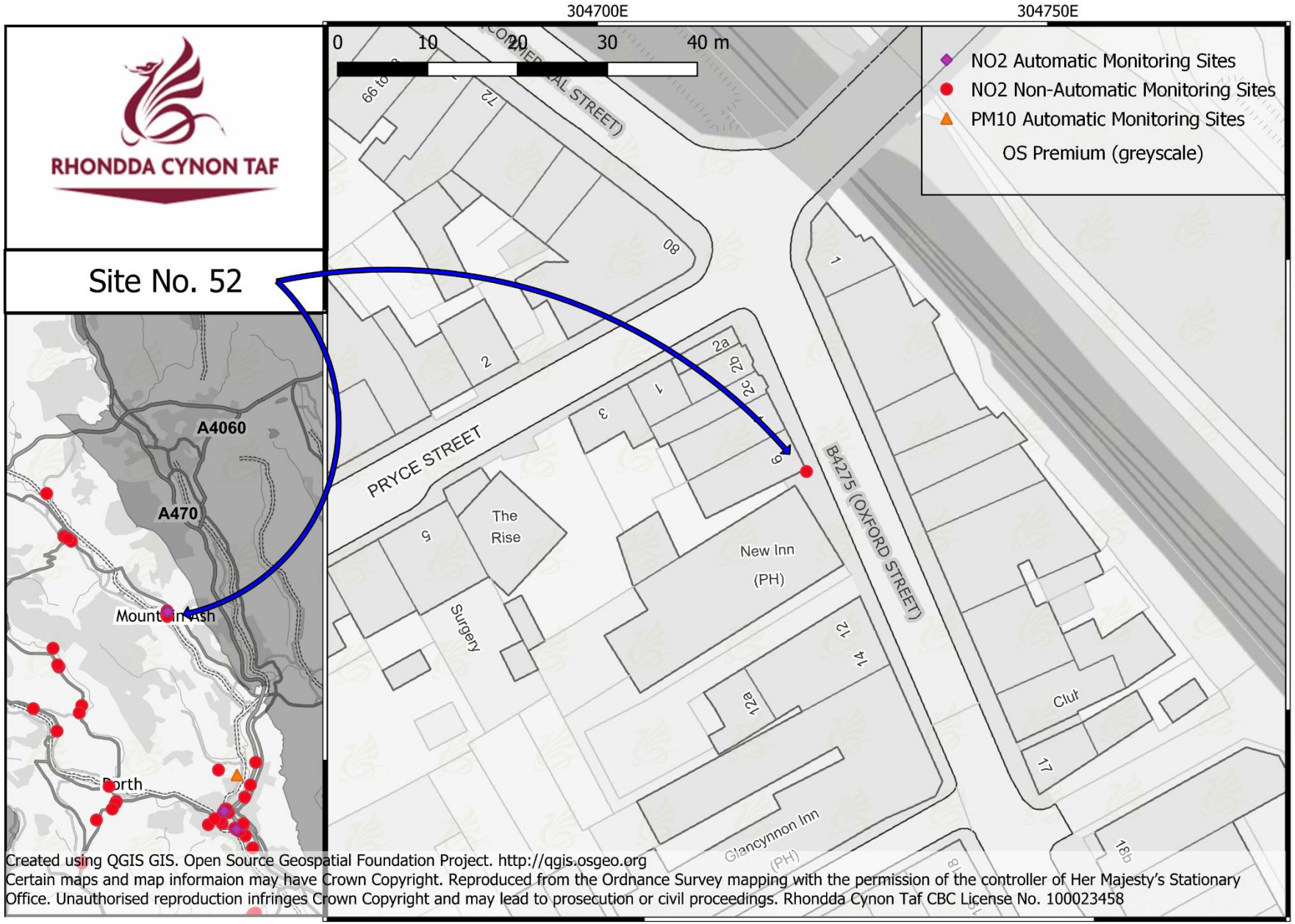
304700E
304750E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 52
A4060
A470
Mountain Ash
Porth
PRYCE STREET
B4275 (OXFORD STREET)
The Rise
Surgery
New Inn
(PH)
Glancynnon Inn
(PH)
Club
199200N
199150N
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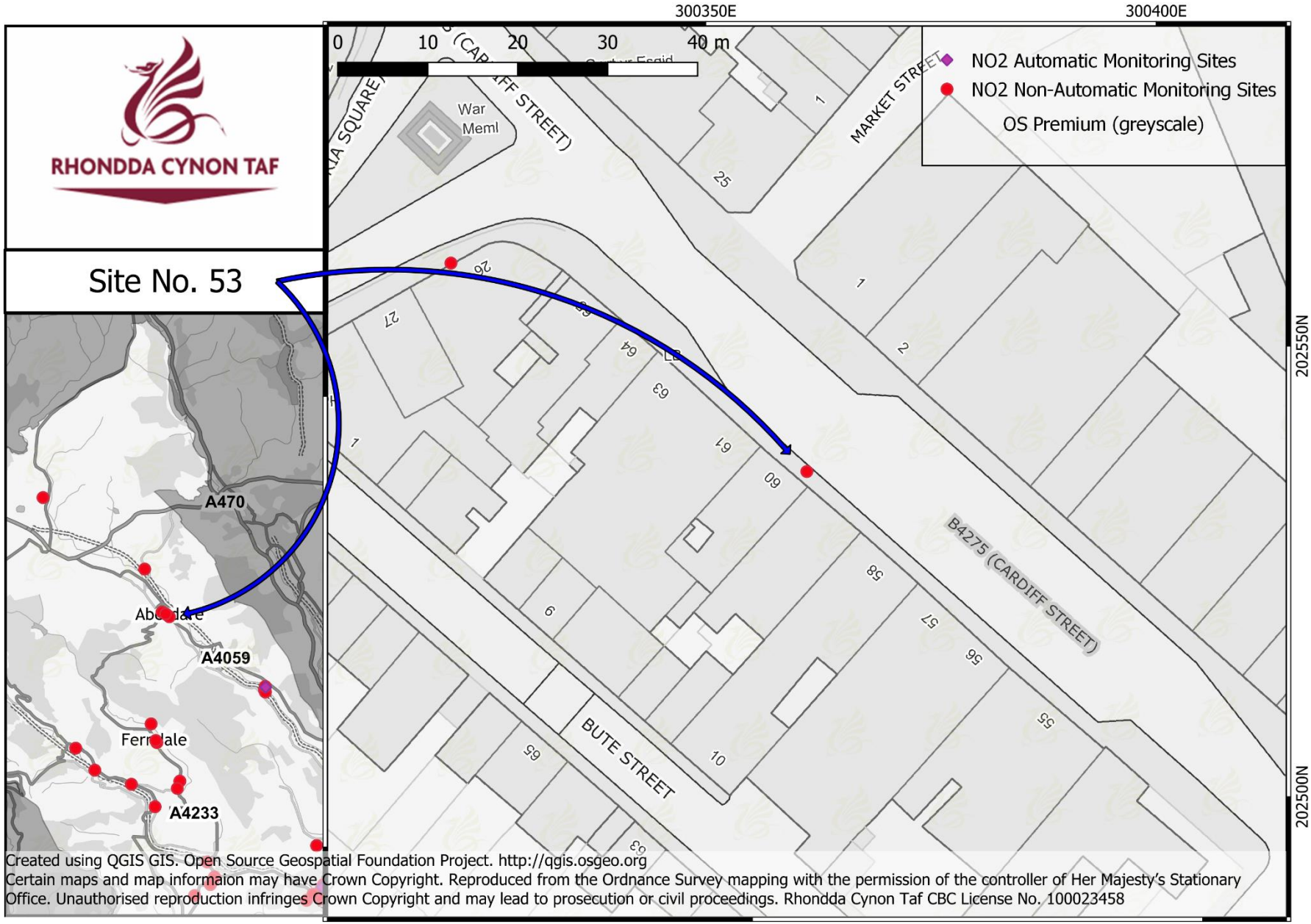
300350E
300400E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 53
A470
A4059
A4233
MARKET STREET
B4275 (CARDIFF STREET)
BUTE STREET
War Meml
202550N
202500N
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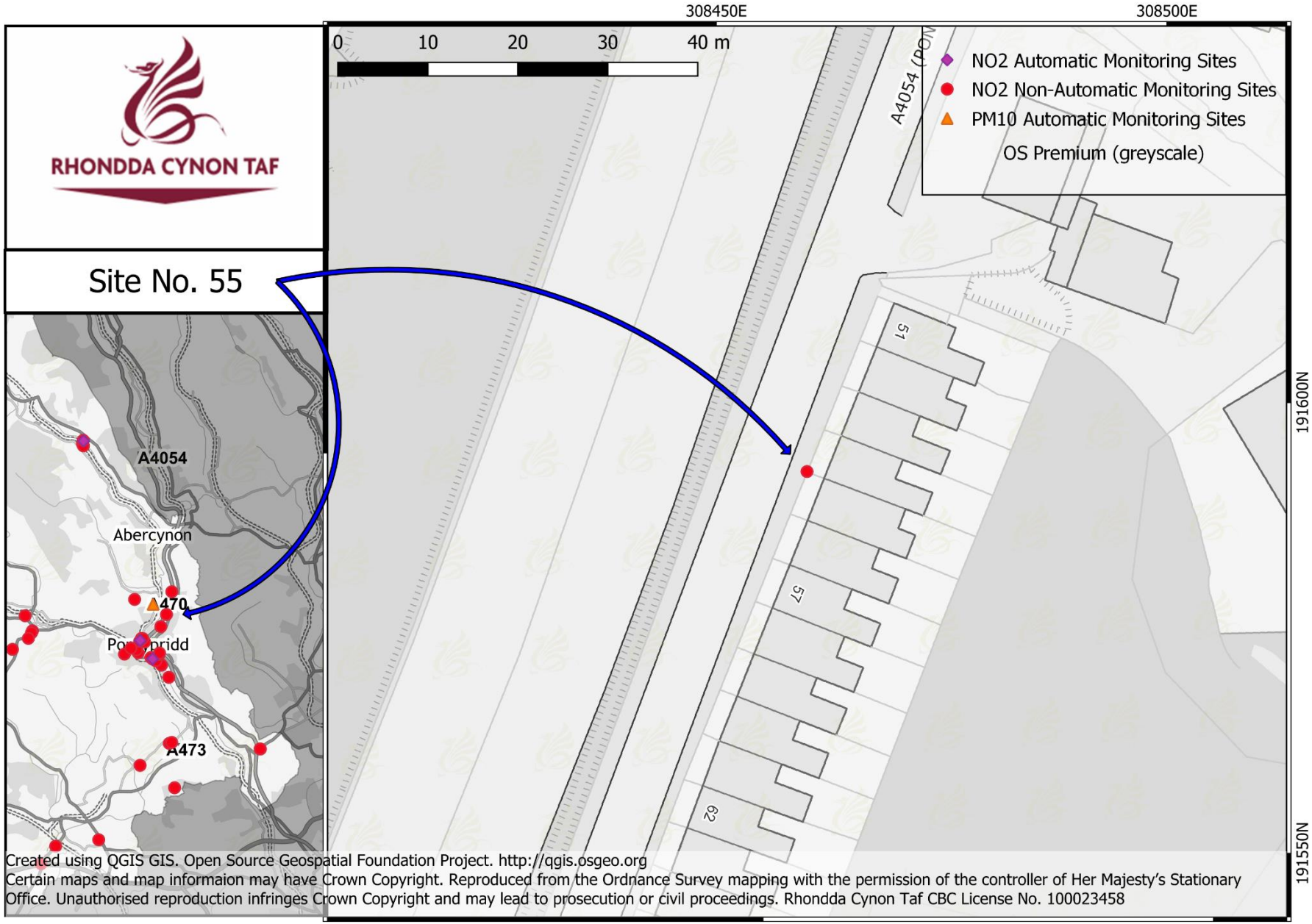
RHONDDA CYNON TAF
Site No. 55
308450E
308500E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
A4054
Abercynon
A473
191600N
191550N
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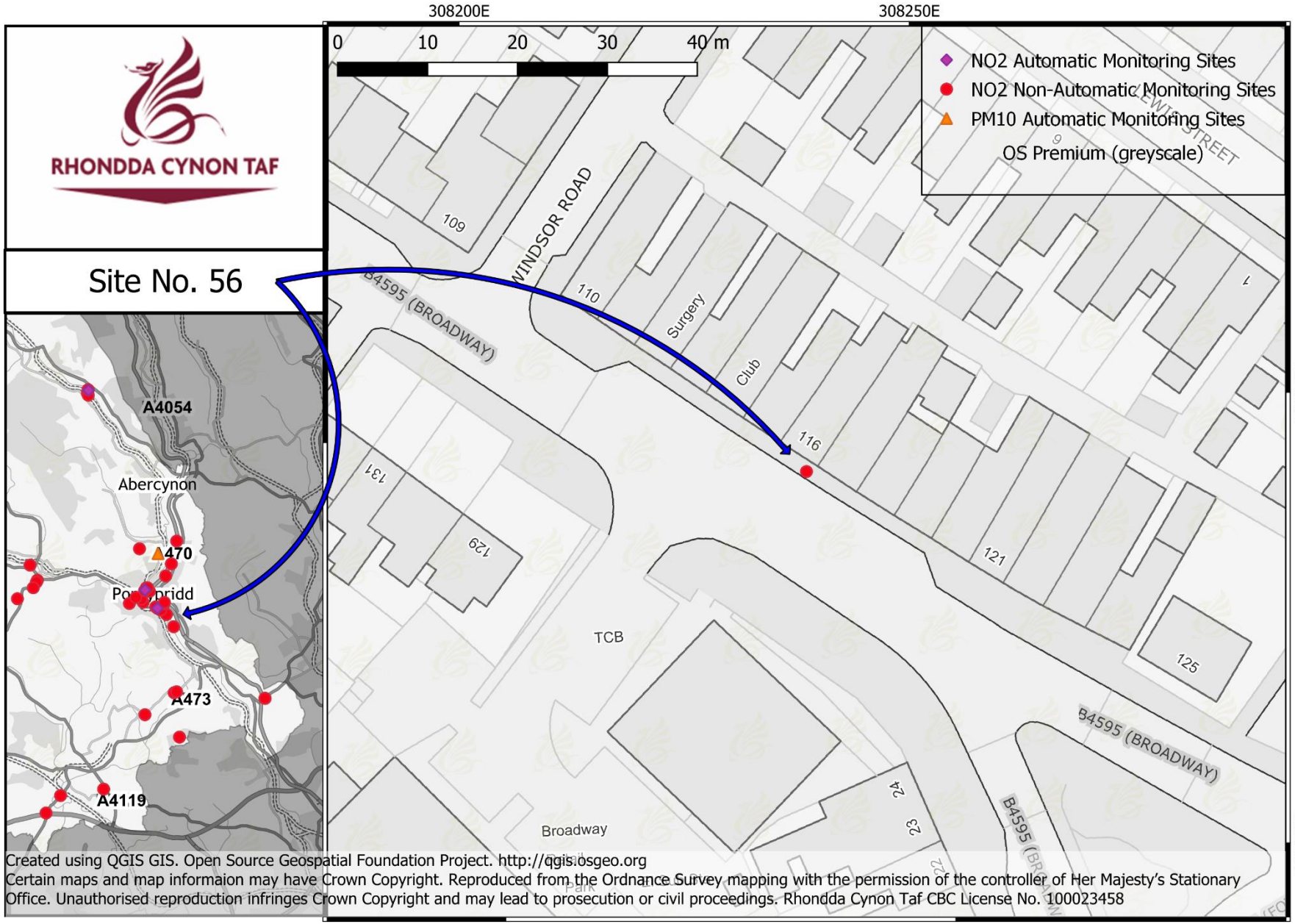
RHONDDA CYNON TAF
Site No. 56
308200E
308250E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
WINDSOR ROAD
B4595 (BROADWAY)
Surgery
Club
TCB
Broadway
109
110
116
121
125
129
131
189350N
189300N
A4054
Abercynon
A470
A473
A4119
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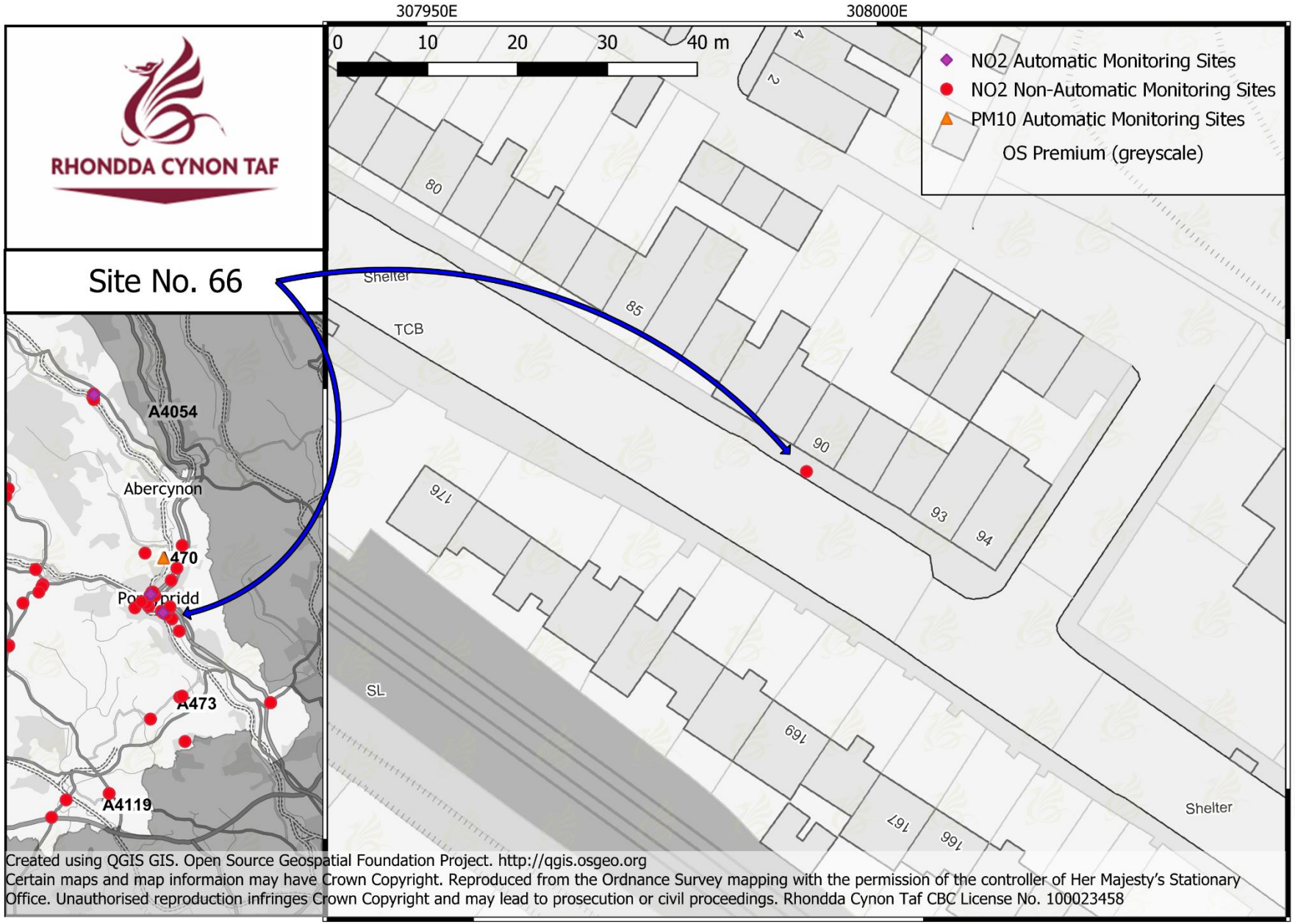
RHONDDA CYNON TAF
Site No. 66
307950E
308000E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189550N
189500N
A4054
Abercynon
470
A473
A4119
Shelter
TCB
SL
80
85
90
93
94
176
169
167
166
2
4
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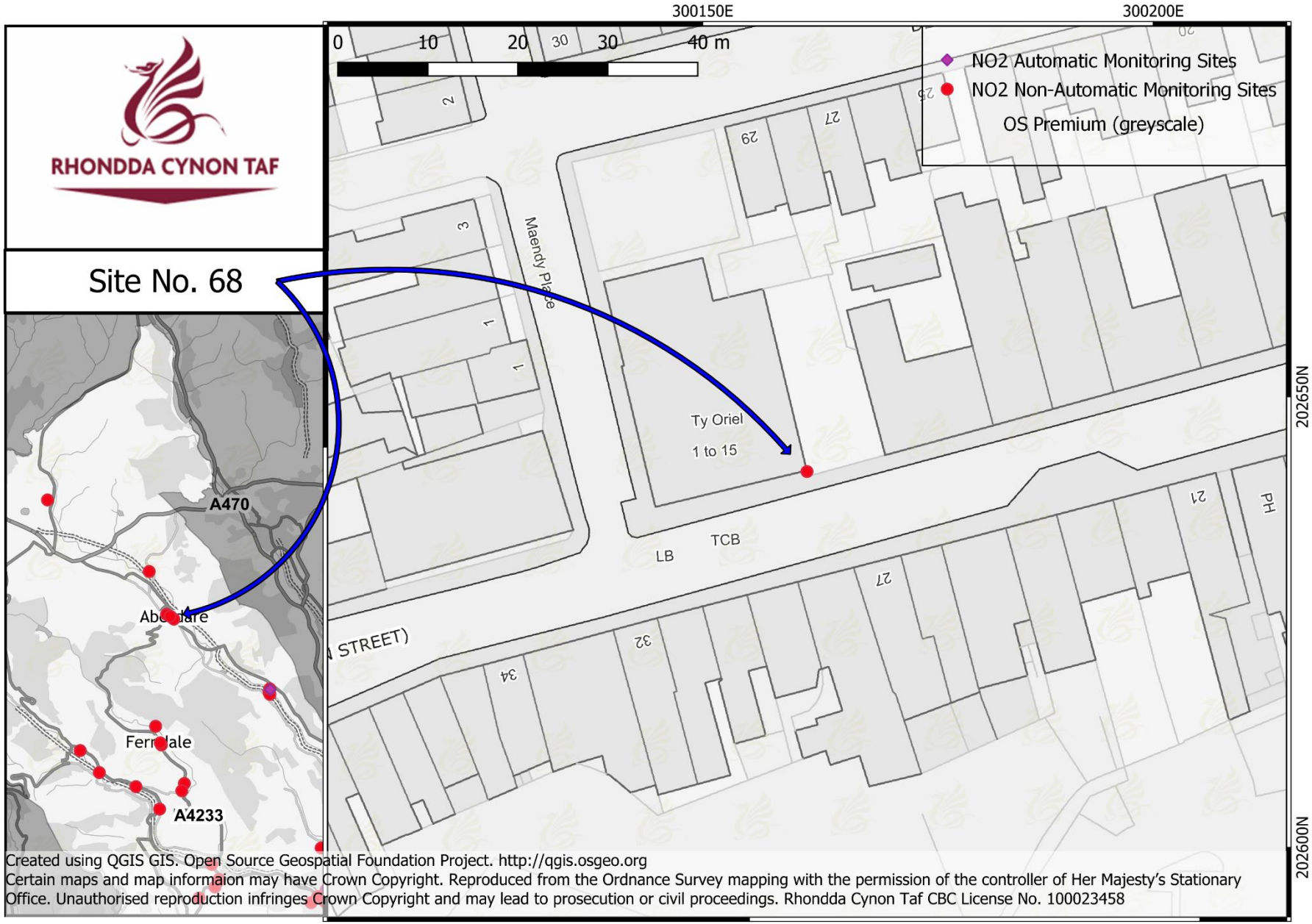
RHONDDA CYNON TAF
Site No. 68
300150E
300200E
202650N
202600N
0 10 20 30 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
Maendy Place
Ty Oriel
1 to 15
TCB
LB
A470
A4233
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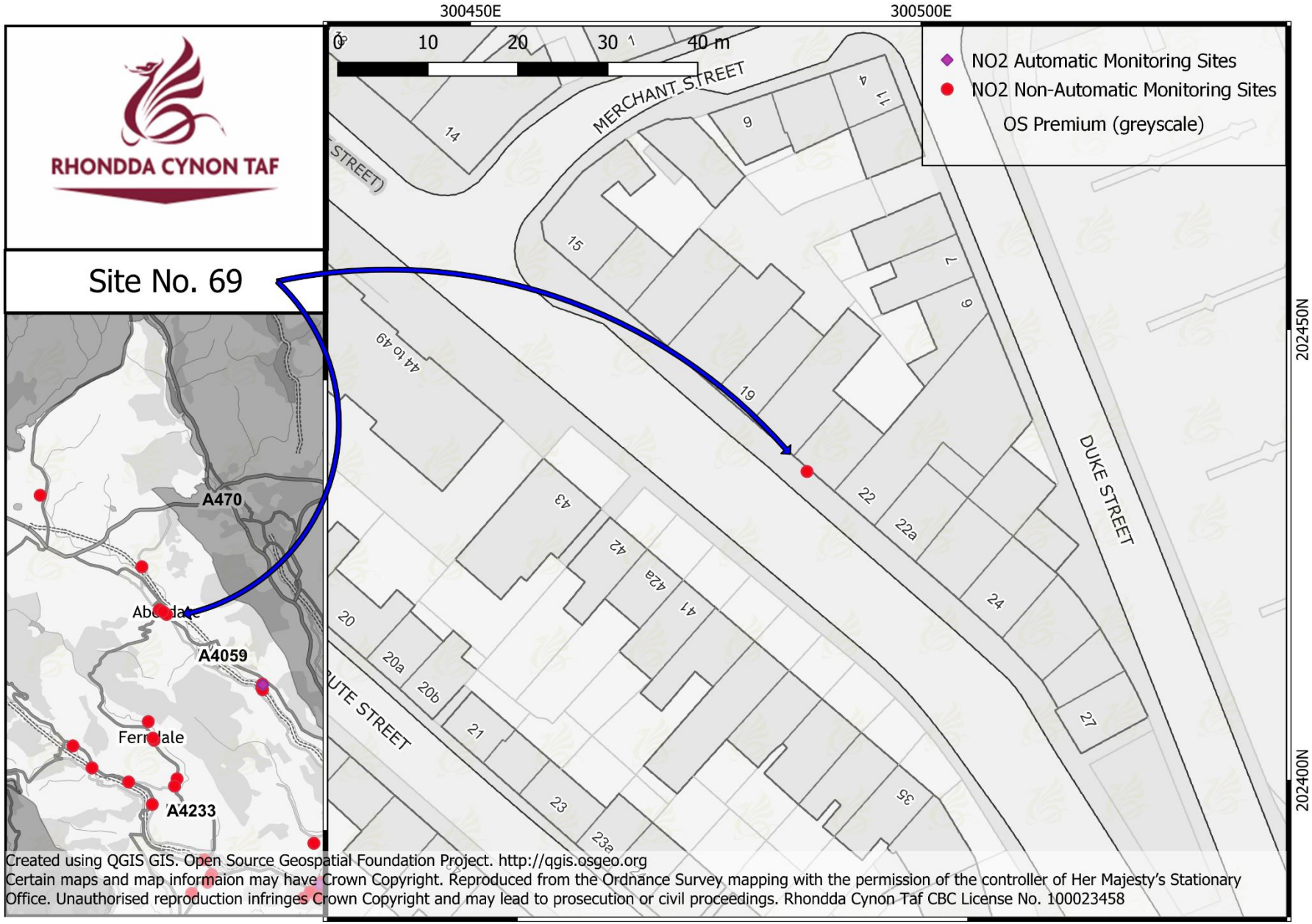
300450E
300500E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 69
MERCHANT STREET
DUKE STREET
202450N
202400N
A470
A4059
A4233
Ferndale
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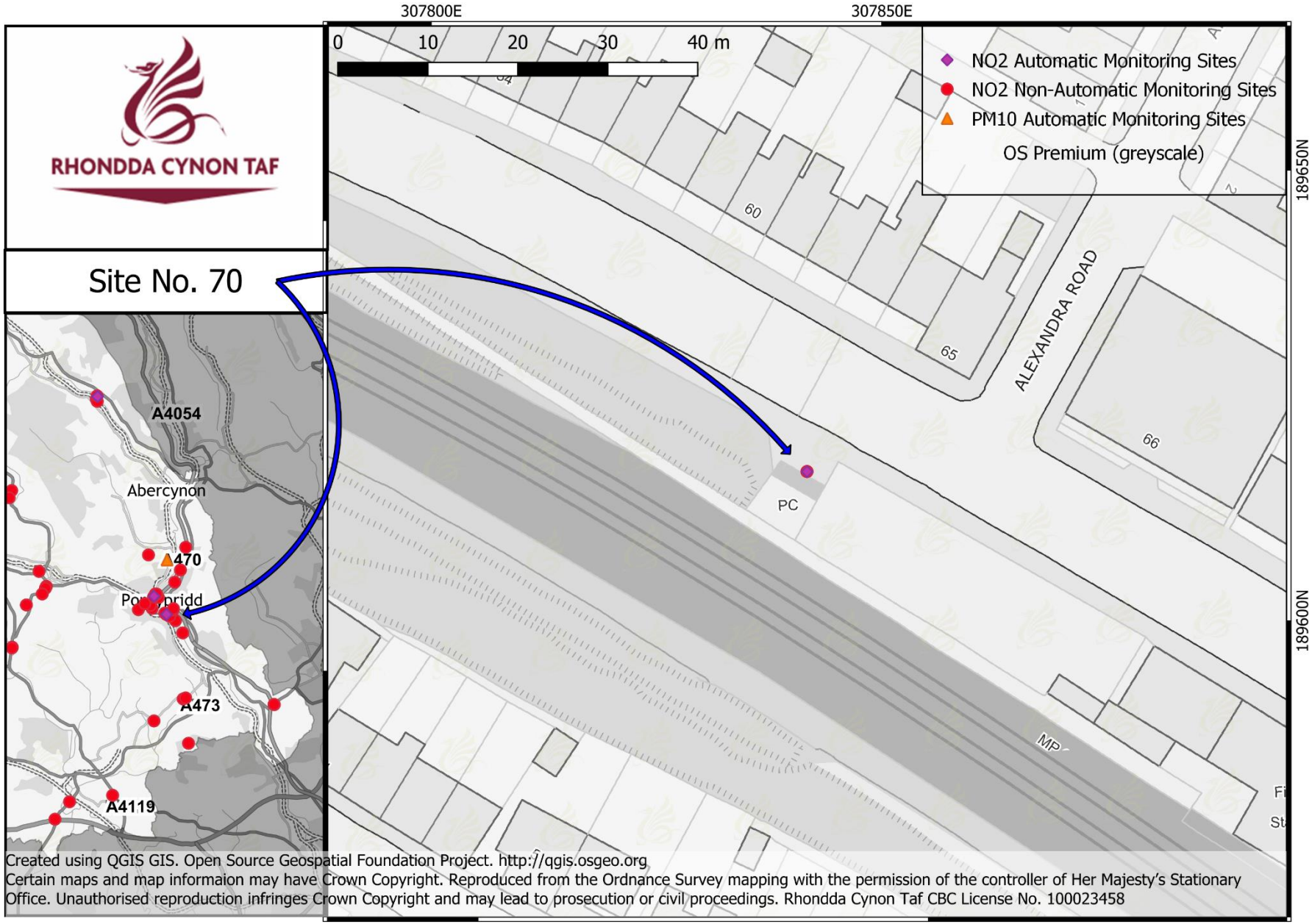
