CYNGOR BWRDEISTREF SIROL RHONDDA CYNON TAF

RHONNDA CYNON TAF COUNTY BOROUGH

2024 Adroddiad Cynnydd o Ansawdd Aer

Tachwedd 2024

2024 Air Quality Progress Report

November 2024

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 2024 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. Oni nodir fel arall, barn a sylwadau Cyngor Bwrdeistref Sirol Rhondda Cynon Taf sy'n cael eu mynegi yn yr Adroddiad ar Gynnydd 2024.

Yn unol â Chynllun y Gymraeg 2024, 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 2024 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. Unless otherwise stated all opinions and views contained within the 2024 Progress Report are that of Rhondda Cynon Taff County Borough Council only.

In accordance with Rhondda Cynon Taff's Welsh Language Scheme, the 2024 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.

Local Authority:	Rhondda Cynon Taf County Borough Council
Local Authority Officer:	Neil Pilliner Environmental Protection & Housing Standards Manager
Department:	Public Health and Protection
Address:	Ty Elai Dinas Isaf East Williamstown Tonypandy CF40 1NY
Telephone:	01443 425001
E-mail:	EnvironmentalPollution@rhondda-cynon-taff.gov.uk
Report Ref. No.:	2024PR
Date:	15th November 2024

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 mân [PM_{10}] – y mae angen eu harchwilio'n fwy manwl. Mae Adroddiad Cynnydd Ansawdd yr Aer 2024 yn cynnwys asesiad o ddata monitro ansawdd aer gafodd eu casglu yn ystod 2023, 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'n parhau i fod yn wir 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. 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 nad yw'n cydymffurfio. Credir bod yr ardaloedd sydd mewn perygl – ardaloedd sydd yn hanesyddol yn gysylltiedig â lefelau uwch o NO_2 – eisoes wedi cael eu cynnwys yn rhan o Ardaloedd Rheoli Ansawdd Aer [ARhAA] ac, yn wahanol i'r rhan fwyaf o'r lleoliadau, mae'n bosibl fydd ansawdd aer yn yr ardaloedd yma ddim yn gwella mor gyflym ag ardaloedd eraill yn y tymor canolig.

Mae gyda Rhondda Cynon Taf 16 ARhAA, 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. Mae'r ARhAA yma o faint penodol ac maen nhw wedi'u gwasgaru ar hyd a lled y Fwrdeistref.

Mae gwaith monitro diweddar yn cefnogi'r ddealltwriaeth bod ARhAA Canol Tref Aberdâr, Broadway, Pentre'r Eglwys, Cilfynydd, Llanharan, Llwynypia, Mwyndy, Nantgarw, Tonyrefail a Threfforest i'w gweld yn debygol o gydymffurfio'n gynaliadwy â'r Amcanion Ansawdd Aer blynyddol ar gyfer NO_2. Er mwyn cydnabod y cyflawniad yma, mae adolygiadau o bob Ardal Rheoli Ansawdd Aer wedi'u cynnal, gan gadarnhau nad yw'r Ardaloedd Rheoli Ansawdd Aer yma bellach yn angenrheidiol ac y gellir eu dirymu. Yn ogystal â hynny, er bod rhannau o Ardal Rheoli Ansawdd Aer Canol Tref Pontypridd yn parhau i beidio â chydymffurfio o bosibl, mae rhan benodol wedi sicrhau cydymffurfiaeth barhaus ac felly mae modd lleihau maint yr Ardal Rheoli Ansawdd Aer hefyd er mwyn parhau i dargedu'r rhannau lle mae diffyg cydymffurfio yn bennaf.

Mae ARhAA Cymer, Glynrhedynog, Canol Tref Aberpennar, Nightingales Bush a Tylorstown i'w gweld yn debygol o barhau i beidio â chydymffurfio â'r Amcanion Ansawdd Aer blynyddol ar gyfer NO_2 yn y tymor canolig wrth i gamau gwella wedi'u targedu gael effaith gadarnhaol yn y dyfodol.

Yn 2023 daeth trefniadau monitro blaenorol yng Nglyn-coch i ben, gan gydfynd ag ansicrwydd cychwynnol ynghylch dilyniant tebygol Chwarel Craig yr Hesg yn y dyfodol. Gyda chaniatâd yn awr yn cael ei roi gan Weinidog o Lywodraeth Cymru i alluogi datblygiad parhaus Chwarel Craig yr Hesg, penderfynodd yr Awdurdod Lleol ail-fuddsoddi mewn offer

monitro er mwyn parhau i arsylwi ansawdd aer lleol o fewn y gymuned. Mae'r cyfnod adnewyddu yma wedi golygu mai dim ond gwaith monitro PM_{10} cyfyngedig iawn yr oedd yr Awdurdod Lleol yn gallu ei wneud yng Nglyn-coch yn ystod 2023. Fodd bynnag, disgwylir y bydd canlyniadau monitro Glyn-coch ar gyfer $PM_{2.5}$ a PM_{10} ar gael yn 2024 yn barod ar gyfer dadansoddiad a sylwadau yn rhan o'r adroddiad cynnydd ansawdd aer blynyddol nesaf a fydd yn cael ei gyhoeddi yn 2025.

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 yn ddiweddar ar gyfer pob un o'i 16 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 cyn gynted â phosibl.

Mae'r Awdurdod Lleol yn parhau, pan fo'n bosib, i weithredu neu i ddylanwadu ar weithredu camau yn ei ARhAA yn ogystal â chamau eraill a all wella ansawdd aer lleol yn gyffredinol. Serch hynny, oherwydd adnoddau cyfyngedig, ni fu'n bosib gweithredu'r holl gamau gwella ansawdd aer ar unwaith. Fodd bynnag, mae'r camau gwella a gyflawnwyd yn ddiweddar yn cynnwys parhau i adeiladu Cynllun Deuoli Coed Elái ar yr A4119 a Seilwaith Metro De Cymru, gosod pedwar deg dau o bwyntiau gwefru cerbydau trydan pwrpasol mewn tri deg un o feysydd parcio cyhoeddus, teithio ar fws am bris gostyngol (pris uchaf o £1) yn Rhondda Cynon Taf yn ystod rhannau o 2023 yn ogystal â theithio addysg ôl-16 i 19 diffiniedig am ddim a bwrw ymlaen â rhaglen waith fesul cam gwerth miliynau o bunnoedd i uwchraddio a gwella nifer o lwybrau teithio llesol.

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'n gallu deillio 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 2028, 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. Mae modd i 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 amlasiantaeth 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 agenda cynhwysfawr. O ganlyniad i hyn, mae wedi ymgorffori'r gydnabyddiaeth yma yn y flaenoriaeth 'Natur ac Amgylchedd' sydd wedi'i chynnwys yn y fersiwn diweddaraf o'i Gynllun Corfforaethol. [2] 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 yr 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.

- Efallai bydd rhoi Deddf yr Amgylchedd (Ansawdd Aer a Seinweddau) (Cymru) 2024 ar waith yn [3] arwain at newidiadau statudol posibl i'r fframwaith cyfreithiol sy'n sail i'r agenda ansawdd aer lleol. Mae'n bosibl y bydd hyn yn gofyn am ailystyried sut mae'r Awdurdod Lleol yn cyflawni ac yn sicrhau adnoddau ar gyfer ei ddyletswyddau ansawdd aer lleol.

- Datblygu dealltwriaeth o lefelau Mater 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 gweithredu 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 [1].

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}], as requiring closer examination. The 2024 Air Quality Progress Report contains an assessment of air quality monitoring data collected during 2023, 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 continues to be the case that the vast majority of Rhondda Cynon Taf experiences compliant air quality, which is likely to remain so into the future. Only some small areas associated with busy urban road junctions, the regional road network or specific local sources are likely to be vulnerable to non-compliant air quality. 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 medium-term.

Currently Rhondda Cynon Taf has sixteen AQMAs, listed in Appendix D1: Current AQMA Boundary Maps, all of which are in respect of breaches of AQOs for NO_2. These AQMAs are of limited size and are distributed throughout the Borough.

Recent monitoring supports the understanding that the Aberdare Town Centre, Broadway, Church Village, Cilfynydd, Llanharan, Llwynypia, Mwyndy, Nantgarw, Tonyrefail and Treforest AQMAs are now all likely to be sustainably compliant to the annual AQO for NO_2. In recognition of this achievement, reviews of each AQMA have been undertaken, confirming that these AQMAs are no longer necessary and may be revoked. In addition, although parts of the Pontypridd Town Centre AQMA remains potentially non-compliant, a specific part has achieved sustained compliance and the AQMA can also be reduced in size so as to continue to primarily target the area of non-compliance.

The Cymmer, Ferndale, Mt Ash Town Centre, Nightingales Bush and Tylorstown AQMAs appear likely to potentially remain non-compliant to the annual AQO for NO_2 into the medium-term whilst future improvement actions take effect.

In 2023 previous monitoring arrangements at Glyncoch came to an end, coinciding with initial uncertainty as to the likely future progression of Craig Yr Hesg Quarry. With permissions now being granted by the Welsh Minister to enable the continued development of Craig Yr Hesg Quarry, the Local Authority determined to reinvest in upgraded monitoring equipment so as to continue its observation of local air quality within the community. This period of renewal has meant the Local Authority was only able to undertake very limited PM_{10} monitoring within Glyncoch during 2023. However, it is expected that monitoring results at Glyncoch for both $PM_{2.5}$ and PM_{10} will become available in 2024 ready for analysis and commentary within the next annual air quality progress report to likely be published in 2025.

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 sixteen 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 as quickly as reasonably possible.

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 the continued construction of the A4119 Coed Ely Dualling Scheme and South Wales Metro Infrastructure, installation of forty-two dedicated electrical vehicle charging points at thirty-one public car parks, subsidised (£1 max fare) bus travel within Rhondda Cynon Taf during parts of 2023 as well as defined free post-16 to 19 education travel and progressing a multimillion pound phased works programme to upgrade and improve a number of active travel routes.

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 2028, 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 comprehensive agenda, in doing so it has incorporated this recognition as a priority of the "Nature and Environment" theme within its updated Corporate Plan [2]. 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 [3] may result in possible statutory changes to the legal framework underpinning the local air quality agenda, which 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 [1].

Contents

List of Tables

List of Figures

3. Actions to Improve Air Quality

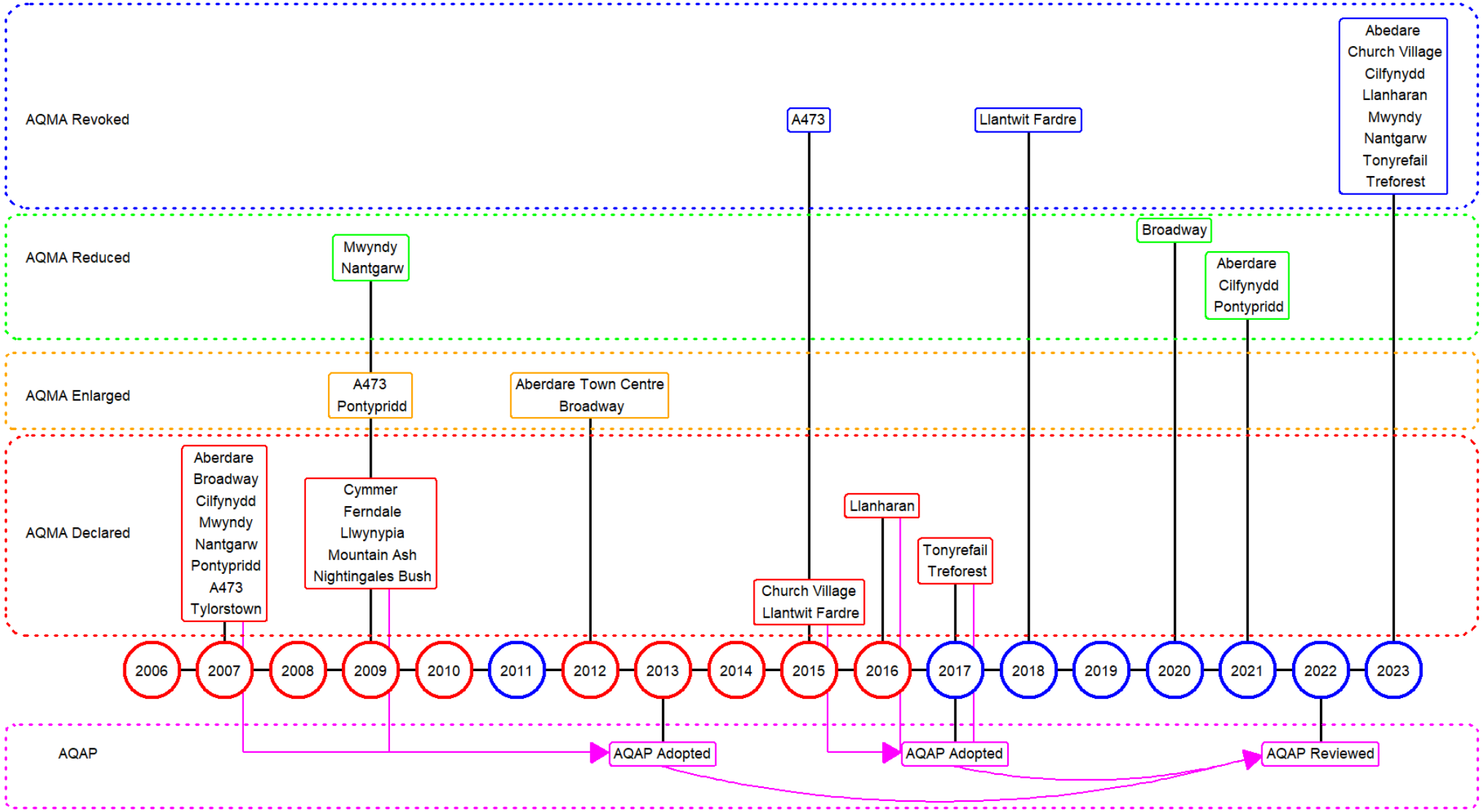
3.1 Previous Work in Relation to Air Quality

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 report on its latest findings. These reviews often include consideration of the current air quality monitoring results, trends and developments that may influence local air quality.

When necessary, annual local air quality 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 bring about 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 even better. AQMAs are seen by local authorities 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 sixteen 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 are 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	✓	✓	-1.6
	Ferndale	Ferndale	annual mean	Certain properties from The Strand via High St to Dyffryn St	143	✓	✓	-2.1
	Llwynypia	Llwynypia	annual mean	All properties along Partridge Rd	29	✓	✓	-3.0
	Tonyrefail	Tonyrefail	annual mean	Certain properties at Mill St	20	-	-	-1.8
	Tylorstown	Tylorstown	annual mean	Certain properties at East Rd	68	✓	✓	-0.8
Cynon	Aberdare Town Centre	Aberdare	annual mean	All properties along Cardiff St from Victoria Sq to Cross St	33	-	-	-3.7
	Mountain Ash Town Centre	Mountain Ash	annual mean	Certain properties from Oxford St to Ffrwyd Cres and Seymour St	63	✓	✓	-5.4
Taf	Broadway	Treforest	annual mean	All properties along Broadway	204	-	-	-2.2
	Church Village	Church Village	annual mean	Certain properties from Dyffryn Tce. to Main Rd	47	-	-	-3.5
	Cilfynydd	Cilfynydd	annual mean	Certain properties from Pontshonnorton Rd to Merthyr Rd	36	-	✓	-5.0
	Llanharan	Llanharan	annual mean	Certain properties from The Sq to Chapel Rd	11	-	-	-5.1
	Mwyndy	Mwyndy	annual mean	One property at Mwyndy	1	-	✓	-6.1
	Nantgarw	Nantgarw	annual mean	All properties at Graig View	8	-	✓	-2.6

	Nightingales Bush	Pontypridd	annual mean	All properties at Nightingales Bush to Pentrebach Rd	10	-	✓	-6.3
	Pontypridd Town Centre	Pontypridd	annual mean	Certain properties along Gelliwastad Rd and Morgan St	93	-	✓	-1.2
	Treforest	Treforest	annual mean	Certain properties nearest the A470 at Cardiff St	8	-	✓	-1.2

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) AQMA lies within a Noise Action Plan Priority Area (road) or 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	**	**				**		*	***	***			***	**	**
	Llwynypia	**	**					***						**	*	
	Tonyrefail	*	*		**		***	***		***		*		***	*	*
	Tylorstown	**	**		*		***		*	***		**		***	**	**
Cynon	Aberdare	**						***	*							
	Mountain Ash	***	*	*	*			***	*					**	*	***
Taf	Broadway	**						**	*			*	*			
	Church Village	**						***				*		**		
	Cilfynydd	***		*		*				*					*	
	Llanharan	**					***							**		**
	Mwyndy	***		*		*		***								
	Nantgarw	***		**	***			***							*	
	Nightingales Bush	***		*		***									*	
	Pontypridd	**	**			*		***	*						*	
	Treforest	***		*		**										*

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 AQAP actions and other measures, that may look to improve local air quality within the current AQMA's, that have been recently significantly progressed or completed are:

- The continued construction of the A4119 Coed Ely Dualling Scheme.
- The continued construction of Metro Infrastructure, to provide future support in the operation of the South Wales Metro.
- The ongoing installation, on behalf of the Cardiff Capital Region, of forty-two dedicated electrical vehicle chargers (90% completed) at thirty-one public car parks across Rhondda Cynon Taf.
- Increasing rail services from six to eight trains per hour, daytime Monday to Saturday, between Pontypridd to Cardiff along the South Wales's Core Valley Lines Railway.
- The ongoing installation, with funding delivered by the Office for Zero Emission Vehicles, of twenty-six dedicated electrical vehicle chargers (85% completed) at twenty-six public car parks across Rhondda Cynon Taf.
- Continuing subsidised (£1 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 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 a £4.29 million phased works programme to upgrade and improve Rhondda Fach active travel routes

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 completed or progressed over the course of the next reporting year:

- In regards to the Broadway, Church Village, Cilfynydd, Mt Ash Town Centre, Nantgarw, Nightingales Bush, Pontypridd Town Centre and Treforest AQMAs, continued progress in delivery of the South Wales Metro.
- In regard to the Llanharan AQMA, a review of design and funding options to consider the prospect of delivery of the Llanharan Bypass in light of clarified Welsh transport policy or via alternative funding mechanism.
- Substantive completion of the A4119 Coed Ely Dualling Scheme.
- The further delivery of dedicated electrical vehicle charging points at selected public car parks.

- Removal of the last remaining diesel locomotives from the South Wales Valleys Railway (passenger services) potentially resulting in directly reduced railway emissions as well as possible improvement in the attractiveness of this transport option.

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

- Consideration of the relocation of Treforest Industrial Estate train station, on the South Wales Valleys Railway, to a location that may increase its use.

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 ELVs	RCT	Promoting Low Emission Transport	Alternative Refuelling Infrastructure to Promote Electric Vehicle Recharging	RCT	2021	Ongoing	TBC	Delivery of EV strategy. Emphasis on establishing a charging network at community destinations.
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	Alternatives to private vehicle use	Other	TfW (WG)	Ongoing	Ongoing	TBC	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 Bypass To relieve traffic from the existing local roads	Llanharan	Traffic Management	Strategic Highway Improvements	RCT (RCT+WG)	TBC	TBC	TBC	Preferred route (Route No.2) determined, planning and design phase [7]. Under review to consider funding mechanisms

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 consider vehicle emission standards	RCT	Promoting Low Emission Transport	Company Vehicle Procurement	RCT	2020	TBC	March trial 35% increase in journey uptake leading to 7% increase post trial	Trial of free-for-all public bus travel during March 2023 followed by subsidised (max £1 fare) travel during part of the summer and defined free post 16 school transport to encourage sustained uptake.
8	RCT Staff Homeworking Initiative ICT systems to enable wide scale homeworking	RCT	Promoting Travel Alternatives	Encourage / Facilitate Homeworking	RCT (RCT)	2019	2020	Significant uptake in home working	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)	2020	2022	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	Urban 20mph Speed Limit Introduction of WG 30mph to 20mph general urban speed limit	RCT	Traffic Management	20mph Zones	RCT	2020	2023	TBC	Implementation of national policy.

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	Local Authority Vehicle Procurement To consider Local Authority vehicle emission standards	RCT	Promoting Low Emission Transport	Public Vehicle Procurement	RCT (RCT)	2020	2022	TBC	Initial review concluded that a move to hire, as opposed to owned, fleet will provide greater flexibility as modernisation of the Local Authority takes place. In action trials of LEV (Light Electric Vehicle) and ZEVs progressing. 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					
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
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.

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					
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
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.

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					
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.
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	2020	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					
19	Gelli/Treorchy Bypass To relieve traffic from the existing local roads	Rhondda Fawr	Traffic Management	Strategic Highway Improvements	RCT	2019	TBC	TBC	Preliminary investigation of feasibility and potential options supported by undertaking WelTag Stage 1 assessment.
20	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].
21	Support of National 'Clean Air Day' 2020	RCT	Promoting Travel Alternatives	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					
22	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
23	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	TBC	TBC	Construction works commenced. Expectation of minor effect on NO_2 within the entirety of Tonyrefail AQM

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					
24	On-street Parking Provision Review to consider WG proposed Pavement Parking Restrictions	RCT	Traffic Management	Parking Enforcement on Highway	RCT	2020	TBC	TBC	Initial review of current local provisions, adaptation and enforcement with respect to possible national policy implications Potential to reduce general emissions where current on pavement parking is impeding traffic

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 sixteen 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 that 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
Llwynypia	
Tonyrefail	
Aberdare Town Centre	
Broadway	
Church Village	
Cilfynydd	
Llanharan	
Mwyndy	
Nantgarw	
Treforest	

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: 0.06 km of footways Improved: 5.4 km of footways; 2.8 km of shared routes
		The amount of investment in new or improved Active Travel Routes	~ £7,284,000
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 670 pupils. Delivered Kerbcraft / Child Pedestrian Training to 1,222 pupils. Initiatives to promote RCT as a tourist destination for walking and cycling.
LP1	Dedicated SPG	Production of an SPG	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 select education locations
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 2023

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 2023 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 2023, with three automatic monitoring locations examining NO_2 and one automatic monitoring location examining PM_{10}. Table 4-1 presents the details of the sites with further information available via the Air Quality in Wales website [1].

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, per se, reflect the purpose of local air quality management its results are not considered within this Report.

For most of 2023 the automatic monitoring of PM_{10} at Site No. 130 was temporarily suspended, as the original instrumentation at the air quality station had come to the end of its functionality and there was significant uncertainty around the long-term continuation of Craig Yr Hesg Quarry, a likely local source of particulate matter. Subsequent to the local situation being clarified and a necessary procurement process, the Local Authority updated and enhanced its monitoring capability. A new Palas FIDAS 200 monitor was installed, that enables the simultaneous monitoring of particulate matter, both $PM_{2.5}$ and PM_{10}, whilst in doing so ensuring the utilisation of an approved equivalence method.

No other new automatic monitoring sites were commenced or existing automatic monitoring sites discontinued in 2023 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 2023.

No existing non-automatic monitoring sites were discontinued and no new non-automatic monitoring sites for NO_2 were commenced in 2023.

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 FIDAS	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

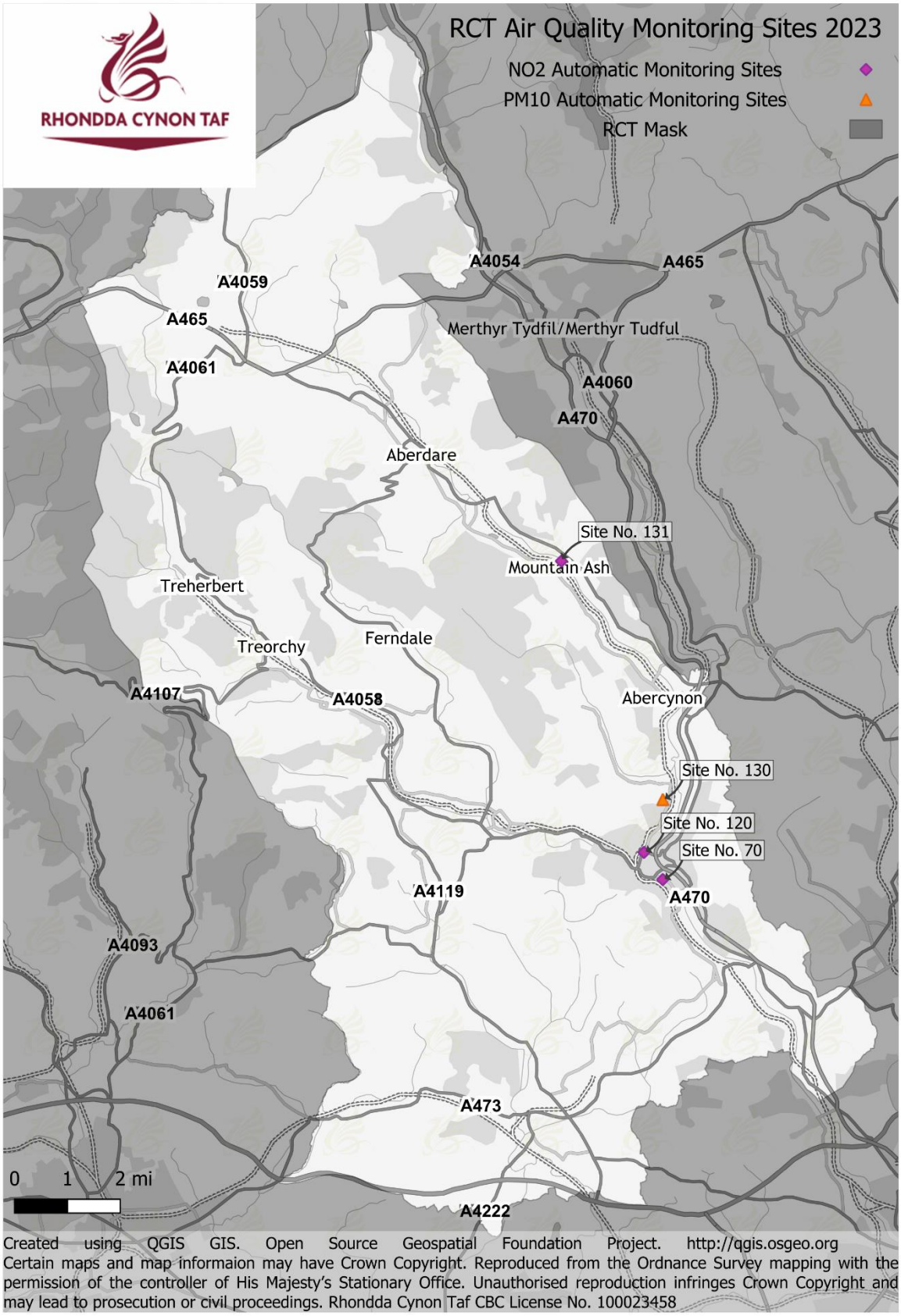


Table 4-2: Details of Non-Automatic Monitoring Sites

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

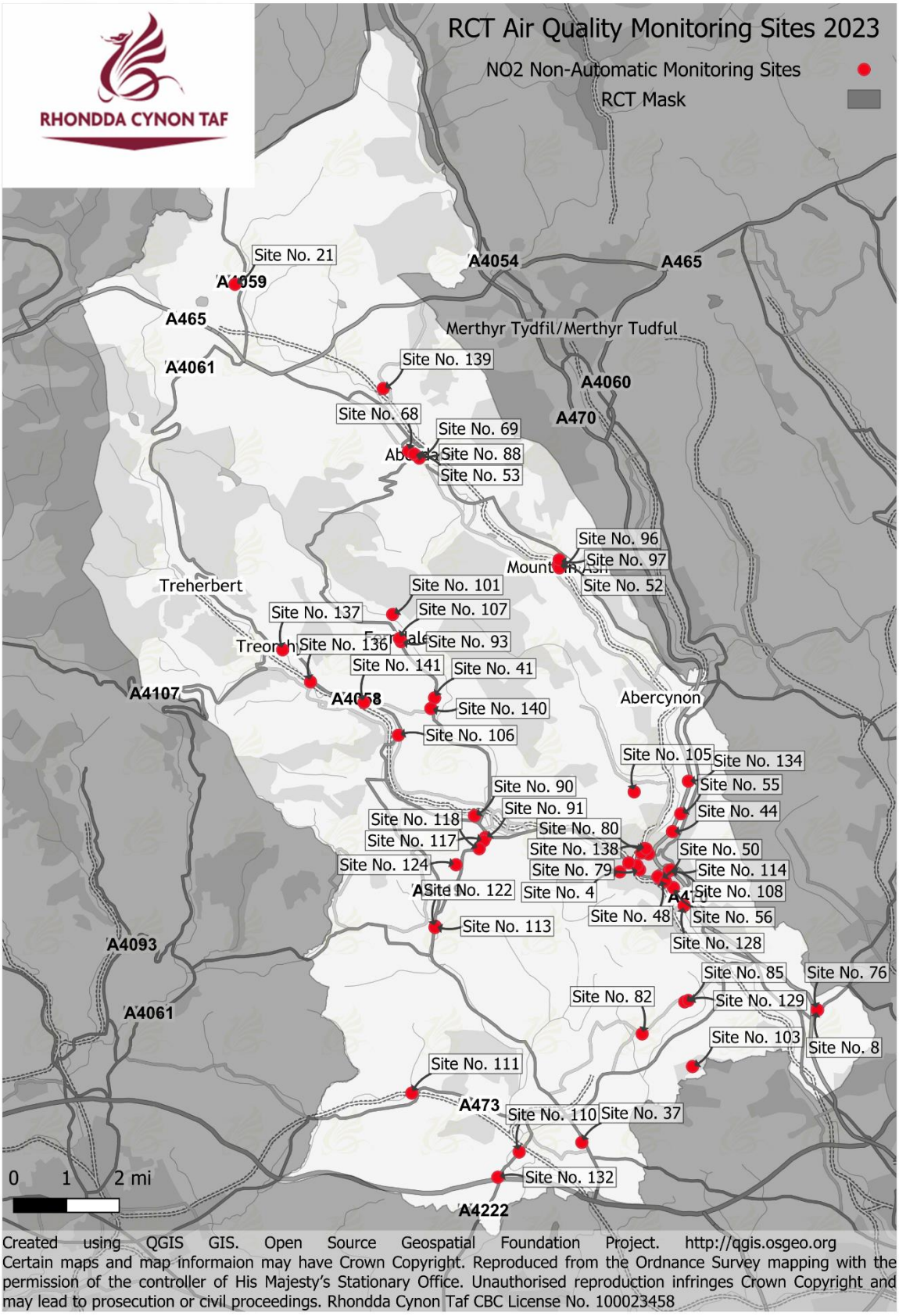
Site ID	Site Name	Start	Site Type	Associated AQMA	OS Grid Reference		Site Height (m)	Co-located	Monitor to Nearest Relevant Exposure[(1)] (m)	Kerb to Nearest Relevant Exposure (m)	Kerb to Monitor (m)
					X	Y					
93	High Street, Ferndale	2007	Roadside	Ferndale	299931	196843	3.5	No	<0.1	2.1	2.1
96	Oxford 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 2023

This subsection presents the results of air quality monitoring undertaken in 2023 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 2023 (%) (3)	NO_2 Annual Mean Concentration (μgm^{-3}) (4)				
							2019	2020	2021	2022	2023
4	Lanelay Terrace, Maesycoed	Suburban	Non-Automatic	-	91.7	91.7	14.1	10.3	11.5	11.9	11.6
8	Parc y Nant, Nantgarw	Roadside	Non-Automatic	NA	83.3	83.3	35.8	24.7	31.8	35.4	31.1
21	Woodland Park, Penderyn	Urban Background	Non-Automatic	NA	100	100	5.4	3.9	5.3	5.1	4.9
37	Lakeside Court, A4119	Roadside	Non-Automatic	Y	100	100	32.3 {29.5}	22.7 {21.2}	27.8 {25.5}	28.0 {25.3}	26.5 {24.0}
41	**East Rd, Tylorstown**	Roadside	Non-Automatic	NA	100	100	42.2	31.0	40.6	39.8	**41.3**
44	Coronation Tr, Pontypridd	Roadside	Non-Automatic	Y	100	100	29.2 {34.9}	21.7 {25.2}	24.7 {29.3}	24.7 {29.6}	24.0 {28.8}
47	Broadway Co-Sampling	Roadside	Non-Automatic	NA	83.3	83.3	25.5	20.3	21.4	22.9	20.6
48	Broadway Co-Sampling	Roadside	Non-Automatic	NA	100	100	25.7	19.4	21.2	22.9	23.2
50	Broadway Co-Sampling	Roadside	Non-Automatic	NA	100	100	25.1	18.9	22.1	24.5	22.2
51	Broadway, Treforest	Roadside	Non-Automatic	NA	100	100	34.5	24.7	31.0	31.2	28.6

Site ID	Site Name	Site Type	Monitoring Type	NO_2 Fall-Off (1)	Valid Data Capture Period (%) (2)	Valid Data Capture 2023 (%) (3)	NO_2 Annual Mean Concentration (μgm^{-3}) (4)				
							2019	2020	2021	2022	2023
52	Oxford St, Mt Ash	Roadside	Non-Automatic	-	91.7	91.7	42.2	32.1	31.7	33.2	36.4
53	Cardiff St, Aberdare	Roadside	Non-Automatic	NA	91.7	91.7	33.6	24.4	29.5	29.3	30.4
55	Cilfynydd Rd, Cilfynydd	Roadside	Non-Automatic	NA	100	100	28.1	21.9	26.6	26.4	25.1
56	Broadway, Treforest	Roadside	Non-Automatic	NA	100	100	31.5	26.8	33.3	33.1	33.5
66	Broadway, Treforest	Roadside	Non-Automatic	NA	100	100	33.5	23.2	29.4	30.5	29.4
68	Canon Street, Aberdare	Roadside	Non-Automatic	-	100	100	29.6	21.5	27.1	25.3	26.2
69	Cardiff St, Aberdare.	Roadside	Non-Automatic	NA	100	100	27.7	21.3	25.5	27.0	25.3
70	Broadway	Roadside	Automatic	Y	89.6	89.6	25.4 {27.7}	20.4 {22.1}	21.7 {24.1}	22.8 {25.0}	20.1 {22.0}
76	Heol-y-Gors, Nantgarw	Roadside	Non-Automatic	-	91.7	91.7	28.0	20.8	25.2	26.1	26.1
79	High St, Pontypridd	Roadside	Non-Automatic	-	100	100	30.0	22.8	25.3	26.6	28.0
80	Morgan St, Pontypridd	Roadside	Non-Automatic	NA	100	100	28.8	20.1	23.2	24.4	25.2
81	Sardis Bridge Pontypridd	Roadside	Non-Automatic	-	100	100	32.7‡	21.4	25.7	27.1	27.5
82	Main Rd, Llantwit Fardre	Roadside	Non-Automatic	Y	100	100	24.9 {22.7}	19.4 {18.0}	22.9 {20.3}	23.4 {21.2}	22.8 {20.6}
83	Ceridwen Terrace	Roadside	Non-Automatic	-	100	100	31.5	26.4‡	26.6	27.0	28.6
84	**Gelliwastad Rd**	Roadside	Non-Automatic	-	83.3	83.3	41.2	31.4	39.1	38.5	**40.8**
85	Efail Isaf Junction (West)	Roadside	Non-Automatic	NA	100	100	30.3	22.7	29.4	27.6	27.2
88	Victoria Sq, Aberdare	Roadside	Non-Automatic	-	100	100	29.1‡	21.0	26.5	27.0	26.0
90	Cymmer Rd, Dinas	Roadside	Non-Automatic	NA	100	100	31.7	24.3	33.5	30.4	32.3
91	**High St, Cymmer**	Roadside	Non-Automatic	-	83.3	83.3	45.6	37.8	43.8	43.6	**45.0**
93	High Street, Ferndale	Roadside	Non-Automatic	-	100	100	43.3	29.0	40.3	37.6	39.8
96	Oxford St, Mt Ash	Roadside	Non-Automatic	-	100	100	37.1	27.4‡	26.0	28.2	29.5
97	**New Rd, Mt Ash**	Roadside	Non-Automatic	NA	100	100	45.6	45.7	38.2	39.5	**41.5**

Site ID	Site Name	Site Type	Monitoring Type	NO_2 Fall-Off (1)	Valid Data Capture Period (%) (2)	Valid Data Capture 2023 (%) (3)	NO_2 Annual Mean Concentration (μgm^{-3}) (4)				
							2019	2020	2021	2022	2023
101	Long Row, Blaenllechau	Urban Background	Non-Automatic	NA	83.3	83.3	5.7	5.0‡	5.9	5.1	5.8
103	Ty Mawr Farm, Efail Isaf	Urban Background	Non-Automatic	NA	100	100	7.9	5.6	7.4	6.3	7.0
105	Greenfield Ave, Glyncoch	Urban Background	Non-Automatic	NA	100	100	7.5	5.9	7.6	7.3	7.0
106	Partridge Road, Llwynypia	Roadside	Non-Automatic	-	100	100	36.0	26.8	34.3	31.4	30.5
107	High St, Ferndale	Roadside	Non-Automatic	-	100	100	32.0	22.9	28.5	27.7	28.1
108	Nightingales Bush(6)	Roadside	Non-Automatic	NA	83.3	83.3	51.4	33.7‡	38.1	39.0	37.9
110	Cowbridge Rd	Roadside	Non-Automatic	NA	100	100	30.5	18.6	23.2	23.2	23.4
111	Bridgend Rd, Llanharan	Roadside	Non-Automatic	-	100	100	33.1	26.9	32.4	27.3	27.3
113	Mill St, Tonyrefail	Roadside	Non-Automatic	NA	100	100	31.4	25.1‡	28.3	27.8‡	29.9
114	Pentrebach Rd	Roadside	Non-Automatic	NA	100	100	25.1	18.4	23.5	22.2	22.5
117	**High St, Cymmer**	Roadside	Non-Automatic	NA	91.7	91.7	49.7	35.6	44.0	43.9	**45.0**
118	**High St, Cymmer**	Roadside	Non-Automatic	NA	100	100	63.8	45.1	52.9	52.2	**52.7**
120	Pontypridd	Roadside	Automatic	NA	87.3	87.3	30.2	25.1	28.3	28.4	27.2
122	Mill St, Tonyrefail	Roadside	Non-Automatic	NA	66.7	66.7	28.7	22.5	29.0	28.0	24.1‡
124	Trebanog Rd, Trebanog	Roadside	Non-Automatic	-	91.7	91.7	24.1	17.4	23.1	20.9	23.3
128	Cardiff Rd, Treforest	Roadside	Non-Automatic	NA	100	100	29.1	20.8	25.5	27.4	28.4
129	Main Rd, Church Village	Roadside	Non-Automatic	Y	100	100	23.1 {21.9}	18.1‡ {17.3}	20.9 {19.8}	20.4 {19.2}	21.8 {20.5}
131	Mt Ash	Roadside	Automatic	NA	75.8	75.8	46.6	34.2	33.2	31.6	31.6
132	Cowbridge Rd, Talygarn	Roadside	Non-Automatic	NA	100	100	31.0	19.6‡	24.4	22.8	22.4
134	Pontypridd High School	Other	Non-Automatic	Y	100	100	15.4 {13.4}	13.1‡ {11.6}	15.1 {13.0}	16.4 {14.5}	16.3 {14.3}

Site ID	Site Name	Site Type	Monitoring Type	NO_2 Fall-Off (1)	Valid Data Capture Period (%) (2)	Valid Data Capture 2023 (%) (3)	NO_2 Annual Mean Concentration (μgm^{-3}) (4)				
							2019	2020	2021	2022	2023
135	Ysgol Evan James	Roadside	Non-Automatic	Y	100	100	-	16.7 {13.8}	22.9 {18.3}	23.5 {19.6}	22.2 {18.6}
136	Ystrad Rd, Pentre	Roadside	Non-Automatic	-	100	100	-	28.1	33.7	36.2	34.4
137	High St, Treorchy	Roadside	Non-Automatic	NA	100	100	-	22.2	27.0	25.7	27.9
138	Berw Rd, Pontypridd	Roadside	Non-Automatic	-	100	100	-	-	31.7	31.1	32.1
139	Llwydcoed Rd, Llwydcoed	Roadside	Non-Automatic	Y	100	100	-	-	-	15.8 {14.0}	16.5 {14.5}
140	Penrhys Rd, Tylorstown	Roadside	Non-Automatic	NA	100	100	-	-	-	30.0	30.6
141	Gelligaled Rd, Ystrad	Roadside	Non-Automatic	Y	100	100	-	-	-	25.2 {24.4}	24.9 {24.1}

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 2023 (%) (3)	NO_2 1-Hour Means > $200\mu gm^{-3}$ (5)				
						2019	2020	2021	2022	2023
70	Broadway	Roadside	Continuous	89.6	89.6	0 (88.9)	0 (72.0)	0 (64)	0 (76)	0 (62.9)
120	Pontypridd	Roadside	Continuous	87.3	87.3	0 (115.0)	0 (102.0)	0 (100)	0 (118)	0 (86.2)
131	Mt Ash	Roadside	Continuous	75.8	75.8	0 (141.3)	0 (124.0)	0 (108.5)	0 (106)	0 (101.5)

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 2023 (%) (2)	PM_{10} Annual Mean Concentration (μgm^{-3}) (3)				
					2019	2020	2021	2022	2023
130	Garth Ave. FIDAS	Industrial	12.4	12.4	14.4	14.4	11.5	16.4	13.8

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 2023 (%) (2)	PM_{10} 24-Hour Means > 50 μgm^{-3} (3)(4)				
					2019	2020	2021	2022	2023
130	Garth Ave. FIDAS	Industrial	12.4	12.4	2 (22.7)	4 (28.7)	2 (19.9)	3 (28.7)	1 (28.0)

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 have not been “annualised” as per Boxes 7.9 and 7.10 in LAQM.TG16
(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 2023 (%) (2)	$PM_{2.5}$ Annual Mean Concentration (μgm^{-3}) (3)				
					2019	2020	2021	2022	2023
130	Garth Ave. FIDAS	Industrial	61.1	11.7	-	-	-	-	5.7

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.TG16

4.3 Comparison of 2023 Monitoring Results with AQOs

This section details the Local Authority's consideration of air quality monitoring data collected in 2023, its context to previous years and its relation to relevant Air Quality Objectives.

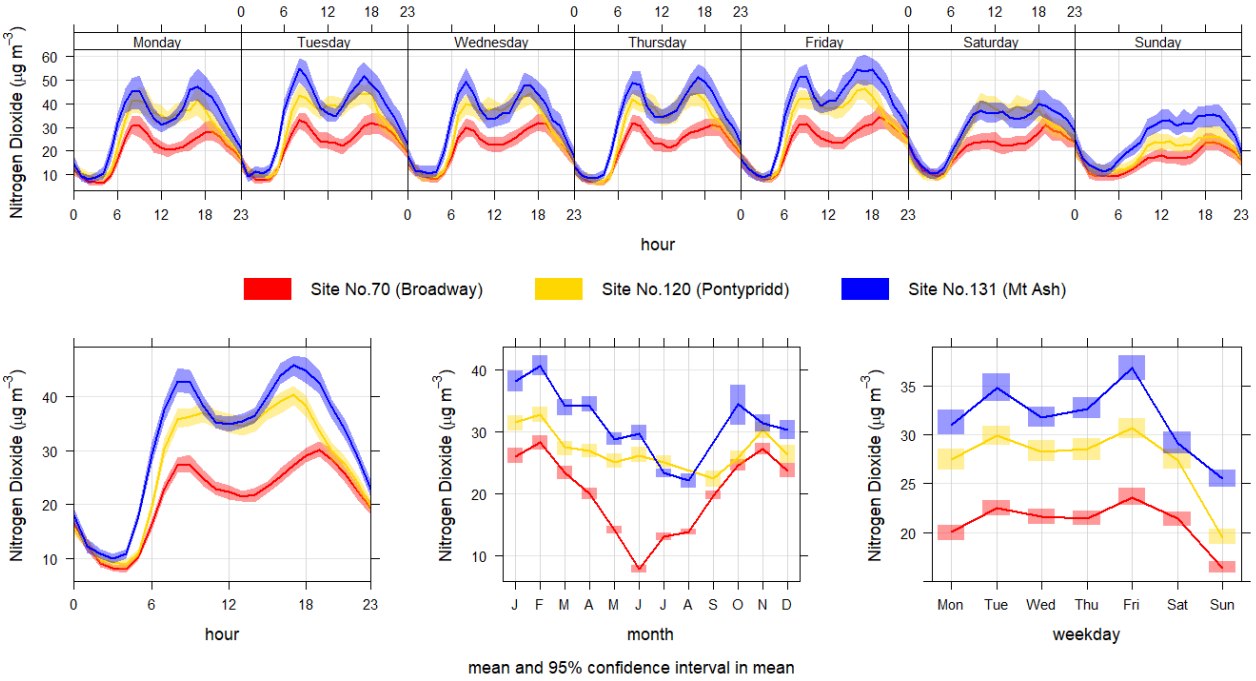
4.3.1 Nitrogen Dioxide [NO_2]

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 9% since 2022 and "since 2021, concentrations have fallen each year to reach the lowest point in 2023". With roadside NO_2 levels "lower than they were before and during lockdown restrictions, with 2023 concentrations … being 30% lower than 2019 levels". With the improvement attributed to a "reduction in vehicle usage, along with a general decrease in NO_x emissions from traffic, may explain why average NO_2 concentrations have remained below those measured pre-COVID". It has also been reported [12] that Rhondda Cynon Taf, in comparison with other Welsh Local Authorities, has been ranked[2] (lower the better) 6th out of 9 for NO_2.

To help consider the relevance and context of the latest NO_2 monitoring data, from 2023, it is possible to examine it in a number of ways. Figure 4-3 below contains time variation plots of the 2023 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 2023.

Figure 4-3: Time Variation Plot of NO_2 Automatic Monitoring Data

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



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:

- 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 vehicle transportation 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 result in reduced NO_2 stability.

Although very similar patterns in the occurrence of NO_2 are observed at all three automatic sites, it is also the case that specific circumstances at each location are likely reflected in the observations. For instance, 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.

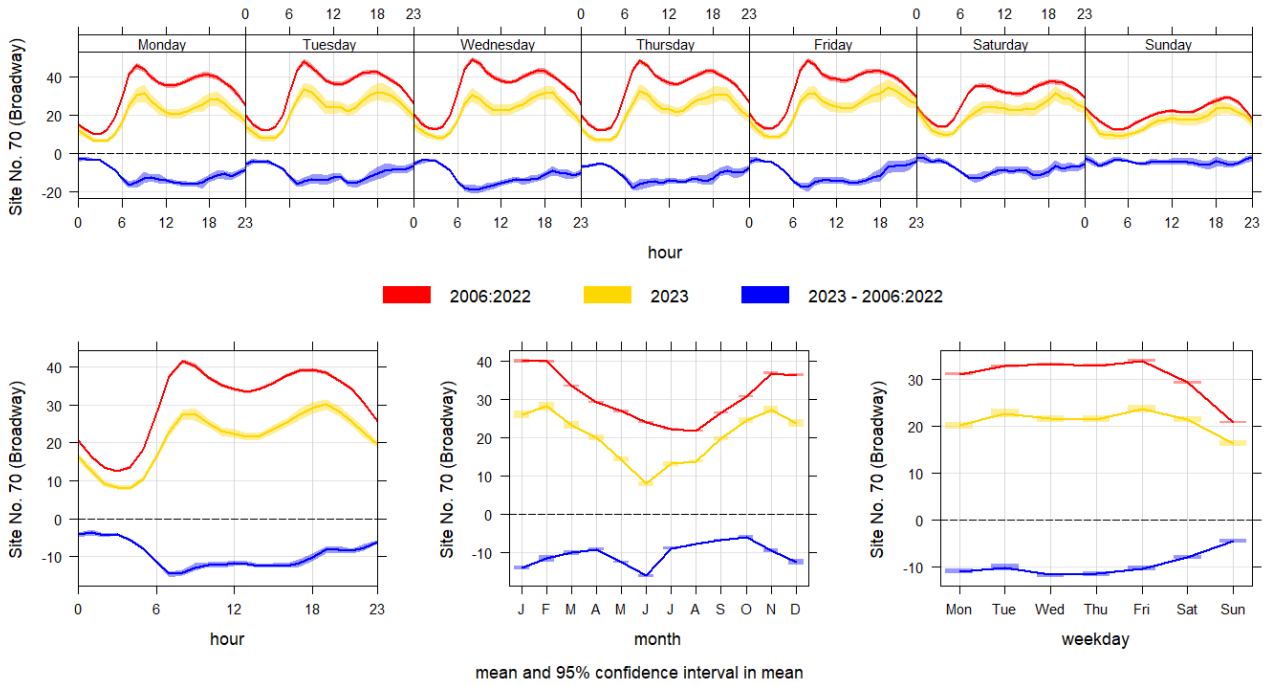
Both human factors and natural phenomena can be heavily influenced by changeable weather conditions, which themselves maybe cyclical. These weather conditions can result in significant variability in observed air quality from year to year. For instance, a protracted dry and cold winter may increase the emission of NO_2, and its precursors, from 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 a material effect on the emission of oxides of nitrogen from certain local road traffic and consequently the 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. In reviewing both the above monitoring data and the below historic data in comparison, at present it does not appear possible to identify a material effect on local air quality from the default speed limit change. This understanding is in keeping with assessments undertaken more broadly throughout Wales [13]. However, any relevant location may vary in circumstances and only a limited period of time has passed since the implementation of the change. As such, it may be sometime before a definitive determination of any impact, one way or the other, can be established.

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 2023 with the historic average, between 2006 and 2022. Figure 4-4 provides normalised time variation plots of this comparison and the calculated difference between the current and historic measurements.

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

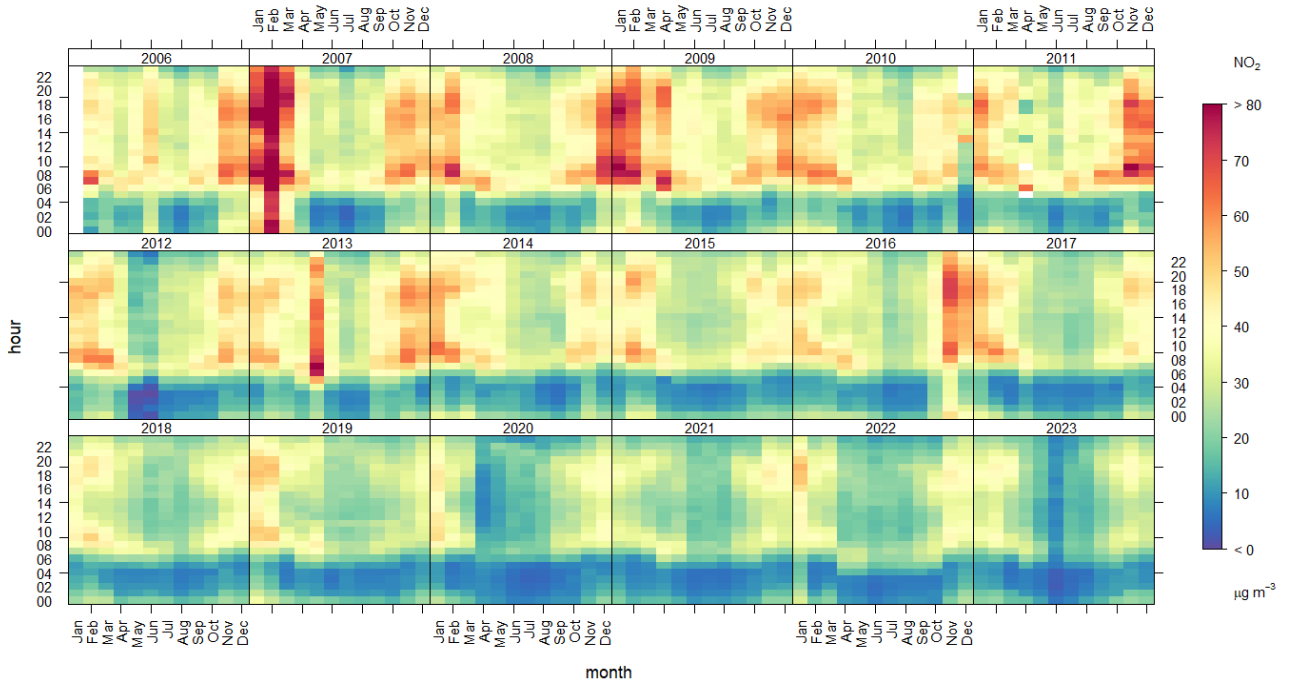


The above normalised time variation plots of current and historic NO_2 measurements shows that the pattern associated with the occurrence of NO_2 at Broadway has historically (results from 2006 to 2022) been consistent (the narrowness of the plotted red line). Both the latest 2023 results (the plotted gold line) and the historic results (the plotted red line) show very similar patterns albeit with levels of NO_2 in 2023 generally 5 μgm^{-3} to 11 μgm^{-3} lower, and 18 μgm^{-3} lower in respect to June, than the longer-term average.

The lower than longer-term average levels of NO_2 apparent in 2023 appear to be relatively stable throughout 2023, suggesting the possibility of an ongoing improving trend in NO_2 that has continued into and throughout 2023. The noticeable reduction in levels of NO_2 in June 2023, in comparison to the historic average, may be attributable to ozone events coinciding with record-breaking temperatures [14] during the summer across most of the UK.

The trend level plot of hourly mean NO_2 at Site No. 70 (Broadway) produced in Figure 4-5 below, is another useful way of examining the relationship of NO_2 over each year between 2006 and 2023. 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. Although 2023 shows subdued levels of NO_2 during the summer it nonetheless appears comparable to 2022 and also to the recent past between 2017 and 2019.

Figure 4-5: 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 (with some summers hotter and winters colder than the average), 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] and Bárðarbunga [17] volcanic eruptions can have a similar influence.

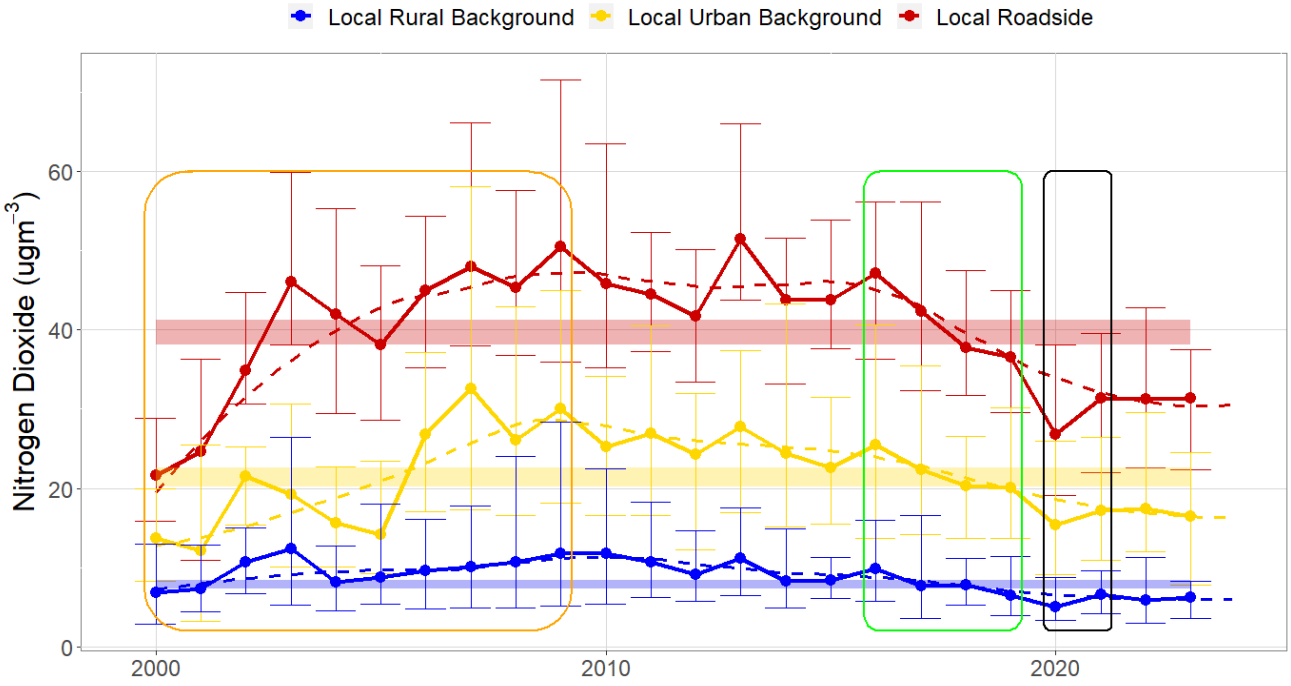
As any individual monitoring site can be influenced by very local circumstances, it can be of benefit to consider a collection of similar monitoring locations when assessing general influences upon local air quality. It has been possible to collate monitoring data from locations where monitoring has 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 (isolated and peri-urban residential areas), the 'local urban background'[4] environment (residential areas of most townships and the suburbs of strategic towns) and the 'roadside'[5] environment (residential areas in close proximity to busy urban roads) within Rhondda Cynon

[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.
[4] urbanised residential areas at a distance from the kerb of major roads and an absence of local industry.
[5] roadside urban locations often within 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.

Taf. The local rural background may help to illustrate wide-scale regional influences. 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 4-6 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 4-6: 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 historic consistency with published background levels (2020 onwards published background levels may not currently take account of likely COVID-19 related disruption and its legacy) 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

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

(solid red line) environment 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 levels of NO_2, during 2020, being generally at their lowest since 2003. This exceptional impact has appeared to have 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 slight improving or stabilisation in levels may have been reached, with 2023 suggestive of a continuation of this current NO_2 trend.

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, without inclusion of monitoring results from 2020, for each environment.

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	-3.85

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

Local Urban	-3.93
Local Roadside	-3.43

Given the uniformity of the improvement in the five-year trend in NO_2, 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 have been 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 2023 levels of NO_2 still remain substantially lower in comparison to 2019 [11]. The potential stabilisation of the trend in 2023 could indicate the possibility that the recent improving trend has begun to tail and instead stabilise to a slight improving or even more static position. As such, it remains difficult to determine if the current significant improving trend will be further sustained at its recent rate by continued cultural and economic changes, such as the continuation of home-working and non-traditional commuting times by some. Alternatively, there is an apparent risk that the trend may have started to ebb or pause, with potential future economic conditions challenging the adoption of new transport technology and there remains a risk that the prevailing weather conditions observed through 2016 to 2019 could alter so as to become less conducive.

It is still 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 from 2023, 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 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.

Within Rhondda Cynon Taf, it is apparent that in 2023, 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.

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. Table 4-9 below identifies the locations of relevant population where the annual mean for NO_2 was above 54 μgm^{-3} at least once in the past five years.

Table 4-9: Monitoring sites with an annual mean for NO_2 greater than 54μgm^{-3} at least once between 2019 and 2023

Site ID(1)	AQMA	Area	1-hour AQO for NO_2	NO_2 Annual Mean Concentration (μgm^{-3}) (2)				
				2019	2020	2021	2022	2023
118◈	Cymmer	Rhondda	Yes	**<u>63.8</u>**	**45.1**	**52.9**	**52.2**	**52.7**

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) Means for diffusion tubes indicated with ◈ have met the initial NO_2 'fall-off' correction criteria but have not been corrected as monitoring location is within a street canyon and correction may not be valid.

(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.TG16, 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.

To consider the context of the identified monitoring sites, Figure 4-7 below displays a time plot of the recent annual means at the above locations, as well as the area between 54 μgm^{-3} and 60 μgm^{-3} shaded in grey. All the identified monitoring sites are within the Cymmer

AQMA, which has already been declared for a breach of the annual mean and 1-hour mean AQOs for NO_2.

Figure 4-7: Time Plots, with reference lines, of the annual mean for NO_2 at identified monitoring sites.

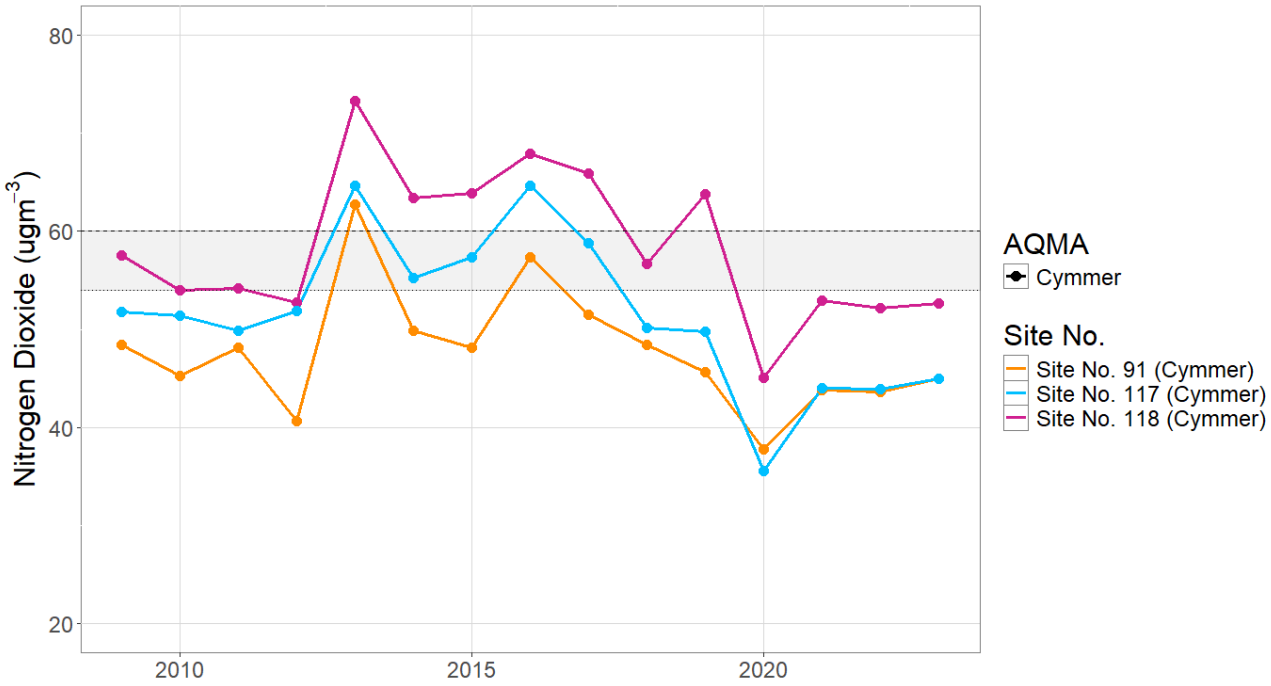


Figure 4-7 illustrates that only Site No. 118 (Cymmer) has shown an elevated annual mean for NO_2 that has been above 54 μgm^{-3} during the past but, since 2020, the annual mean for NO_2 has been proximal to or below 54 μgm^{-3}. Other locations within the Cymmer AQMA have also experienced elevated levels of NO_2 but, since 2017, the annual mean for NO_2 at these locations has been consistently below 54 μgm^{-3}. This may indicate that the area within the Cymmer AQMA, likely at risk of breaching of the 1-hour mean AQOs for NO_2, is relatively confined, with most or even possibly all of the Cymmer AQMA is now likely compliant with the 1-hour mean AQOs for NO_2.

At present there remains some uncertainty if the reductions in NO_2 observed, since 2019, will be sufficiently sustained into the future. As such, even though levels of NO_2 within the Cymmer AQMA have been below 54 μgm^{-3} since 2020, it may be too early to determine if circumstances have sustainably changed to warrant reconsideration of the Cymmer AQMA and its reference to the 1-hour mean AQO for NO_2. However, should levels of NO_2 within the Cymmer AQMA remain below 54 μgm^{-3} into the future then it is expected that the Cymmer AQMA may be reviewed in this respect.

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 2023; 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 2023. 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 2023, at each monitoring site.

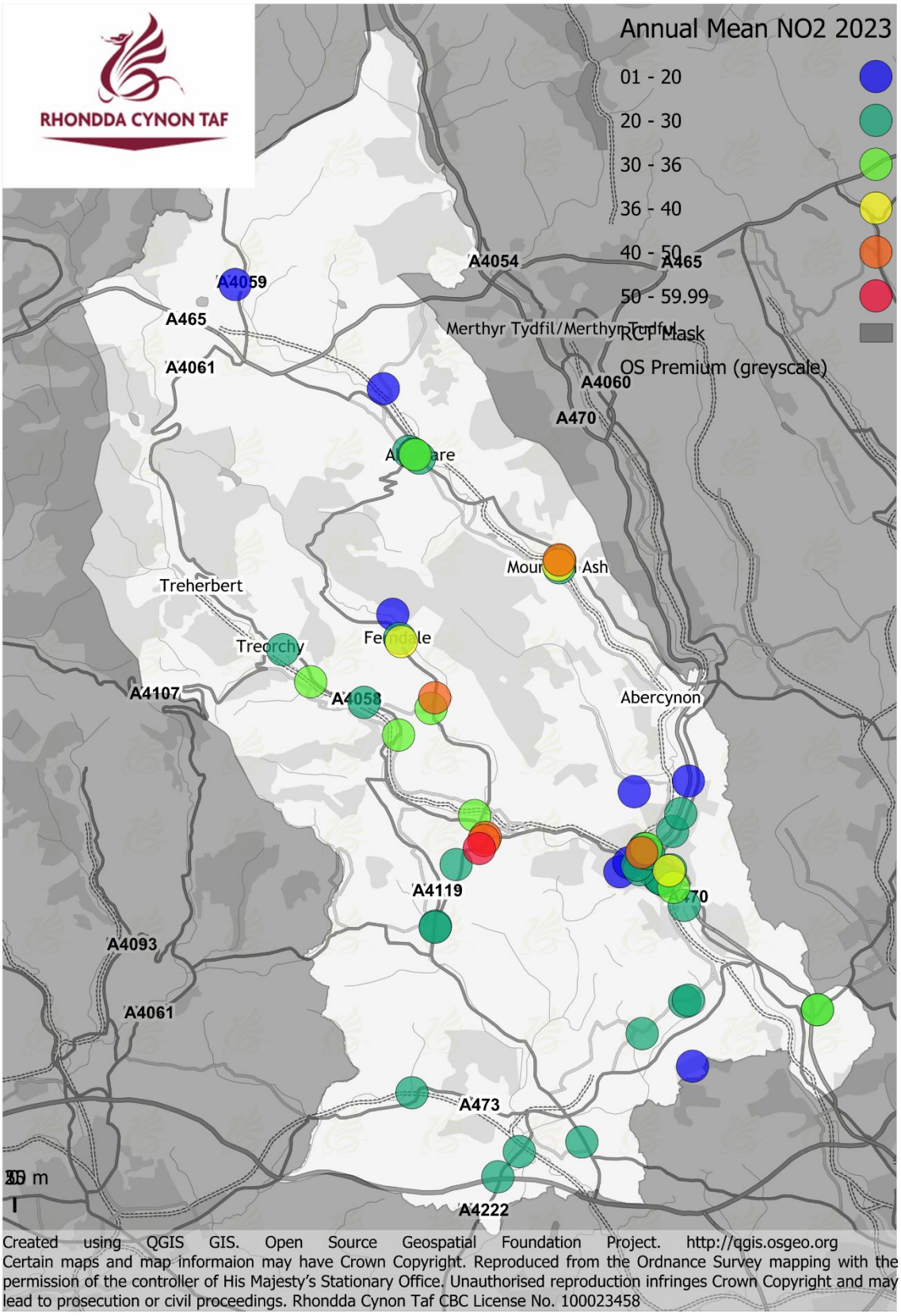


Table 4-10 collates each monitoring site to its region and associated local community. Where the community is in bold, the community is also associated with an AQMA that has been declared for a breach of the annual mean AQO for NO_2, and where underlined the AQMA has in addition been declared for a breach of the 1-hour AQO for NO_2.

Table 4-10: Annual mean NO_2, in 2023, collated to region and each local community.

Region	Community (1)(2)	Site No.	2023 $N0_2$ Annual Mean (3)(4)(5)(6)
Background	Rhondda	101	5.8
	Cynon	21	4.9
	Taf	4	11.6
		103	7
		105	7
Rhondda	**Cymmer**	**91**	**45**
		117	**45**
		118	**52.7**
	Dinas	90	32.3
	Ferndale	93	39.8
		107	28.1
	Llwynypia	106	30.5
	Pentre	136	34.4
	Tonyrefail	113	29.9
		122	24.1‡
	Trebanog	124	23.3
	Treorchy	137	27.9
	Tylorstown	**41**	**41.3**
		140	30.6
	Ystrad	141	24.9 {24.1}
Cynon	**Aberdare**	53	30.4
		68	26.2
		69	25.3
		88	26
	Llwydcoed	139	16.5 {14.5}
	Mountain Ash	52	36.4
		96	29.5
		97	**41.5**
		131	31.6
Taf	**Broadway**	51	28.6
		56	33.5
		66	29.4
		70	20.1 {22.0}
	Church Village	85	27.2
		129	21.8 {20.5}
	Cilfynydd	44	24.0

Region	Community (1)(2)	Site No.	2023 NO_2 Annual Mean (3)(4)(5)(6)
			{28.8}
		55	25.1
		134	16.3 {14.3}
	Llanharan	111	27.3
	Llantwit Fardre	82	22.8 {20.6}
	Mwyndy	37	26.5 {24.0}
	Nantgarw	8	31.1
		76	26.1
	Nightingales Bush	108	37.9
		114	22.5
	Pontyclun	110	23.4
	Pontypridd	79	28
		80	25.2
		81	27.5
		83	28.6
		84	**40.8**
		120	27.2
		135	22.2 {18.6}
		138	32.1
	Talygarn	132	22.4
	Treforest	128	28.4

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 NO2 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.