307800E
307850E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189650N
189600N
ALEXANDRA ROAD
60
65
66
PC
MP
RHONDDA CYNON TAF
Site No. 70
A4054
Abercynon
A470
A473
A4119
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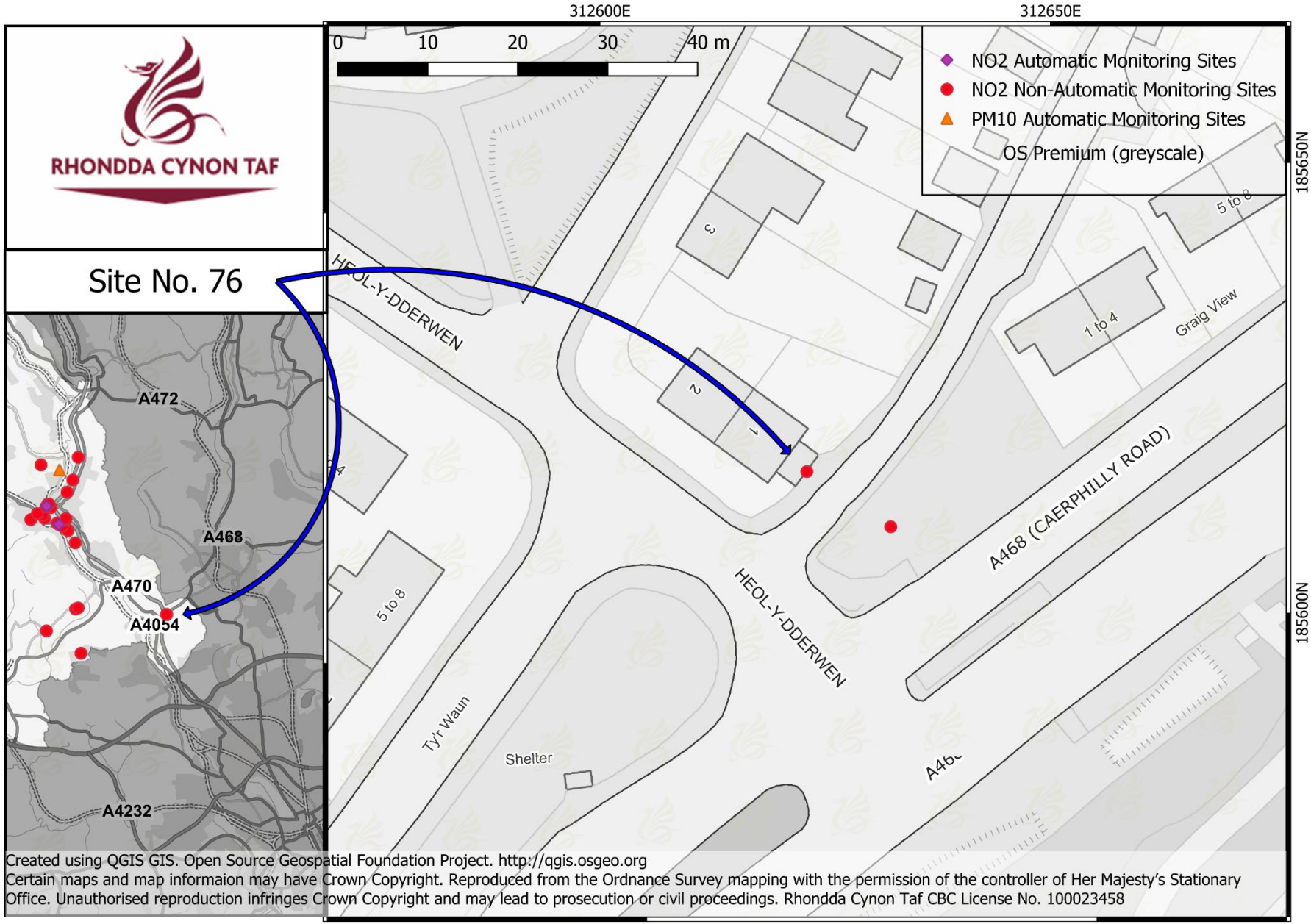
312600E
312650E
185650N
185600N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 76
A472
A468
A470
A4054
A4232
HEOL-Y-DDERWEN
A468 (CAERPHILLY ROAD)
Graig View
1 to 4
5 to 8
Tyr Waun
Shelter
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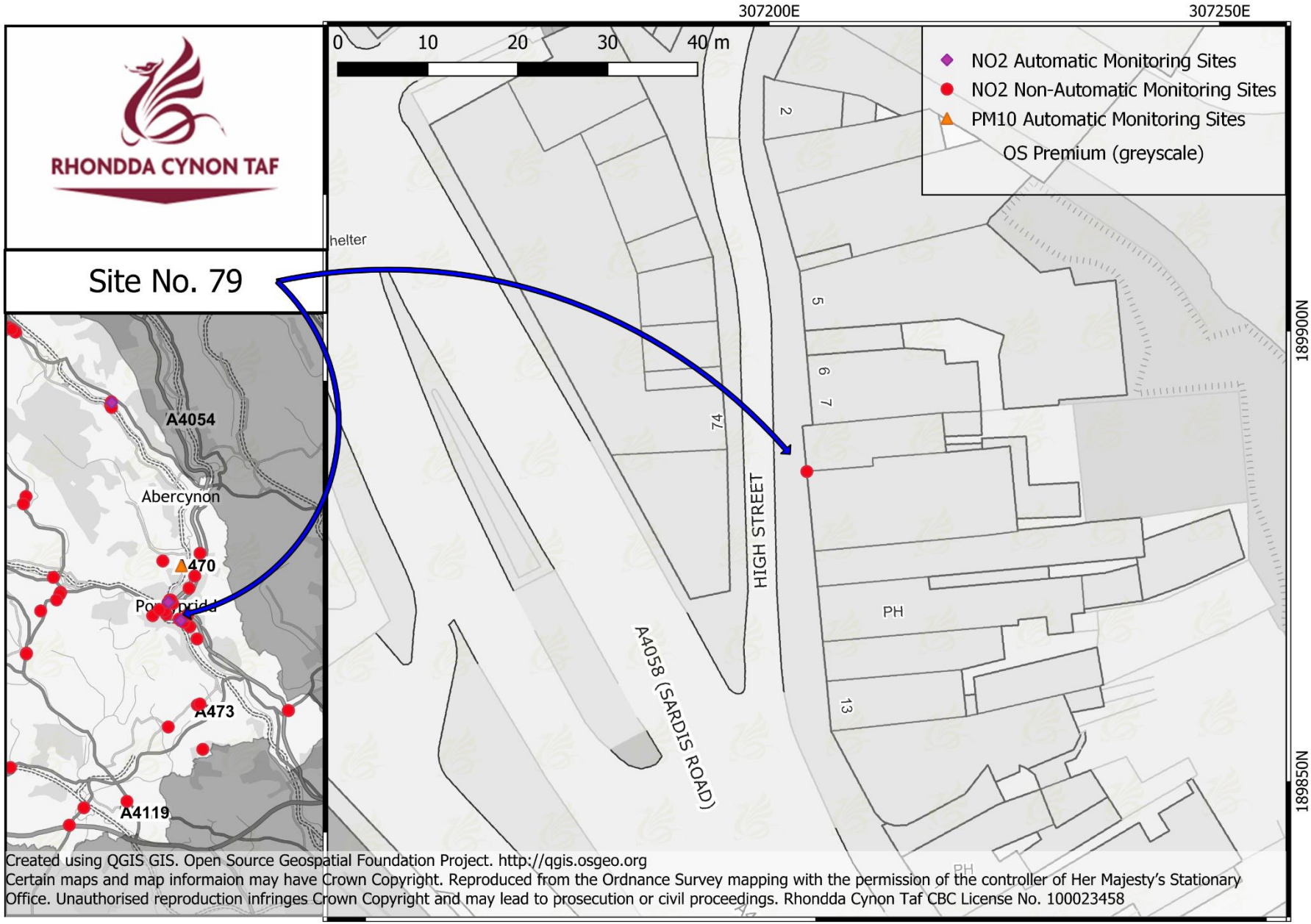
RHONDDA CYNON TAF
Site No. 79
307200E
307250E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189900N
189850N
HIGH STREET
A4058 (SARDIS ROAD)
PH
A4054
Abercynon
A473
A4119
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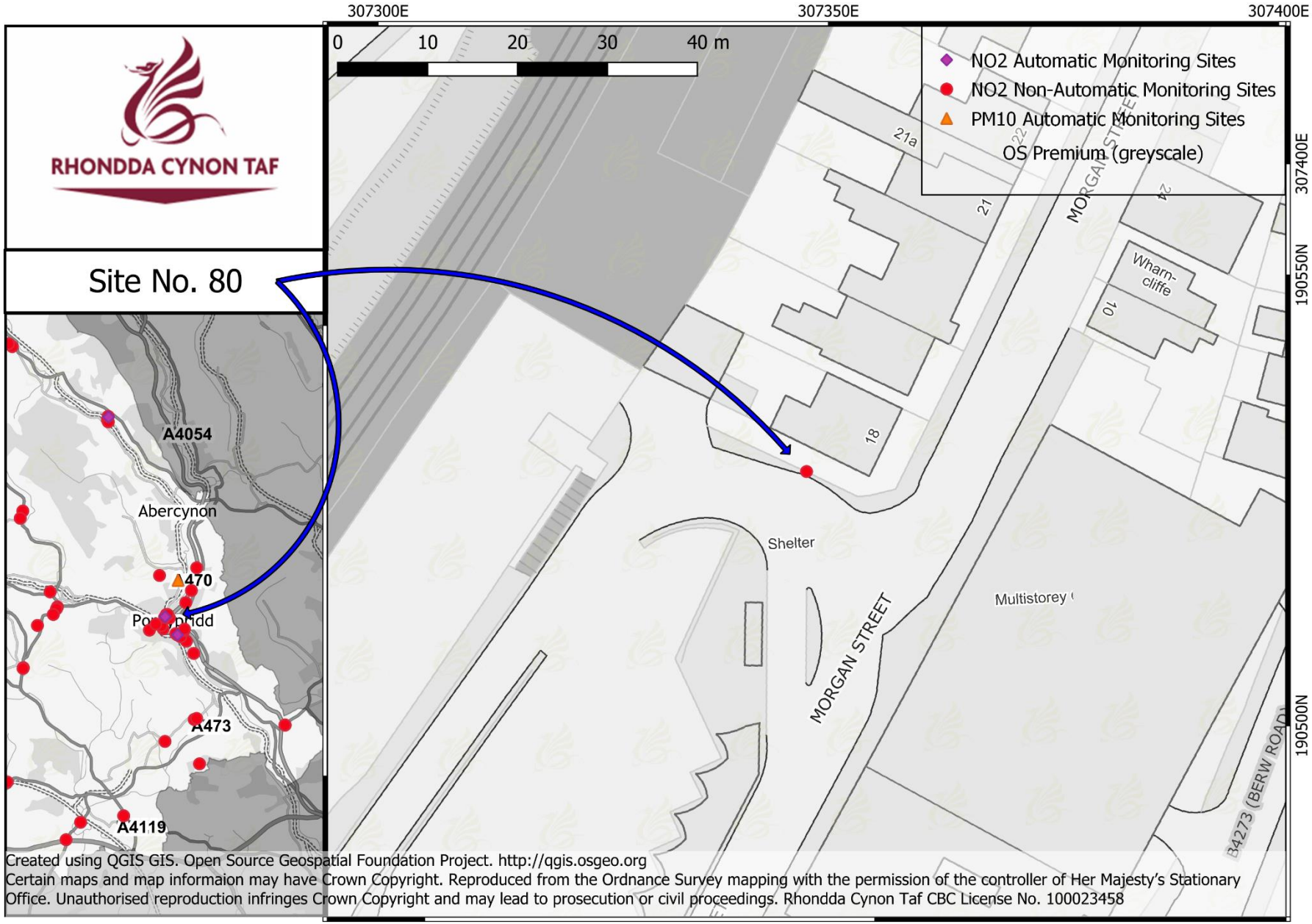
307300E
307350E
307400E
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 80
A4054
Abercynon
A470
A473
A4119
21a
22
21
MORGAN STREET
24
Wharn-cliffe
10
18
Shelter
Multistorey
MORGAN STREET
B4273 (BERW ROAD)
307400E
190550N
190500N
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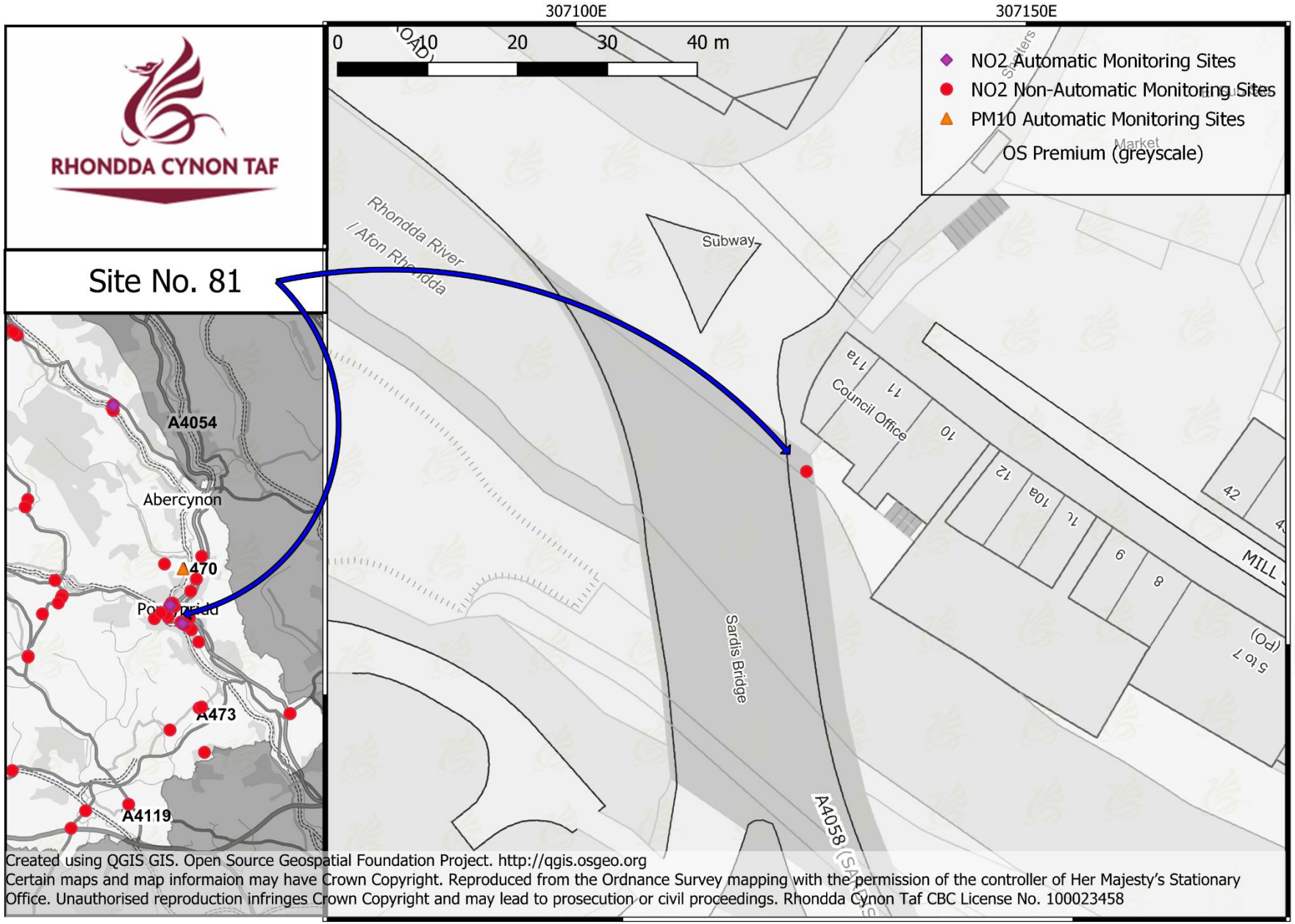
307100E
307150E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
190050N
190000N
Site No. 81
A4054
Abercynon
470
A473
A4119
Rhondda River / Afon Rhondda
Subway
Sardis Bridge
A4058
Council Office
MILL
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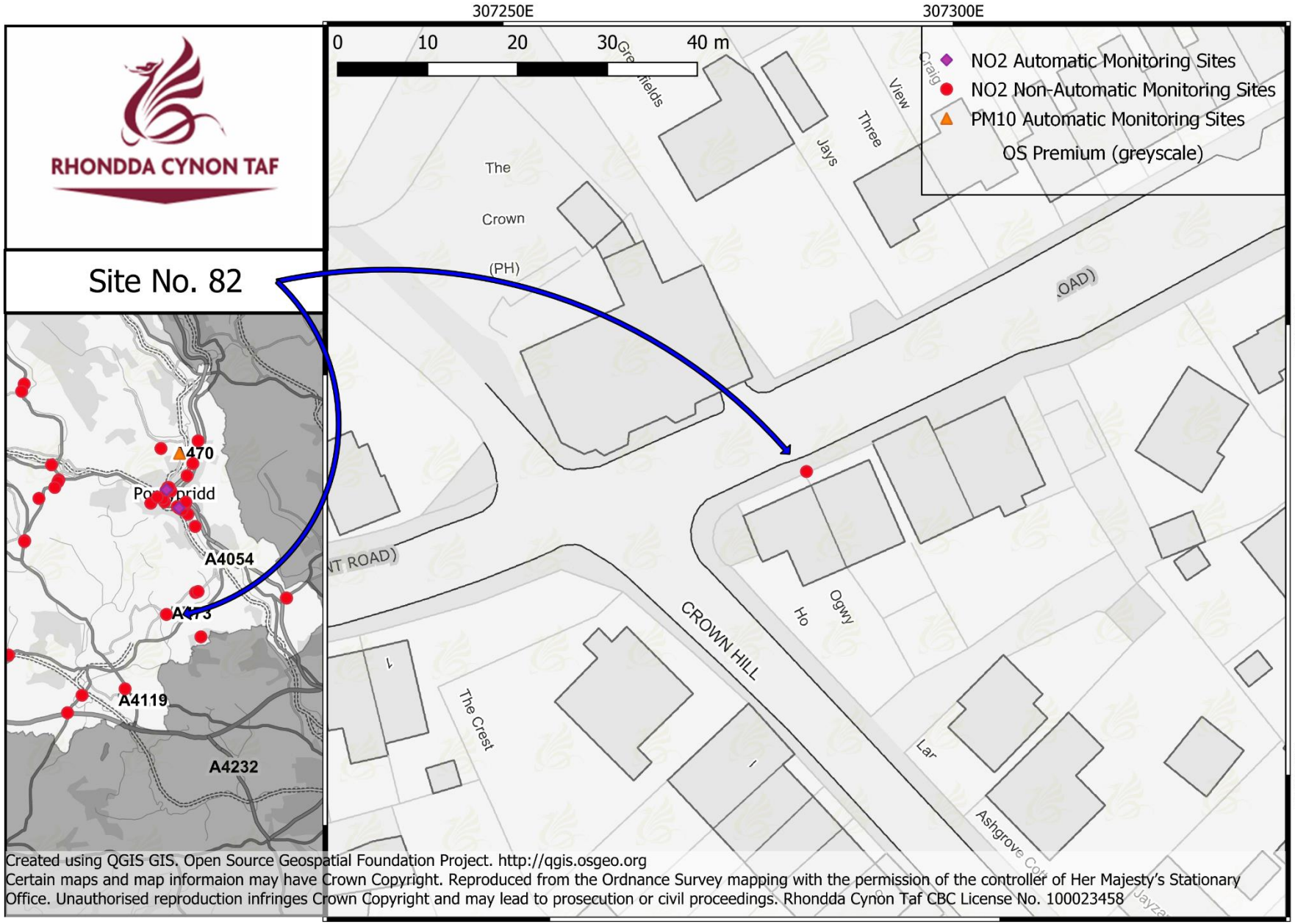
RHONDDA CYNON TAF
Site No. 82
307250E
307300E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
184900N
184850N
The Crown (PH)
CROWN HILL
The Crest
A470
A4054
A473
A4119
A4232
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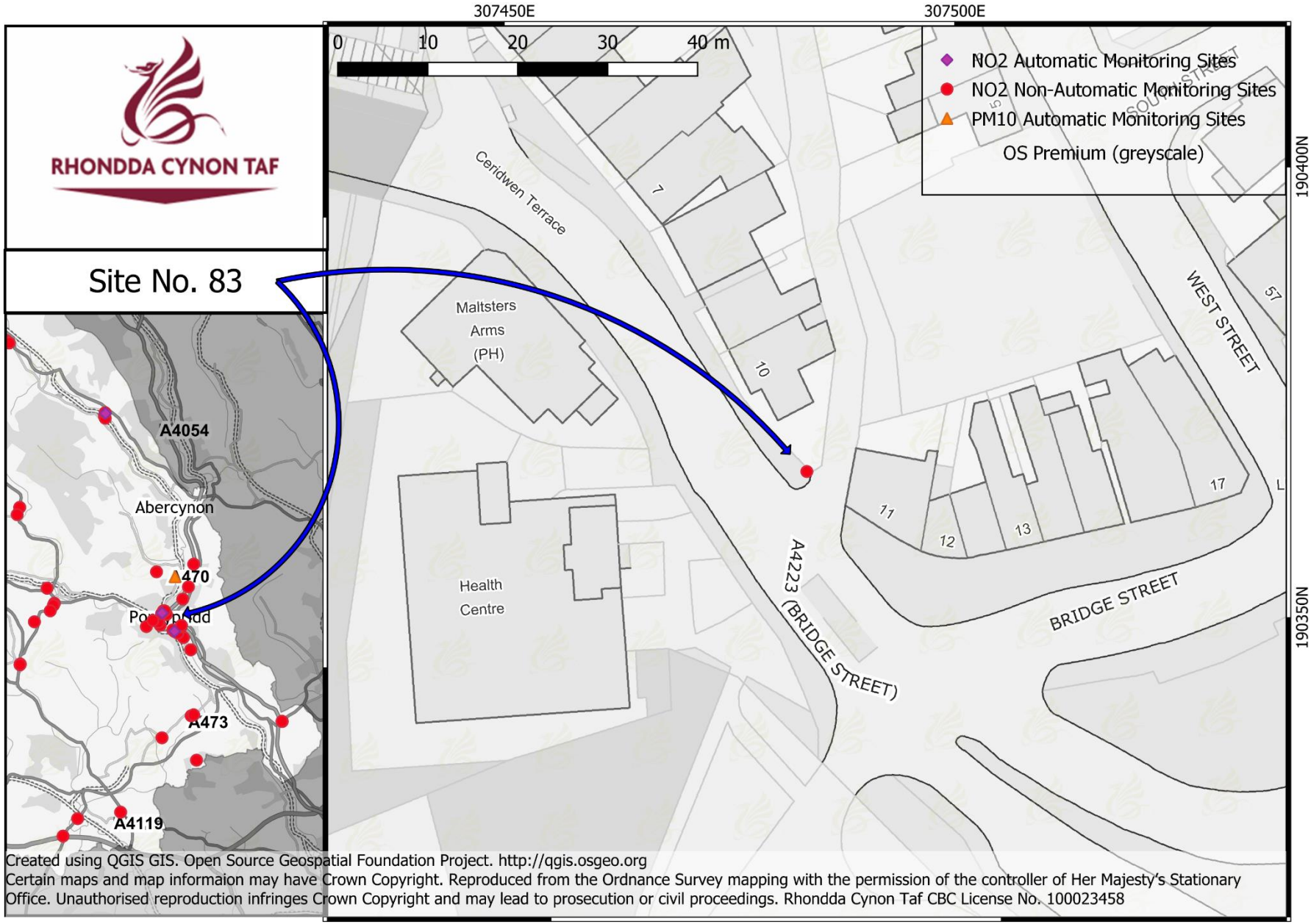
RHONDDA CYNON TAF
Site No. 83
307450E
307500E
190400N
190350N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Ceridwen Terrace
Maltsters Arms (PH)
Health Centre
A4223 (BRIDGE STREET)
BRIDGE STREET
WEST STREET
SOUTH STREET