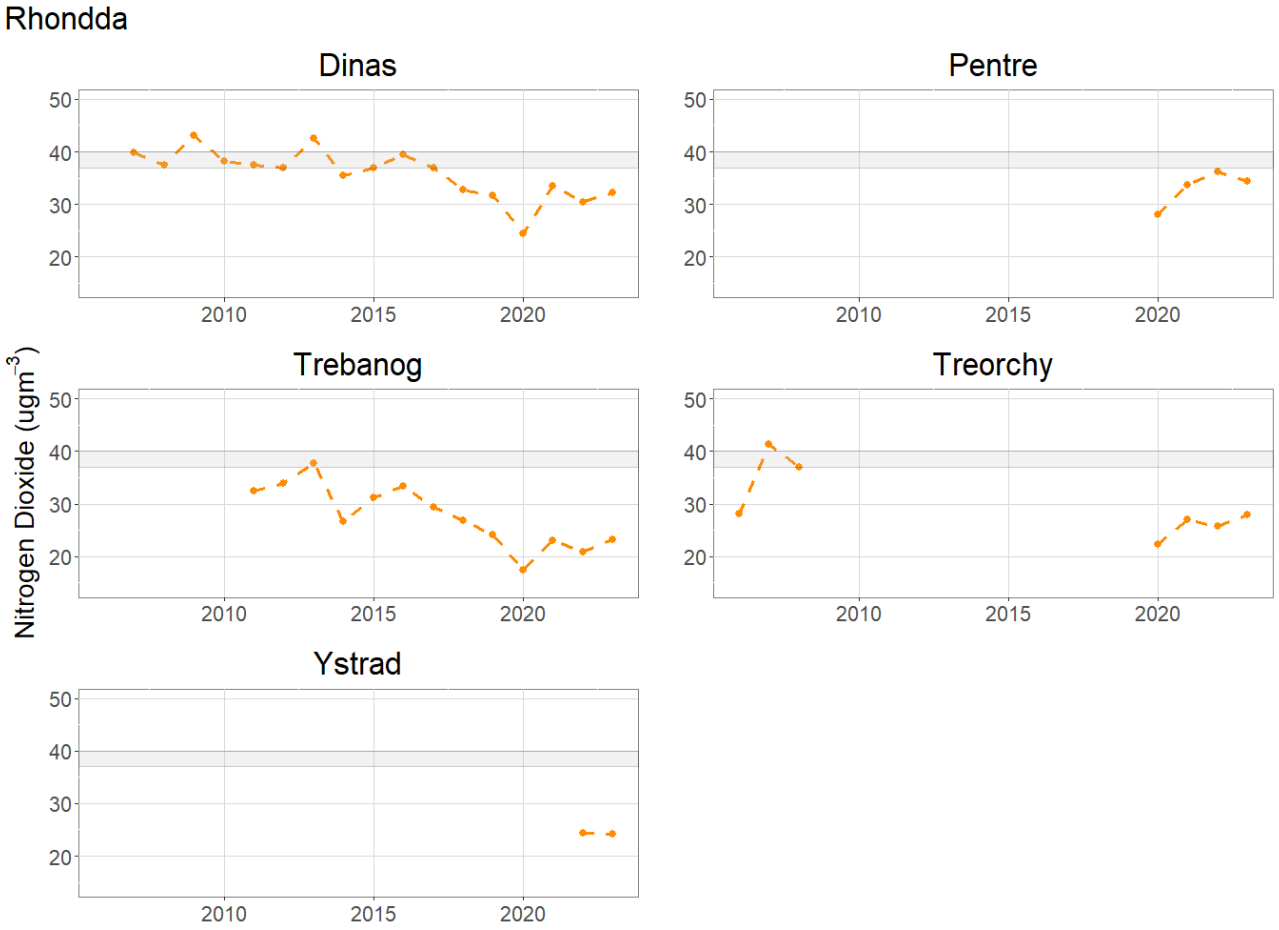
(6) Where the NO_2 ‘fall-off’ corrected predicted mean has been determined it is has been reported in curly brackets ‘{ }’

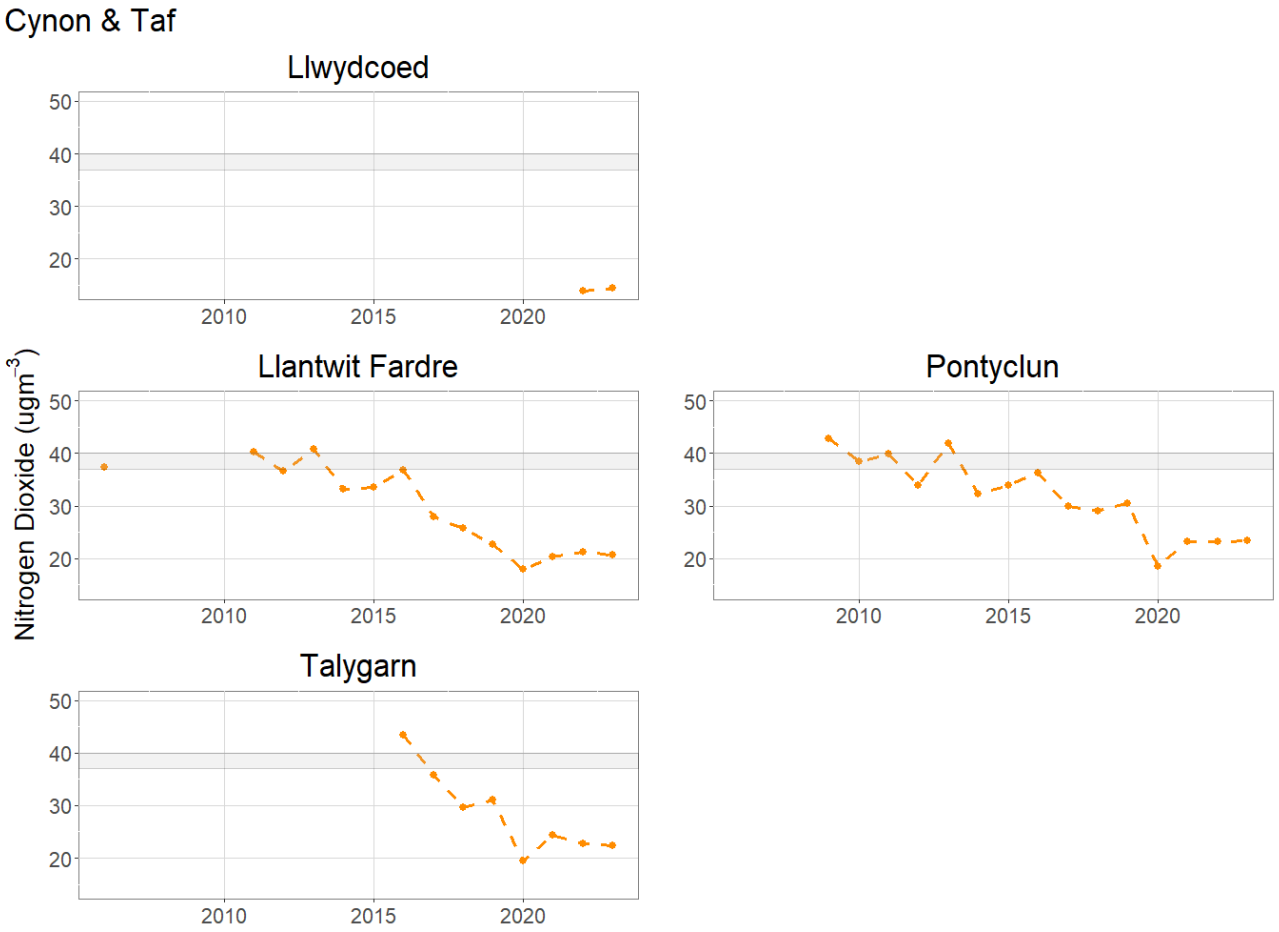
4.3.3.1 Review of areas not associated with an AQMA

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 some 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. 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 near future.

Figure 4-9: Time Plots of the maximum annual mean NO_2, from 2006 to 2023, collated to each relevant community not currently associated with an AQMA.


Rhondda
Dinas
Pentre
Trebanog
Treorchy
Ystrad
Nitrogen Dioxide (ugm-3)
50
40
30
20
2010
2015
2020



4.3.4 Review of AQMAs

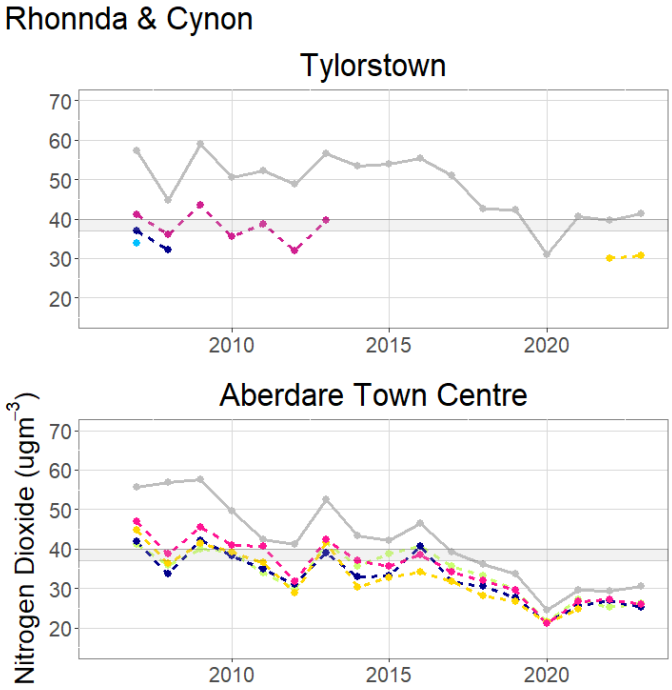
Currently there are sixteen AQMAs within Rhondda Cynon Taf, all of which are in respect of breaches of AQOs for NO_2. These AQMAs are of limited size, are distributed throughout the County Borough and all are significantly associated with road transport emissions, Section 3.2 provides further information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

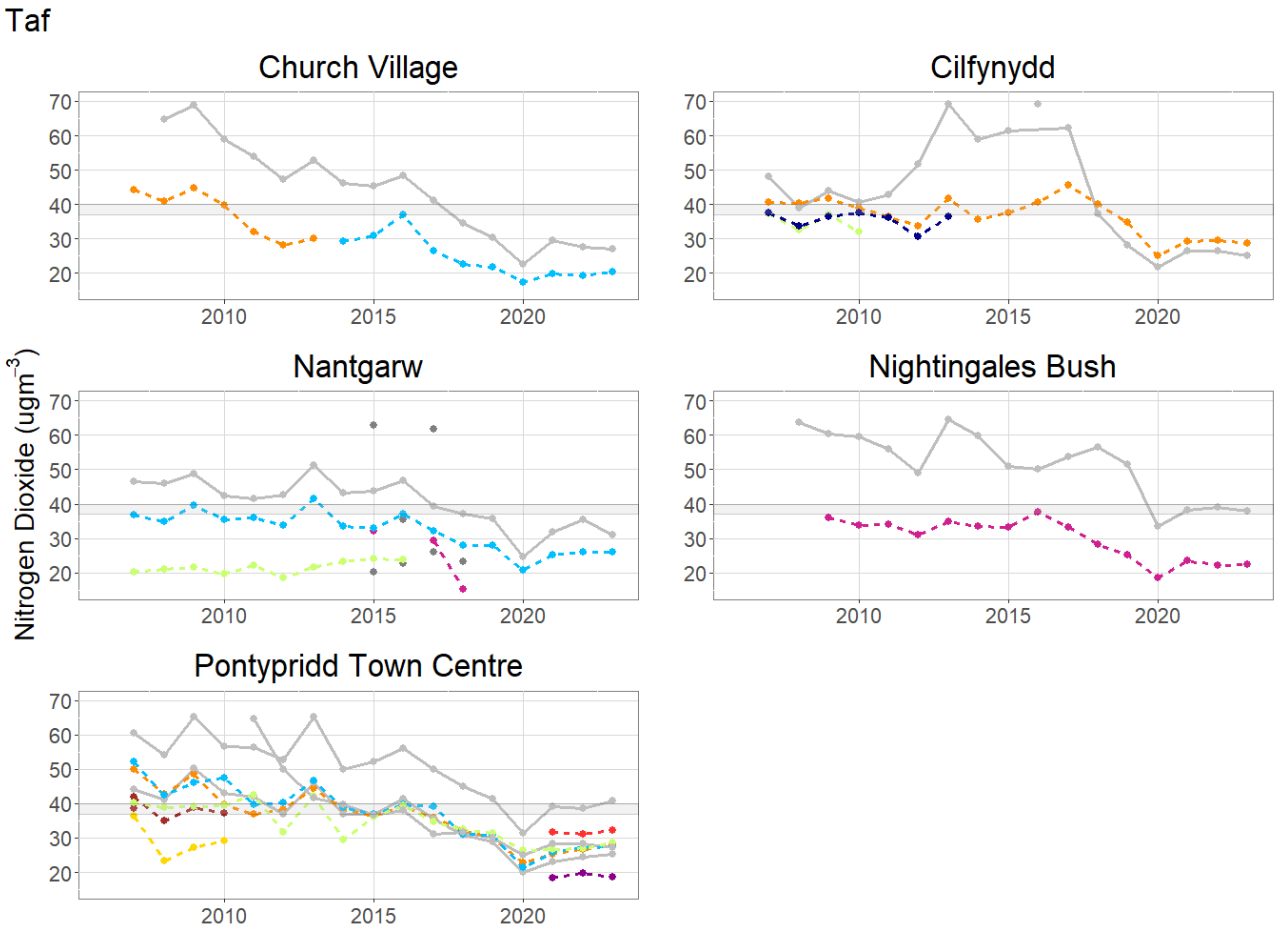
As local air quality can change over time due to national, regional and local changes as well as due to the progression of targeted actions that may improve local air quality. It can be appropriate to review existing AQMAs to ensure they remain pertinent and continue to reflect any area of non-compliance 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 Aberdare Town Centre, Church Village, Cilfynydd, Nantgarw, 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 2023, 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.

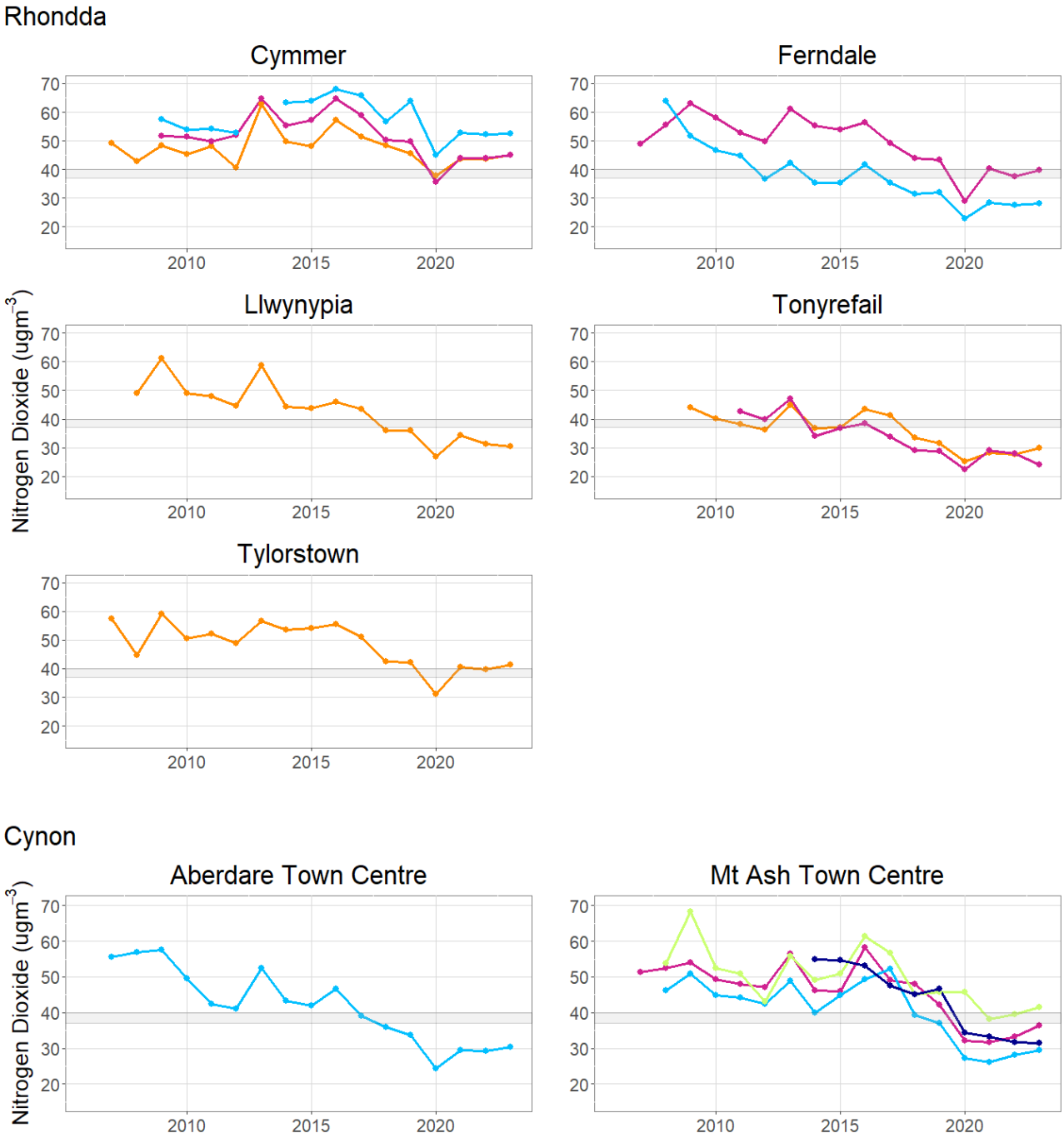
In addition to areas adjacent to an existing AQMA, it is also important to examine if sustained compliance to an AQO has been achieved within an AQMA or part thereof, as it may be appropriate to amend or even revoke the AQMA. Although an AQMA, or part thereof, may show compliance to the annual mean AQO 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.

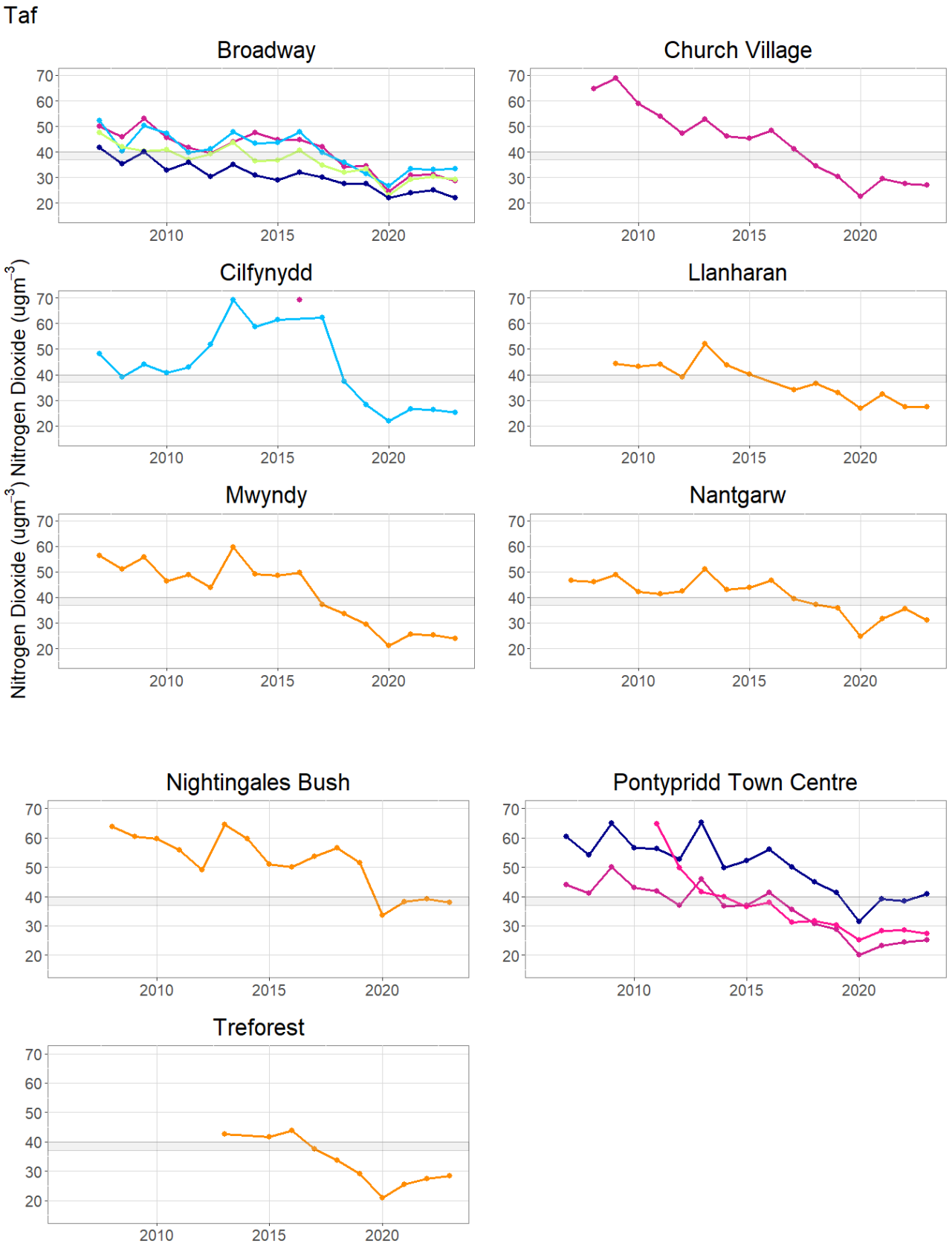
To maintain an efficient approach to its local air quality management duties initial consideration can be undertaken with available monitoring data and the examination of local trends and understanding. Where this approach identifies a need for further assessment, prior to determining any necessary changes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

In undertaking the review, 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 2023, 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 4-11 below.

Table 4-11: 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 Full	-	-	-	No
	Ferndale	-	In Part	-	In Part	No
	Llwynypia	-	-	-	In Full	Yes
	Tonyrefail	-	-	-	In Full	Yes
	Tylorstown	In Full	-	-	-	No
Cynon	Aberdare Town Centre		-	-	In Full	Yes
	Mountain Ash Town Centre	In Part	In Part	In Part	In Part	No
Taf	Broadway	-	-	-	In Full	Yes
	Church Village	-	-	-	In Full	Yes
	Cilfynydd	-	-	-	In Full	Yes
	Llanharan	-	-		In Full	Yes
	Mwyndy	-	-	-	In Full	Yes
	Nantgarw	-	-	-	In Full	Yes
	Nightingales Bush	-	In Full	-	-	No
	Pontypridd Town Centre	In Part	-	-	In Part	No
	Treforest	-	-	-	In Full	Yes

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 2023.

As observed in Figure 4-11 above and further illustrated in

Appendix D2: AQMA Trends, 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 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 either continue to reduce or otherwise stabilise to some extent.

When considering if there is a need to amend or revoke 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, most of the AQMAs are not expected to experience a substantive change in local circumstance that would be expected to significantly influence current understanding of them. With the exception that levels of NO_2 within the Llanharan AQMA may substantively reduce should the Llanharan Bypass be completed within the medium-term.

Those AQMAs that have been identified as showing likely compliance throughout their area are reviewed within the corresponding subsections below. Table 4-11 above also indicates that the Ferndale, Mountain Ash Town Centre and Pontypridd 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 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 location, 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

8 that were not otherwise included for administrative purposes

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, street-canyon effect and inherent road traffic congestion associated with its northern junction, are all significant factors influencing the observed levels of NO_2. The boundary of these local variations and the likely associated boundary of potential 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 Mountain Ash Town Centre AQMA, even though it will retain an area of compliance, remains a pragmatic designation. In any event, given the current local improving trend in NO_2 it may be possible that the entire western half of the AQMA will be reviewed in the near-term. As such it is not considered appropriate at this time to reduce the geographical extent of the Mountain Ash Town Centre AQMA.

In respect of the Pontypridd Town Centre AQMA, monitoring data may indicate two distinct areas of the AQMA which could require further review. The automatic monitoring location Site No. 120 (Pontypridd) which, for logistical reasons, has not been located at the immediate worse-case scenario, has observed compliance with the annual AQO for NO_2 for a number of years. However, the inclusion of this area enables the current AQMA to remain contiguous and acknowledges the close interrelationship of the local environment along the length of the AQMA. As such it is not considered appropriate at this time to reduce the geographical extent of the Pontypridd Town Centre AQMA in respect of automatic monitoring location Site No. 120. The distinct area associated with Site No. 80, Pontypridd Bus Station, appears to have shown compliance to the annual mean AQO for NO_2 for a sustained period of time. Given its separation and differences from the remainder of the Pontypridd Town Centre AQMA it is considered appropriate for it to be reviewed now.

At this time it is not considered necessary to undertake a further review of Cymmer, Tylorstown and Nightingales Bush AQMAs as they continue to demonstrate non-compliance to the annual mean AQO for NO_2 into the medium-term and in respect of the Cymmer AQMA potentially the longer-term, unless future targeted improvement actions have a desired effect. Nonetheless, all three AQMAs also continue to show a local improving trend in NO_2.

4.3.4.1 Review of Llwynypia AQMA

Figure 4-12 below provides a summary of information relevant to the Llwynypia AQMA. Section 3.2 provides further information on each AQMA and Appendix D1: Current AQMA Boundary Maps provides detailed maps of the AQMA and its associated monitoring locations.

Figure 4-12: Llwynypia AQMA Summary

Events	**Declaration**	2009
	Amendment	None
Local Area		Centred upon and solely includes Partridge Rd, Llwynypia, which sits along the base of the Rhondda Fawr valley. At this location, Partridge Rd observes mainly terraced two-story residential houses abutting its western side and a retaining wall and associated embankment along its eastern flank. Within the AQMA Partridge Rd, as it forms part of the A4058, is a busy highway

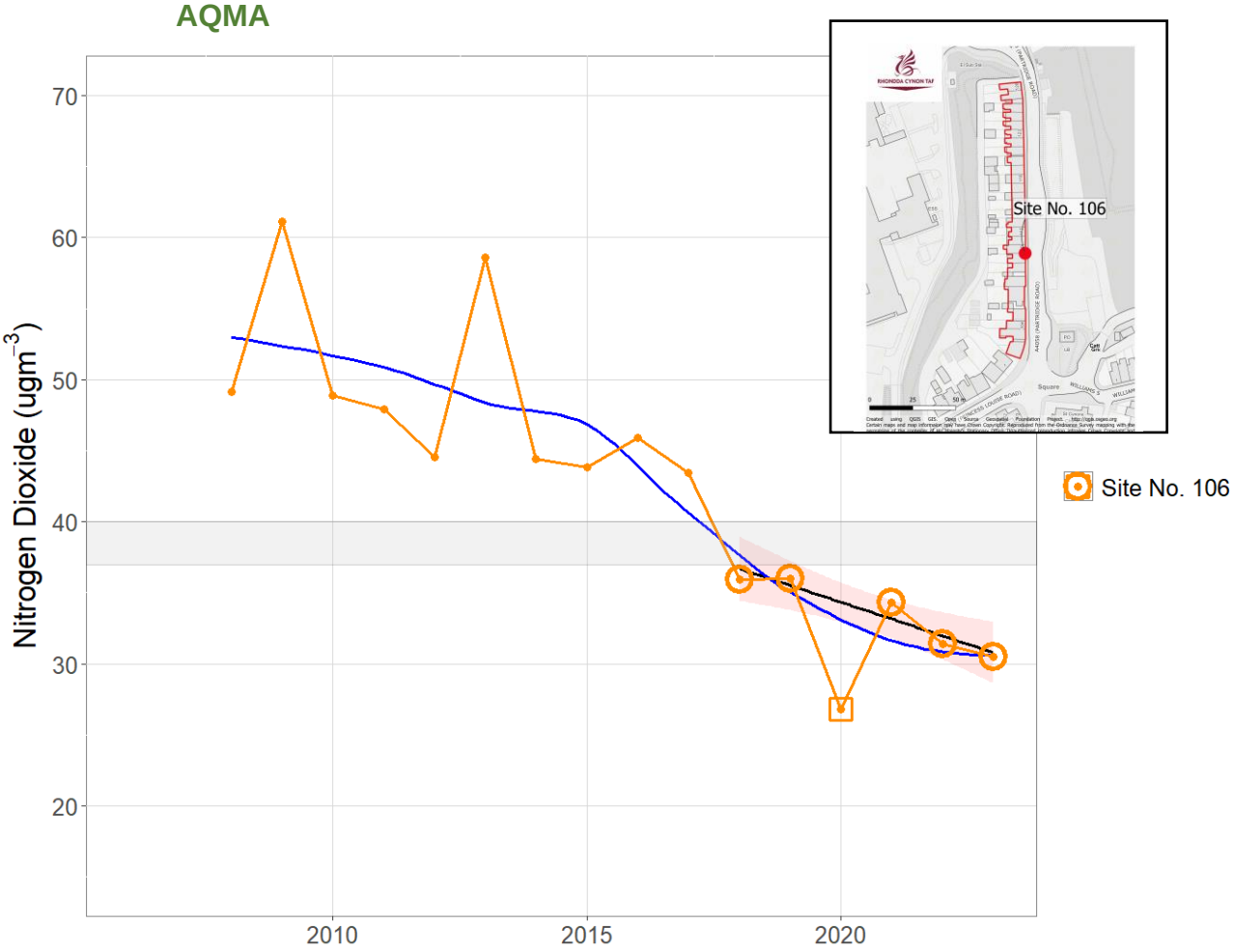
	conveying local traffic along the north-south axis of the Rhondda Fawr valley and prescribes a new 20 mph speed limit.
Est. No. of Properties	29
WIMD[9]	159th
NO_2 Local Sources & Influences (in order of likely importance)	>10,000 AADTF[10]
	Traffic-lights Managed Junction
	On street parking, in parts reducing width of useable carriageway
	Limited street-canyon
	Bus Stop
	Ysbyty Cwm Rhondda biomass boiler plant (capacity < current environmental permitting threshold)
	Regional background

As discussed in Section 4.3.1, the general local trend in NO_2 is expected to be either of a continuing gradual improvement or, at worse, a potential stabilisation of the trend to a more static position. It is possible that the redevelopment of the vacant former Llwynypia Hospital site, adjacent to the eastern boundary of the AQMA may arise in the medium-term future. This development is likely to be either commercial or residential in aspect and may result in some consequential road-traffic growth within the AQMA. Any such redevelopment will be considered upon its merits, and where deemed necessary it may be subject to an Air Quality Assessment that will help to evaluate any material impacts prior to determination of the proposal. It would be expected that this approach would aspire to protect current improvements in the level of NO_2 within the AQMA and not jeopardise continued compliance to the annual mean AQO for NO_2.

Figure 4-13 below displays a time plot of the recent annual means at relevant location(s) within the AQMA, as well as the area between 36 μgm^{-3} and 40 μgm^{-3} shaded in grey. The overall NO_2 trend line for monitoring locations within the AQMA is provided in blue and the most recent five-year trend slope (excluding 2020) is provided in a solid black line with the associated range of uncertainty as a red shaded area.

[9] Wales Index of Multiple Deprivation rank of the most deprived ward within the AQMA out of out of 1,909 Welsh wards, a lower rank indicating a greater relative level of deprivation.
[10] Annual Average Daily Traffic Flow based upon data collected and projected pre-2020

Figure 4-13: Time Plot, with reference lines, of the annual mean for NO_2 at Llwynypia AQMA



Although the above graph indicates historically elevated levels of NO_2, including noticeable single-year peaks in 2009 and 2013, it also demonstrates, as highlighted by the blue trend line, an overall improving position with decreasing levels of NO_2 locally. As expected, a substantial decrease in NO_2 levels can be observed in 2020, as a result of COVID related disruption at that time, as can the subsequent expected rebound as the disruption ended. The levels of NO_2 from 2021 onwards appear to have consistent alignment with the five-year trend, year-on-year -3% NO_2 decrease, indicating that current compliance may be maintained into the near future at least.

The levels of NO_2 at the monitoring location(s) within the AQMA are significantly less than the current annual mean AQO for NO_2, providing a noticeable margin of compliance. In addition, the geographical, topographical and source related features within and associated with the AQMA are expected to be relatively consistent with the monitoring results and are not expected to materially change in the near-term. The consistent local trend in NO_2 is likely reflective of the AQMA and suggests a likelihood of future stability or gradual improvement to NO_2 into the short to medium term. Taking account of the available evidence it is considered that, **due to consistent and sustainable compliance to the annual mean AQO for NO_2, it is appropriate to revoke the current Llwynypia AQMA**.

4.3.4.2 Review of Tonyrefail AQMA

Figure 4-12 below provides a summary of information relevant to the Tonyrefail AQMA. Section 3.2 provides further information on each AQMA and Appendix D1: Current AQMA Boundary Maps provides detailed maps of the AQMA and associated monitoring locations.

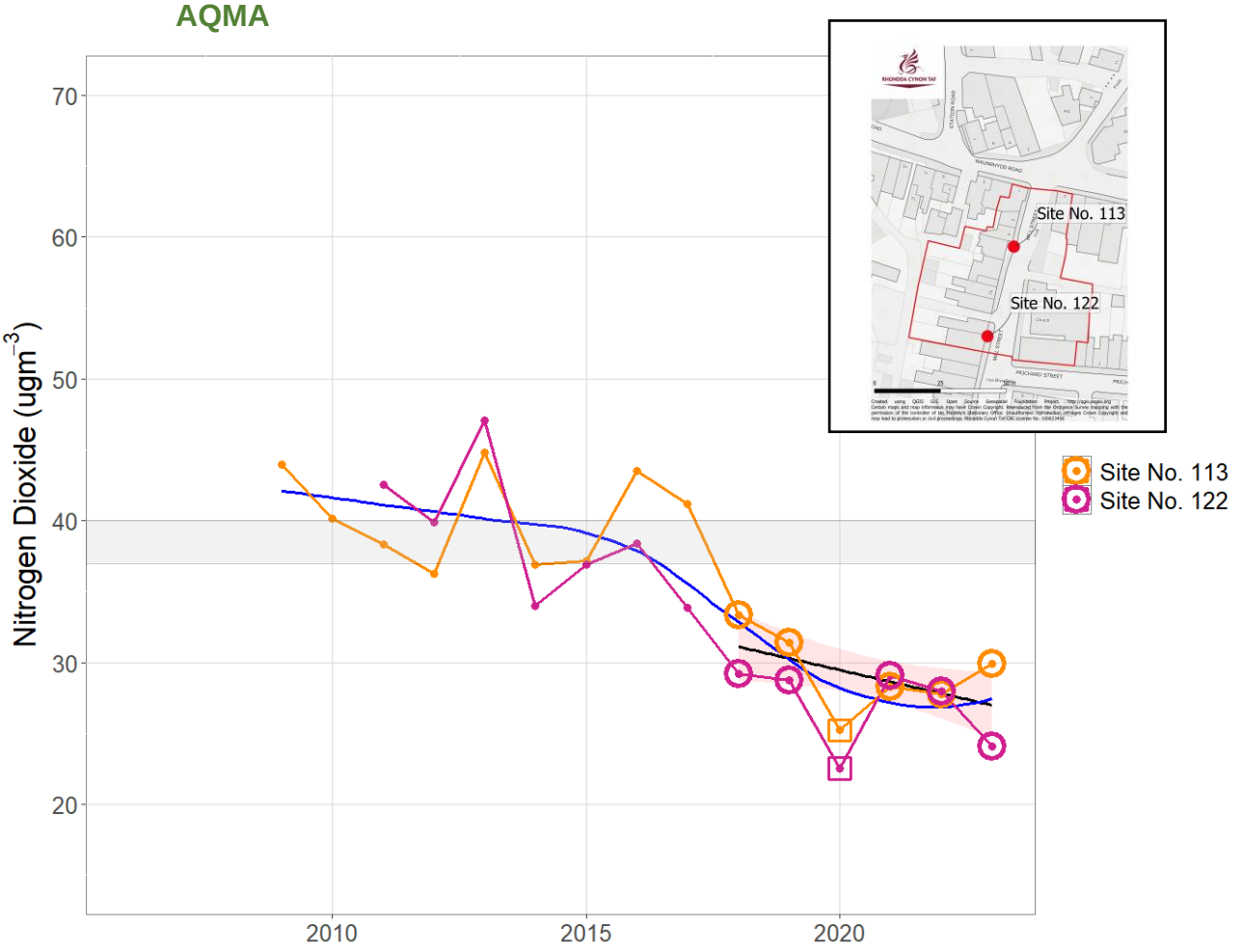
Figure 4-14: Tonyrefail AQMA Summary

Events	**Declaration**	2018
	Amendment	None
Local Area		Centred upon and solely includes Mill St, Tonyrefail, which sits partly along the base of the Ely valley. At this location, Mill St observes mainly terraced two-story commercial and residential premises abutting both flanks. Within the AQMA Mill St, provides local connecting routes to other parts of Tonyrefail. This part of Mill St is integrated with a traffic-lights managed junction, observes in carriageway bus-stopping and prescribes to a new 20 mph speed limit.
Est. No. of Properties		20
WIMD[11]		637th
NO_2 Local Sources & Influences (in order of likely importance)		5,000 - 10,000 AADTF[12]
		Traffic-lights Managed Complex Junction
		On street parking, in parts reducing width of useable carriageway
		Approx. 14% incline to highway as it approaches junction
		Limited street-canyon
		Bus Stops
		Regional background

As discussed in Section 4.3.1, the general local trend in NO_2 is expected to be either of a continuing gradual improvement or, at worse, a potential stabilisation of the trend to a more static position. At present there are not believed to be any granted or foreseen developments that would, if developed in the near-term, would be predicted to materially impact the current trend in NO_2 within the AQMA. Figure 4-15 below displays a time plot of the recent annual means at relevant location(s) within the AQMA, as well as the area between 36 μgm^{-3} and 40 μgm^{-3} shaded in grey. The overall NO_2 trend line for monitoring locations within the AQMA is provided in blue and the most recent five-year trend slope (excluding 2020) is provided in a solid black line with the associated range of uncertainty as a red shaded area.

[11] Wales Index of Multiple Deprivation rank of the most deprived ward within the AQMA out of out of 1,909 Welsh wards, a lower rank indicating a greater relative level of deprivation.
[12] Annual Average Daily Traffic Flow based upon data collected and projected pre-2020

Figure 4-15: Time Plot, with reference lines, of the annual mean for NO_2 at Tonyrefail AQMA



The above graph demonstrates, as highlighted by the blue trend line, an overall improving position with decreasing levels of NO_2. As expected, a substantial decrease in NO_2 levels can be observed in 2020, as a result of COVID related disruption at that time, as can the subsequent rebound as the disruption ended. The levels of NO_2 from 2021 onwards appear to be in broadly consistent alignment with the five-year trend, year-on-year -1.8% NO_2 decrease, indicating that current compliance may be maintained into the near future at least.

The levels of NO_2 at the monitoring location(s) within the AQMA are significantly less than the current annual mean AQO for NO_2, providing a noticeable margin of compliance. In addition, the geographical, topographical and source related features within and associated with the AQMA are expected to be relatively consistent with the monitoring results and are not expected to materially change in the near-term. As such the consistent local trend in NO_2 is likely reflective of the AQMA and suggests a likelihood of future stability or gradual improvement to NO_2 into the short to medium term. Taking account of the available evidence it is considered that, **due to consistent and sustainable compliance to the annual mean AQO for NO_2, it is appropriate to revoke the current Tonyrefail AQMA**.

4.3.4.3 Review of Aberdare Town Centre AQMA

Figure 4-12 below provides a summary of information relevant to the Aberdare Town Centre AQMA. Section 3.2 provides further information on each AQMA and Appendix D1: Current AQMA Boundary Maps provides detailed maps of the AQMA and associated monitoring locations.

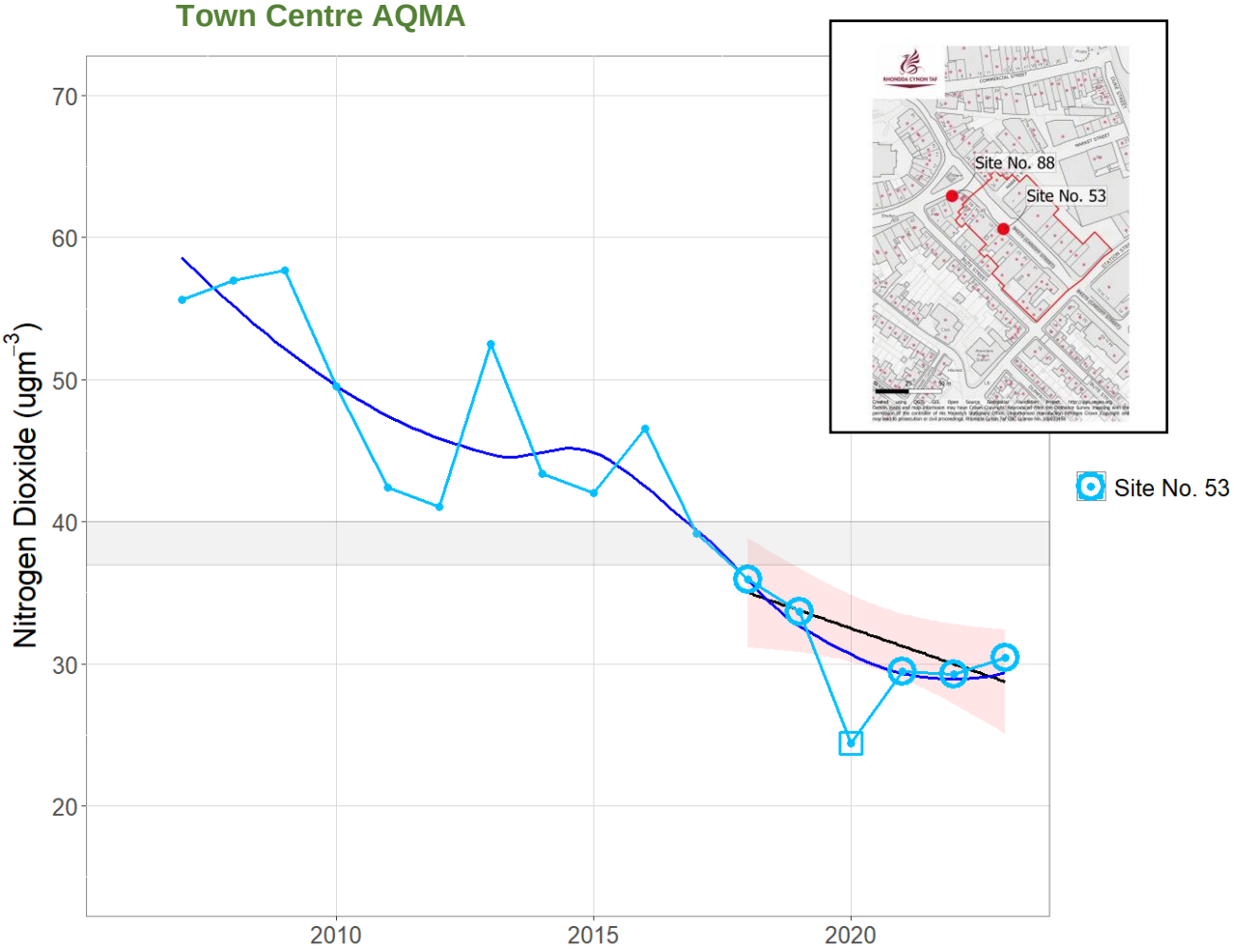
Figure 4-16: Aberdare Town Centre AQMA Summary

Events	**Declaration**	2007
	Amendment	2012: increased to take account of adjacent non-compliance along Cardiff St (South)
		2021: decreased to take account of sustained compliance in outer-parts of the AQMA along Canon St, Victoria Sq and Cardiff St (South)
Local Area		Centred upon and solely includes Cardiff St, Aberdare, which sits along the base of the Cynon valley. At this location, Cardiff St observes terraced two-story and three-story primarily commercial premises (with potential above ground level residential spaces) flanking a relatively wide carriageway, which includes dedicated parking and loading bays. Within the AQMA Cardiff St, provides access to commercial premises as well as local connecting routes to other parts of the commercial centre of Aberdare, with sections of the road integrated with traffic-lights managed junctions and pedestrian traffic-light managed crossings and prescribes a new 20 mph speed limit.
Est. No. of Properties		33
WIMD[13]		273rd
NO_2 Local Sources & Influences (in order of likely importance)		5,000 - 10,000 AADTF[14]
		Traffic-lights managed junction
		Traffic congestion due to high level of pedestrian traffic
		Waiting vehicles
		Regional background

As discussed in Section 4.3.1, the general local trend in NO_2 is expected to be either of a continuing gradual improvement or, at worse, a potential stabilisation of the trend to a more static position. In addition, at present there are not believed to be any granted or foreseen developments that would, if developed in the near-term, would be predicted to materially impact the current trend in NO_2 within the AQMA. Figure 4-17 below displays a time plot of the recent annual means at relevant location(s) within the AQMA, as well as the area between 36 μgm^{-3} and 40 μgm^{-3} shaded in grey. The overall NO_2 trend line for monitoring locations within the AQMA is provided in blue and the most recent five-year trend slope (excluding 2020) is provided in a solid black line with the associated range of uncertainty as a red shaded area.

[13] Wales Index of Multiple Deprivation rank of the most deprived ward within the AQMA out of out of 1,909 Welsh wards, a lower rank indicating a greater relative level of deprivation.
[14] Annual Average Daily Traffic Flow based upon data collected and projected pre-2020

Figure 4-17: Time Plot, with reference lines, of the annual mean for NO_2 at Aberdare Town Centre AQMA



Although the above graph indicates historically elevated levels of NO_2, including noticeable elevated levels prior to 2010 and the single-year peak in 2013, it also demonstrates, as highlighted by the blue trend line, an overall improving position with decreasing levels of NO_2 from 2009 onwards. As expected, a substantial decrease in NO_2 levels can be observed in 2020, as a result of COVID related disruption at that time, as can the subsequent rebound as the disruption ended. The levels of NO_2 from 2021 onwards appear to be in broadly consistent alignment with the five-year trend, year-on-year -3.7% NO_2 decrease, indicating that current compliance may be maintained into the near future at least.

The levels of NO_2 at the monitoring location(s) within the AQMA are significantly less than the current annual mean AQO for NO_2, providing a noticeable margin of compliance. In addition, the geographical, topographical and source related features within and associated with the AQMA are expected to be relatively consistent with the monitoring results and are not expected to materially change in the near-term. As such the consistent local trend in NO_2 is likely reflective of the AQMA and suggests a likelihood of future stability or gradual improvement to NO_2 into the short to medium term. Taking account of the available evidence it is considered that, **due to consistent and sustainable compliance to the annual mean AQO for NO_2, it is appropriate to revoke the current Aberdare Town Centre AQMA**.

4.3.4.4 Review of Broadway AQMA

Figure 4-12 below provides a summary of information relevant to the Broadway AQMA. Section 3.2 provides further information on each AQMA and Appendix D1: Current AQMA Boundary Maps provides detailed maps of the AQMA and associated monitoring locations.

Figure 4-18: Broadway AQMA Summary

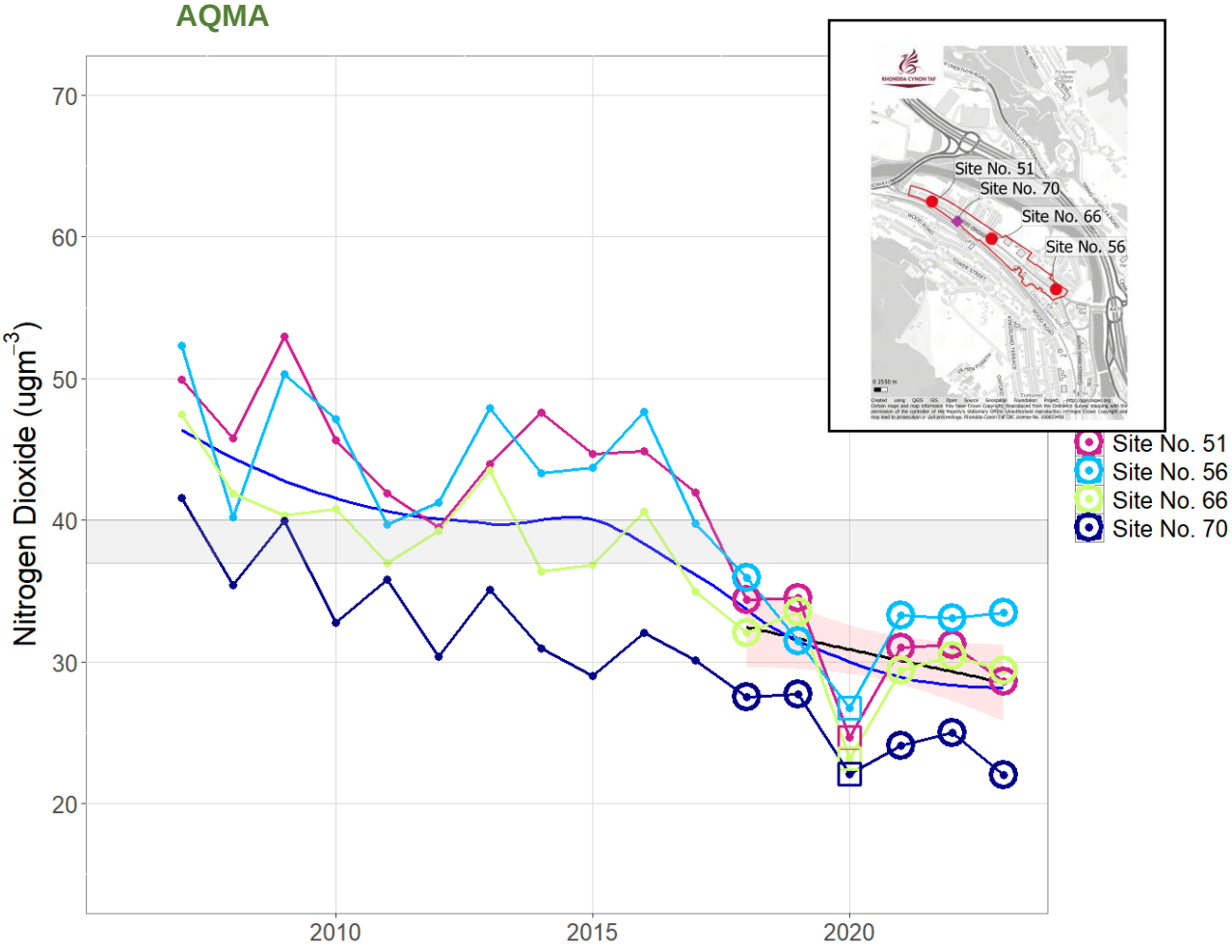
Events	**Declaration**	2007
	Amendment	2012: increased to take account of adjacent non-compliance along Park St
		2019: decreased to take account of sustained compliance in outer-parts of the AQMA along Park St
Local Area		Centred upon and solely includes Broadway, Treforest, which sits along the base of the Taf valley. At this location, Broadway observes terraced primarily two-storey and three-story residential premises as well as a tall railway embankment, flanking a relatively wide carriageway. Within the AQMA, Broadway provides access to local connecting routes to other parts of Treforest, Pontypridd Town Centre and interchanges with the nearby A470 trunk road. Sections of Broadway are integrated with traffic-lights managed junctions and pedestrian traffic-light managed crossings and observes in carriageway bus-stopping. In addition, the carriageway has been augmented with traffic calming infrastructure (speed bumps) and prescribes a 20 mph speed limit.
Est. No. of Properties		204
WIMD[15]		604th
NO_2 Local Sources & Influences (in order of likely importance)		>10,000 AADTF[16]
		Traffic-lights managed junction
		Related traffic congestion due to heavily used surrounding highway network
		Dispersal of emissions from nearby A470
		Traffic calming measures
		Valley-lines diesel locomotives
		Regional background

As discussed in Section 4.3.1, the general local trend in NO_2 is expected to be either of a continuing gradual improvement or, at worse, a potential stabilisation of the trend to a more static position. During 2013 a series of road traffic calming measures (speed bumps) in conjunction with a prescribed 20 mph speed limit was introduced along Broadway. It is expected that in the near term, existing Core Valley Lines diesel train locomotives will be replaced with electric locomotives, likely resulting in the removal of this current local NO_2 source. It is understood some provisional reserve measures within the Welsh Government supplemental plan to tackle levels of NO_2 associated with the A470, could have a deleterious

[15] Wales Index of Multiple Deprivation rank of the most deprived ward within the AQMA out of out of 1,909 Welsh wards, a lower rank indicating a greater relative level of deprivation.
[16] Annual Average Daily Traffic Flow based upon data collected and projected pre-2020

impact upon air quality within the neighbouring urban area, including Broadway. However, it is expected should any such measures be advanced for further consideration, they would be rigorously assessed to determine any likely impact and amended accordingly. Otherwise at present there are not believed to be any other granted or foreseen developments that would, if developed in the near-term, would be predicted to materially impact the current trend in NO_2 within the AQMA. Figure 4-19 below displays a time plot of the recent annual means at relevant location(s) within the AQMA, as well as the area between 36 μgm^{-3} and 40 μgm^{-3} shaded in grey. The overall NO_2 trend line for monitoring locations within the AQMA is provided in blue and the most recent five-year trend slope (excluding 2020) is provided in a solid black line with the associated range of uncertainty as a red shaded area.

Figure 4-19: Time Plot, with reference lines, of the annual mean for NO_2 at Broadway AQMA



The above graph demonstrates, as highlighted by the blue trend line, an overall improving position with decreasing levels of NO_2 for an extended period. As expected, a substantial decrease in NO_2 levels can be observed in 2020, as a result of COVID related disruption at that time, as can the subsequent rebound as the disruption ended. The levels of NO_2 from 2021 onwards appear to be in broadly consistent alignment with the mean five-year trend, year-on-year -2.2% NO_2 decrease, indicating that current compliance may be maintained into the near future at least.

Given that the levels of NO_2 at the monitoring location(s) within the AQMA are significantly less than the current annual mean AQO for NO_2, which provides a noticeable margin of compliance. In addition, the geographical, topographical and source related features within and associated with the AQMA are expected to be relatively consistent with the monitoring results and are not expected to materially change in the near-term. The local trend in NO_2 is likely reflective of the AQMA and suggests a likelihood of future stability or gradual improvement to NO_2 into the short to medium term. Taking account of the available evidence it is considered that, **due to consistent and sustainable compliance to the annual mean AQO for NO_2, it is appropriate to revoke the current Broadway AQMA**.

4.3.4.5 Review of Church Village AQMA

Figure 4-12 below provides a summary of information relevant to the Church Village AQMA. Section 3.2 provides further information on each AQMA and Appendix D1: Current AQMA Boundary Maps provides detailed maps of the AQMA and associated monitoring locations.

Figure 4-20: Church Village AQMA Summary

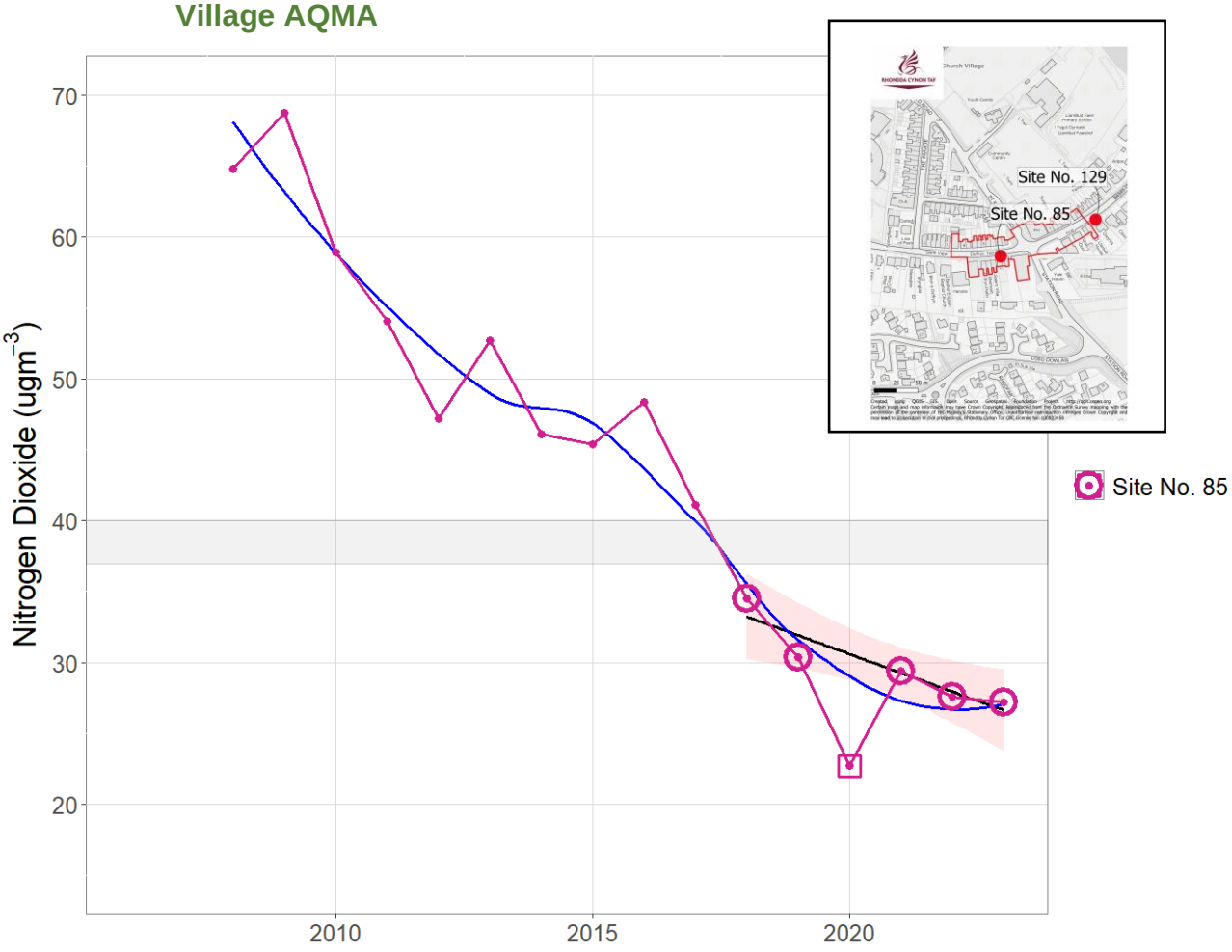
Events	**Declaration**	2015
	Amendment	None
Local Area		Centred upon the crossroads of Main Rd and St Illtyd Rd, Church Village which sits within the relatively open Taf vale. At this location, the immediate approach of main road to the junction is bordered by two-storey residential and some commercial premises. Within the AQMA, Main Rd and St Illtyd Rd provides access to local connecting routes to other parts of Church Village, neighbouring communities and the Church Village Bypass (A473) to the south. The parts of the highways within the AQMA are integrated with traffic-lights managed junctions and pedestrian traffic-light managed crossings and observes in carriageway bus-stopping and prescribes a new 20 mph speed limit.
Est. No. of Properties		47
WIMD[17]		501st
NO_2 Local Sources & Influences (in order of likely importance)		5,000 - 10,000 AADTF[18]
		Traffic-lights managed junction
		Limited street-canyon
		Bus Stops
		Regional background

As discussed in Section 4.3.1, the general local trend in NO_2 is expected to be either of a continuing gradual improvement or, at worse, a potential stabilisation of the trend to a more static position. In 2009 the Church Village Bypass was opened, which substantially removed regional traffic from the local highway system, resulting in sizeable reductions in locally observed levels of NO_2. At present there are not believed to be any other granted or foreseen developments that would, if developed in the near-term, would be predicted to materially

[17] Wales Index of Multiple Deprivation rank of the most deprived ward within the AQMA out of out of 1,909 Welsh wards, a lower rank indicating a greater relative level of deprivation.
[18] Annual Average Daily Traffic Flow based upon data collected and projected pre-2020

impact the current trend in NO_2 within the AQMA. Figure 4-21 below displays a time plot of the recent annual means at relevant location(s) within the AQMA, as well as the area between 36 μgm^{-3} and 40 μgm^{-3} shaded in grey. The overall NO_2 trend line for monitoring locations within the AQMA is provided in blue and the most recent five-year trend slope (excluding 2020) is provided in a solid black line with the associated range of uncertainty as a red shaded area.

Figure 4-21: Time Plot, with reference lines, of the annual mean for NO_2 at Church Village AQMA



The above graph demonstrates, as highlighted by the blue trend line, an overall improving position with decreasing levels of NO_2 for an extended period. As expected, a substantial decrease in NO_2 levels can be observed in 2020, as a result of COVID related disruption at that time, as can the subsequent rebound as the disruption ended. The levels of NO_2 from 2021 onwards appear to be in broadly consistent alignment with the five-year trend, year-on-year -3.5% NO_2 decrease, indicating that current compliance may be maintained into the near future at least.

Given that the levels of NO_2 at the monitoring location(s) within the AQMA are significantly less than the current annual mean AQO for NO_2, which provides a noticeable margin of compliance. In addition, the geographical, topographical and source related features within and associated with the AQMA are expected to be relatively consistent with the monitoring results and are not expected to materially change in the near-term. As such the consistent

local trend in NO_2 is likely reflective of the AQMA and suggests a likelihood of future stability or gradual improvement to NO_2 into the short to medium term. Taking account of the available evidence it is considered that, **due to consistent and sustainable compliance to the annual mean AQO for NO_2, it is appropriate to revoke the current Church Village AQMA**.

4.3.4.6 Review of Cilfynydd AQMA

Figure 4-12 below provides a summary of information relevant to the Cilfynydd AQMA. Section 3.2 provides further information on each AQMA and Appendix D1: Current AQMA Boundary Maps provides detailed maps of the AQMA and associated monitoring locations.

Figure 4-22: Cilfynydd AQMA Summary

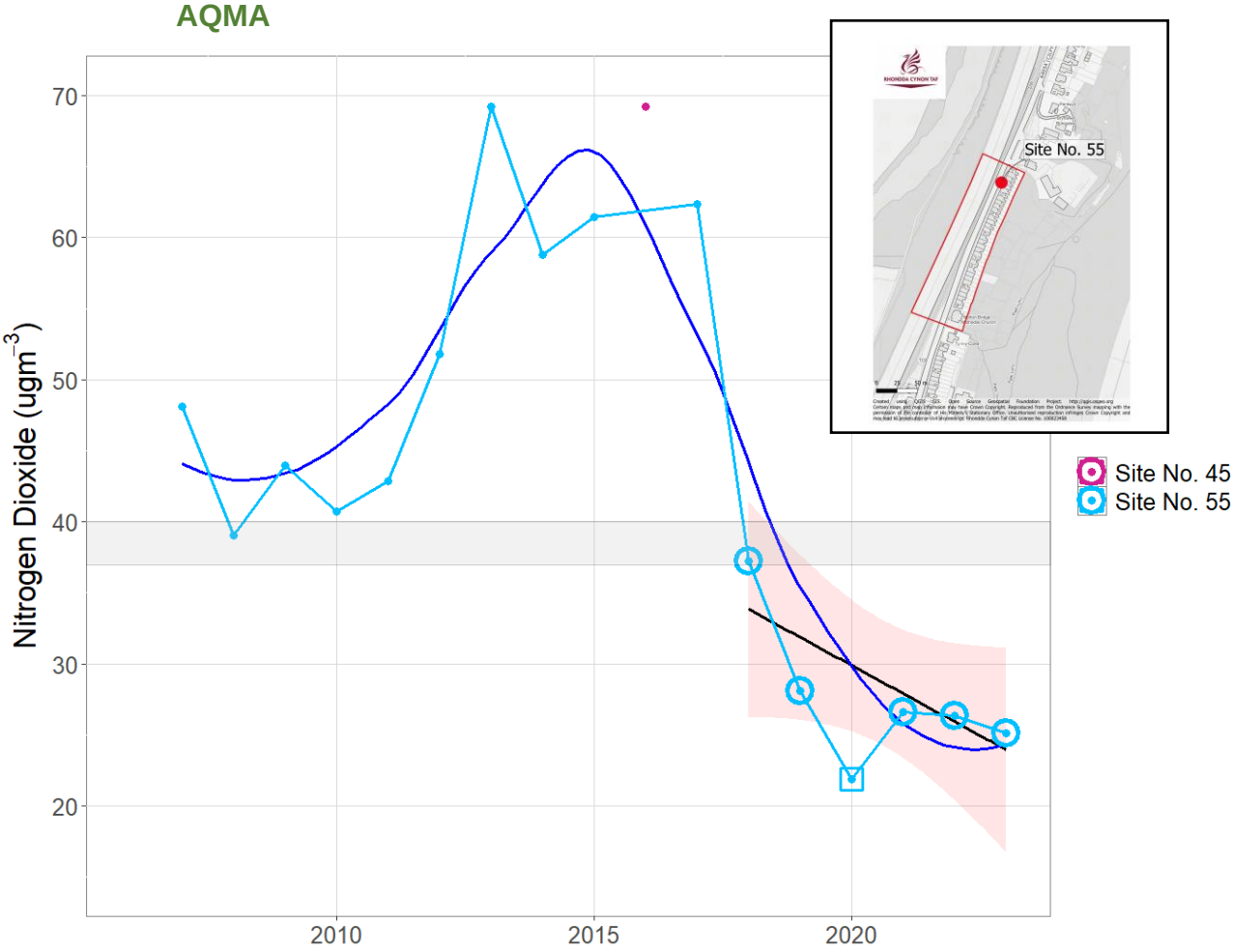
Events	**Declaration**	2007
	Amendment	2021: decreased to take account of sustained compliance along Coronation Tce.
Local Area		Centred upon and solely includes Pontshonnorton Rd, Cilfynydd which sits along the eastern flank of the Taf valley. At this location, Pontshonnorton Rd observes two-storey residential premises along its eastern side and the top of the retaining wall of the A470 along its western flank. Within the AQMA, Pontshonnorton Rd, provides access to local connecting routes to other parts of Cilfynydd, Pontypridd Town Centre and interchanges with the nearby A470 trunk road. Pontshonnorton Rd can experience a significant shortening of carriageway width due to the presence of parked vehicles and prescribes a 20 mph speed limit The AQMA sits directly above and leeward of the A470 strategic trunk road, managed on behalf of Welsh Government by its agent, which prescribes a 70 mph speed limit at this point. Southbound traffic along the A470 can experience reduced speed and peak time congestion as it approaches the Pontypridd interchanges to the south.
Est. No. of Properties		36
WIMD[19]		737th
NO_2 Local Sources & Influences (in order of likely importance)		A470: 48,386 AADTF[20]
		Pontshonnorton Rd: 5,000 - 10,000 AADTF[21]
		On street parking, in parts reducing width of useable carriageway
		Bus Stops
		Regional background

As discussed in Section 4.3.1, the general local trend in NO_2 is expected to be either of a continuing gradual improvement or, at worse, a potential stabilisation of the trend to a more static position. In 2018, parts of the A470 directly to the south of the AQMA were subject to

[19] Wales Index of Multiple Deprivation rank of the most deprived ward within the AQMA out of out of 1,909 Welsh wards, a lower rank indicating a greater relative level of deprivation.
[20] Annual Average Daily Traffic Flow based upon data collected in 2023
[21] Annual Average Daily Traffic Flow based upon data collected and projected pre-2020

a 50 mph speed limit as part of Welsh Government efforts to reduce NO_2 levels along parts of the A470s length. Although this change did not directly affect the part of the A470 directly associated with the AQMA, it may have resulted in a reduction in congestion southbound which in turn may have reduced levels of NO_2 within the AQMA. At present there are not believed to be any other granted or foreseen developments that would, if developed in the near-term, would be predicted to materially impact the current trend in NO_2 within the AQMA. Figure 4-23**Error! Reference source not found.** below displays a time plot of the recent annual means at relevant location(s) within the AQMA, as well as the area between 36 μgm^{-3} and 40 μgm^{-3} shaded in grey. The overall NO_2 trend line for monitoring locations within the AQMA is provided in blue and the most recent five-year trend slope (excluding 2020) is provided in a solid black line with the associated range of uncertainty as a red shaded area.

Figure 4-23: Time Plot, with reference lines, of the annual mean for NO_2 at Cilfynydd AQMA



The above graph demonstrates, as highlighted by the blue trend line, the recent significantly improving position with decreasing levels of NO_2 since 2018. As expected, a noticeable decrease in NO_2 levels can be observed in 2020, as a result of COVID related disruption at that time, as can the subsequent rebound as the disruption ended. The levels of NO_2 from 2021 onwards appear to be in broadly consistent alignment with the five-year trend, year-on-year -5% NO_2 decrease. Albeit this trend may be showing signs of shallowing to a potential future period of more gradual improvement, nonetheless, still indicating that current compliance may be maintained into the near future at least.

The levels of NO_2 at the monitoring location(s) within the AQMA are significantly less than the current annual mean AQO for NO_2, which provides a noticeable margin of compliance. In addition, the geographical, topographical and source related features within and associated with the AQMA are expected to be relatively consistent with the monitoring results and are not expected to materially change in the near-term. It is also expected that Welsh Government will maintain its own effective interventions, with respect to the A470, until such time as they are no longer needed. As such the consistent local trend in NO_2 is likely reflective of the AQMA and suggests a likelihood of future stability or gradual improvement to NO_2 into the short to medium term. Taking account of the available evidence it is considered that, **due to consistent and sustainable compliance to the annual mean AQO for NO_2, it is appropriate to revoke the current Cilfynydd AQMA**.

4.3.4.7 Review of Llanharan AQMA

Figure 4-12 below provides a summary of information relevant to the Llanharan AQMA. Section 3.2 provides further information on each AQMA and Appendix D1: Current AQMA Boundary Maps provides detailed maps of the AQMA and associated monitoring locations.

Figure 4-24: Llanharan AQMA Summary

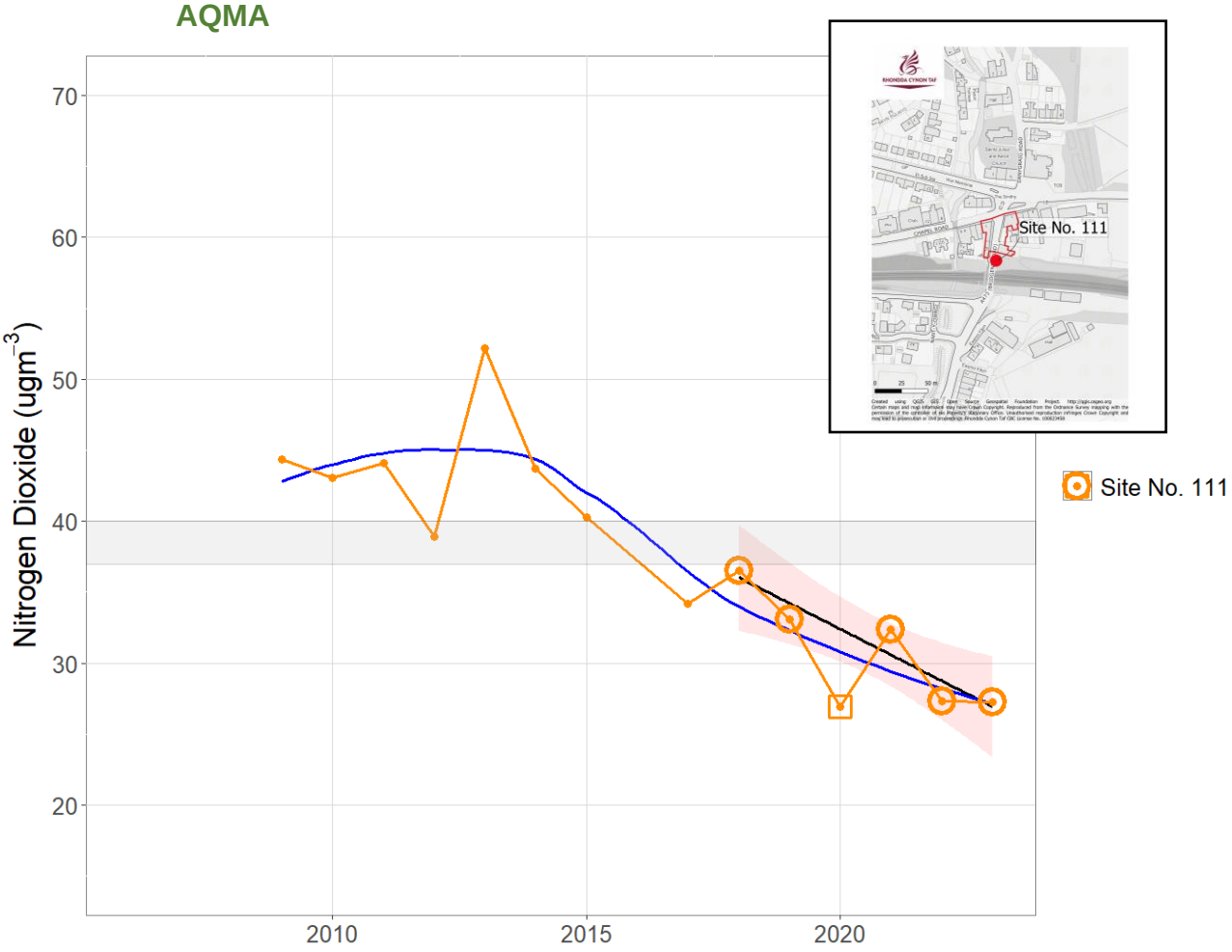
Events	**Declaration**	2016
	Amendment	None
Local Area		Centred upon a chicane, as it bridges the Swansea-Paddington mainline railway, of Bridgend Rd, Llanharan which sits within the relatively open Taf vale. At this location, Bridgend Rd is bordered by two-storey residential and some commercial premises. Within the AQMA, Bridgend Rd provides access to local connecting routes to other parts of Llanharan, neighbouring communities and the regionally important Bridged-Llantrisant highway corridor. The part of the highway within the AQMA observes a narrow carriageway, which in combination with the hard cornering required by the bridging of the below railway, can result in an impediment to HDV traffic and resultant congestion. Bridgend Rd prescribes a new 20 mph speed limit.
Est. No. of Properties		11
WIMD[22]		657th
NO_2 Local Sources & Influences (in order of likely importance)		10,262 AADTF[23]
		Narrow carriage way causing impediment to some traffic
		Limited street-canyon
		Mainline railway
		Regional background

As discussed in Section 4.3.1, the general local trend in NO_2 is expected to be either of a continuing gradual improvement or, at worse, a potential stabilisation of the trend to a more static position. It is understood that the Local Authority is giving detailed consideration to a

[22] Wales Index of Multiple Deprivation rank of the most deprived ward within the AQMA out of out of 1,909 Welsh wards, a lower rank indicating a greater relative level of deprivation.
[23] Annual Average Daily Traffic Flow based upon data collected in 2023

potential Llanharan relief road scheme to displace traffic from Bridgend Rd and onto a new peripheral road of modern design. Although no specific timeline has been formally adopted for approving and implementing the project, should it be implemented the relief road would be expected to support further significant reductions in local levels of NO_2 within the AQMA. Otherwise, at present there are not believed to be any other granted or foreseen developments that would, if developed in the near-term, would be predicted to materially impact the current trend in NO_2 within the AQMA. Figure 4-25**Error! Reference source not found.** below displays a time plot of the recent annual means at relevant location(s) within the AQMA, as well as the area between 36 μgm^{-3} and 40 μgm^{-3} shaded in grey. The overall NO_2 trend line for monitoring locations within the AQMA is provided in blue and the most recent five-year trend slope (excluding 2020) is provided in a solid black line with the associated range of uncertainty as a red shaded area.

Figure 4-25: Time Plot, with reference lines, of the annual mean for NO_2 at Llanharan AQMA



The above graph demonstrates, as highlighted by the blue trend line, an overall improving position, since 2017, with decreasing levels of NO_2 for an extended period. As expected, a substantial decrease in NO_2 levels can be observed in 2020, as a result of COVID related disruption at that time, as can the subsequent rebound as the disruption ended. The levels of NO_2 from 2021 onwards appear to be in broadly consistent alignment with the five-year trend, year-on-year -5.1% NO_2 decrease, indicating that current compliance may be maintained into the near future at least.

Given that the levels of NO_2 at the monitoring location(s) within the AQMA are significantly less than the current annual mean AQO for NO_2, which provides a noticeable margin of compliance. In addition, the geographical, topographical and source related features within and associated with the AQMA are expected to be relatively consistent with the monitoring results and are not expected to materially change in the near-term. As such the consistent local trend in NO_2 is likely reflective of the AQMA and suggests a likelihood of future stability or gradual improvement to NO_2 into the short to medium term. Taking account of the available evidence it is considered that, **due to consistent and sustainable compliance to the annual mean AQO for NO_2, it is appropriate to revoke the current Llanharan AQMA**.

4.3.4.8 Review of Mwyndy AQMA

Figure 4-12 below provides a summary of information relevant to the Mwyndy AQMA. Section 3.2 provides further information on each AQMA and Appendix D1: Current AQMA Boundary Maps provides detailed maps of the AQMA and associated monitoring locations.

Figure 4-26: Mwyndy AQMA Summary

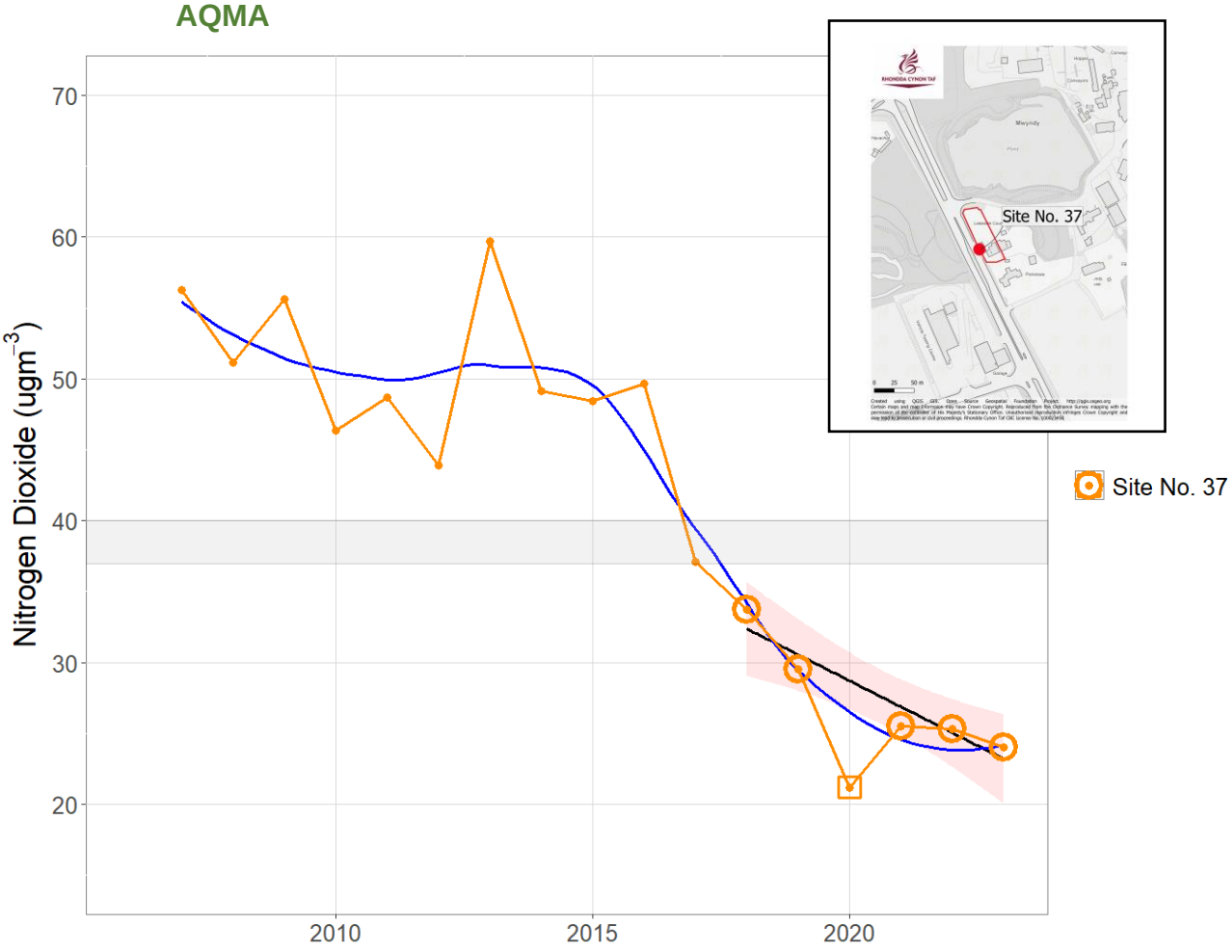
Events	**Declaration**	2007
	Amendment	2009: decreased to take account of adjacent sustained compliance.
Local Area		Centred upon a part of the A4119 as it approaches its junction with School Rd, Pontyclun and further to the south the M4, sitting within the relatively open Taf vale. At this location, the A4119 is bordered by sporadic detached two-storey residential premises. Within the AQMA, the A4119 provides access to local connecting routes as well as regional access to the M4. The part of the highway within the AQMA observes a duel-carriageway and is integrated with a traffic-lights managed junction. During peak commuting periods significant local congestion can arise from traffic flow south towards the M4. The A4119 within the AQMA prescribes a 40 mph speed limit.
Est. No. of Properties		1
WIMD[24]		1884th
NO_2 Local Sources & Influences (in order of likely importance)		36,379 AADTF[25]
		Traffic-lights managed junction
		Related traffic congestion due to heavily used surrounding highway network
		Regional background

As discussed in Section 4.3.1, the general local trend in NO_2 is expected to be either of a continuing gradual improvement or, at worse, a potential stabilisation of the trend to a more static position. During 2024 various highways safety infrastructure improvement schemes are expected to be delivered to sections of the A4119 directly to the north of the AQMA. These schemes deliver the introduction of additional traffic-lights controlled junctions at

[24] Wales Index of Multiple Deprivation rank of the most deprived ward within the AQMA out of out of 1,909 Welsh wards, a lower rank indicating a greater relative level of deprivation.
[25] Annual Average Daily Traffic Flow based upon data collected in 2023

certain pre-existing junctions. Although these schemes maybe expected to interrupt traffic flow along the A4119, they are unlikely to materially affect the prevalence of south bound congestion along the A4119 within the AQMA. Otherwise, at present there are not believed to be any other granted or foreseen developments that would, if developed in the near-term, would be predicted to materially impact the current trend in NO_2 within the AQMA. Figure 4-27**Error! Reference source not found.** below displays a time plot of the recent annual means at relevant location(s) within the AQMA, as well as the area between 36 μgm^{-3} and 40 μgm^{-3} shaded in grey. The overall NO_2 trend line for monitoring locations within the AQMA is provided in blue and the most recent five-year trend slope (excluding 2020) is provided in a solid black line with the associated range of uncertainty as a red shaded area.

Figure 4-27: Time Plot, with reference lines, of the annual mean for NO_2 at Mwyndy AQMA



Although the above graph indicates historically elevated levels of NO_2, including noticeable single-year peak in 2013, it also demonstrates, as highlighted by the blue trend line, an overall improving position with decreasing levels of NO_2 for an extended period. As expected, a substantial decrease in NO_2 levels can be observed in 2020, as a result of COVID related disruption at that time, as can the subsequent rebound as the disruption ended. The levels of NO_2 from 2021 onwards appear to be in broadly consistent alignment with the five-year trend, year-on-year -6.1% NO_2 decrease. Albeit this trend may be showing signs of shallowing to a potential future period of more gradual improvement, nonetheless, indicating that current compliance may be maintained into the near future at least.

Given that the levels of NO_2 at the monitoring location(s) within the AQMA are significantly less than the current annual mean AQO for NO_2, which provides a noticeable margin of compliance. In addition, the geographical, topographical and source related features within and associated with the AQMA are expected to be relatively consistent with the monitoring results and are not expected to materially change in the near-term. As such the consistent local trend in NO_2 is likely reflective of the AQMA and suggests a likelihood of future stability or gradual improvement to NO_2 into the short to medium term. Taking account of the available evidence it is considered that, **due to consistent and sustainable compliance to the annual mean AQO for NO_2, it is appropriate to revoke the current Mwydny AQMA**.

4.3.4.9 Review of Nantgarw AQMA

Figure 4-12 below provides a summary of information relevant to the Nantgarw AQMA. Section 3.2 provides further information on each AQMA and Appendix D1: Current AQMA Boundary Maps provides detailed maps of the AQMA and associated monitoring locations.

Figure 4-28: Nantgarw AQMA Summary

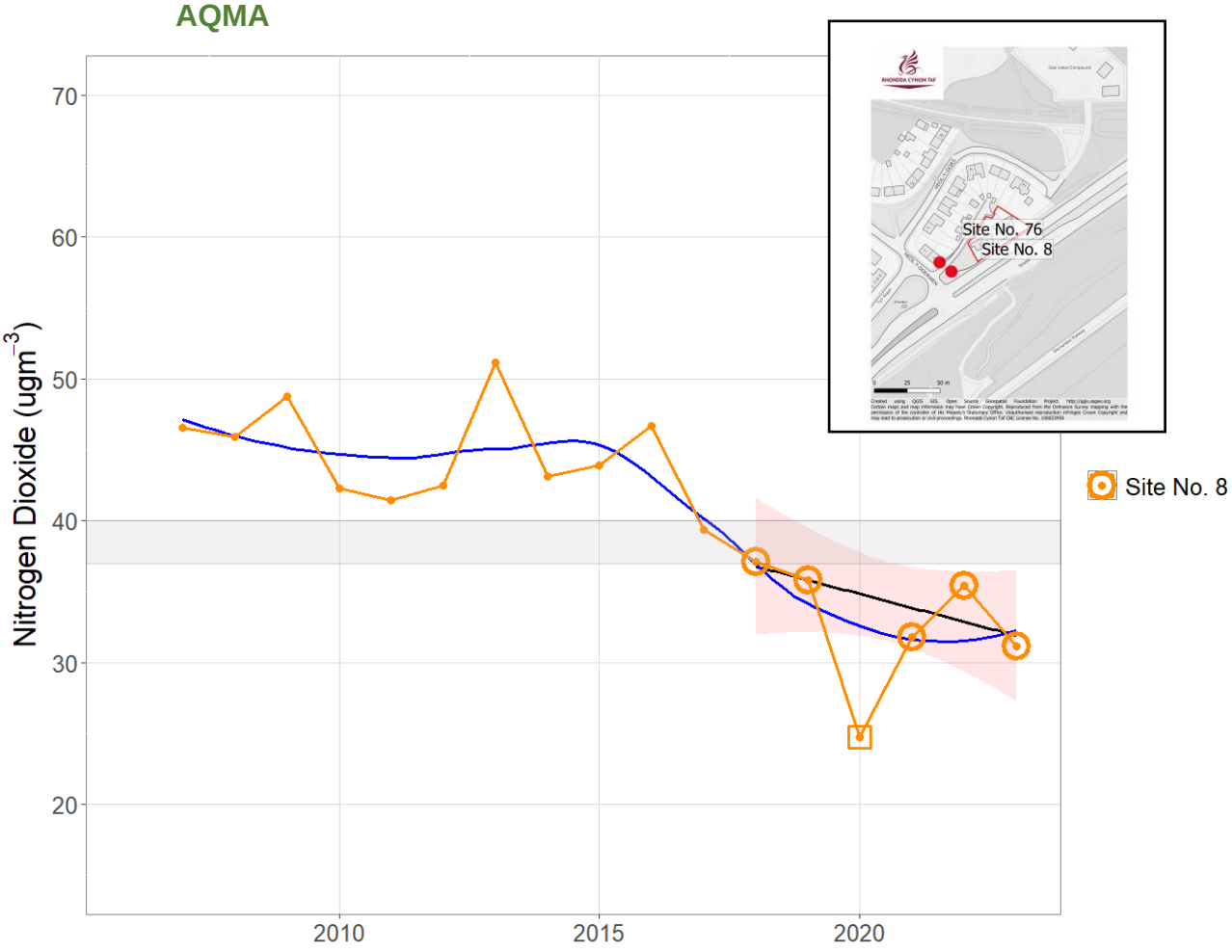
Events	**Declaration**	2007
	Amendment	2009: decreased to take account of adjacent sustained compliance at Heol-y-gors.
Local Area		Centred upon a part of the A468 as it approaches its junction with Heol-y-dderwen, Nantgarw, sitting along the base of a pass between the Taf and Rhymney valleys. At this location, the A468 has an open aspect with some residential premises in proximity to the north. Within the AQMA, the A468 provides access between the Rhymney Valley's and the A470 trunk road. The part of the highway within the AQMA observes a duel-carriageway, an incline and is integrated with a traffic-lights managed junction. During peak commuting periods significant local congestion can arise from traffic flow towards the A470 to the west. The A468 within the AQMA prescribes a 40 mph speed limit.
Est. No. of Properties		8
WIMD[26]		1308th
NO_2 Local Sources & Influences (in order of likely importance)		41,903 AADTF[27]
		Traffic-lights managed junction
		Approx. 4.5% incline to highway west to east
		Related traffic congestion due to heavily used surrounding highway network
		Regional background

As discussed in Section 4.3.1, the general local trend in NO_2 is expected to be either of a continuing gradual improvement or, at worse, a potential stabilisation of the trend to a more static position. Otherwise at present there are not believed to be any other granted or foreseen developments that would, if developed in the near-term, would be predicted to

[26] Wales Index of Multiple Deprivation rank of the most deprived ward within the AQMA out of out of 1,909 Welsh wards, a lower rank indicating a greater relative level of deprivation.
[27] Annual Average Daily Traffic Flow based upon data collected in 2023

materially impact the current trend in NO_2 within the AQMA. Figure 4-29**Error! Reference source not found.** below displays a time plot of the recent annual means at relevant location(s) within the AQMA, as well as the area between 36 μgm^{-3} and 40 μgm^{-3} shaded in grey. The overall NO_2 trend line for monitoring locations within the AQMA is provided in blue and the most recent five-year trend slope (excluding 2020) is provided in a solid black line with the associated range of uncertainty as a red shaded area.

Figure 4-29: Time Plot, with reference lines, of the annual mean for NO_2 at Nantgarw AQMA



Although the above graph indicates historically elevated levels of NO_2, it also demonstrates, as highlighted by the blue trend line, a more recent overall improving position with decreasing levels of NO_2 since 2016. As expected, a substantial decrease in NO_2 levels can be observed in 2020, as a result of COVID related disruption at that time, as can the subsequent rebound as the disruption ended. The levels of NO_2 from 2021 onwards appear to be in broadly consistent alignment with the five-year trend, year-on-year -2.6% NO_2 decrease, indicating that current compliance may be maintained into the near future at least.

Given that the levels of NO_2 at the monitoring location(s) within the AQMA are significantly less than the current annual mean AQO for NO_2, which provides a noticeable margin of compliance. In addition, the geographical, topographical and source related features within and associated with the AQMA are expected to be relatively consistent with the monitoring results and are not expected to materially change in the near-term. As such the consistent

local trend in NO_2 is likely reflective of the AQMA and suggests a likelihood of future stability or gradual improvement to NO_2 into the short to medium term. Taking account of the available evidence it is considered that, **due to consistent and sustainable compliance to the annual mean AQO for NO_2, it is appropriate to revoke the current Nantgarw AQMA**.

4.3.4.10 Review of Pontypridd Town Centre AQMA

Figure 4-12 below provides a summary of information relevant to the Pontypridd Town Centre AQMA. Section 3.2 provides further information on each AQMA and Appendix D1: Current AQMA Boundary Maps provides detailed maps of the AQMA and associated monitoring locations.

Figure 4-30: Pontypridd Town Centre AQMA Summary

Events	**Declaration**	2007
	Amendment	2009: decreased to take account of sustained compliance along High St and Taff St
		2021: decreased to take account of sustained compliance along parts of Gelliwastad Rd
Local Area		Centred upon part of Gelliwastad Rd and Morgan St, Pontypridd which sits along the base of the Taf valley. At this location, Gelliwastad Rd observes two-storey and three-storey commercial premises (with the potential for above ground floor residential areas) and taller civic buildings along its sides. Within the AQMA, Gelliwastad Rd provides access to the regional commercial hub of Pontypridd Town Centre as well as through-traffic from the Rhondda valleys to the northern Pontypridd A470 interchange. Morgans St, has a largely open aspect with some premises directly abutting the highway. Morgan St provides access to both Pontypridd Bus Station and some town centre car parking. Gelliwastad Rd is integrated with a traffic-lights managed junction and traffic-lights managed pedestrian crossings. Both highways prescribe to a new 20 mph speed limit
Est. No. of Properties		93
WIMD[28]		994th
NO_2 Local Sources & Influences (in order of likely importance)		Gelliwastad Rd: 12,452 AADTF[29]
		Morgan St: 1,000 – 5,000 AADTF[30]
		Higher number of Heavy Duty Vehicles
		Bus waiting within Pontypridd Bus Station
		Dispersal of emissions from nearby A470
		Regional background

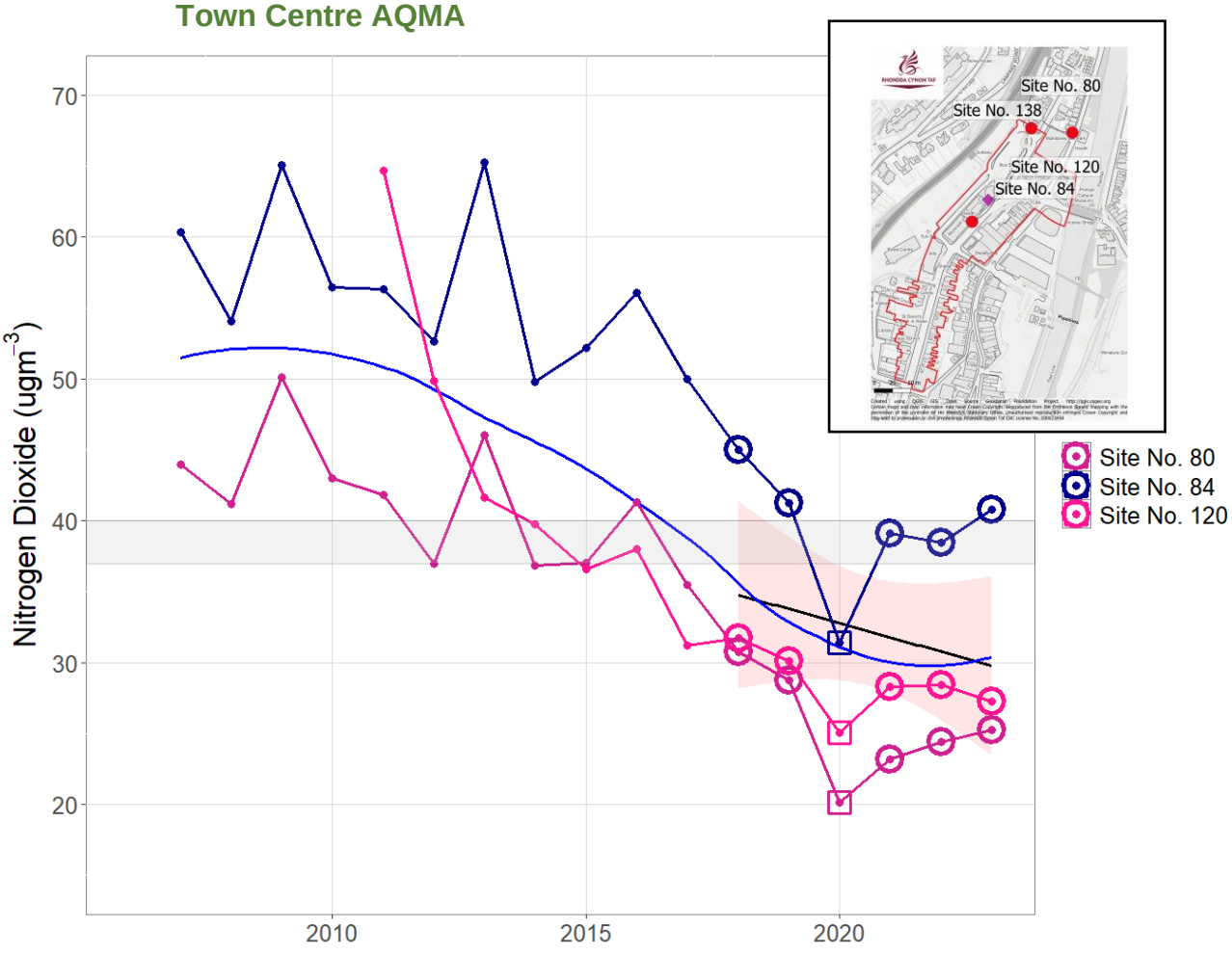
As discussed in Section 4.3.1, the general local trend in NO_2 is expected to be either of a continuing gradual improvement or, at worse, a potential stabilisation of the trend to a more

[28] Wales Index of Multiple Deprivation rank of the most deprived ward within the AQMA out of out of 1,909 Welsh wards, a lower rank indicating a greater relative level of deprivation.
[29] Annual Average Daily Traffic Flow based upon data collected in 2023
[30] Annual Average Daily Traffic Flow based upon data collected and projected pre-2020

static position. Taking account of Welsh Government comments, it is expected that the composition of the public service bus fleet, which comprises a significant number of vehicles movements along Morgan St as they access Pontypridd Bus Station, will transition to electric or similar alternative vehicles potentially as early as 2028. It is also understood some provisional reserve measures within the Welsh Government supplemental plan to tackle levels of NO_2 associated with the A470, could have a deleterious impact upon air quality within the neighbouring urban area, including Pontypridd Town Centre. However, it is expected should any such measures be advanced for further consideration, they would be rigorously assessed to determine any likely impact and amended accordingly.

Otherwise at present there are not believed to be any other granted or foreseen developments that would, if developed in the near-term, would be predicted to materially impact the current trend in NO_2 within the AQMA. Figure 4-31**Error! Reference source not found.** below displays a time plot of the recent annual means at relevant location(s) within the AQMA, as well as the area between 36 μgm^{-3} and 40 μgm^{-3} shaded in grey. The overall NO_2 trend line for monitoring locations within the AQMA is provided in blue and the most recent five-year trend slope (excluding 2020) is provided in a solid black line with the associated range of uncertainty as a red shaded area.

Figure 4-31: Time Plot, with reference lines, of the annual mean for NO_2 at Pontypridd Town Centre AQMA

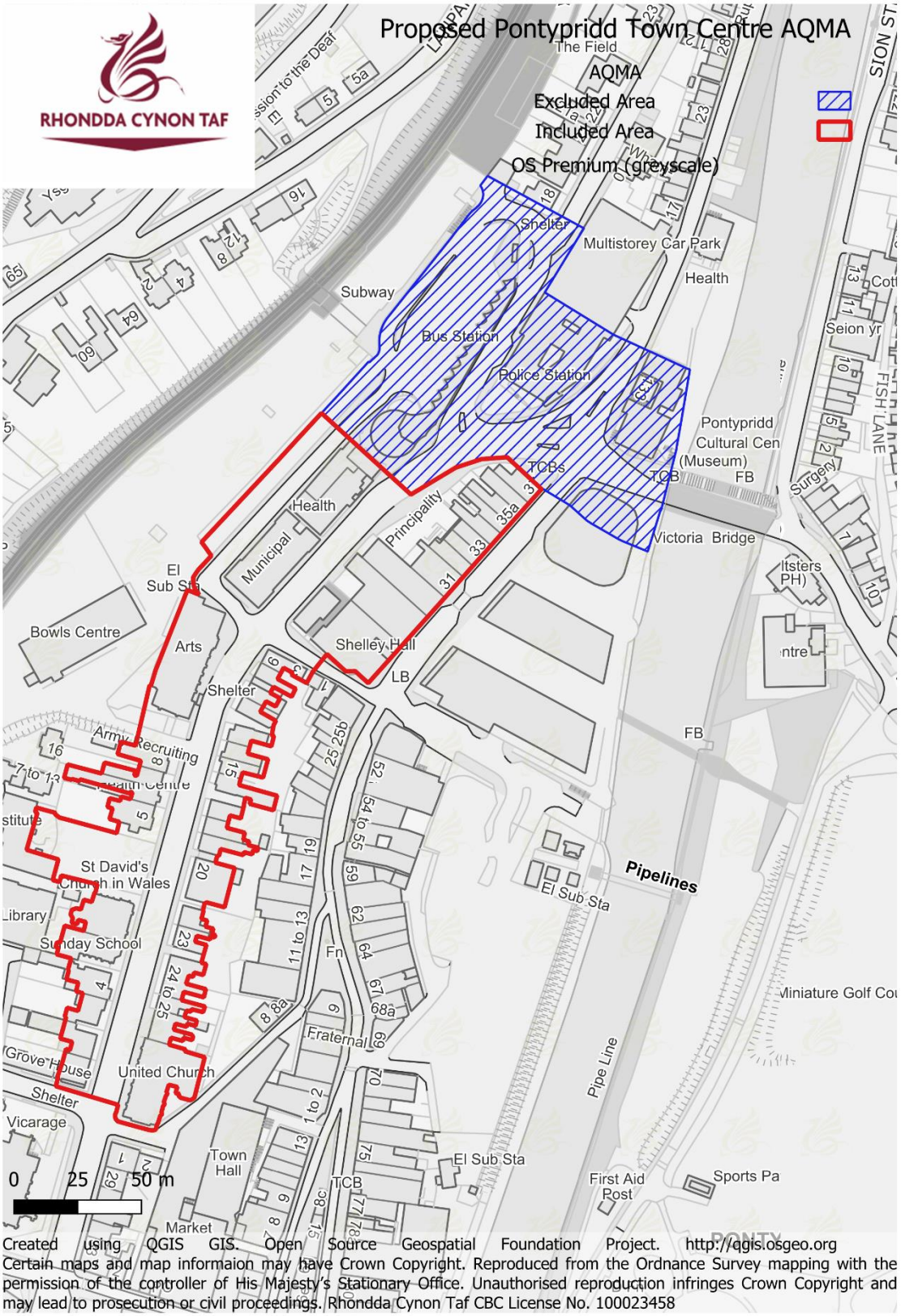


The above graph demonstrates an historic period of elevated levels of NO_2 within part of the Pontypridd Town Centre AQMA associated with Gelliwastad Rd and although improvements have been made it is expected that this part of the AQMA, associated with Site No. 84, will likely remain non-compliant or potentially non-compliant into the near future. With regard to Pontypridd Bus Station and Morgan St, the level of NO_2 has been consistently relatively lower as shown by Site Nos. 80 and 84 that bracket this area. In addition, as highlighted by the blue trend line, an overall improving position with decreasing levels of NO_2 for an extended period has been observed. As expected, a noticeable decrease in NO_2 levels can be observed in 2020, as a result of COVID related disruption at that time, as can the subsequent rebound as the disruption ended. The levels of NO_2 from 2021 onwards appear to be in broadly consistent alignment with the mean five-year trend, year-on-year -1.2% NO_2 decrease.

The area of the AQMA within Gelliwastad Rd is believed to experience differing influences in comparisons to Morgan St and Pontypridd Bus Station, which supports understanding of the differing achievement of compliance in only part of the AQMA. The levels of NO_2 at Morgan St and Pontypridd Bus Station are significantly less than the current annual mean AQO for NO_2, which provides a noticeable margin of compliance. In addition, the geographical, topographical and source related features within and associated with this part of the AQMA are expected to be relatively consistent with these monitoring results and are not expected to materially change in the near-term. Furthermore, the consistent local trend in NO_2 is likely reflective of the AQMA and suggests a likelihood of future stability or gradual improvement to NO_2 into the short to medium term at Morgan St. Taking account of the available evidence it is considered that, **due to consistent and sustainable compliance to the annual mean AQO for NO_2 within part of the AQMA as it encompasses Morgan St, it is appropriate to amend the current Pontypridd Town Centre AQMA so as to exclude Morgan St.**

Figure 4-32 provides a map indicating the proposed future AQMA demarcated in red and the proposed area to be excluded from the extant AQMA demarcated and hatched in blue. If enacted the amendment would reduce the number of premises within the Pontypridd Town Centre AQMA by approximately five.

Figure 4-32: Map of proposed amended Pontypridd Town Centre AQMA



4.3.4.11 Review of Treforest AQMA

Figure 4-12 below provides a summary of information relevant to the Treforest AQMA. Section 3.2 provides further information on each AQMA and Appendix D1: Current AQMA Boundary Maps provides detailed maps of the AQMA and associated monitoring locations.

Figure 4-33: Treforest AQMA Summary

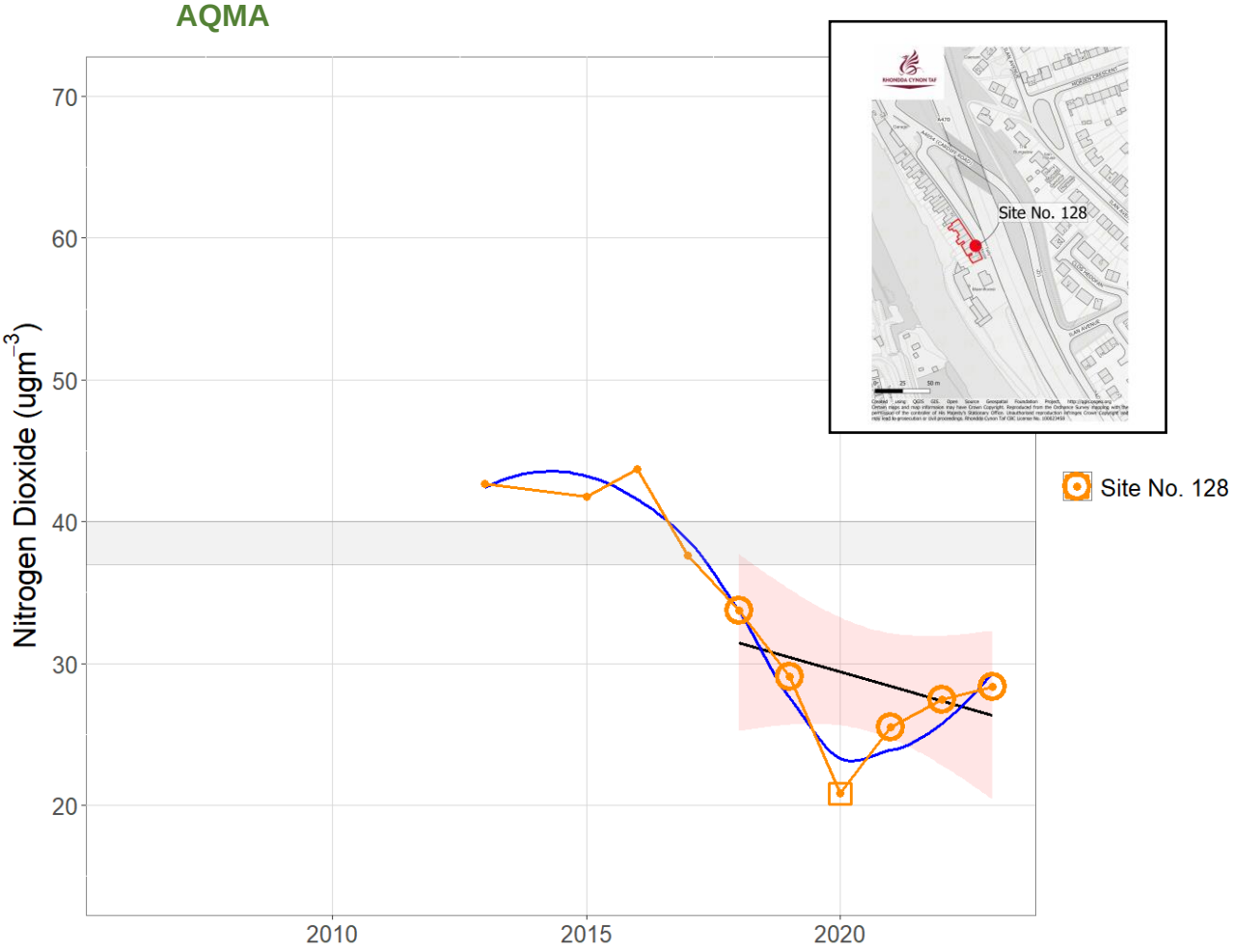
Events	**Declaration**	2018
	Amendment	None
Local Area		Centred upon and solely includes part of Cardiff Rd, Treforest which sits along the base of the Taf valley. At this location, Cardiff Rd observes two-storey residential premises along its western side and the bottom of the retaining wall of the A470 along its eastern flank, placing the A470 carriageway at approximately 1st floor height. Within the AQMA, Cardiff Rd is a dead end road that provides immediate access to local premises. Cardiff road sits directly below and windward of the A470 strategic trunk road, managed on behalf of Welsh Government by its agent, prescribed a 50 mph speed limit. Cardiff Rd prescribes a new 20 mph speed limit.
Est. No. of Properties		8
WIMD[31]		937th
NO_2 Local Sources & Influences		A470: 63,677 AADTF[32]
		Cardiff Rd: <200 AADTF[33]
(in order of likely importance)		Regional background

As discussed in Section 4.3.1, the general local trend in NO_2 is expected to be either of a continuing gradual improvement or, at worse, a potential stabilisation of the trend to a more static position. In 2018, part of the A470 directly adjacent to the AQMA was subject to a 50 mph speed limit as part of Welsh Government efforts to reduce NO_2 levels along parts of its length. This change is likely have had an effect in both reducing emissions directly and potentially reducing the incidence and impact of chronic congestion from traffic along the A470, as it approaches the Pontypridd interchanges to the north. Otherwise, at present there are not believed to be any other granted or foreseen developments that would, if developed in the near-term, would be predicted to materially impact the current trend in NO_2 within the AQMA. Figure 4-34**Error! Reference source not found.** below displays a time plot of the recent annual means at relevant location(s) within the AQMA, as well as the area between 36 μgm^{-3} and 40 μgm^{-3} shaded in grey. The overall NO_2 trend line for monitoring locations within the AQMA is provided in blue and the most recent five-year trend slope (excluding

[31] Wales Index of Multiple Deprivation rank of the most deprived ward within the AQMA out of out of 1,909 Welsh wards, a lower rank indicating a greater relative level of deprivation.
[32] Annual Average Daily Traffic Flow based upon data collected in 2023
[33] Annual Average Daily Traffic Flow based upon data collected and projected pre-2020

2020) is provided in a solid black line with the associated range of uncertainty as a red shaded area.

Figure 4-34: Time Plot, with reference lines, of the annual mean for NO_2 at Treforest AQMA



The above graph demonstrates, as highlighted by the blue trend line, an overall improving position with decreasing levels of NO_2 for an extended period. As expected, a noticeable decrease in NO_2 levels can be observed in 2020, as a result of COVID related disruption at that time, as can the subsequent rebound as the disruption ended. The levels of NO_2 from 2021 onwards appear to be in broadly consistent alignment with the five-year trend, year-on-year -1.2% NO_2 decrease, indicating that current compliance may be maintained into the near future at least.

Given that the levels of NO_2 at the monitoring location(s) within the AQMA are significantly less than the current annual mean AQO for NO_2, which provides a noticeable margin of compliance. In addition, the geographical, topographical and source related features within and associated with the AQMA are expected to be relatively consistent with the monitoring results and are not expected to materially change in the near-term. It is also expected that Welsh Government will maintain its own effective interventions, with respect to the A470, until such time as they are no longer needed. As such the consistent local trend in NO_2 is likely reflective of the AQMA and suggests a likelihood of future stability or gradual improvement to NO_2 into the short to medium term. Taking account of the available evidence it is

considered that, **due to consistent and sustainable compliance to the annual mean AQO for NO_2, it is appropriate to revoke the current Treforest AQMA**.

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[34] (lower the better) 5th out of 6 for PM_{10}.

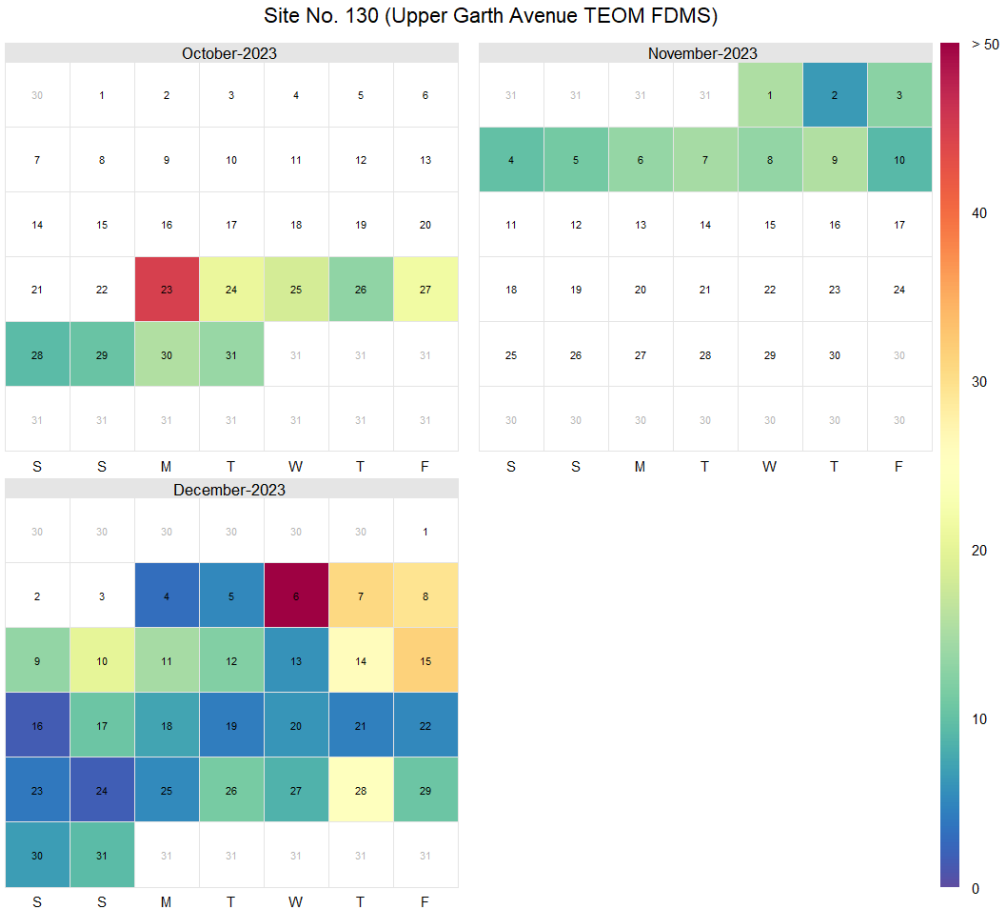
The Local Authority did not monitor PM_{10} within the Rhondda Cynon Taf general urban environment in 2023.

During 2023 the Local Authority did undertake very limited PM_{10} monitoring within Glyncoch, at Site No. 130 (Upper Garth Avenue TEOM FDMS), a suburban community within the Taf Valley and in close proximity to the active Craig Yr Hesg Quarry. Apart from variation in the production level and adhoc temporary pausing of works at Craig Yr Hesg Quarry, it is believed that during 2023, Glyncoch was not subject to any unexpected influences derived from a significant change in local circumstance or a locally transient event. For most of 2023 the monitoring of PM_{10} at Site No. 130 was temporarily suspended. As, towards the end of 2022, the instrumentation at the air quality station had come to the end of its functionality and there was uncertainty as to if the quarrying of mineral at Craig Yr Hesg Quarry would continue beyond the near-term, given related planning applications to extend the life-span and extent of the quarry had been refused by the Local Authority. However, subsequently the extension and continued operation of Craig Yr Hesg Quarry was consented by the Welsh Minister for Climate Change upon appeal. In light of this reversal, and the now permitted extension of quarrying activity at Craig Yr Hesg Quarry, towards the end of 2023 the Local Authority installed new upgraded monitoring equipment at its existing monitoring location. Although the monitoring of PM_{10} has been recommenced, as a result of the significantly reduced data capture during 2023, only limited consideration of the 2023 data set can be made.

Figure 4-35 provides a calendar plot identifying, where limited data is available, when the 24-hour daily means of PM_{10} in 2023 was at its highest at Site No. 130 (Upper Garth Avenue TEOM FDMS).

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

Figure 4-35: Calendar Plot of the 24-hour daily means of PM_{10} at Site No. 130 (Upper Garth Avenue TEOM FDMS) in part of 2023



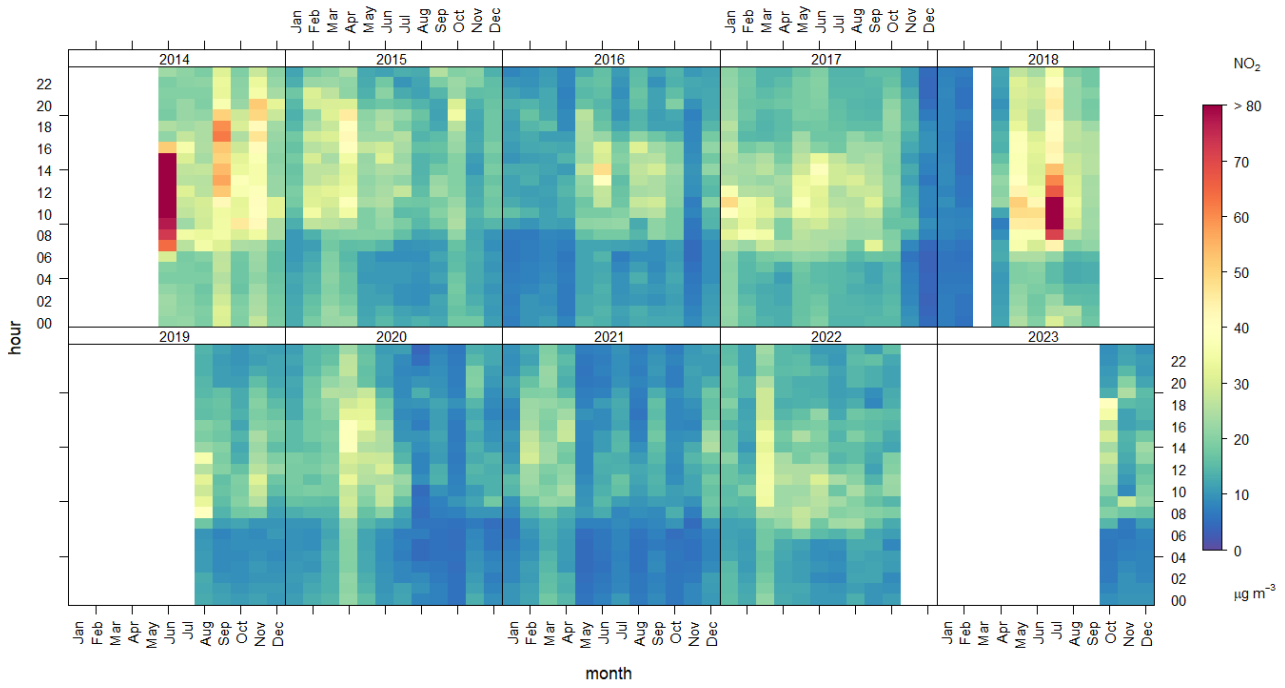
The calendar plot illustrates that, in general, occasions of elevated PM_{10} levels at Glyncoch were relatively infrequent for the limited period when data was available. Nonetheless, it also suggests that occasional elevated levels of PM_{10} can be experienced. The calendar plot doesn't indicate wildly varying results but rather that the highest levels of PM_{10} often appear to be clustered to several consecutive days at a time.

Nationally levels of PM_{10} have been persistently declining in the long-term, despite a period of stability between 2015 and 2019, with "the average roadside PM_{10} concentration [falling] to the lowest value in the [nationally monitored] time series [in 2023]" [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 4-36 below, is a useful way of examining the temporal relationship of the trend in PM_{10} over each year between 2014 and 2023. The trend level plot indicates the 2023 period, where data was available data, may have experienced similar levels of PM_{10} as that experienced during the recent past. The trend level plot does show some 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. 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 average, even where the underlying sources of PM_{10} may remain consistent or are only changing incrementally.

Figure 4-36: Trend Level Plot of PM_{10} measured at Site No. 130 (Upper Garth Avenue TEOM FDMS) from 2014 to 2023.



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 require long duration data sets. a reference line corresponding to the 24-hour daily mean AQO for PM_{10} of no more than 35 times in a 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).

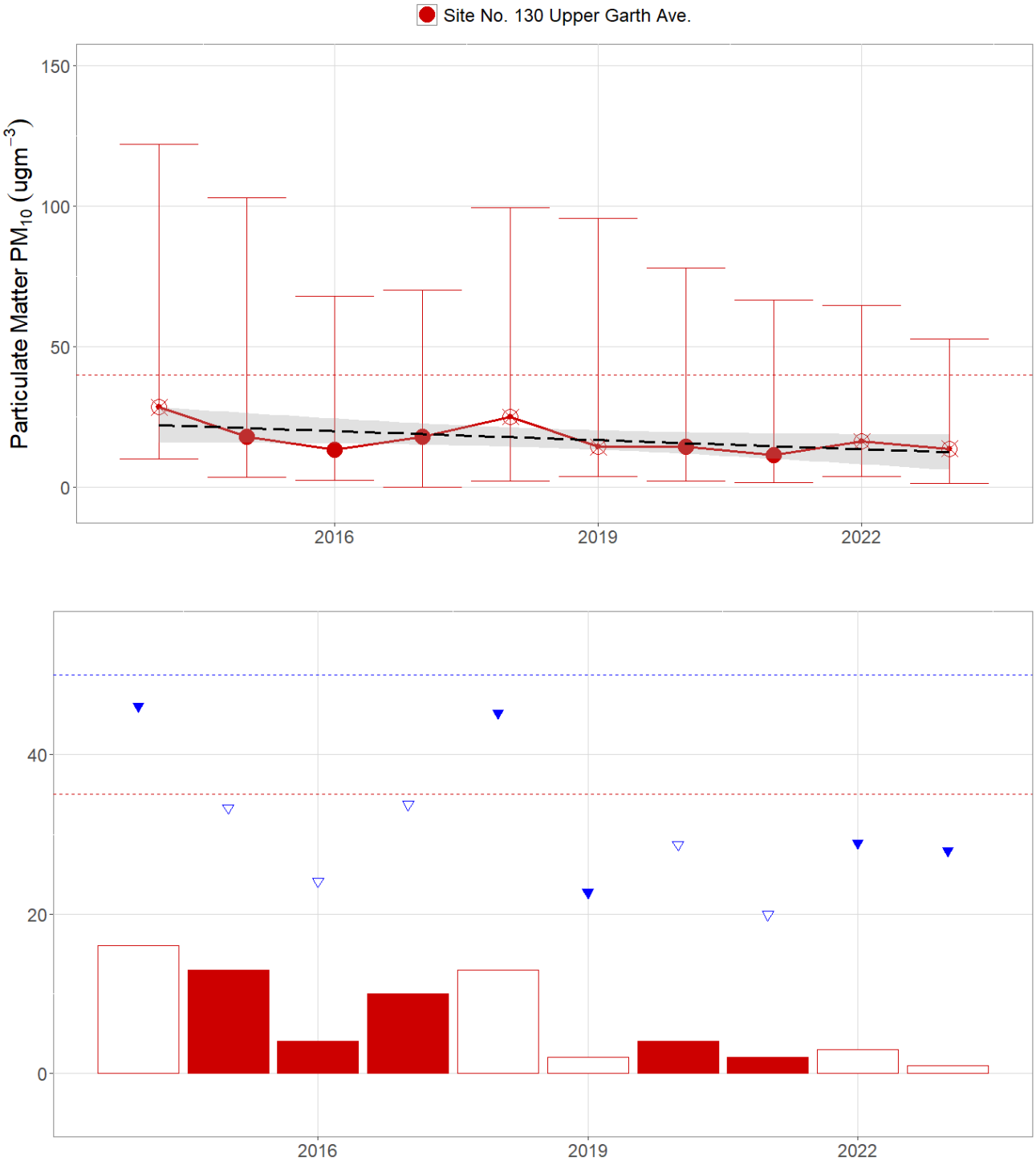
Figure 4-37 below produces time plots of Site No. 130 (Upper Garth Avenue). The top time plot displays the PM_{10} annual mean (solid line with solid dots (when the corresponding data capture is 75% or greater) or empty dots (when the corresponding data capture is less than 75%), the associated straight-fit trend line[35] (dashed black line and associated grey shaded area), the intra-year 24-hour daily mean spread (vertical bars and whiskers) and a reference line corresponding to the annual mean AQO for PM_{10} of 40 μgm^{-3} (dashed red line).

The bottom 'bar and points' plot displays 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 red 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 blue triangles when the corresponding capture was 85% or greater), with a

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

reference line corresponding to the 24-hour daily mean AQO for PM_{10} of no more than 35 times in a 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 4-37: Time Plot of the annual mean PM_{10} at Site No. 130 (Upper Garth Avenue) from 2014 to 2023.



Site No. 130 (Upper Garth Avenue) appears to continue to experience an undulating annual mean (solid line in top time plot), subject to a degree of oscillation (ranging between 11.5

μgm^{-3} to 25.1 μgm^{-3} over the recent past) around a relatively consistent long-term average (shaded grey area in top time plot). Historically, it is also apparent that the 24-hour daily mean spreads (the whiskers in top time plot) can be subject to some year-to-year change, although in the recent past this may have narrowed somewhat.

In addition, the number of occasions the 24-hour daily mean AQO for PM_{10} is greater than 50 μgm^{-3} (the bottom bar and point plot) are generally low but continues to show a degree of variability.

Due to the very limited amount of data available for 2023 it is not possible to provide inference as to its context within the recent past. However, it is expected that more extensive monitoring results at Glyncoch for PM_{10} will become available in 2024 ready for analysis and commentary within the next annual air quality progress report.

4.3.6 Particulate Matter [$PM_{2.5}$]

In looking to support understanding and further inform the local community, the Local Authority has, during the end of 2023, implemented the monitoring of $PM_{2.5}$ at Glyncoch with substantive monitoring results expected to become available in 2024, ready for analysis and commentary within the next annual air quality progress report.

4.4 Summary of Compliance with AQOs as of 2023

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 the **following AQMAs have achieved sustainable compliance to the annual mean AQO for NO_2 and may now be revoked:**

- Aberdare Town Centre Air Quality Management Area
- Broadway Air Quality Management Area
- Church Village Air Quality Management Area
- Cilfynydd Air Quality Management Area
- Llanharan Air Quality Management Area
- Llwynypia Air Quality Management Area
- Mwyndy Air Quality Management Area
- Nantgarw Air Quality Management Area
- Tonyrefail Air Quality Management Area
- Treforest Air Quality Management Area

It has also determined on the basis of consistent monitoring data and understanding over a number of years, that a **part of the following AQMA has achieved sustainable compliance to the annual mean AQO for NO_2 and that the AQMA maybe amended in size** to reflect the reduced area of non-compliance:

- Pontypridd Town Centre Air Quality Management Area

In maintaining a precautionary approach, it is considered appropriate to **retain, as they currently are, the following remaining AQMAs for possible non-compliance to an AQO for NO_2**

- Cymmer Air Quality Management Area
- Mt Ash Town Centre Air Quality Management Area
- Nightingales Bush Air Quality Management Area
- Tylorstown 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)

It is believed that there have been no newly built local roads or related transport developments, in 2023, that would likely significantly elevate levels of air pollution within a relevant population.

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 observe elevated levels of NO_2, that may be non-compliant to the respective EU Limit Values. 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 for the closely related Cilfynydd, Nightingales Bush, Pontypridd Town Centre and Treforest 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.

The impact of this action so far has been reviewed [21] on behalf of Welsh Government and its specific implications, with respect to the Cilfynydd, Nightingales Bush and Treforest AQMAs have also been examined, by the Local Authority, within its 2020 Annual Air Quality Progress Report and also within the reviews of specific AQMAs within Section 4.3.4 of this report. Prior to 2020 and associated coronavirus related disruption, it was estimated that the benefit of the current vehicle speed reductions may equate to a 2.8μgm^{-3} lowering in the level of NO_2 along the intervention area, with the greatest impact likely to be experienced where the original maximum speed limit was being achieved or where chronic congestion manifested. However, along parts of the A470, often associated with its junctions, where slower speeds predominated and at times significant congestion can still be encountered, the measure may have been less impactful.

In addition to the maximum speed reduction action, certain “precautionary retained measures” have also been outlined, with Welsh Government reserving the right to implement them if deemed necessary to do so. In respect to the A470 these measures currently include additional air quality barriers at certain points, improved park & ride provision and a Clean Air Zone. It is understood that preliminary work to enable, if necessary, these precautionary retained measures have also been progressed. With specific regard to the implementation of a Clean Air Zone it has been acknowledged that the measure could be “detrimental to Pontypridd based on current modelling information and routes available for traffic to use” [21]. As such the Local Authority retains reservations about the implementation of a Clean Air Zone and awaits the outcome of further work that may help to explore its likely full impact.

Subsequent to the implementation of the maximum speed reduction action, the Welsh Government has acknowledged [22] the possibility that additional areas, between the Tongwynlais & Upper Boat Junctions of the A470, may be at risk of becoming non-compliant with the EU Limit Values for NO_2. It is understood that further investigation may be ongoing to consider the appropriateness of targeted measures, such as extension of the 50 mph speed restriction, that may be considered necessary to reduce, as quickly as reasonable, locally observed NO_2.

5.1.2 Non-Trunk Road Traffic Sources

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 [23] updates on a number of major highways projects 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 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	Given the Welsh Government 'programme of future road investment', this scheme is under review as to whether a revised scheme, with the inclusion of the Llanharan Sustainable Transport Corridor, could be considered that could conform to possible future delivery requirements that may be supported by Welsh Government or if alternative funding mechanisms can be applied.	Llanharan	Potential major improvement within AQMA
Ely Valley Road Dualling	Providing additional carriageways along A4119 north of Royal Glamorgan Hospital, to improve capacity and reduce the likelihood of peak traffic congestion.	£5.8M investment to progress construction phase with expected completion in 2025. This scheme has not been subject to review by the 'programme of future road investment' as it is now being delivered via alternative funding mechanisms.	Tonyrefail	Potential minor improvement within AQMA
Core-Valleylines Railway Park & Ride	Providing additional and improved park & ride capacity at strategic railways stations to increase public transport use. Several Park & ride	Continuous improvement programme of works having regard to Metro delivery	Cilfynydd Llanharan Mt Ash Mwyndy	Potential minor improvement within AQMAs due to reduction in longer-

Project	Description	Status	Affected AQMA	Qualitative Impact
	schemes have already been advanced.		Nightingales Bush Treforest	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	Llwynypia	Uncertain impact dependent upon desired scheme
North West Cardiff Corridor	Improvements to bus infrastructure, junction capacity and traffic management to reduce existing congestion points	£0.959M allocated to Cardiff CC as lead authority to advance improvement works	Mwyndy	Effects on AQMA 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	Given the Welsh Government 'programme of future road investment', this scheme is under review as to whether a revised scheme could be considered that could conform to possible future delivery requirements that may be supported by Welsh Government or if alternative funding mechanisms can be applied.	Aberdare	Potential moderate improvement within AQMA and surrounding suburban area.
Park and Ride Programme	Create additional parking capacity at rail stations across RCT	£0.74M allocated which includes £0.57M transfer to TFL to progress Treorchy P&R	Llwynypia Pontypridd	Potential minor improvement within AQMA and surrounding suburban area.

Project	Description	Status	Affected AQMA	Qualitative Impact
Default 20mph Programme	Implementation of the default 20mph programme	Changes fully implemented (initial phased enforcement. Ongoing review of some classifications in-line with latest WG Guidance.	-	Expected minor impact dependent upon implementation and local circumstances.
Making Better Use Programme	Identify low cost, high value improvements for congested sections of the local highway network.	£0.25M 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 gradual 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 [24]. 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 [24].Table 5-2 identifies that there were no new or substantially changed stationary Regulated Facilities, within Rhondda Cynon Taf, in 2023.

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 [25]. 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 2023.

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 [26] and the Local Development Plan [27], 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 [28] 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 2023 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 2023 where an AQA was desired.

Application Number	Location	Description	Affecting LAQM or AQMA
23/5019/41	Miskin, Pontyclun	Pre-application submission for large residential development at Bute Quarry	-
23/0585/10	Pontypridd Town Centre	Change of use from commercial to residential units within AQMA	Pontypridd Town Centre

Application 23/5019/41 residential development of Bute Quarry 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.

Applications 23/0585/10 change of use from commercial to residential units, or parts thereof, within the Pontypridd Town Centre was withdrawn by the applicant.

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 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" [29]. 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”. 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 is not aware of any other pollution incidence that could have significantly affected air quality within its area during 2023.

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.

In recognising that, in certain circumstances, there can be a potential association between the domestic use of solid fuels and fuel poverty. It is also 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 [22] 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 recently consented Environment (Air Quality and Soundscapes)(Wales) Act 2024 [3] 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 guidance as to this new legislation, which could result in operational implications to how it resources and performs its Local Air Quality Management duties and related tasks. 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 [27] 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.

As part of the sustainability monitoring framework put in place to assess the application of the Local Development Plan, a number of air quality indicators have been adopted and were reported upon within the Local Development Plan Annual Monitoring Report [30].

6.4 Local & Regional Transport Plans and Strategies

As a result of a Regulatory Order[36] the Local Authority is no longer required to maintain an individual Local Transport Plan, instead a number of plans and regional transport related strategies may apply to the Local Authority's area.

6.4.1 Regionally Collaborative Local Transport Plan

The Local Authority has adopted a regionally collaborative Local Transport Plan [rc-LTP] [31], which is based upon a number of objectives, several of which are relevant to local air quality management; as shown in Table 6-2.

[36] In accordance with The Transport Wales Act 2006

Table 6-2: Objectives relevant to local air quality management within the rc-LTP.

No.	Objectives of the rc- Local Transport Plan
1	To improve connectivity by sustainable transport between the SE Wales Valleys and the rest of Wales, the UK and Europe.
2	To improve interchange within and between modes of transport
3	To improve the quality, efficiency and reliability of the transport system.
4	To reduce traffic growth, traffic congestion and to make better use of the existing road system
5	To achieve a modal shift towards more sustainable forms of transport for moving people and freight.
6	To reduce significantly carbon emissions from transport.
7	To reduce the impact of the transport system on the local street scene and the natural, built and historic environment.
8	To promote sustainable travel and to make the public more aware of the consequences of their travel choices on climate, the environment and health.

The rc-LTP, which initially covered the period 2015 to 2020, acknowledges the need for sustainable transport solutions and proposes a number of actions to encourage the use of public transport and modal shift, whilst limiting new major road building. Table 6-3 notes the relevant actions proposed by the rc-LTP which, if delivered within existing funding constraints, could have a potential effect on local air quality management in Rhondda Cynon Taf. In line with guidance, the rc-LTP only has regard to schemes which are deliverable within the Local Authority's remit.

Table 6-3: Proposed actions contained within the rc-Local Transport Plan.

rc-Local Transport Plan Schemes		Delivery	Relevant AQMA or area of interest
1	Active Travel Schemes, to improve walking and cycling links to key services and facilities and improve accessibility within and between communities.	Ongoing	All
2	Safe Routes in Communities Scheme, to improve accessibility within communities with a specific focus on providing safe, sustainable routes to schools and school travel plans to encourage a greater use of active modes of travel	Ongoing	All
3	A4059 Aberdare Bypass Extension Scheme to develop an existing road, in parallel with the ongoing dualling of the A465, to maintain access between communities	Preliminary	Hirwaun
4	Bus Priority Schemes to include measures to relieve congestion pinch points along strategic bus corridors, raise kerbs, new information displays and, where feasible, new seating and shelters for public bus users within Rhondda Cynon Taf	Ongoing	All
5	Bus Rapid Transit Schemes to develop, where feasible, improved cross-valley links between key settlements outside Cardiff and Newport, by	Preliminary	Broadway Cilfynydd Nantgarw Pontypridd

rc-Local Transport Plan Schemes		Delivery	Relevant AQMA or area of interest
	construction of segregated sections of bus priority road space.		
6	Treforest Estate Station Park and Ride Provision Scheme, to provide a new Park and Ride Facility which could serve a wide catchment area including Tonteg and Church Village.	Preliminary (in conjunction with possible repositioning of railway station)	Broadway Church Village Llantwit Fardre
7	Park and Ride Improvement Schemes to improve current provision of park and ride facilities at relevant railway stations	Ongoing	All
8	Aberdare Bus Station Upgrade Schemes to include new electronic information displays and other changes to improve the desirability of the stations to users	Ongoing	Aberdare
9	Tonypandy Bus Station Upgrade Schemes to include new electronic information displays and other changes to improve the desirability of the stations to users	Ongoing	Ferndale Llwynypia Tylorstown
10	Strategic Transport Corridor Management System A4119 / A473, to include modifying the junction layout and the installation of a new urban traffic control system.	Completed	Mwyndy Church Village Llantwit Fardre
11	Mountain Ash Cross Valley Link Road, to provide a bridge forming a cross valley link to divert traffic from the B4275 to the A4059	Completed	Mountain Ash

In addition to the specific schemes and interventions outlined above it is recognised that certain transport related policy interventions, associated with the Local Authority, can also have an important role in Local Air Quality Management. Table 6-4 provides an overview of other key policy and project related developments and potential implications to local air quality management.

Table 6-4: 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. It has also been working collaboratively with its partners, both local and regional, in the regulatory delivery of Taxi & Private Hire vehicle emission improvements through best practice, industry support and possible licensing conditions. As an example, SWARCO has been awarded a contract by the Cardiff Capital Region to deliver 34 chargers at 31 sites throughout the Region and funding has also been awarded by the Cardiff Capital Region

Policy	Description
	to implement a 'try before you buy' scheme for low emission wheel chair accessible 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 formally evaluating its fleet composition with the aim of identifying the necessary measures required to transition to a low emission vehicle fleet. In time this may bring forward vehicle emissions improvements, especially with respect to NOx emissions, emitted by the Local Authority.
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. Depending upon support mechanisms this could also have the potential to impact, in the short term, on the viability of some school transport provision.
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[37] direct impact on NO_x emissions [32] [33], albeit each location will experience its own specific circumstances. However, careful consideration [34] of any engineered street speed reduction measures, especially along streets that may otherwise be vulnerable to elevated levels of NO_2, will 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

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

Policy	Description
	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, as identified in several AQMAs. 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 available pavement, then the likelihood of additional traffic congestion may increase.

6.4.2 Cardiff Capital Region Transport Authority

Complimentary to the regionally collaborative Local Transport Plan, the Local Authority is also a member of the Cardiff Capital Region Transport Authority, which has been formed to support the Cardiff Capital Region's ambition for a 'more connected, competitive and resilient region'. The Regional Transport Authority is advancing a number of Capital Region transport improvement schemes [35] and provides regular updates on the progress made delivering them, via the Cardiff Capital Region 'Project Hub' webpage [36]. Some of these schemes are specific to Rhondda Cynon Taf and have been outlined below in Table 6-5.

Table 6-5: Cardiff Capital Region Transport Authority Schemes in Rhondda Cynon Taf.

Cardiff Capital Region Transport Authority Schemes		Relevant AQMA or area of interest
1	South Wales Metro (hybrid rail/tram/road) to include potential new North West Tram Corridor from Cardiff to Pontyclun, with the possibility of establishing connections to additional communities along the route, as well as the separate development of a new station at Nantgarw.	All
2	South Wales Main Line Railway Upgrade to improve journey times, capacity and user experience.	Llanharan
3	Mid Valley Train Tram Connectivity to possibly include a cross valley connection from the Rhondda Valleys to Pontypool and to include possible integration with Pontypridd Bus Station.	All
4	Reinstatement of passenger services between Aberdare and Hirwaun	Aberdare

In addition to the above, the Welsh Government are investing £750M to progress a range of rail improvement schemes [37] associated with the Core Valley Railway Lines, which could have an effect on local air quality management within Rhondda Cynon Taf; as detailed in Table 6-6.

Table 6-6: Proposed Transport for Wales Rail Schemes.

Transport for Wales Rail Schemes		Relevant AQMA or area of interest
1	Core-Valley Lines electrification	Broadway Pontypridd

		Aberdare
2	Upgrading of all stations and signalling	All
3.	Constructing at least two new railway stations	All

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. The 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, and associated information dissemination. The impact of this supplemental plan intervention is discussed in Section 5.1.

Although the supplemental plan intervention has likely had an effect in reducing observed NO_2 levels, it is possible that the Welsh Government may also consider further interventions, potentially both within the current targeted area and other neighbouring parts of the A470, to further expedite improvement in the locally observed levels of NO_2. Whilst the Local Authority welcomes the Welsh Government action so far, it continues to stress the importance of a close working relationship to ensure any future proposed actions do not have unacceptable adverse consequences on local air quality management elsewhere.

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 [38] 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' [39]. 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' [40], 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 has updated a number of maps [41] 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 [42] 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 [43], 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 [2] 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 6-7 provides a description of the Local Authority's overarching themes and associated core objectives.

Table 6-7: 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 serving as the Local Authority's Well-being objectives. The Cwm Taff Morgannwg Well-Being Plan [44] 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 [45]. 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 current 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 most recently published data ranks (the lower the ranking the better) Rhondda Cynon Taf as 4 out of 9 for NO_2, 4 out of 5 for PM_{10} and 3 out of 5 for $PM_{2.5}$. Although there are currently twenty-two Local Authorities in Wales, some may be ranked equally.

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 has 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 has resulted in the 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 has potentially identified two clusters, one based around Mt Ash and Penrhiwceiber and the other based around Cymmer, Ferndale, Llwynypia 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 [46] 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’, available here webpage, 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 [47].

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 6-8 below, that are to be achieved by 2030.

Table 6-8: 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, subsequent to community and stakeholder engagement, adopted a Climate Change Strategy [48]. This strategy incorporates a number of specific goals, aligned to its Climate Commitments, to be achieved between now and 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 6-9 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 be indirectly complimentary to local air quality management.

Table 6-9: 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 2023 levels of NO_2 may have remained relatively stable, with only moderate change from the previous year. Even though some of the dramatic improvement in NO_2 observed during the period of COVID-19 related disruption has somewhat abated. It still appears that the considerable improvements in the levels of NO_2 observed between 2016 to 2019 continue to have been maintained. With the expectation that levels of NO_2 will continue to stabilise or possibly even further improve into the near future, albeit any improvement is likely to be at a more moderate rate than the recent past.

In the past some localised areas within Rhondda Cynon Taf 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. Current understanding combined with a number of years of monitoring results underly sustained compliance to the annual AQO for NO_2 within the entirety of several of these AQMAs. Taking account of the local circumstances within each relevant AQMA, as well as more broadly, it is considered appropriate to revoke the Aberdare Town Centre, Broadway, Church Village, Cilfynydd, Llanharan, Llwynypia, Mwyndy, Nantgarw, Treforest and Tonyrefail AQMAs.

It is also acknowledged that although widespread improvement in the levels of NO_2 has been observed, it remains the case that some AQMAs still observe non-compliance to the annual mean AQO for NO_2 in their entirety or at least parts thereof. With regards to the Pontypridd Town Centre AQMA, although a part of it remains potentially non-compliant to the annual mean AQO for NO_2. It is considered reasonable to modify its current geographical area so as to remove part that is now believed to be sustainably compliant to the annual mean AQO for NO_2.

In doing so, these actions recognise the significant achievement both national and local interventions have had in improving local air quality both at specific locations and more widely; and will reduce the number of properties within an AQMA, in Rhondda Cynon Taf, by over a third. However, the Cymmer, Ferndale, Mt Ash Town Centre, Nightingales Bush, Pontypridd Town Centre (as amended) and Tylorstown AQMAs, although having experienced some improvement in recent years, are likely to potentially remain non-compliant to the annual AQO for NO_2 into the medium-term, unless future improvement actions have a desired effect.

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. In 2023 the Local Authority was only able to undertake very limited PM_{10} monitoring within Glyncoch, as it completed a review and upgrading works of it's monitoring provision. Subsequent to this investment, monitoring results at Glyncoch will become available in 2024 for both $PM_{2.5}$ and PM_{10}.

In its consideration of local air quality, it has been necessary for the 2023 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.

It is expected that ongoing work at Craig Yr Hesg Quarry will likely continue an existing air quality impact upon the community of Glyncoch. The Local Authority continues to engage with the operators of Craig Yr Hesg Quarry to attempt to mitigate the impact of the site activities on the surrounding community.

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, likely the most regionally significant since the completion of the Church Village Bypass, upon reducing local levels of NO_2 and helping to achieve AQO compliance within parts of several associated AQMAs. It may also be the case that, given reported circumstances within and along nearby sections of the A470, further measures may be adopted by Welsh Government to continue progress in reducing local levels of NO_2. In this respect, although the Local Authority would welcome engagement with Welsh Government and its agents, the Local Authority retains reservations about the implementation of a Clean Air Zone, which additional assessment work may help to further explore.

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. Most of the 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 and, in any event, due to the nature of local air quality trends, it will likely require more time before a robust assessment can be made.

It is the case, as can be seen from road infrastructure improvement measures over the last few years at Llantwit Fadre and Church Village, Broadway and Pontypridd Town Centre, that highly localised measures can bring about important reductions in local levels of NO_2, helping to achieve compliance to relevant AQOs within these AQMAs. Previous interventions help demonstrate 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 struggle to improve as quickly as possible.

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.

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 2024 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 2025.

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.

- In light of sustainable compliance to the annual mean AQO for NO_2 within a number of AQMAs, the Local Authority will, notwithstanding the outcome of the necessary consultations and dependent upon their consideration, implement the revocation of the following Air Quality Management Areas:

    - Aberdare Town Centre Air Quality Management Area
    - Broadway Air Quality Management Area
    - Church Village Air Quality Management Area
    - Cilfynydd Air Quality Management Area
    - Llanharan Air Quality Management Area
    - Llwynypia Air Quality Management Area
    - Mwyndy Air Quality Management Area
    - Nantgarw Air Quality Management Area
    - Tonyrefail Air Quality Management Area
    - Treforest Air Quality Management Area

- In light of sustainable compliance to the annual mean AQO for NO_2 within a part of its areas, the Local Authority will, notwithstanding the outcome of the necessary consultations and dependent upon their consideration, amend the Pontypridd Town Centre Air Quality Management Area so as to decrease the area currently encompassed.

- 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 2025 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 2023.

[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, “Minutes of the meeting of the Cabinet,” September 2019.

[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, 30 April 2024. [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,” July 2024. [Online]. Available: https://statswales.gov.wales/Catalogue/Environment-and-Countryside/Air-Quality/airqualityindicators-by-localauthority. [Accessed August 2024].

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

[14] 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.

[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 April 2023. [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 supplemental plan to the UK plan for tackling roadside nitrogen dioxide concentrations 2017 – Annual Data for NO2 Concentrations for the Motorway and Trunk Road for 2020 and 2021,” September 2022.

[22] 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.

[23] Rhondda Cynon Taf CBC, “Highways, Transportation & Strategic Projects Supplementary Capital Programme,” October 2022.

[24] Rhondda Cynon Taf CBC, “Environmental Permitting Webpage,” August 2024. [Online]. Available: https://www.rctcbc.gov.uk/EN/Business/LicencesandPermits/Pollutionrelatedlicences/EnvironmentalPermitting.aspx.

[25] Rhondda Cynon Taf CBC, “Clean Air Act Approval Webpage,” August 2024. [Online]. Available: https://www.rctcbc.gov.uk/EN/Business/LicencesandPermits/Pollutionrelatedlicences/Cleanairactapproval.aspx.

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

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

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

[29] 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/.

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

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

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

[33] 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.

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

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

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

[37] 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].

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

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

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

[41] Rhondda Cynon Taf CBC, “Active Travel Existing Route Maps,” 2021. [Online]. Available: https://datamap.gov.wales/maps/active-travel-network-maps/view?center=-3.4936103196589574,51.59394627224147&zoom=5#/. [Accessed August 2024].

[42] Rhondda Cynon Taf CBC, “PRIORITISATION OF PROPOSED ACTIVE TRAVEL SCHEMES SHOWN IN RHONDDA CYNON TAF ACTIVE TRAVEL NETWORK MAP,” June 2022.

[43] Rhondda Cynon Taf CBC, “Active Travel Annual Report,” 12th October 2023.

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

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

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

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

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

[49] D. C. Carslaw and J. Davison, “The openair book: A Guide to the Analysis of Air Pollution Data,” 1st October 2024.

[50] RStudio Inc., “Windows 10/11 RSTUDIO-2024.09.0+375,” 23rd September 2024.

[51] R Core Team, “R: A language and environment for statistical computing,” R Foundation for Statistical Computing, 2021.

[52] QGIS Association, “QGIS Geographic Information System,” 2024.

[53] LAQM Helpdesk, “Summary of Laboratory Performance in AIR NO2 Proficiency Testing Scheme (September 2021 – October 2023),” Defra and the Devolved Administrations, Oct 2023.

[54] National Physics Laboratory, “National Bias Adjustment Facotrs Spreedsheet version no. 09/24,” Defra and the Devolved Administrations, September 2024.

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

[56] B. V. U. o. b. o. The LAQM Support Helpdesk, “NO2 Fall-Off with Distance Calculator (Version 4.2),” The LAQM Support Helpdesk, April 2016.

[57] 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 2024].

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

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

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

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

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

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

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

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

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

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

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

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

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

[71] 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.