A4054
Abercynon
A470
A473
A4119
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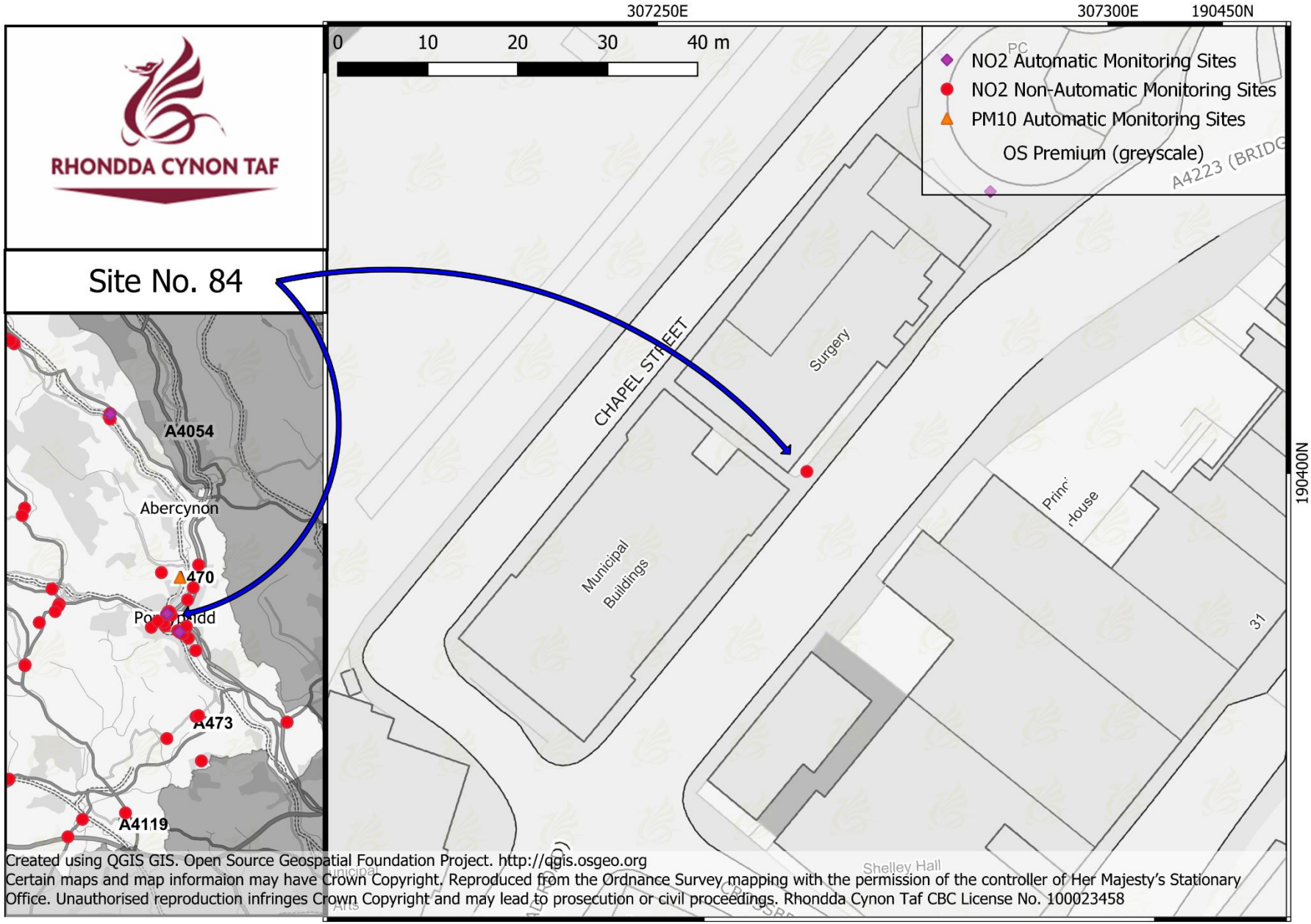
RHONDDA CYNON TAF
Site No. 84
307250E
307300E
190450N
190400N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
CHAPEL STREET
Surgery
Municipal Buildings
A4054
Abercynon
A470
A473
A4119
Shelley Hall
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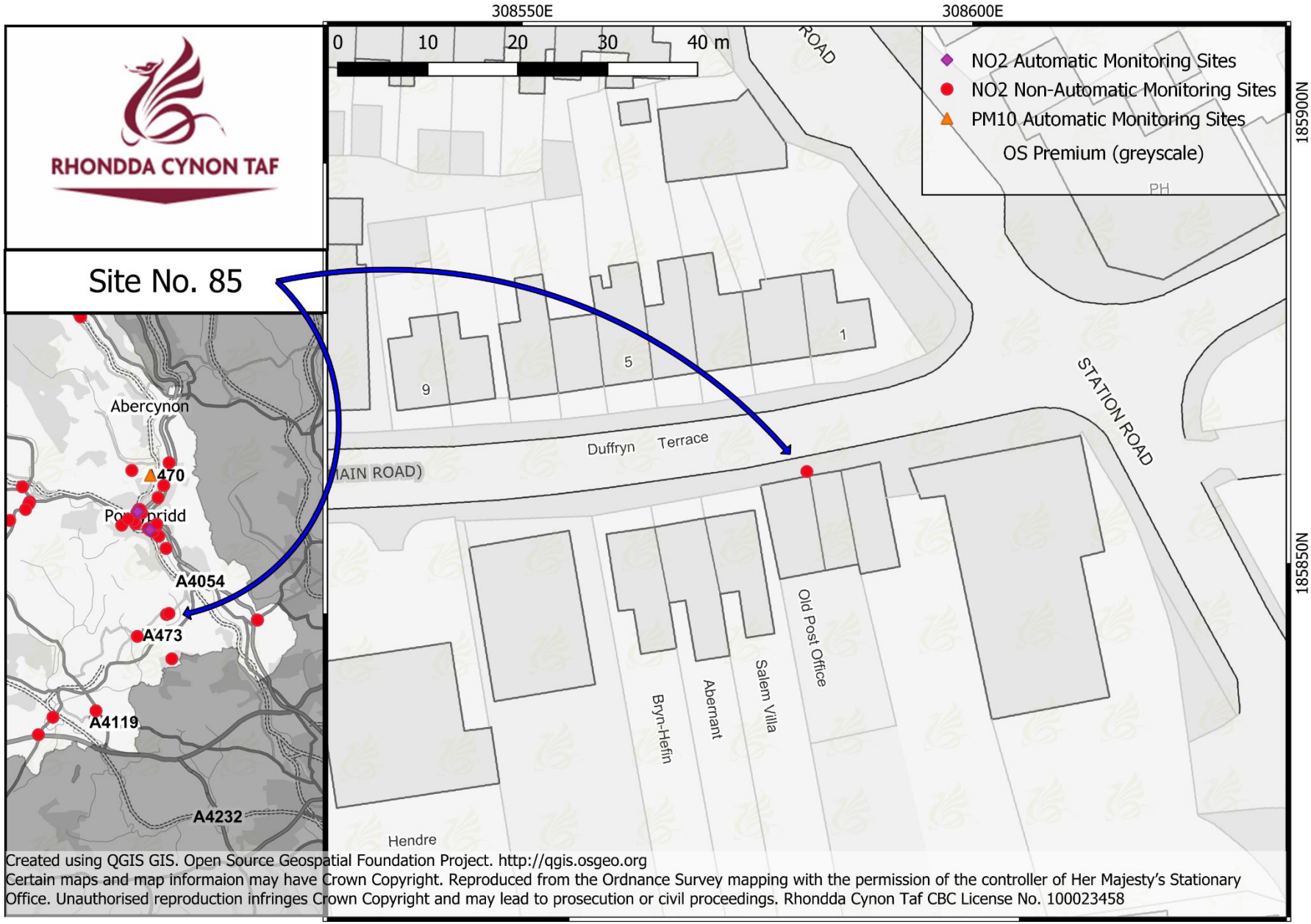
RHONDDA CYNON TAF
Site No. 85
308550E
308600E
185900N
185850N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
ROAD
PH
1
5
9
STATION ROAD
Duffryn Terrace
AIN ROAD)
Old Post Office
Salem Villa
Abernant
Bryn-Hefin
Hendre
Abercynon
470
A4054
A473
A4119
A4232
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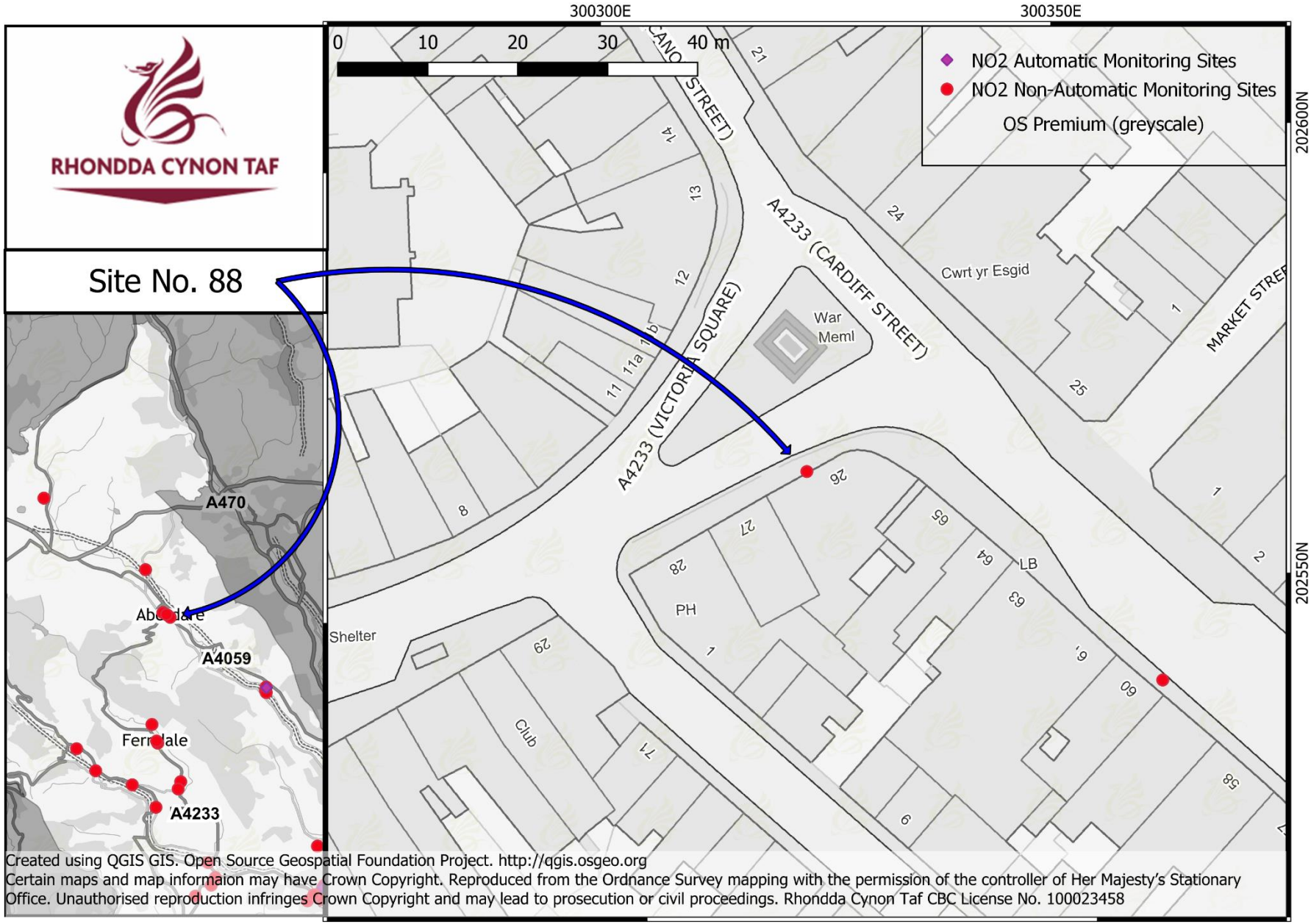
300300E
300350E
202600N
202550N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 88
A4233 (CARDIFF STREET)
A4233 (VICTORIA SQUARE)
Cwrt yr Esgid
War Meml
MARKET STREET
PH
LB
Shelter
Club
A470
A4059
A4233
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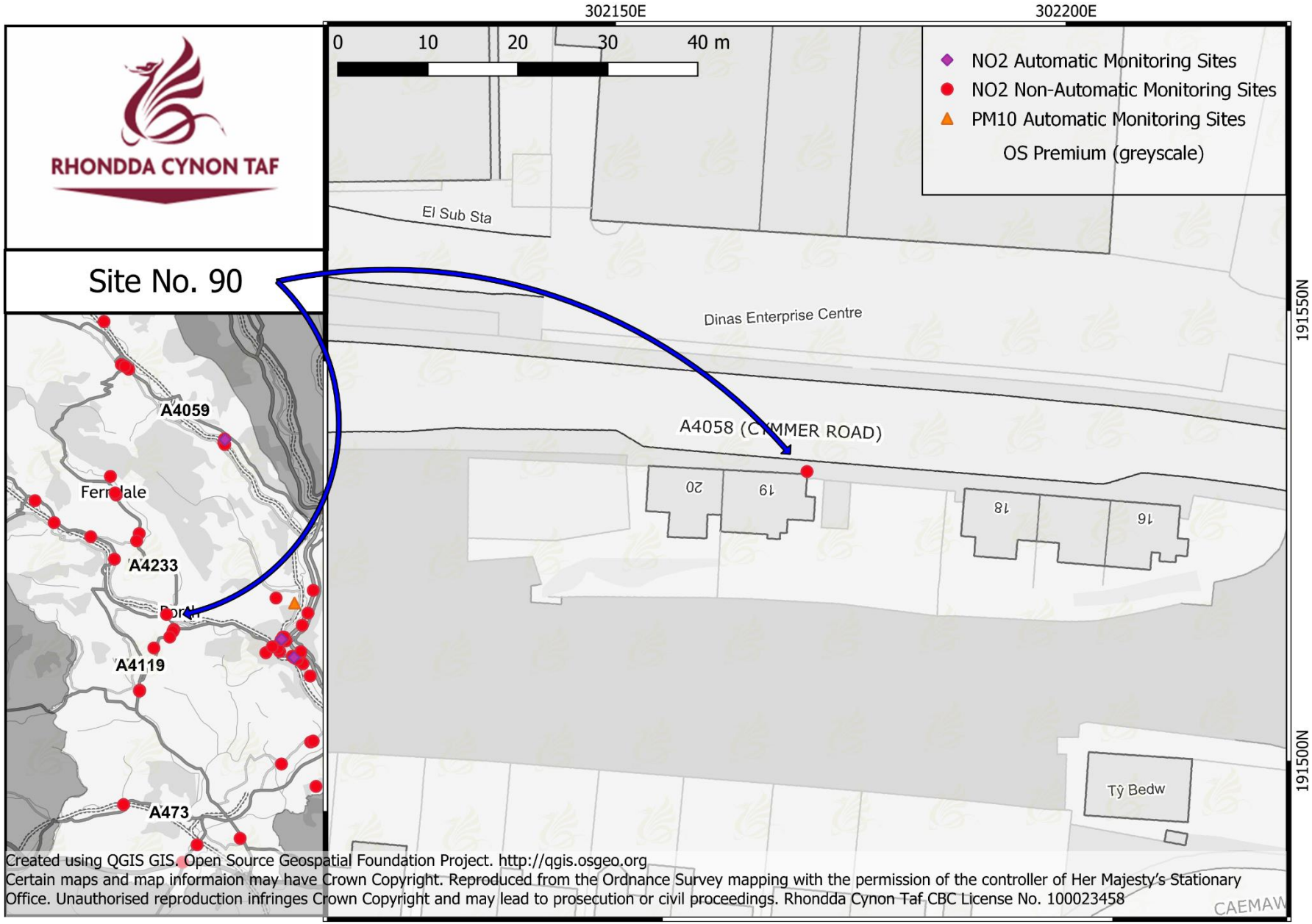
RHONDDA CYNON TAF
Site No. 90
302150E
302200E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
El Sub Sta
Dinas Enterprise Centre
A4058 (CYMMER ROAD)
20
19
18
16
Tŷ Bedw
191550N
191500N
A4059
A4233
A4119
A473
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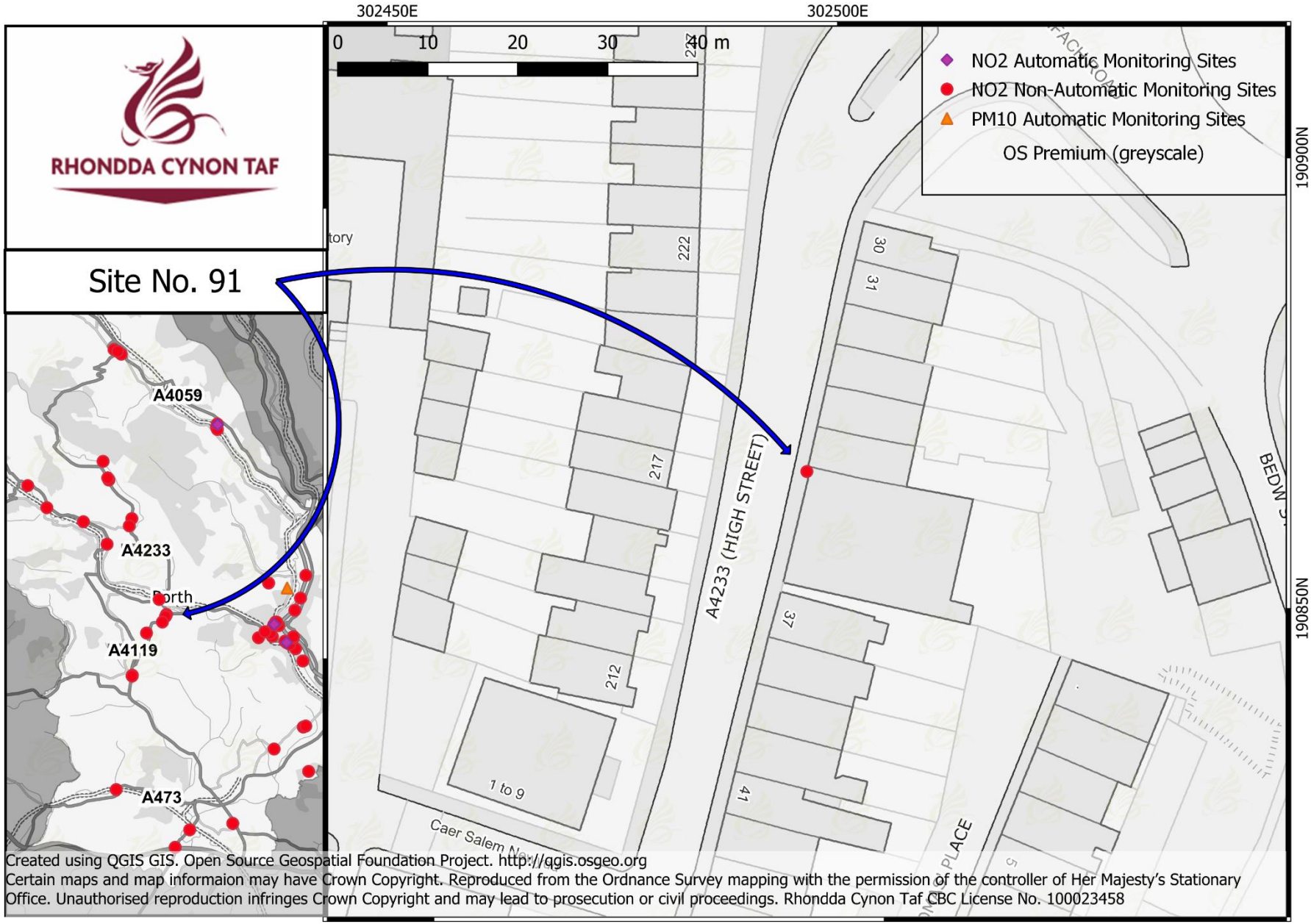
302450E
302500E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Site No. 91
A4059
A4233
A4119
A473
Porth
A4233 (HIGH STREET)
222
217
212
227
30
31
37
41
1 to 9
190900N
190850N
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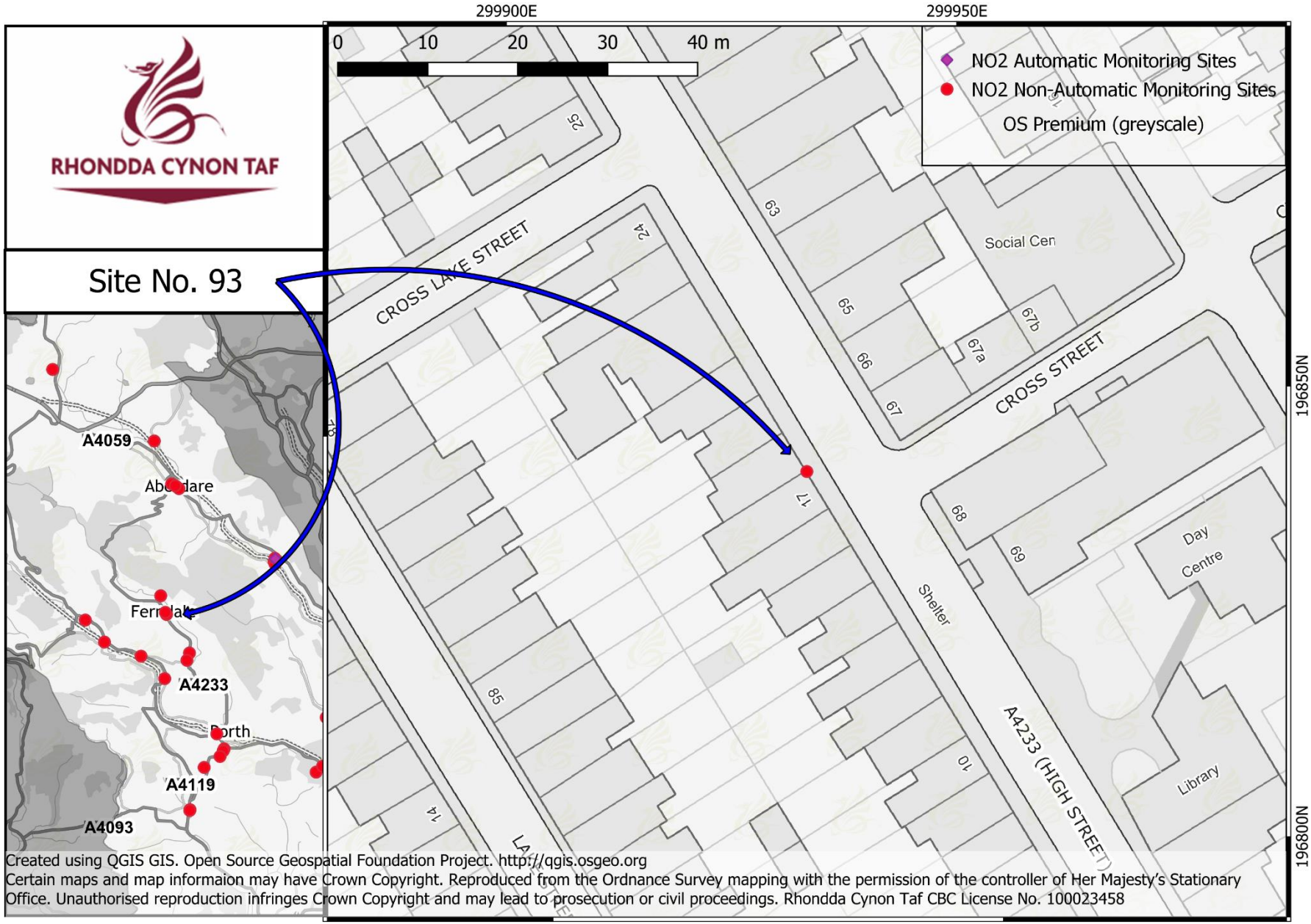
299900E
299950E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 93
CROSS LAKE STREET
CROSS STREET
A4233 (HIGH STREET)
Social Cen
Day Centre
Library
Shelter
A4059
A4233
A4119
A4093
196850N
196800N
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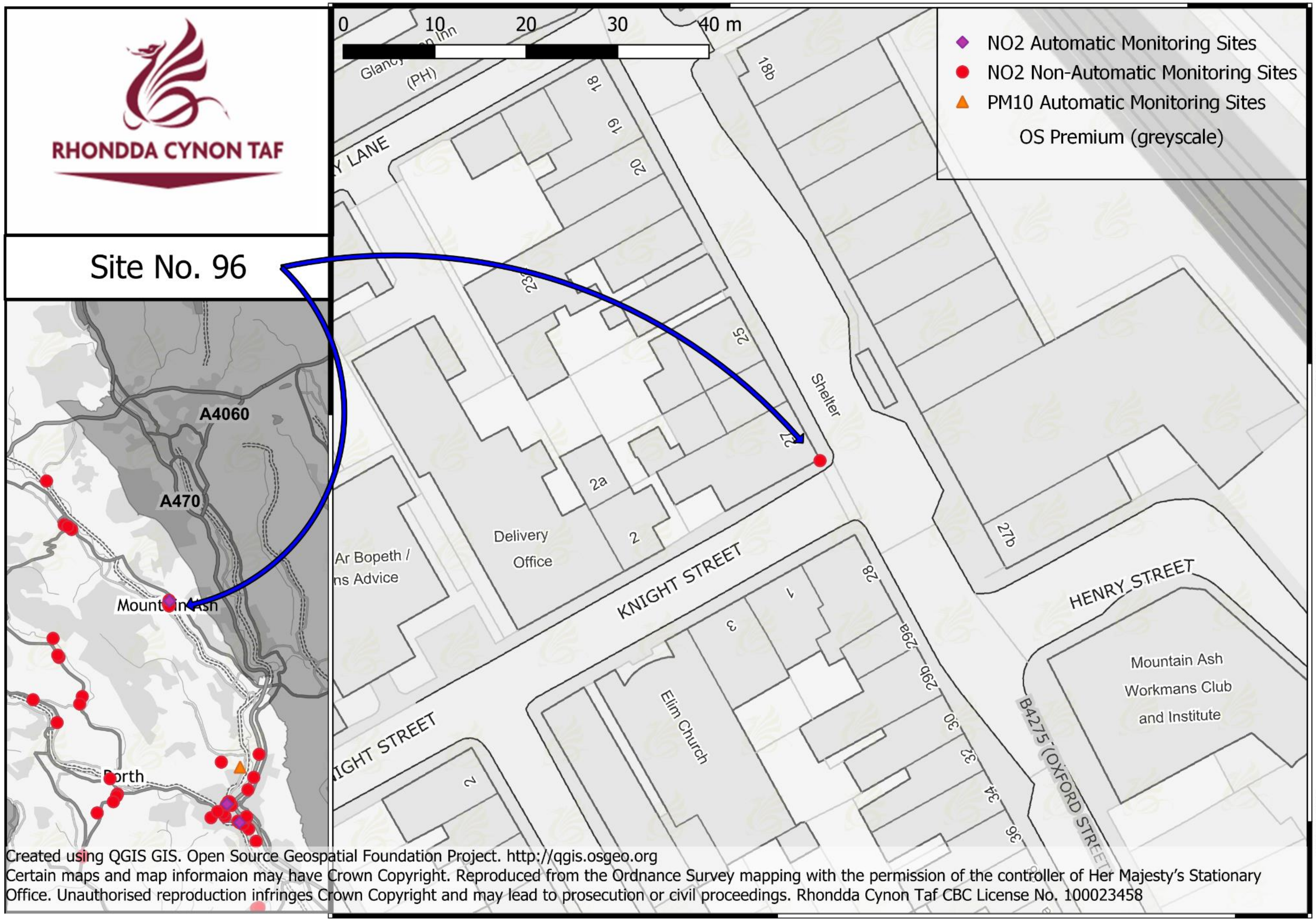