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

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

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

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

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

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

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

9. Appendix A1: Monthly Diffusion Tube Monitoring Results

Table A.9-1: Full Monthly Diffusion Tube Results for 2023

Site ID	NO_2 Mean Concentrations ($\mu g/m^3$)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (0.96 Factor) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
4	20.5	17.3	14.4	9.6	10.0	8.0	6.2	8.7	11.6	-	15.1	11.2	6.2	11.6	-
8	46.3	36.5	33.4	32.4	29.6	30.5	21.1	31.4	-	-	37.0	26.0	21.1	31.1	-
21	7.7	6.7	4.8	4.9	3.9	3.5	2.9	3.6	8.9	7.2	4.3	3.2	2.9	4.9	-
37	35.2	33.9	29.8	24.4	30.5	15.0	20.1	25.0	25.2	35.7	30.8	25.6	15.0	26.5	24.0
41	48.5	48.1	45.9	40.4	44.5	38.3	33.5	38.8	48.4	46.0	43.6	40.4	33.5	41.3	-
44	30.8	31.0	36.2	20.6	22.7	21.1	17.7	15.1	24.5	26.7	30.6	23.1	15.1	24.0	28.8
47	26.8	-	-	24.4	18.4	18.5	17.0	16.8	24.6	28.4	19.2	20.3	16.8	20.6	-
48	29.4	27.0	28.2	24.8	18.3	18.4	17.8	21.8	24.9	28.0	27.6	23.5	17.8	23.2	-
50	26.1	25.3	28.2	24.2	18.1	17.8	16.8	18.5	24.9	29.0	22.8	25.2	16.8	22.2	-
51	34.7	33.4	40.0	36.0	30.6	25.6	24.8	14.2	31.2	33.3	27.2	27.0	14.2	28.6	-
52	49.4	-	42.3	39.7	34.9	35.9	25.3	33.6	38.5	42.7	42.9	31.5	25.3	36.4	-
53	43.5	30.4	36.1	32.2	26.5	26.9	22.3	26.6	36.8	-	39.3	27.8	22.3	30.4	-
55	30.7	29.6	37.6	21.9	27.8	24.4	19.2	23.6	25.3	32.0	25.6	16.1	16.1	25.1	-
56	44.9	40.6	42.7	39.9	35.8	24.0	22.9	24.1	33.6	43.0	36.8	30.2	22.9	33.5	-
66	35.5	38.8	39.4	33.6	28.7	22.7	18.6	21.9	32.9	39.7	38.8	16.6	16.6	29.4	-
68	34.8	33.3	28.1	27.5	30.1	24.8	16.4	22.9	24.3	29.3	31.3	24.6	16.4	26.2	-
69	31.8	31.3	29.3	27.2	27.5	22.4	14.3	23.0	27.3	31.8	31.3	19.0	14.3	25.3	-

Site ID	NO_2 Mean Concentrations ($\mu g/m^3$)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (0.96 Factor) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
76	34.5	30.5	27.1	26.3	24.6	24.0	-	24.6	26.7	29.8	30.5	20.7	20.7	26.1	-
79	37.2	31.9	29.1	31.0	24.7	21.0	20.3	23.3	31.9	33.9	34.9	30.2	20.3	28.0	-
80	35.8	30.5	36.7	24.9	20.1	19.6	14.7	22.6	26.6	30.2	28.7	25.1	14.7	25.2	-
81	37.1	29.5	32.2	31.7	29.3	24.9	18.1	24.8	31.0	34.0	28.3	23.4	18.1	27.5	-
82	28.7	29.3	24.1	20.1	23.4	19.2	15.1	18.3	27.8	29.9	28.4	21.0	15.1	22.8	20.6
83	37.0	33.5	37.0	29.0	30.1	24.6	18.7	23.5	33.3	35.0	28.5	26.9	18.7	28.6	-
84	49.5	51.7	44.0	-	-	36.4	27.6	38.9	48.0	44.3	45.5	39.1	27.6	40.8	-
85	30.4	34.7	31.8	27.9	28.1	24.7	20.2	23.6	31.9	31.1	27.4	27.7	20.2	27.2	-
88	30.0	27.1	24.9	30.3	25.8	28.4	20.7	24.7	32.9	34.0	29.6	17.2	17.2	26.0	-
90	37.2	39.1	40.4	30.7	36.3	29.2	24.7	28.3	33.0	40.8	29.7	34.2	24.7	32.3	-
91	39.4	52.0	52.5	48.9	51.1	42.5	32.2	38.2	53.7	57.9	-	-	32.2	45.0	-
93	42.2	53.3	42.5	42.0	43.6	36.8	28.0	36.3	47.7	49.8	39.7	35.8	28.0	39.8	-
96	39.2	34.9	31.3	30.2	28.6	25.4	20.6	25.5	31.2	35.9	37.6	28.3	20.6	29.5	-
97	46.0	43.0	48.0	41.8	43.2	44.2	30.6	35.8	50.0	54.4	47.5	33.7	30.6	41.5	-
101	7.0	7.1	5.9	7.3	5.3	3.2	-	3.9	6.3	-	7.8	6.6	3.2	5.8	-
103	10.4	9.6	5.8	5.3	6.7	5.0	4.1	8.3	6.3	9.2	10.2	6.6	4.1	7.0	-
105	9.4	8.6	8.1	6.5	7.4	5.0	4.3	5.8	7.5	9.5	9.3	5.7	4.3	7.0	-
106	32.2	40.7	34.7	32.1	37.1	30.4	27.7	30.0	34.4	39.7	23.3	18.5	18.5	30.5	-
107	31.2	37.1	27.3	29.0	23.4	28.6	20.0	21.9	39.8	42.6	24.0	26.5	20.0	28.1	-
108	50.1	47.0	46.3	40.9	38.4	35.9	30.3	37.7	-	-	37.0	31.5	30.3	37.9	-
110	27.2	29.5	32.0	24.2	26.6	21.4	13.2	17.7	30.0	27.5	23.7	19.3	13.2	23.4	-

Site ID	NO_2 Mean Concentrations ($\mu g/m^3$)														
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual Mean		
													Raw Data	Bias Adjusted (0.96 Factor) and Annualised (1)	Distance Corrected to Nearest Exposure (2)
111	37.0	18.3	31.1	26.8	30.5	24.5	19.6	23.1	32.5	36.9	35.2	25.5	18.3	27.3	-
113	35.5	41.3	35.3	27.6	32.0	24.9	25.7	23.9	32.1	36.2	36.7	22.4	22.4	29.9	-
114	30.7	31.6	28.1	24.0	19.7	18.1	12.4	19.3	25.6	29.2	27.2	15.6	12.4	22.5	-
117	54.1	66.4	52.9	46.1	-	46.2	33.7	36.6	48.9	42.0	44.6	44.3	33.7	45.0	-
118	61.2	64.5	62.9	51.1	58.2	41.5	45.0	45.0	59.8	68.8	51.4	48.8	41.5	52.7	-
122	32.6	35.3	25.7	23.3	-	-	-	21.8	26.5	32.0	30.1	-	21.8	24.1‡	-
124	27.3	29.0	31.4	20.7	23.2	19.1	15.0	-	24.6	28.8	26.4	21.2	15.0	23.3	-
128	36.3	32.3	38.5	32.1	26.0	19.3	17.0	25.7	27.2	37.3	36.6	26.2	17.0	28.4	-
129	29.1	29.6	23.6	19.5	19.7	15.8	15.1	16.2	24.2	28.5	26.4	24.6	15.1	21.8	20.5
132	30.4	37.4	26.4	20.2	23.3	17.8	12.8	17.8	20.0	27.8	23.7	22.2	12.8	22.4	-
134	21.3	16.8	19.2	18.1	16.8	11.7	8.1	21.5	15.4	19.0	23.2	12.1	8.1	16.3	14.3
135	26.0	25.0	29.4	20.3	25.3	17.3	14.0	19.2	24.4	27.2	30.5	19.0	14.0	22.2	18.6
136	40.3	34.4	44.8	38.9	33.8	31.7	25.0	34.6	42.9	43.3	37.4	23.4	23.4	34.4	-
137	34.2	28.3	33.5	29.0	28.4	22.0	19.9	28.4	34.8	34.2	31.4	25.1	19.9	27.9	-
138	44.4	39.2	44.5	26.9	29.2	28.1	25.2	28.0	32.4	36.7	35.6	31.0	25.2	32.1	-
139	22.1	20.9	21.1	16.3	13.5	13.7	11.1	15.3	16.9	22.0	20.8	12.7	11.1	16.5	14.5
140	31.2	31.7	35.5	28.8	32.2	32.9	26.7	31.2	41.0	36.8	28.8	25.6	25.6	30.6	-
141	32.9	33.3	30.9	23.1	24.1	20.8	16.5	22.5	26.5	30.8	30.0	20.3	16.5	24.9	24.1

Table Notes

Exceedances of the NO_2 annual mean objective of 40µg/m3 are shown in bold.
Exceedances of the NO_2 1-hour mean objective (200µg/m3 not to be exceeded more than 18 times per year) or otherwise NO_2 annual means exceeding 60µg/m3, 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' [49], in combination with other significant R packages, within RStudio [50], version 2024.09.0+375, as operated within the open-source R-Programme [51] computational language for environmental statistical computing and graphics, version 4.4.2. This utility, 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 3.38.13 "Grenoble" [52]. 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 2023 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[38]; achieving the highest rank of "satisfactory" [53].

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 [54].

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

Table C.1: National Diffusion Tube Bias Adjustment Spreadsheet for 2023

National Diffusion Tube Bias Adjustment Factor Spreadsheet — Spreadsheet Version Number: 09/24

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 March 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[5] (To undo your selection, choose (All))	Site Type	Local Authority	Length of Study (months)	Diffusion Tube Mean Conc. (Dm) (µg/m³)	Automatic Monitor Mean Conc. (Cm) (µg/m³)	Bias (B)	Tube Precision[6]	Bias Adjustment Factor (A) (Cm/Dm)
SOCOTEC Didcot	20% TEA in water	2023	KS	New Forest District Council	10	32	21	50.1%	G	0.67
SOCOTEC Didcot	20% TEA in water	2023	KS	Marylebone Road intercomparison	11	52	38	37.1%	G	0.73
SOCOTEC Didcot	20% TEA in water	2023	R	South Oxfordshire Distric Council	12	22	16	33.9%	G	0.75
SOCOTEC Didcot	20% TEA in water	2023	R	South Oxfordshire District Council	10	33	29	15.8%	G	0.86
Socotec Didcot	20% TEA in water	2023	R	London Borough Of Ealing	12	57	40	40.6%	G	0.71
Socotec Didcot	20% TEA in water	2023	R	London Borough Of Ealing	12	37	29	29.1%	G	0.77
Socotec Didcot	20% TEA in water	2023	R	London Borough Of Ealing	12	43	30	42.1%	G	0.70
Socotec Didcot	20% TEA in water	2023	R	Rhondda Cynon Taf Cbc	11	24	23	4.2%	G	0.96
SOCOTEC Didcot	20% TEA in water	2023		Overall Factor[3] (8 studies)				Use		0.76

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 2023, has been described by the AEA_DifTPAB_vo4.xls spreadsheet [55] as good, with the completed spreadsheet reproduced in Table C.2 below.

Table C.2 – Spreadsheet checking precisions and accuracy of 2023 colocation study

Checking Precision and Accuracy of Triplicate Tubes

AEA Energy & Environment
From the AEA group

Diffusion Tubes Measurements									
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
1	04/01/2023	01/02/2023	26.8	29.4	26.1	27	1.7	6	4.3
2	01/02/2023	01/03/2023		27.0	25.3	26	1.2	5	10.8
3	01/03/2023	05/04/2023		28.2	28.2	28	0.0	0	0.0
4	05/04/2023	03/05/2023	24.4	24.8	24.2	24	0.3	1	0.8
5	03/05/2023	31/05/2023	18.4	18.3	18.1	18	0.2	1	0.4
6	31/05/2023	05/07/2023	18.5	18.4	17.8	18	0.4	2	0.9
7	05/07/2023	02/08/2023	17.0	17.8	16.8	17	0.5	3	1.3
8	02/08/2023	06/09/2023	16.8	21.8	18.5	19	2.5	13	6.3
9	06/09/2023	04/10/2023	24.6	24.9	24.9	25	0.2	1	0.4
10	04/10/2023	01/11/2023	28.4	28.0	29.0	28	0.5	2	1.3
11	01/11/2023	06/12/2023	19.2	27.6	22.8	23	4.2	18	10.5
12	06/12/2023	03/01/2024	20.3	23.5	25.2	23	2.5	11	6.2
13									

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

Automatic Method		Data Quality Check	
Period Mean	Data Capture (% DC)	Tubes Precision Check	Automatic Monitor Data
26.266191	99.85119048	Good	Good
28.33737	81.25	Good	Good
22.772427	99.4047619	Good	Good
19.604989	99.25595238	Good	Good
15	99.70238095	Good	Good
8	25.83333333	Good	or Data Capture
13	80.6547619	Good	Good
14	100	Good	Good
20	99.4047619	Good	Good
25	98.95833333	Good	Good
28.062176	99.88095238	Good	Good
37.496619	99.70193741	Good	Good
Overall survey -->		Good precision	Good Overall DC

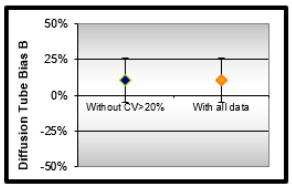
(Check average CV & DC from Accuracy calculations)

Site Name/ ID:

Precision: 12 out of 12 periods have a CV smaller than 20%

Accuracy (with 95% confidence interval) without periods with CV larger than 20%	
Bias calculated using 11 periods of data	
Bias factor A	0.96 (0.84 - 1.13)
Bias B	4% (-11% - 19%)
Diffusion Tubes Mean:	24 μgm^{-3}
Mean CV (Precision):	6
Automatic Mean:	23 μgm^{-3}
Data Capture for periods used:	96%
Adjusted Tubes Mean:	23 (20 - 27) μgm^{-3}

Accuracy (with 95% confidence interval) WITH ALL DATA	
Bias calculated using 11 periods of data	
Bias factor A	0.96 (0.84 - 1.13)
Bias B	4% (-11% - 19%)
Diffusion Tubes Mean:	24 μgm^{-3}
Mean CV (Precision):	6
Automatic Mean:	23 μgm^{-3}
Data Capture for periods used:	96%
Adjusted Tubes Mean:	23 (20 - 27) 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 [54] 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^{λ}	(0.75 – 1.07)
2014	**0.90**	11	✓	0.79^{λ}	(0.77 – 0.90)
2015	**0.96**	4	✓	0.81^{λ}	(0.73 – 0.96)
2016	**1.0**	0	✓	0.83^{λ}	(0.74 – 1.00)
2017	**0.91**	10	✓	0.74^{λ}	(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)

[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 2023 is comparable with and in the range of the national bias factor it has been determined that the local bias factor will be used to enable correction, ensuring 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 2023

Site	Average Annualization Factor	Raw Data Annual Mean (µg/m^3)	Data Capture in 2020 (%)	Annualised Annual Mean (µg/m^3)
122	0.883627822	27.276	66.7	24.1

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 [56], Table C.5 below provides the output of the calculator for 2023 NO_2 monitoring data.

Table C.5 – NO_2 Fall-off with Distance from the Road Adjustment in 2023

Enter data into the pink cells

Site Name/ID	Distance (m)		NO_2 Annual Mean Concentration (µg/			Comment
	Monitoring Site to Kerb	Receptor to Kerb	Background	Monitored at Site	Predicted at Receptor	
RCTCBC/37	2.2	4.1	9.5	26.5	24.0	
RCTCBC/44	9.2	3.8	9.3	24.0	28.8	
RCTCBC/70/NOx	5.2	3.1	8.6	20.1	22.0	
RCTCBC/82	1.6	3.2	8.2	22.8	20.6	
RCTCBC/129	2.1	3.2	8.5	21.8	20.5	
RCTCBC/134	19.8	33.7	8.9	16.3	14.3	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	8.6	22.2	18.6	
RCTCBC/139	1.9	4.2	5.5	16.5	14.5	
RCTCBC/141	1.3	1.6	6.0	24.9	24.1	

11.4 QA/QC of Automatic Monitoring

During 2023, 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.

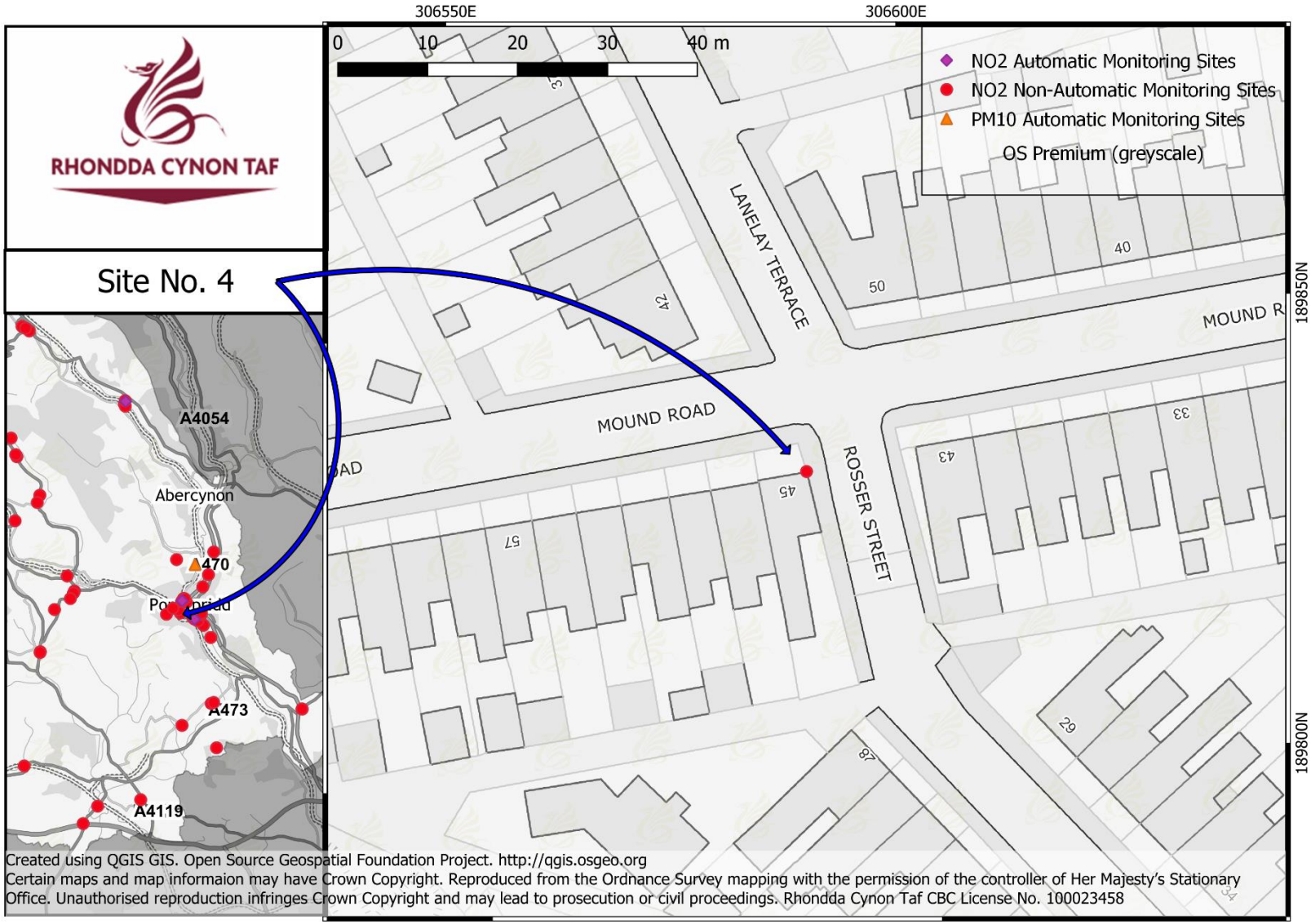
The Local Authority has installed and started to make use of an automatic monitoring analyser for $PM_{2.5}$ and PM_{10}. The Local Authority operated a MCERTS certified optical light scattering Palas FIDAS 200 [Site No. 130 (Upper Garth Avenue)]. It is directly owned and controlled by the Local Authority and is periodically inspected by a trained officer. These inspections are to be complemented with twice yearly services by the Local Authority's service contract engineers, Air Monitors. All data gathered by Site No. 130 (Upper Garth Avenue) has been

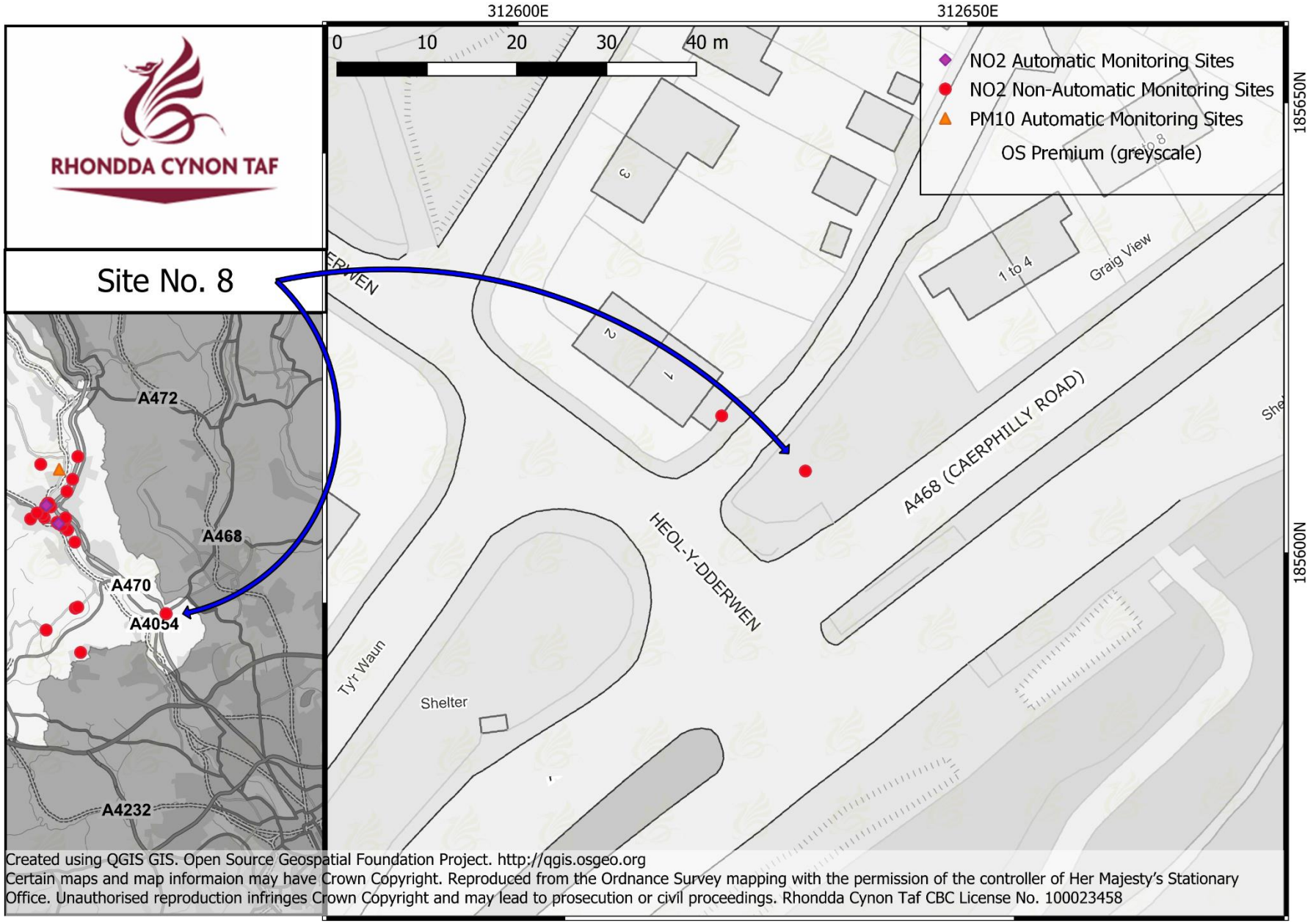
processed, validated and ratified in accordance with procedures, set out in guidance, by Officers of the Local Authority.

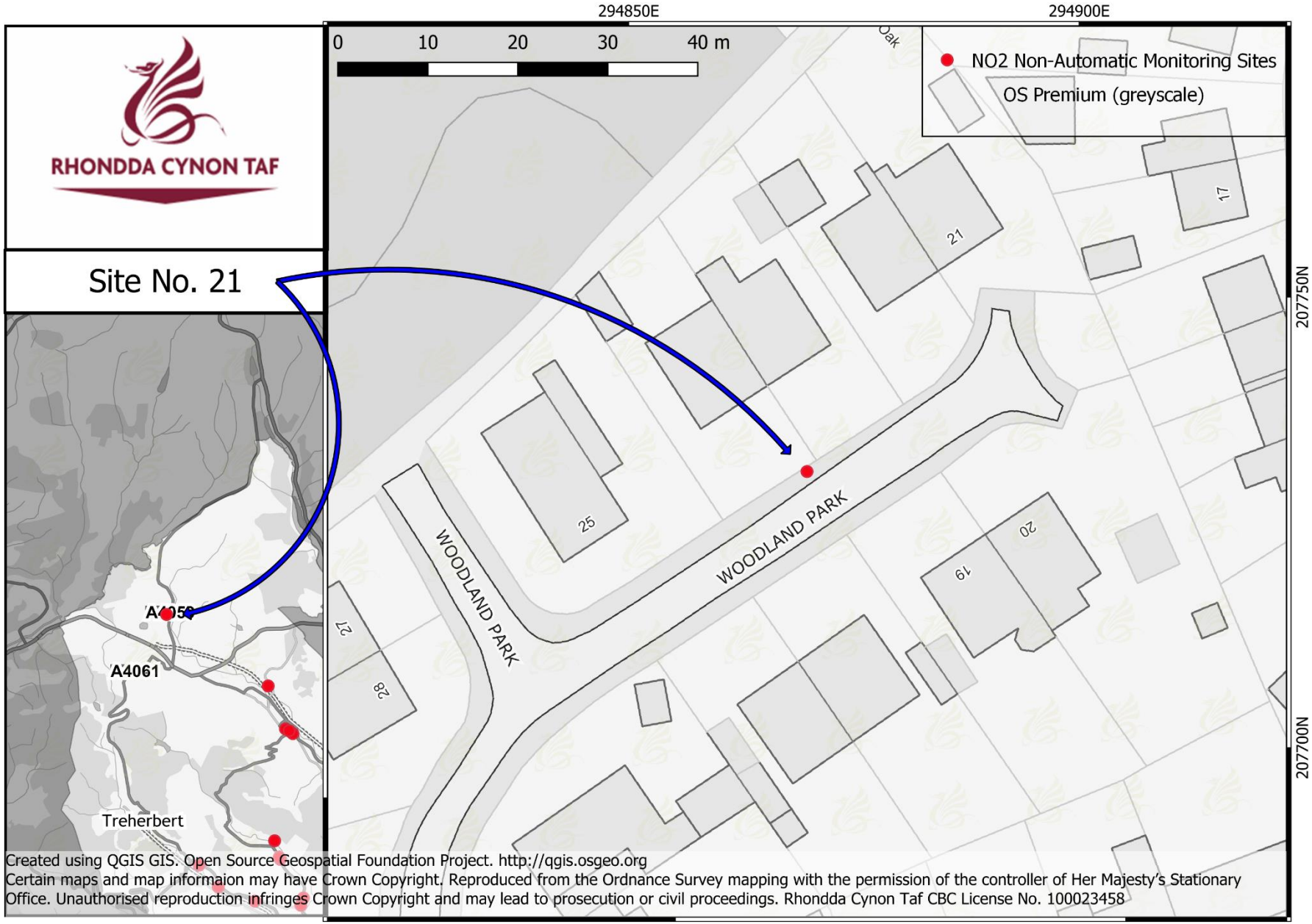
11.4.1 PM_{10} Monitoring Adjustment

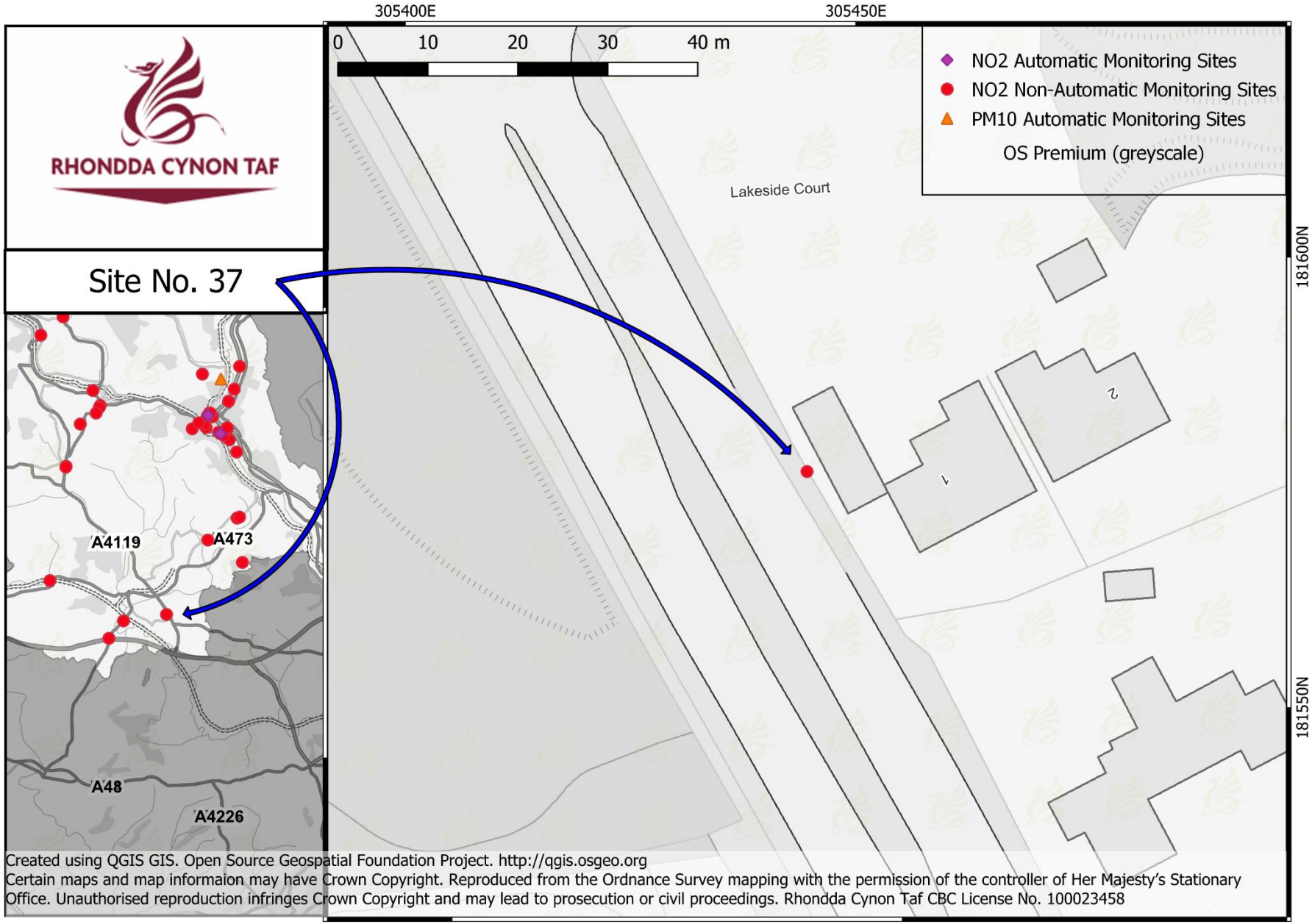
The Local Authority operates a Palas FIDAS 200 [Site No. 130 (Upper Garth Avenue)]. The method used involves sampling at ambient conditions, without the need for mathematical adjustment post data collection, and has been formally considered [57] as an EU equivalent method without correction.

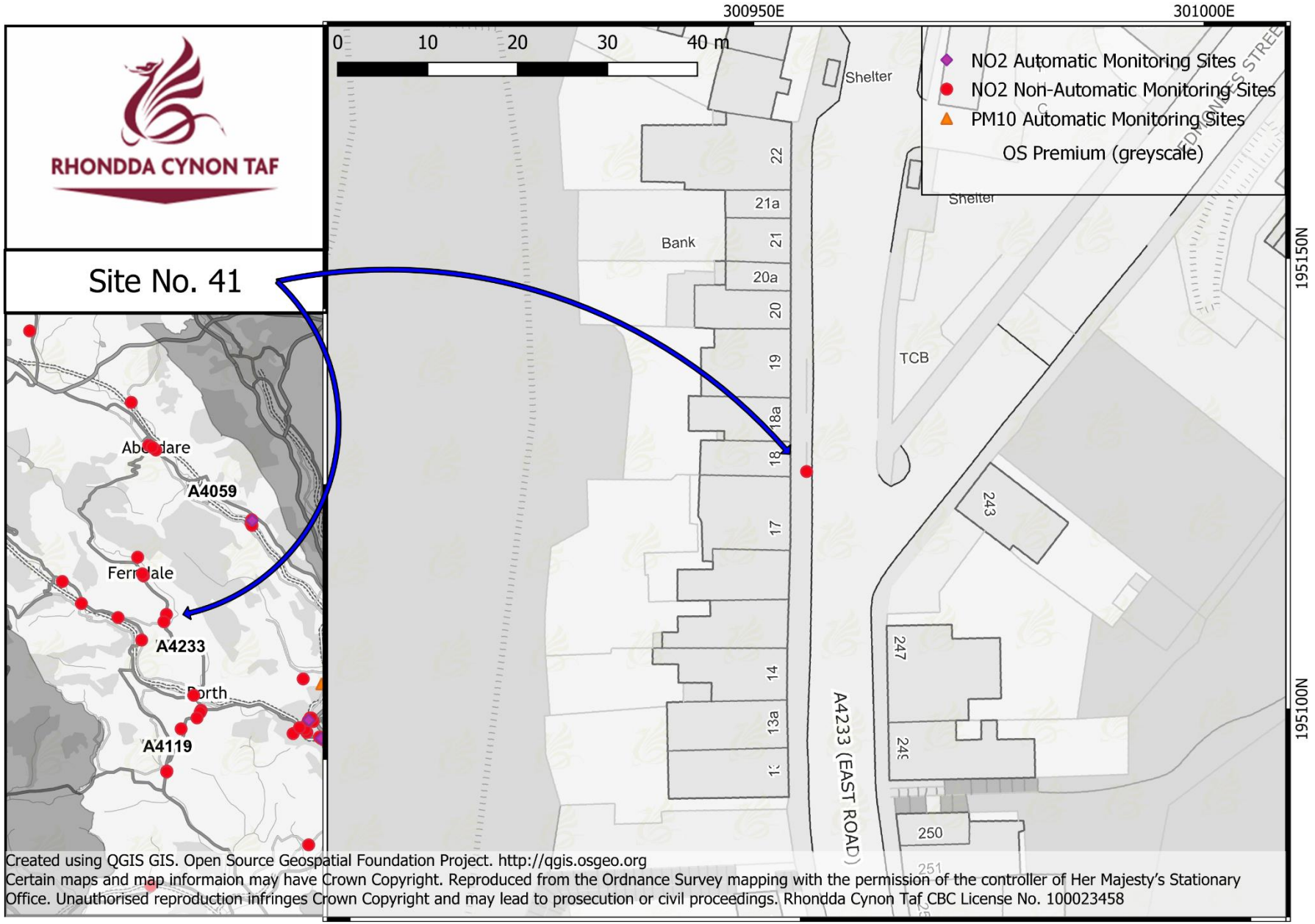
12. Appendix C2: Monitoring Location Maps

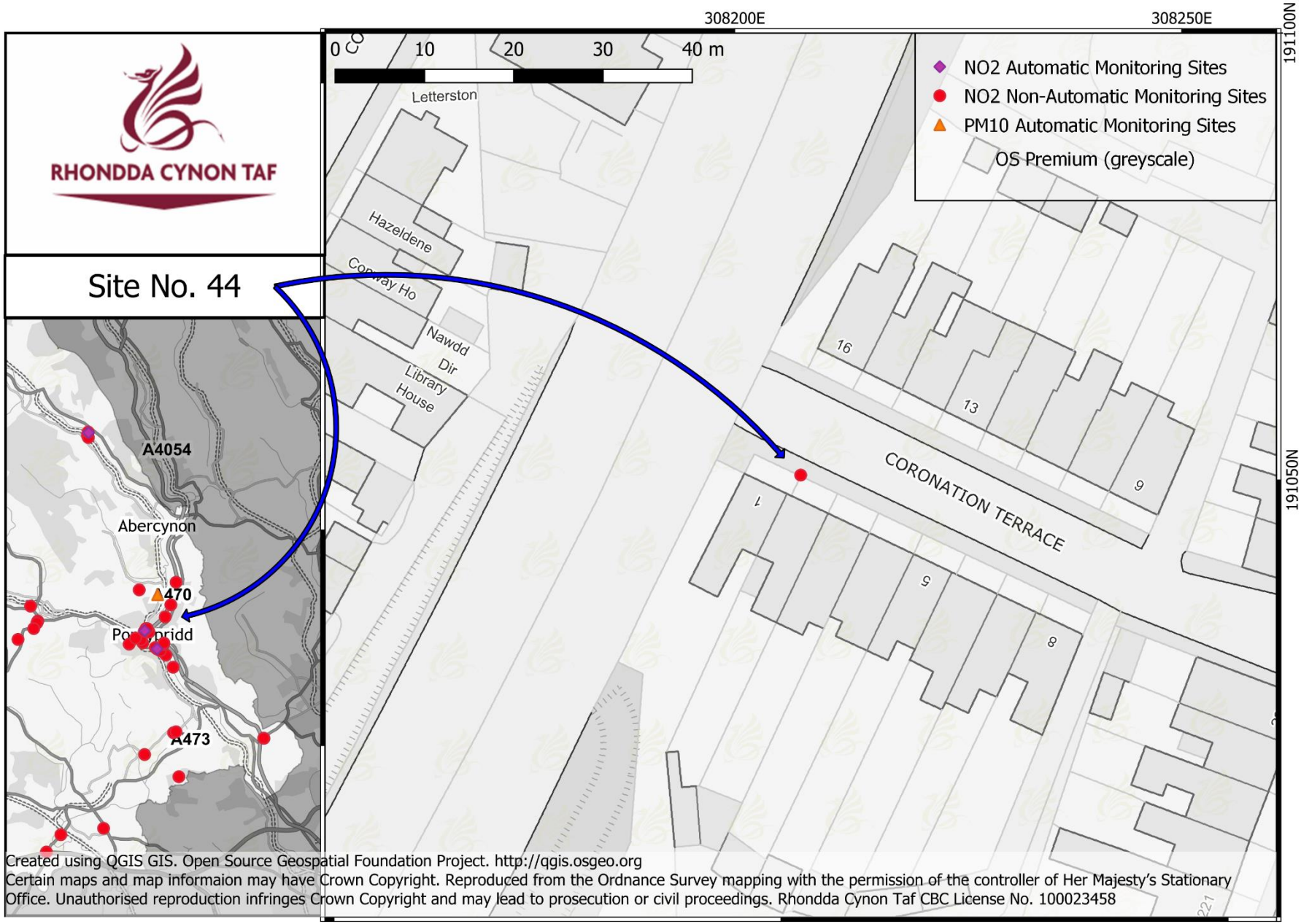


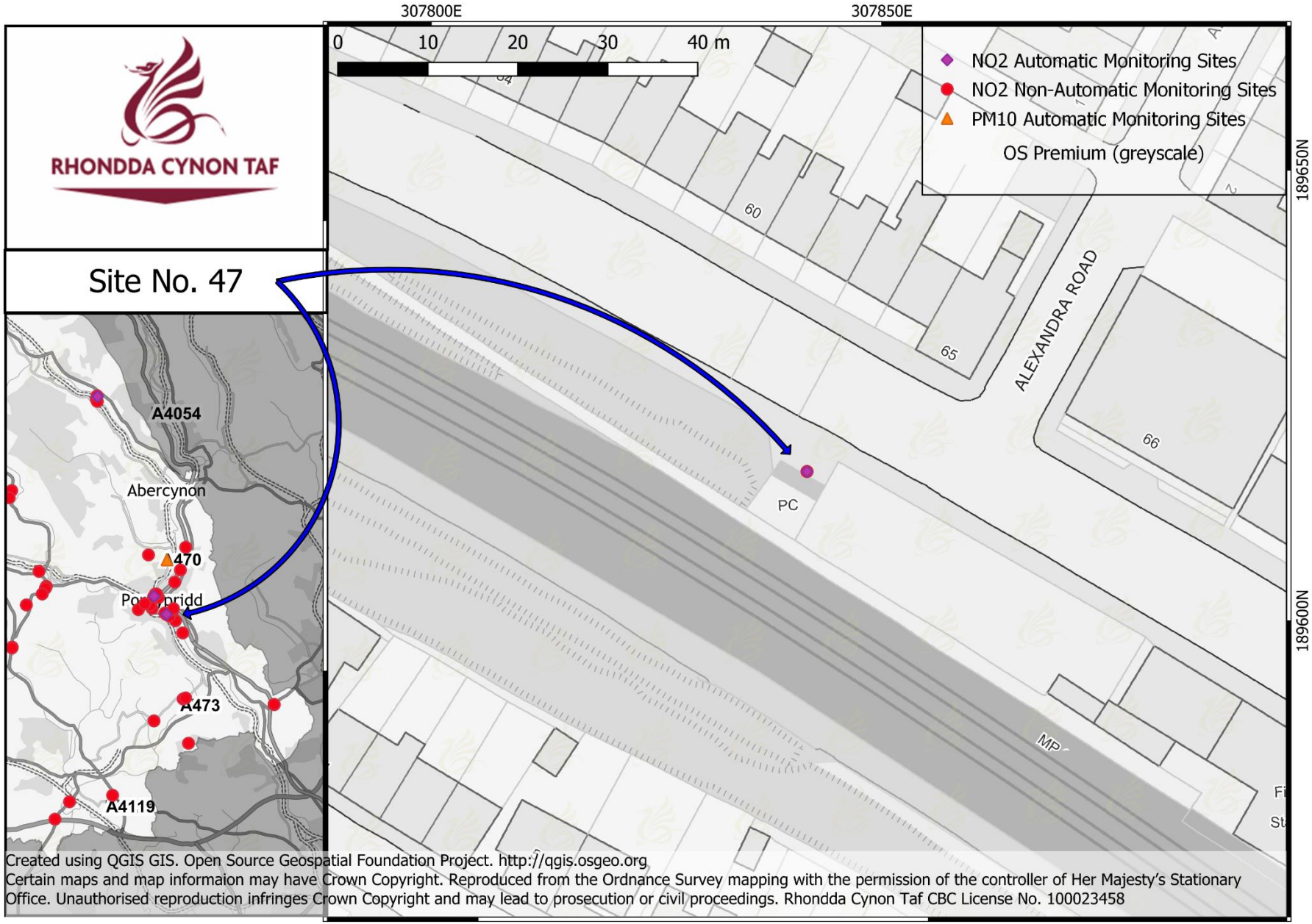

312600E
312650E
185650N
185600N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 8
A472
A468
A470
A4054
A4232
A468 (CAERPHILLY ROAD)
HEOL-Y-DDERWEN
Graig View
1 to 4
Tyr Waun
Shelter
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

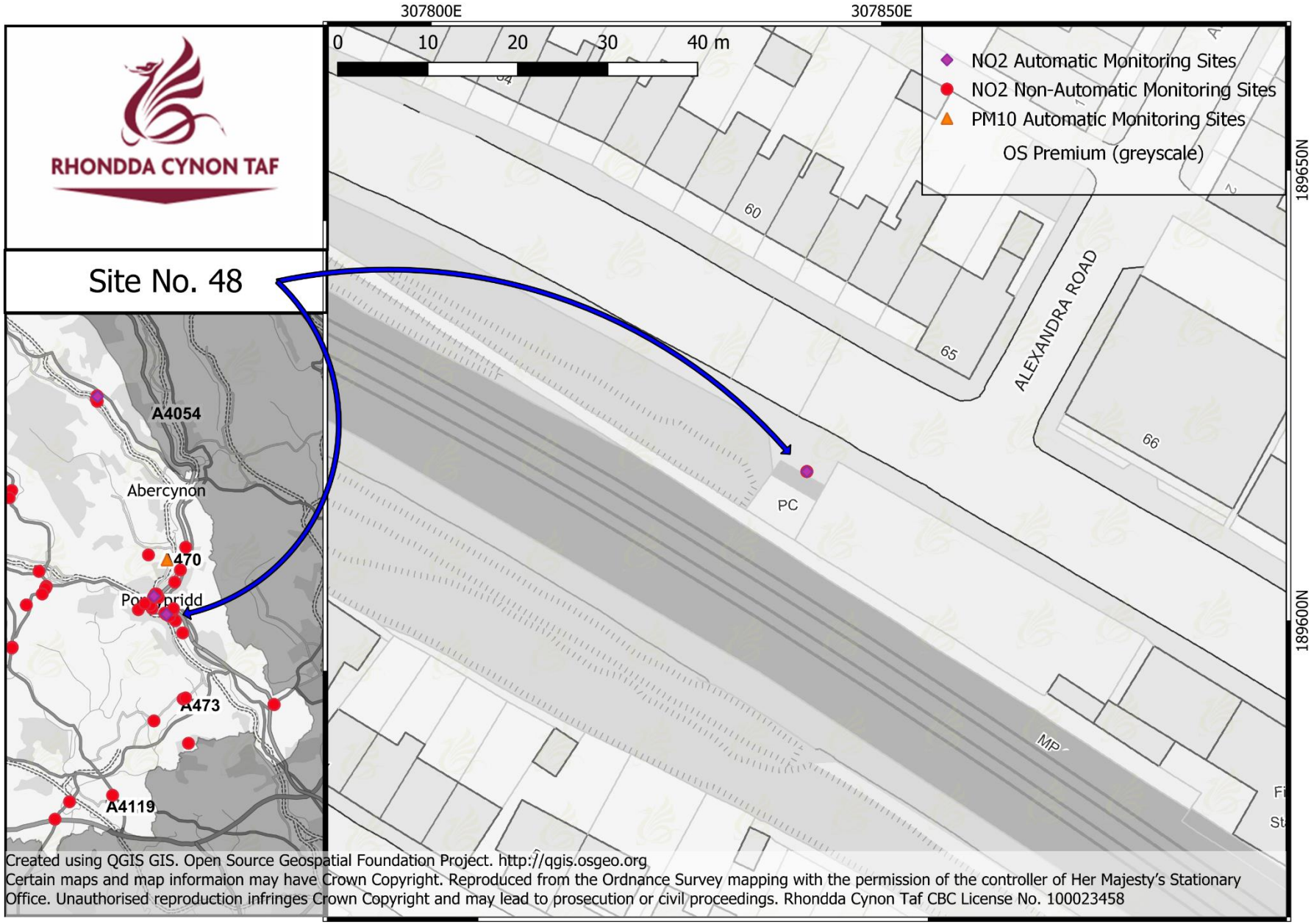

294850E
294900E
0
10
20
30
40 m
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 21
A4061
Treherbert
WOODLAND PARK
WOODLAND PARK
25
27
28
21
17
19
20
207750N
207700N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

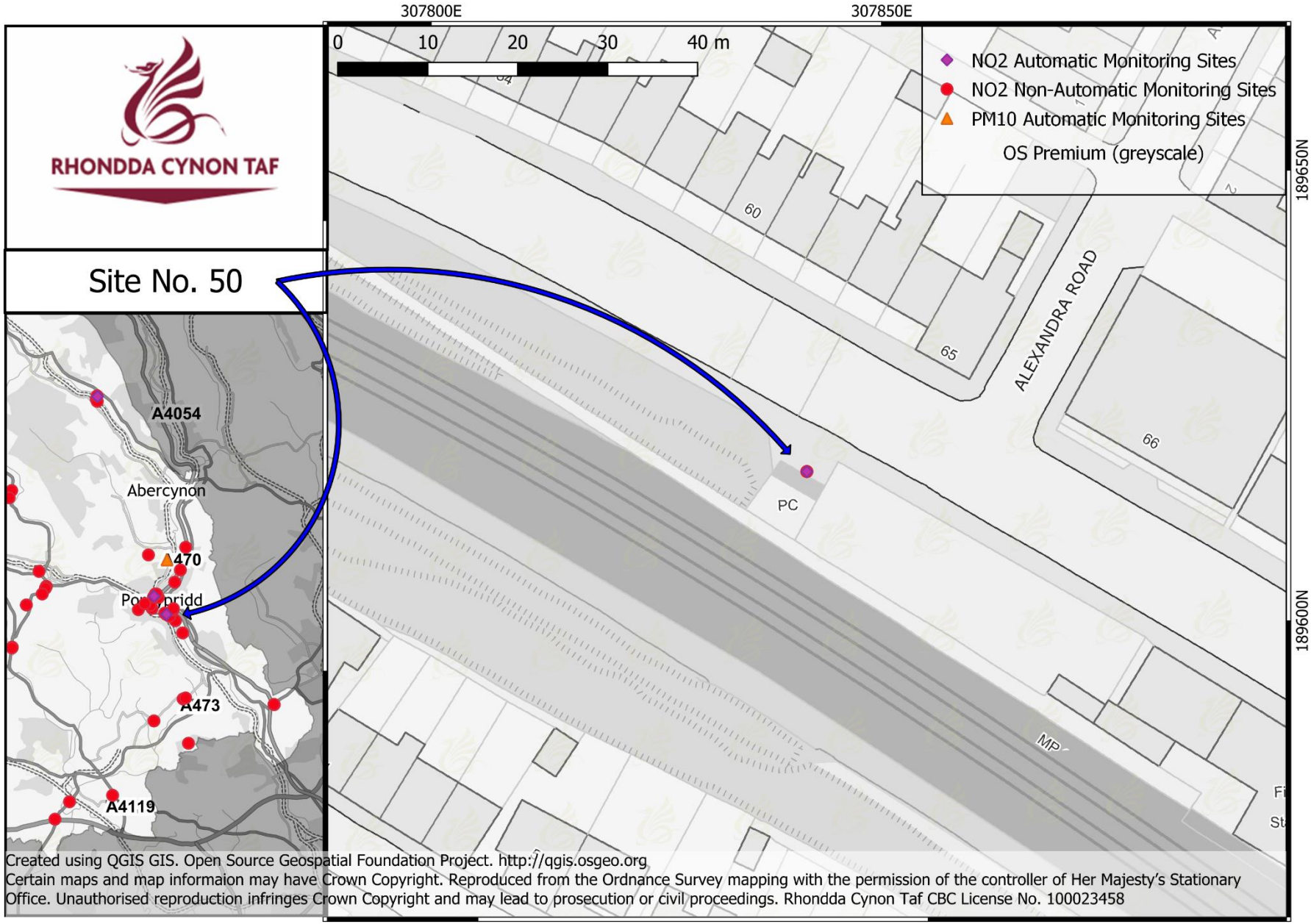

305400E
305450E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Lakeside Court
181600N
181550N
RHONDDA CYNON TAF
Site No. 37
A4119
A473
A48
A4226
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

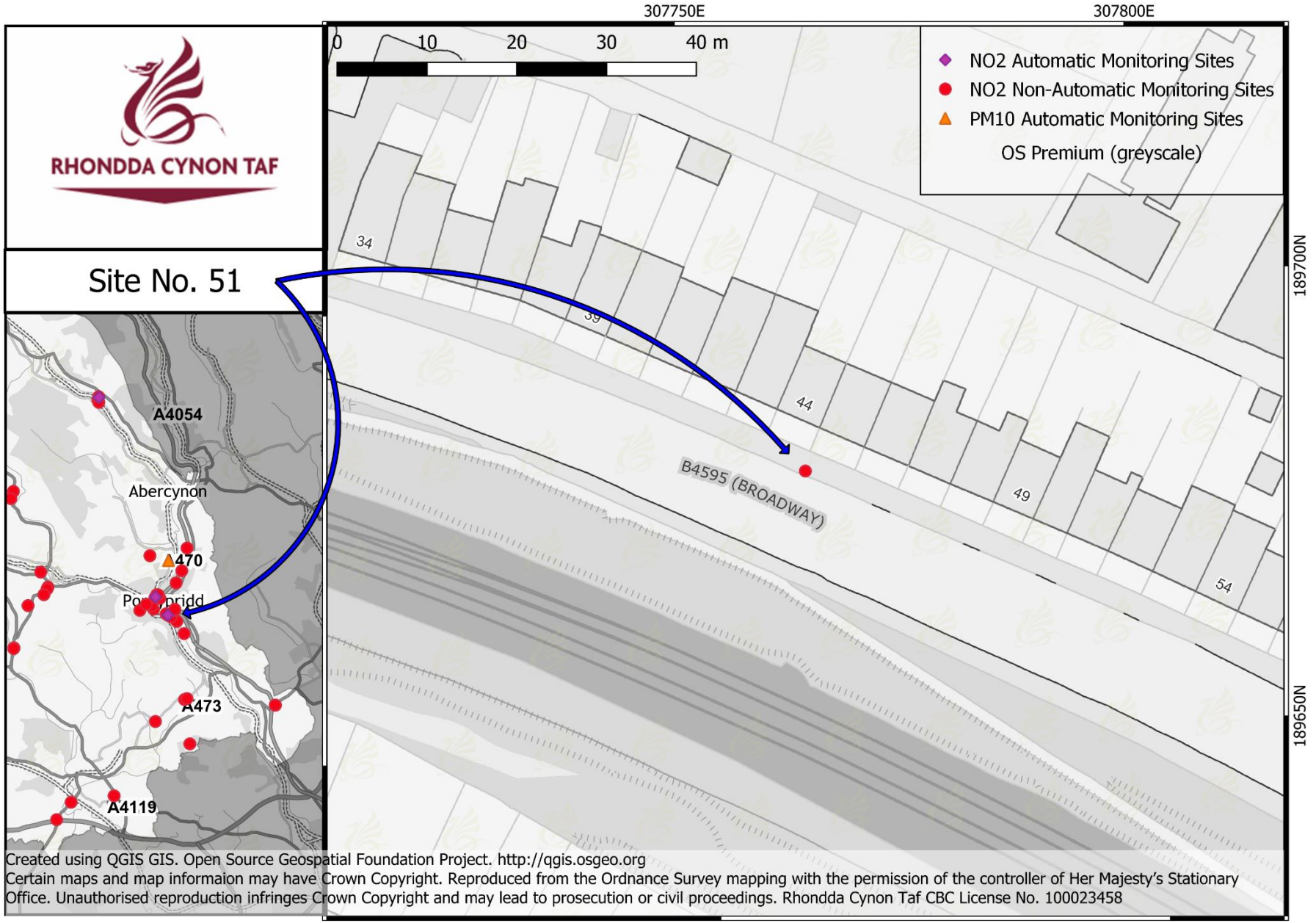

RHONDDA CYNON TAF
Site No. 41
300950E
301000E
195150N
195100N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Shelter
Bank
TCB
A4233 (EAST ROAD)
A4059
A4233
A4119
22
21a
21
20a
20
19
18a
18
17
14
13a
243
247
250
251
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

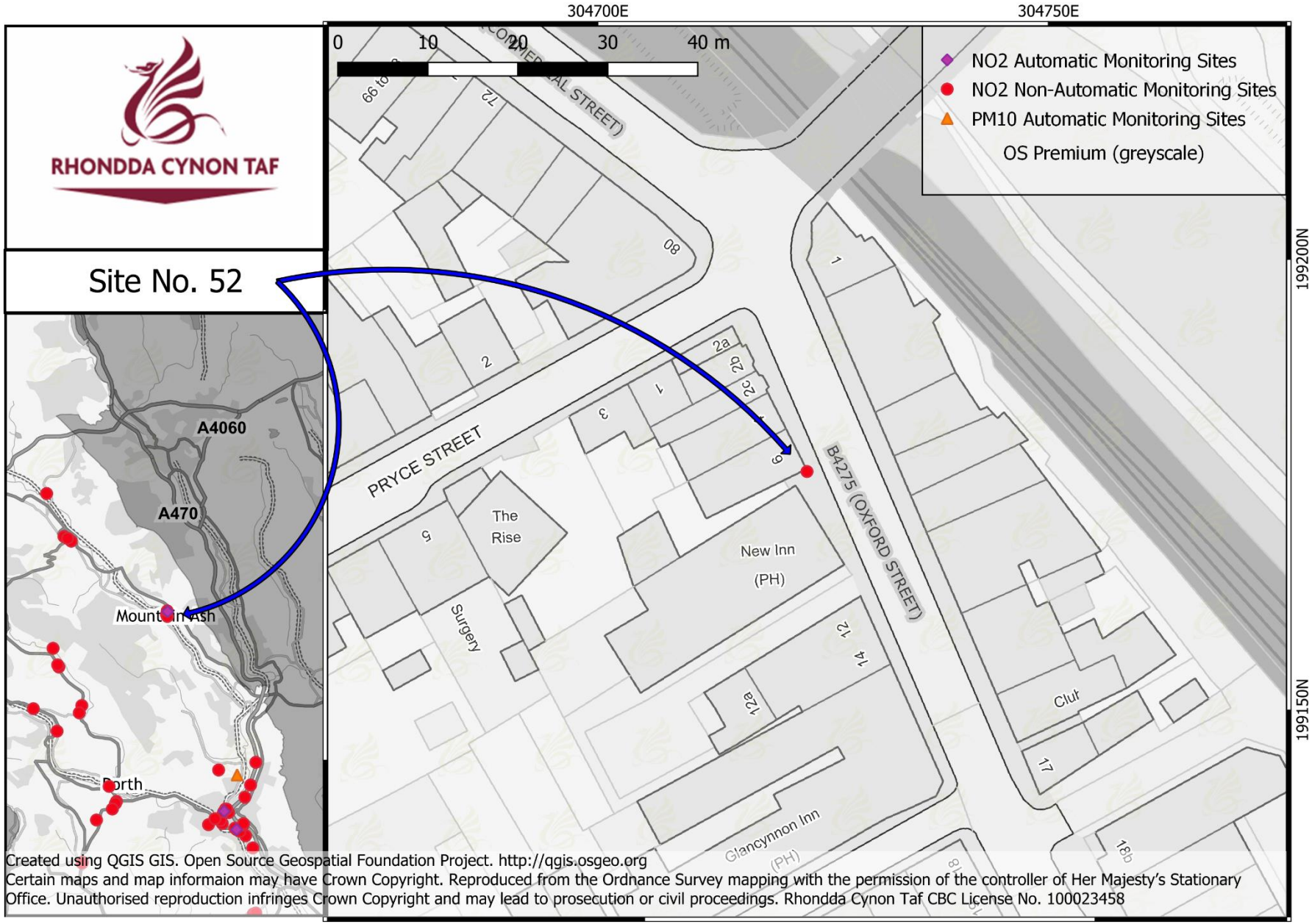

RHONDDA CYNON TAF
Site No. 44
308200E
308250E
191100N
191050N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Letterston
Hazeldene
Conway Ho
Nawdd Dir
Library House
CORONATION TERRACE
16
13
9
1
5
8
A4054
Abercynon
A470
A473
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

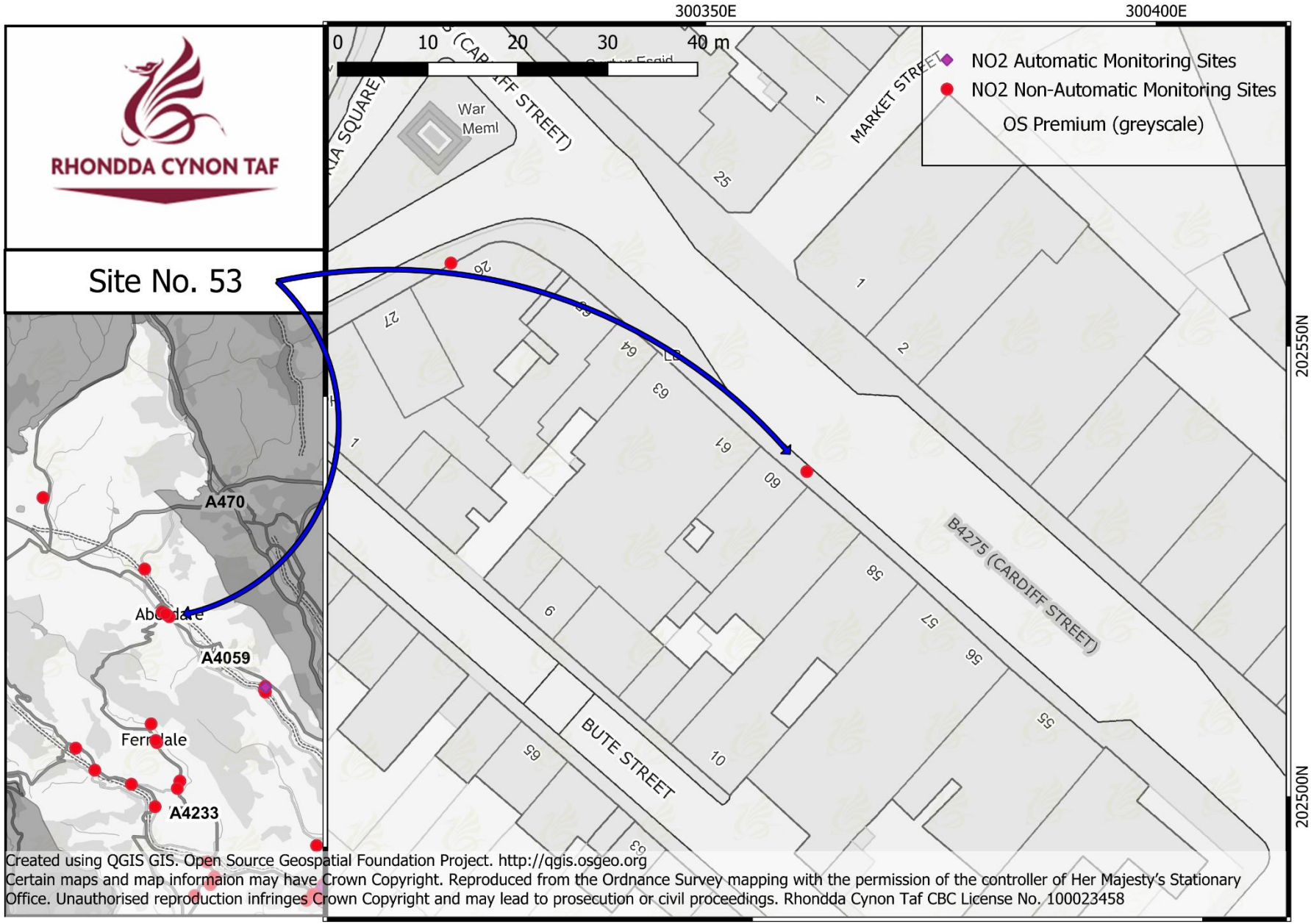

307800E
307850E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189650N
189600N
ALEXANDRA ROAD
60
65
66
PC
MP
RHONDDA CYNON TAF
Site No. 47
A4054
Abercynon
A470
A473
A4119
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

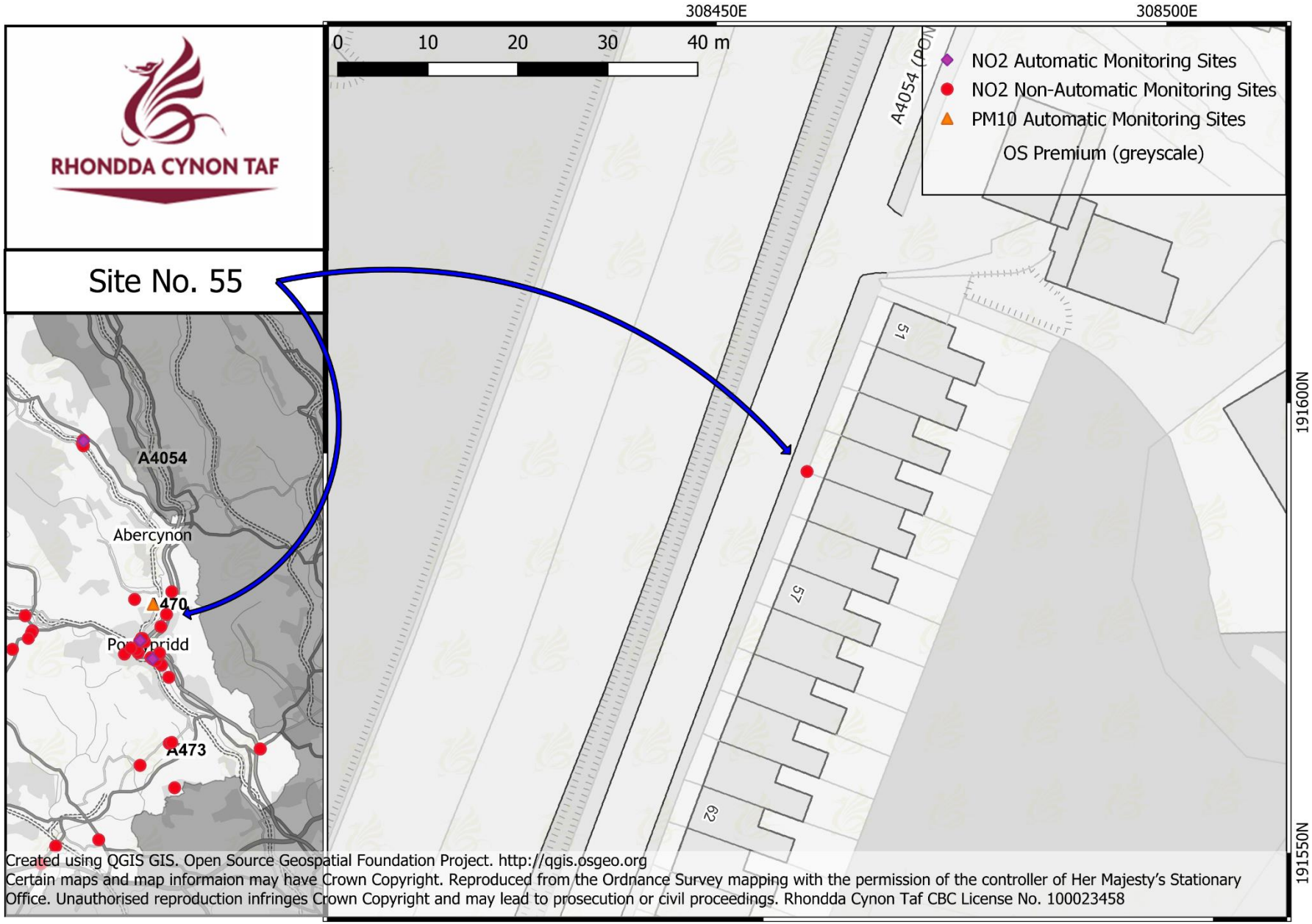

307800E
307850E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189650N
189600N
ALEXANDRA ROAD
60
65
66
PC
MP
RHONDDA CYNON TAF
Site No. 48
A4054
Abercynon
A470
A473
A4119
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

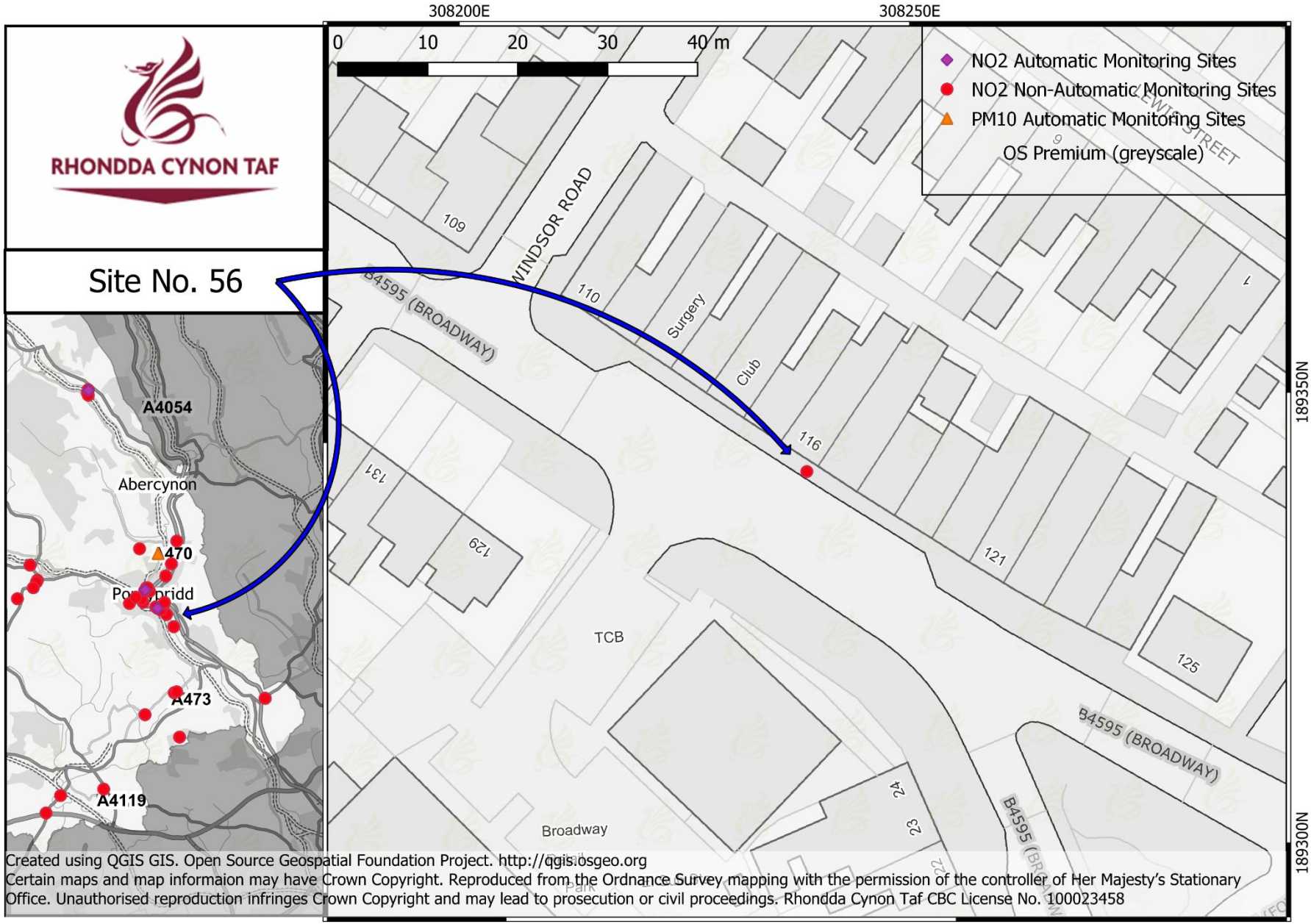

307800E
307850E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189650N
189600N
ALEXANDRA ROAD
60
65
66
PC
MP
RHONDDA CYNON TAF
Site No. 50
A4054
Abercynon
A470
A473
A4119
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

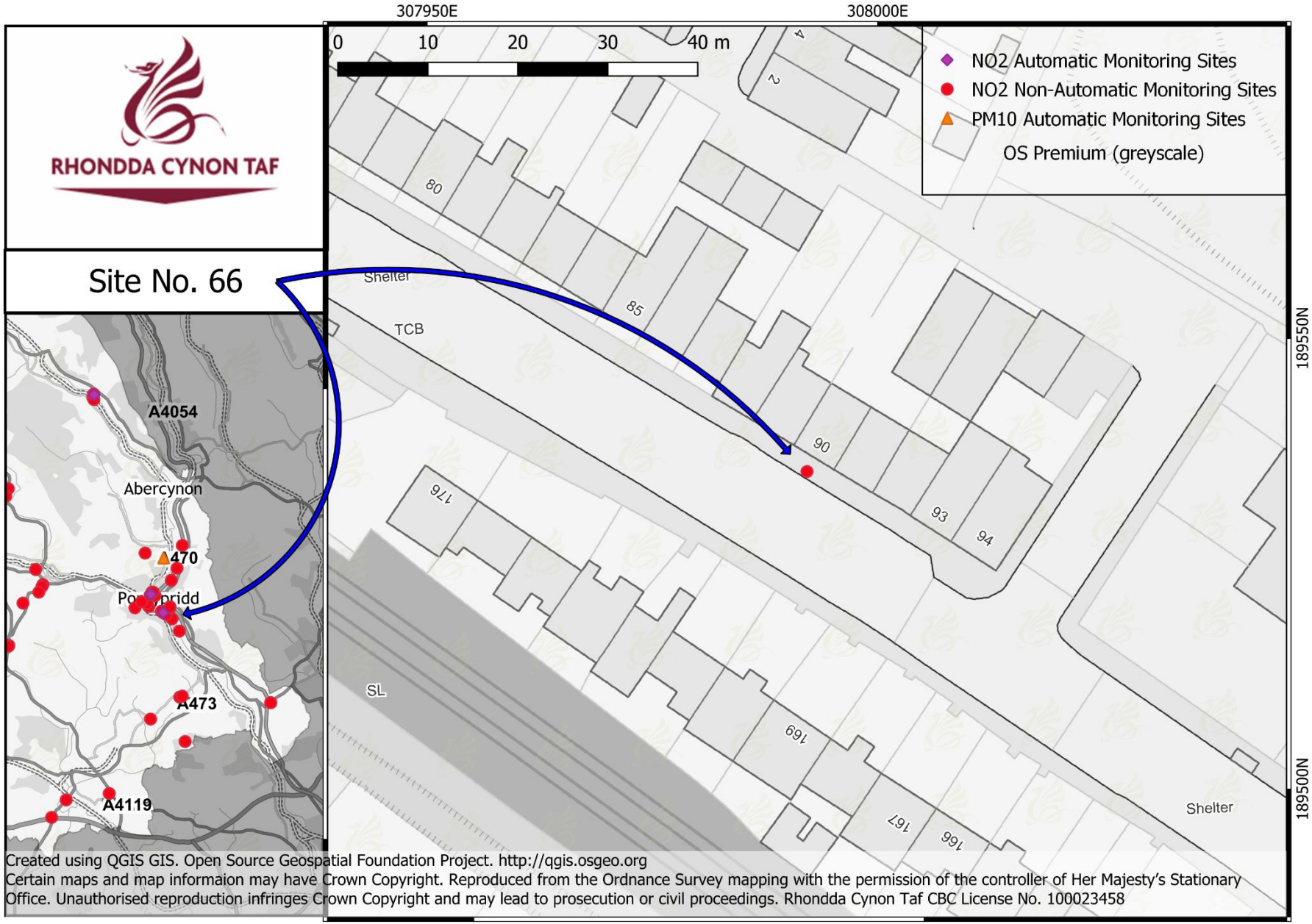

RHONDDA CYNON TAF
Site No. 51
307750E
307800E
189700N
189650N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
34
39
44
49
54
B4595 (BROADWAY)
A4054
Abercynon
A470
A473
A4119
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

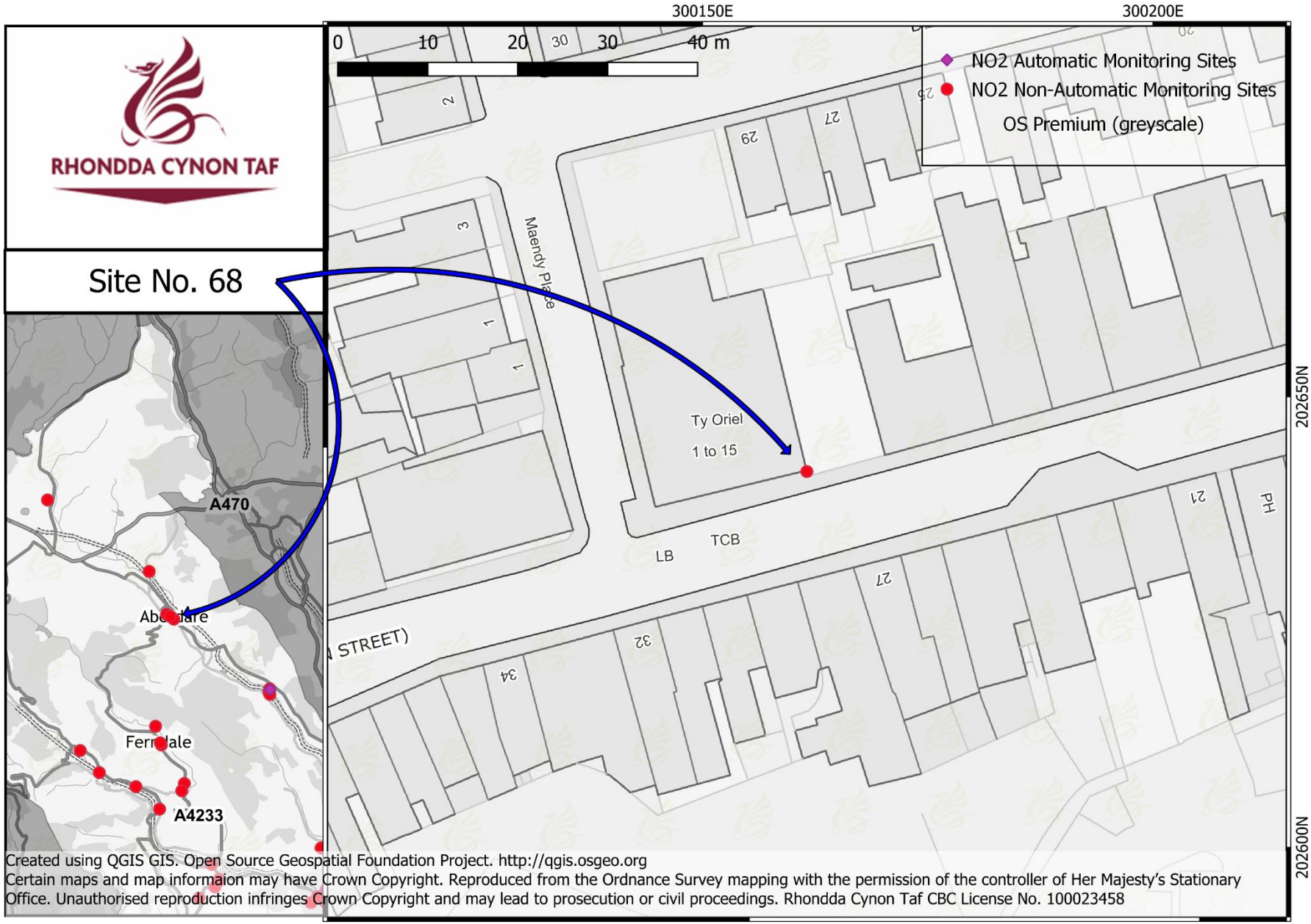

304700E
304750E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 52
A4060
A470
Mountain Ash
Porth
PRYCE STREET
B4275 (OXFORD STREET)
The Rise
Surgery
New Inn
(PH)
Glancynnon Inn
(PH)
Club
199200N
199150N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

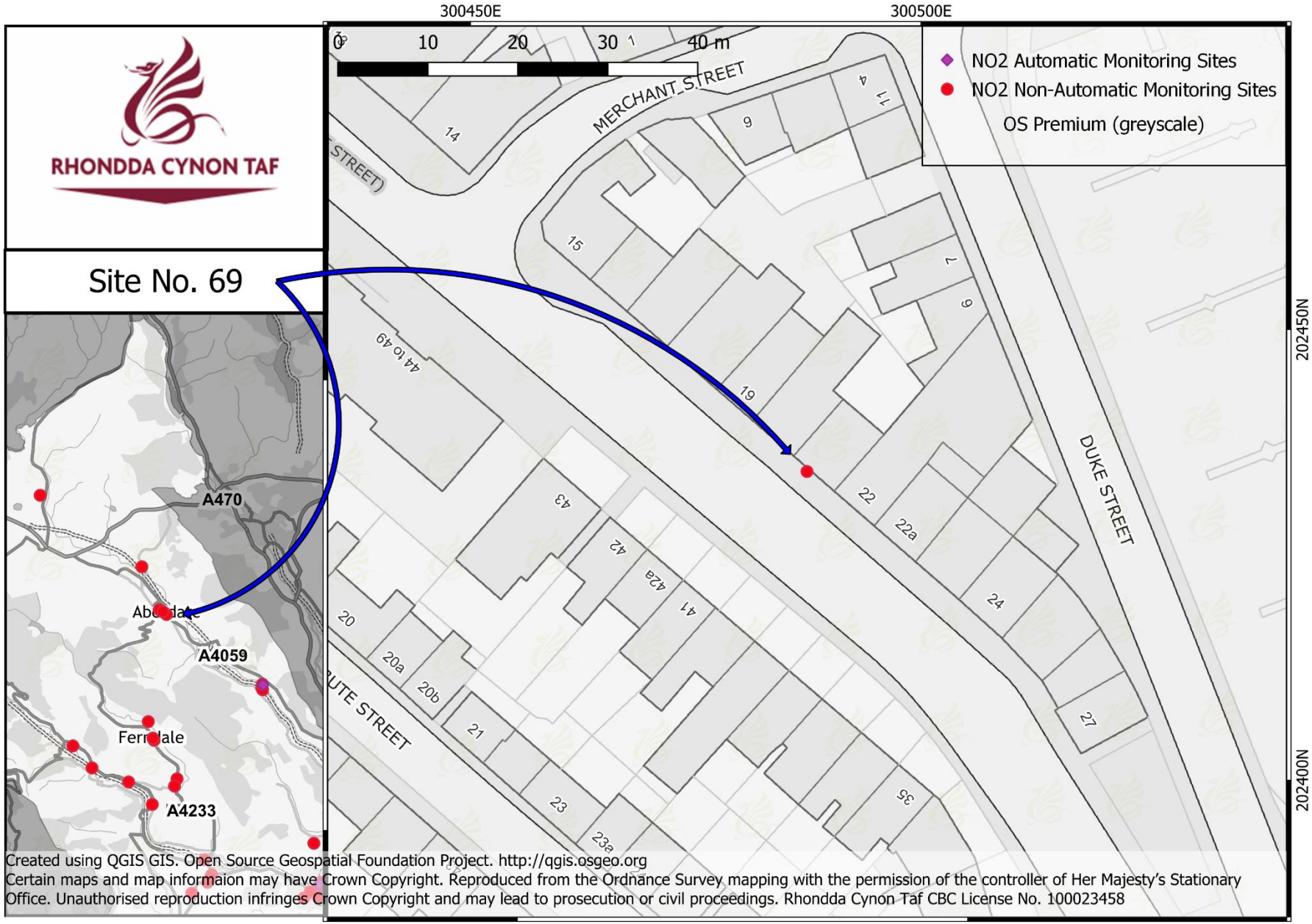

300350E
300400E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 53
A470
A4059
A4233
MARKET STREET
B4275 (CARDIFF STREET)
BUTE STREET
War Meml
202550N
202500N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

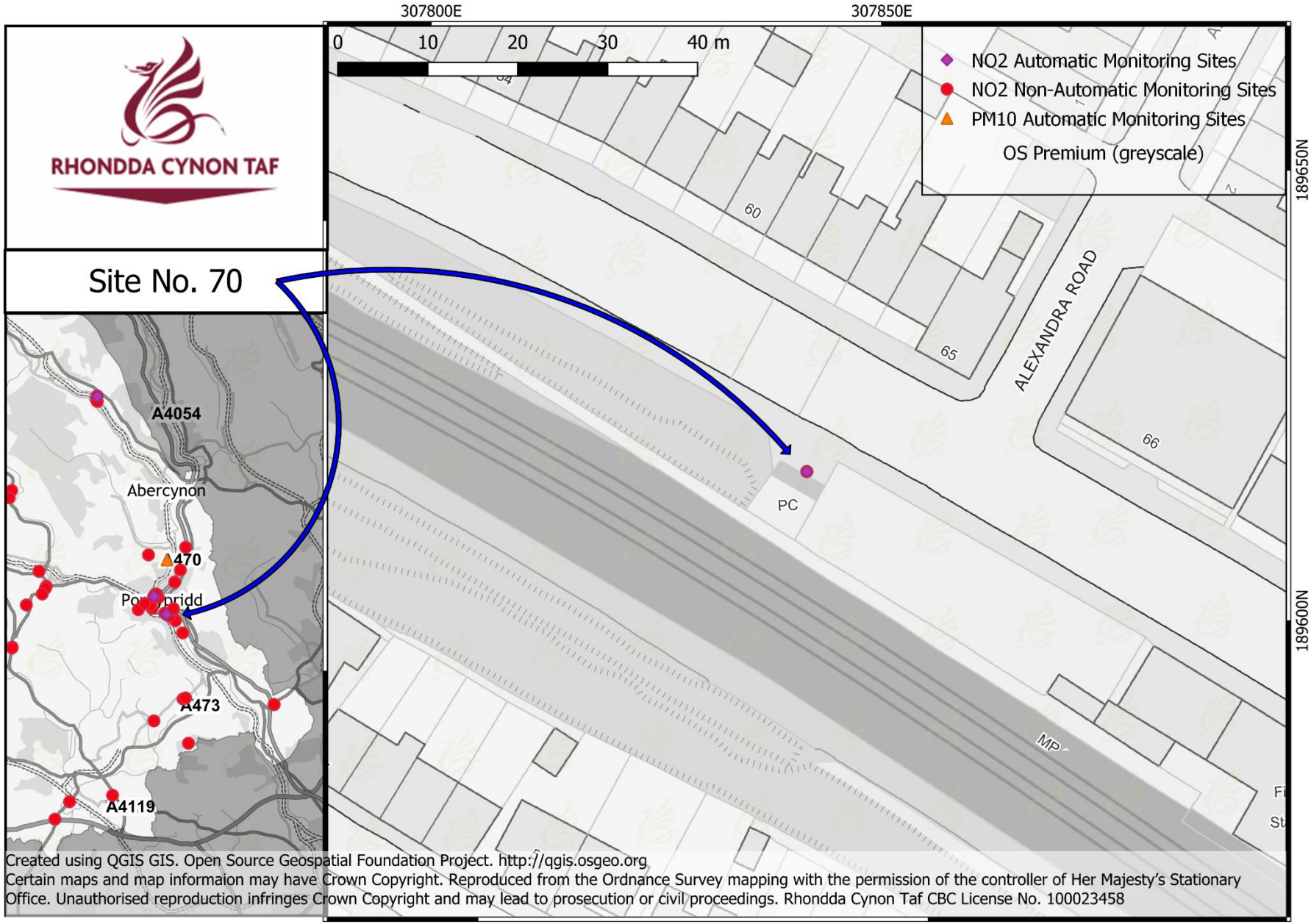

RHONDDA CYNON TAF
Site No. 55
A4054
Abercynon
A470
A473
308450E
308500E
191600N
191550N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
A4054 (NORTH)
51
57
62
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

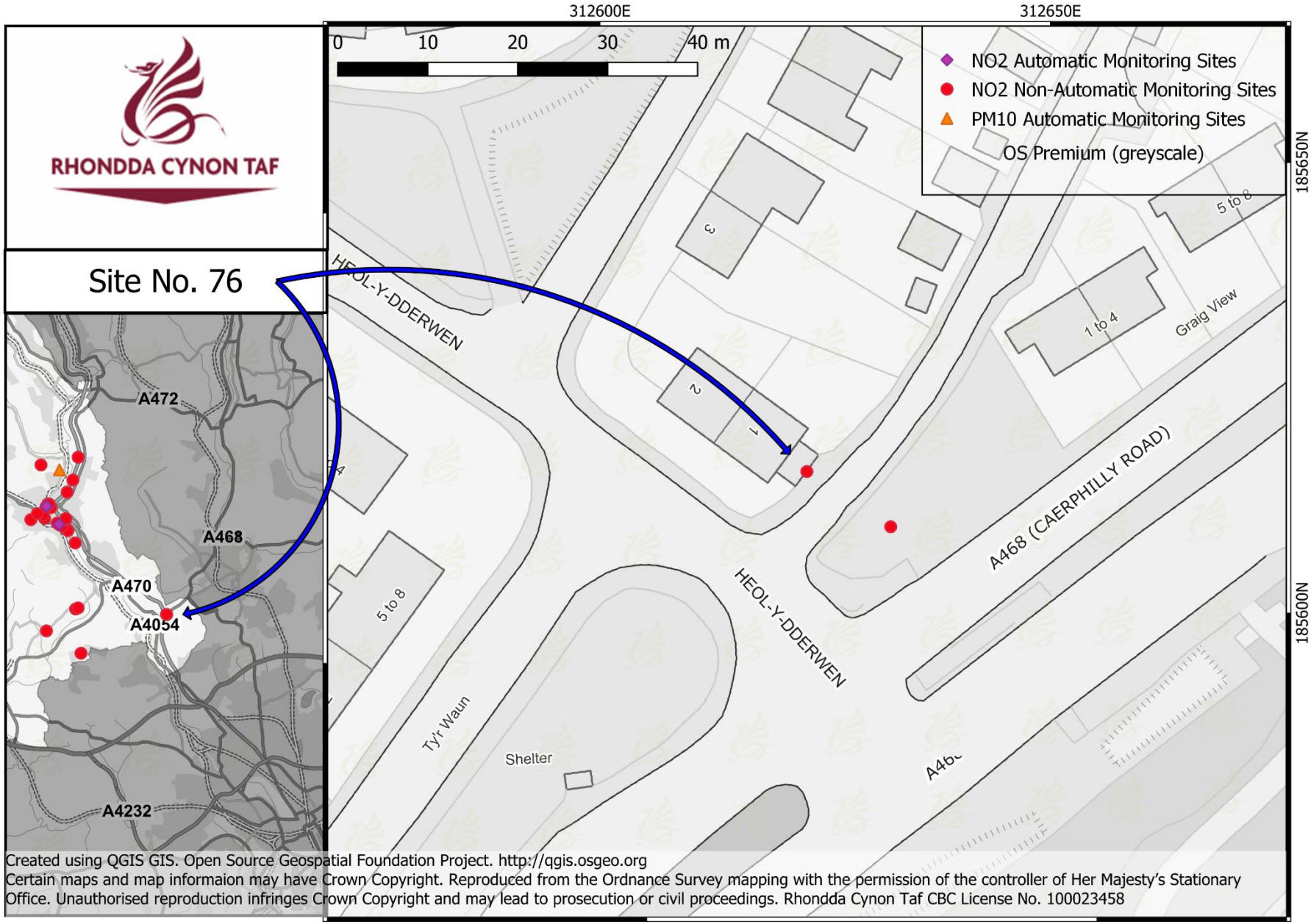

RHONDDA CYNON TAF
Site No. 56
308200E
308250E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
WINDSOR ROAD
B4595 (BROADWAY)
Surgery
Club
TCB
Broadway
109
110
116
121
125
129
131
189350N
189300N
A4054
Abercynon
A470
A473
A4119
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

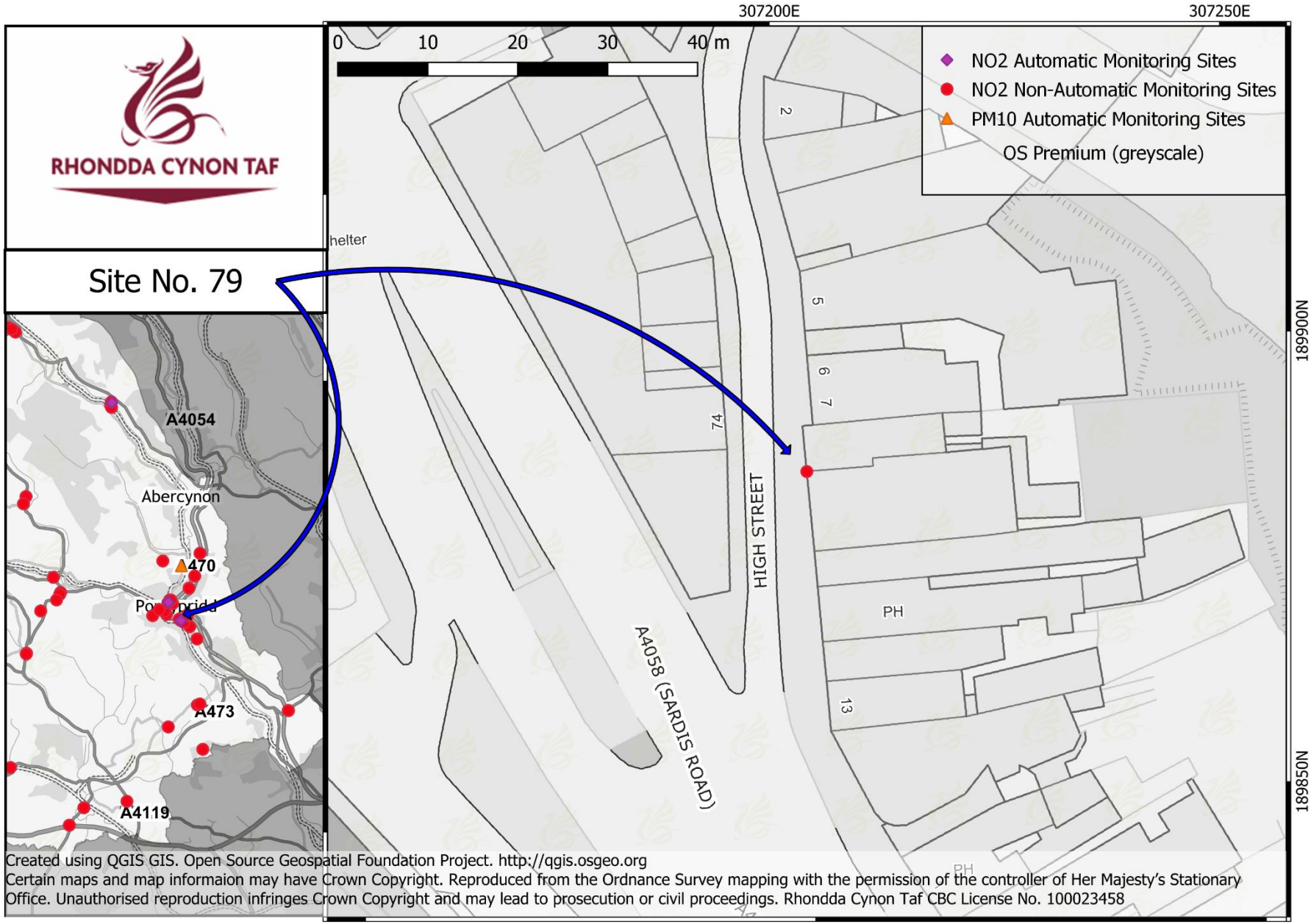

RHONDDA CYNON TAF
Site No. 66
307950E
308000E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189550N
189500N
A4054
Abercynon
470
A473
A4119
Shelter
TCB
SL
80
85
90
93
94
176
169
167
166
2
4
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

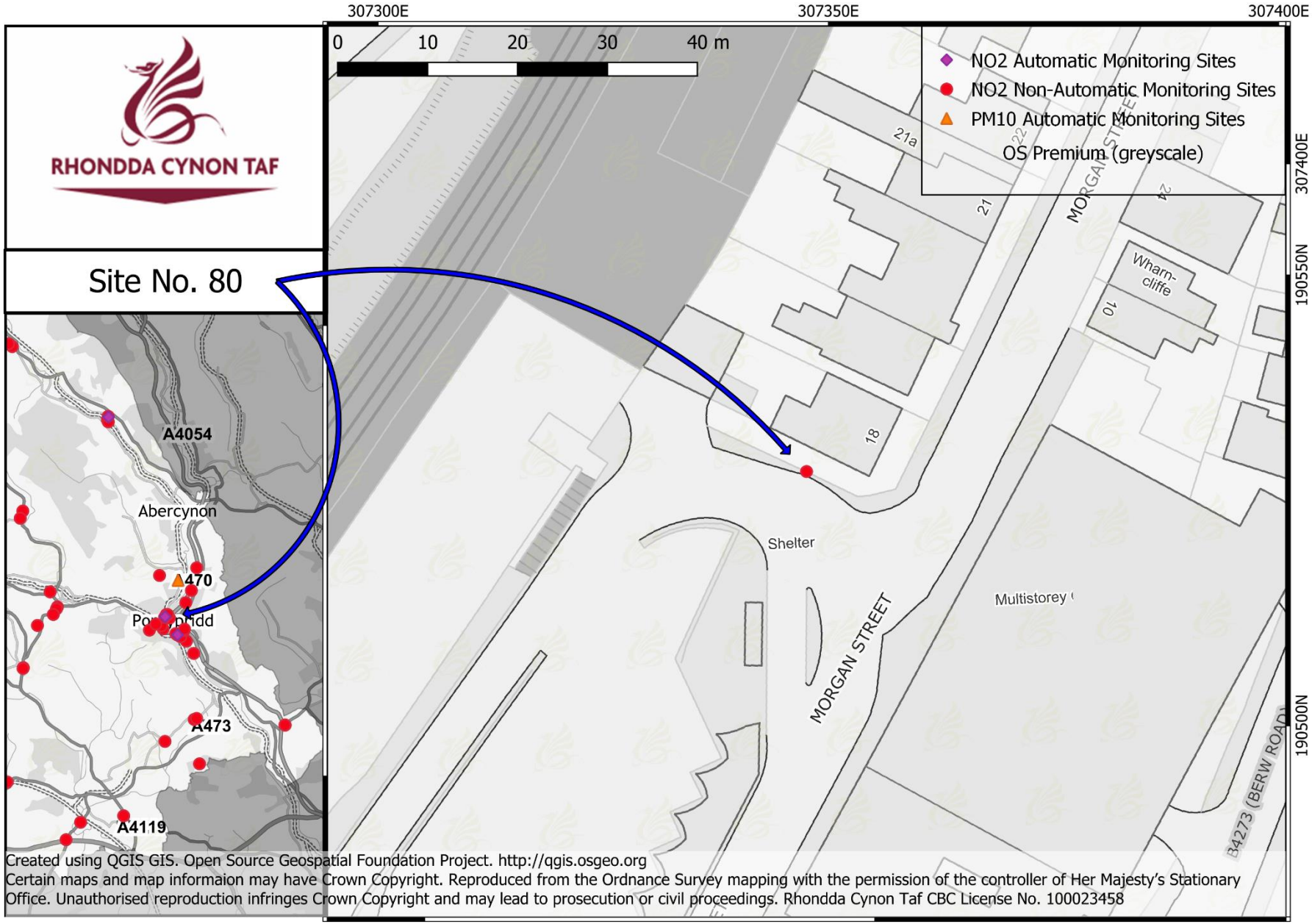

RHONDDA CYNON TAF
Site No. 68
300150E
300200E
202650N
202600N
0 10 20 30 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
Maendy Place
Ty Oriel
1 to 15
TCB
LB
A470
A4233
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

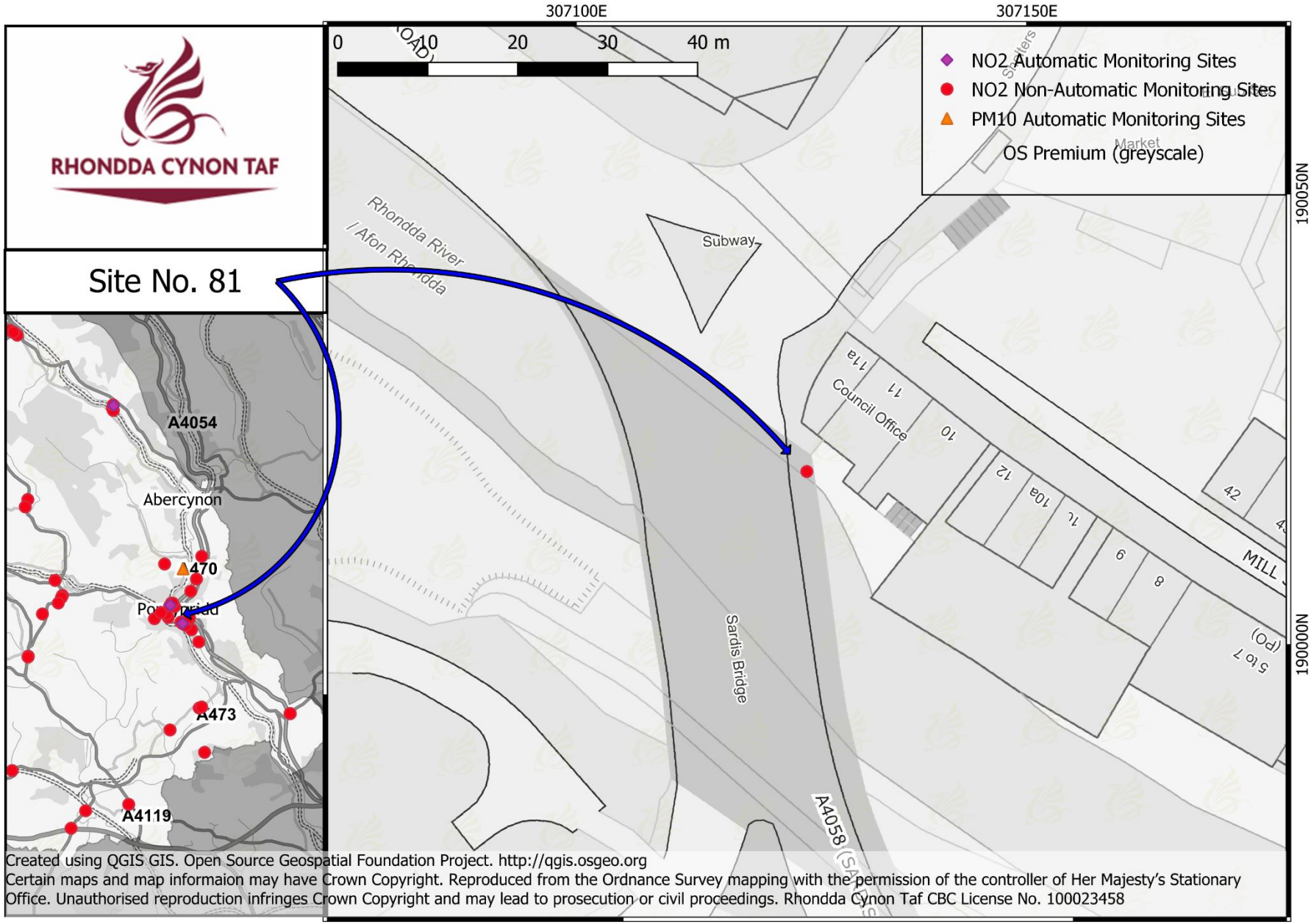

300450E
300500E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 69
MERCHANT STREET
DUKE STREET
202450N
202400N
A470
A4059
A4233
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

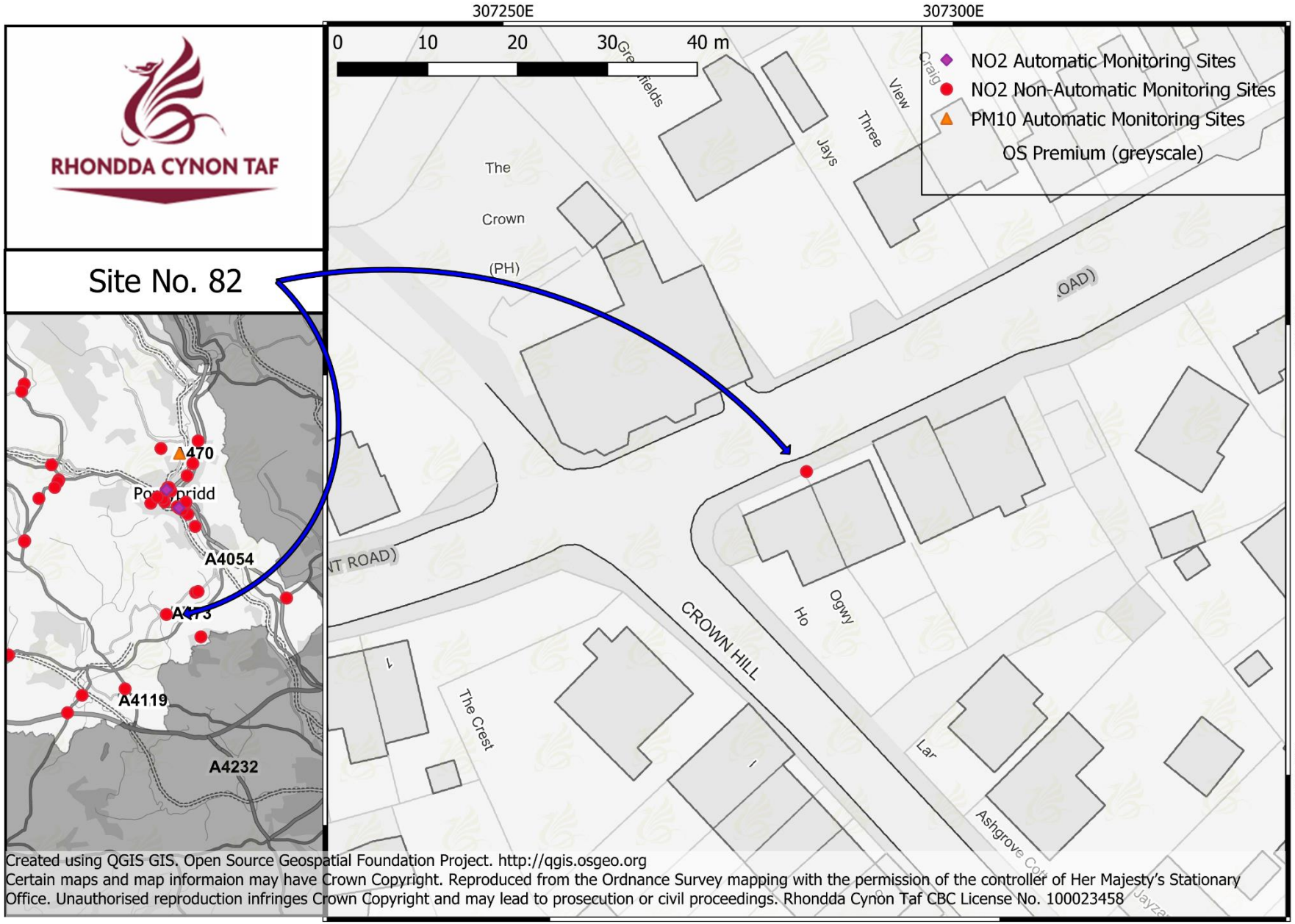

307800E
307850E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189650N
189600N
ALEXANDRA ROAD
60
65
66
PC
MP
RHONDDA CYNON TAF
Site No. 70
A4054
Abercynon
A470
A473
A4119
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

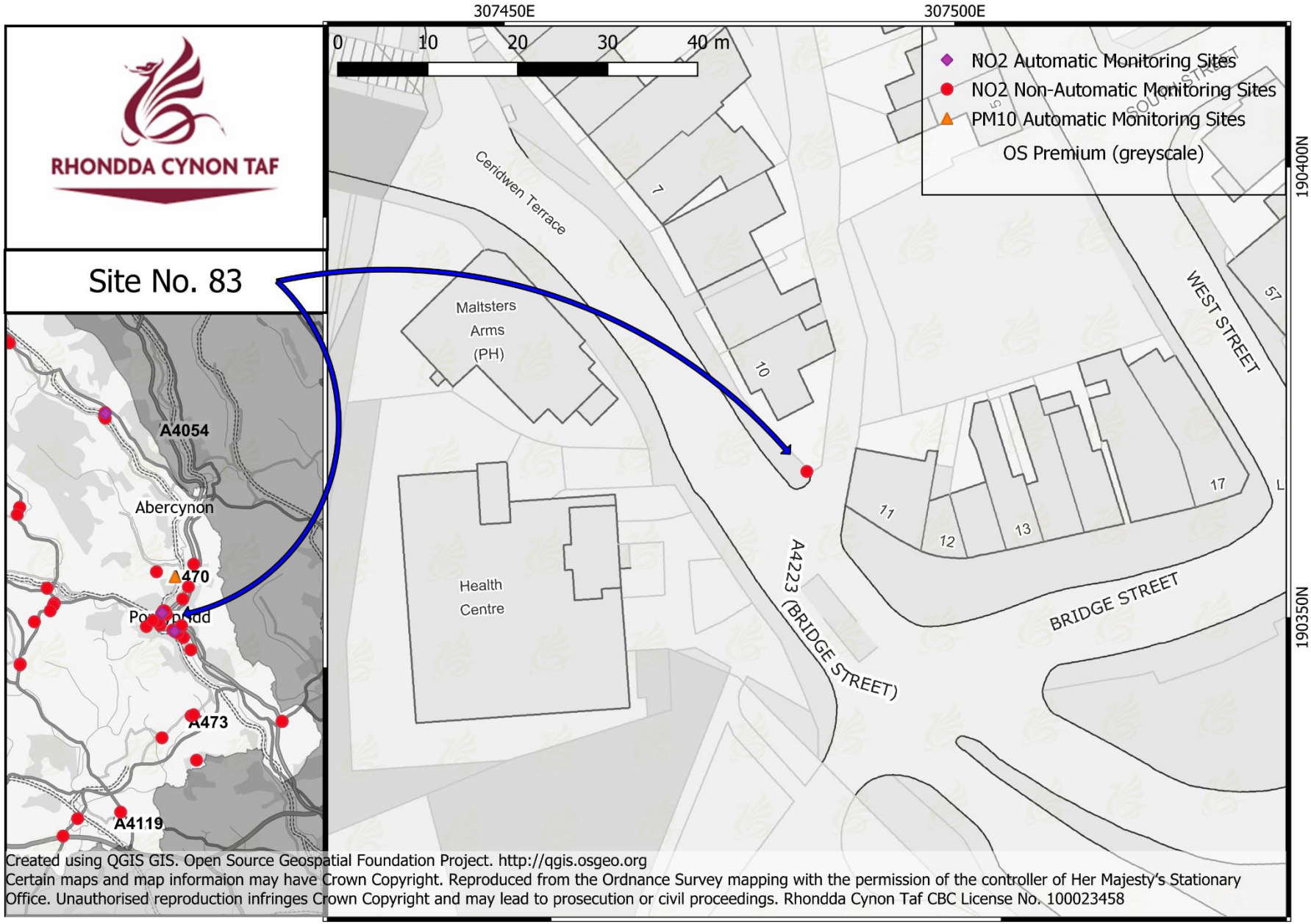

312600E
312650E
185650N
185600N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 76
A472
A468
A470
A4054
A4232
HEOL-Y-DDERWEN
A468 (CAERPHILLY ROAD)
Graig View
1 to 4
5 to 8
Tyr Waun
Shelter
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

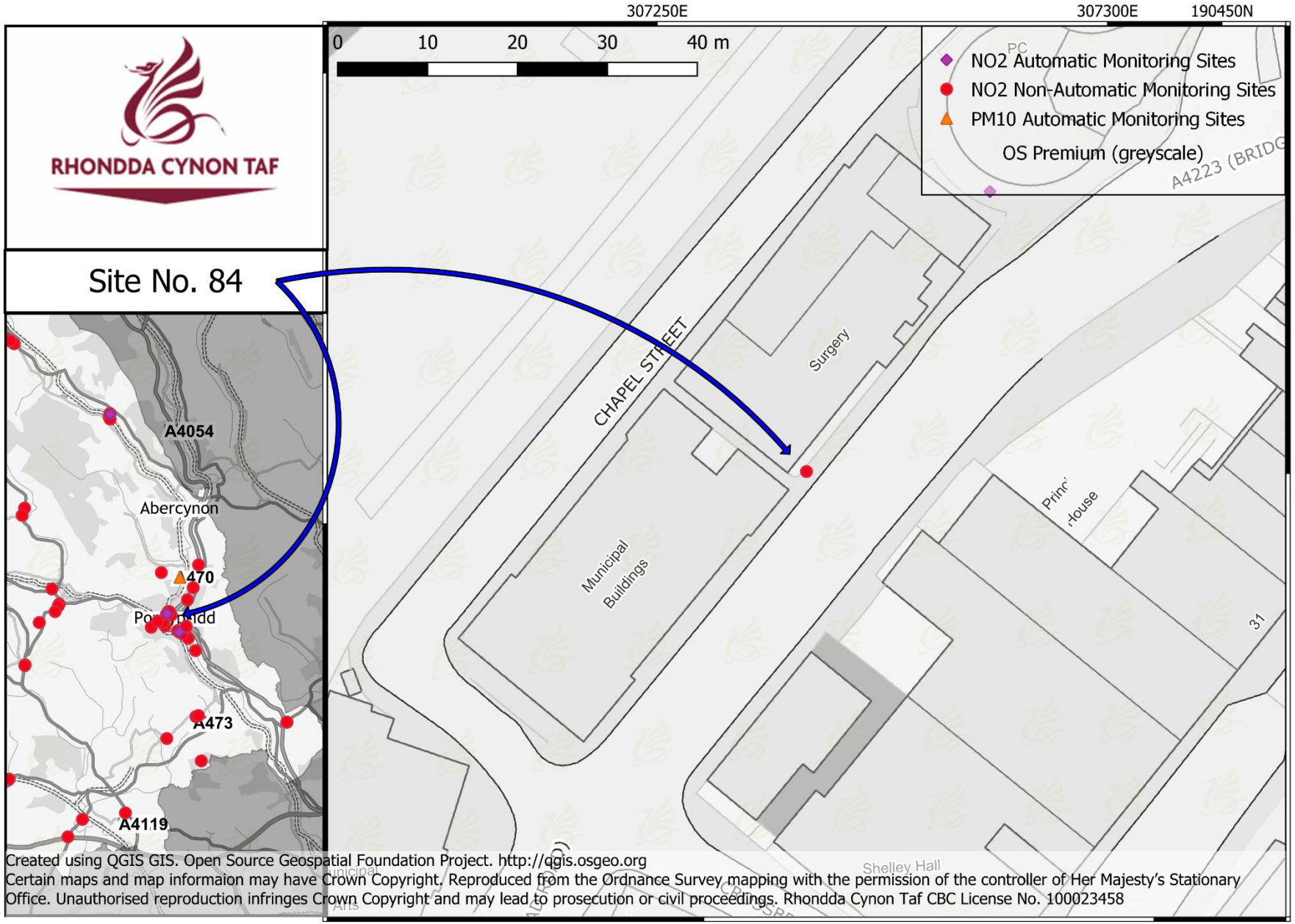

RHONDDA CYNON TAF
Site No. 79
307200E
307250E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189900N
189850N
HIGH STREET
A4058 (SARDIS ROAD)
PH
A4054
Abercynon
A473
A4119
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

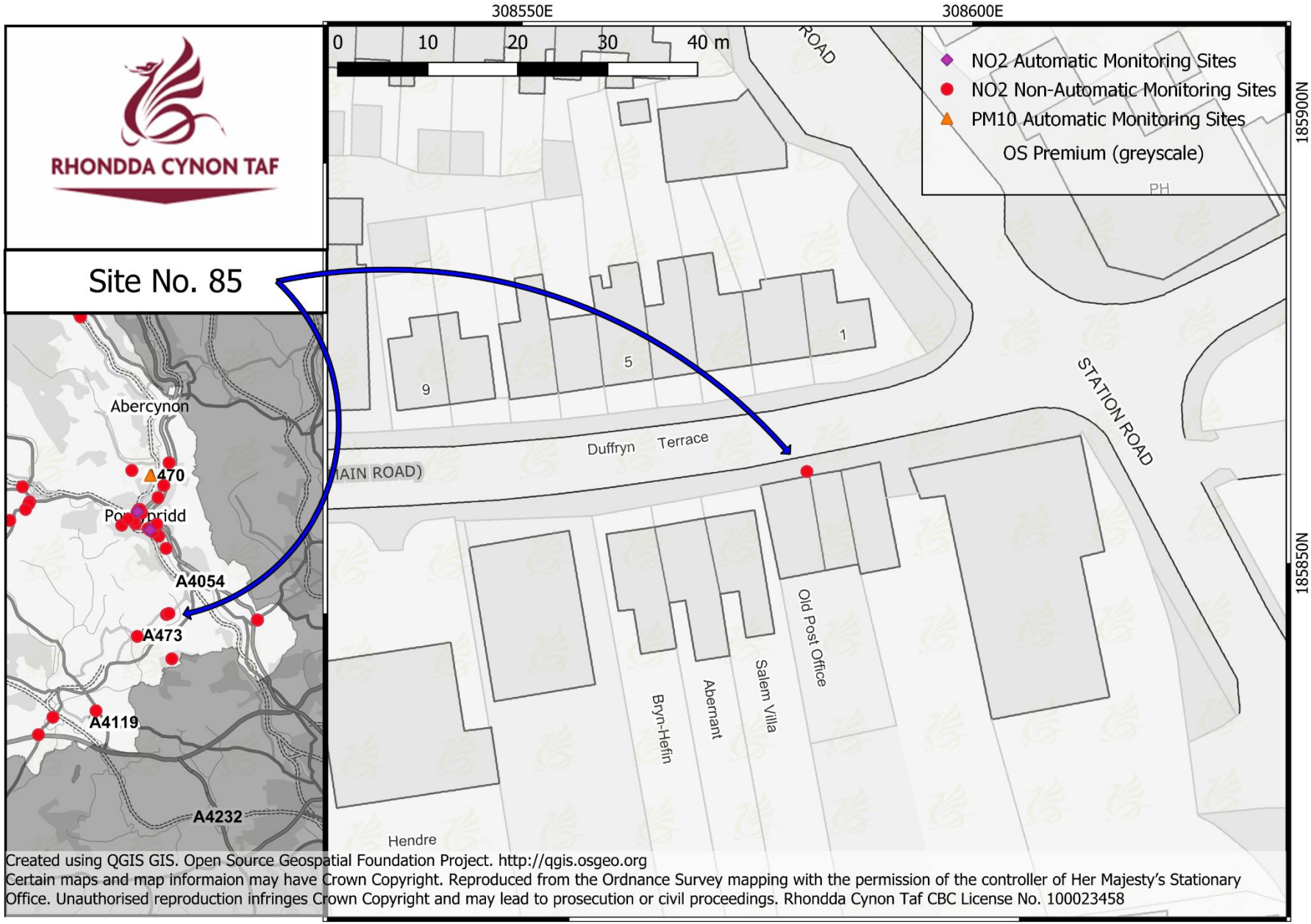

307300E
307350E
307400E
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 80
A4054
Abercynon
A470
A473
A4119
21a
22
21
MORGAN STREET
24
Wharn-cliffe
10
18
Shelter
Multistorey
MORGAN STREET
B4273 (BERW ROAD)
307400E
190550N
190500N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

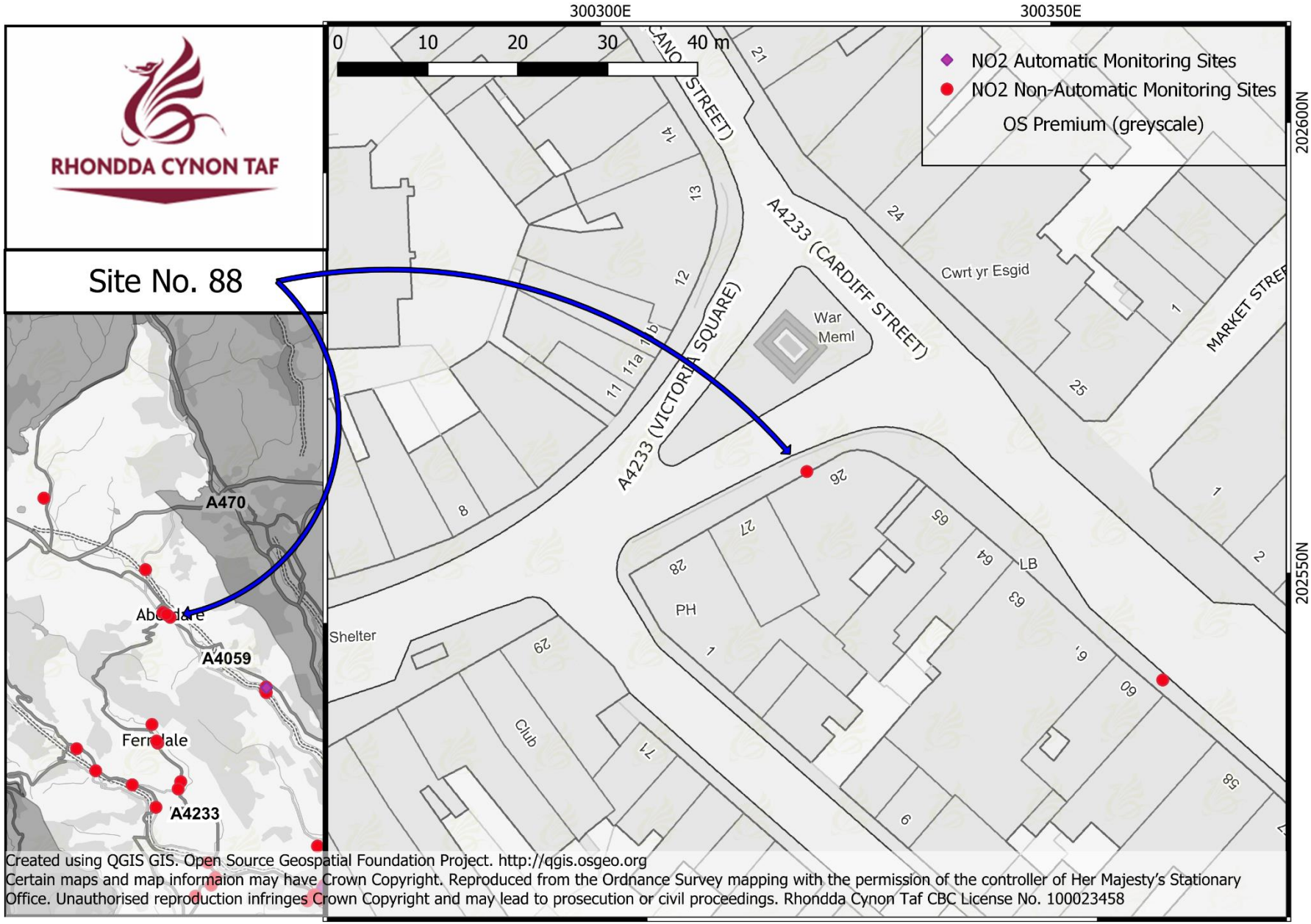

307100E
307150E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
190050N
190000N
Site No. 81
A4054
Abercynon
470
A473
A4119
Rhondda River / Afon Rhondda
Subway
Sardis Bridge
A4058
Council Office
MILL
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

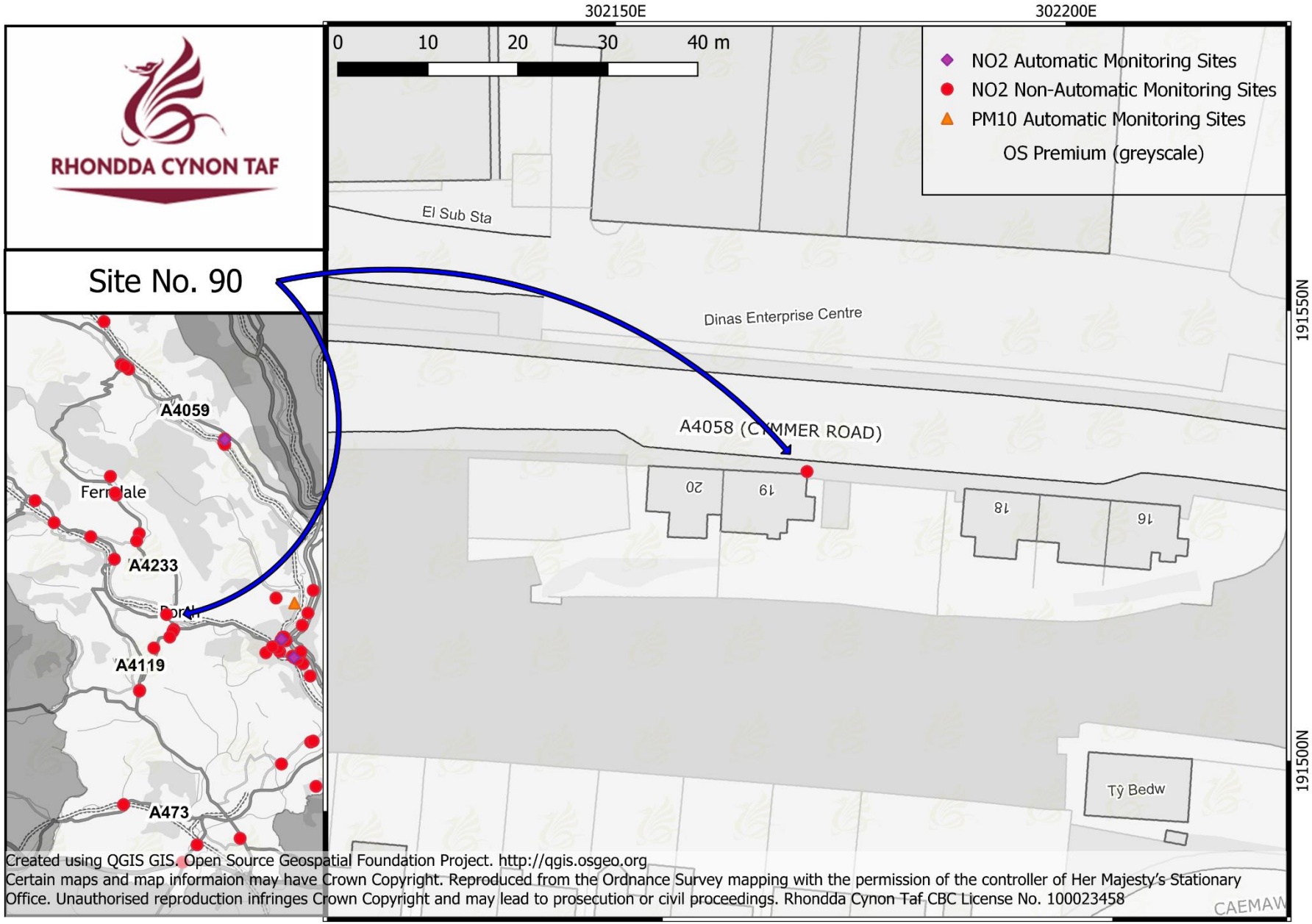

RHONDDA CYNON TAF
Site No. 82
307250E
307300E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
184900N
184850N
A470
A4054
A473
A4119
A4232
The Crown (PH)
CROWN HILL
The Crest
Ogwy
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

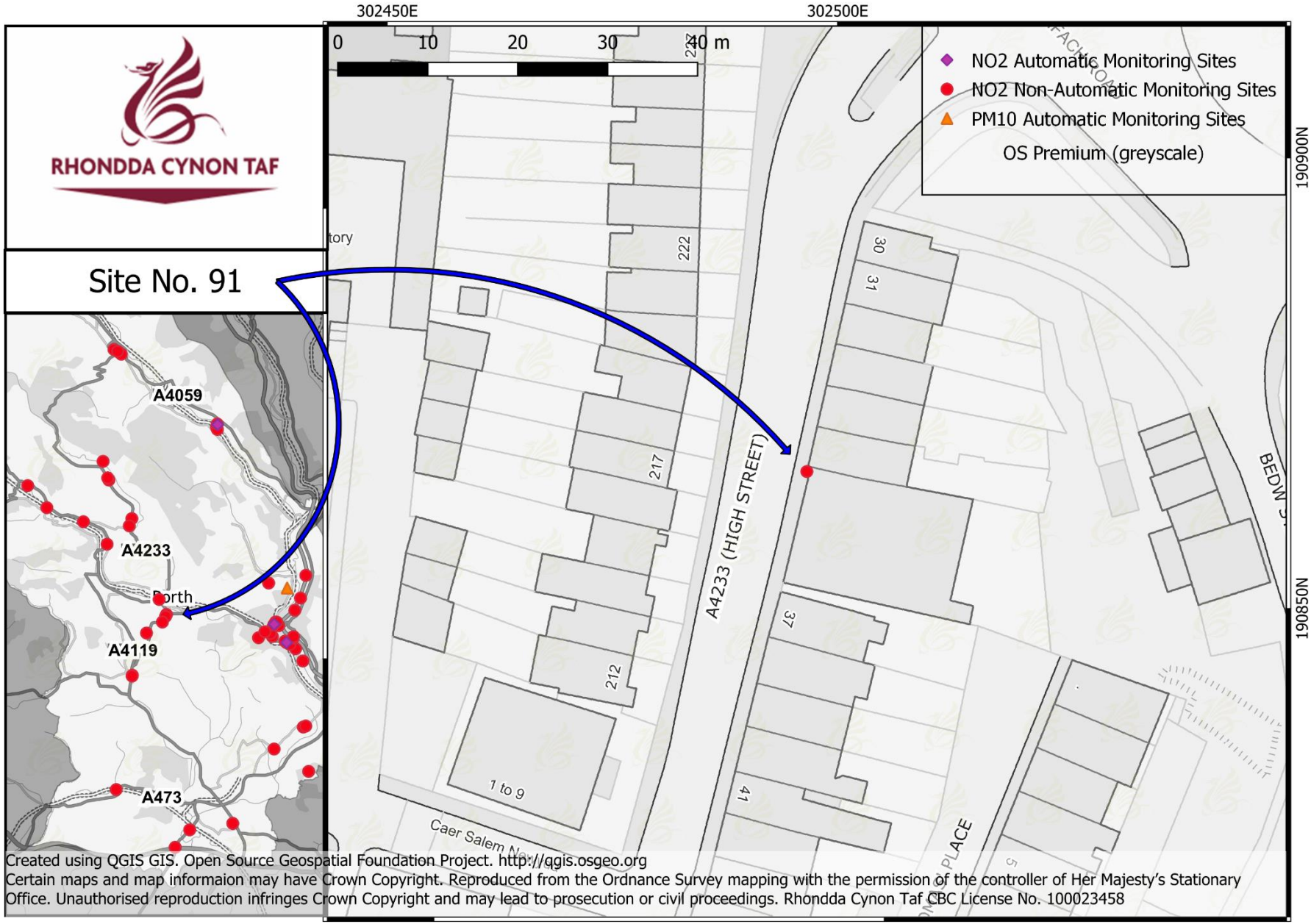

307450E
307500E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
190400N
190350N
Site No. 83
Ceridwen Terrace
Maltsters Arms (PH)
Health Centre
A4223 (BRIDGE STREET)
WEST STREET
BRIDGE STREET
SOUTH STREET
A4054
Abercynon
A470
A473
A4119
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

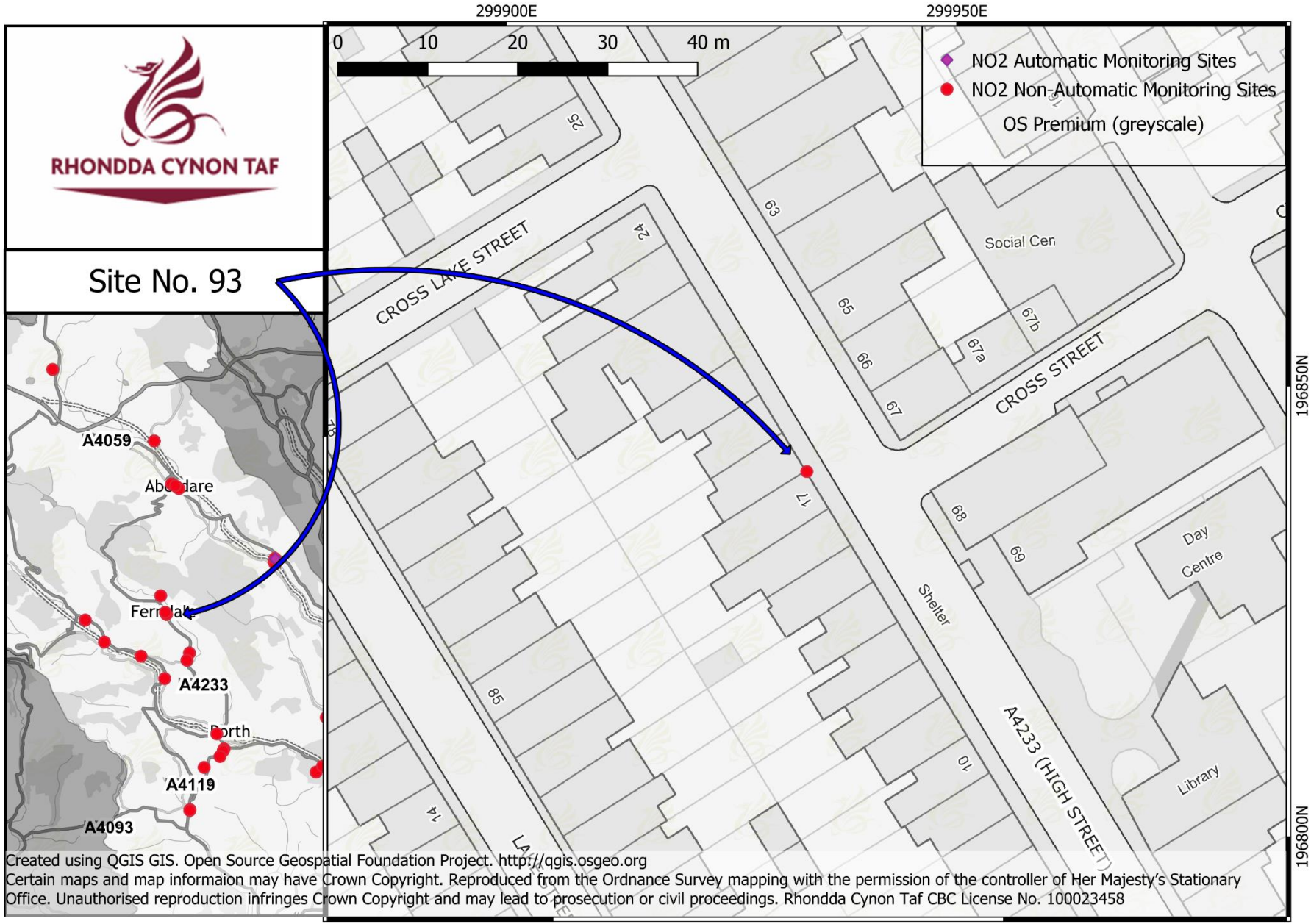

RHONDDA CYNON TAF
Site No. 84
307250E
307300E
190450N
190400N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
CHAPEL STREET
Surgery
Municipal Buildings
A4054
Abercynon
A470
A473
A4119
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

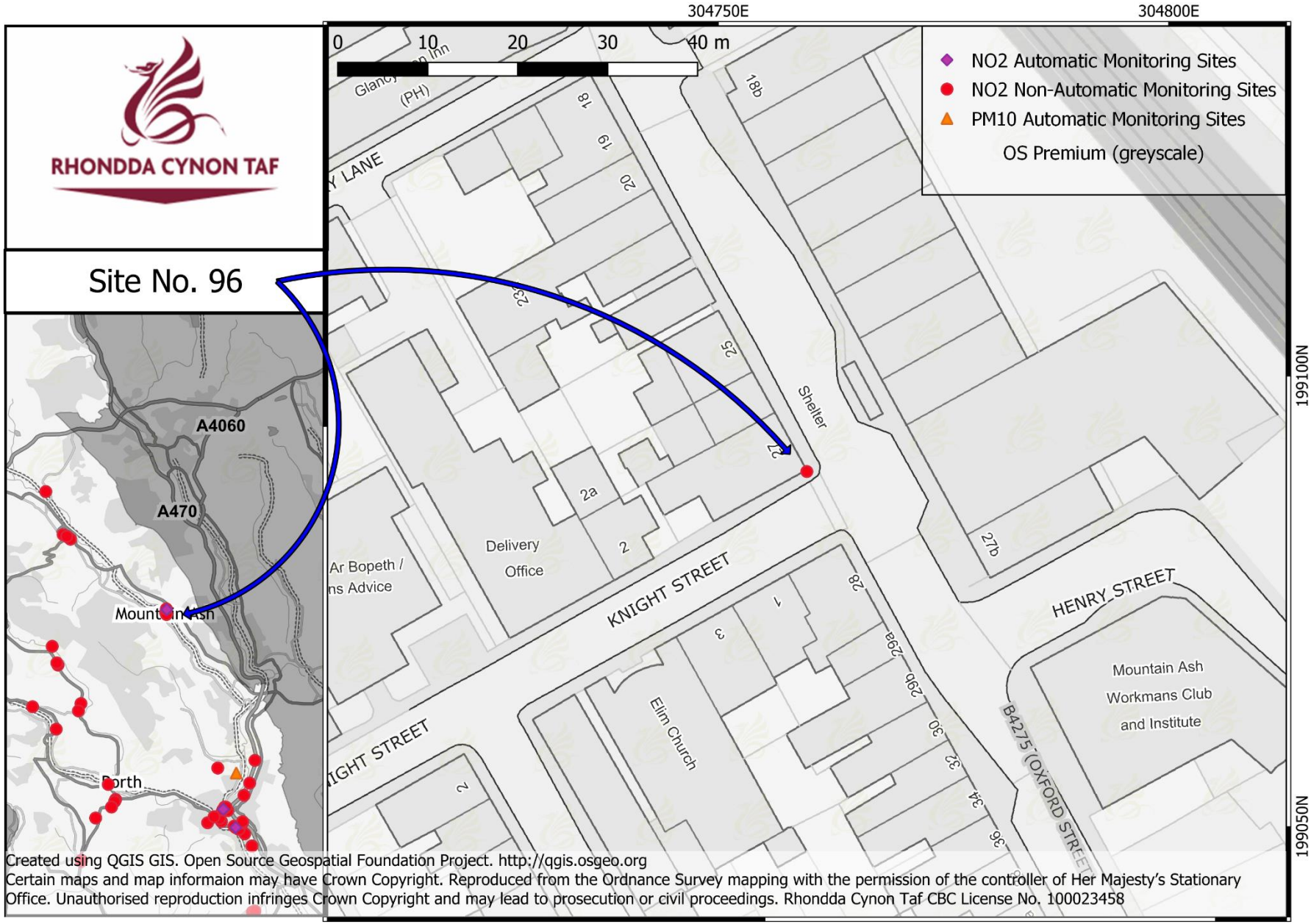

RHONDDA CYNON TAF
Site No. 85
308550E
308600E
185900N
185850N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
ROAD
PH
1
5
9
STATION ROAD
Duffryn Terrace
AIN ROAD)
Old Post Office
Salem Villa
Abernant
Bryn-Hefin
Hendre
Abercynon
470
A4054
A473
A4119
A4232
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

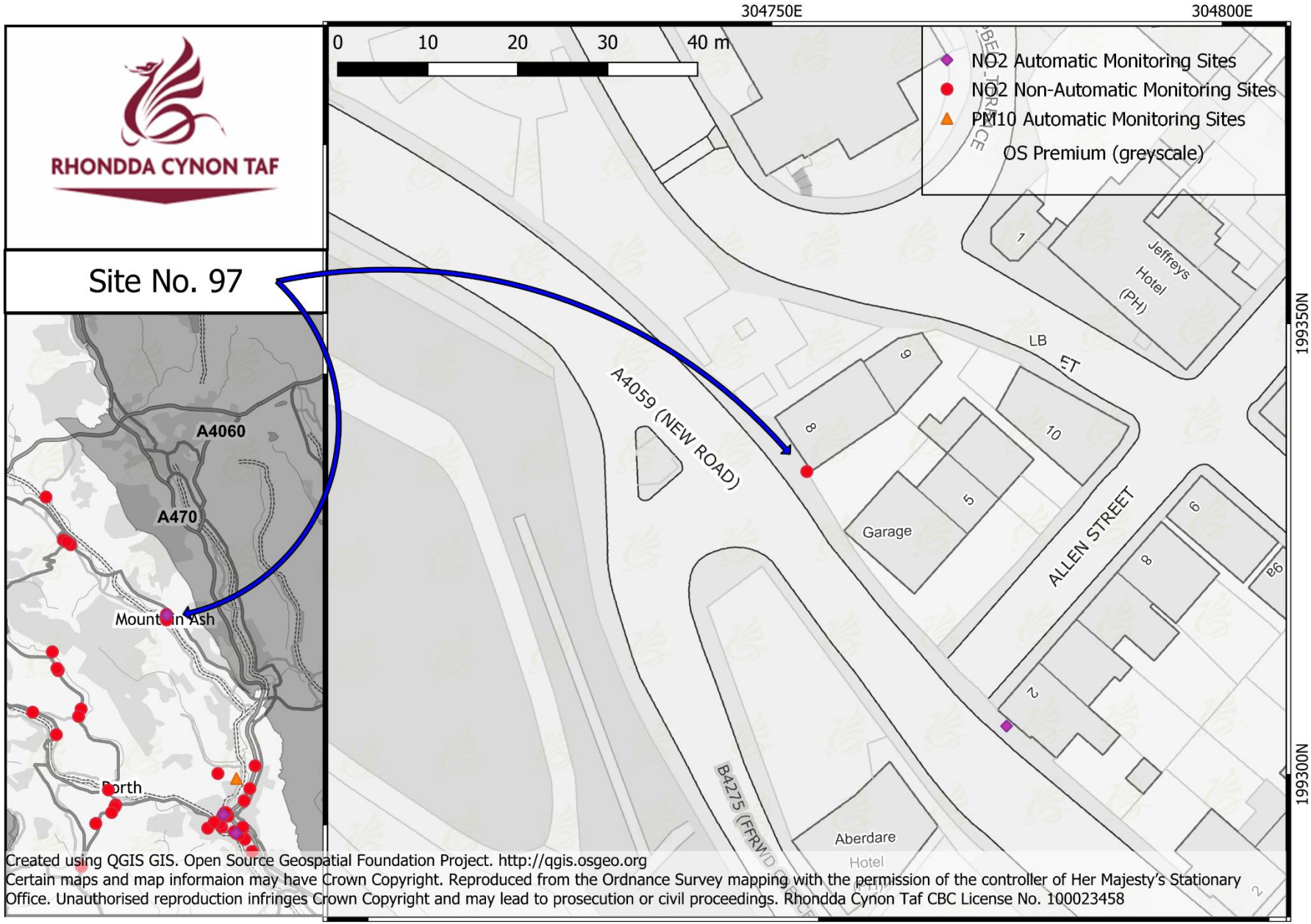

300300E
300350E
202600N
202550N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 88
A4233 (VICTORIA SQUARE)
A4233 (CARDIFF STREET)
Cwrt yr Esgid
War Meml
MARKET STREET
Shelter
PH
LB
Club
A470
A4059
A4233
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

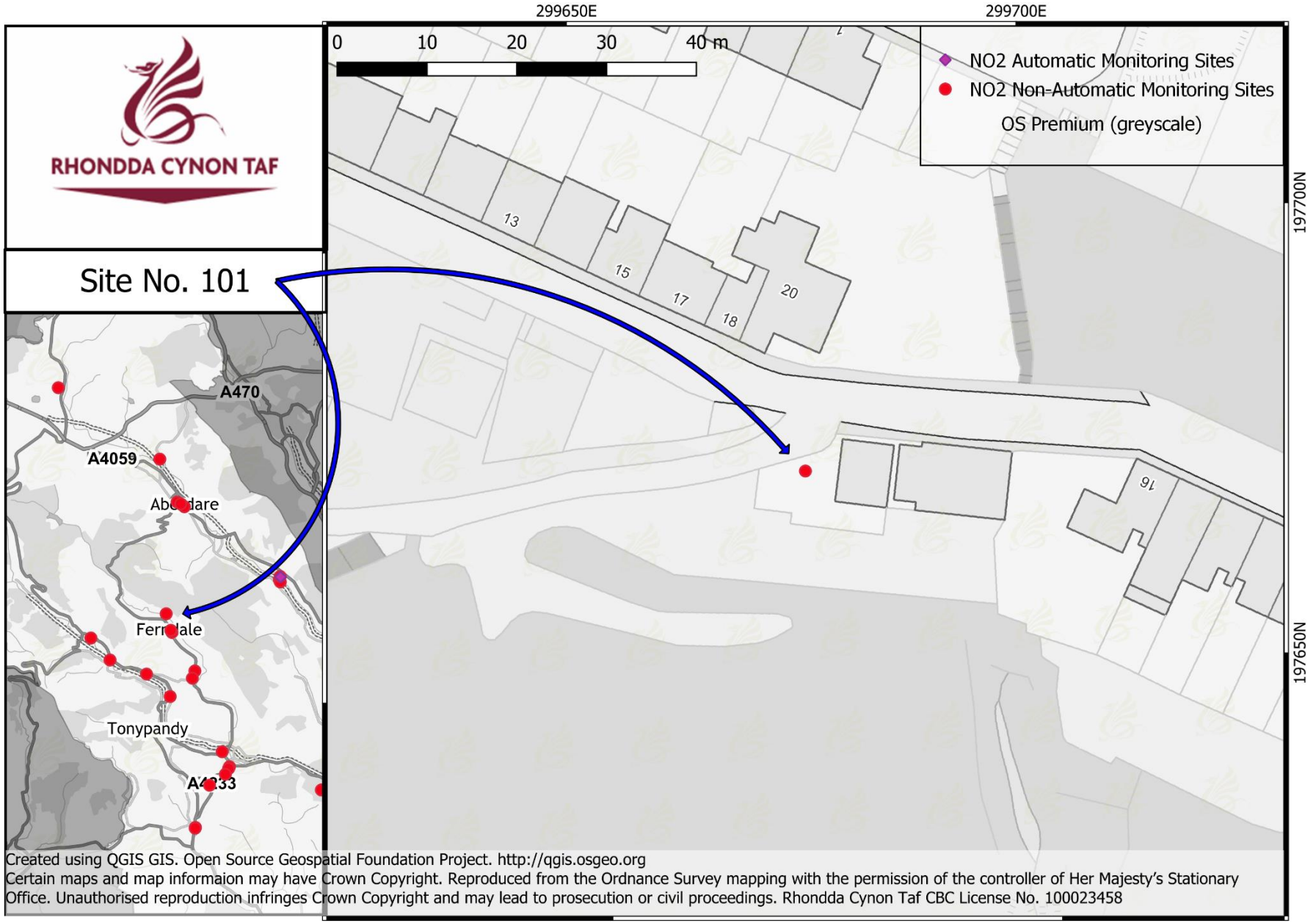

RHONDDA CYNON TAF
Site No. 90
302150E
302200E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
El Sub Sta
Dinas Enterprise Centre
A4058 (CYMMER ROAD)
20
19
18
16
Tŷ Bedw
191550N
191500N
A4059
A4233
A4119
A473
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