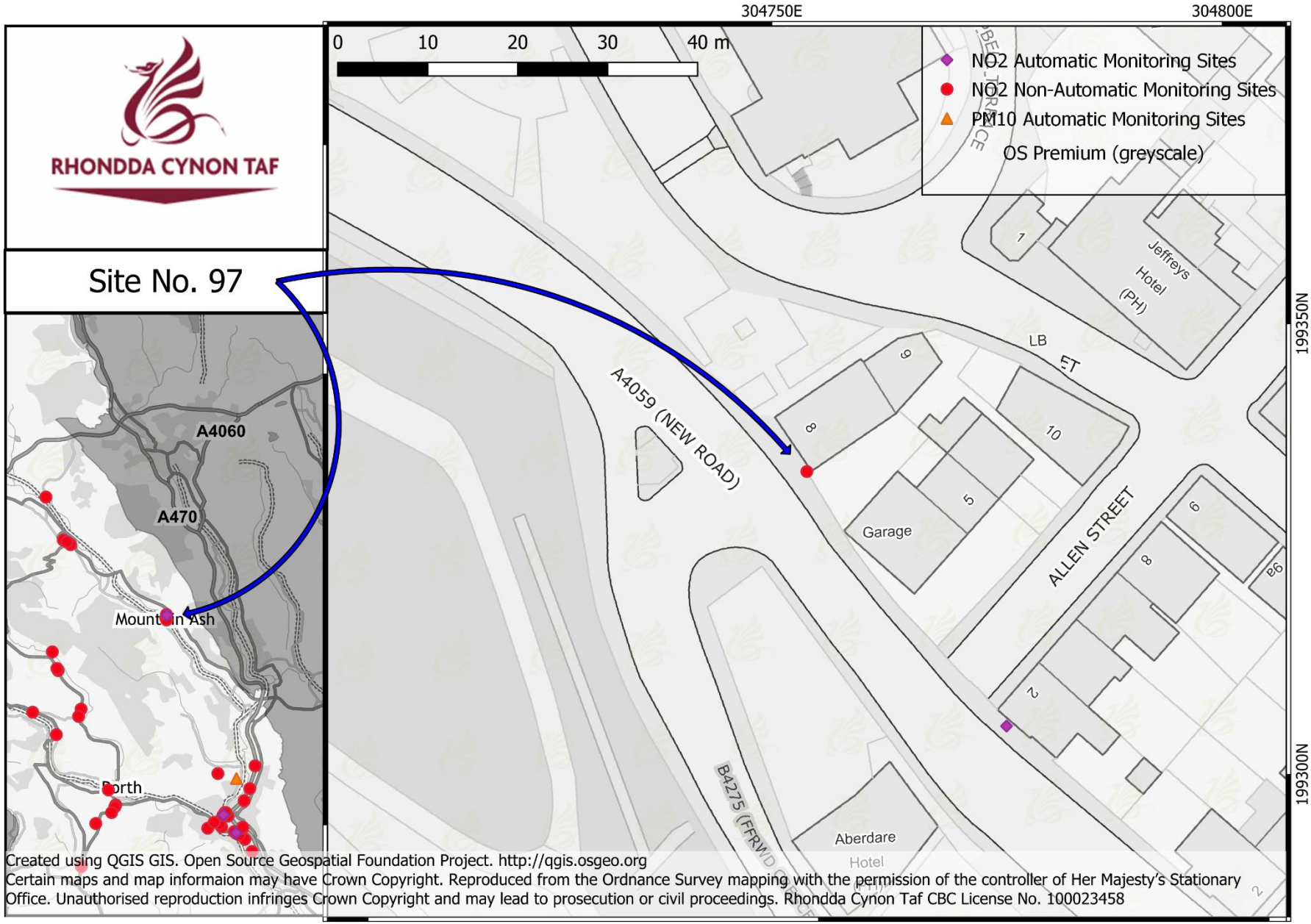
RHONDDA CYNON TAF
Site No. 97
A4060
A470
Mountain Ash
Porth
304750E
304800E
199350N
199300N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
A4059 (NEW ROAD)
Jeffreys Hotel (PH)
ALLEN STREET
Garage
B4275 (FFRWD
Aberdare Hotel
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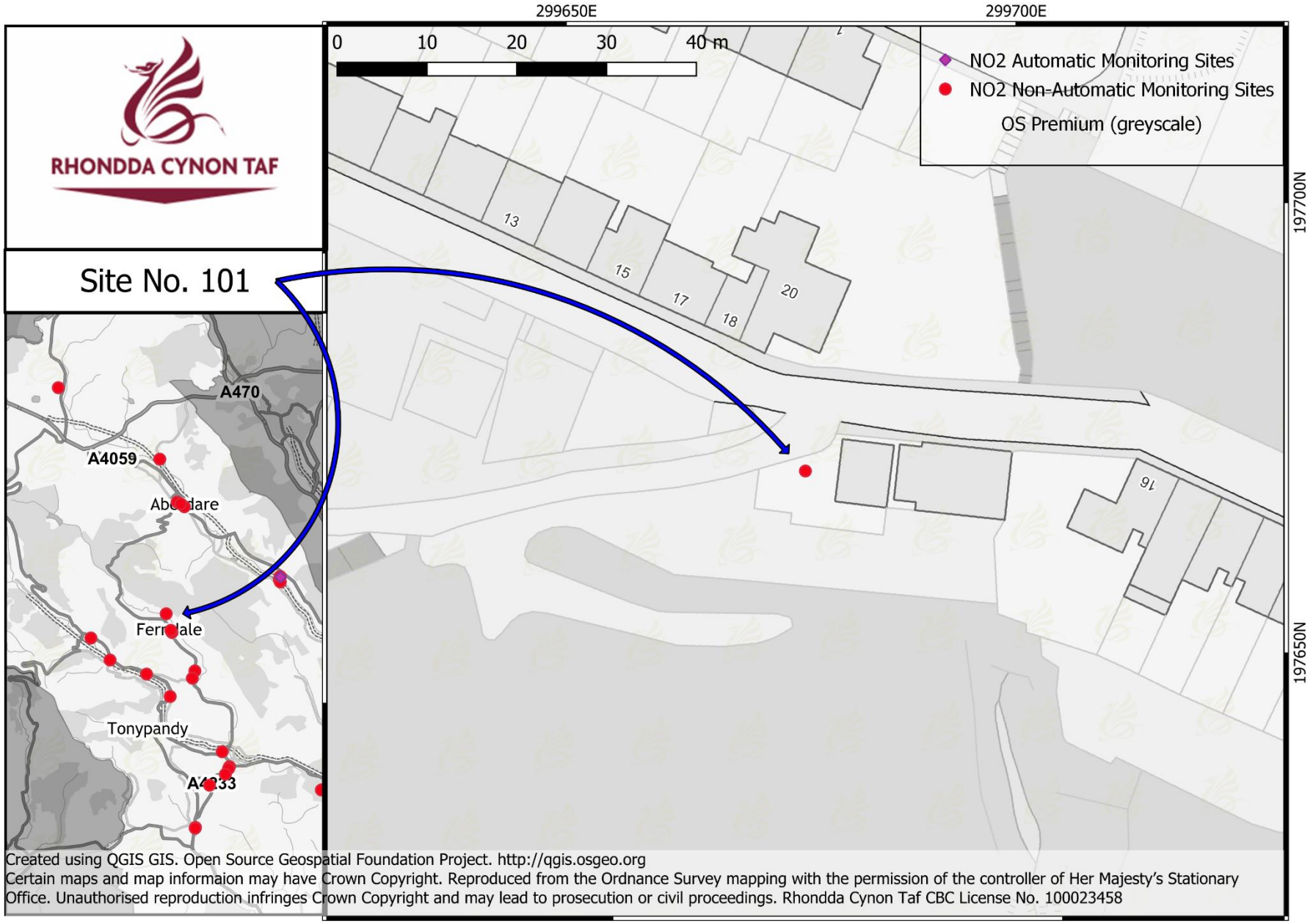
299650E
299700E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 101
A470
A4059
Aberdare
Ferndale
Tonypandy
A4233
13
15
17
18
20
16
197700N
197650N
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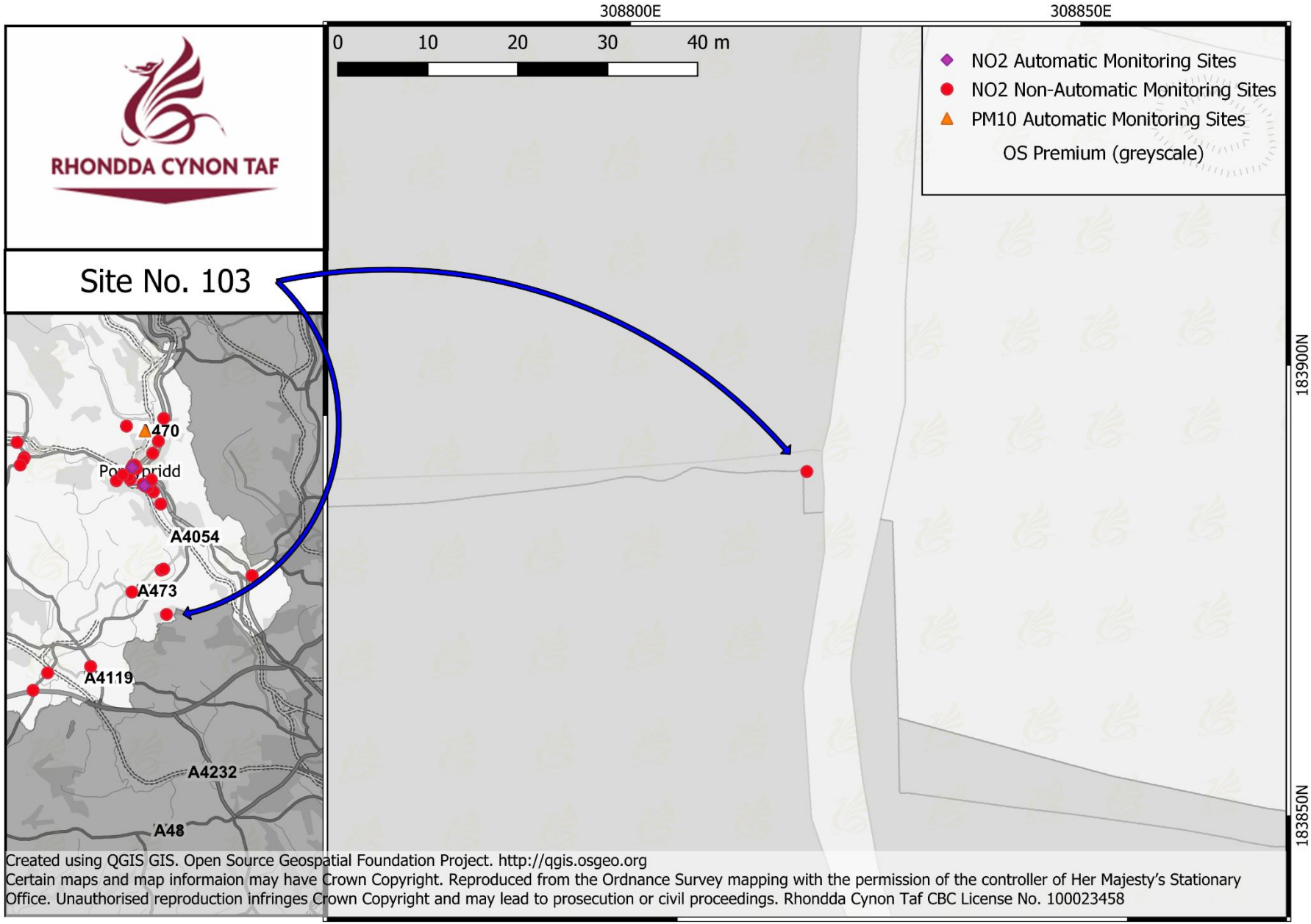
308800E
308850E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 103
A470
A4054
A473
A4119
A4232
A48
183900N
183850N
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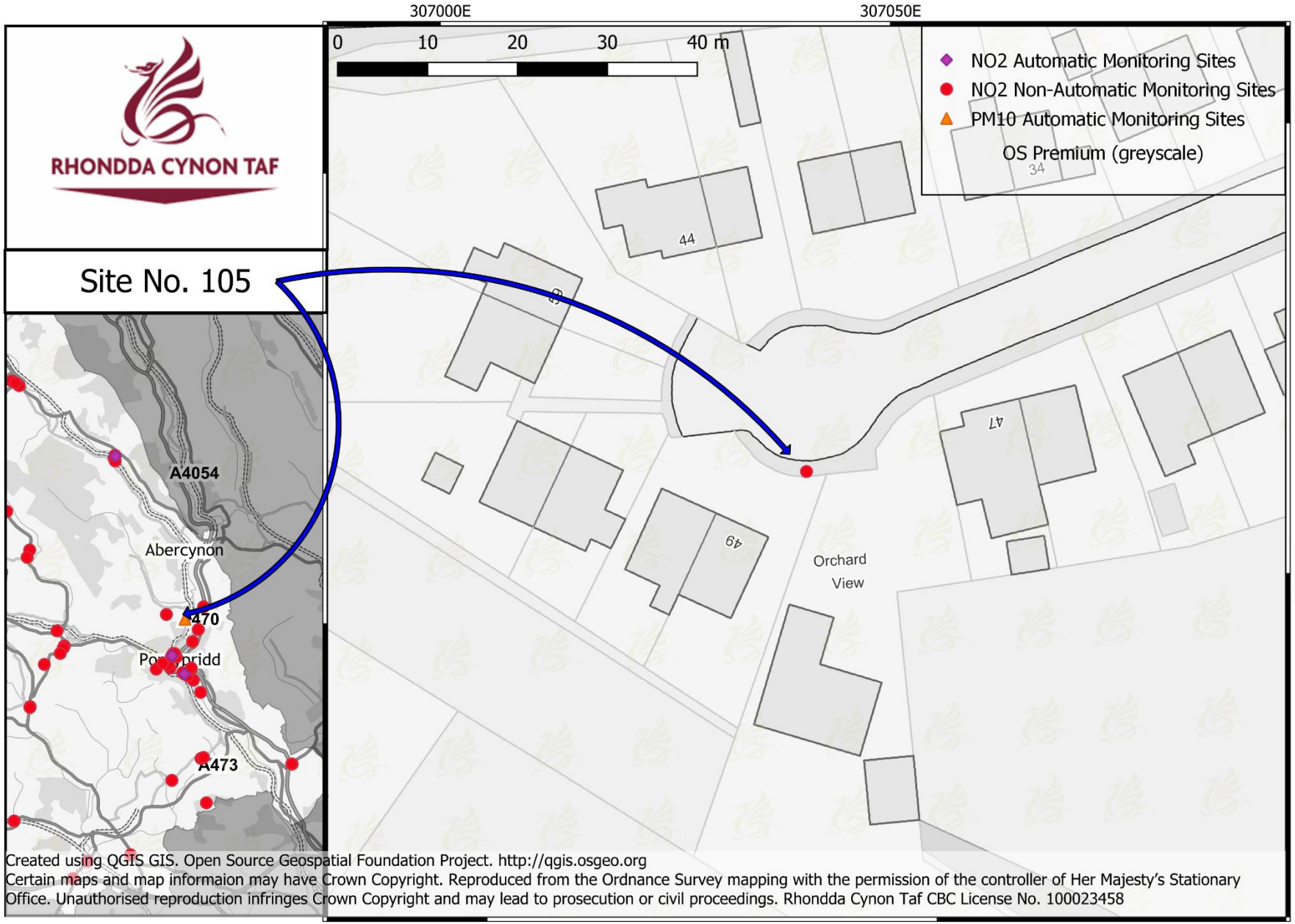
307000E
307050E
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
192300N
192250N
RHONDDA CYNON TAF
Site No. 105
A4054
Abercynon
A470
A473
Orchard
View
44
49
47
34
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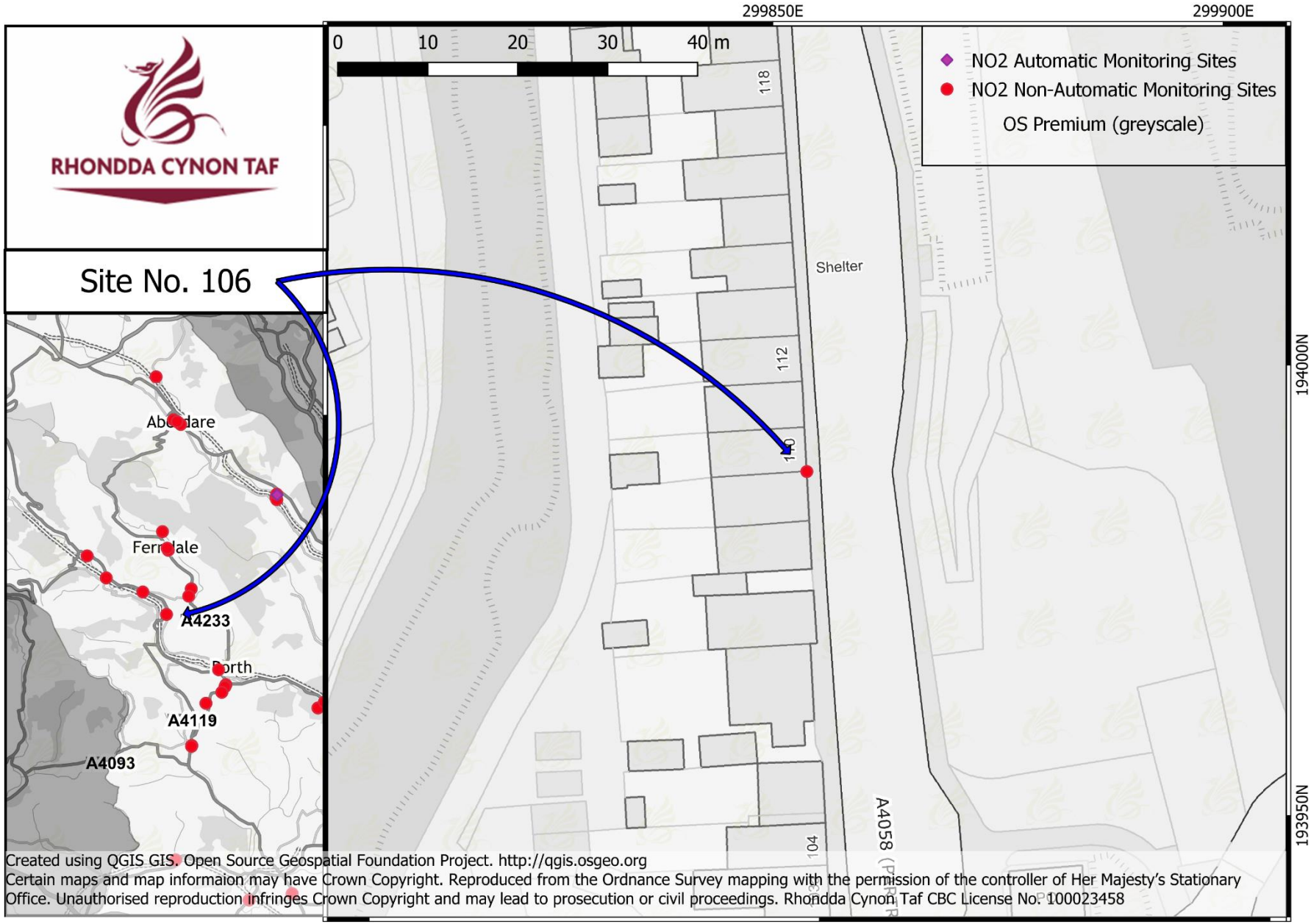
RHONDDA CYNON TAF
Site No. 106
299850E
299900E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
Shelter
118
112
110
104
194000N
193950N
A4058
A4233
A4119
A4093
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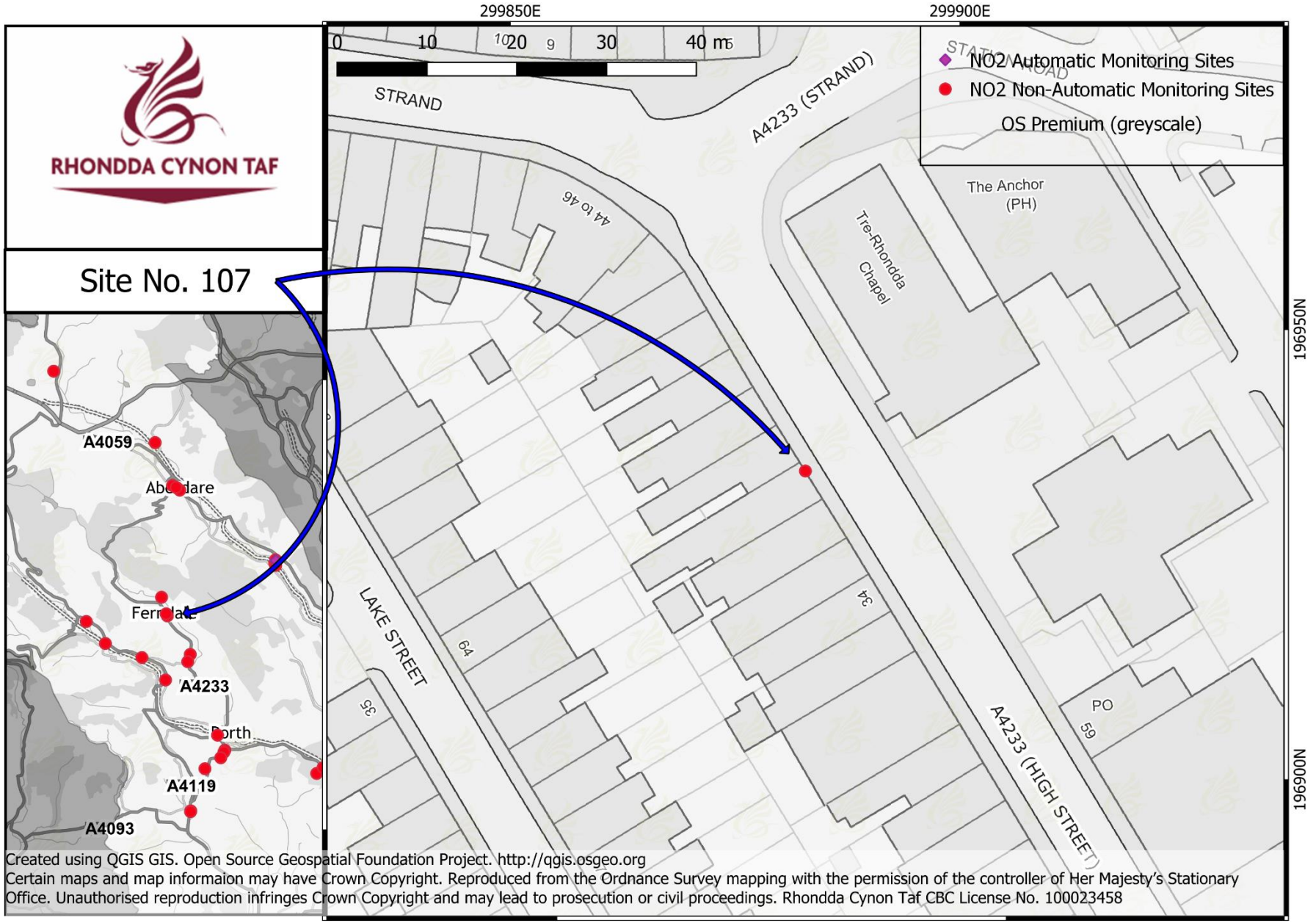
RHONDDA CYNON TAF
Site No. 107
299850E
299900E
196950N
196900N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
STRAND
A4233 (STRAND)
LAKE STREET
A4233 (HIGH STREET)
The Anchor (PH)
Tre-Rhondda Chapel
PO
A4059
A4233
A4119
A4093
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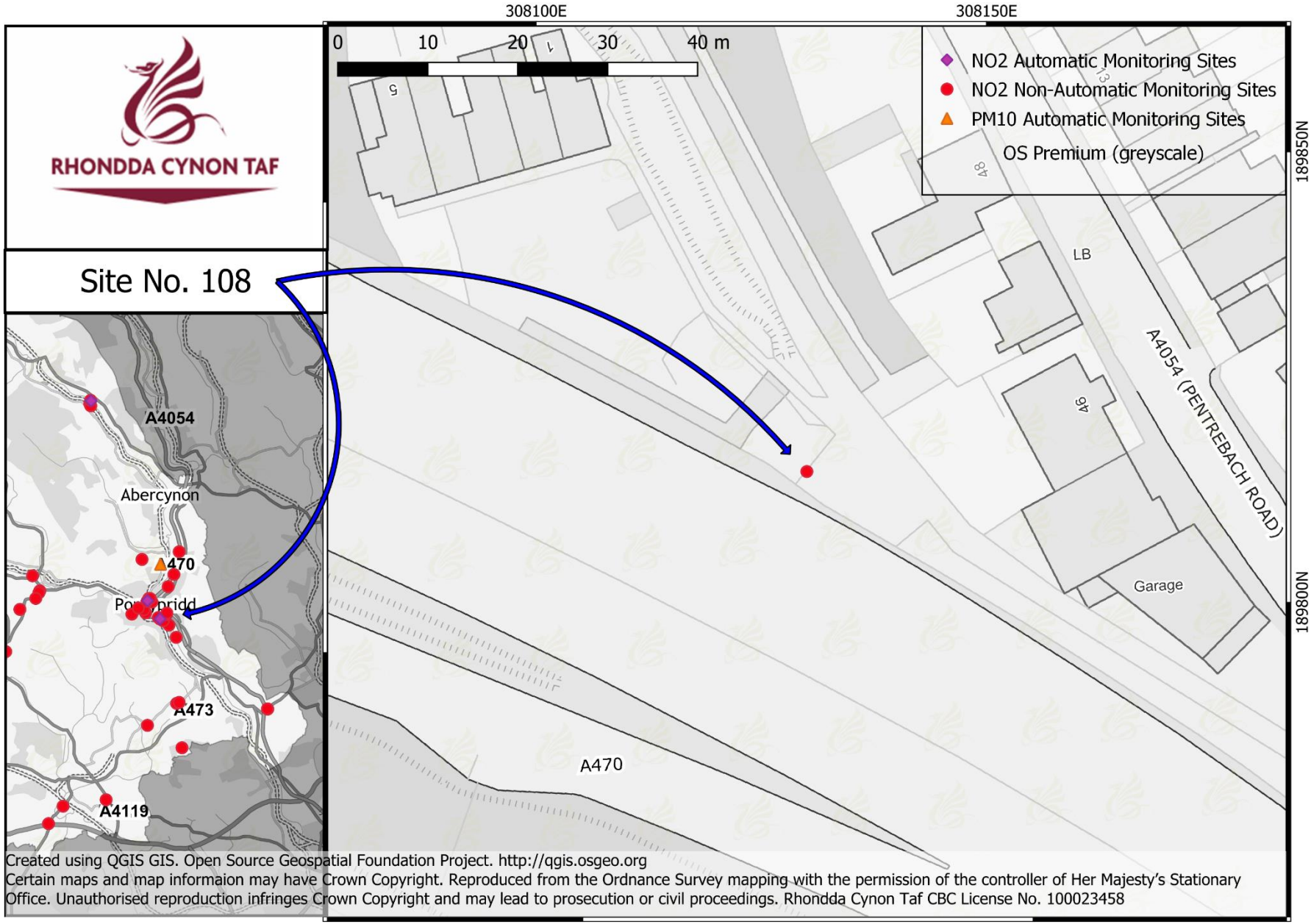
308100E
308150E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189850N
189800N
RHONDDA CYNON TAF
Site No. 108
A4054
Abercynon
A470
A473
A4119
A4054 (PENTREBACH ROAD)
LB
Garage
A470
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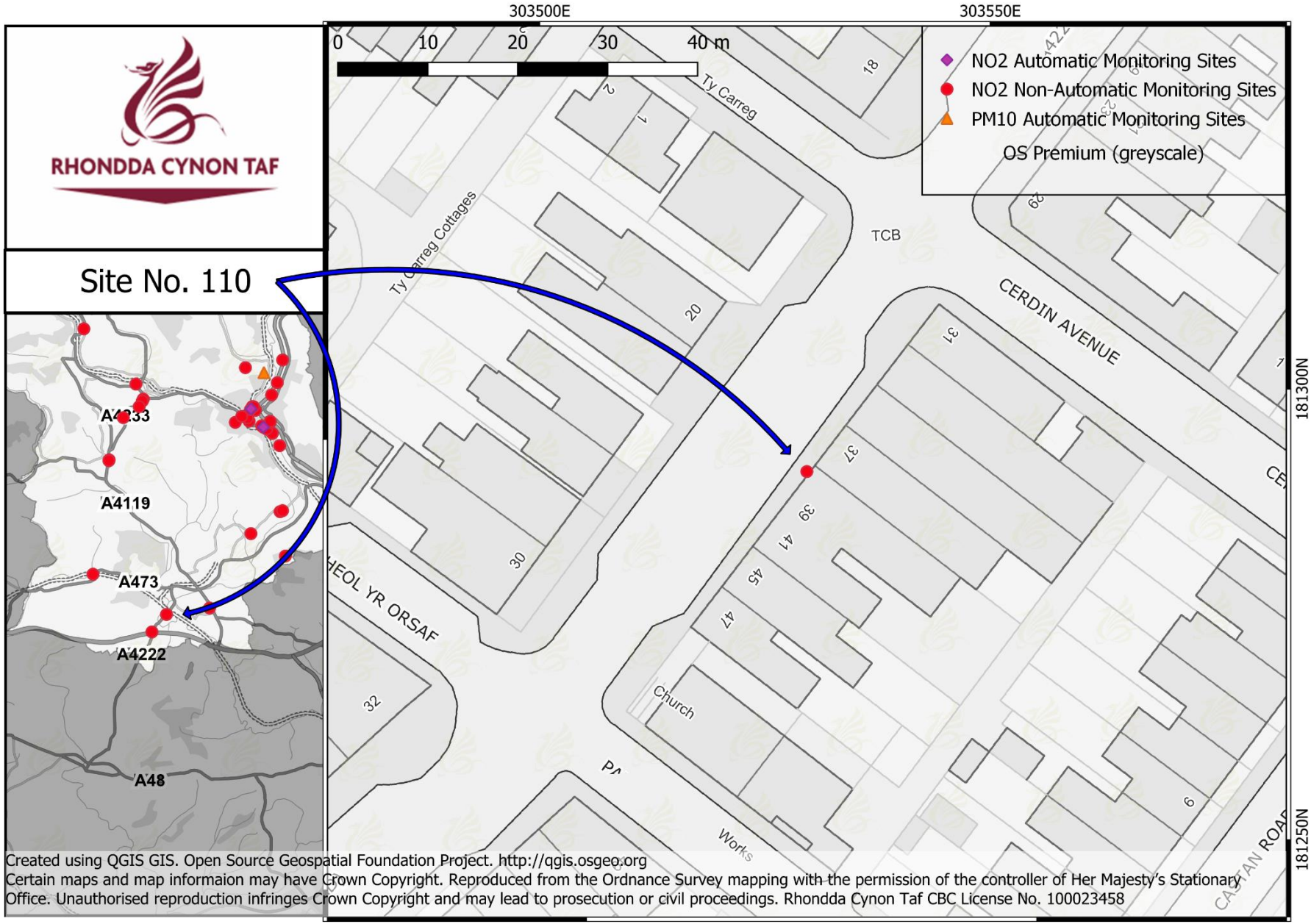
303500E
303550E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 110
A4233
A4119
A473
A4222
A48
Ty Carreg
Ty Carreg Cottages
TCB
CERDIN AVENUE
HEOL YR ORSAF
Church
Works
181300N
181250N
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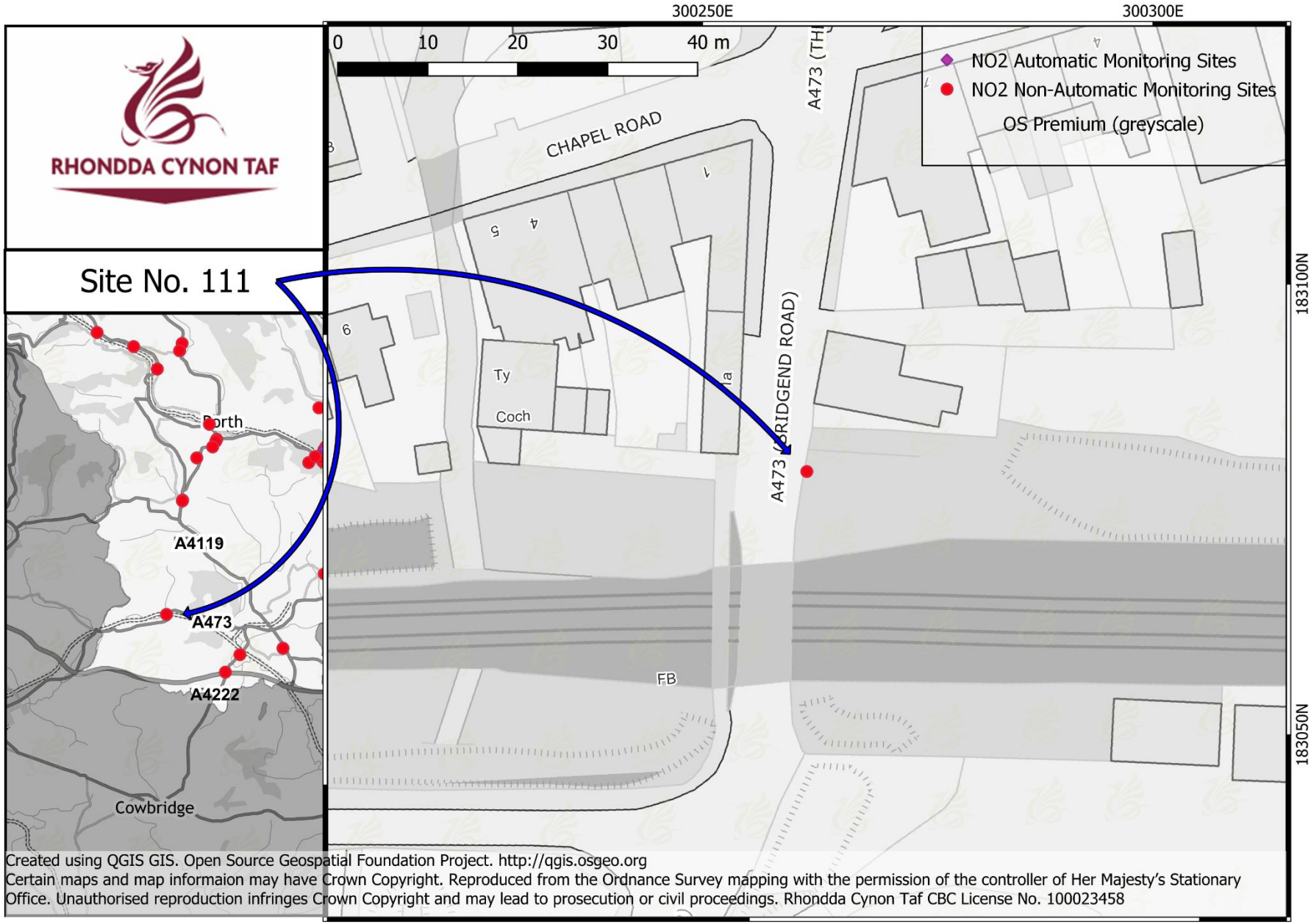
RHONDDA CYNON TAF
Site No. 111
300250E
300300E
183100N
183050N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
CHAPEL ROAD
A473 (THE BRIDGEND ROAD)
Ty
Coch
FB
Porth
A4119
A473
A4222
Cowbridge
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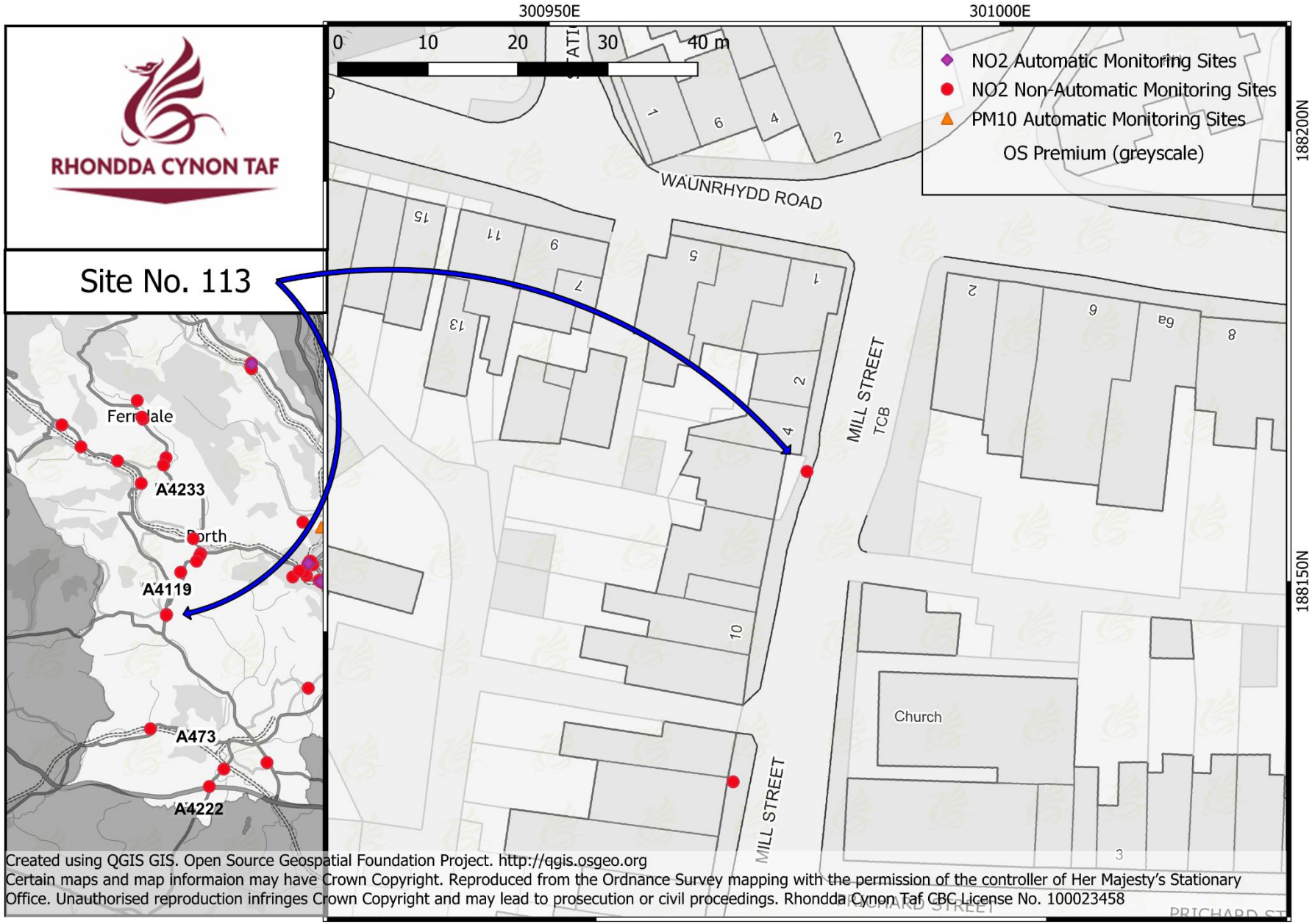
300950E
301000E
188200N
188150N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 113
WAUNRHYDD ROAD
MILL STREET
TCB
MILL STREET
Church
Ferndale
A4233
Porth
A4119
A473
A4222
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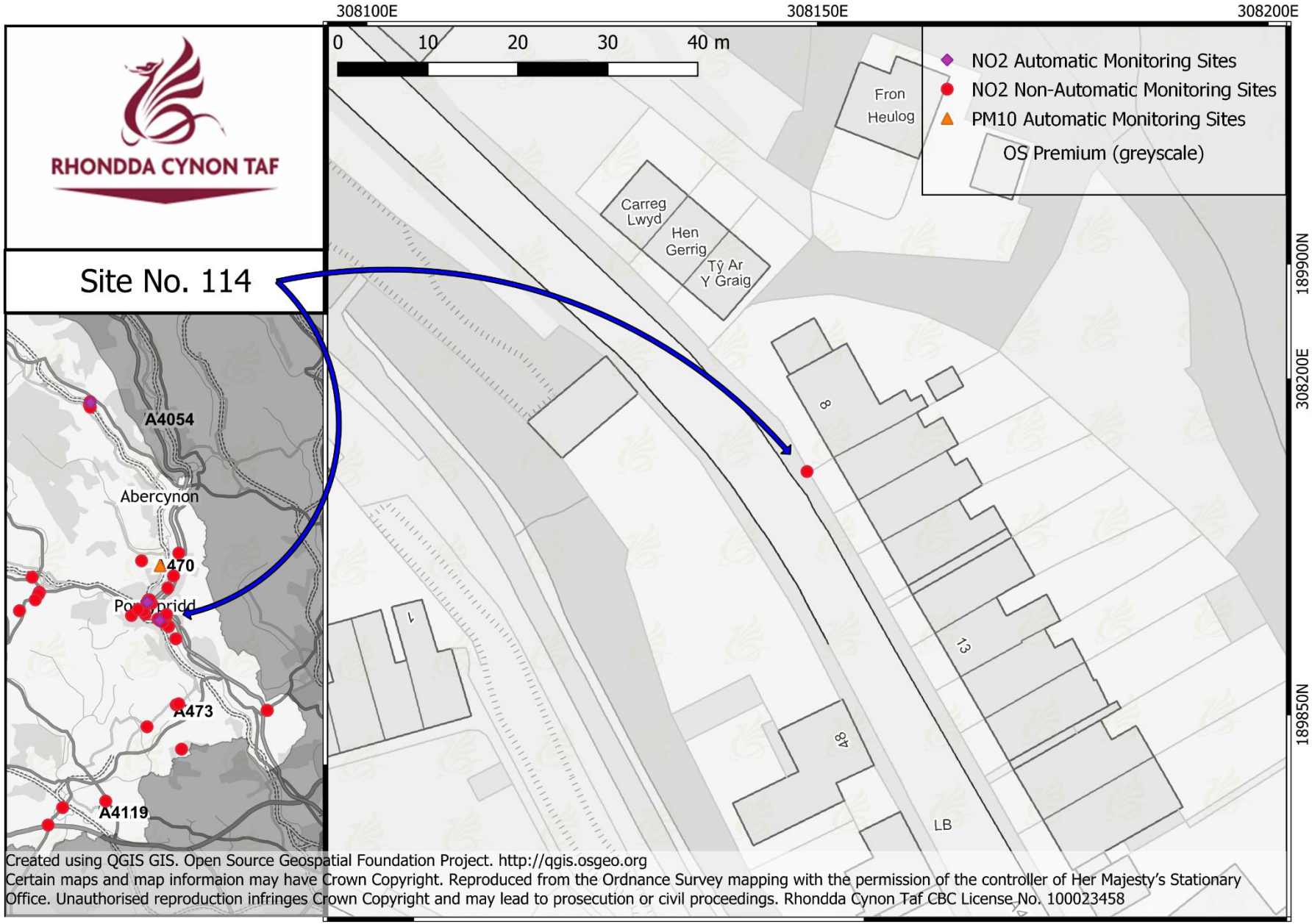
308100E
308150E
308200E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Fron Heulog
Carreg Lwyd
Hen Gerrig
Tŷ Ar Y Graig
189900N
308200E
189850N
8
13
84
LB
Site No. 114
A4054
Abercynon
A470
A473
A4119
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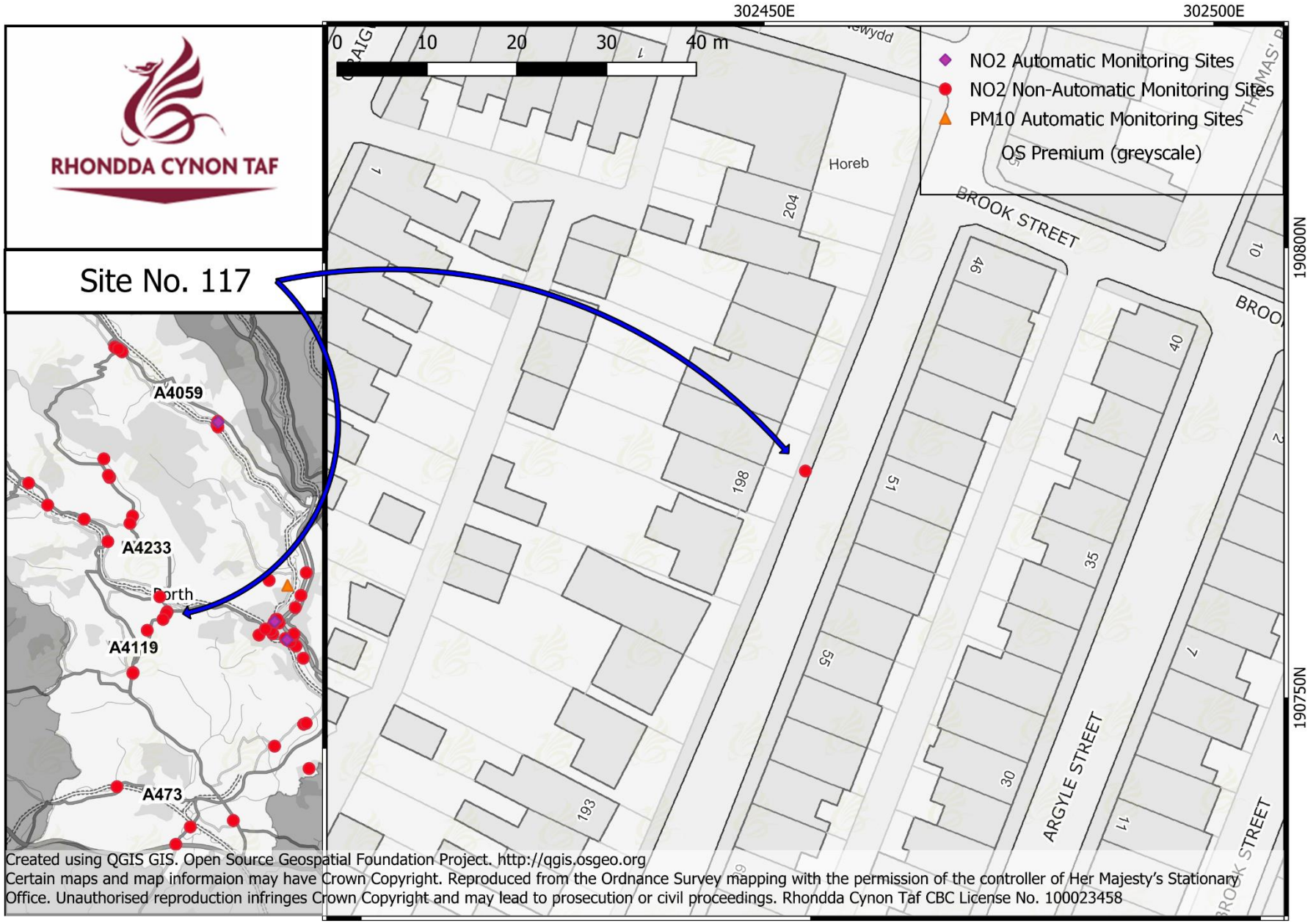
RHONDDA CYNON TAF
Site No. 117
A4059
A4233
Porth
A4119
A473
302450E
302500E
190800N
190750N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Horeb
BROOK STREET
ARGYLE STREET
204
198
193
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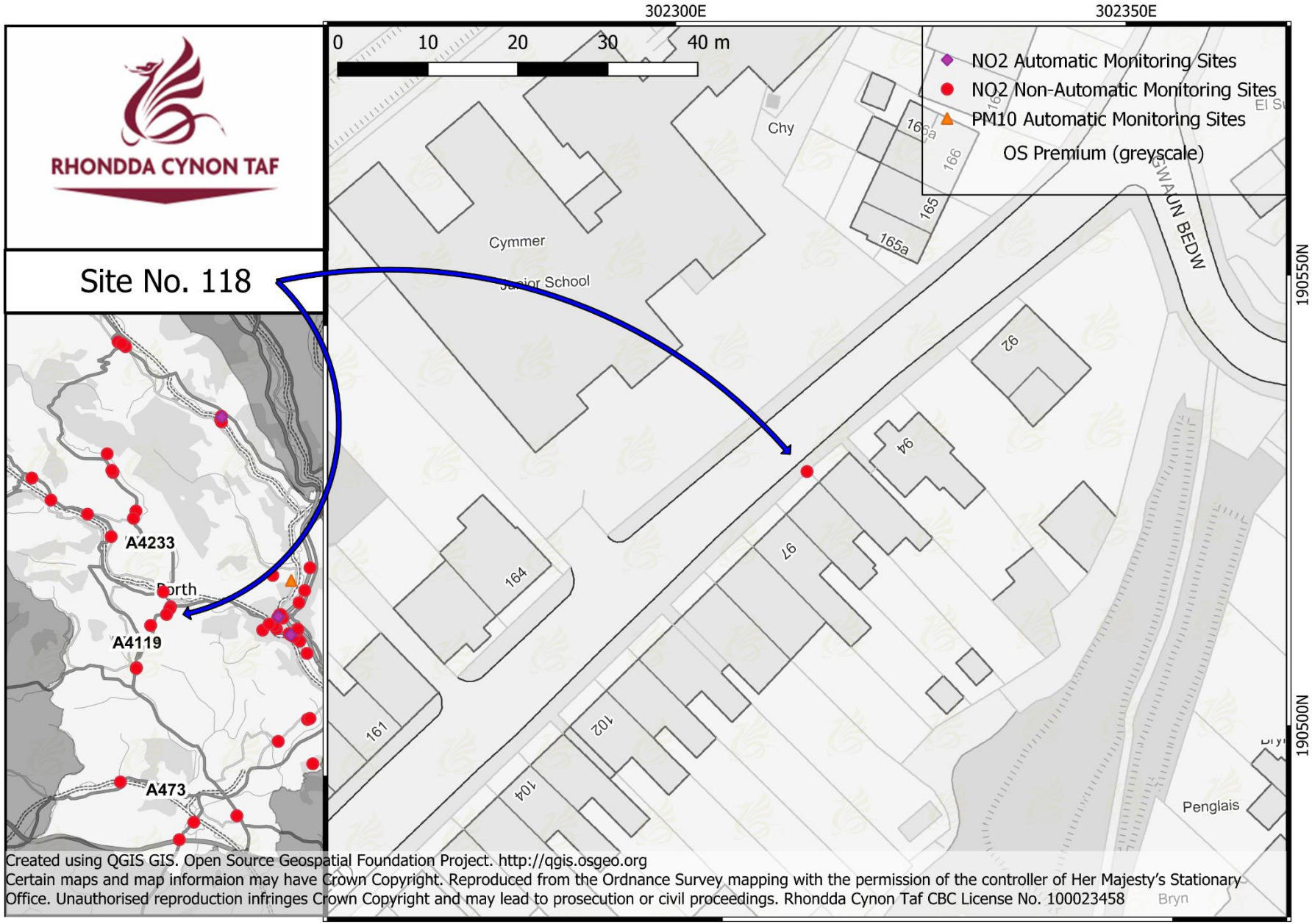
RHONDDA CYNON TAF
Site No. 118
302300E
302350E
190550N
190500N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Cymmer
Chy
A4233
A4119
A473
Penglais
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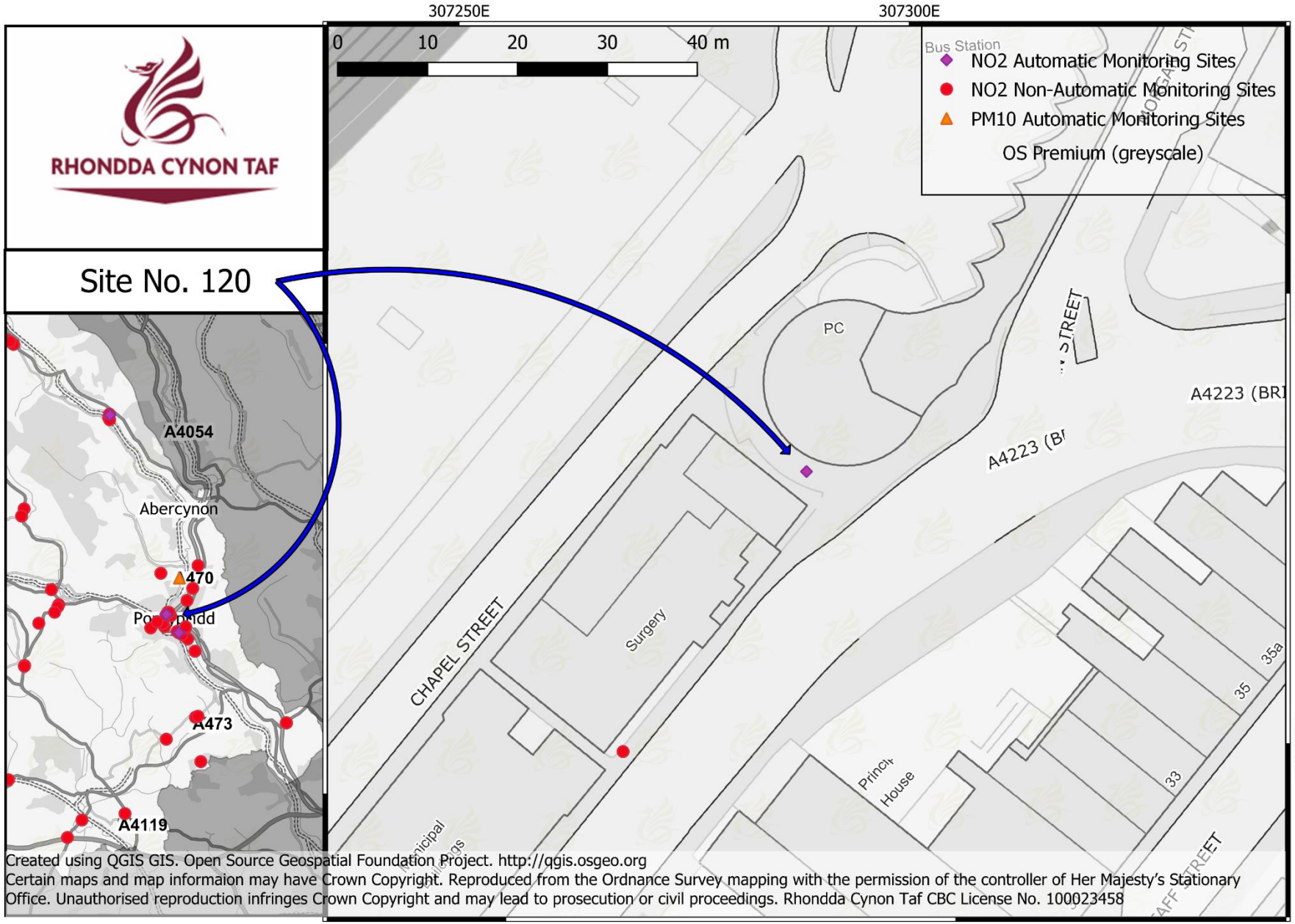
307250E
307300E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Site No. 120
A4054
Abercynon
A470
A473
A4119
Bus Station
PC
A4223 (BR
CHAPEL STREET
Surgery
35a
35
33
190450N
190400N
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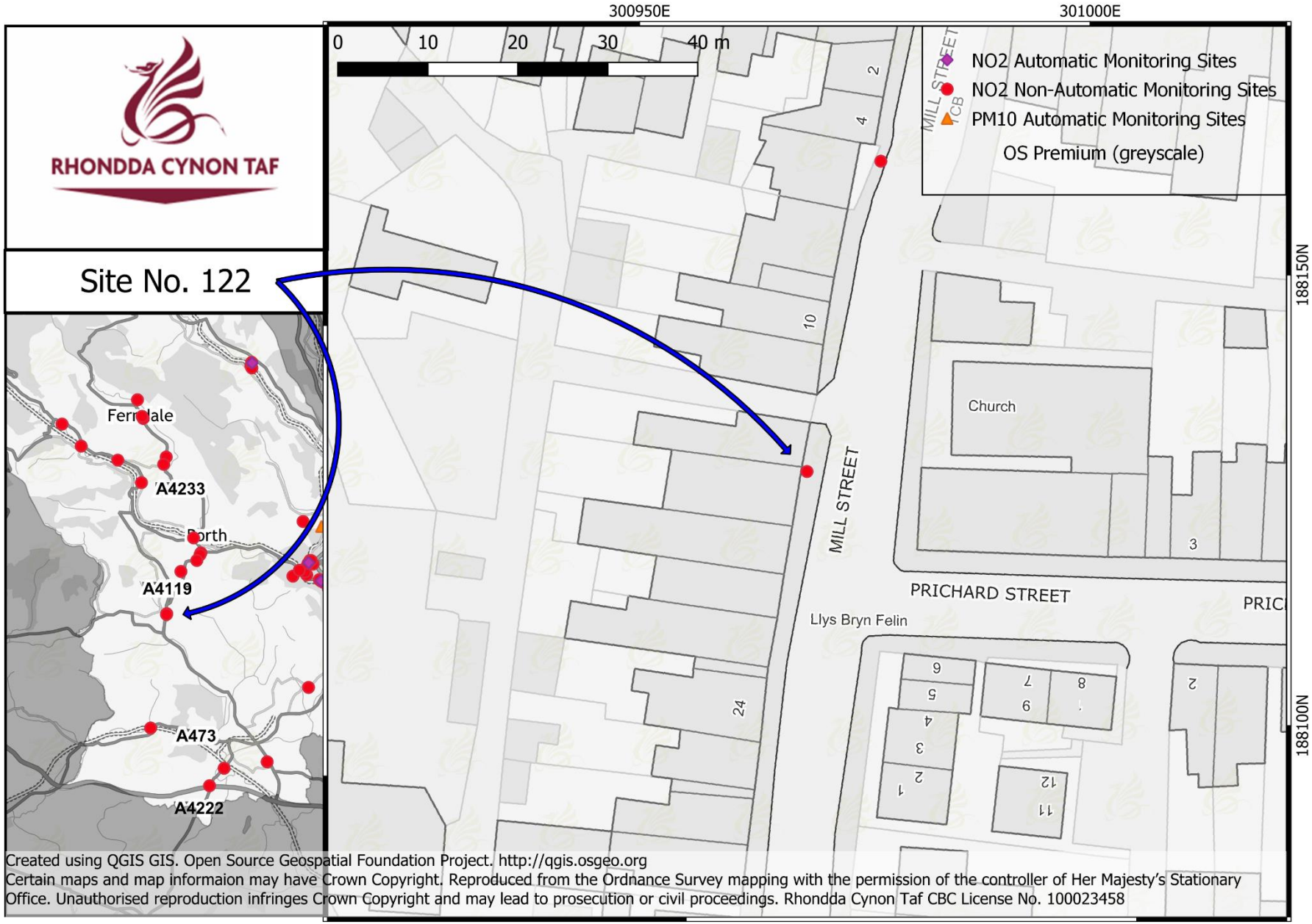
300950E
301000E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 122
Ferndale
A4233
Porth
A4119
A473
A4222
MILL STREET
Church
PRICHARD STREET
Llys Bryn Felin
188150N
188100N
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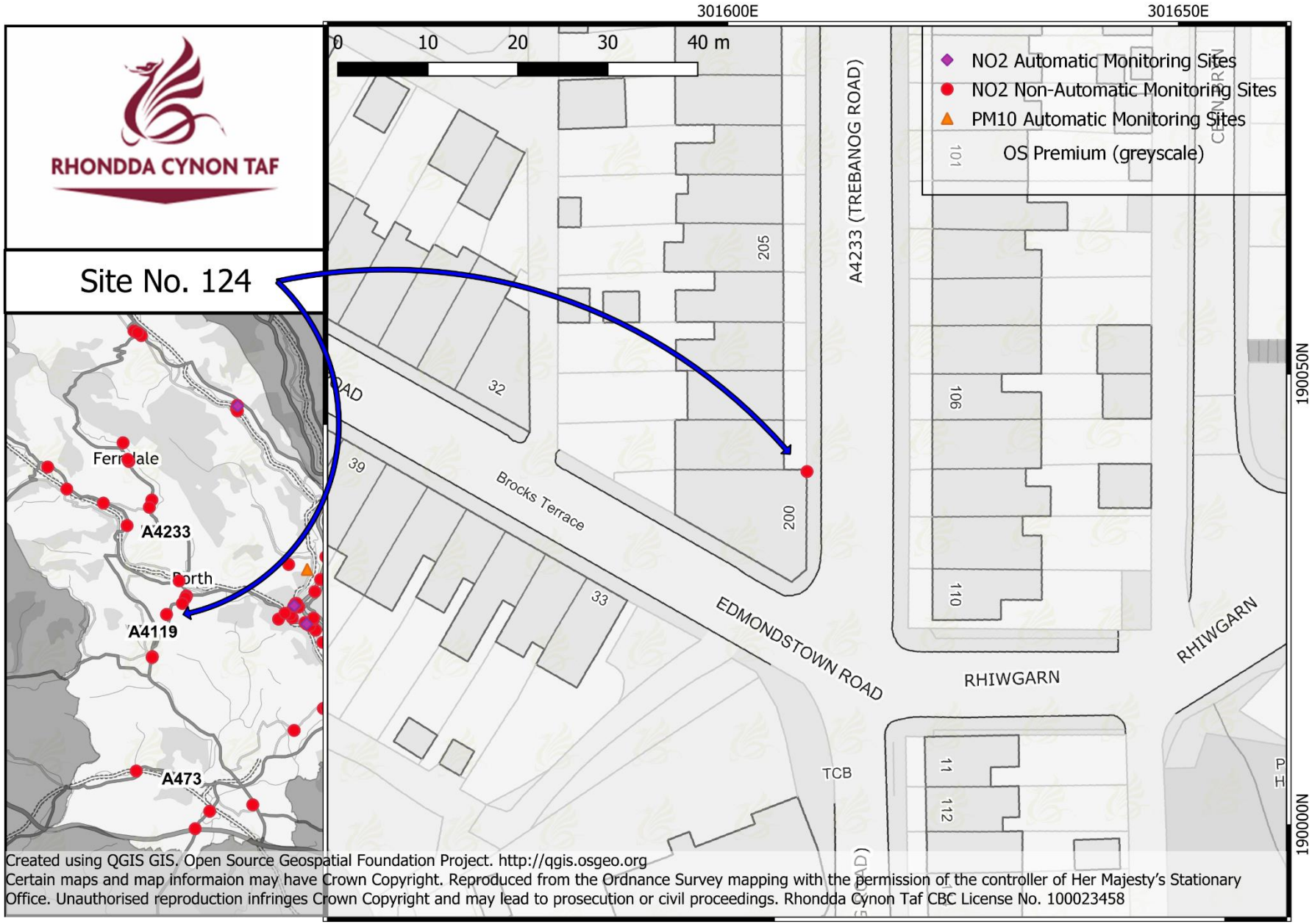
RHONDDA CYNON TAF
Site No. 124
301600E
301650E
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
A4233 (TREBANOG ROAD)
Brocks Terrace
EDMONDSTOWN ROAD
RHIWGARN
RHIWGARN
TCB
205
32
39
200
33
106
110
101
11
112
190050N
190000N
Ferndale
A4233
Porth
A4119
A473
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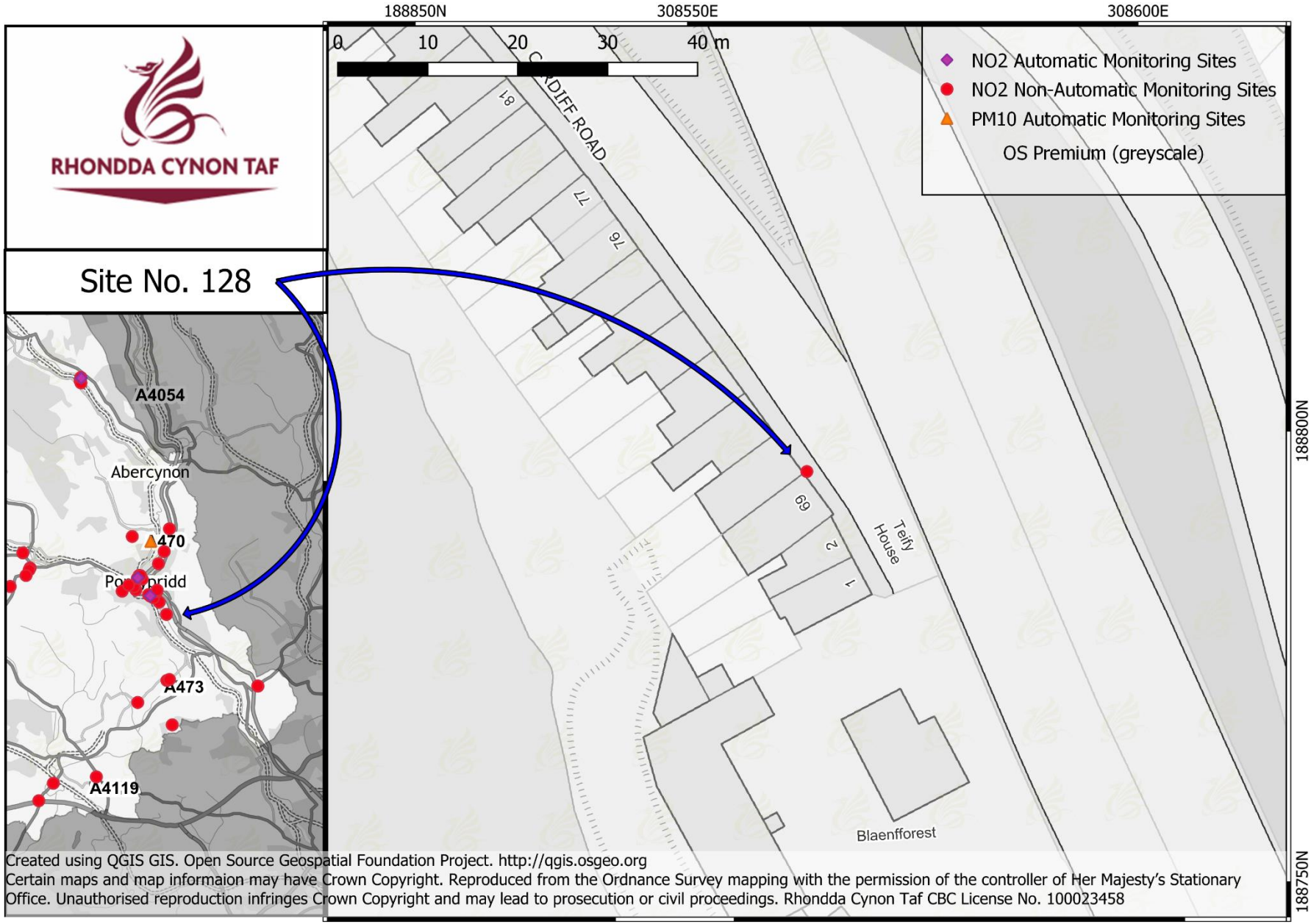
188850N
308550E
308600E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 128
A4054
Abercynon
A470
A473
A4119
CARDIFF ROAD
81
77
76
69
2
1
Teify House
Blaenfforest
188800N
188750N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
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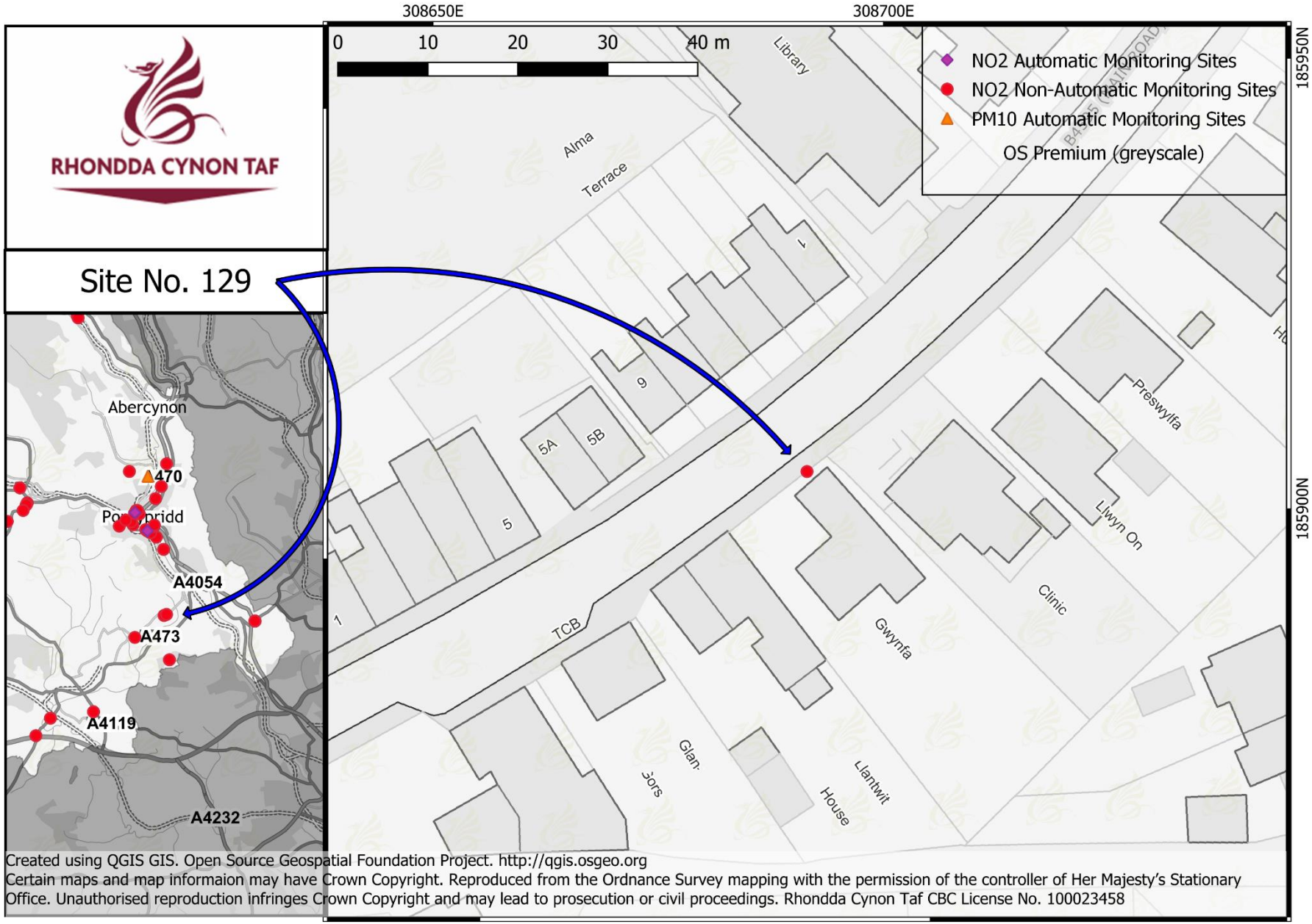
RHONDDA CYNON TAF
Site No. 129
308650E
308700E
185950N
185900N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Abercynon
A470
A4054
A473
A4119
A4232
Alma
Terrace
Library
5A
5B
9
5
TCB
Gwynfa
Clinic
Llwyn On
Preswylfa
House
Llantwit
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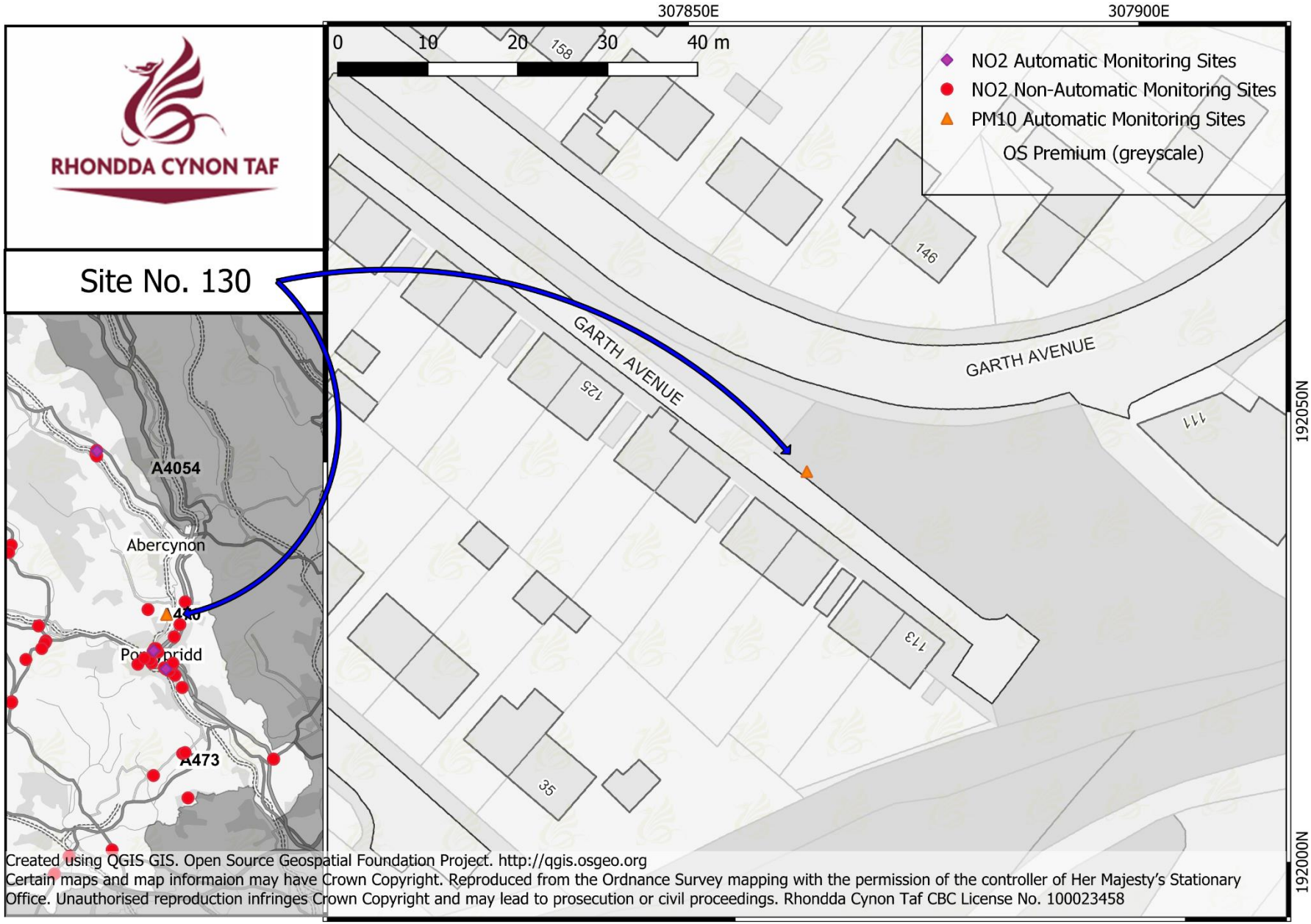
RHONDDA CYNON TAF
Site No. 130
307850E
307900E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
GARTH AVENUE
GARTH AVENUE
158
146
125
111
113
35
A4054
Abercynon
A473
192050N
192000N
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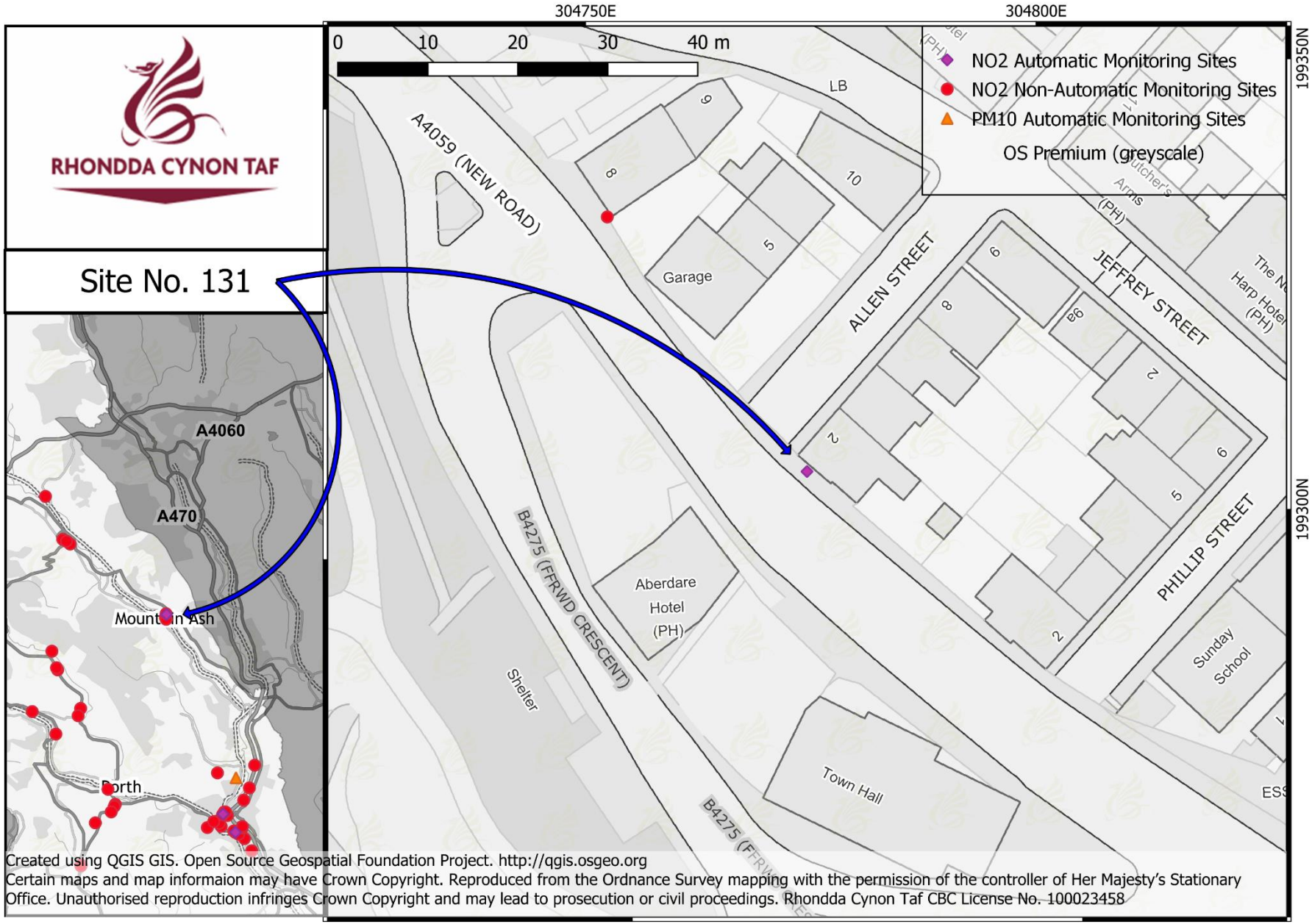
RHONDDA CYNON TAF
Site No. 131
304750E
304800E
199350N
199300N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