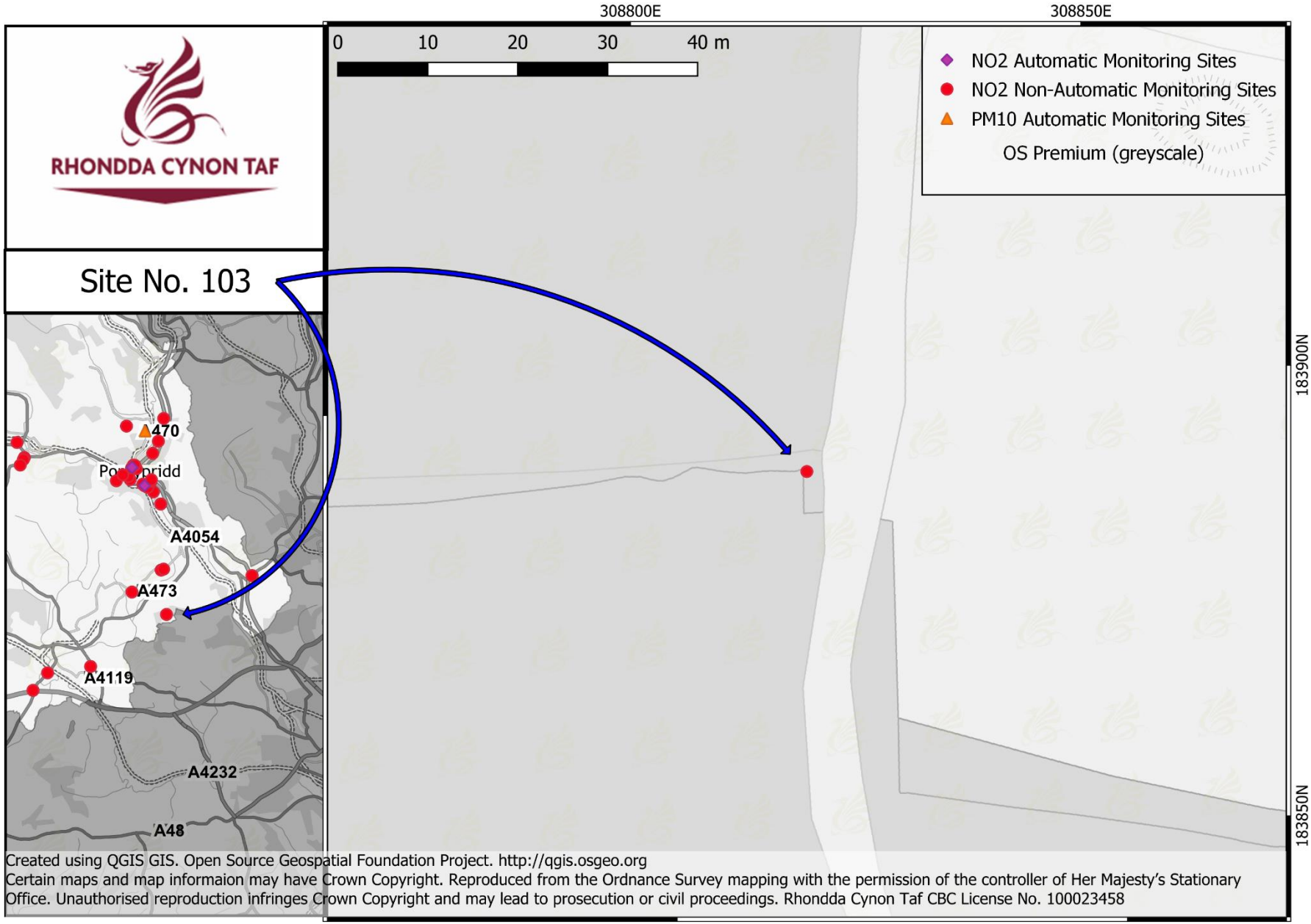

302450E
302500E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Site No. 91
A4059
A4233
A4119
A473
A4233 (HIGH STREET)
222
217
212
1 to 9
30
31
37
41
190900N
190850N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

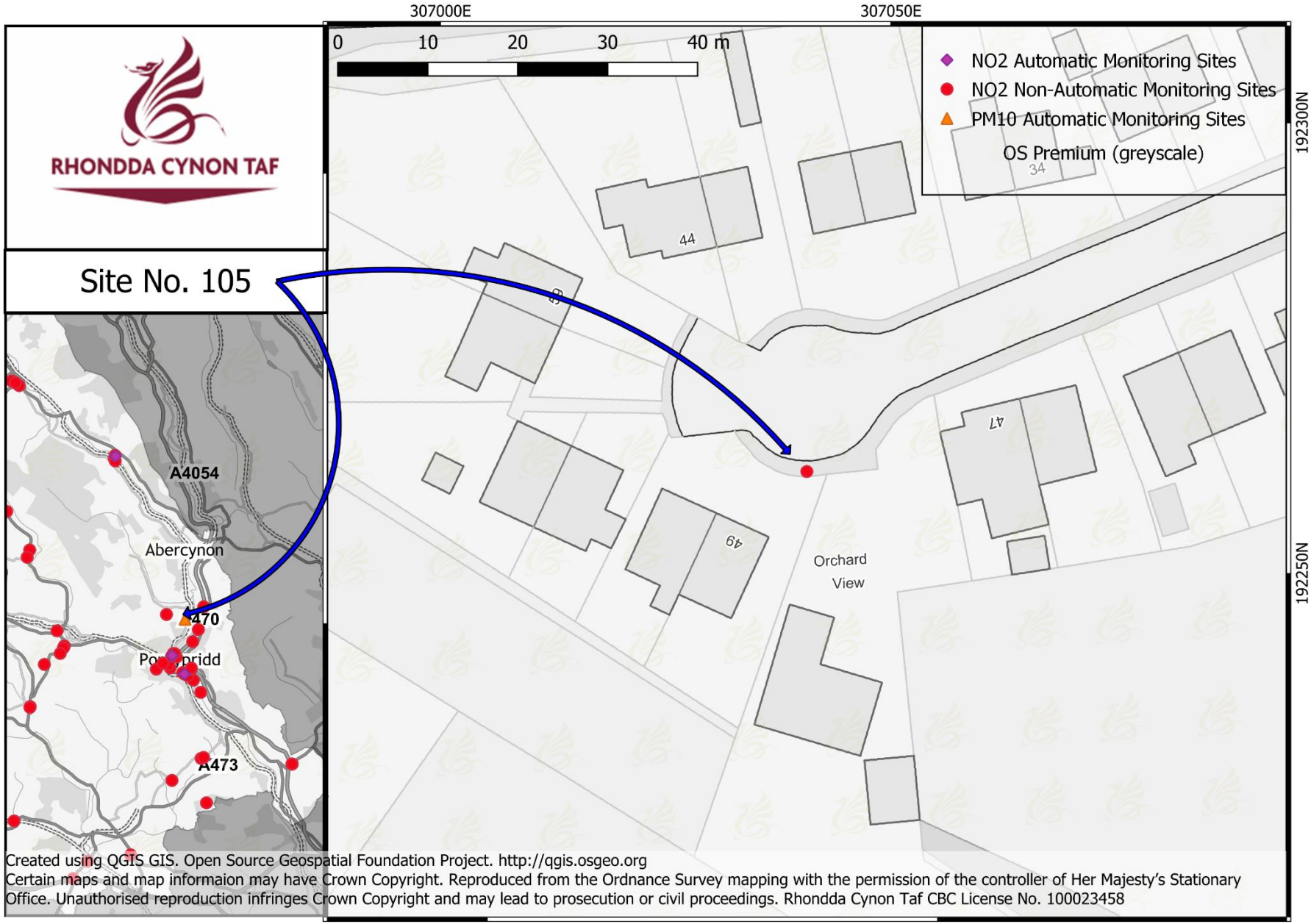

299900E
299950E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 93
CROSS LAKE STREET
CROSS STREET
A4233 (HIGH STREET)
Social Cen
Day Centre
Library
Shelter
A4059
A4233
A4119
A4093
196850N
196800N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

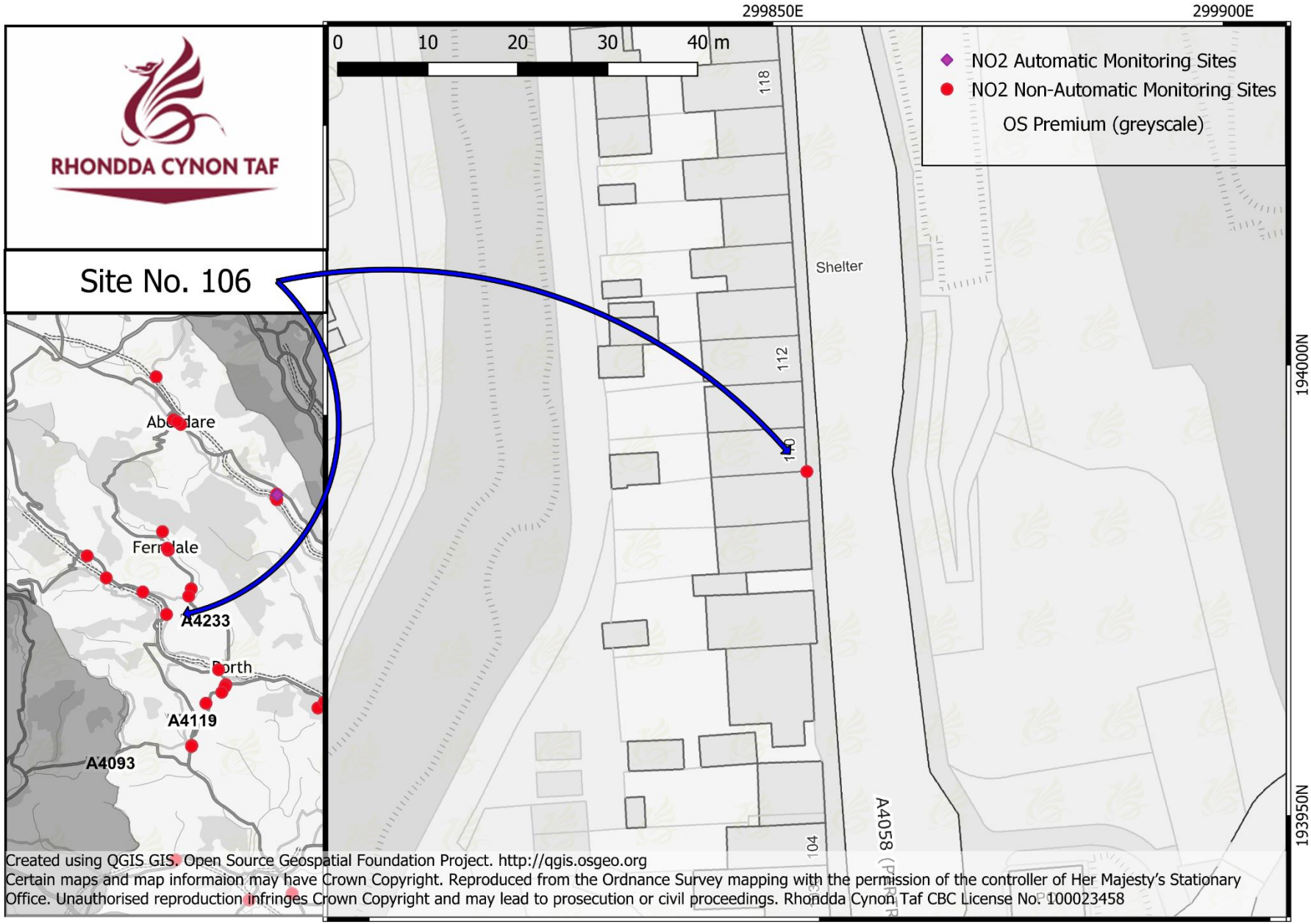

RHONDDA CYNON TAF
Site No. 96
304750E
304800E
199100N
199050N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
A4060
A470
Mountain Ash
Porth
KNIGHT STREET
HENRY STREET
Delivery Office
Shelter
Elim Church
Mountain Ash Workmans Club and Institute
B4275 (OXFORD STREET)
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

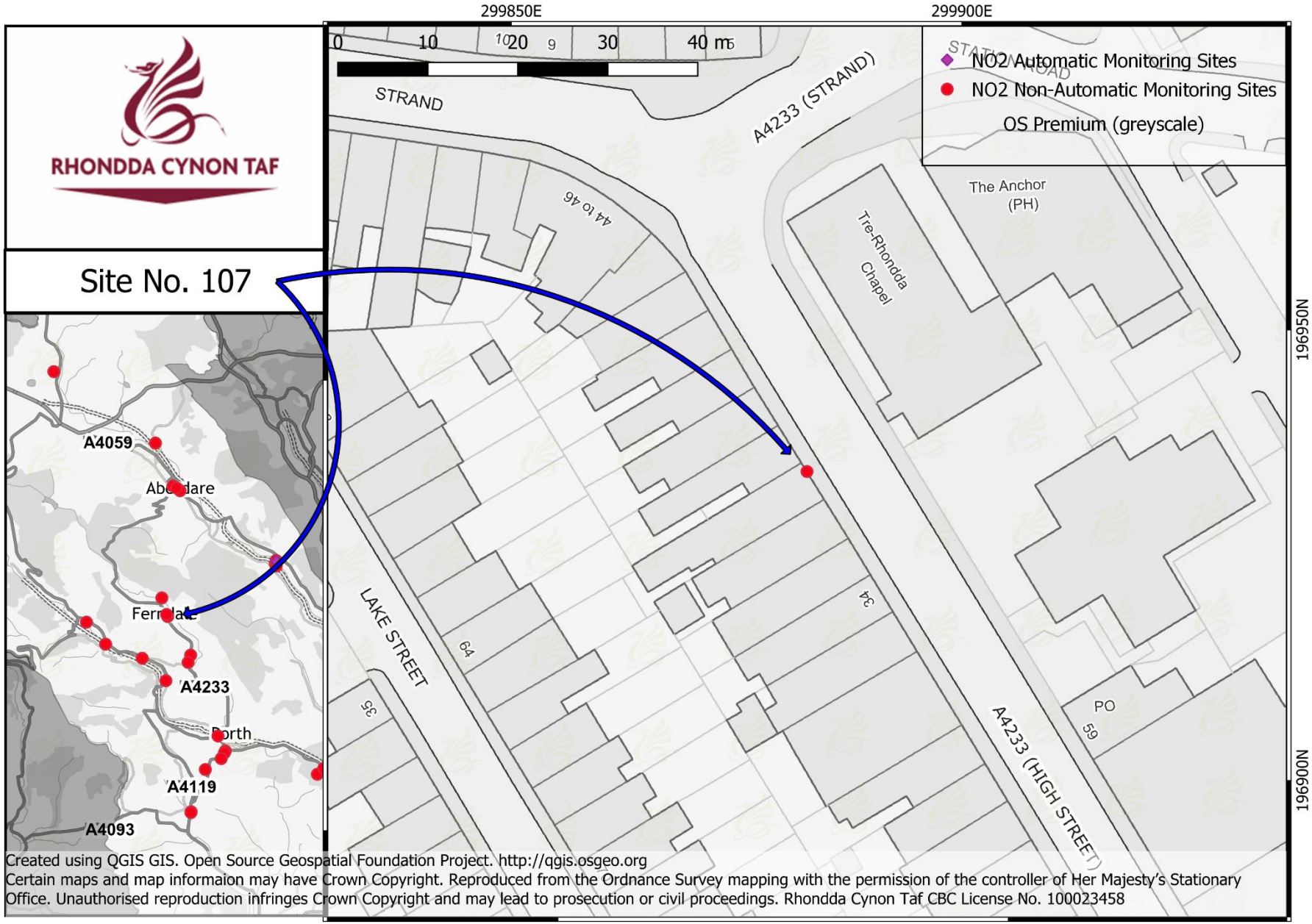

RHONDDA CYNON TAF
Site No. 97
304750E
304800E
199350N
199300N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
A4059 (NEW ROAD)
A4060
A470
Mountain Ash
Porth
Jeffreys Hotel (PH)
Garage
ALLEN STREET
B4275 (FFRWD
Aberdare Hotel
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

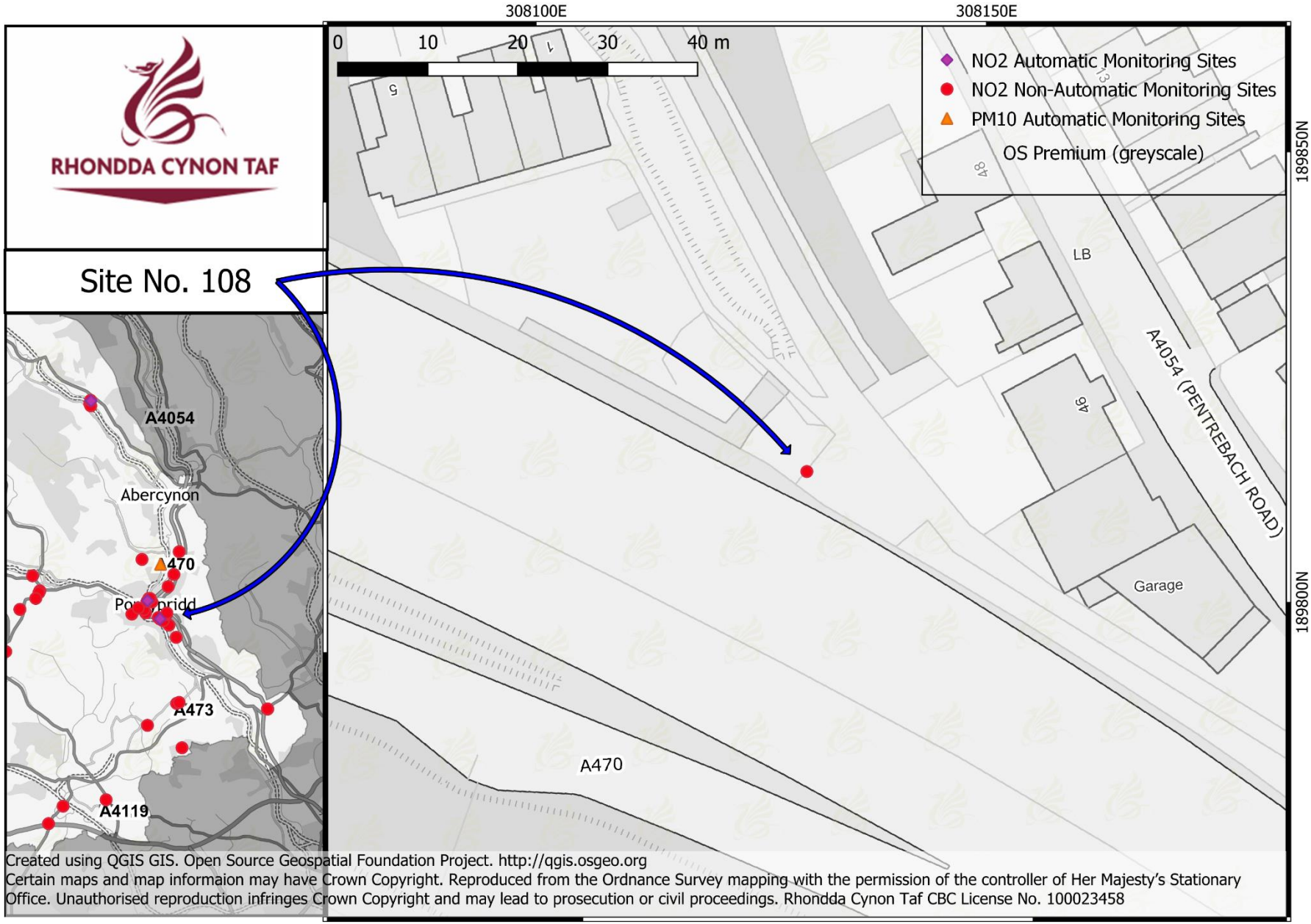

299650E
299700E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 101
A470
A4059
Aberdare
Ferndale
Tonypandy
A4233
13
15
17
18
20
16
197700N
197650N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

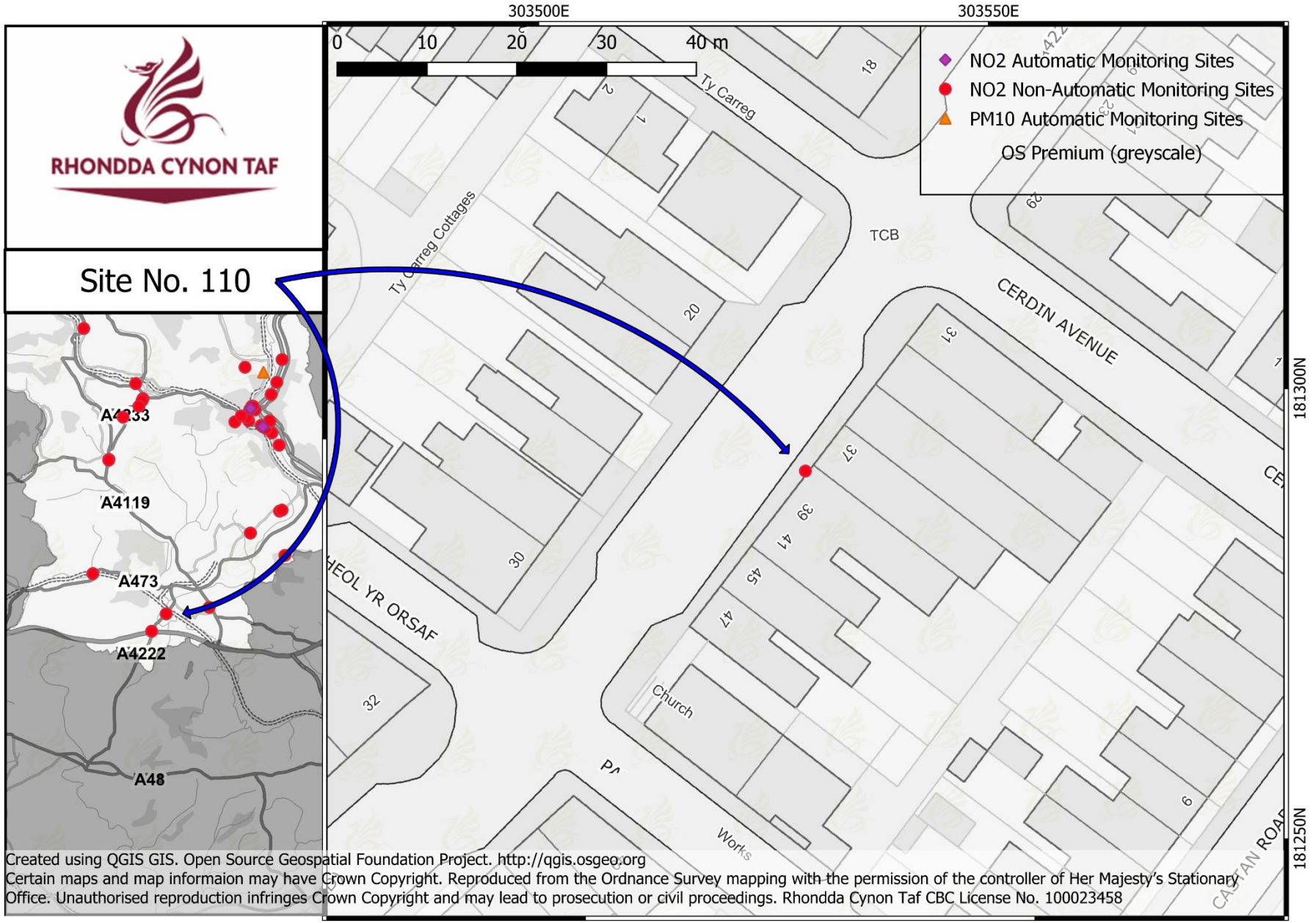

308800E
308850E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 103
A470
A4054
A473
A4119
A4232
A48
183900N
183850N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

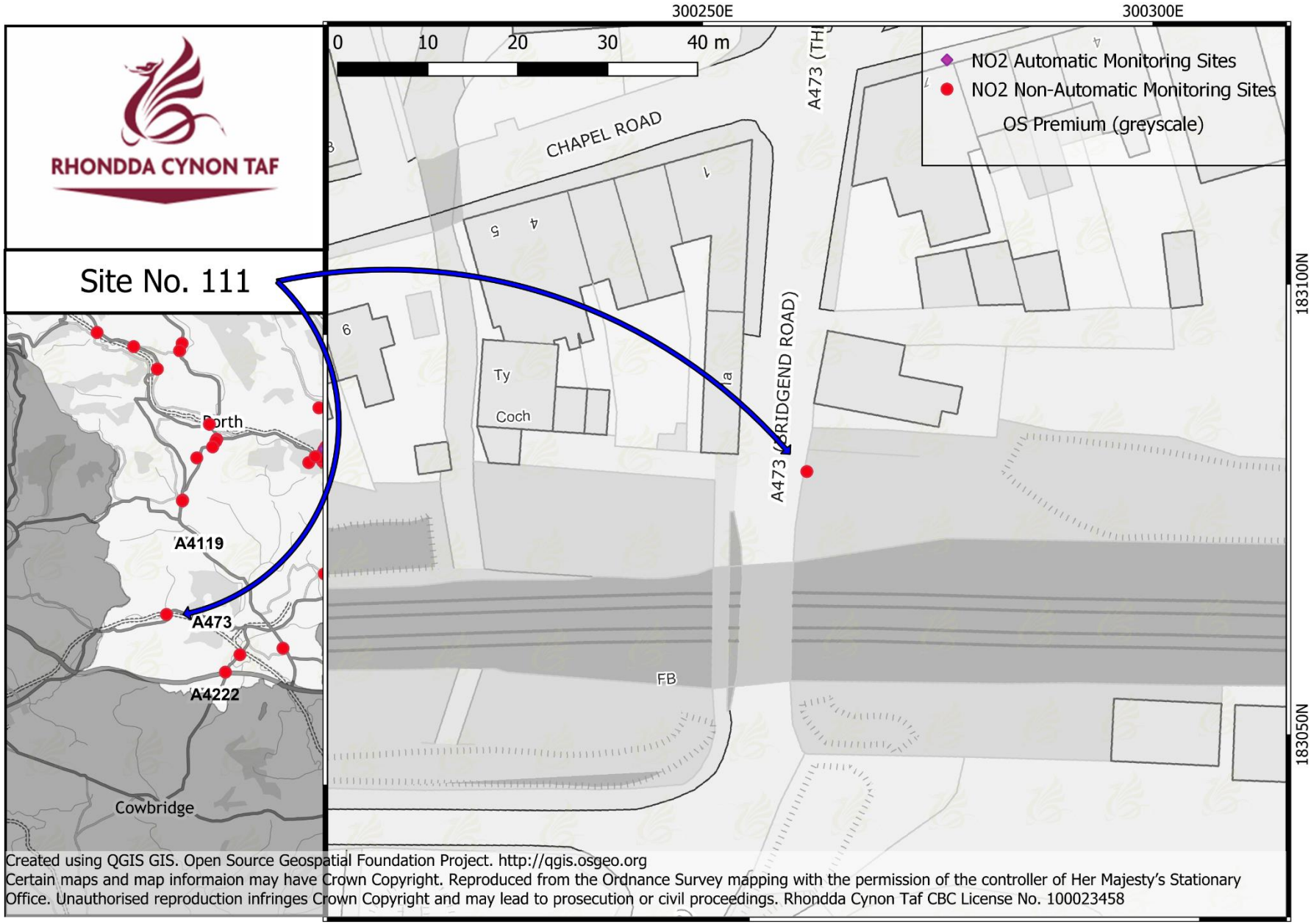

307000E
307050E
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
192300N
192250N
RHONDDA CYNON TAF
Site No. 105
A4054
Abercynon
A470
A473
Orchard
View
44
47
49
34
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

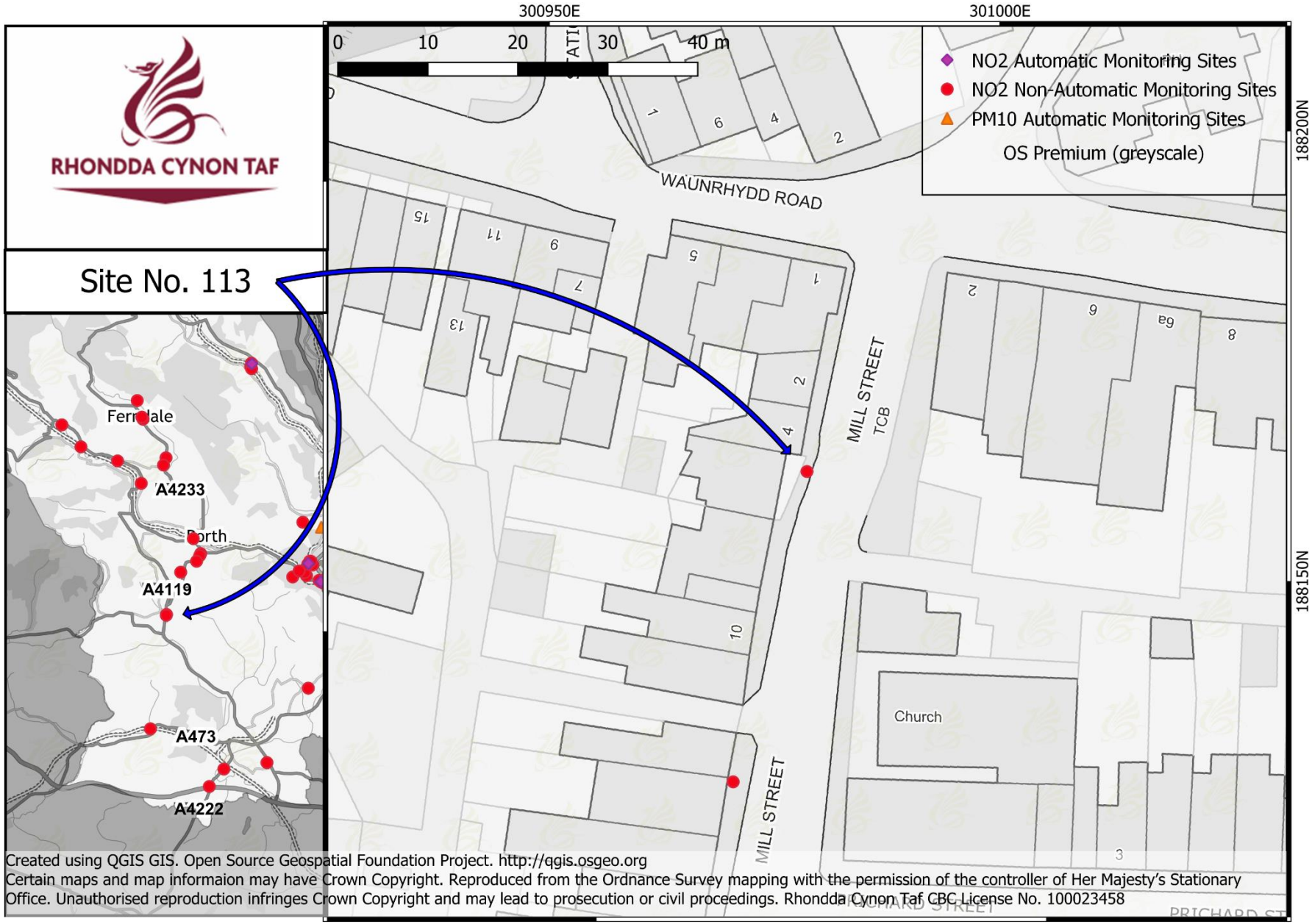

RHONDDA CYNON TAF
Site No. 106
299850E
299900E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
Shelter
118
112
110
104
194000N
193950N
A4058
A4233
A4119
A4093
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

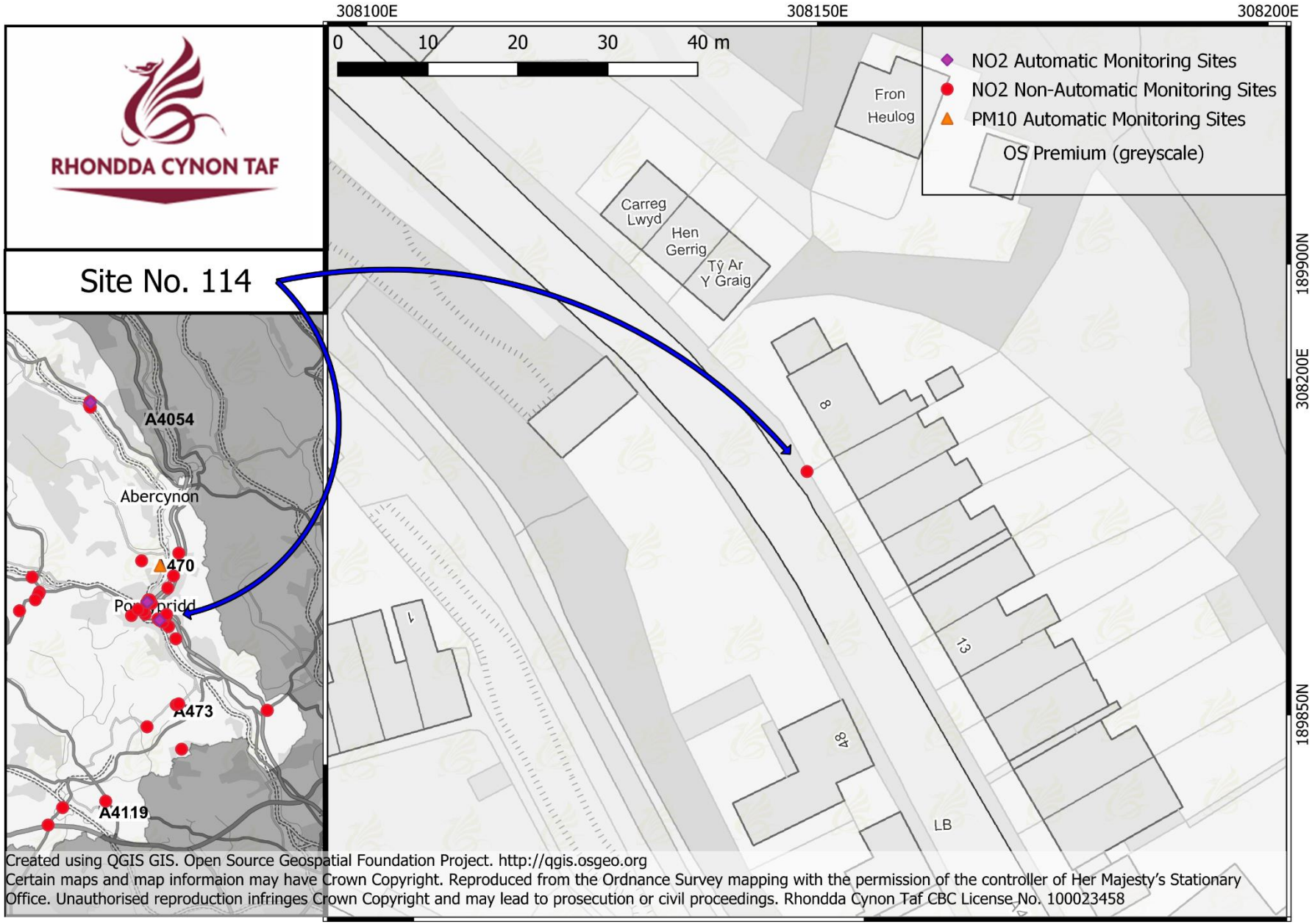

299850E
299900E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 107
STRAND
A4233 (STRAND)
44 to 46
The Anchor (PH)
Tre-Rhondda Chapel
LAKE STREET
64
35
34
PO
59
A4233 (HIGH STREET)
196950N
196900N
A4059
A4233
A4119
A4093
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

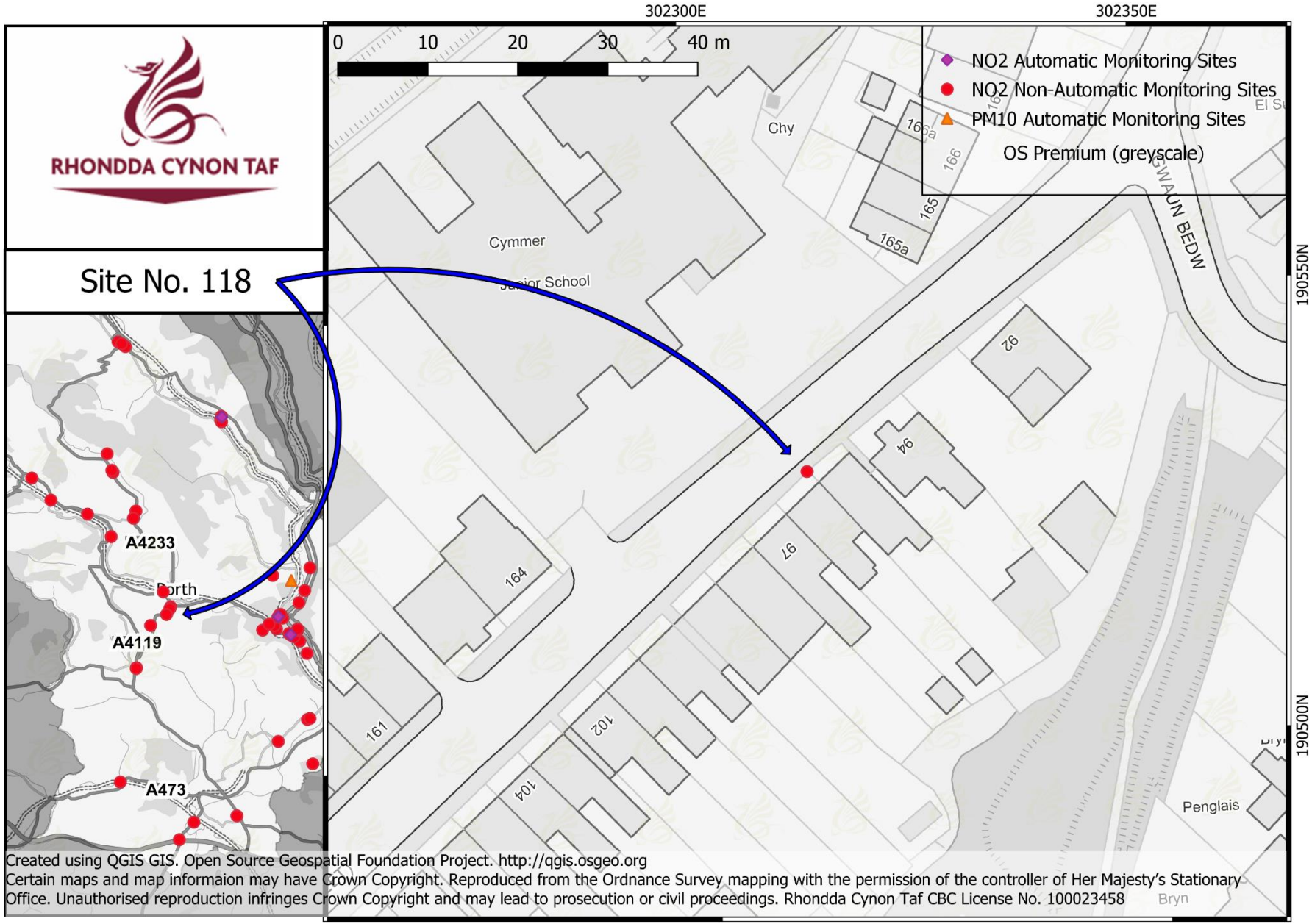

308100E
308150E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
189850N
189800N
RHONDDA CYNON TAF
Site No. 108
A4054
Abercynon
A470
A473
A4119
A4054 (PENTREBACH ROAD)
LB
Garage
A470
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

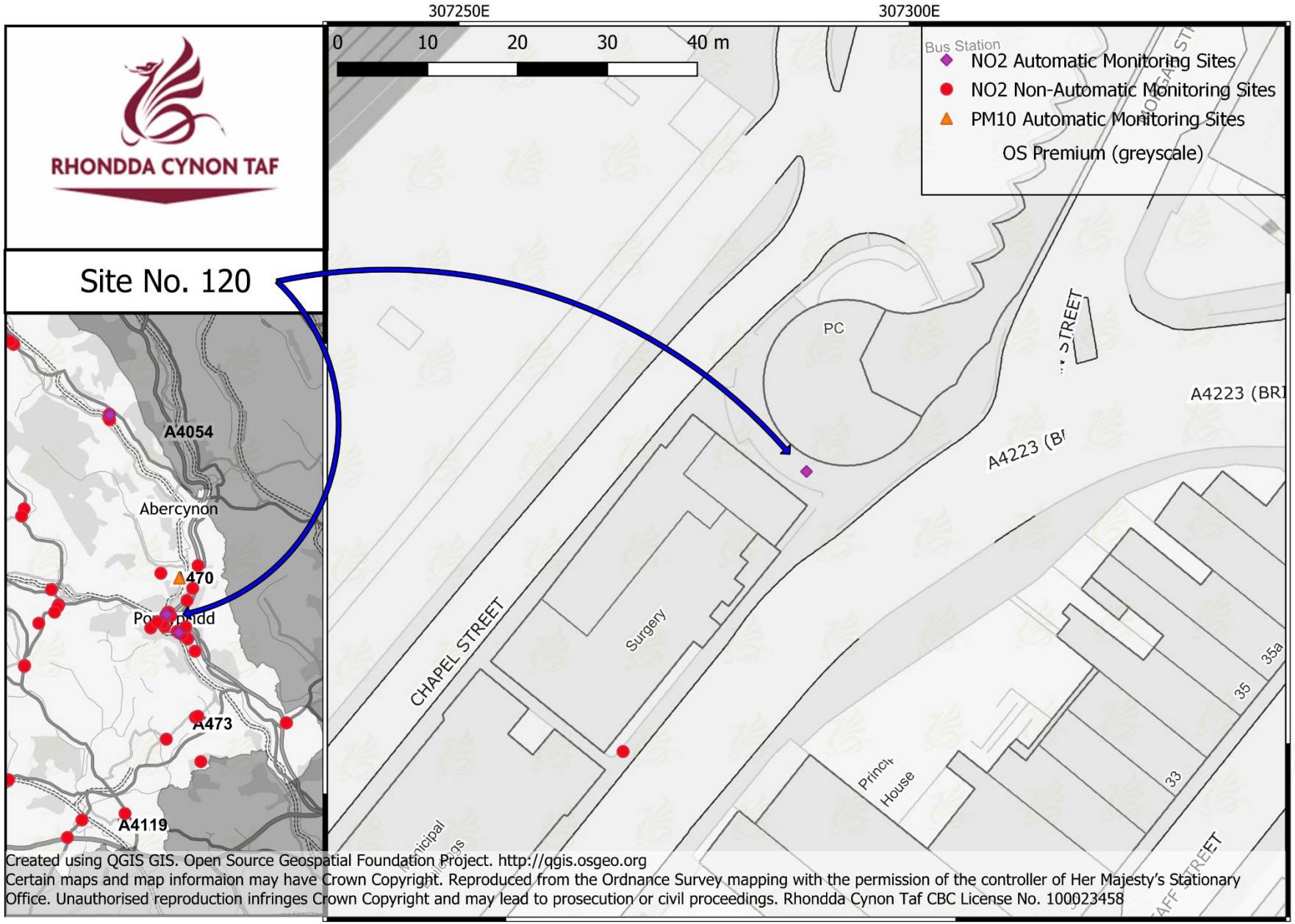

RHONDDA CYNON TAF
Site No. 110
303500E
303550E
181300N
181250N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
A4233
A4119
A473
A4222
A48
Ty Carreg
Ty Carreg Cottages
TCB
CERDIN AVENUE
HEOL YR ORSAF
Church
Works
CASTAN ROAD
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

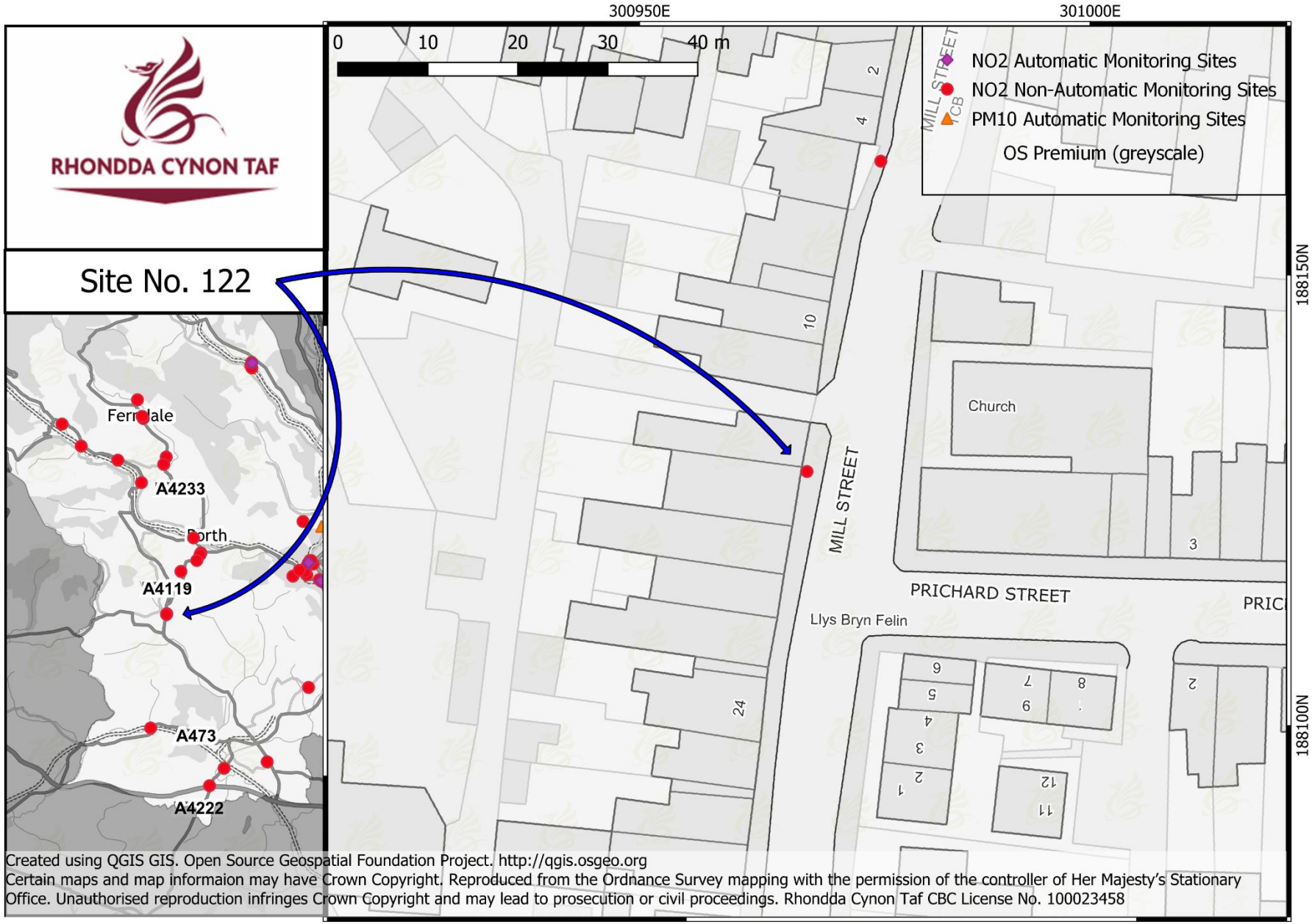

RHONDDA CYNON TAF
Site No. 111
300250E
300300E
183100N
183050N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
CHAPEL ROAD
A473 (THE BRIDGEND ROAD)
Ty
Coch
FB
Porth
A4119
A473
A4222
Cowbridge
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

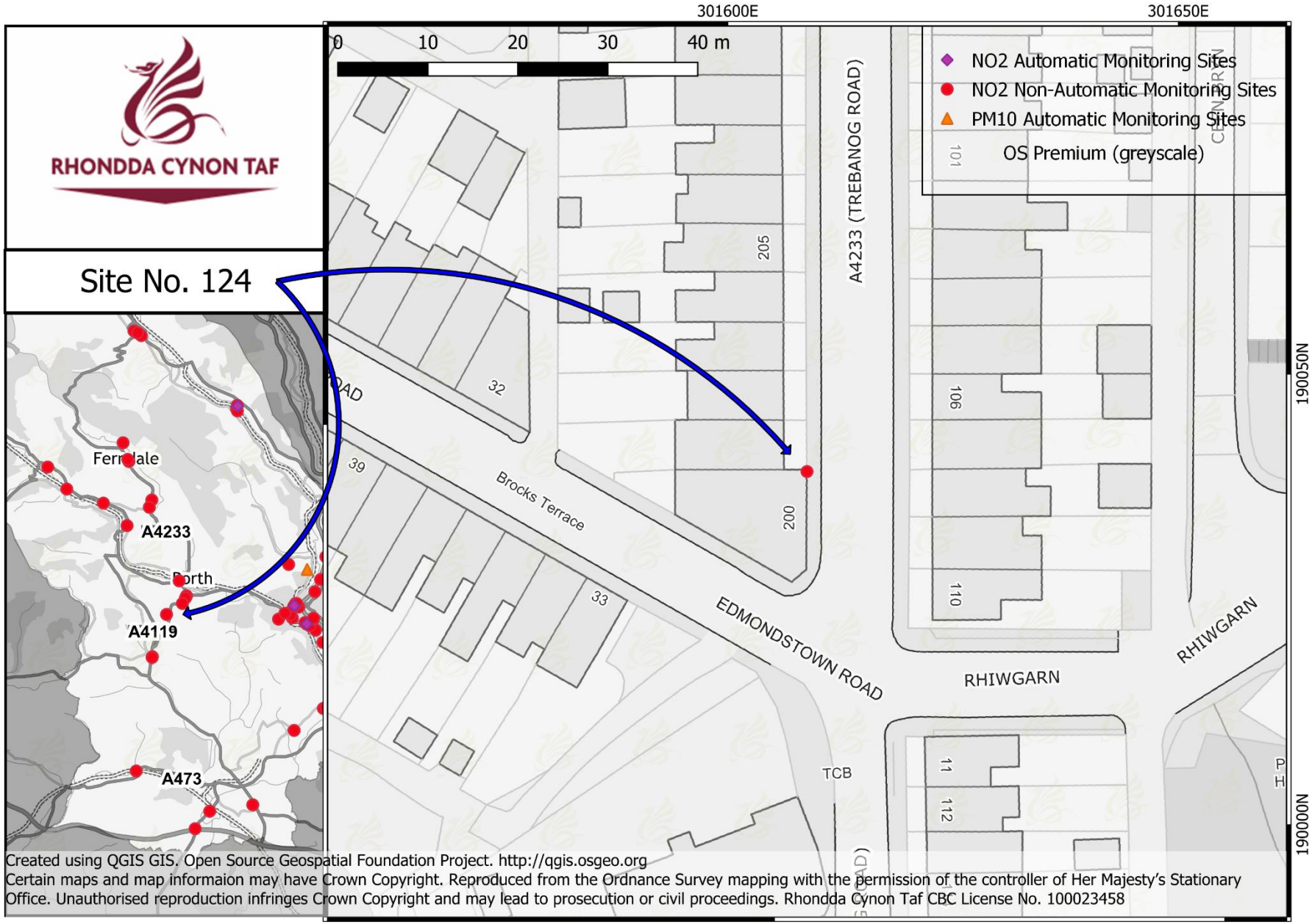

300950E
301000E
188200N
188150N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 113
WAUNRHYDD ROAD
MILL STREET
MILL STREET
Church
Ferndale
A4233
Porth
A4119
A473
A4222
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

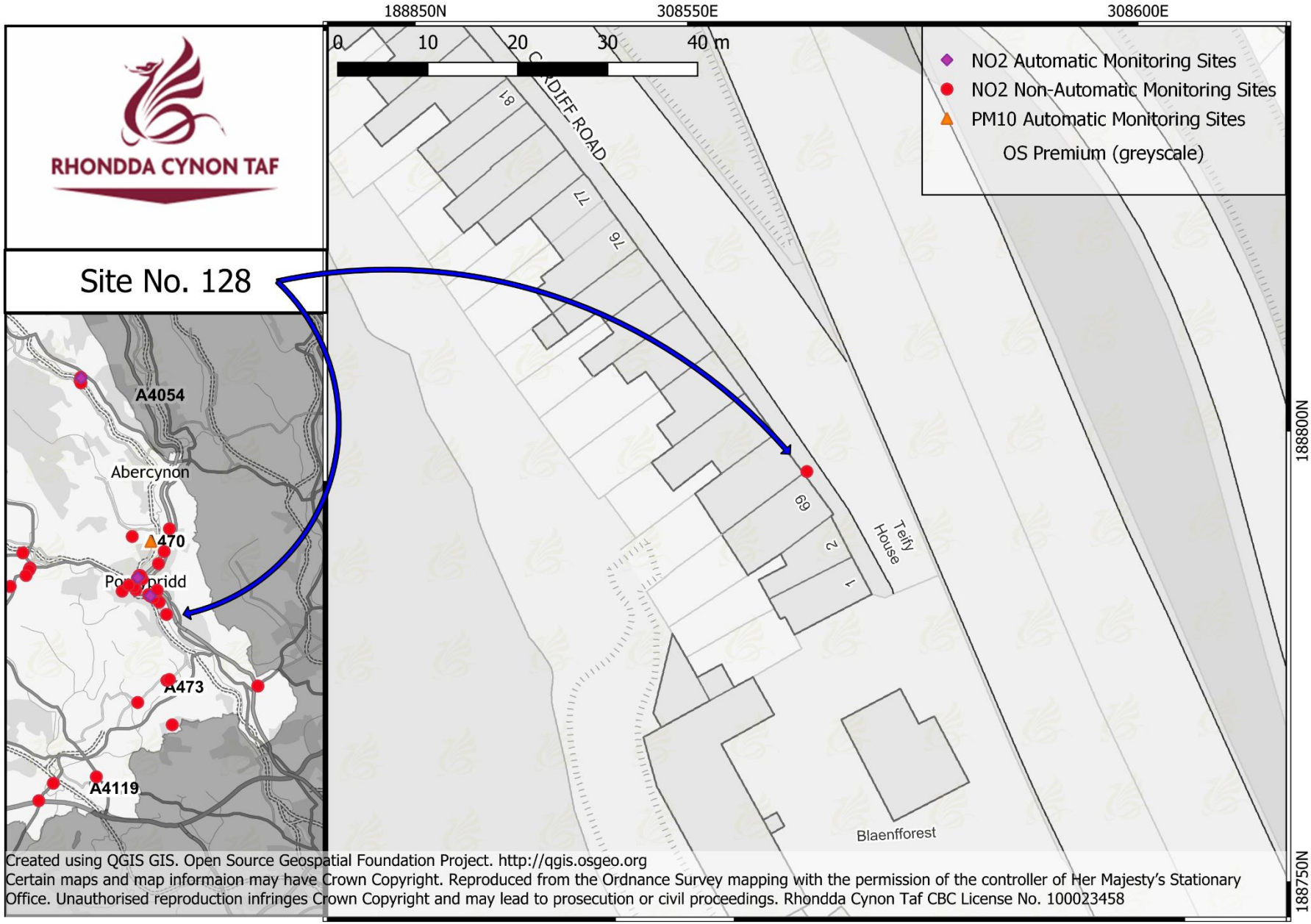

308100E
308150E
308200E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 114
Fron Heulog
Carreg Lwyd
Hen Gerrig
Tŷ Ar Y Graig
8
13
84
LB
189900N
308200E
189850N
A4054
Abercynon
A470
A473
A4119
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

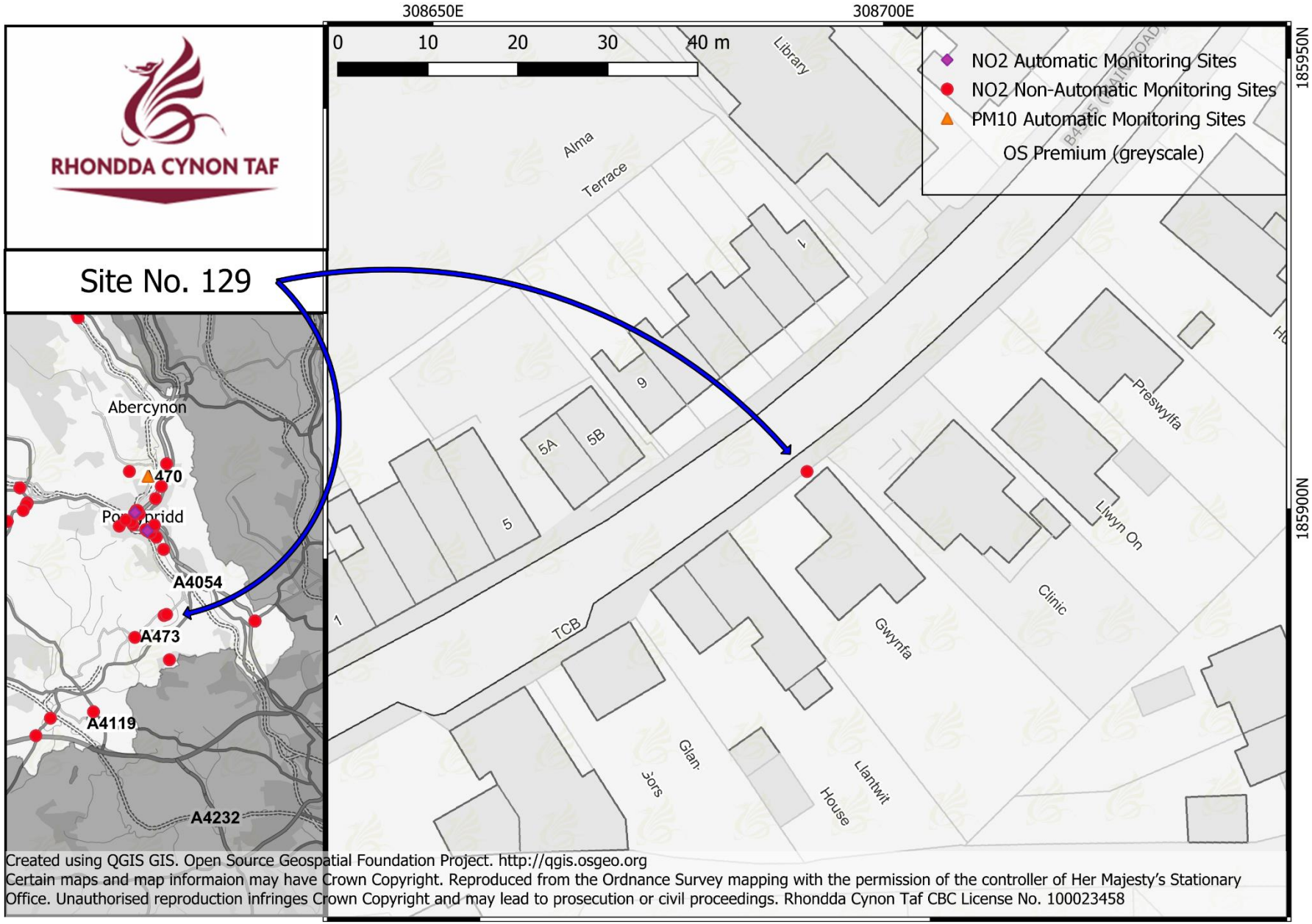

RHONDDA CYNON TAF
Site No. 118
302300E
302350E
190550N
190500N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Cymmer
Chy
A4233
A4119
A473
Penglais
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

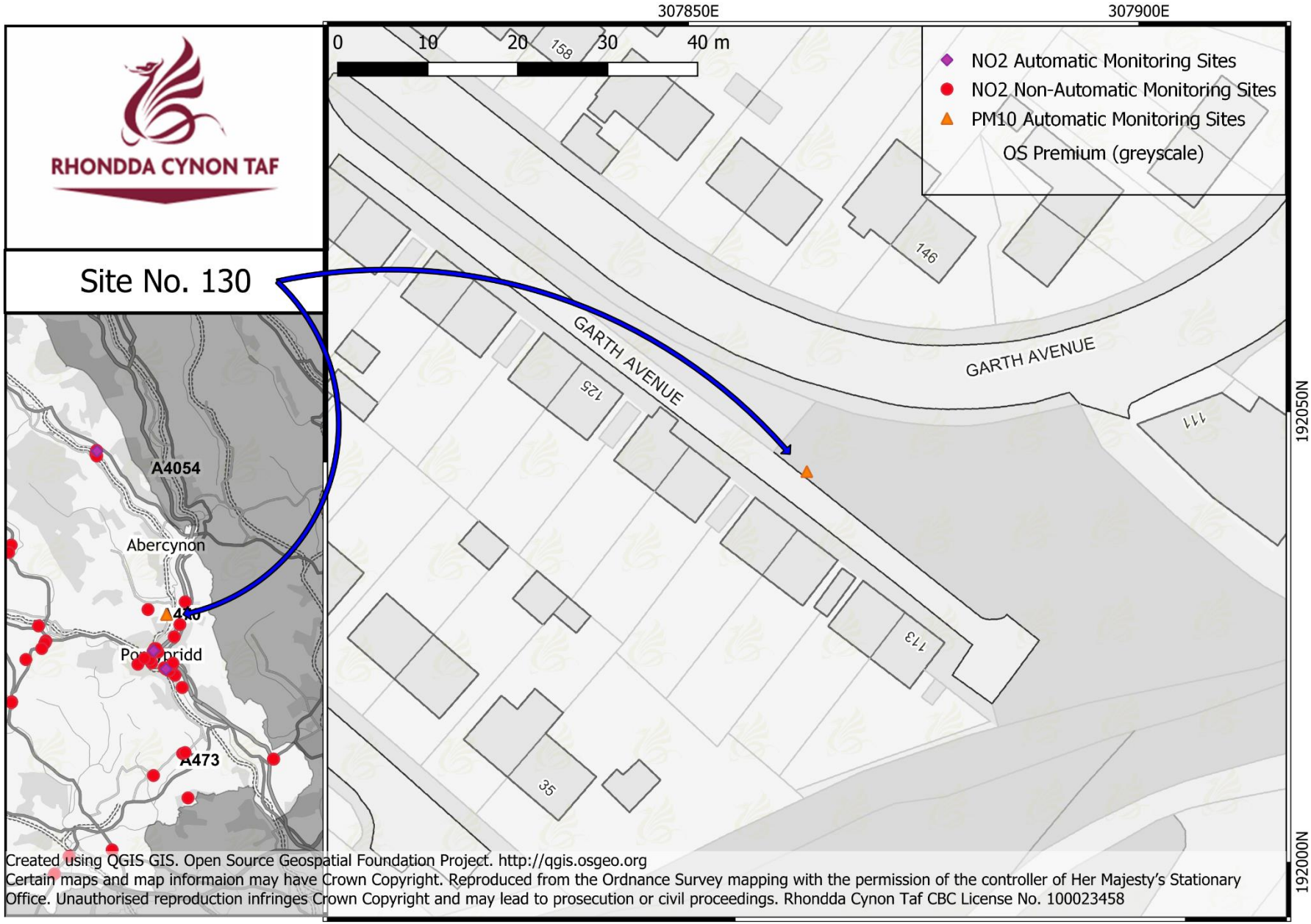

307250E
307300E
0
10
20
30
40 m
Bus Station
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Site No. 120
A4054
Abercynon
A470
A473
A4119
PC
A4223 (BRI
A4223 (Br
CHAPEL STREET
Surgery
Princi
House
35
35a
33
190450N
190400N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

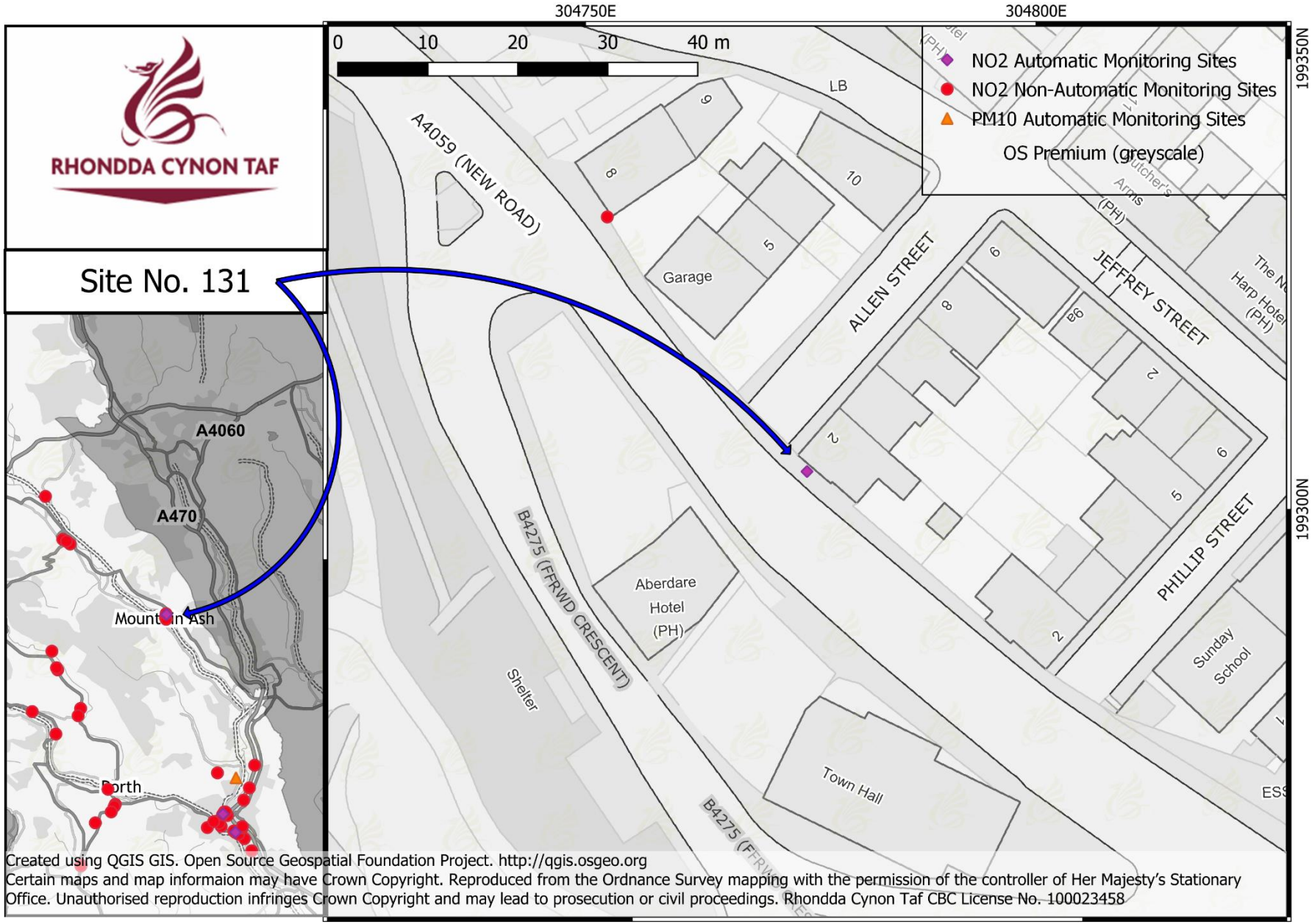

300950E
301000E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 122
A4233
A4119
A473
A4222
MILL STREET
PRICHARD STREET
Church
Llys Bryn Felin
188150N
188100N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

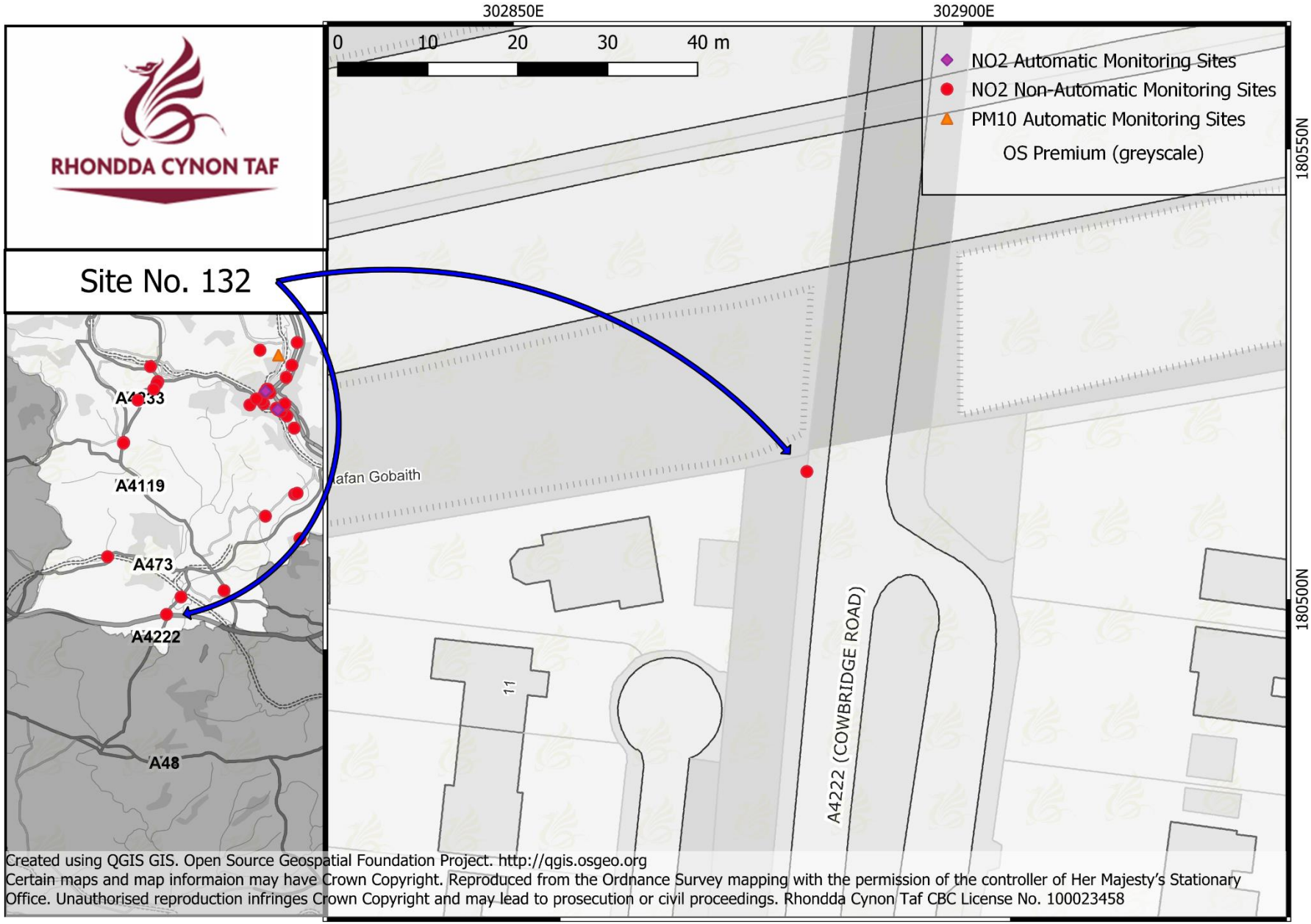

RHONDDA CYNON TAF
Site No. 124
301600E
301650E
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
A4233 (TREBANOG ROAD)
Brocks Terrace
EDMONDSTOWN ROAD
RHIWGARN
RHIWGARN
TCB
205
32
39
200
33
106
110
101
11
112
190050N
190000N
Ferndale
A4233
Porth
A4119
A473
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

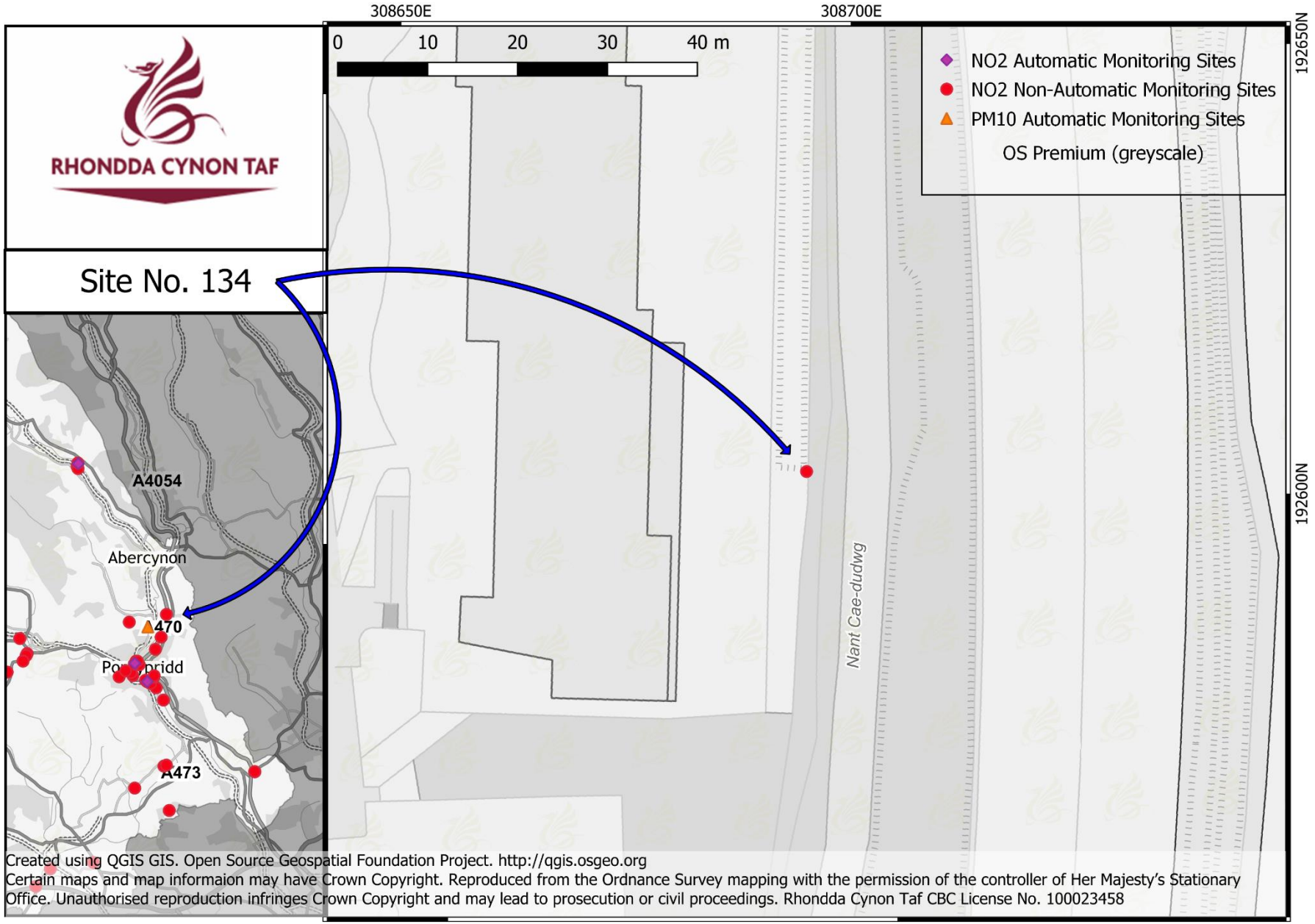

188850N
308550E
308600E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 128
A4054
Abercynon
A470
A473
A4119
81
77
76
69
2
1
Teify House
Blaenfforest
188800N
188750N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