A4059 (NEW ROAD)
ALLEN STREET
JEFFREY STREET
PHILLIP STREET
B4275 (FFRWD CRESCENT)
Garage
Aberdare Hotel (PH)
Shelter
Town Hall
Sunday School
Harp Hotel (PH)
A4060
A470
Mountain Ash
Porth
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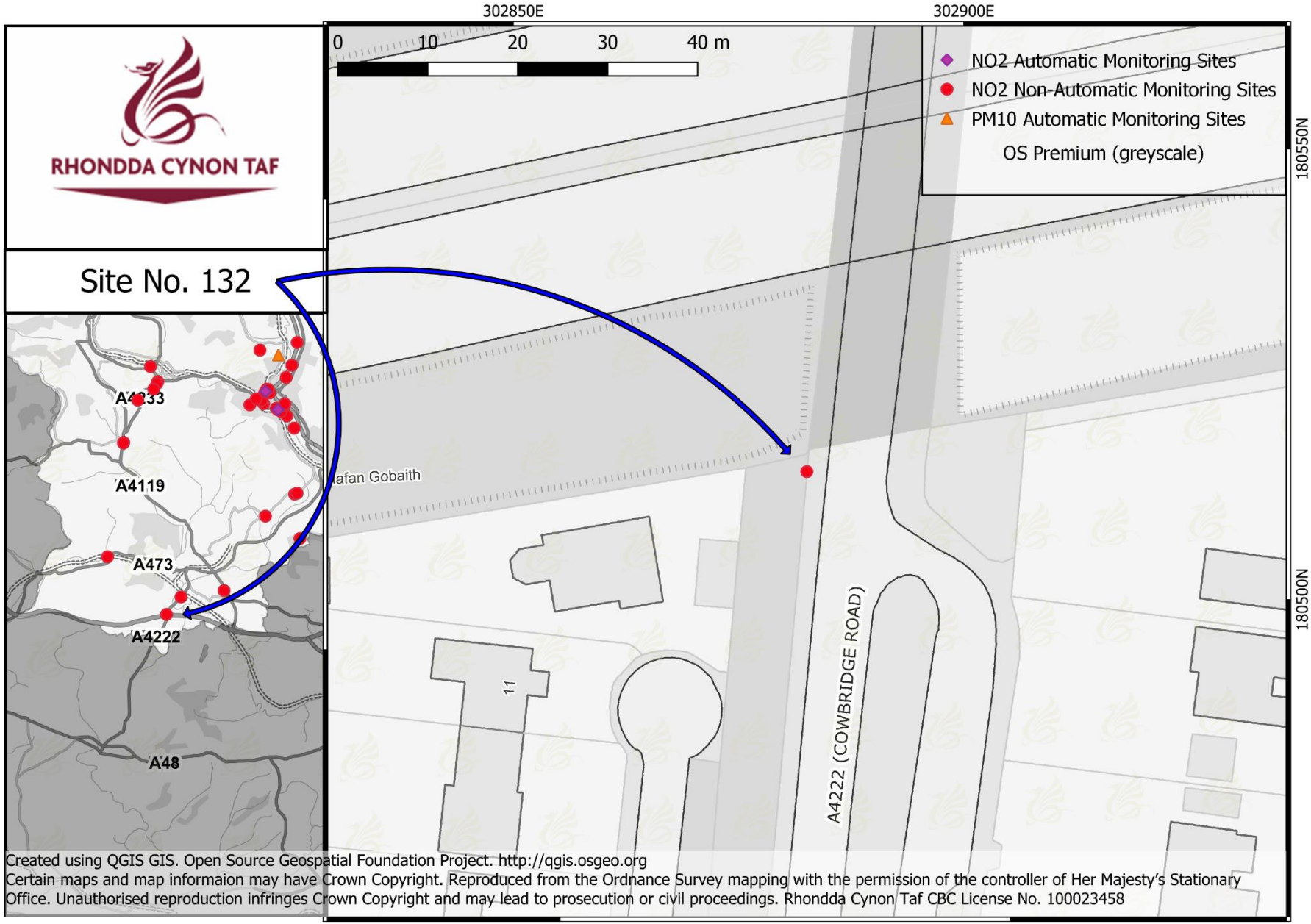
RHONDDA CYNON TAF
Site No. 132
302850E
302900E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
180550N
180500N
A4233
A4119
A473
A4222
A48
afan Gobaith
A4222 (COWBRIDGE ROAD)
11
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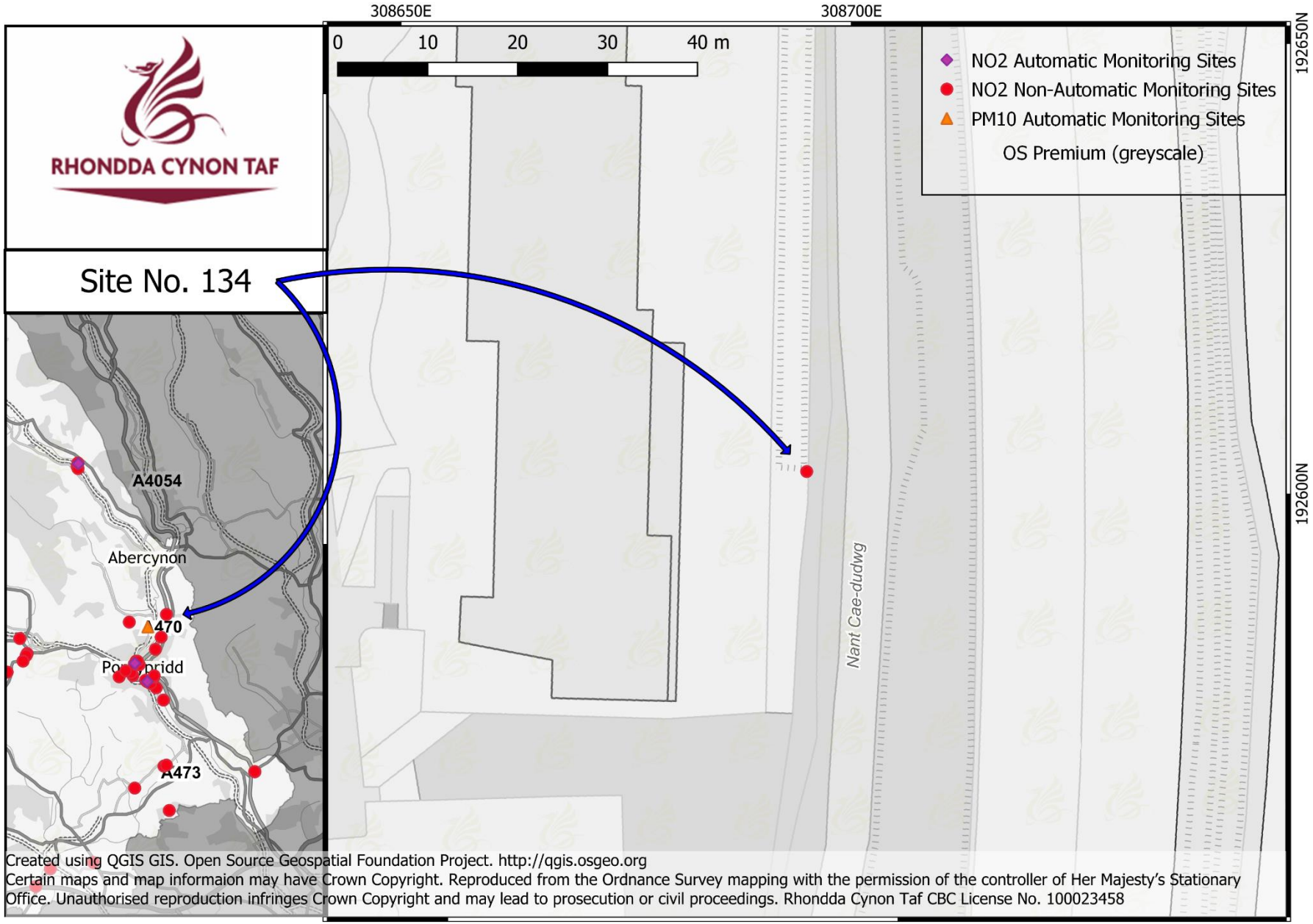
308650E
308700E
0
10
20
30
40 m
192650N
192600N
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 134
A4054
Abercynon
A470
A473
Nant Cae-dudwg
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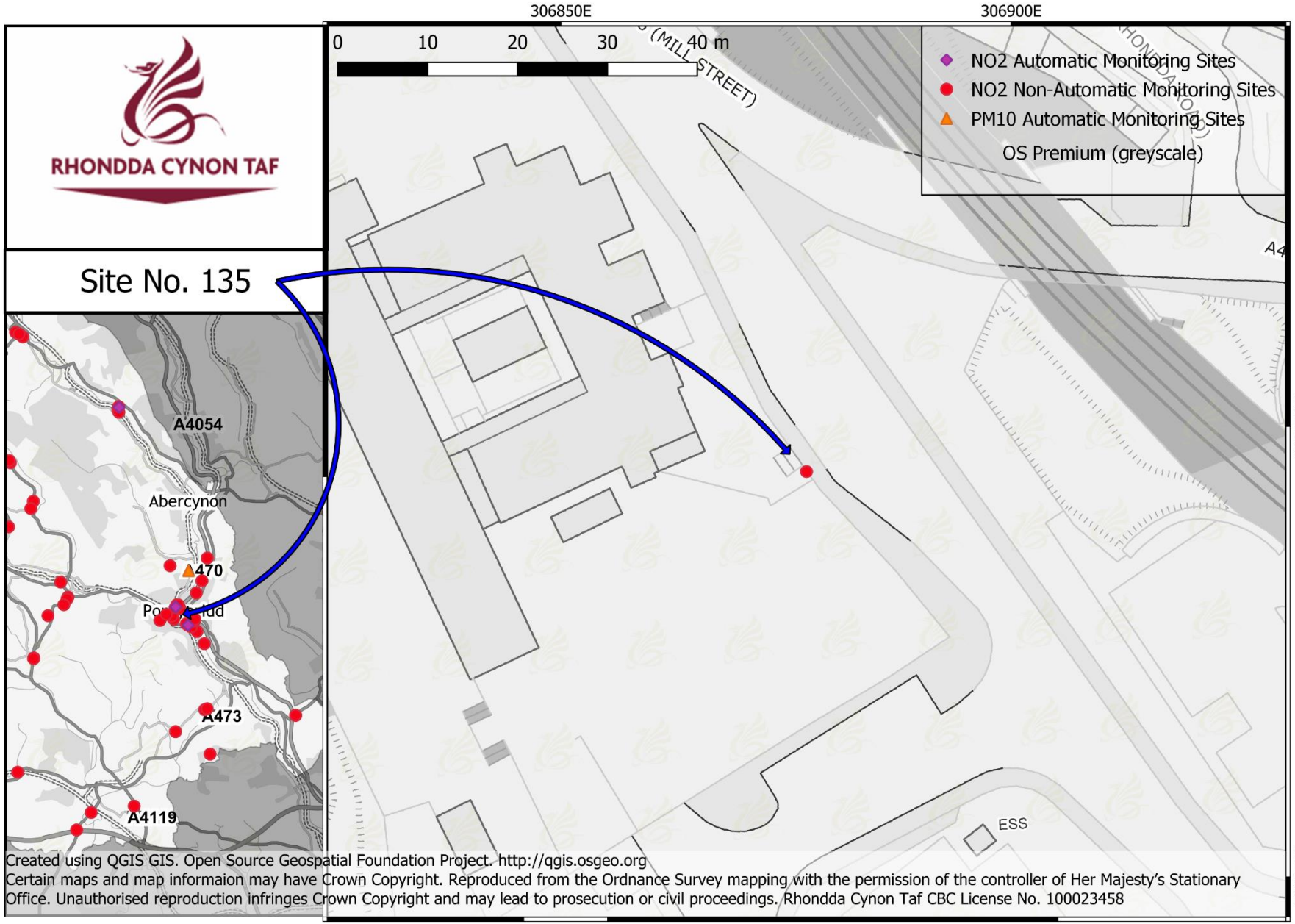
306850E
306900E
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 135
A4054
Abercynon
A470
A473
A4119
190100N
190050N
ESS
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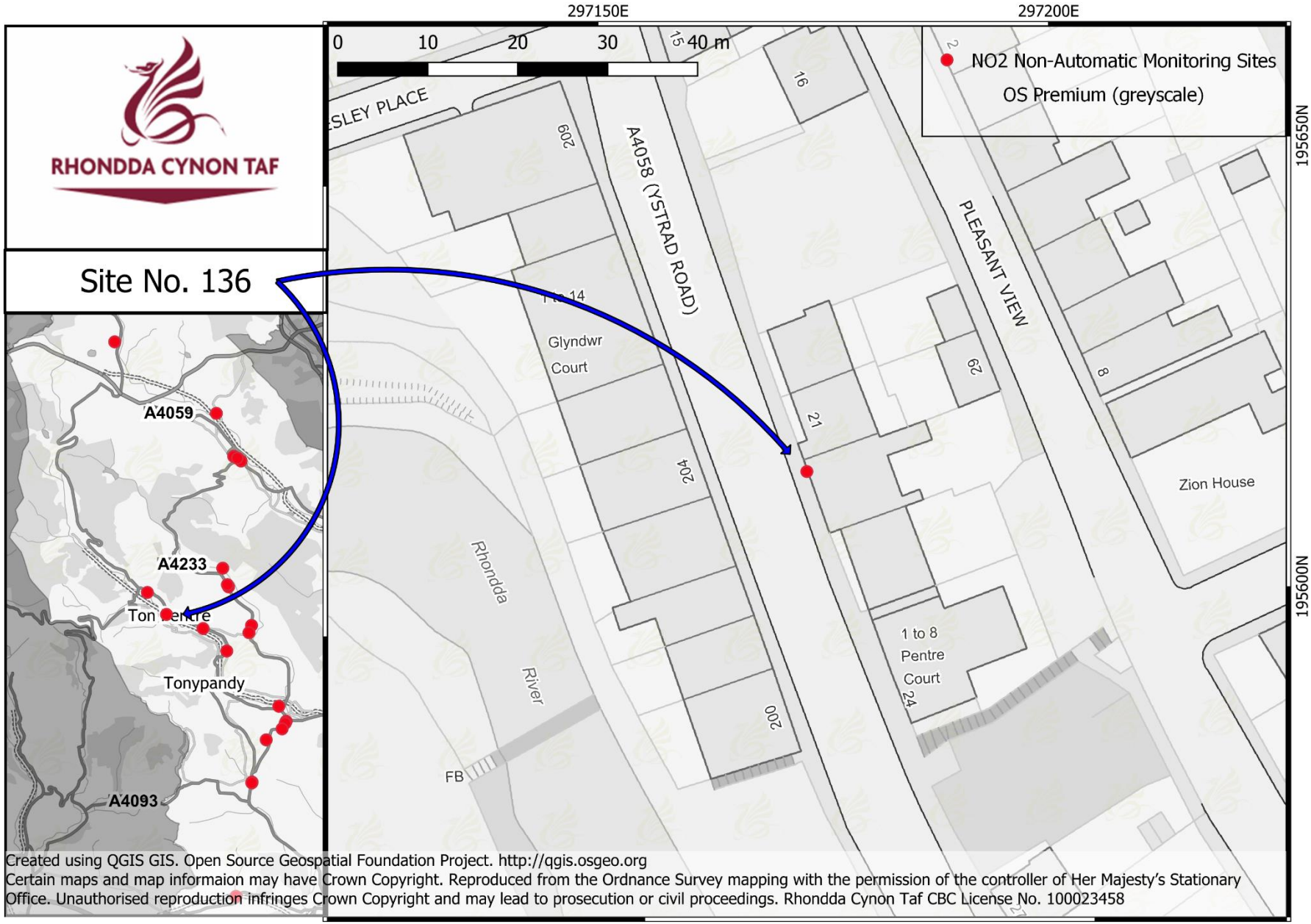
297150E
297200E
0 10 20 30 40 m
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 136
A4058 (YSTRAD ROAD)
PLEASANT VIEW
Glyndwr Court
Zion House
1 to 8 Pentre Court
Rhondda River
FB
A4059
A4233
Tonypandy
A4093
195650N
195600N
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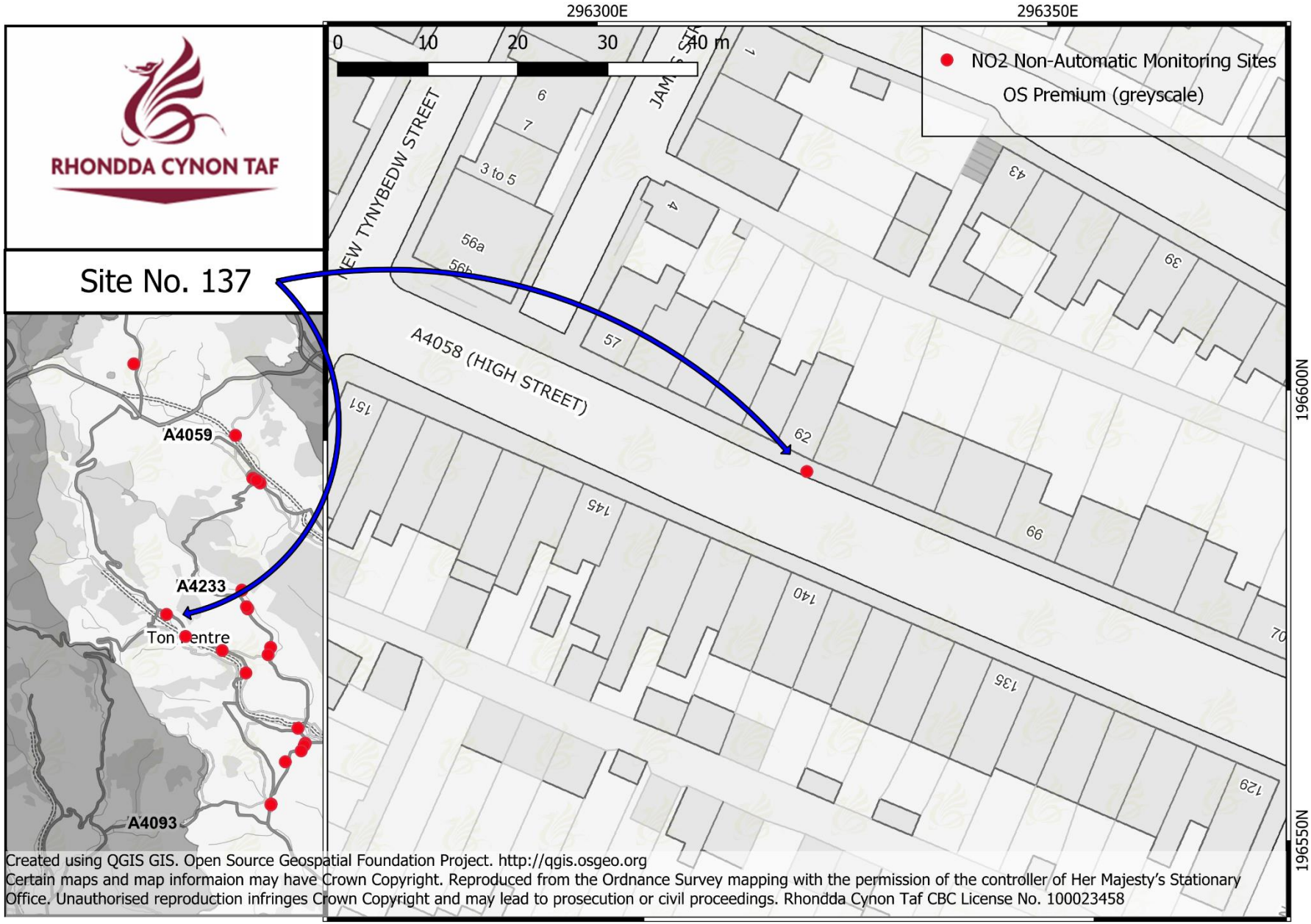
296300E
296350E
0
10
20
30
40 m
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 137
A4058 (HIGH STREET)
NEW TYNYBEDW STREET
JAMES STR
A4059
A4233
A4093
Ton Pentre
196600N
196550N
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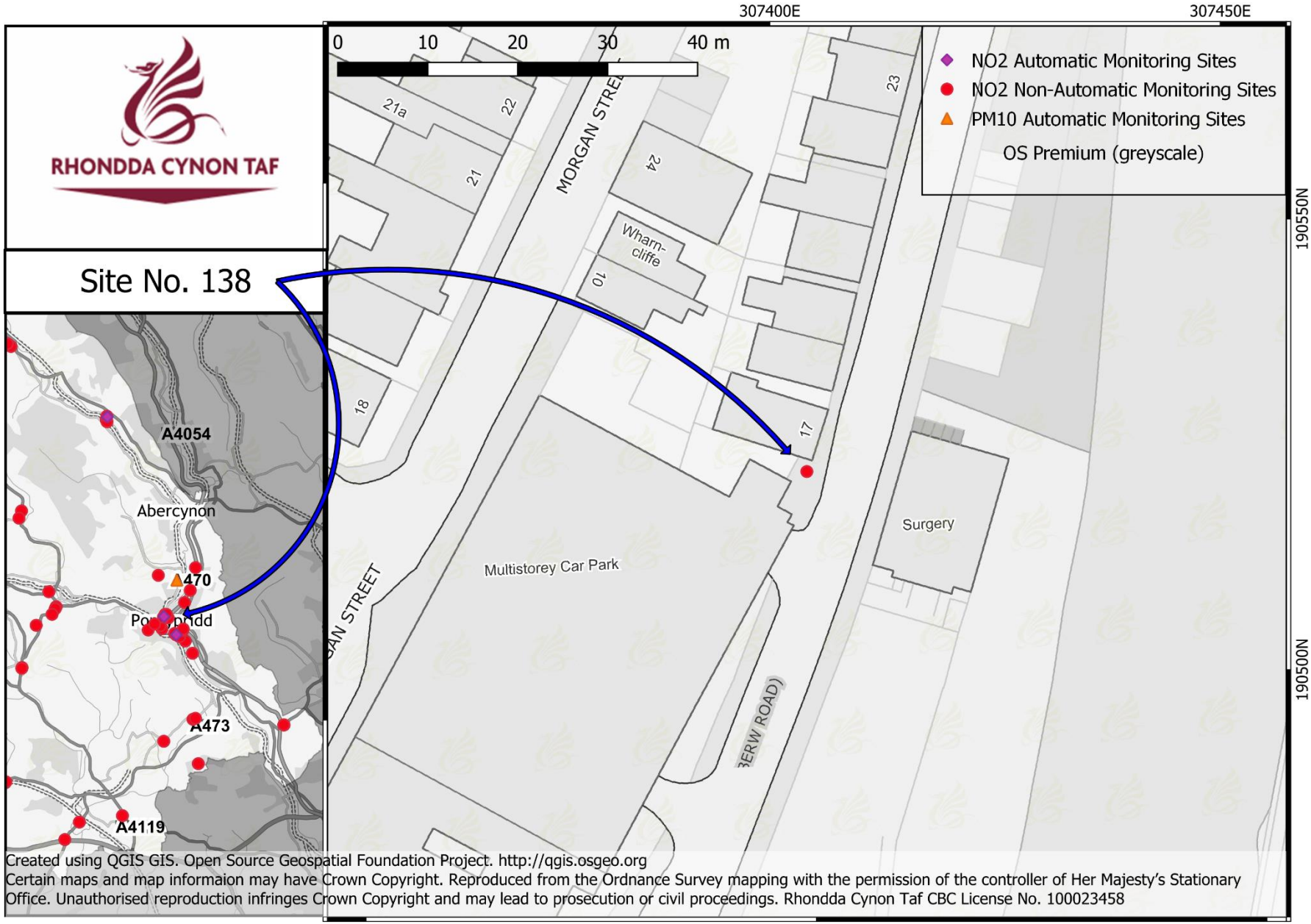
307400E
307450E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 138
A4054
Abercynon
A470
A473
A4119
MORGAN STREET
Wharn-cliffe
Multistorey Car Park
Surgery
21a
22
21
24
23
18
17
10
190550N
190500N
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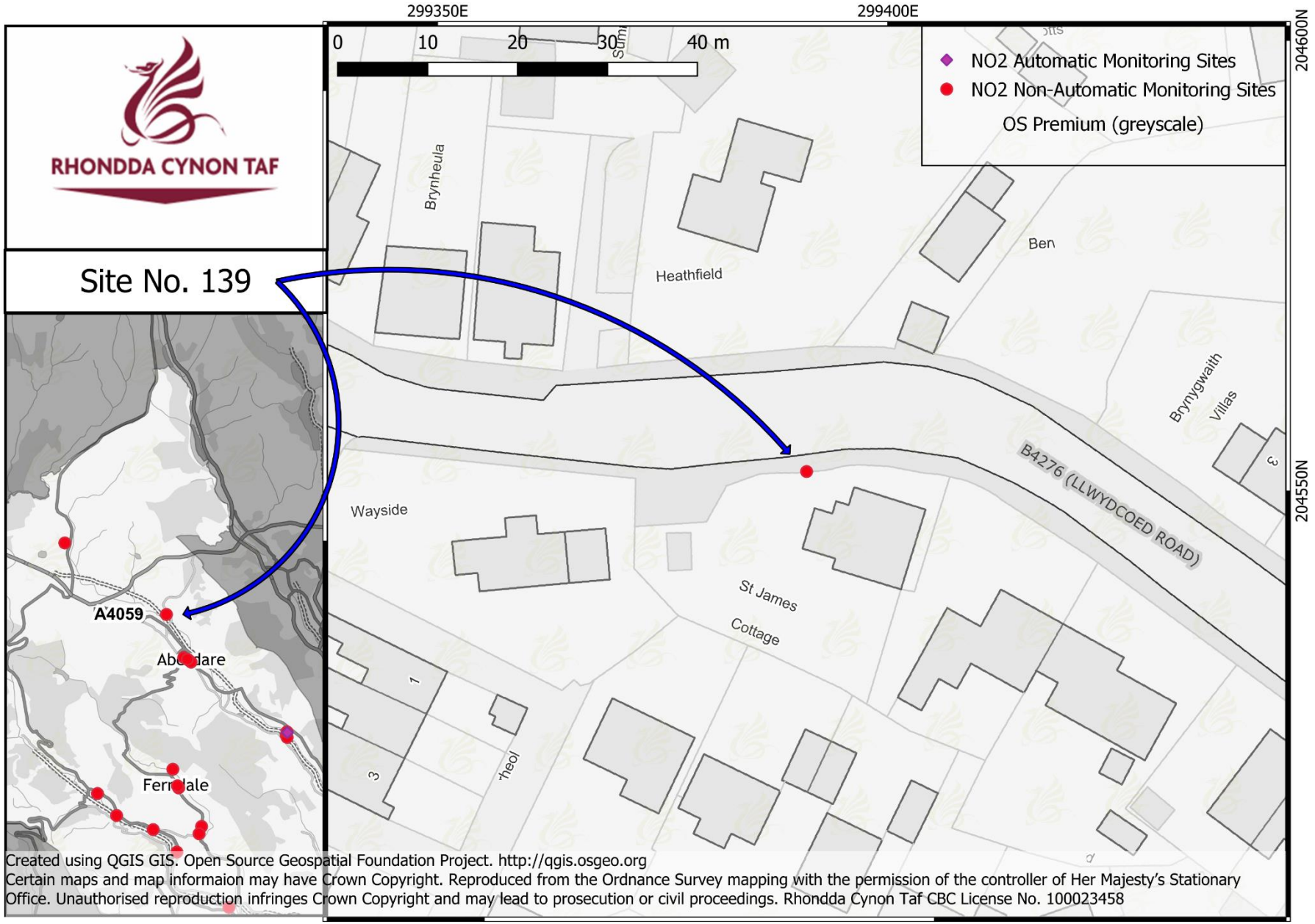
299350E
299400E
204600N
204550N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 139
Brynheula
Heathfield
Ben
Brynygwaith
Villas
B4276 (LLWYDCOED ROAD)
Wayside
St James
Cottage
A4059
Aberdare
Ferndale
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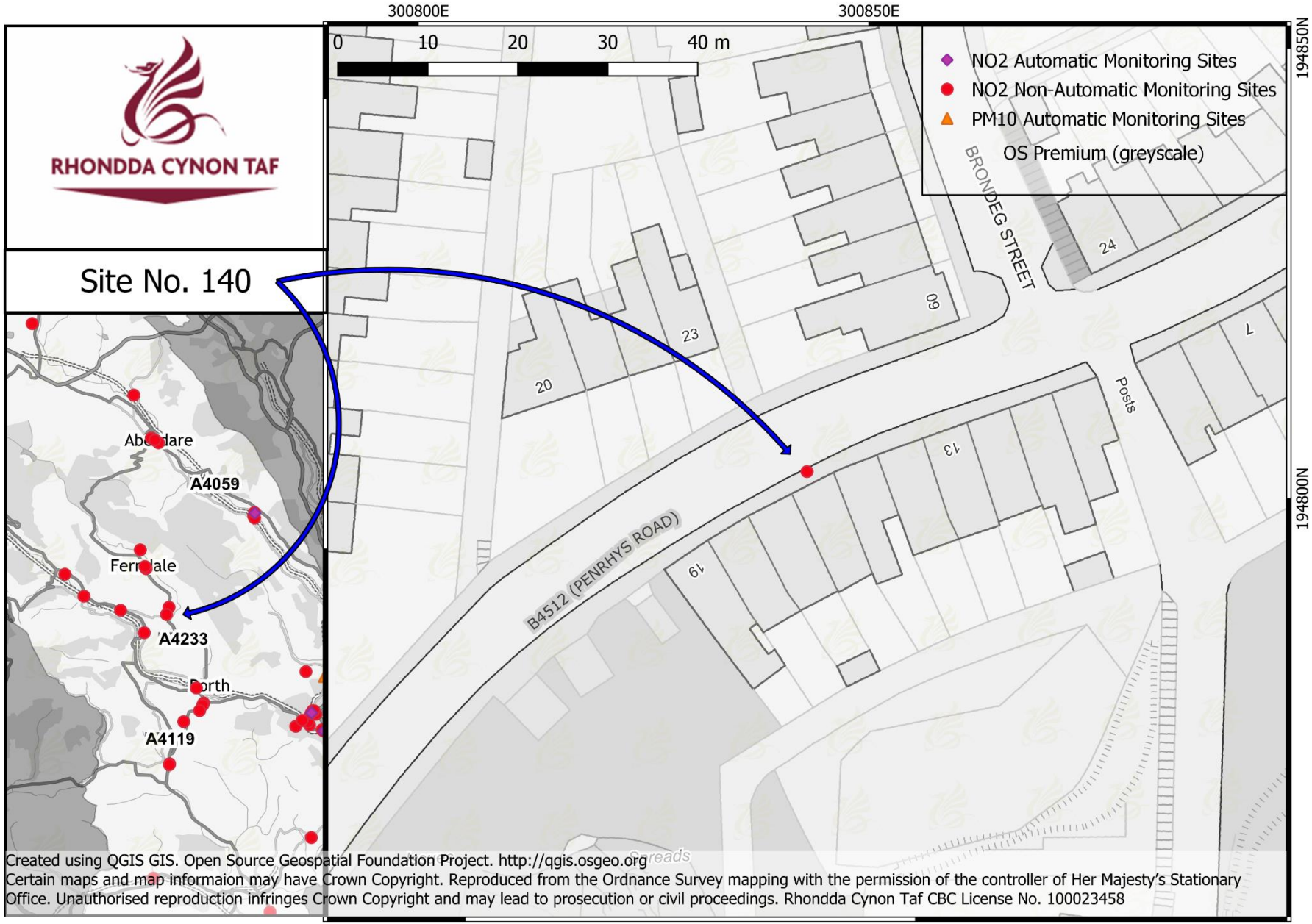
300800E
300850E
194850N
194800N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 140
BRONDEG STREET
B4512 (PENRHYS ROAD)
Posts
A4059
A4233
A4119
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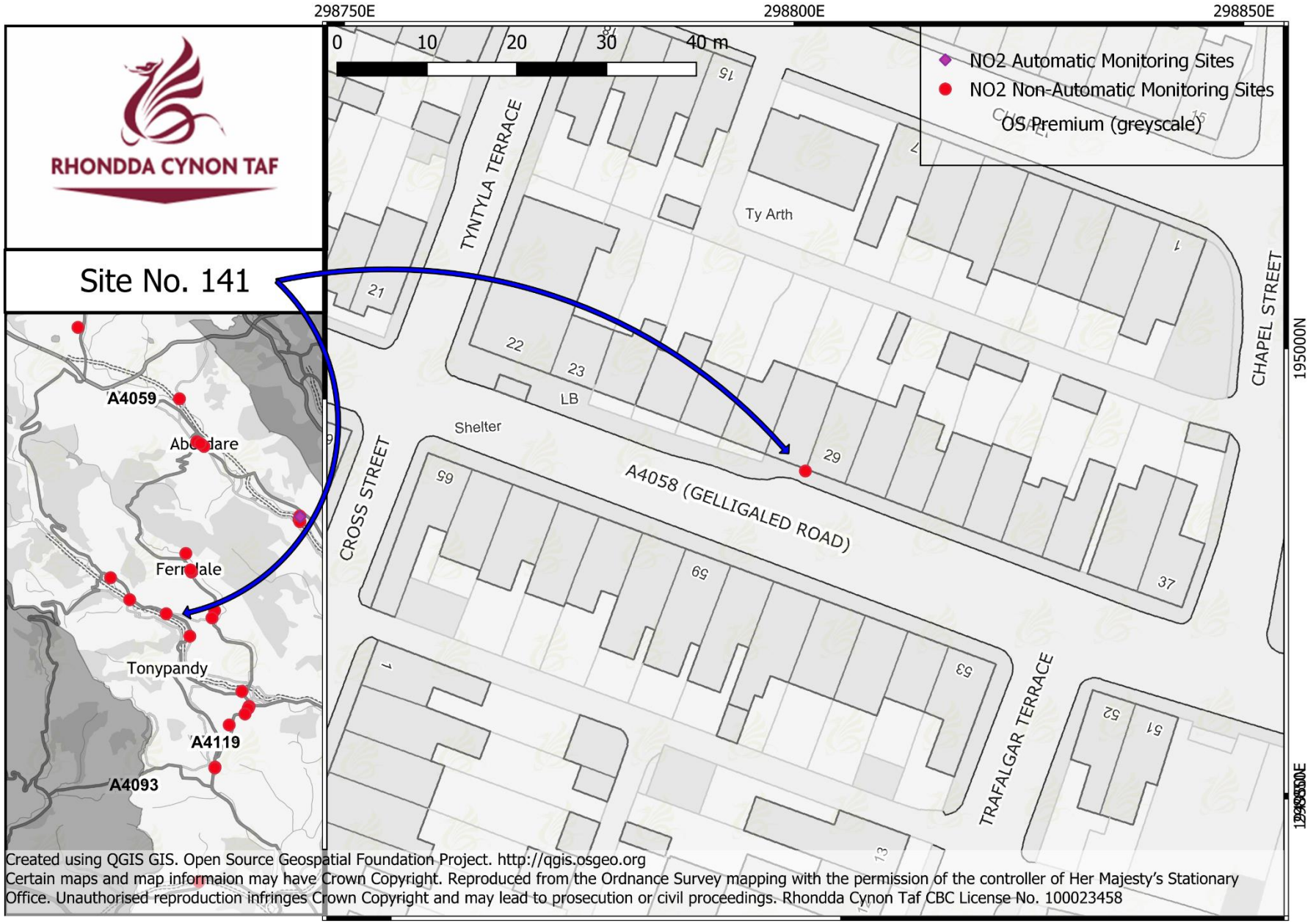
298750E
298800E
298850E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 141
TYNTYLA TERRACE
Ty Arth
CHAPEL STREET
CROSS STREET
Shelter
LB
A4058 (GELLIGALED ROAD)
TRAFALGAR TERRACE
A4059
Aberdare
Ferndale
Tonypandy
A4119
A4093
195000N
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13. Appendix D1: Current AQMA Boundary Maps

Figure D.1: Cymmer Air Quality Management Area

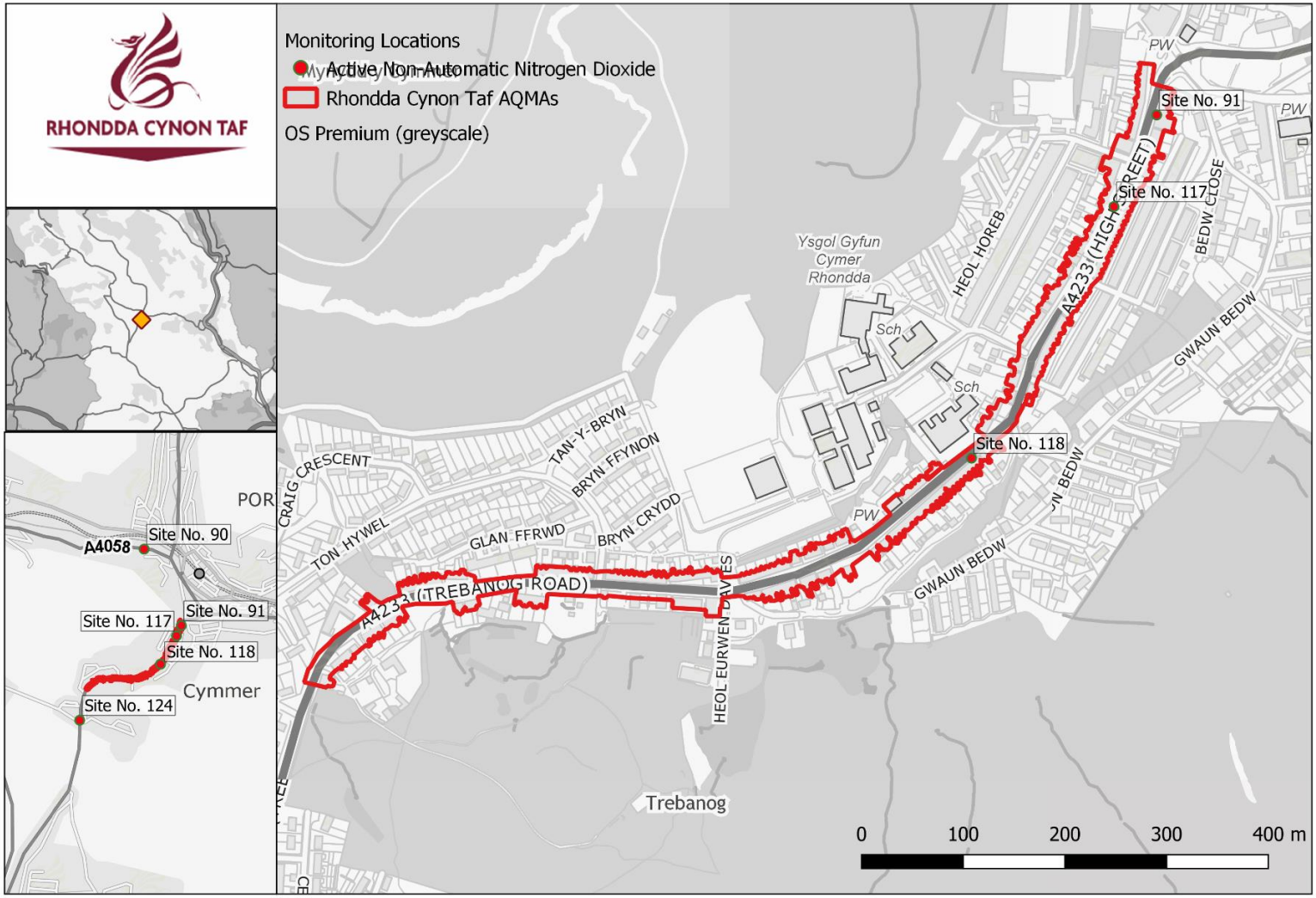

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Figure D.2: Ferndale Air Quality Management Area

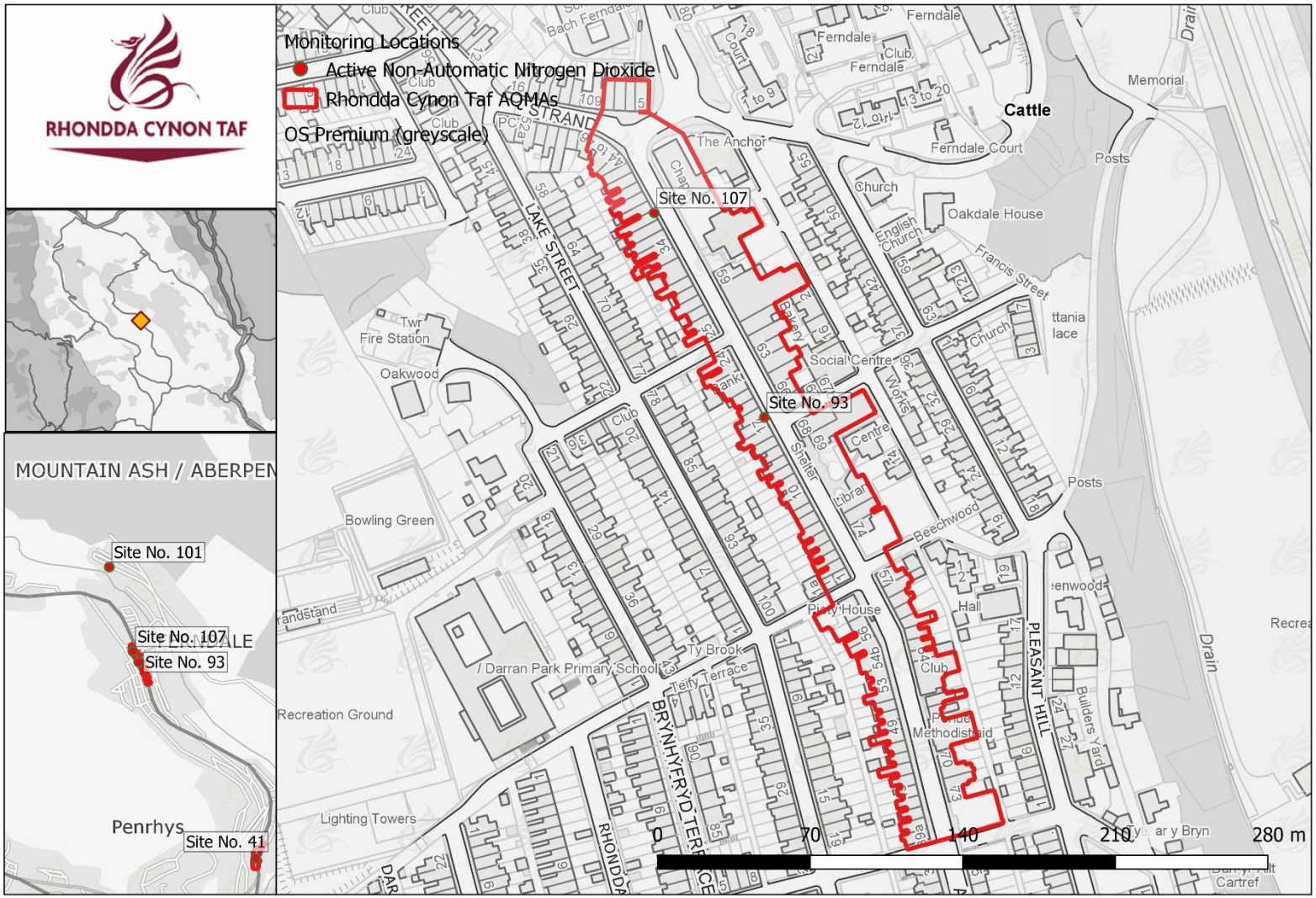

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Figure D.3: Mt Ash Town Centre Air Quality Management Area

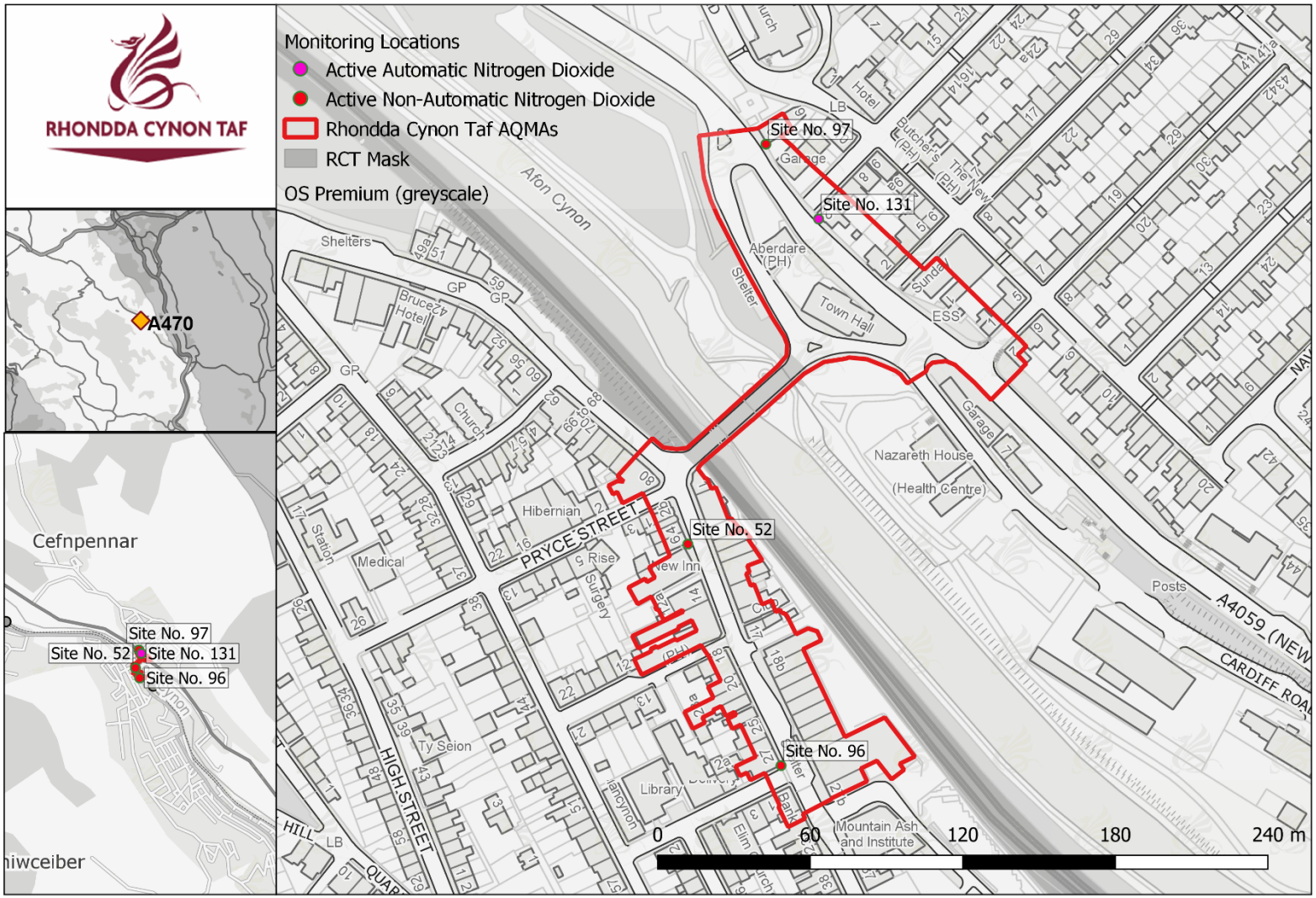

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Figure D.4: Nightingales Bush Air Quality Management Area

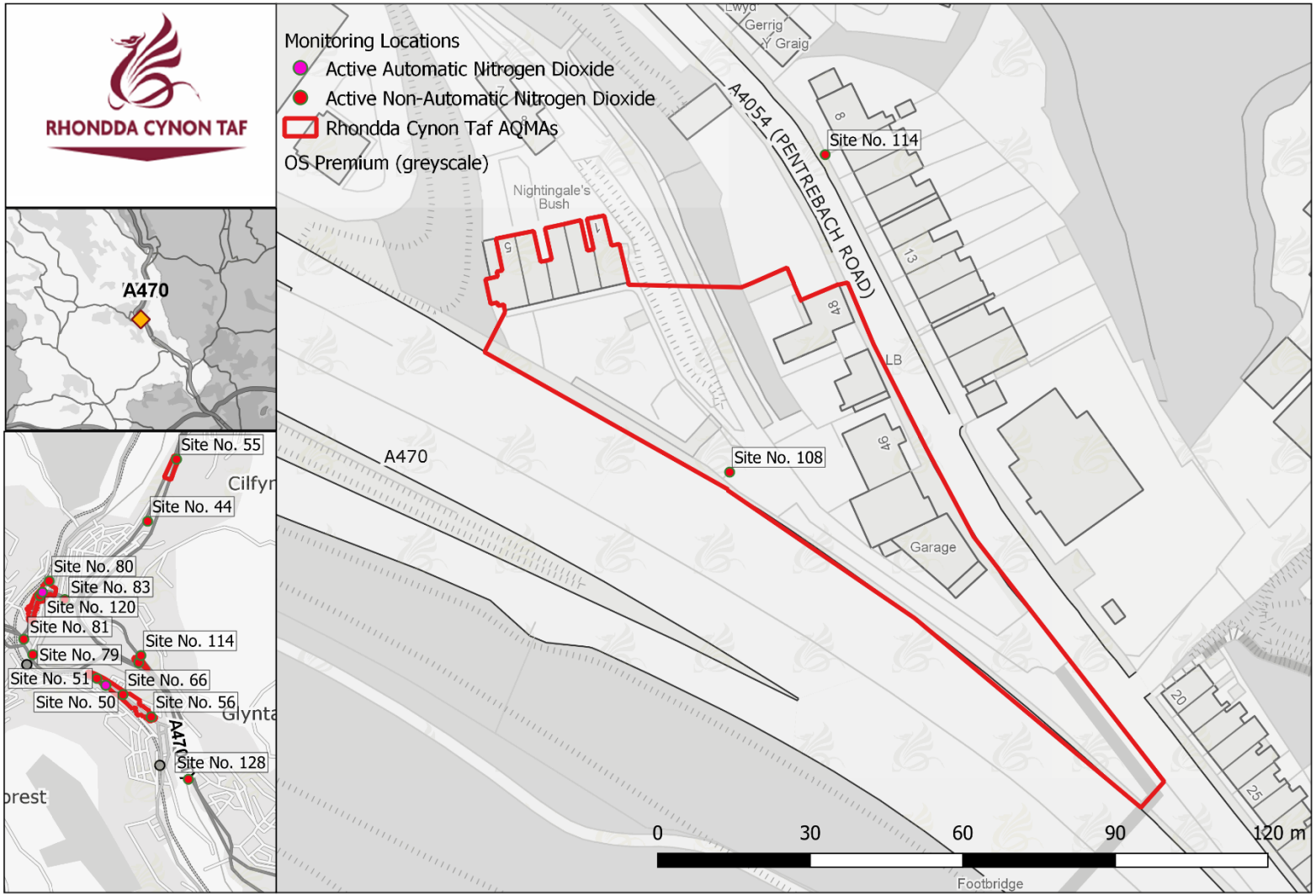

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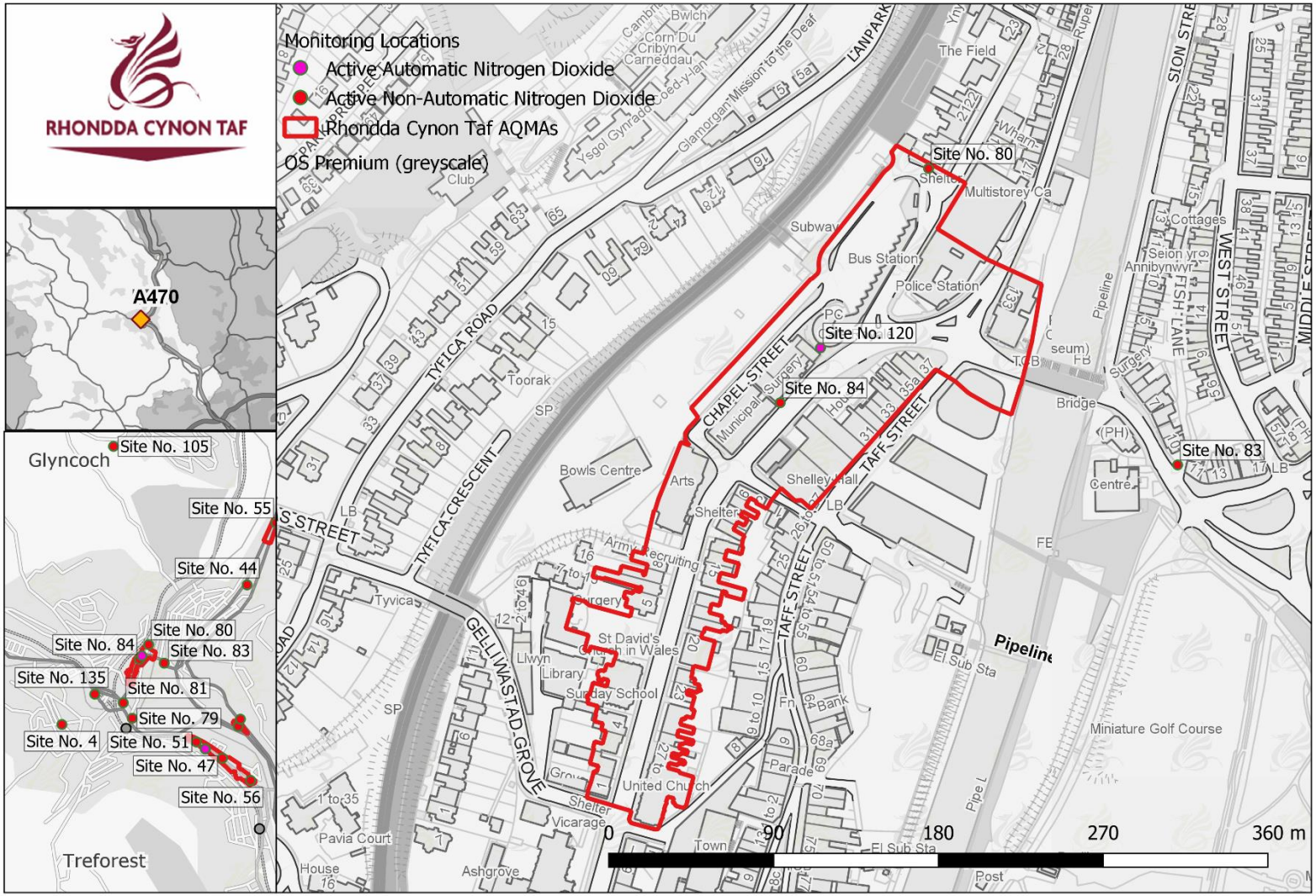
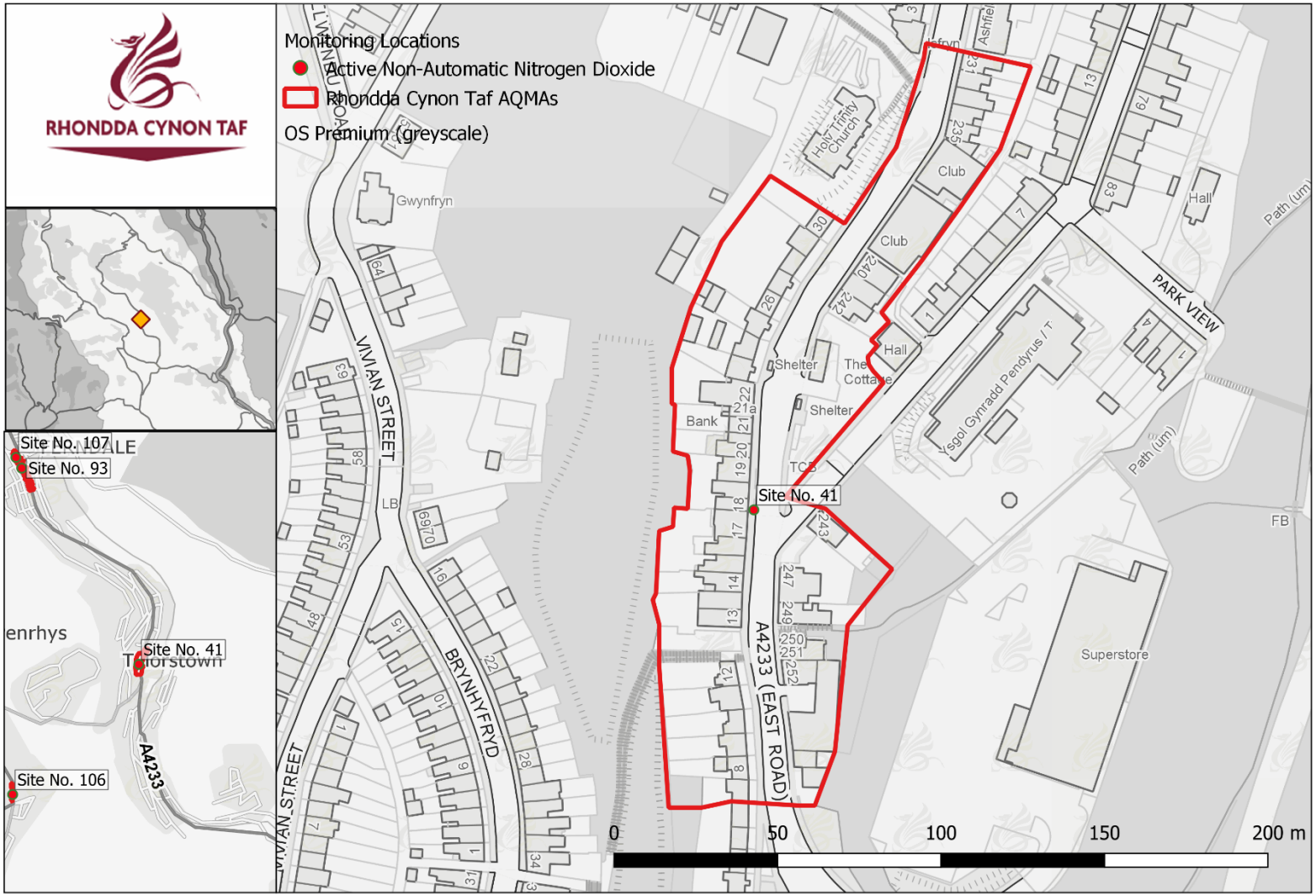
Figure D.5: Pontypridd Town Centre Air Quality Management Area



Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org

Figure D.6: Tylorstown Air Quality Management Area



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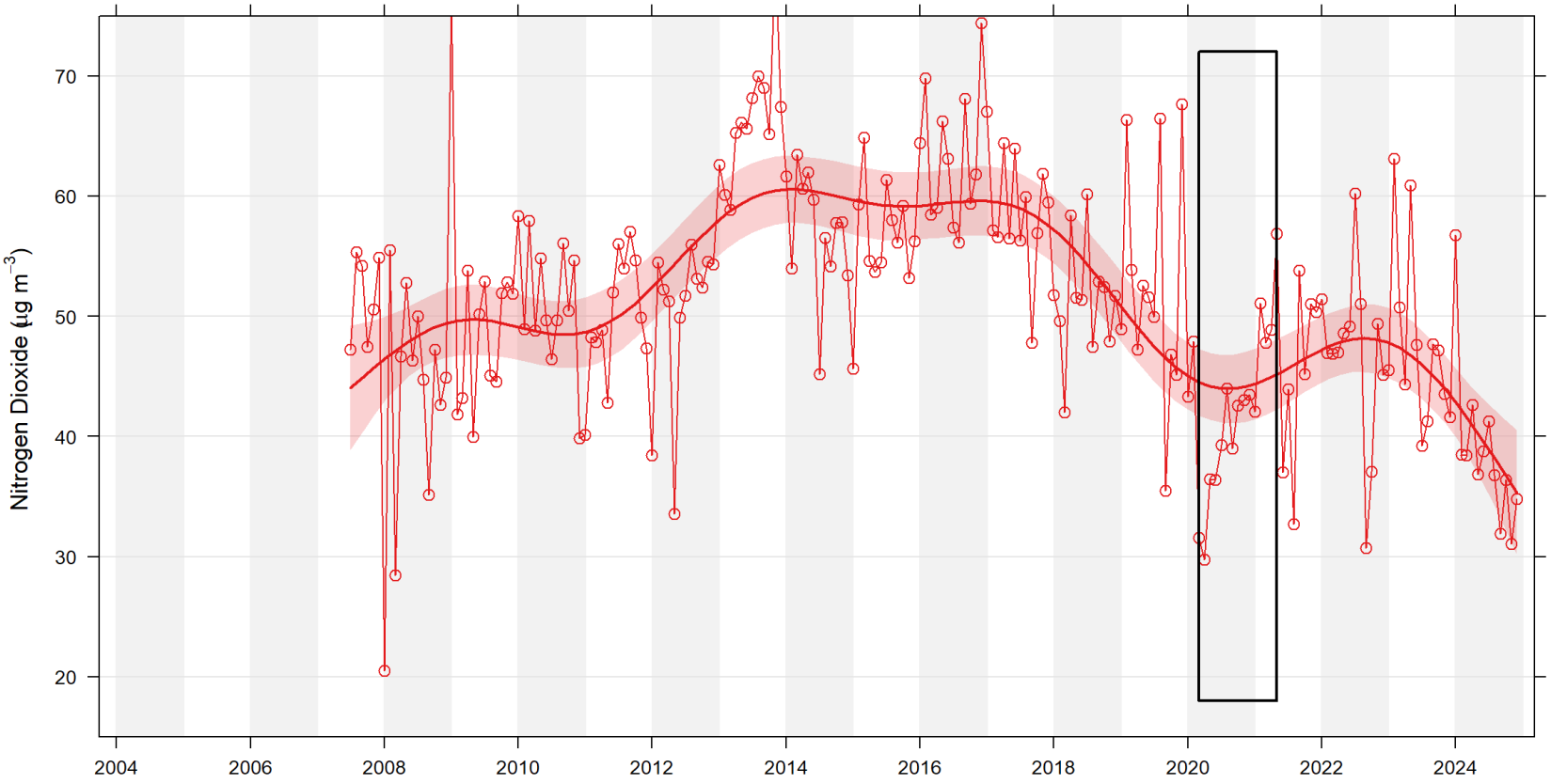
14. Appendix D2: AQMA Trends

The below tables contain information on the current trends in NO_2 within each AQMA, including consideration of both the longer-term, up to 20-year trend, and a quantification of the nearer-term 5-year trend. The smooth trend plots provided have been annotated with a black box for the potential period of COVID-19 related disruption, as this significant period may have influenced the longer-term trend. The nearer-term 5-year trend often gives more bearing to recent events which may be more relevant when considering the immediate future. Also provided is an assessment of the likely improvement in levels of NO_2 that may be necessary to achieve compliance to the relevant AQOs for NO_2 as well as, should current trends persist, a projection of when compliance may be achieved.