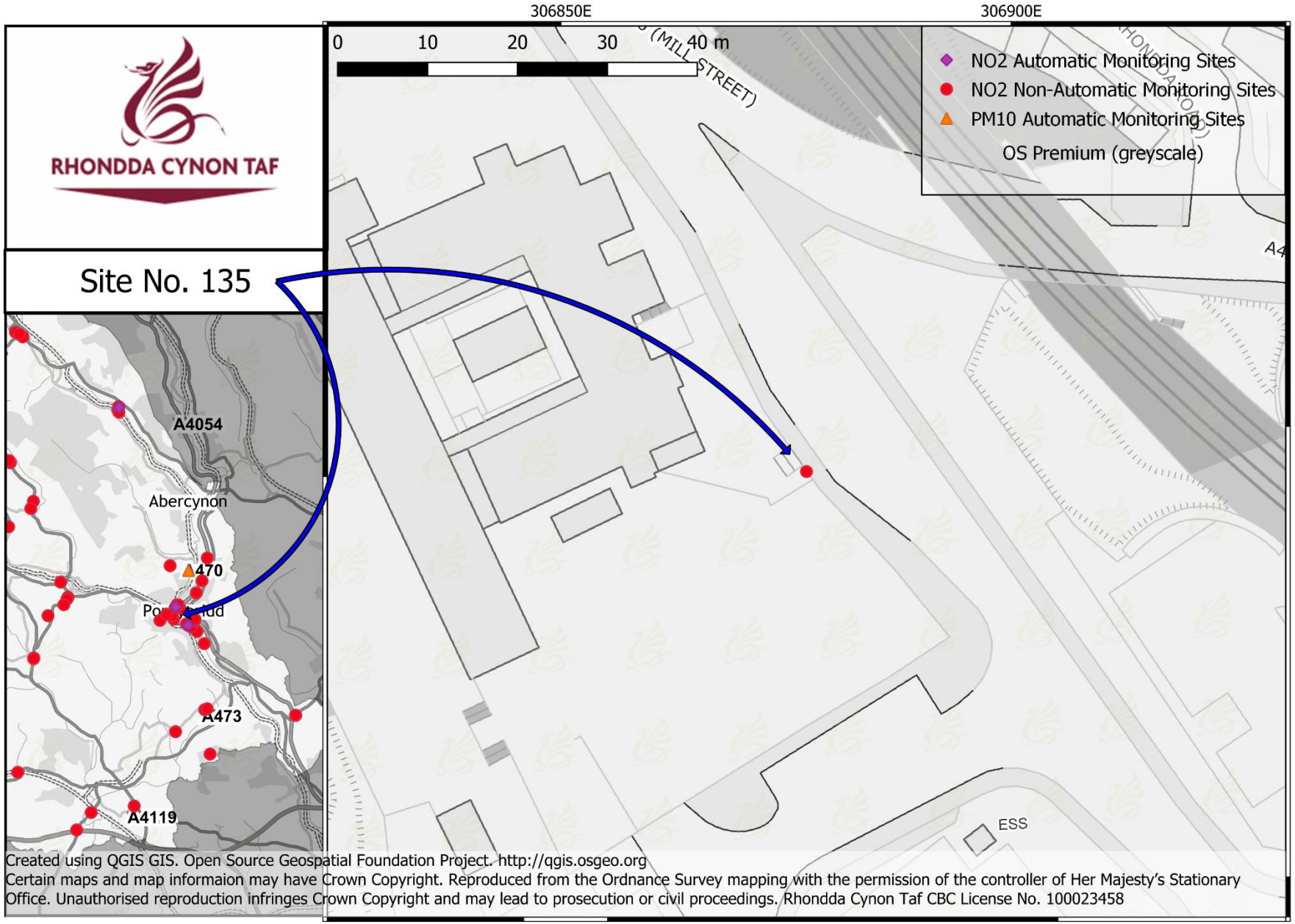

RHONDDA CYNON TAF
Site No. 129
308650E
308700E
185950N
185900N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
Abercynon
A470
A4054
A473
A4119
A4232
Alma
Terrace
Library
5
5A
5B
6
TCB
Gwynfa
Clinic
Llwyn On
Preswylfa
House
Llantwit
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

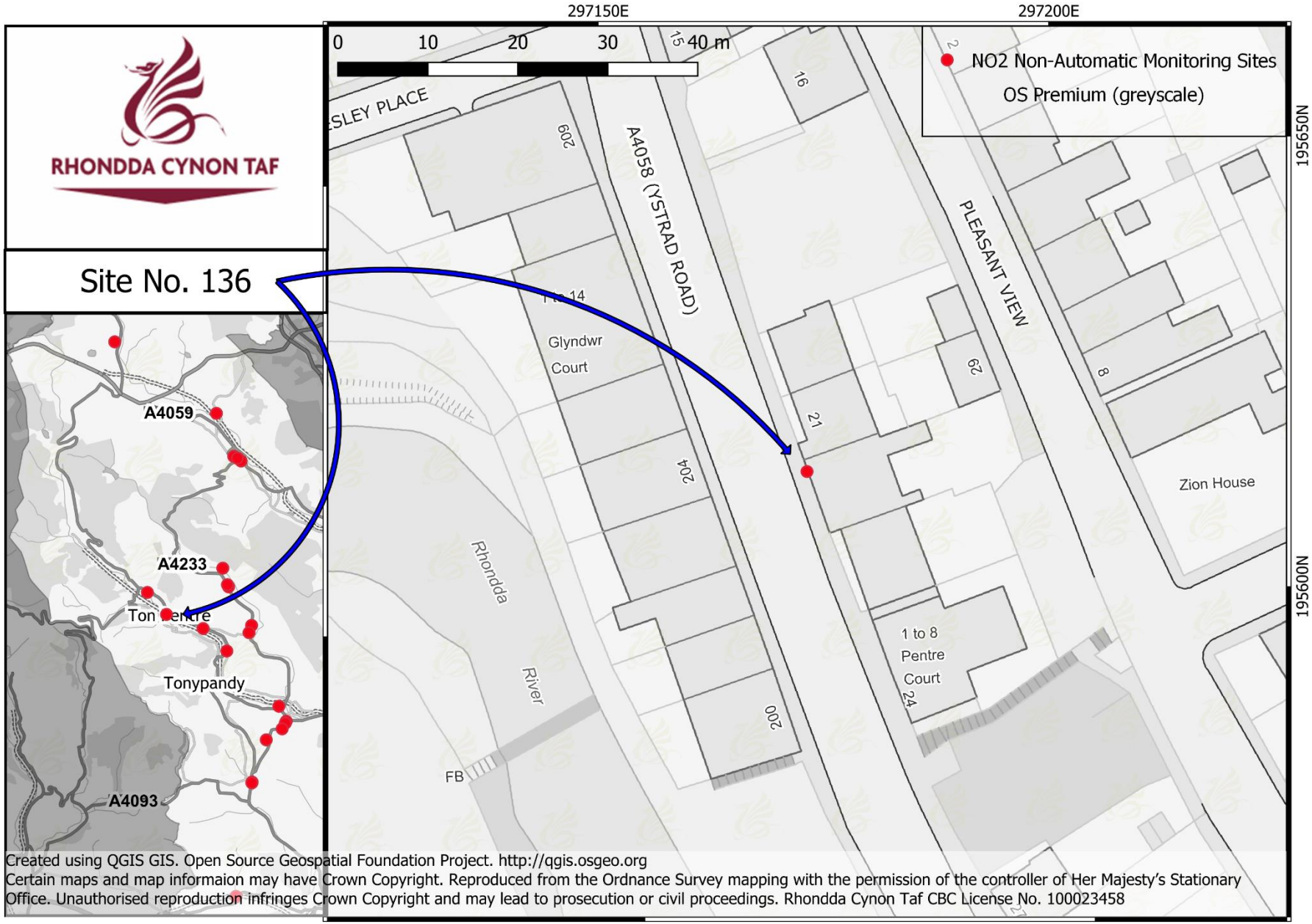

307850E
307900E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 130
GARTH AVENUE
GARTH AVENUE
158
146
125
111
113
35
A4054
Abercynon
A473
192050N
192000N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

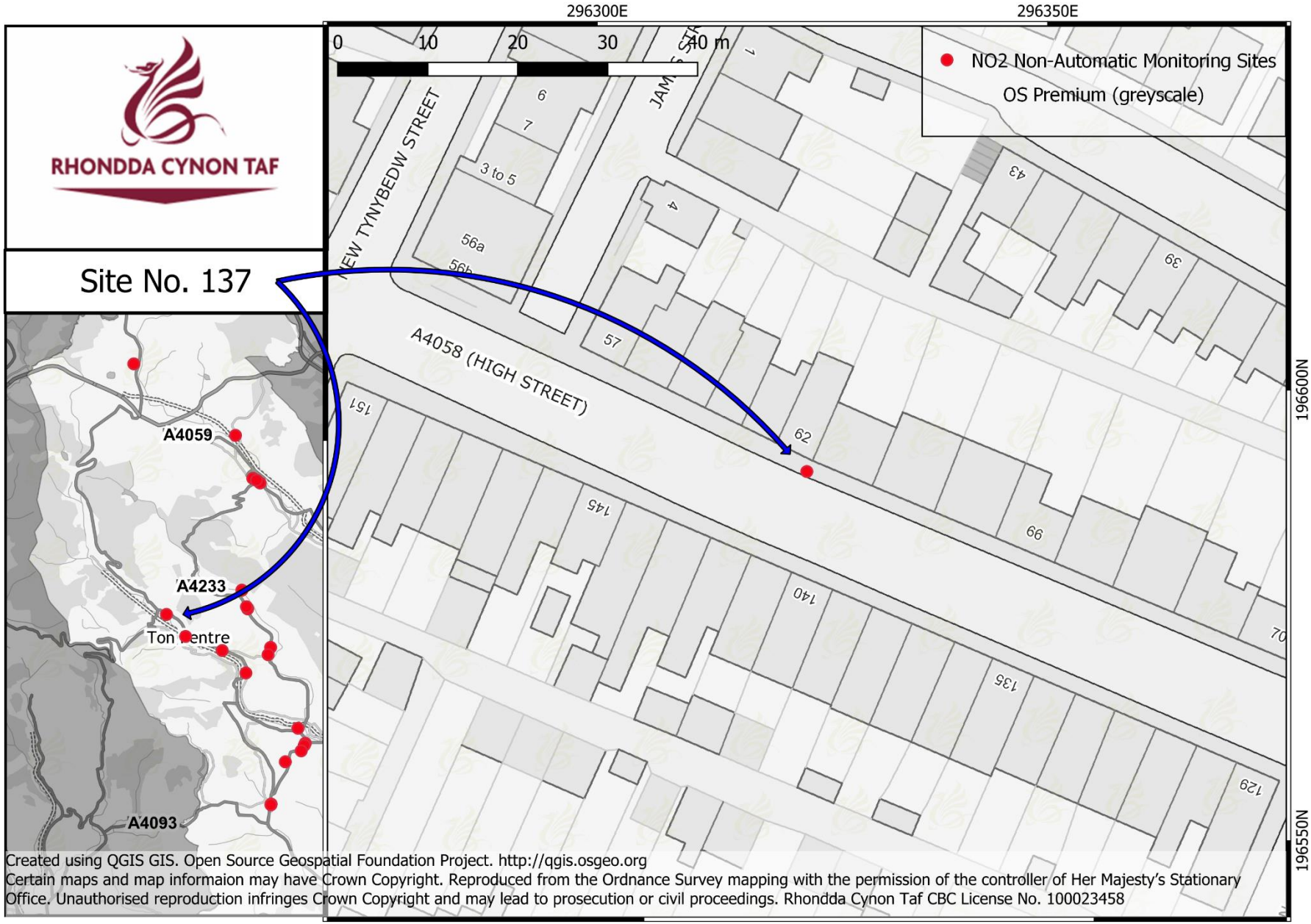

304750E
304800E
199350N
199300N
0 10 20 30 40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 131
A4059 (NEW ROAD)
ALLEN STREET
JEFFREY STREET
PHILLIP STREET
B4275 (FFRWD CRESCENT)
Garage
Aberdare Hotel (PH)
Shelter
Town Hall
Sunday School
Harp Hotel (PH)
Arms (PH)
A4060
A470
Mountain Ash
Porth
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

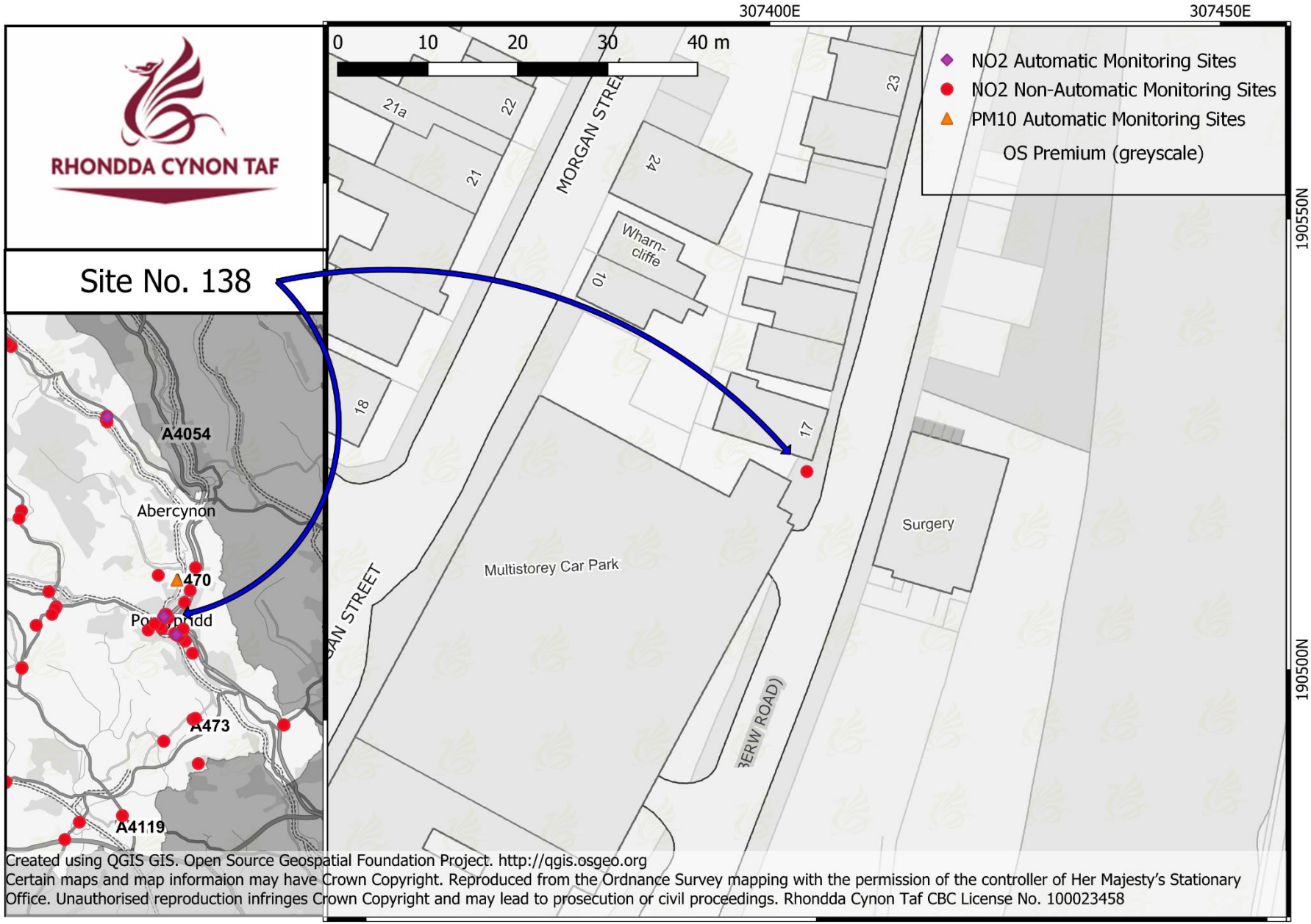

302850E
302900E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
180550N
180500N
RHONDDA CYNON TAF
Site No. 132
A4233
A4119
A473
A4222
A48
afan Gobaith
A4222 (COWBRIDGE ROAD)
11
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

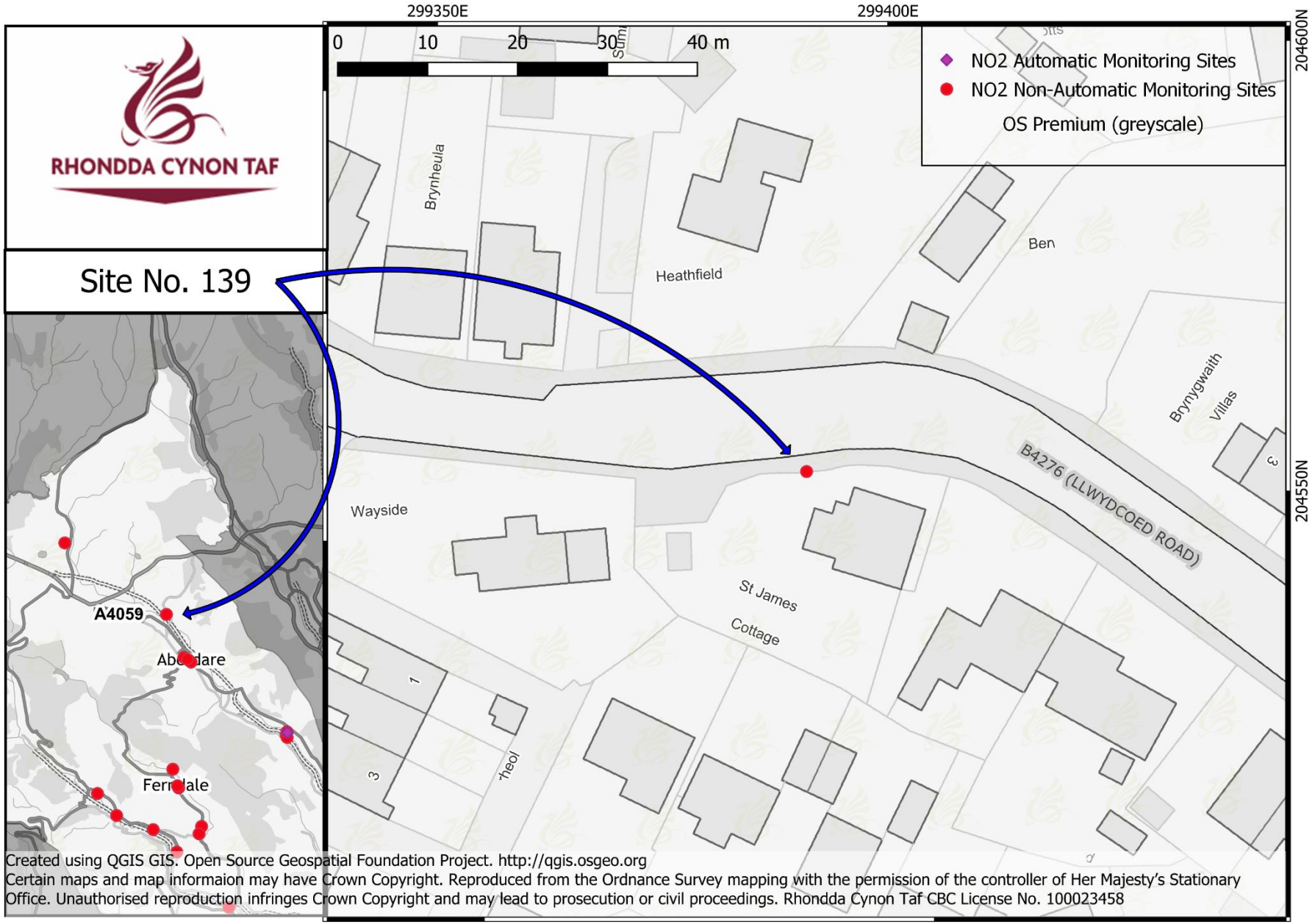

308650E
308700E
0
10
20
30
40 m
192650N
192600N
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 134
A4054
Abercynon
A470
A473
Nant Cae-dudwg
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

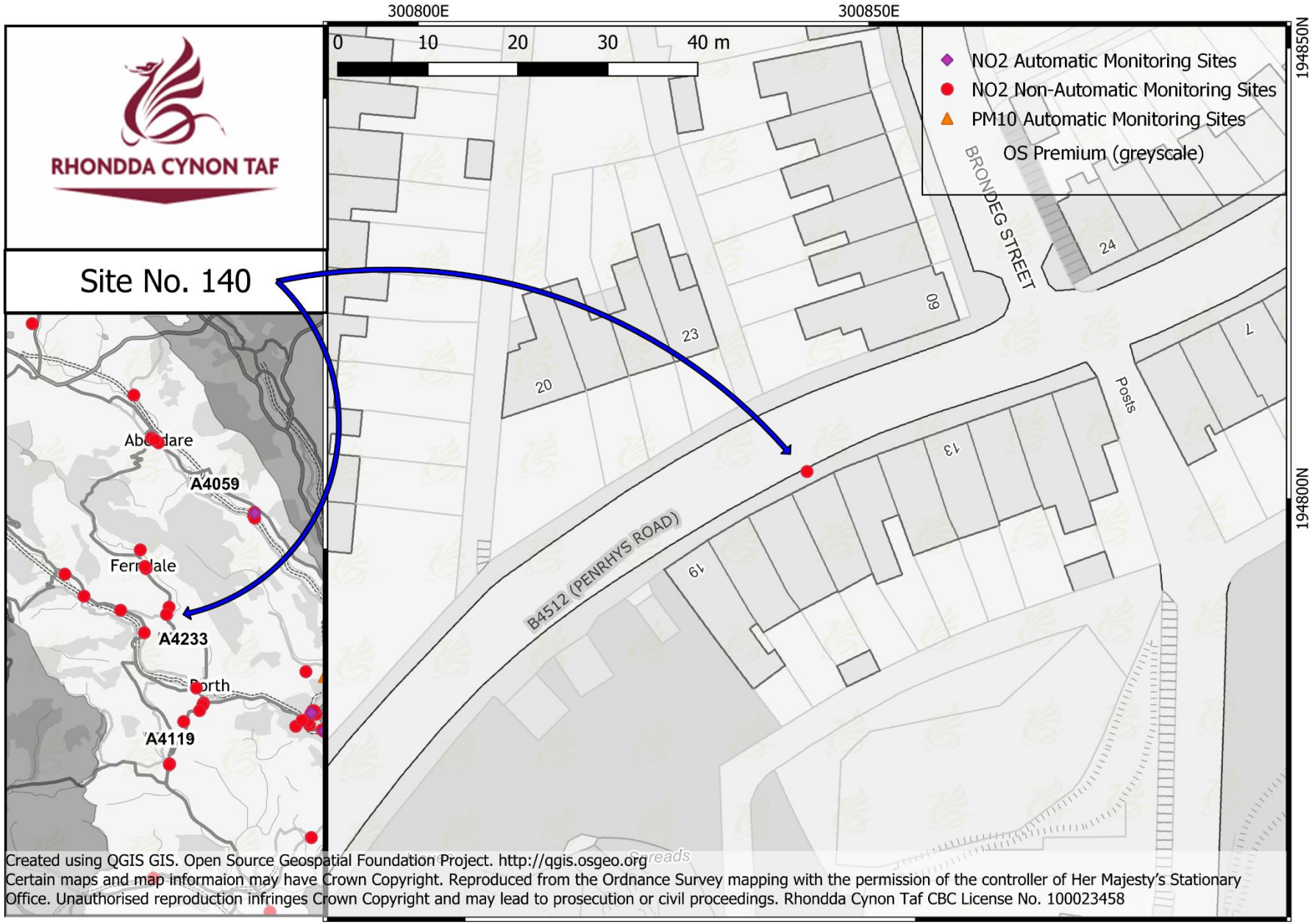

306850E
306900E
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
PM10 Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 135
A4054
Abercynon
A470
A473
A4119
190100N
190050N
ESS
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

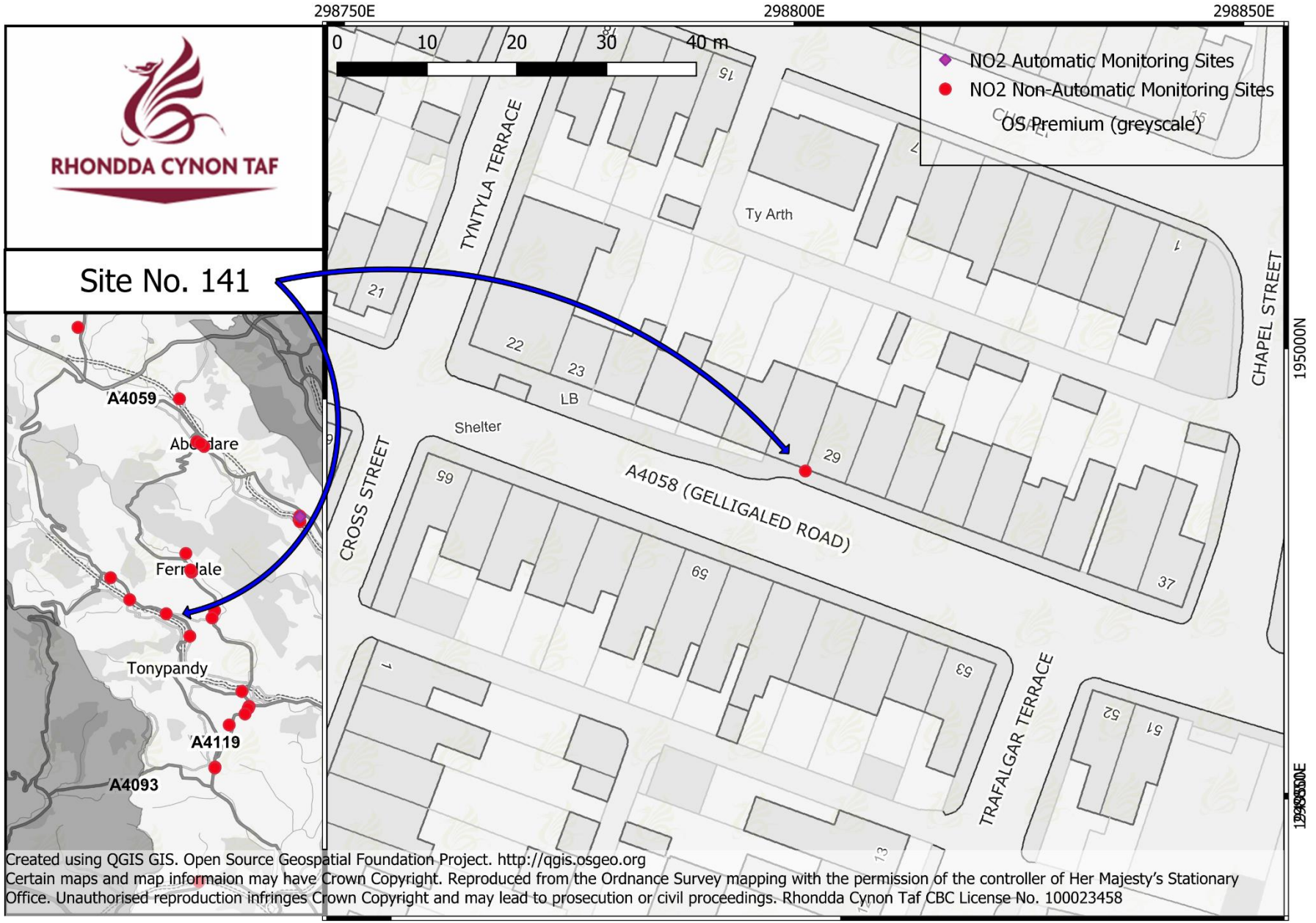

297150E
297200E
0 10 20 30 40 m
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
RHONDDA CYNON TAF
Site No. 136
A4058 (YSTRAD ROAD)
PLEASANT VIEW
Glyndwr Court
Zion House
1 to 8 Pentre Court
Rhondda River
FB
A4059
A4233
Tonypandy
A4093
195650N
195600N
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458


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
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458


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
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

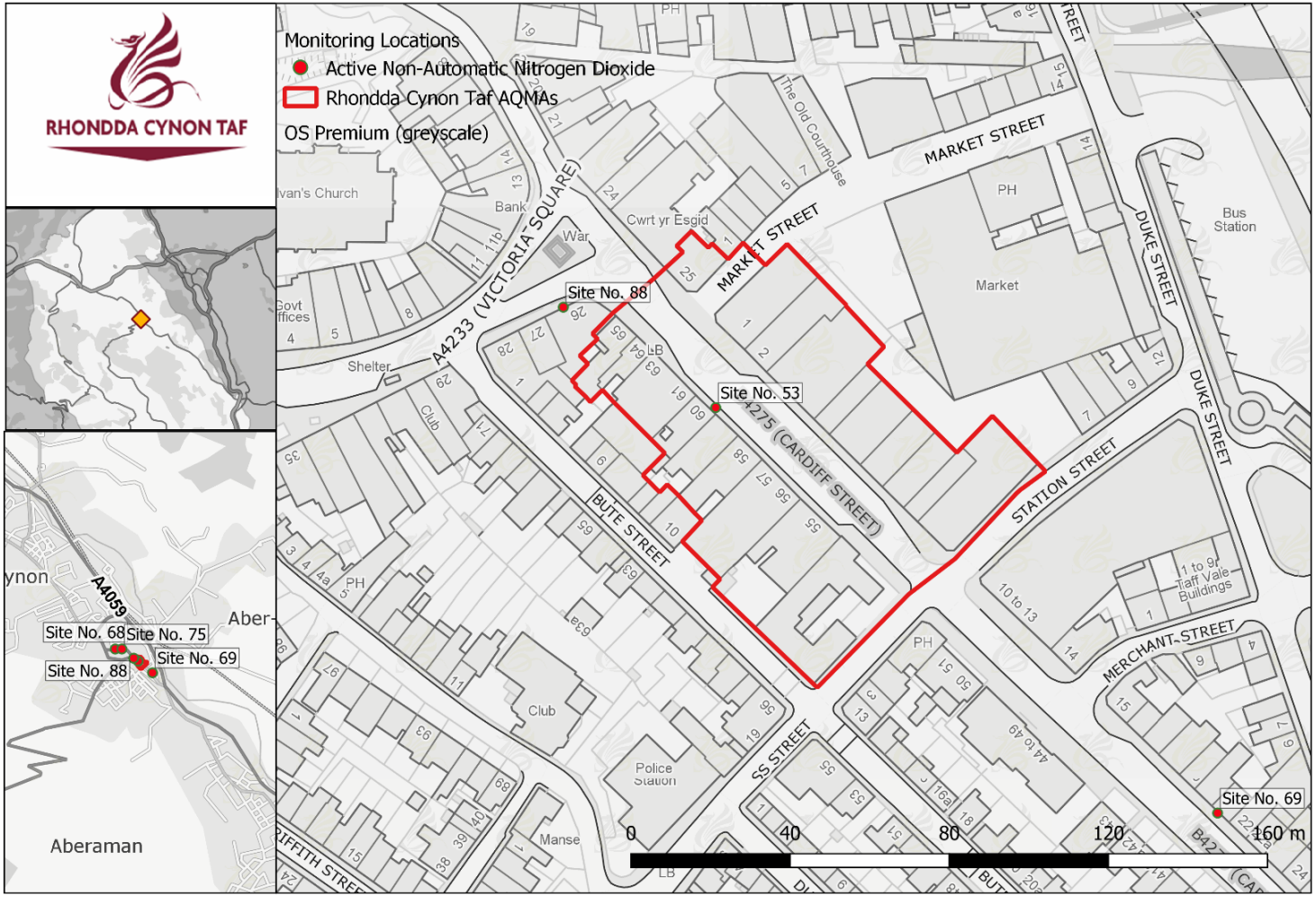

299350E
299400E
204600N
204550N
0
10
20
30
40 m
NO2 Automatic Monitoring Sites
NO2 Non-Automatic Monitoring Sites
OS Premium (greyscale)
Site No. 139
Brynheula
Heathfield
Ben
Brynygwaith
Villas
B4276 (LLWYDCOED ROAD)
Wayside
St James
Cottage
A4059
Aberdare
Ferndale
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458


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
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458


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
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

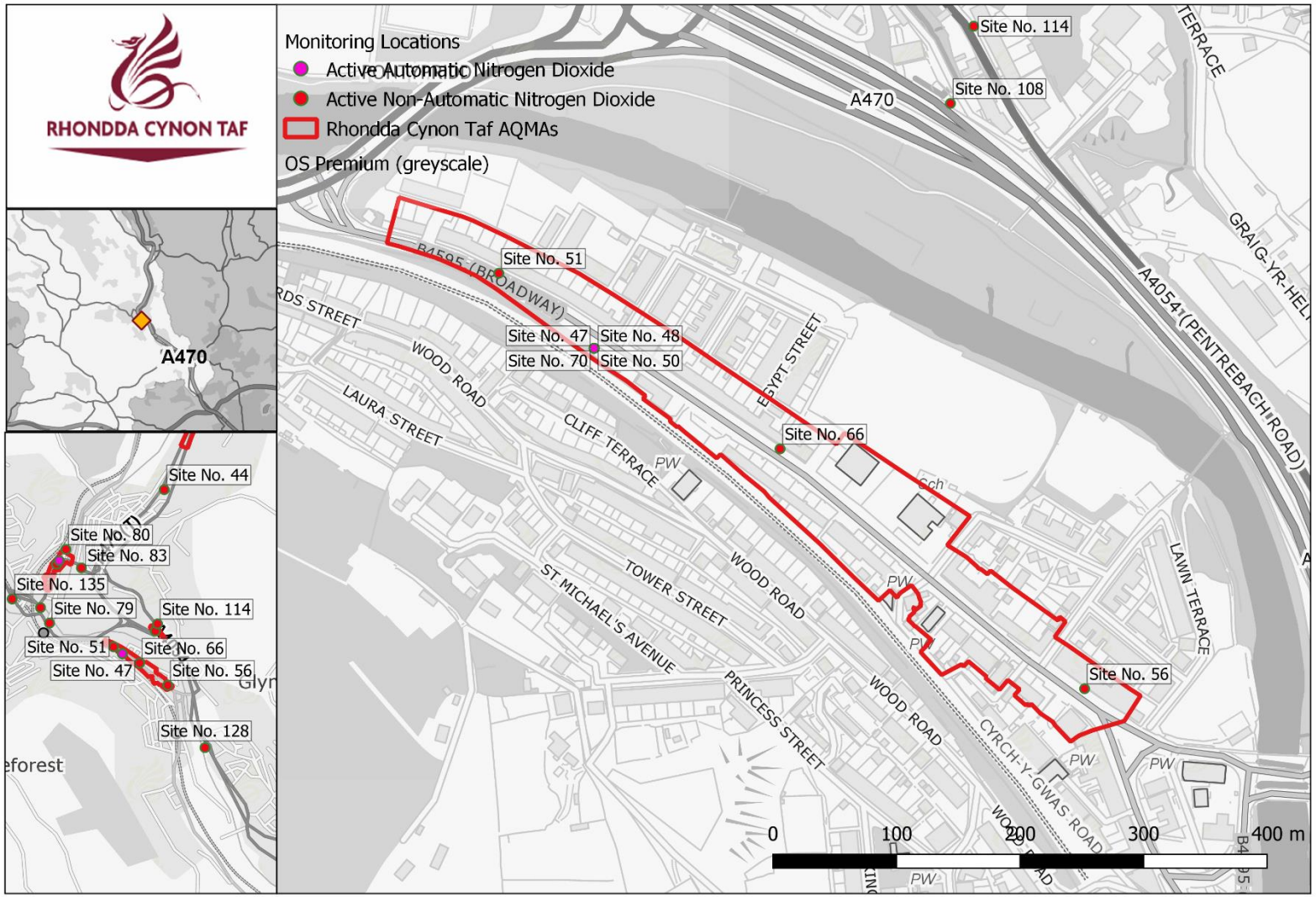
13. Appendix D1: Current AQMA Boundary Maps

Figure D.1: Aberdare Town Centre Air Quality Management Area



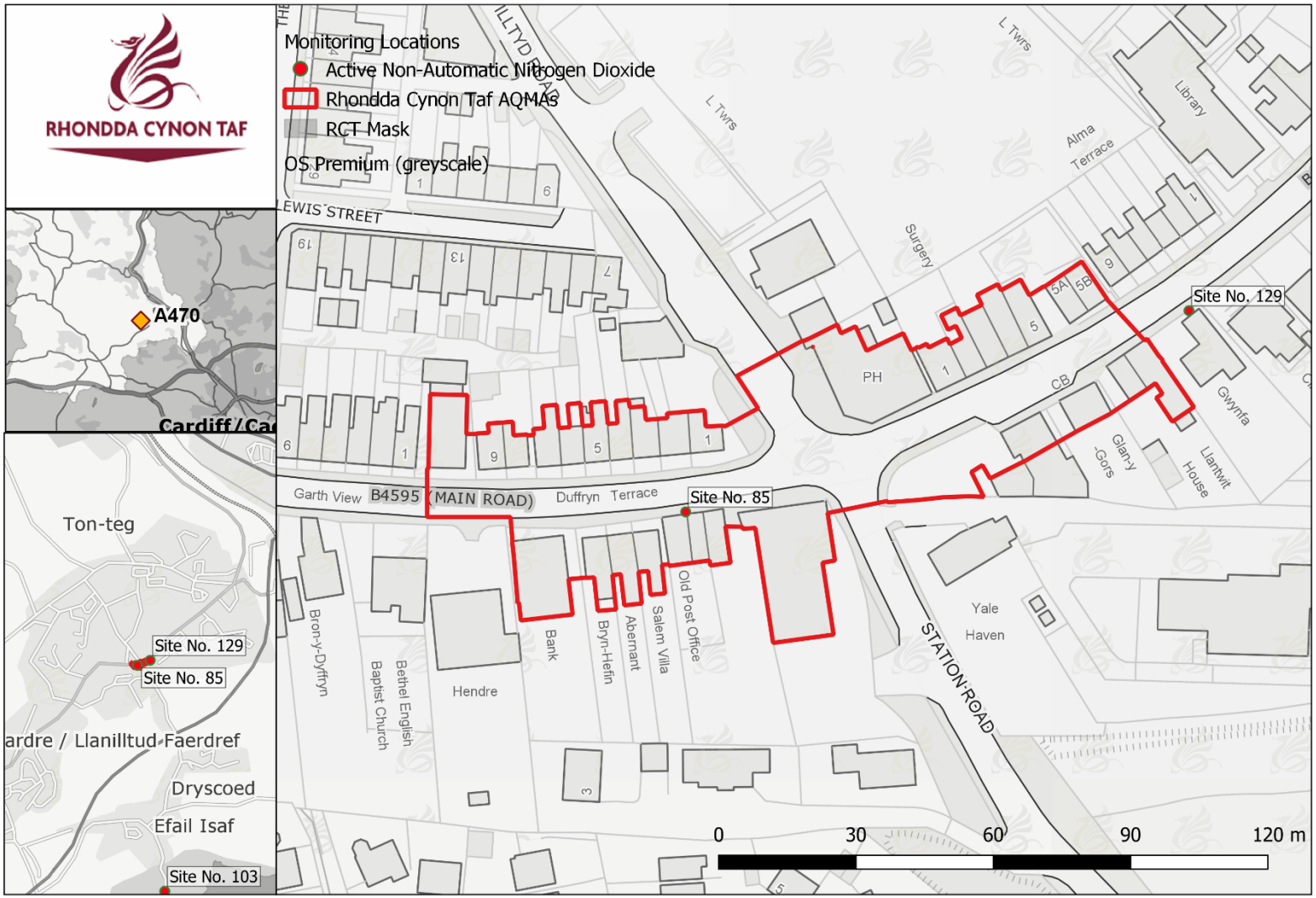
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org

Figure D.2: Broadway Air Quality Management Area



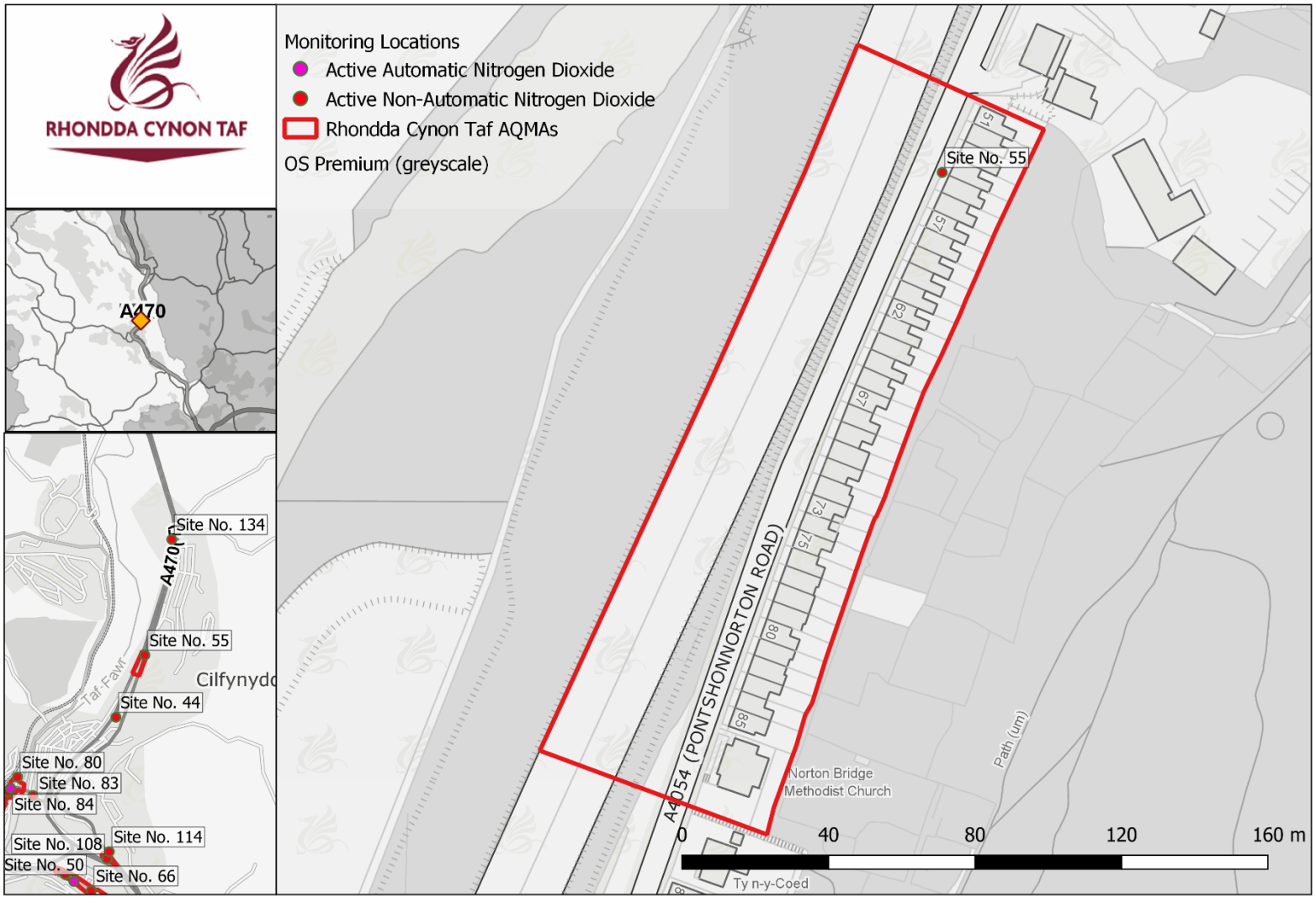
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.3: Church Village Air Quality Management Area



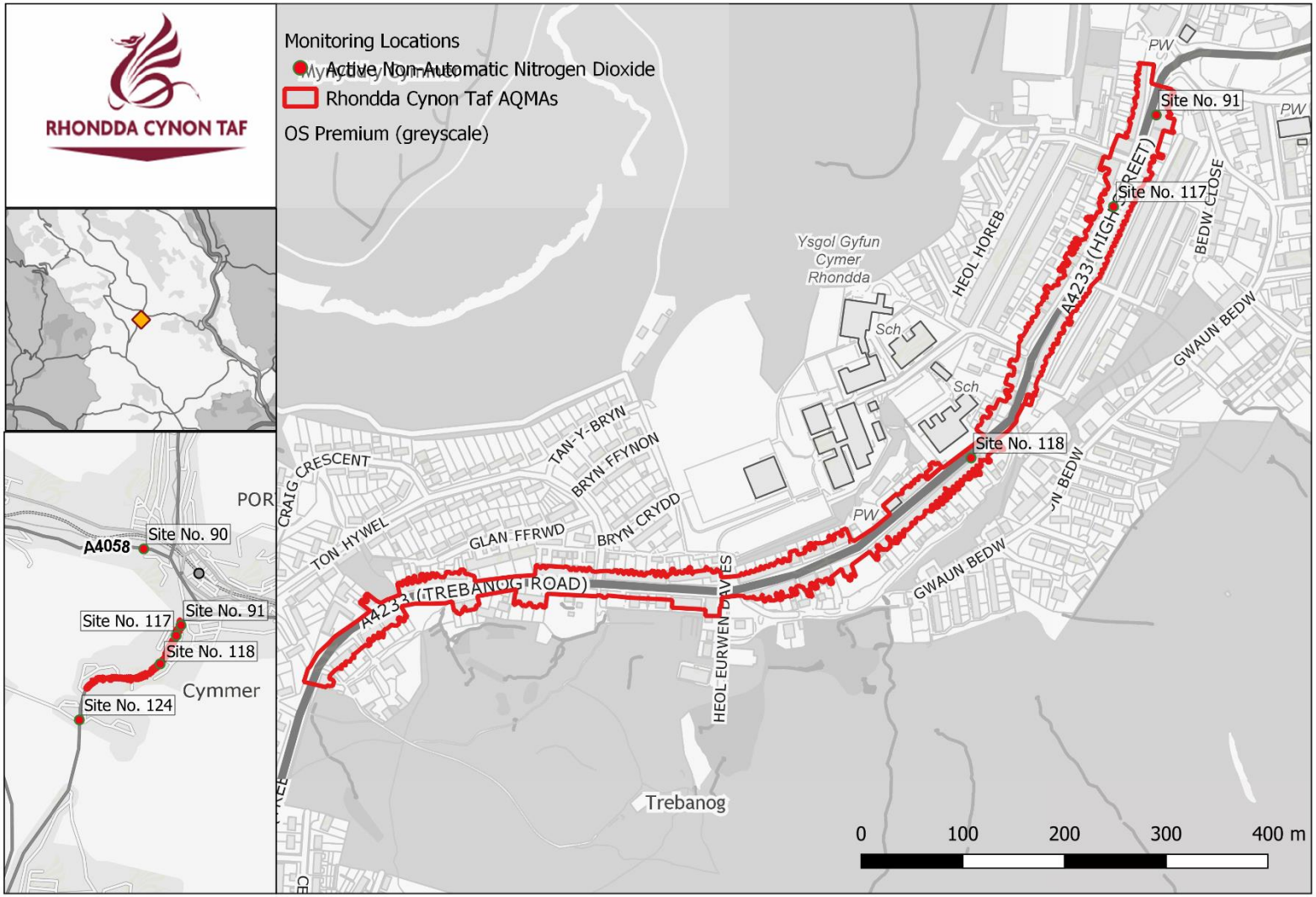
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.4: Cilfynydd Air Quality Management Area



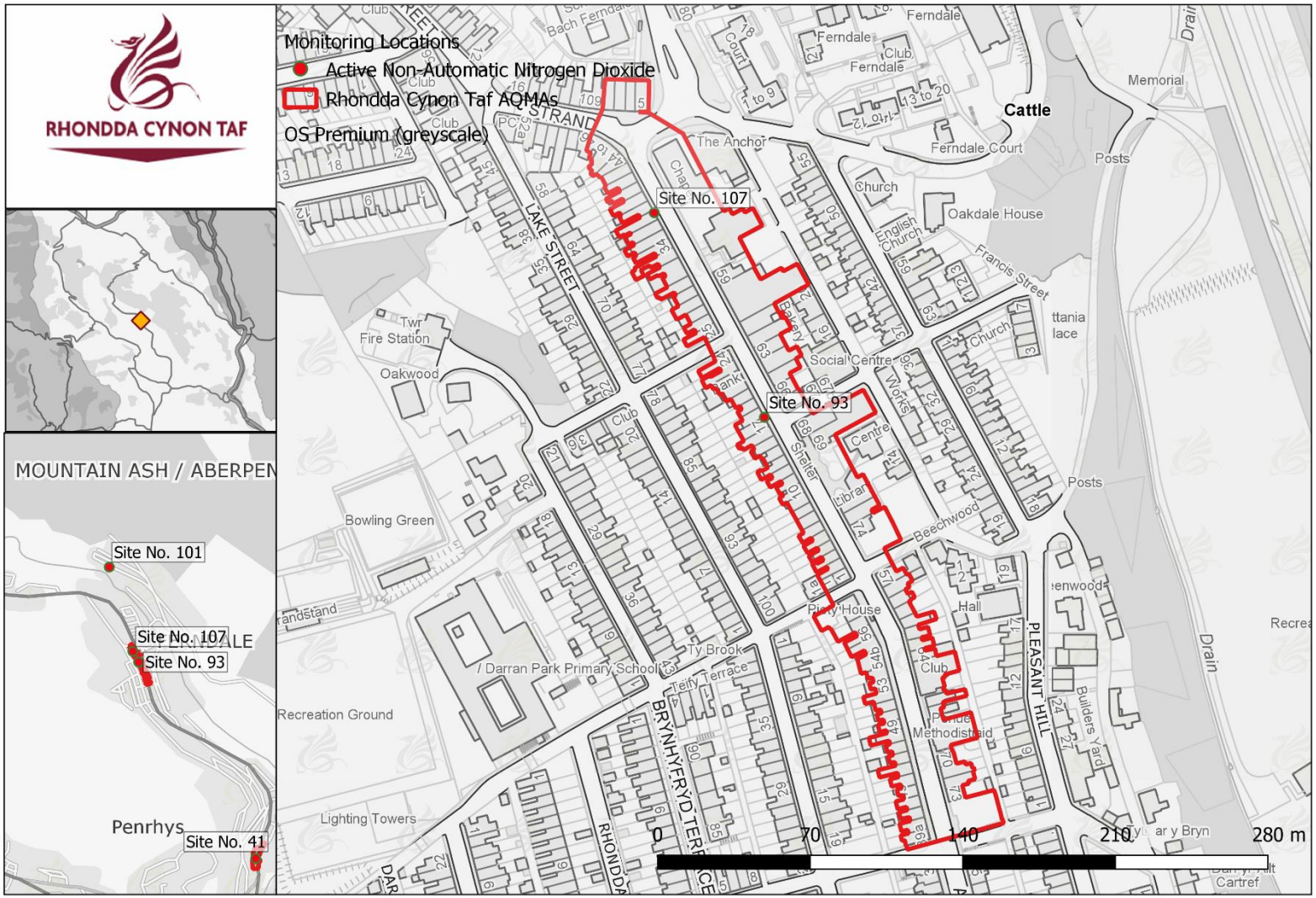
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.5: Cymmer Air Quality Management Area



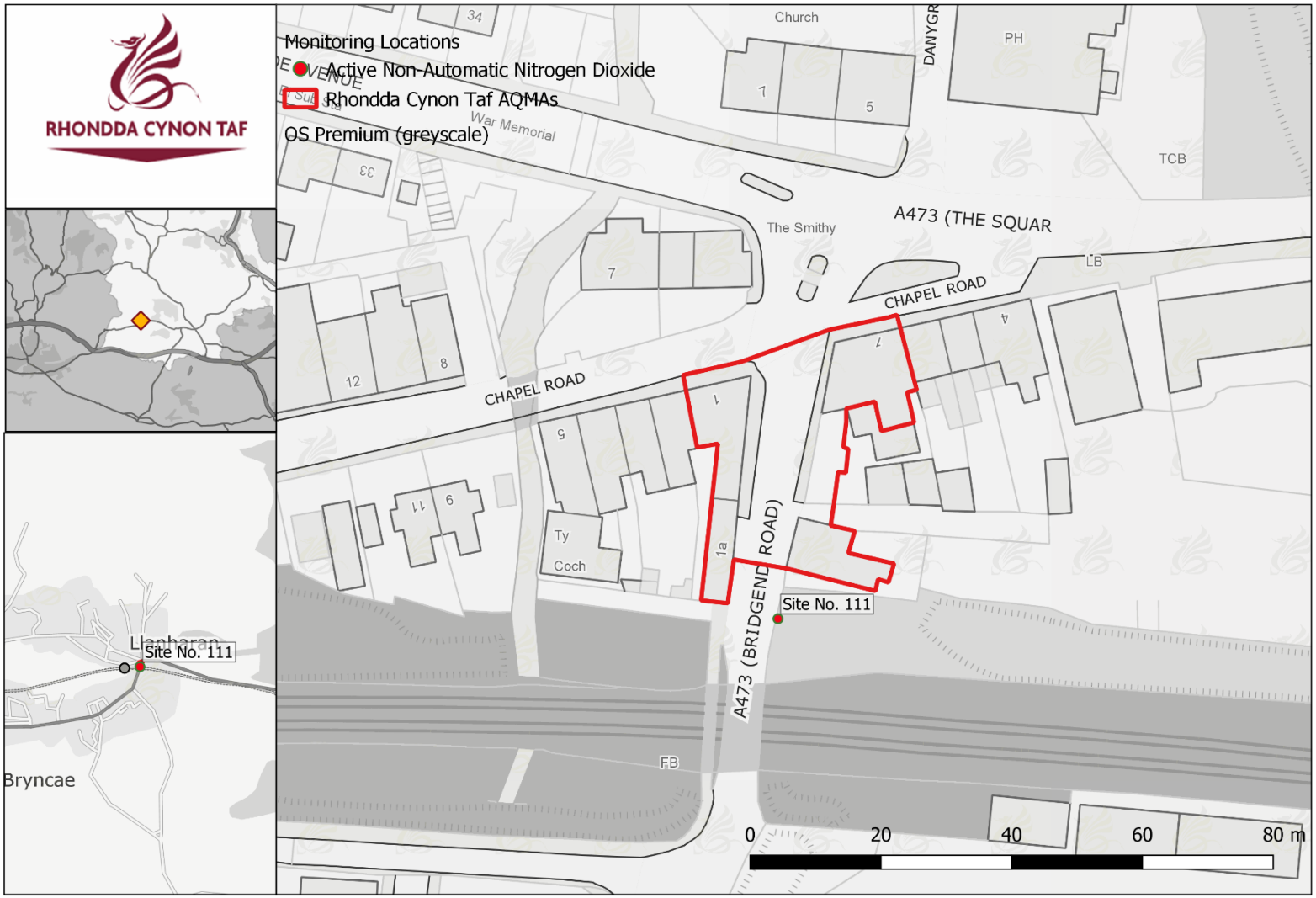
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.6: Ferndale Air Quality Management Area



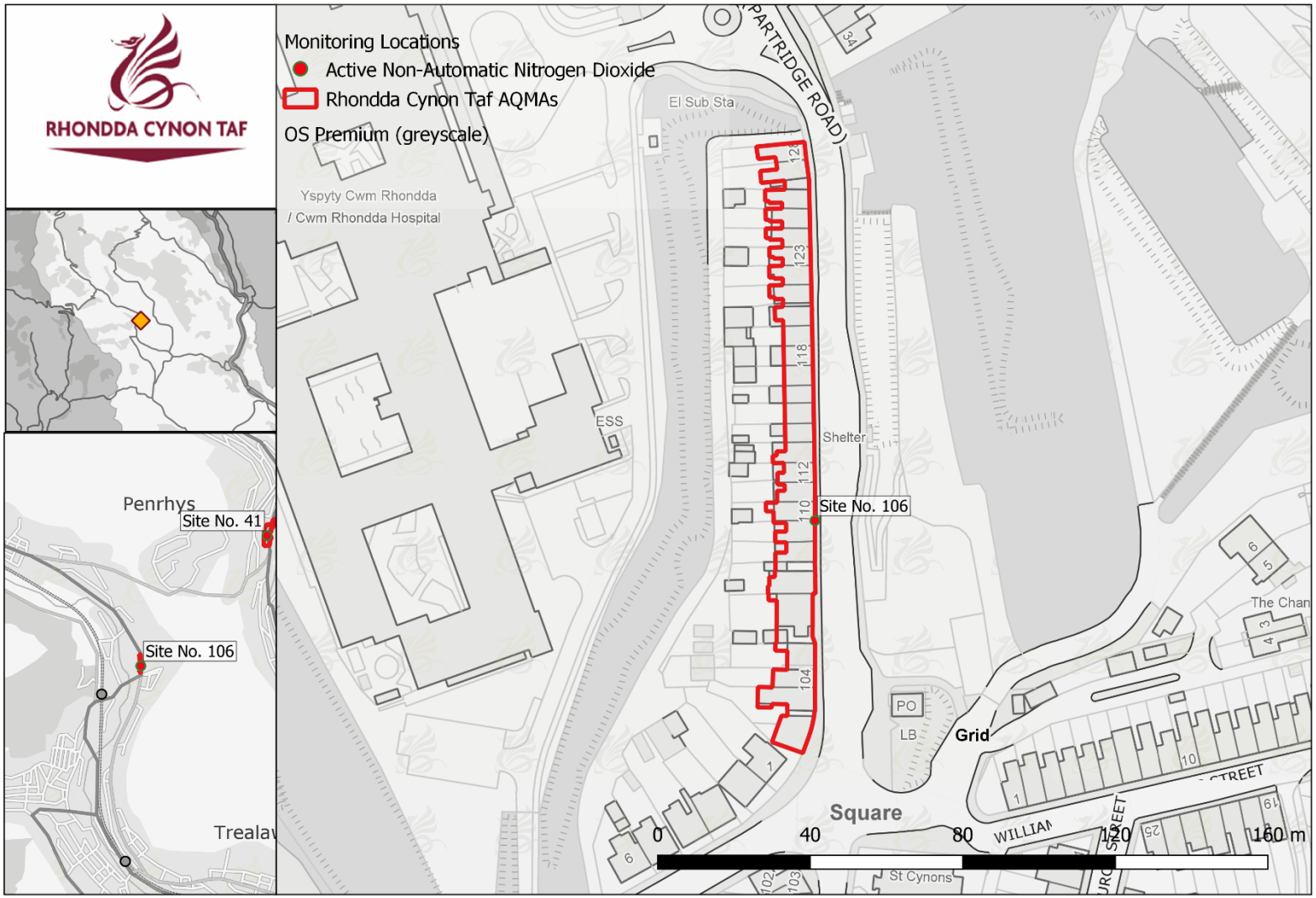
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.7: Llanharan Air Quality Management Area



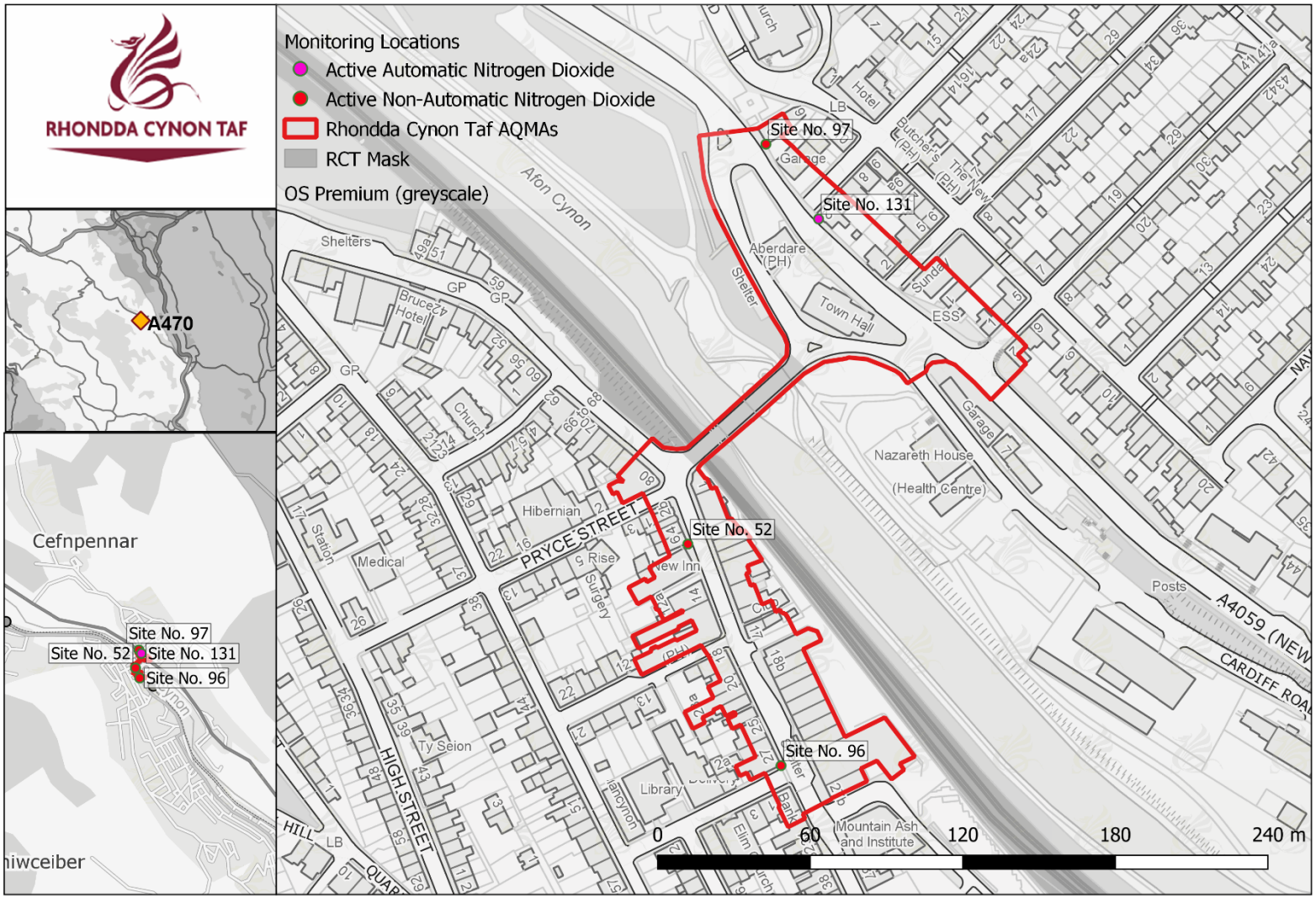
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.8: Llwynypia Air Quality Management Area



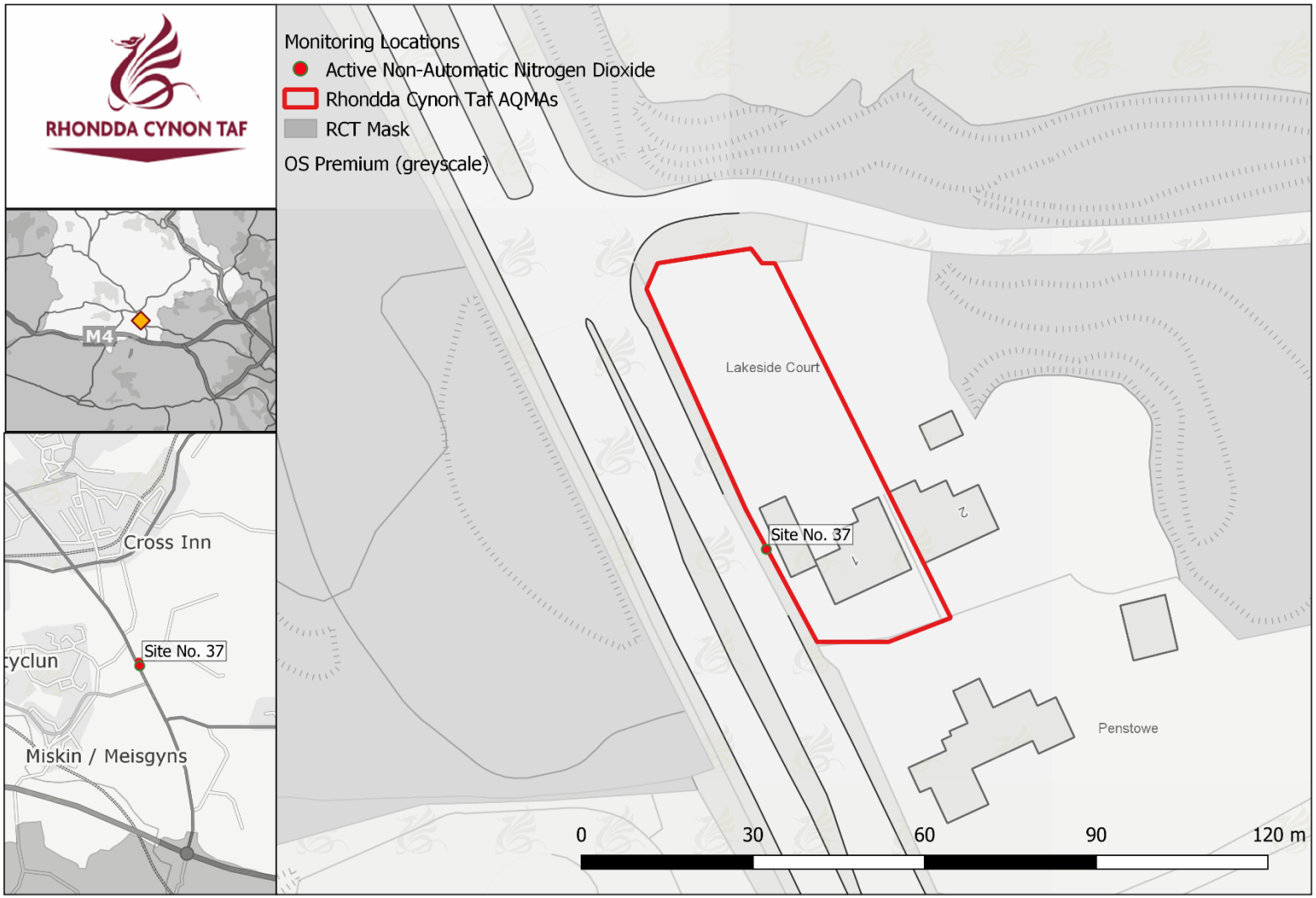
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.9: Mt Ash Town Centre Air Quality Management Area



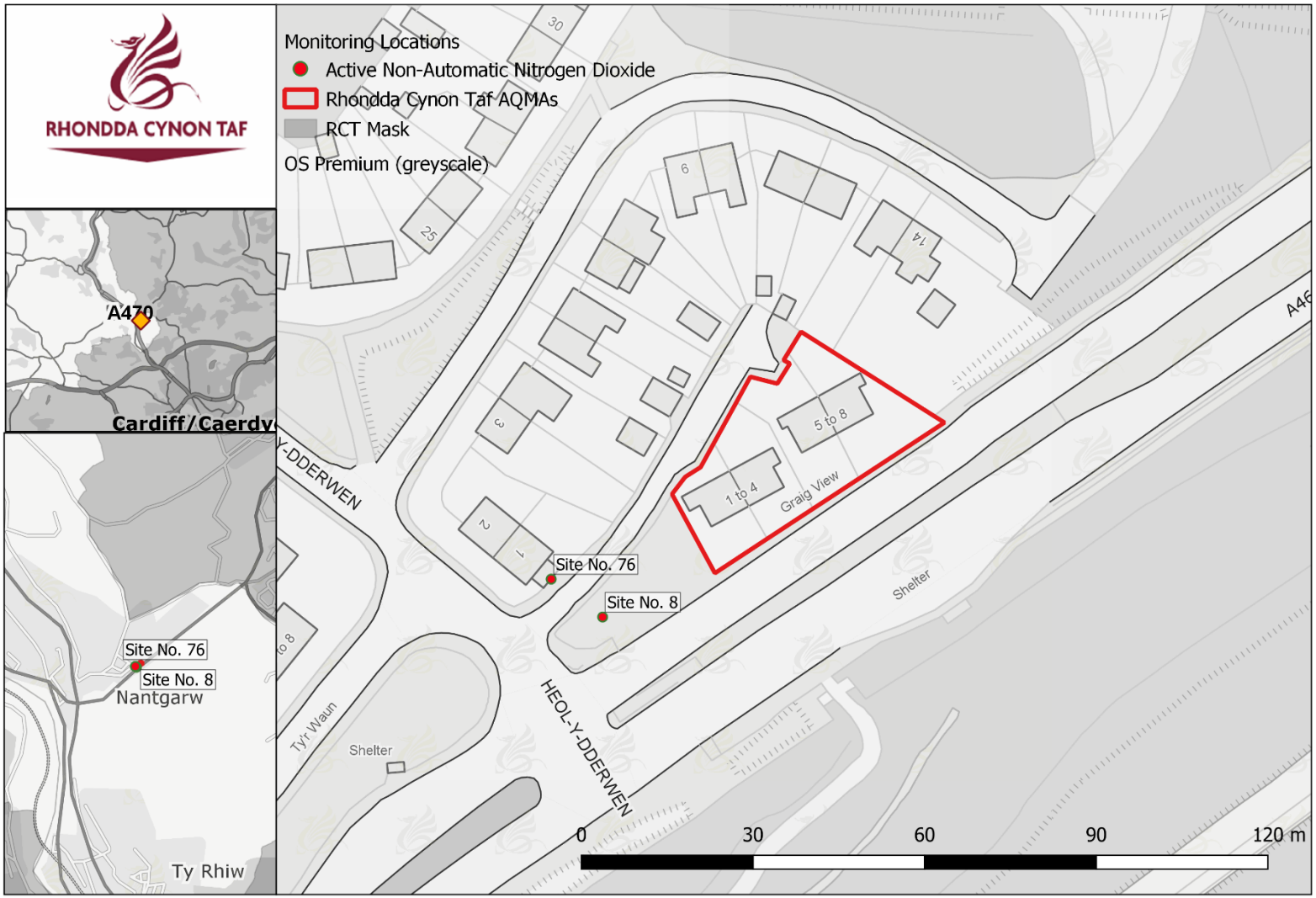
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.10: Mwyndy Air Quality Management Area



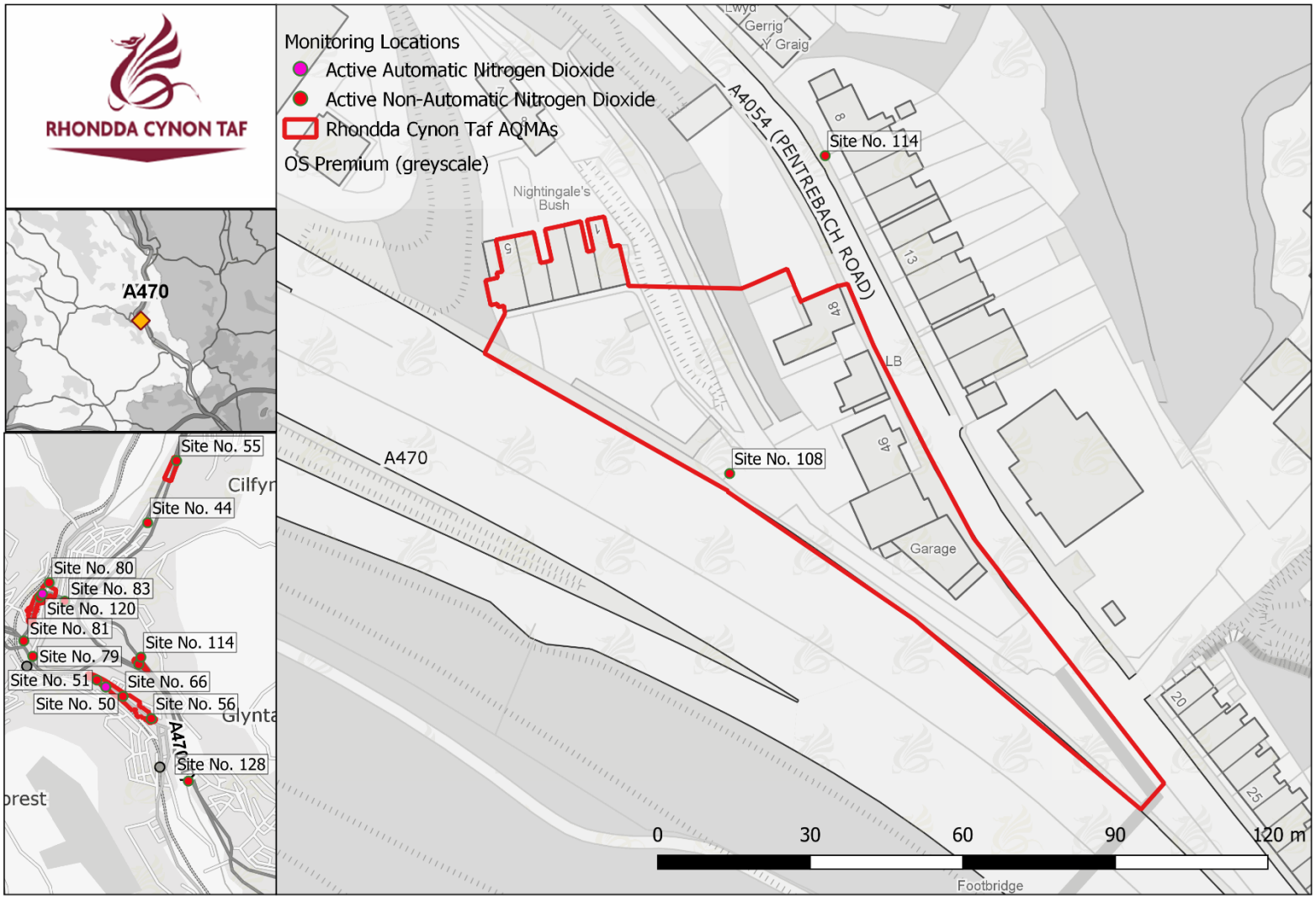
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.11: Nantgarw Air Quality Management Area