14.1 Cymmer AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
17.7	-4.8	4+

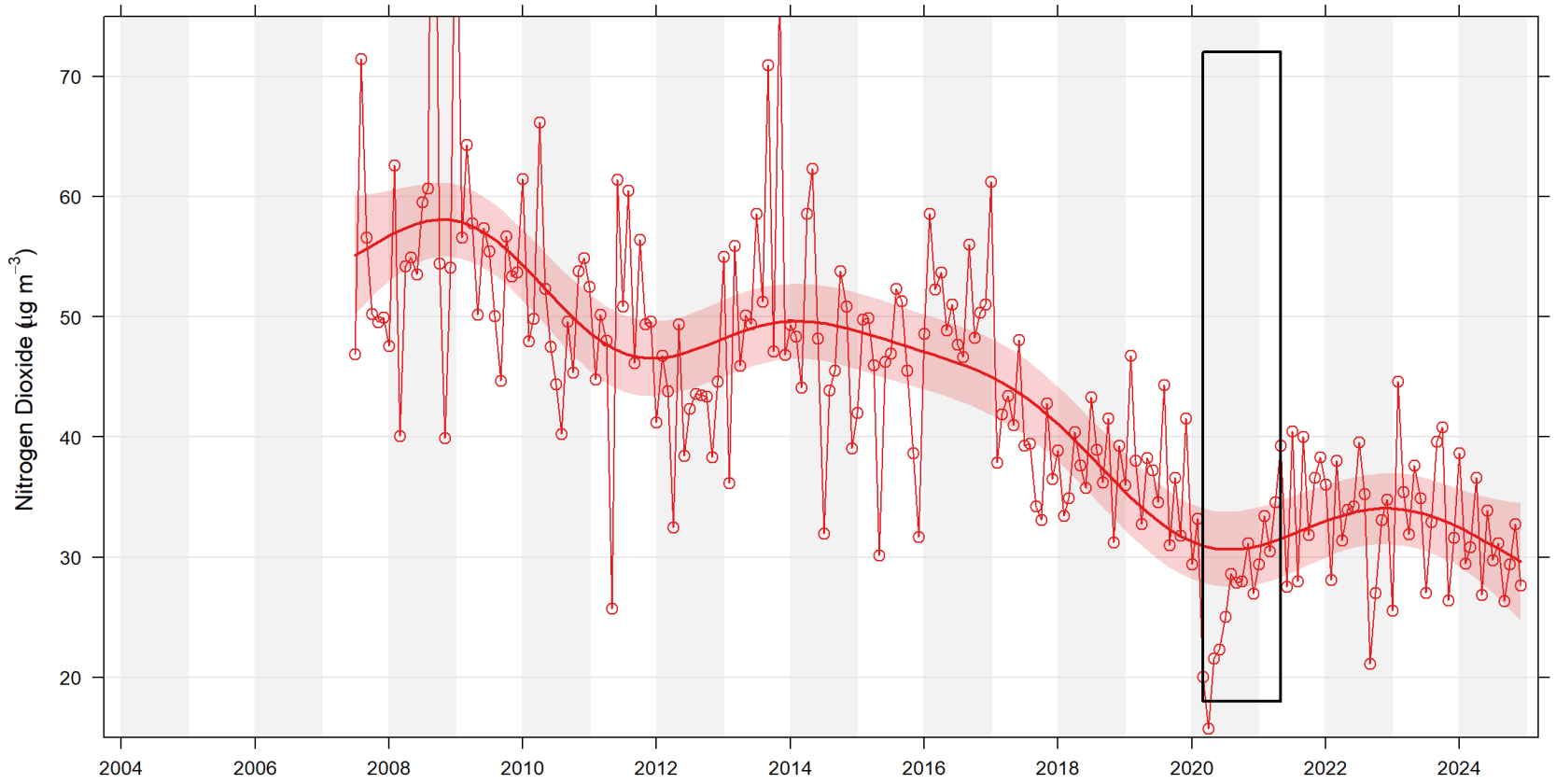
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.2 Ferndale AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-2.95	Near Term

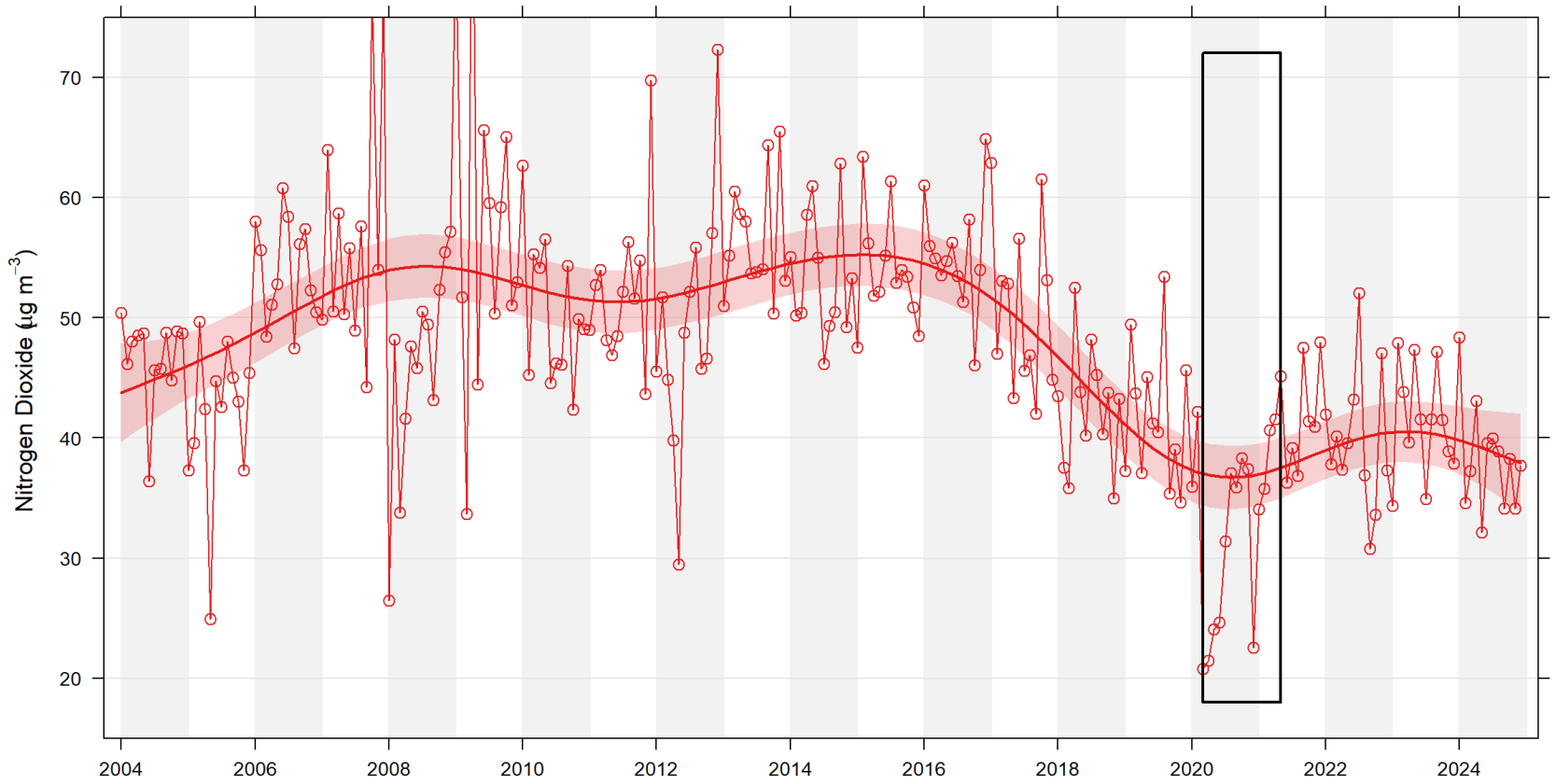
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.3 Tylorstown AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-1.45	Near Term

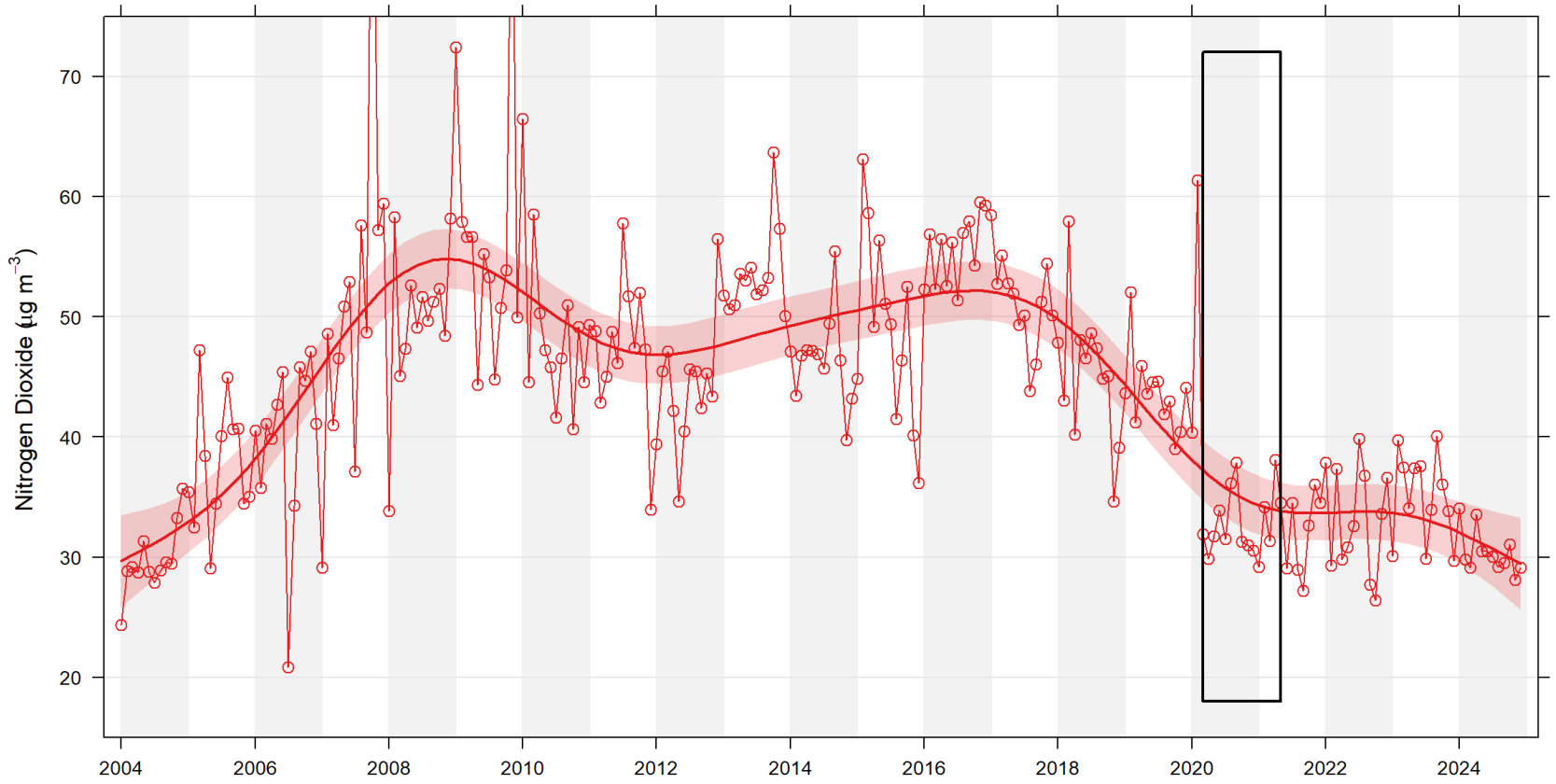
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.4 Mt Ash Town Centre AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-5.9	Near Term

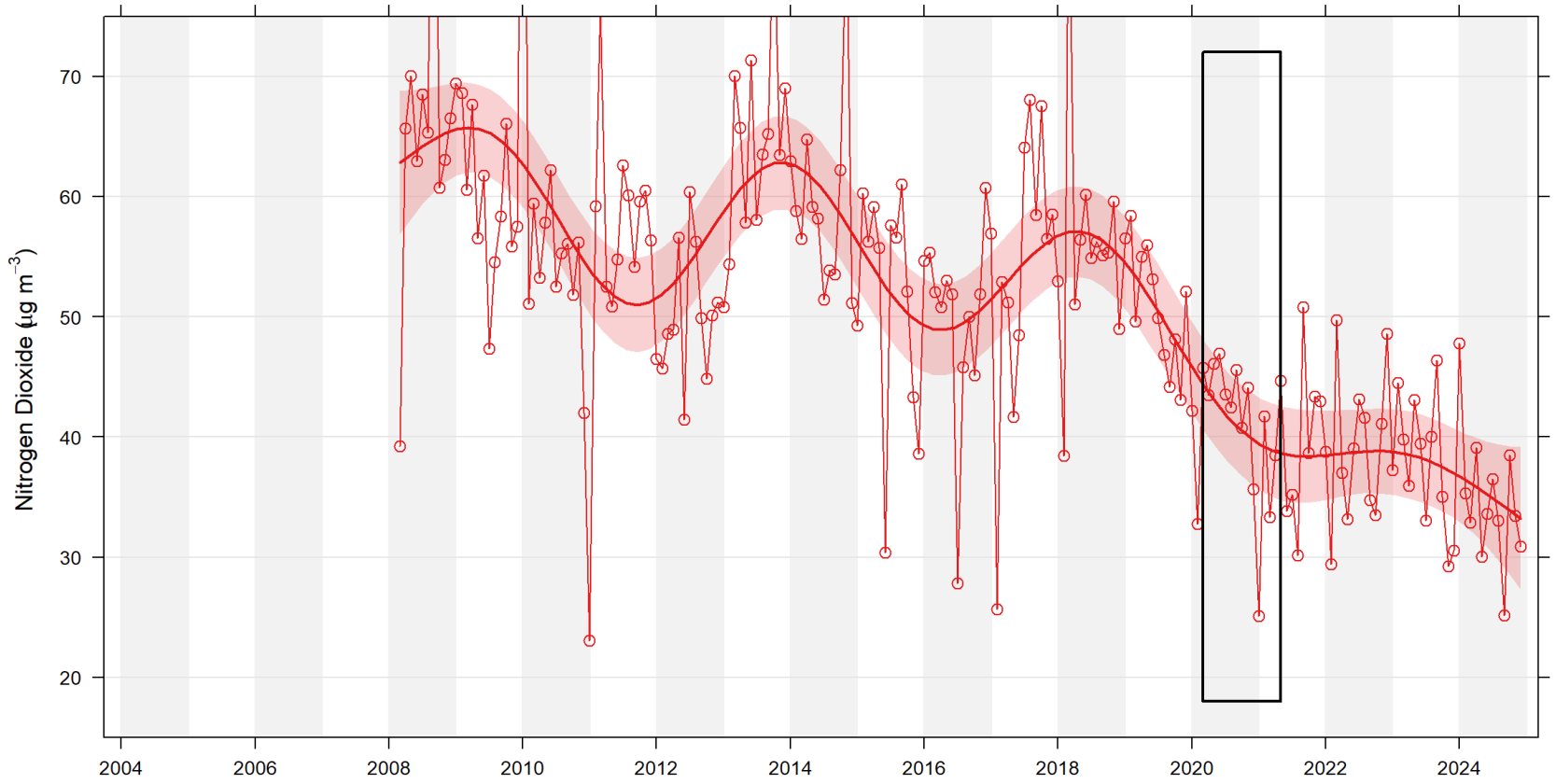
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.5 Nightingales Bush AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-6.11	Near Term

20-year Trend Graph (μgm^{-3} NO_2)[2]



14.6 Pontypridd Town Centre AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-2.25	Near Term

20-year Trend Graph (μgm^{-3} NO_2)[2]

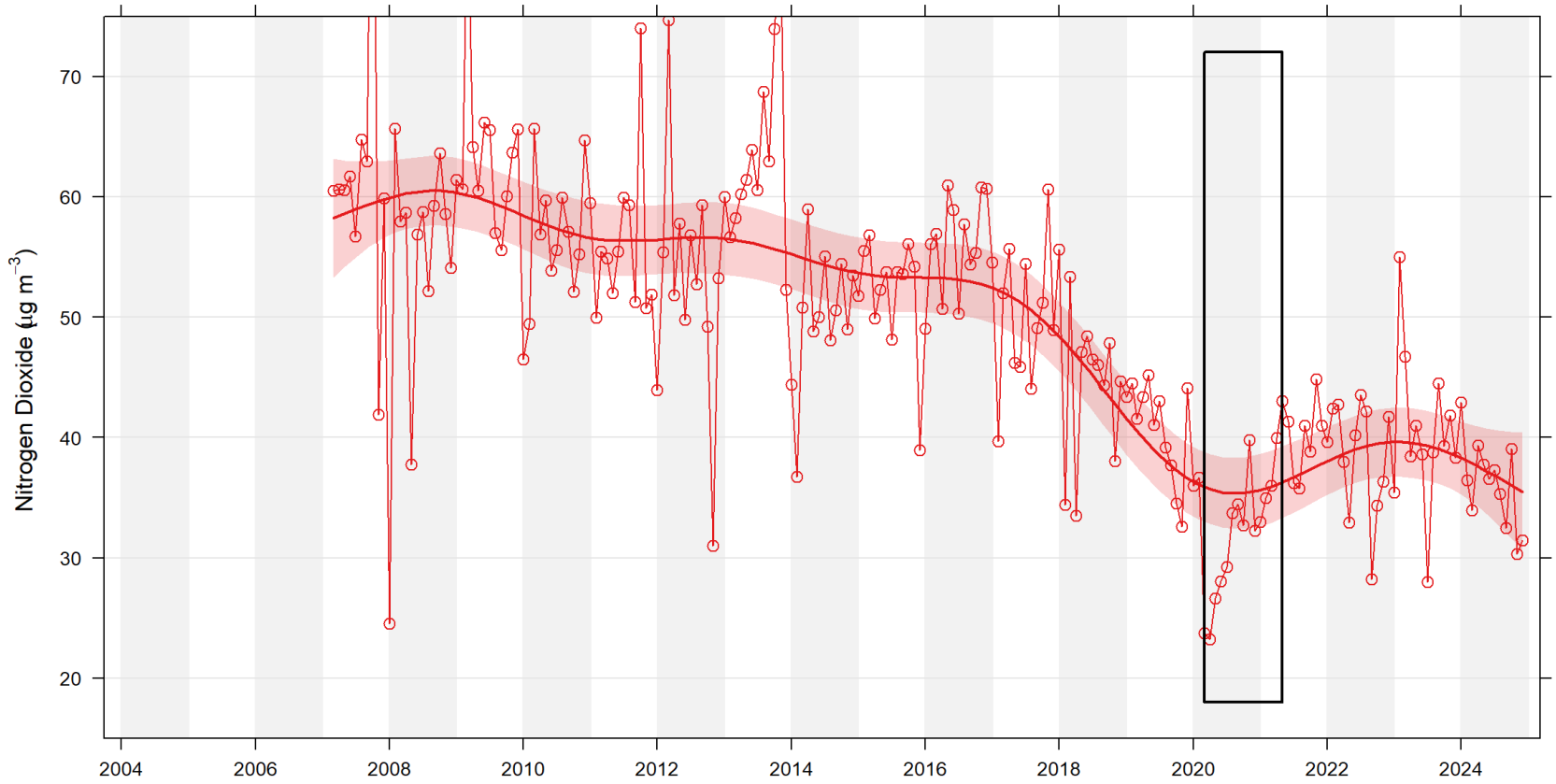


Table Notes

(1) The required reduction in NO_2 determined on the three-year average at the worst case location within the AQMA. Due to the complex relationship between NO_2 and its precursors and sources, this is not a measure of the level of intervention required but rather a comparative indicator between AQMAs.
(2) Trend analysis is indicative for comparison only and as an average may not be reflective of all areas within the respective AQMA.
(3) Projected compliance periods are indicative only and do not necessarily take account of inherent uncertainties and future variables which may result in different real compliance periods.

15. Appendix E2: Current Air Quality Action Plans

15.1 Rhondda

15.1.1 Cymmer AQAP

Cymmer AQAP Actions				Action Monitoring Method
Type	**Ref**	**Description**	**Implementation Year**	
Implement	AT1	New or improved active travel routes and supporting infrastructure within or serving Cymmer and neighbouring communities	2024	The total of length of new or improved relevant active travel routes
				The amount of investment in new or improved active travel routes
	AT3	Behavioural measures to influence travellers, to include the dissemination of information to support active travel and public transport as well as information on practices that can reduce the impact of all travel options.	2023	Delivery of schemes to increase travel information
				Favourable perspective of current public transport operators
				Delivery of schemes to increase modal shift
				Opportunities undertaken to encourage active travel route usage
	LP1	A dedicated Special Planning Guidance policy that provides instruction to development control applicants on how to account for and address air quality considerations, including mitigation measures, associated with relevant proposed developments	2023	Adoption of an SPG
	MT2	Improvement of public bus frequency for services serving Cymmer and neighbouring communities	2024	No. of additional or enhanced relevant bus routes
	OP1.Cy	Green Infrastructure, including hybrid barriers, within Cymmer	2024	Total length of green barrier at Cymmer
	OP2	Green Synchronism, to include policy's and actions that support ecology and biodiversity, within Cymmer and the wider region, that help to support existing or new green infrastructure which may support air quality improvements or	2024	Delivery of green infrastructure and biodiversity policies

		protections and may include awareness and educational activities to further improve the sustainability of relevant local green infrastructure.		
	RF4	Actions that support the adoption of alternative vehicle fuel by the public and which are likely to reduce the dependency upon fossil fuels.	2024	Delivery of the RCTCBC EV strategy in accordance with published schedule
	RF6	Actions that support the adoption of alternative vehicle fuel by the Local Authority within its core fleet	2025	Delivery of the RCTCBC EV strategy in accordance with published schedule
	RF7	Actions that support the adoption of alternative vehicle fuel by service providers contracted by the Local Authority within their core fleet associated with services affecting Cymmer	2025	Delivery of the RCTCBC EV strategy in accordance with published schedule
	RI7.Cy	The provision of new off-street parking within Cymmer	2024	No. of additional local off-street parking spaces provided in Cymmer
	RM2.Cy	The assessment and potential realignment of traffic flow bias at the traffic light controlled junction of High St and Glynfach Rd so as to favour greater traffic flow along High St.	2023	% relevant bias adjustment made % change in average speed within Cymmer AQMA
	RM5	Increased civil parking enforcement by the Local Authority along High St within the Cymmer AQMA	2023	No. of additional hours spent patrolling relevant areas
Reserve	RF8	Actions that support the adoption of alternative vehicle fuel by public bus operators along routes that serve Cymmer	2028	Delivery of the RCTCBC EV strategy in accordance with published schedule

15.1.2 Ferndale AQAP

Ferndale AQAP Actions				Action Monitoring Method
Type	Ref	Description	Implementation Year	
Re c	AT3		2023	Delivery of schemes to increase travel information

		Behavioural measures to influence travellers, to include the dissemination of information to support active travel and public transport as well as information on practices that can reduce the impact of all travel options.		Favourable perspective of current public transport operators
				Delivery of schemes to increase modal shift
				Opportunities undertaken to encourage active travel route usage
	RF4	Actions that support the adoption of alternative vehicle fuel by the public and which are likely to reduce the dependency upon fossil fuels.	2024	Delivery of the RCTCBC EV strategy in accordance with published schedule

15.1.3 Tylorstown AQAP

Tylorstown AQAP Actions				Action Monitoring Method
Type	**Ref**	**Description**	**Implementation Year**	
Reserve	AT3	Behavioural measures to influence travellers, to include the dissemination of information to support active travel and public transport as well as information on practices that can reduce the impact of all travel options.	2023	Delivery of schemes to increase travel information
				Favourable perspective of current public transport operators
				Delivery of schemes to increase modal shift
				Opportunities undertaken to encourage active travel route usage
	RF4	Actions that support the adoption of alternative vehicle fuel by the public and which are likely to reduce the dependency upon fossil fuels.	2024	Delivery of the RCTCBC EV strategy in accordance with published schedule

15.2 Cynon

15.2.1 Mt Ash Town Centre AQAP

Mt Ash Town Centre AQAP Actions				Action Monitoring Method
Type	**Ref**	**Description**	**Implementation Year**	
Reserve	AT1	New or improved active travel routes and supporting infrastructure within or serving Cymmer and neighbouring communities	2024	The total of length of new or improved relevant active travel routes
				The amount of investment in new or improved active travel routes
	AT3		2023	Delivery of schemes to increase travel information

		Behavioural measures to influence travellers, to include the dissemination of information to support active travel and public transport as well as information on practices that can reduce the impact of all travel options.		Favourable perspective of current public transport operators Delivery of schemes to increase modal shift Opportunities undertaken to encourage active travel route usage
	MT2	Improvement of public bus frequency for services serving Mt Ash and neighbouring communities	2024	No. of additional or enhanced relevant bus routes
	RF4	Actions that support the adoption of alternative vehicle fuel by the public and which are likely to reduce the dependency upon fossil fuels.	2024	Delivery of the RCTCBC EV strategy in accordance with published schedule
	RF6	Actions that support the adoption of alternative vehicle fuel by the Local Authority within its core fleet	2025	Delivery of the RCTCBC EV strategy in accordance with published schedule
	RF7	Actions that support the adoption of alternative vehicle fuel by service providers contracted by the Local Authority within their core fleet associated with services affecting Mt Ash	2025	Delivery of the RCTCBC EV strategy in accordance with published schedule
	RF8	Actions that support the adoption of alternative vehicle fuel by public bus operators along routes that serve Mt Ash	2028	Delivery of the RCTCBC EV strategy in accordance with published schedule
	RM5	Increased civil parking enforcement by the Local Authority along New Rd within the Mt Ash AQMA	2023	No. of additional hours spent patrolling relevant areas

15.3 Taf

15.3.1 Nightingales Bush AQAP

Nightingales Bush AQAP Actions				Action Monitoring Method
Type	**Ref**	**Description**	**Implementation Year**	
Imple ment	T1	Continued implementation of the A470 speed restriction of 50mph between Upper Boat and Pontypridd by the Highways Authority	-	To continue to be delivered and monitored by the relevant Highways Authority for the A470 at this location

	RF4	Actions that support the adoption of alternative vehicle fuel by the public and which are likely to reduce the dependency upon fossil fuels.	2024	Delivery of the RCTCBC EV strategy in accordance with published schedule
Reserve	LP1	A dedicated Special Planning Guidance policy that provides instruction to development control applicants on how to account for and address air quality considerations, including mitigation measures, associated with relevant proposed developments	2023	Adoption of an SPG
	MT1	Delivery of the South Wales Metro by Transport for Wales	2024	Achievement of phased development scheme in accordance with published schedule
	MT4.NB	Provision of additional park and ride spaces at existing or new facilities within the Rhondda, Cynon or Merthyr areas		No. of additional park and ride spaces in the Cynon, Merthyr and Rhondda areas, based on a 2022 baseline
	OP1.NB	Green Infrastructure, including hybrid barriers, within Nightingales Bush	2024	Total length of green barrier at Nightingales Bush
	OP2	Green Synchronism, to include policy's and actions that support ecology and biodiversity, within Nightingales Bush and the wider region, that help to support existing or new green infrastructure which may support air quality improvements or protections and may include awareness and educational activities to further improve the sustainability of relevant local green infrastructure.	2024	Delivery of green infrastructure and biodiversity policies

	RF4	Actions that support the adoption of alternative vehicle fuel by the public and which are likely to reduce the dependency upon fossil fuels.	2024	Delivery of the RCTCBC EV strategy in accordance with published schedule

15.3.2 Pontypridd Town Centre AQAP

Pontypridd Town Centre AQAP Actions				Action Monitoring Method
Type	**Ref**	**Description**	**Implementation Year**	
Reserve	AT1	New or improved active travel routes and supporting infrastructure within or serving Pontypridd and neighbouring communities	2024	The total of length of new or improved relevant active travel routes
				The amount of investment in new or improved active travel routes
	AT3	Behavioural measures to influence travellers, to include the dissemination of information to support active travel and public transport as well as information on practices that can reduce the impact of all travel options.	2023	Delivery of schemes to increase travel information
				Favourable perspective of current public transport operators
				Delivery of schemes to increase modal shift
				Opportunities undertaken to encourage active travel route usage
	MT2	Improvement of public bus frequency for services serving Pontypridd and neighbouring communities	2024	No. of additional or enhanced relevant bus routes
	RF4	Actions that support the adoption of alternative vehicle fuel by the public and which are likely to reduce the dependency upon fossil fuels.	2024	Delivery of the RCTCBC EV strategy in accordance with published schedule
	RF6	Actions that support the adoption of alternative vehicle fuel by the Local Authority within its core fleet	2025	Delivery of the RCTCBC EV strategy in accordance with published schedule
	RF8	Actions that support the adoption of alternative vehicle fuel by public bus operators along routes that serve Pontypridd	2028	Delivery of the RCTCBC EV strategy in accordance with published schedule
	RM2.Po	The assessment and potential realignment of traffic flow bias at the traffic light controlled junction of Gelliwastad Rd and Crossbrook St	2023	% relevant bias adjustment made
				% change in average speed within Pontypridd AQMA

		so as to favour greater traffic flow along Gelliwastad Rd.		
	RM5	Increased civil parking enforcement by the Local Authority along High St within the Cymmer AQMA	2023	No. of additional hours spent patrolling relevant areas

16. Glossary of Terms

Abbreviation	Description
Accuracy	A measure of how well a set of data fits the “true” value.
Air Quality Action Plan [AQAP]	A cost effective plan devised by a Local Authority to improve air quality.
Air Quality Management Areas [AQMA]	An area which a Local Authority has designated for action, based upon predicted or measured breach of an Air Quality Objective.
Air Quality Objective [AQO]	The concentrations of pollutants in the atmosphere which can broadly be taken to achieve a certain level of environmental quality. The standards are based on the assessment of the effects of each pollutant on human health including the effects on sensitive sub groups.
Annual mean	The average of the concentrations measured for the pollutant in one year. In the case of an AQO this is for a calendar year.
National Background Concentrations	The level of the pollutant predicted to be present using advanced modelling at a national level. Background concentrations added to local contribution (dependent upon unique local factors) is the total concentration
Benzene [C6H6]	A liquid compound of Carbon and Hydrogen forming a stable aromatic “ring” structure. Mainly occurs due to the evaporation of petroleum.
1,3–Butadiene [C4H6]	A gaseous compound of Carbon and Hydrogen forming a simple conjugated diene. Produced for specific industrial processes and as a by-product in the combustion of petroleum.
Carbon Monoxide [CO]	A gaseous compound of Carbon and Oxygen normally formed by the incomplete combustion of Carbon with Oxygen in an atmosphere with a deficiency of Oxygen.
Climate Change	Is the effect on the statistical distribution of weather over a period of time and caused by the increase in the mean temperature of the Earth’s near surface and oceans, triggered by the anthropogenic emission of greenhouse gasses.
Concentration	The amount of a (polluting) substance in a volume (of air), typically expressed as a mass of pollutant per unit volume of air (for example, microgrammes per cubic metre, $\mu g/m^3$) or a volume of gaseous pollutant per unit volume of air (parts per billion, ppb).
Confidence level	The degree of certainty at which the true value will be in a predicted range.
Coronavirus	SARS-CoV-2 virus and its variants
COVID-19	An infectious disease caused by the SARS-CoV-2 virus
Data capture	The percentage of all the possible measurements for a given period that were validly measured.
Defra	Department of the Environment, Food and Rural Affairs
DMRB	Design Manual for Roads and Bridges
Exceedence	A period of time where the concentration of the pollutant is greater than the appropriate Air Quality Objective.

Particulate Matter [PM_{10}]	An atmosphere of regular and/or irregular particles with a significant probability of having a diameter of 10 µm and less. They are produced from a large variety of natural and anthropogenic sources.
Fine Particulate Matter [$PM_{2.5}$]	An atmosphere of regular and/or irregular particles with a significant probability of having a diameter of 2.5 µm and less. They are produced from a large variety of natural and anthropogenic sources.
Kurtosis	An index of the sharpness of the peaks in a data set
Lead [Pb]	A solid elemental metal. Lead is second only to Iron among the most widely used metals, having a broad range of manufacturing and construction uses. Historically also used as an anti-knocking agent in petroleum, however, its use has now been phased out in the United Kingdom.
Metrological effects	Effects of seasonal variations on the atmosphere. These effects can include temperature, atmospheric turbulence, prevalence of sunlight, etc and is often referred to as Winter or Summer Smog.
Modeling	The use of advanced stochastic simulations to predict a future variable, for instance the concentration of a pollutant in ambient air.
Monitoring Data	Data gained from monitoring using various scientific apparatus
Nitrogen Dioxide [NO_2]	A gaseous compound of Nitrogen and Oxygen normally formed by the oxidation of Nitric Oxide with Oxygen in the air
Nitrogen Oxides [NO_x]	A generic term for all gaseous compounds of Nitrogen and Oxygen and normally comprising of Nitric Oxide and Nitrogen Dioxide
Nitric Oxide [NO]	An unstable gaseous compound of Nitrogen and Oxygen normally formed by the incomplete oxidation of Nitrogen with Oxygen in the air.
n^{th} Percentile	A value that is the rank at a particular point in a collection of data. For example, the 99.8^{th} percentile of values for a year is the value that 99.8% of all the data in the year fall below, or equal.
Precision	A statistical definition of how closely readings within a range are to one another.
Annual Progress Report	An annual report providing the latest monitoring data and assessment of local development and policies for all pollutants of concern as well as progress in the implementation of AQAPs.
μgm^{-3}	Microgrammes per cubic metre of air. A measure of concentration in terms of mass per unit volume. A concentration of 1 μgm^{-3} means that one cubic metre of air contains one microgram (millionth of a gram) of pollutant.
Ratification (Monitoring)	A critical review of all information relating to a data set, in order to amend or reject the data. When the data have been ratified they represent the final data to be used (see also validation).

Running Mean	A mean composed of overlapping time periods. For instance, an 8-hour running mean is calculated every hour, and averages the values for eight hours. The period of averaging is stepped forward by one hour for each value.
Skewness	The bias to asymmetry of a data set
Sulphur Dioxide [SO_2]	A gaseous compound of Sulphur and Oxygen normally formed by the oxidation of Sulphur with Oxygen in combustion processes.
TEA	Triethanolamine. Used as an absorbant for NO_2 in Palmes type passive diffusion tubes.
Transboundary effects	The effects caused by the long distance transportation of air pollutants, typically across national borders. Examples are the Saharan dust episodes and the Central Europe particle episodes.
Validation (Monitoring)	Screening monitoring data by visual examination for spurious and unusual measurements (see also ratification).
Validation (Modeling)	The general comparison of modeled results against monitoring data carried out by the model developer to ensure the model is “fit for purpose”.
Verification (Modeling)	A comparison of modeled results versus monitoring results at relevant local locations.
WG	Welsh Government