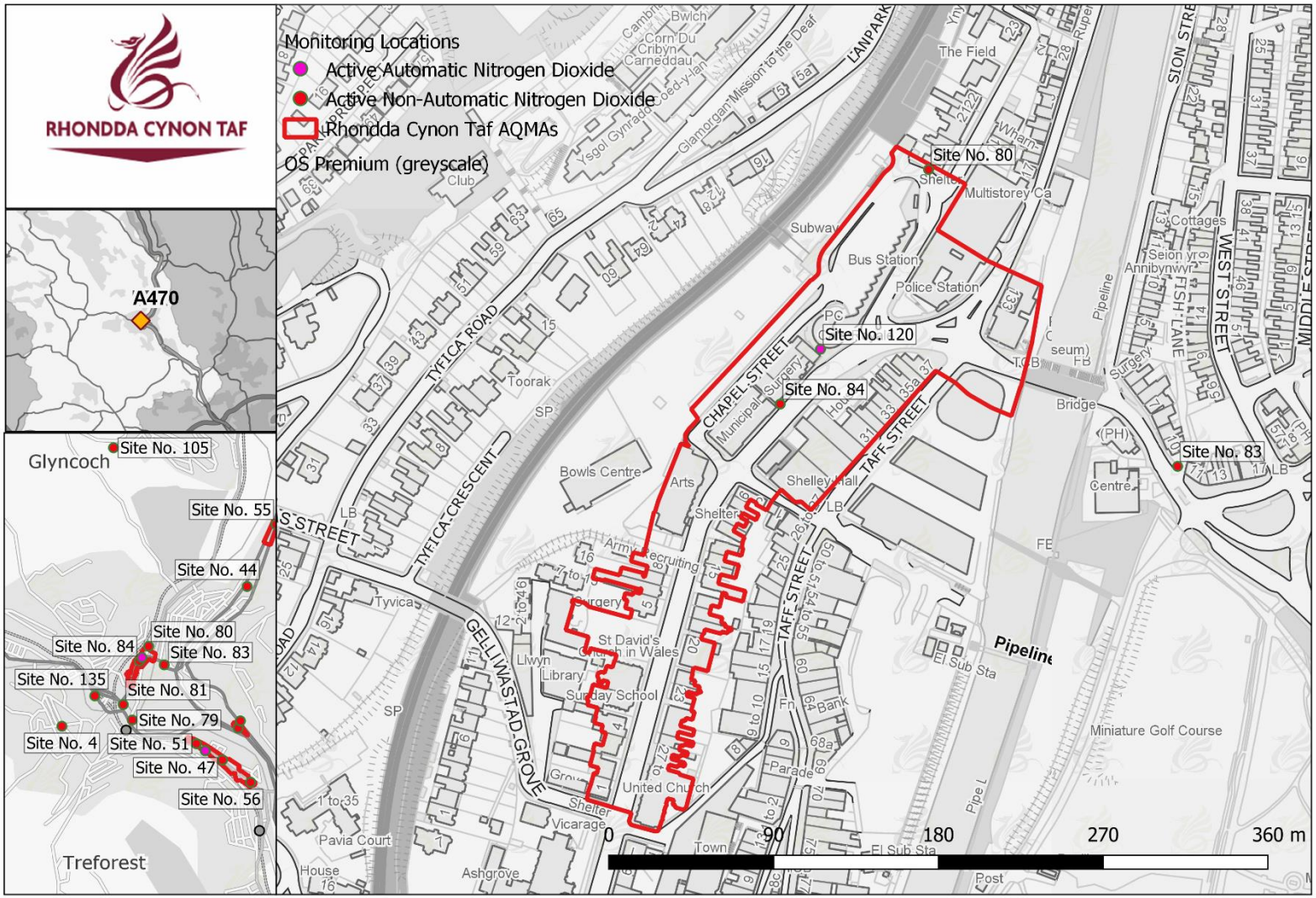
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.12: Nightingales Bush Air Quality Management Area



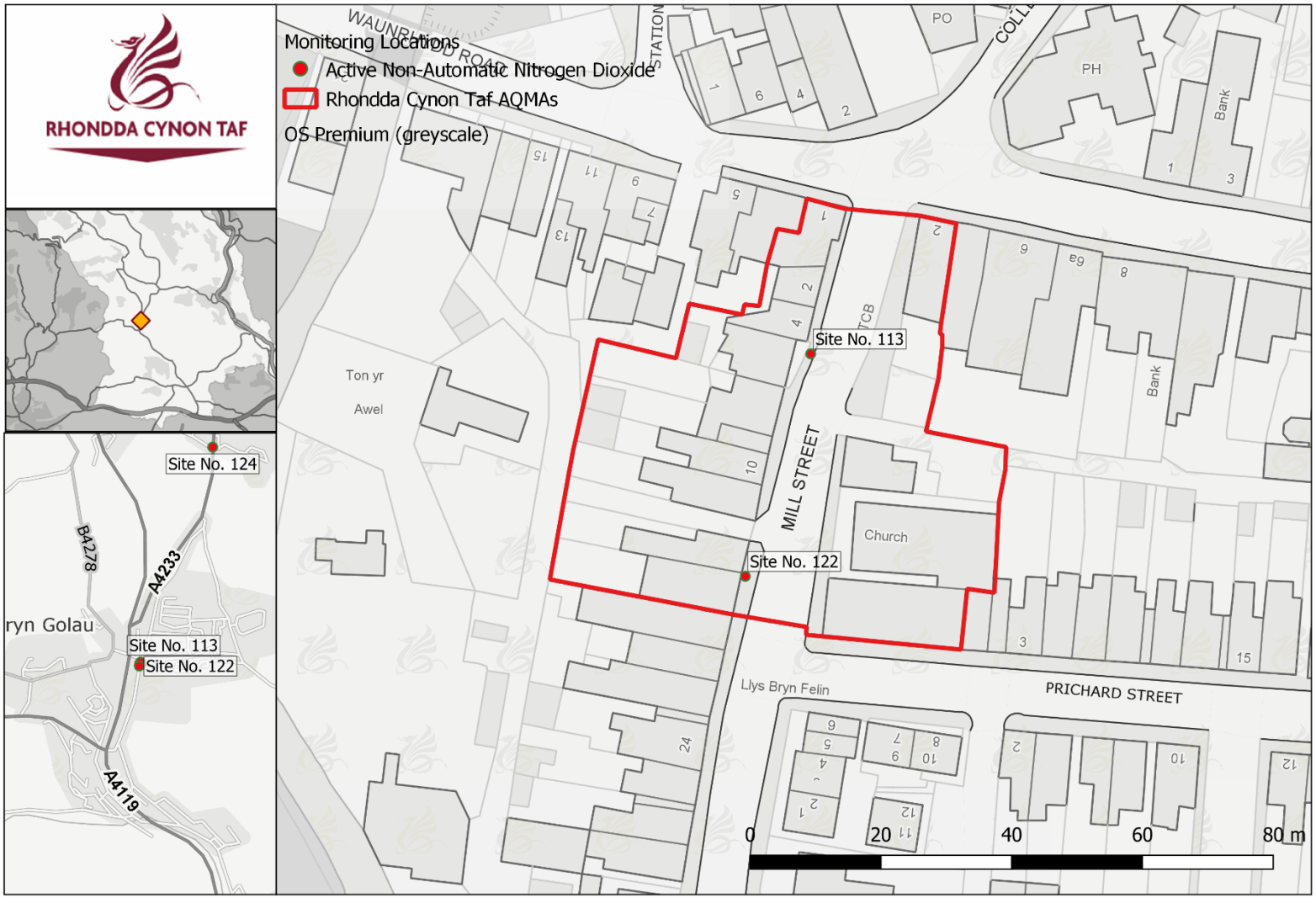
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.13: Pontypridd Town Centre Air Quality Management Area



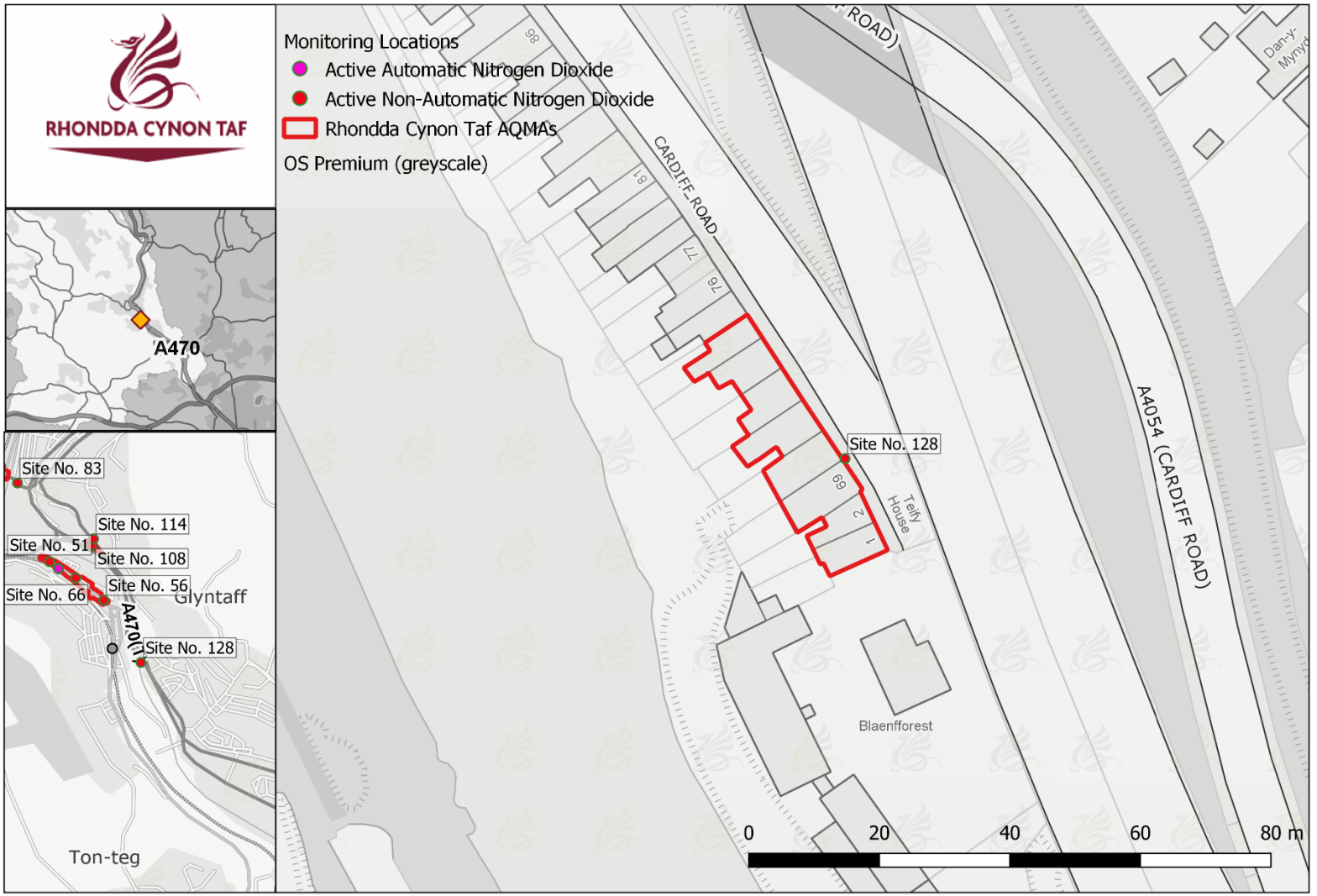
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.14: Tonyrefail Air Quality Management Area



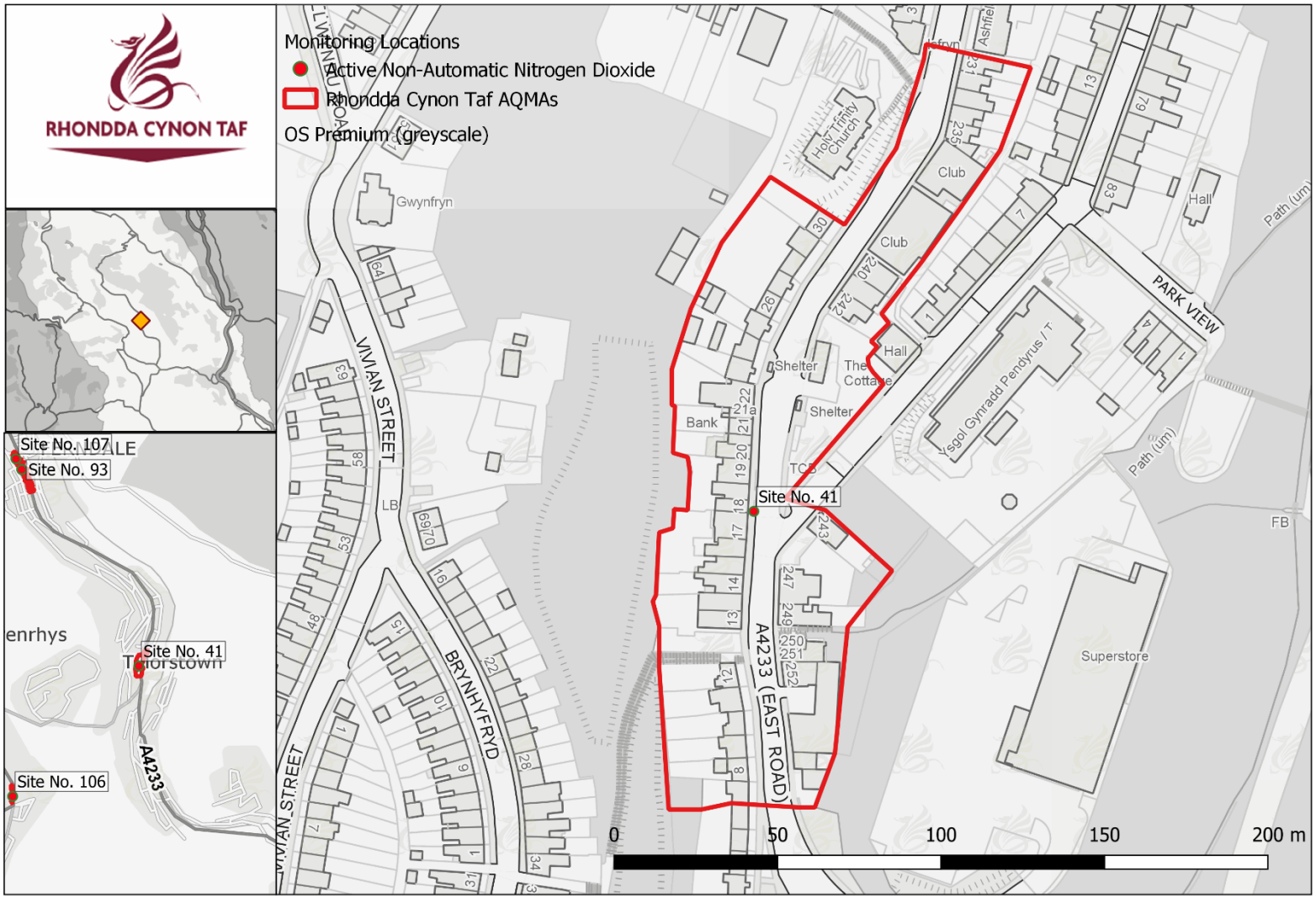
Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.15: Treforest Air Quality Management Area



Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

Figure D.16: Tylorstown Air Quality Management Area



Created using QGIS GIS. Open Source Geospatial Foundation Project. http://qgis.osgeo.org
Certain maps and map informaion may have Crown Copyright. Reproduced from the Ordnance Survey mapping with the permission of the controller of Her Majesty's Stationary Office. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Rhondda Cynon Taf CBC License No. 100023458

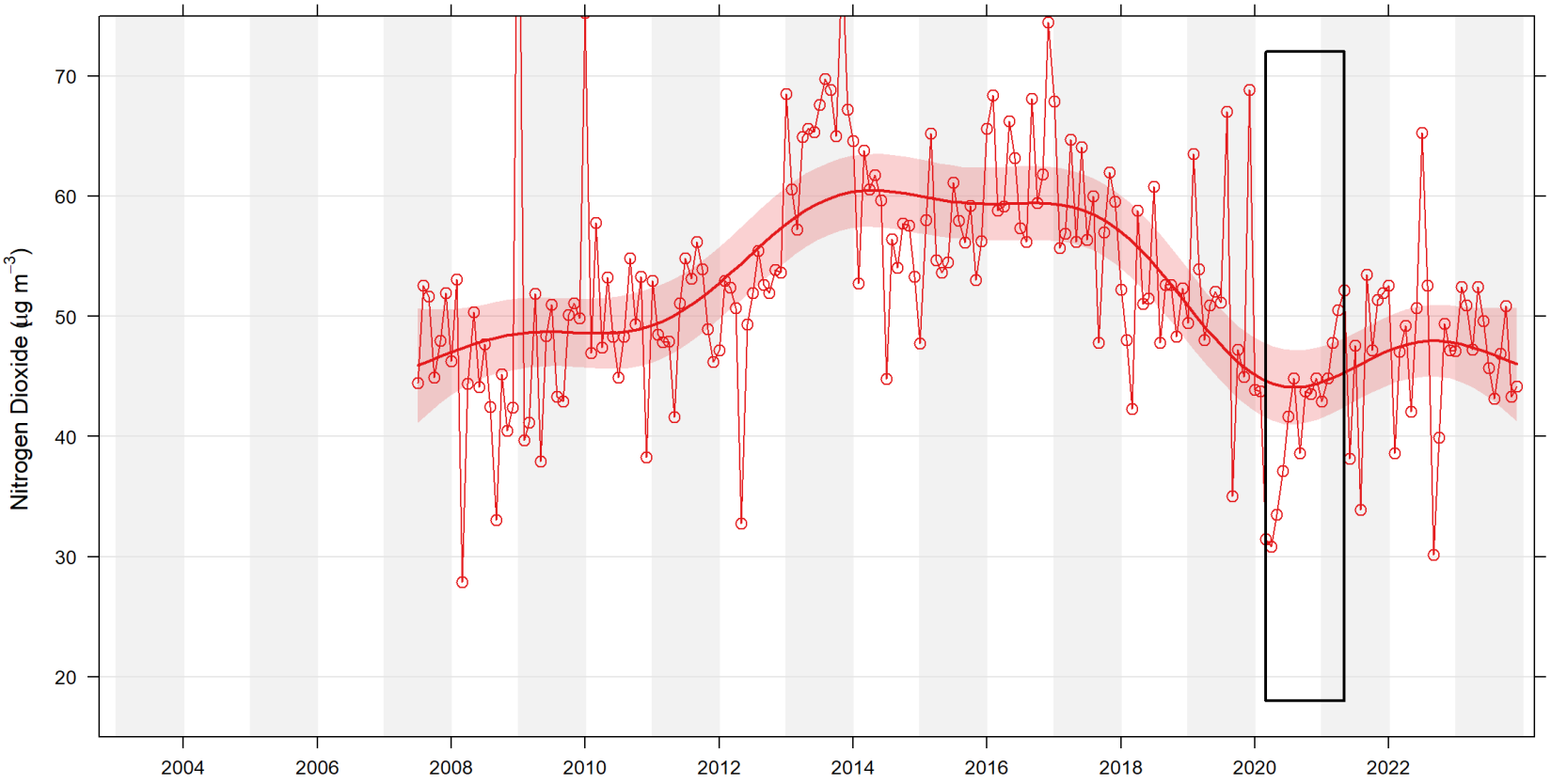
14. Appendix D2: AQMA Trends

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]
28.1	-1.6	19+

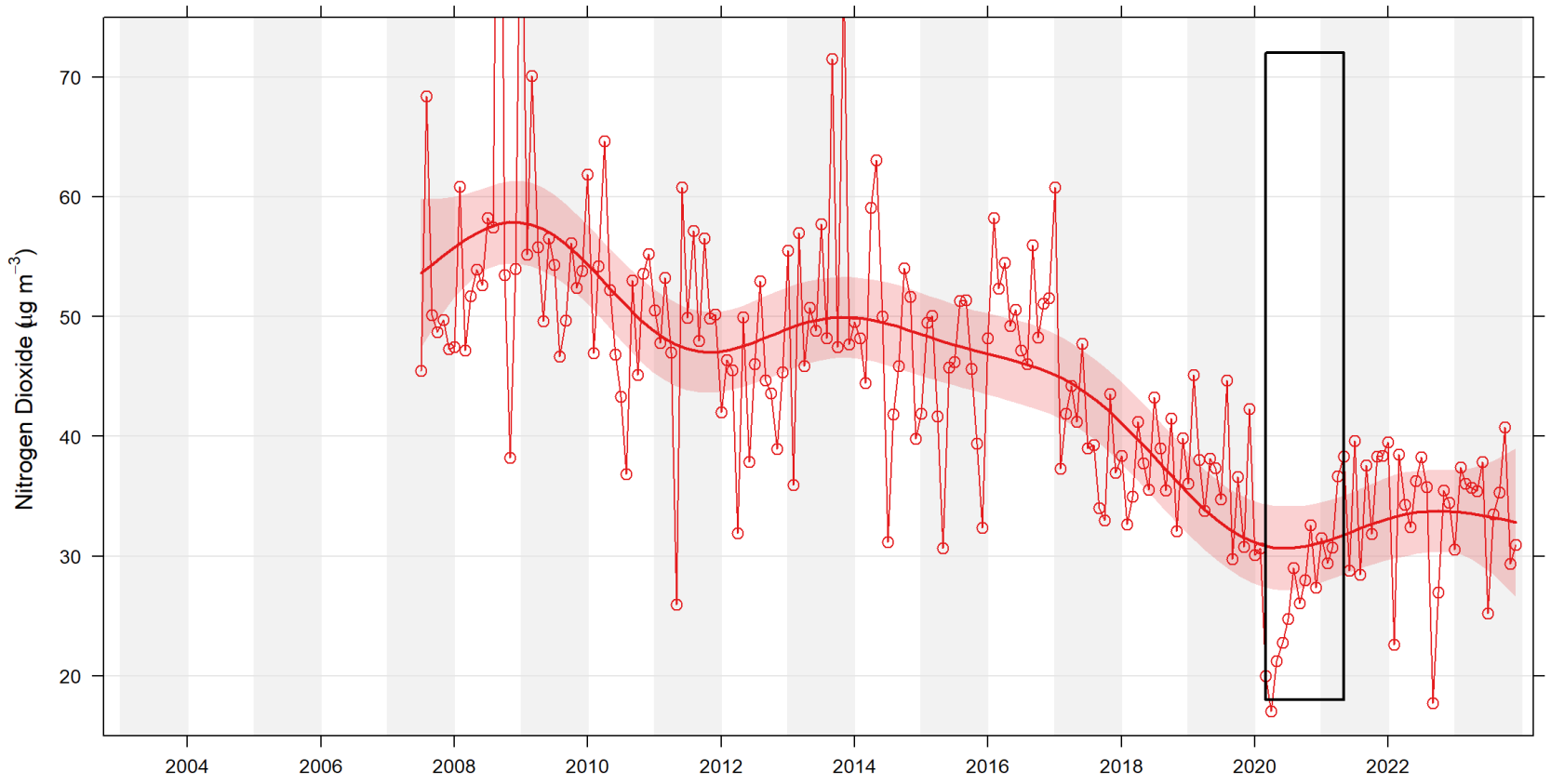
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.2 Ferndale AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
2.4	-2.1	1+

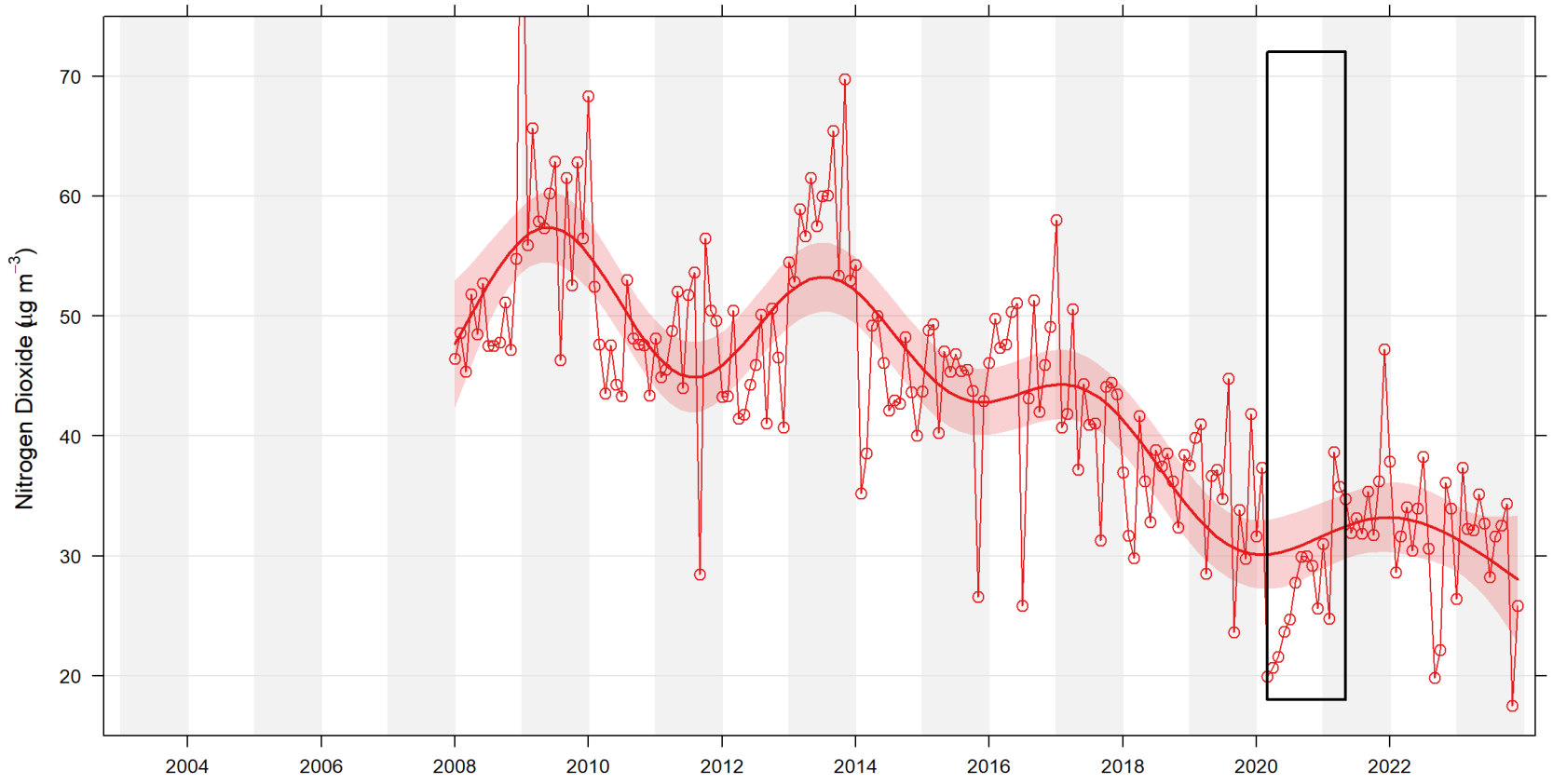
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.3 Llwynypia AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-3.0	Near Term

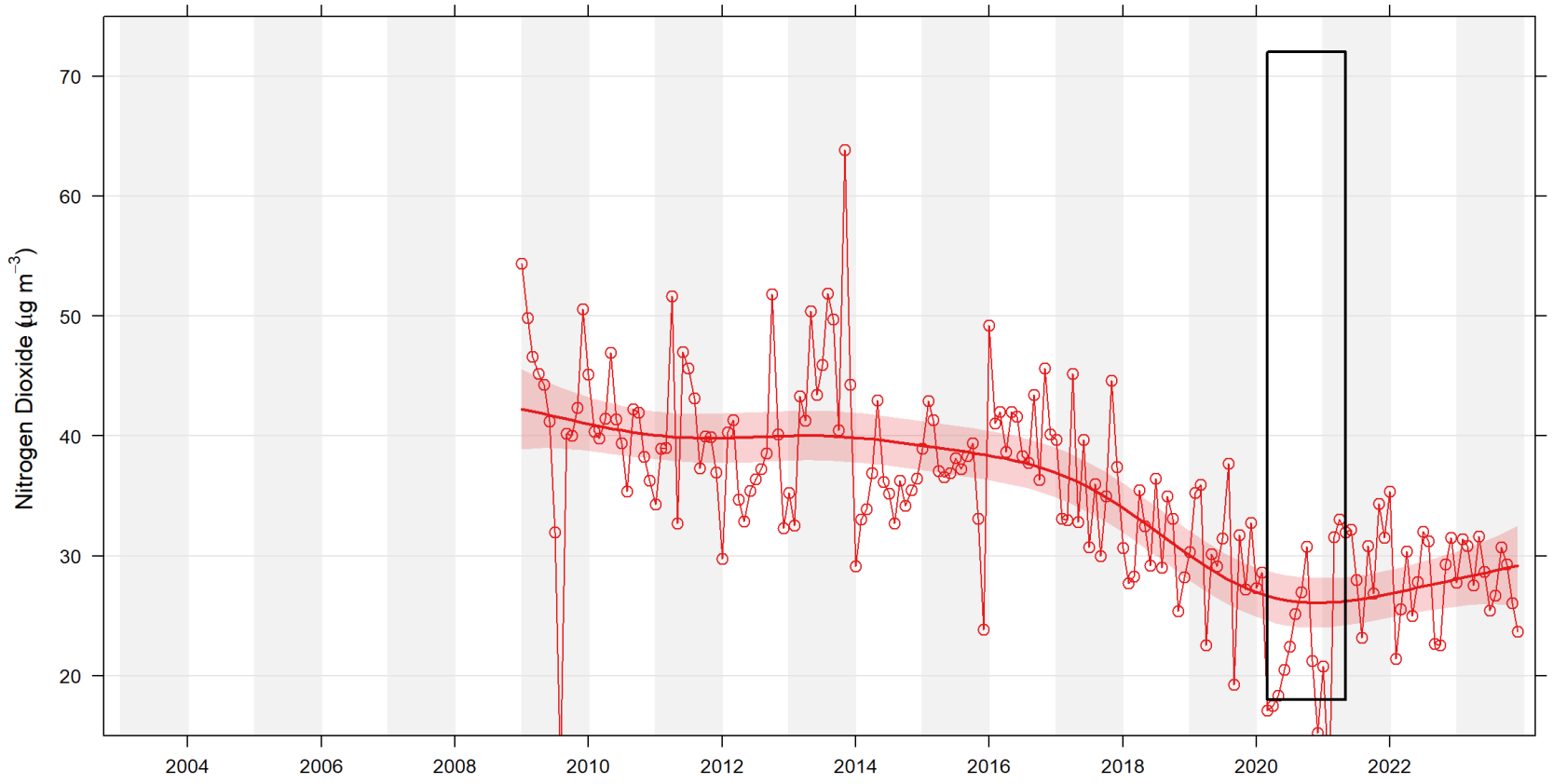
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.4 Tonyrefail AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-1.8	Near Term

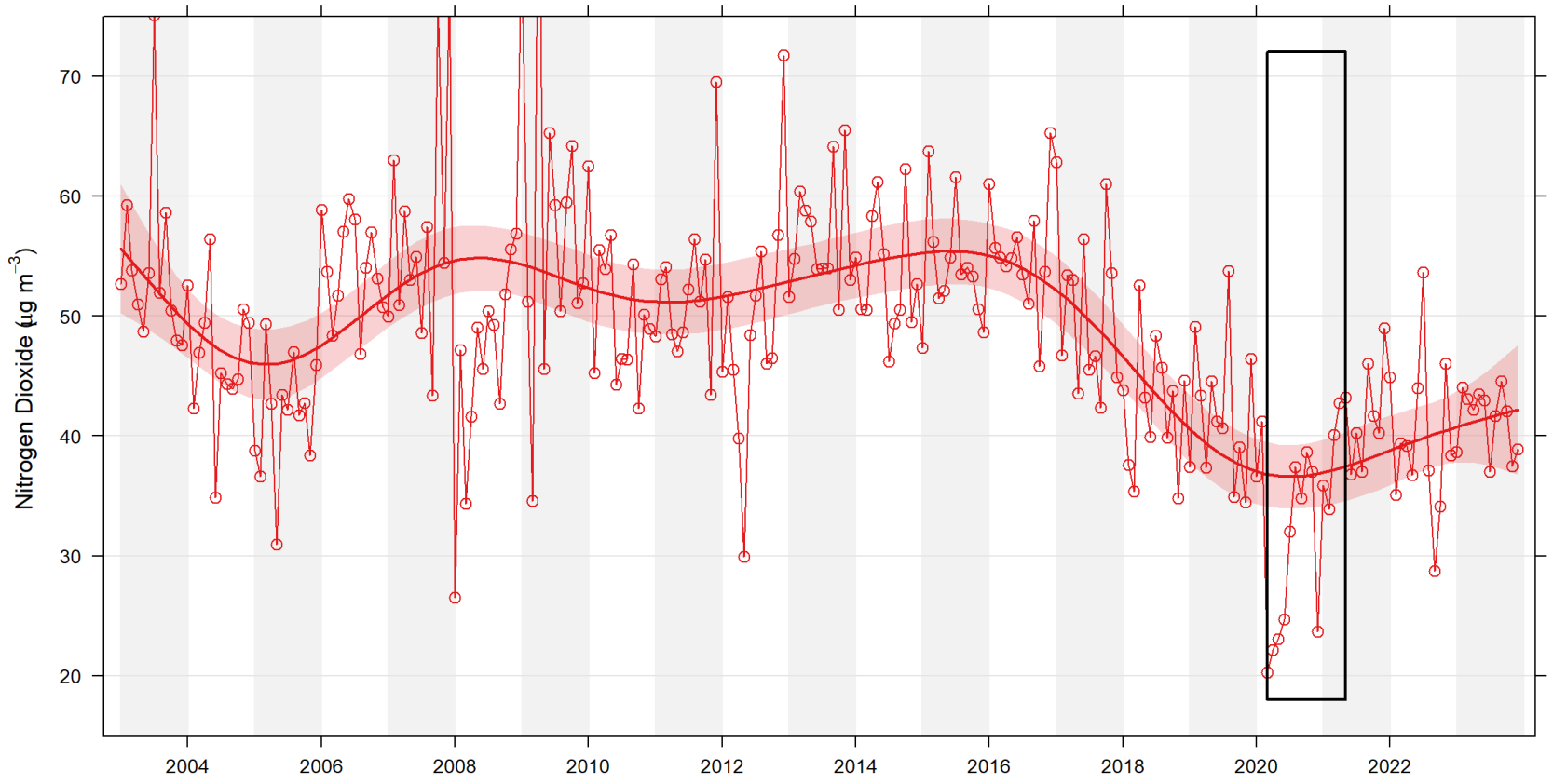
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.5 Tylorstown AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
3.1	-0.8	4+

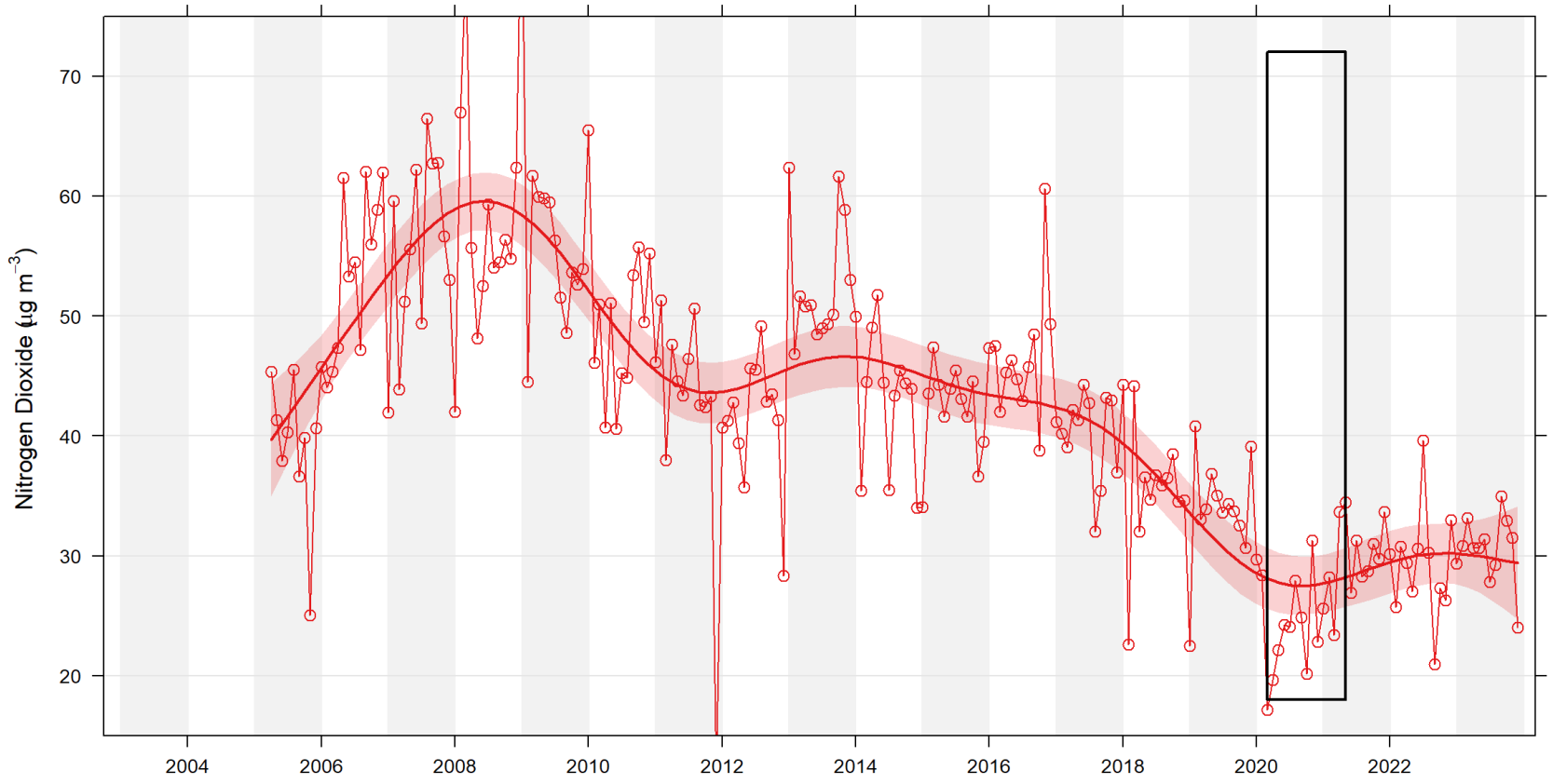
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.6 Aberdare Town Centre AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-3.7	Near Term

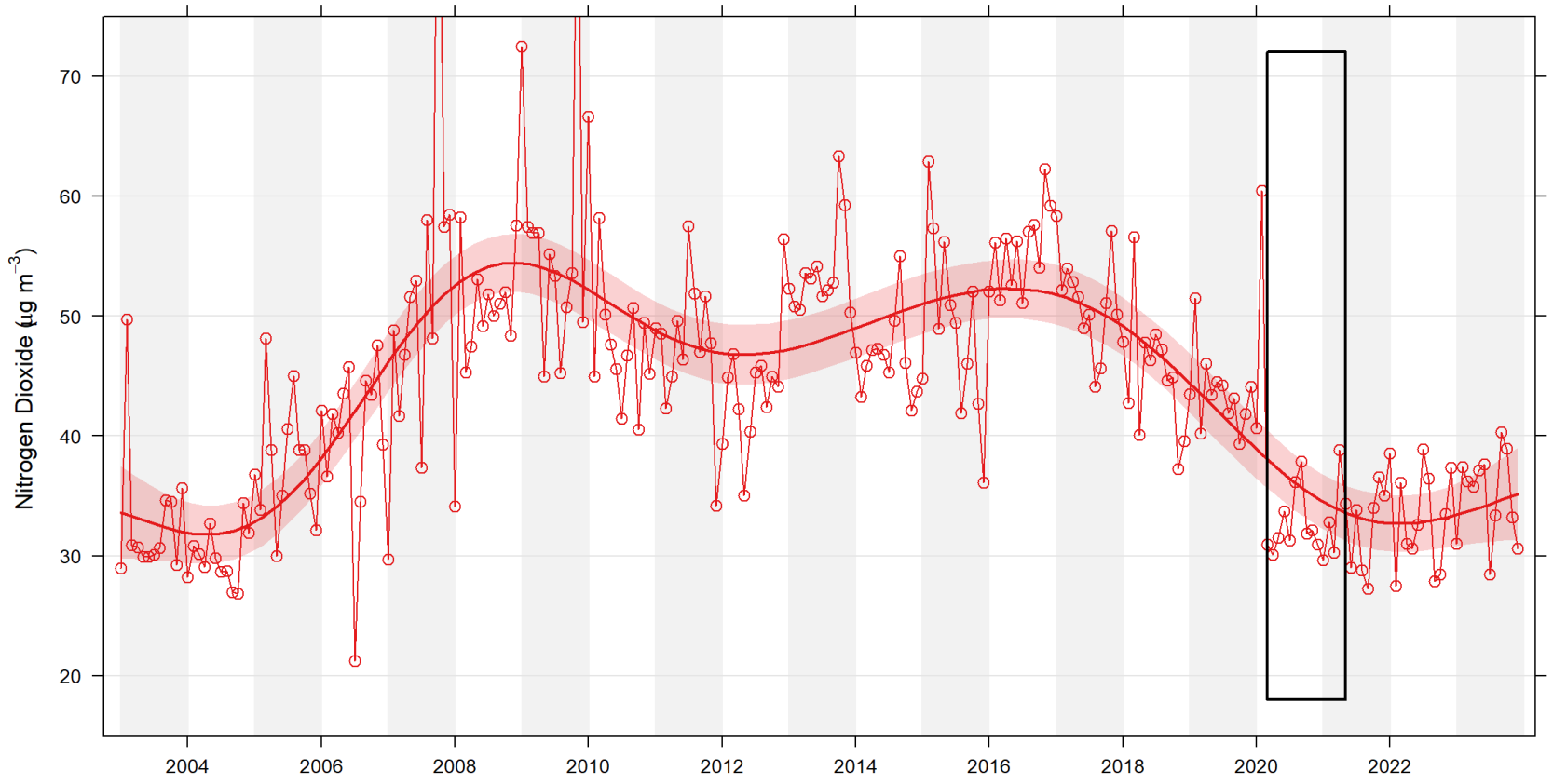
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.7 Mt Ash Town Centre AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
6.5	-5.4	2+

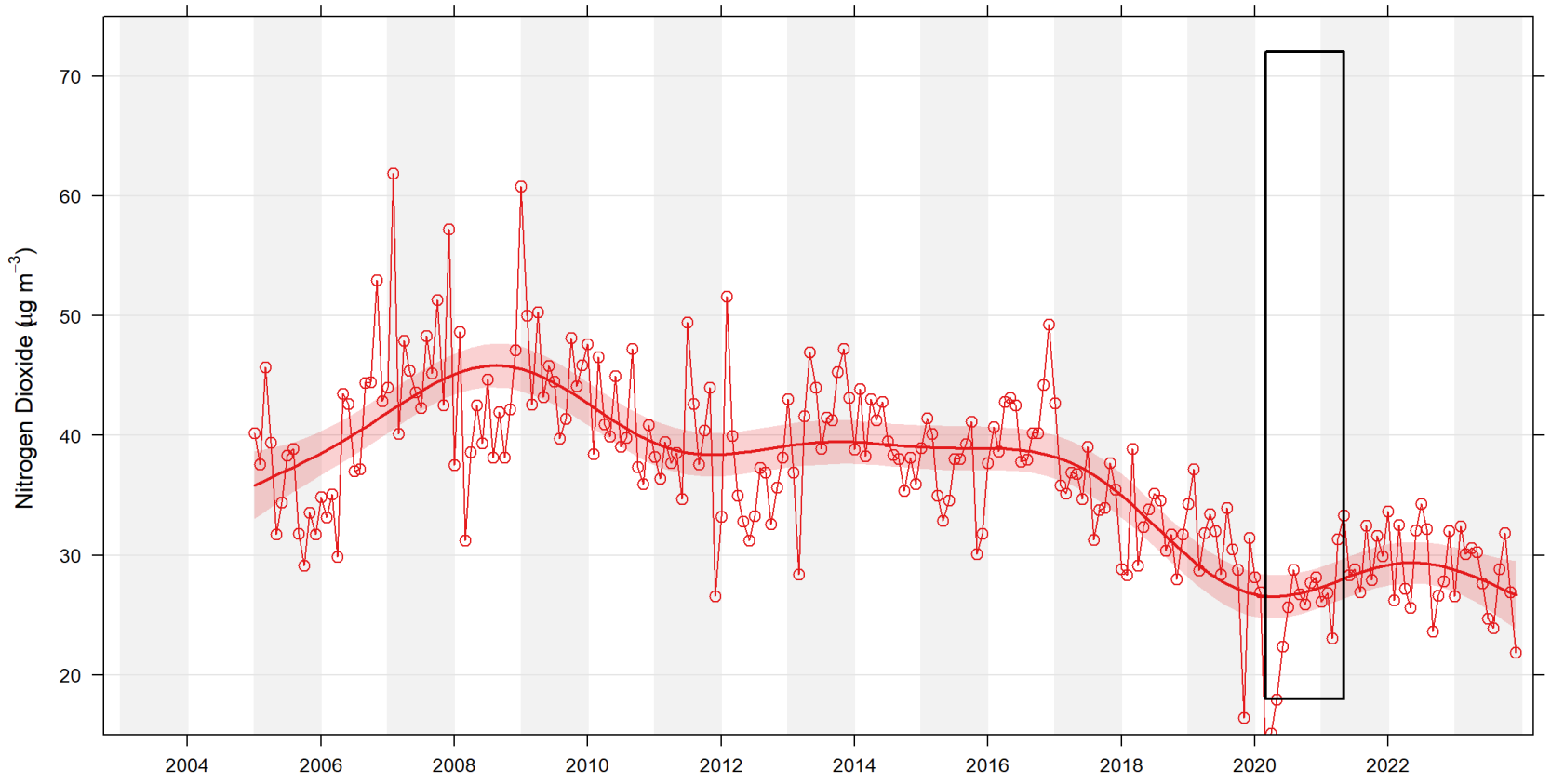
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.8 Broadway AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-2.2	Near Term

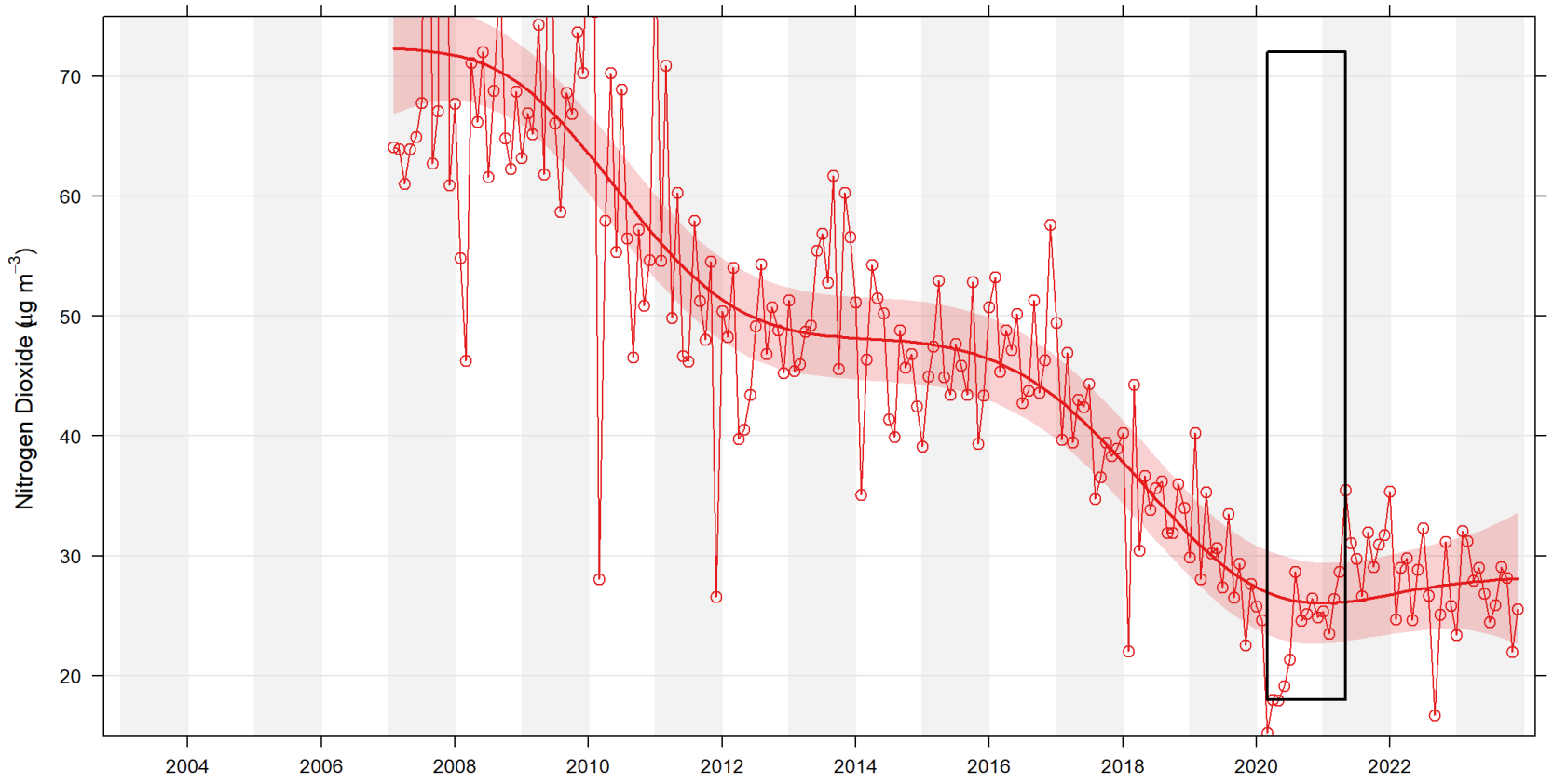
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.9 Church Village AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-3.5	Near Term

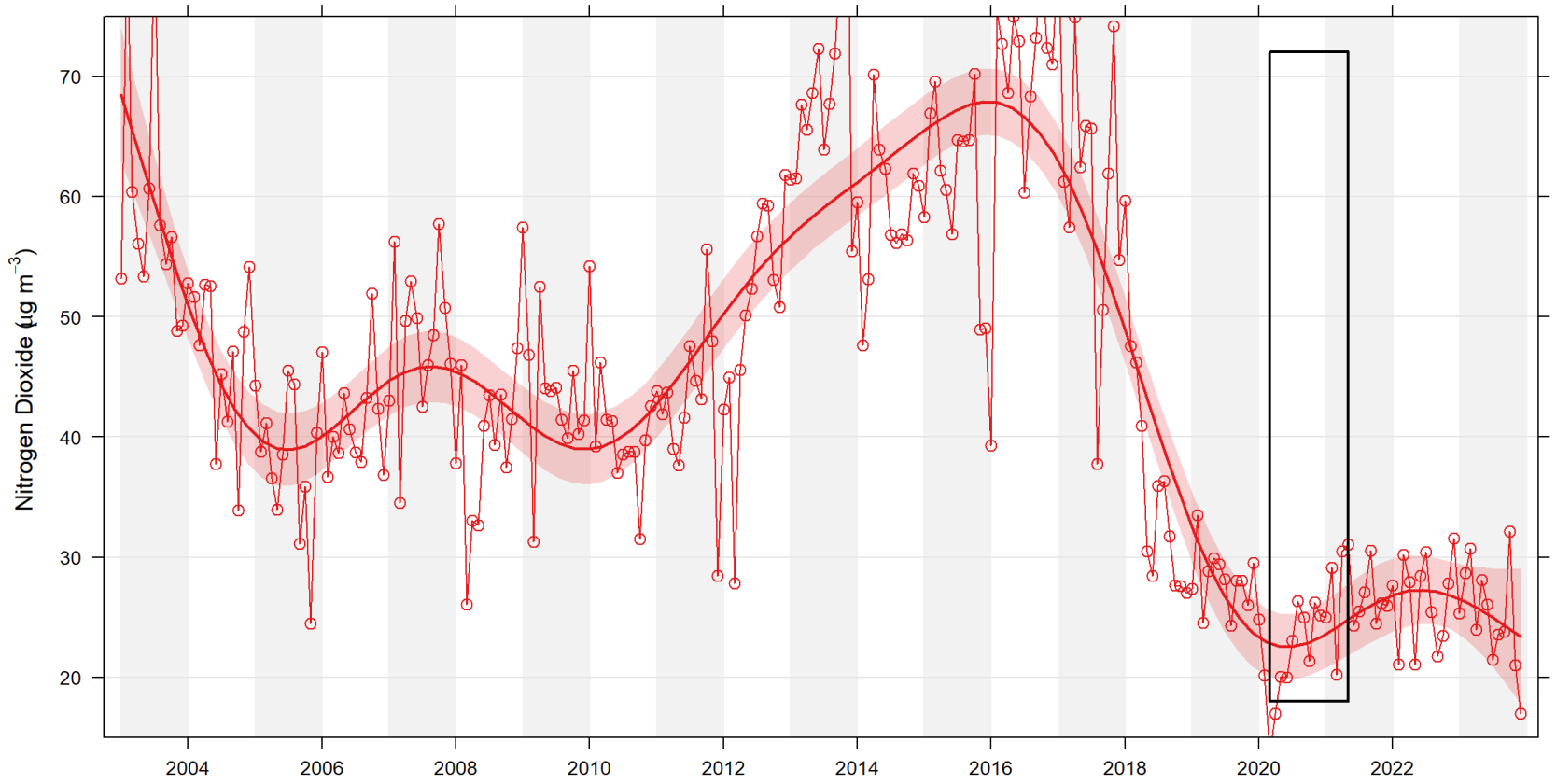
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.10 Cilfynydd AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-5.0	Near Term

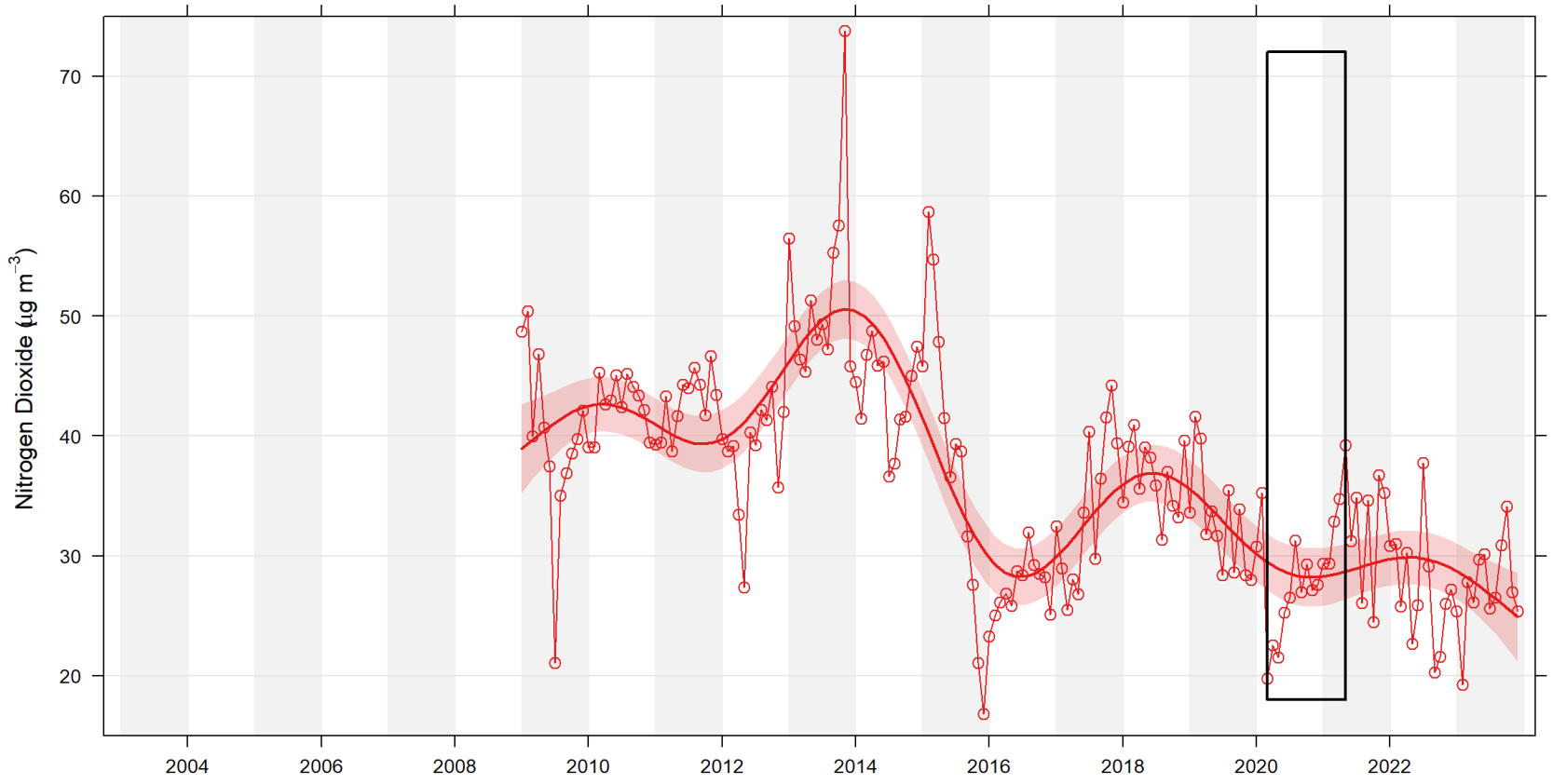
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.11 Llanharan AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-5.1	Near Term

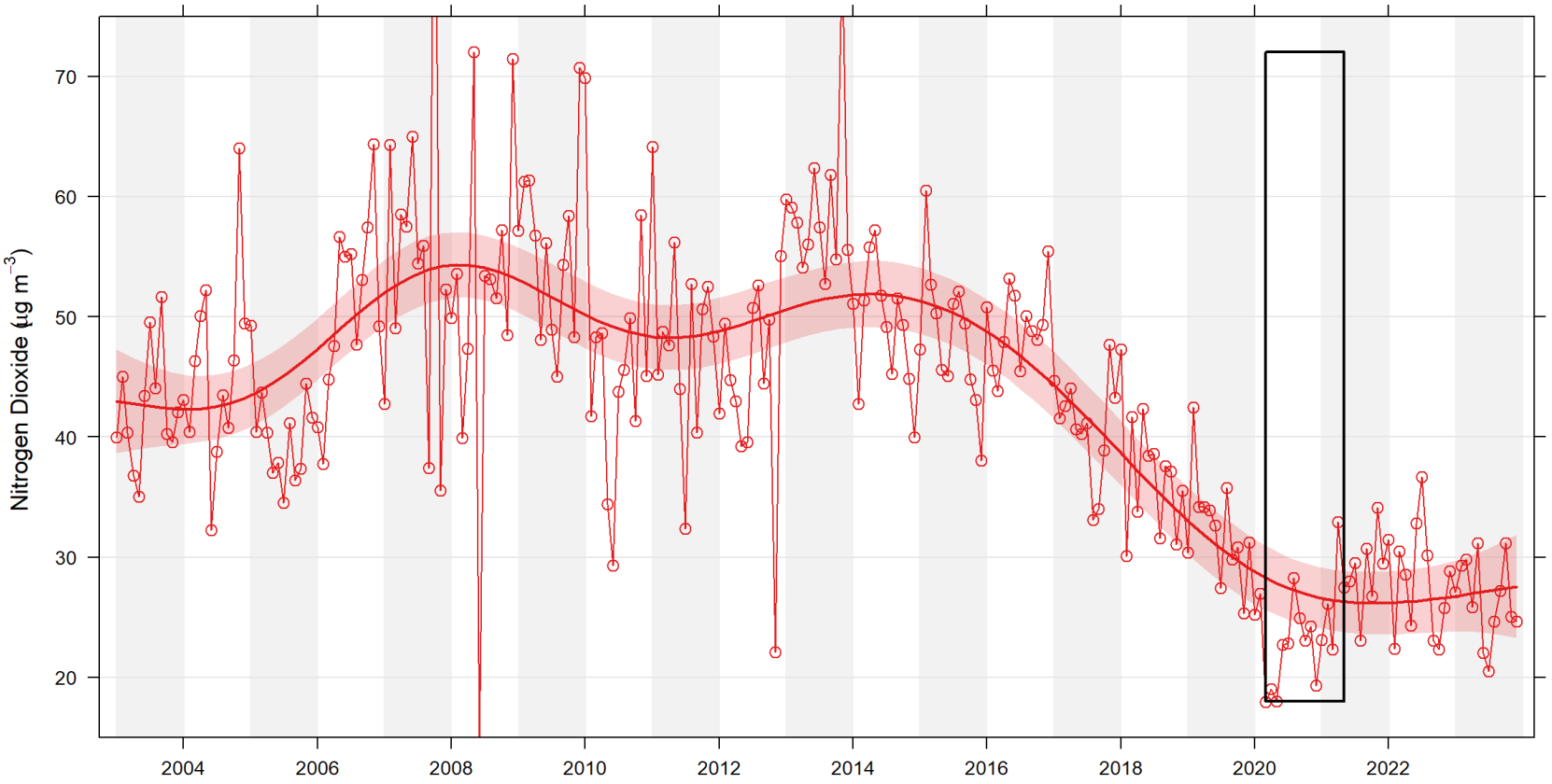
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.12 Mwyndy AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-6.1	Near Term

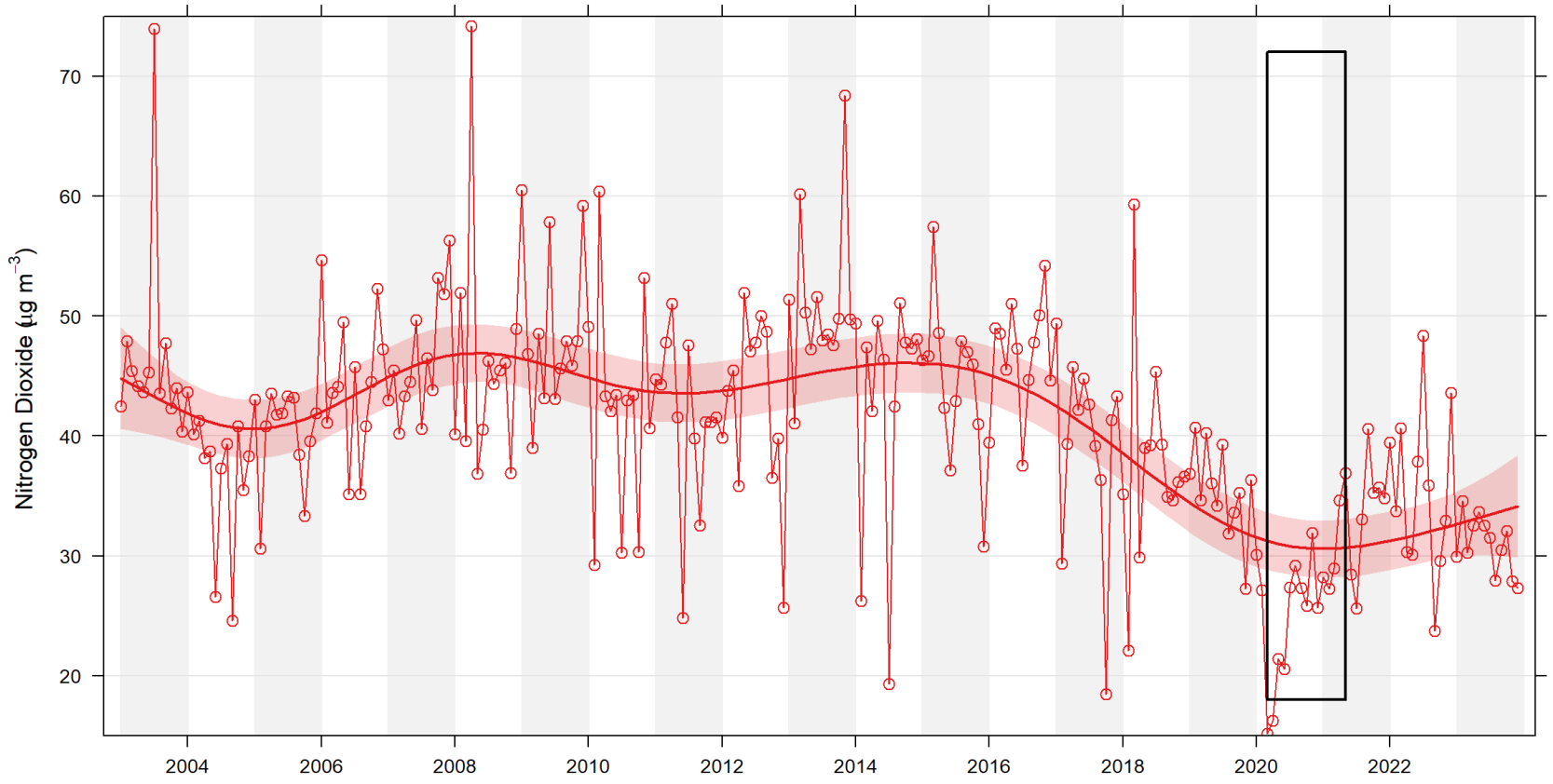
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.13 Nantgarw AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-2.6	Near Term

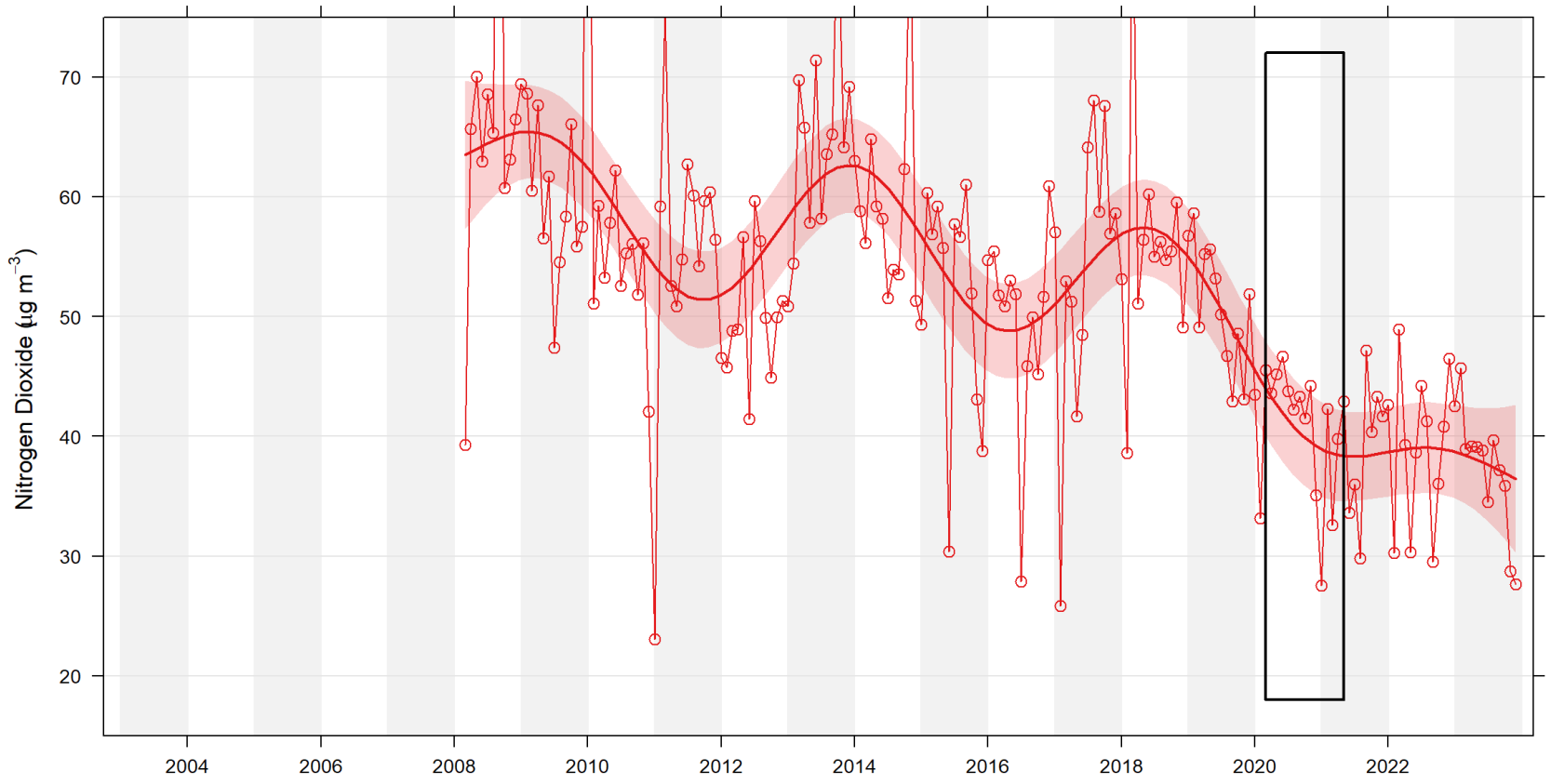
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.14 Nightingales Bush AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
10.4	-6.3	2+

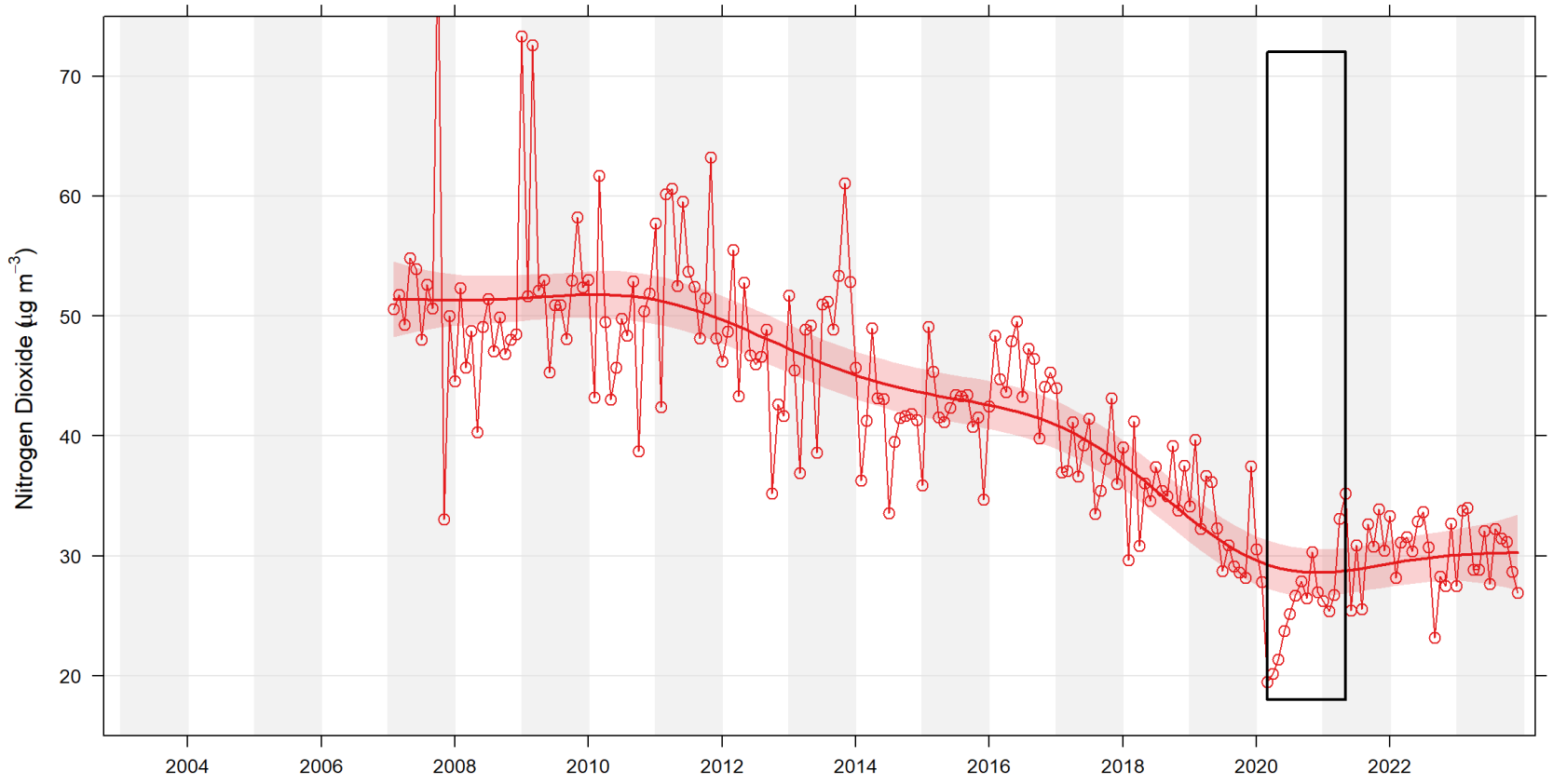
20-year Trend Graph (μgm^{-3} NO_2)[2]



14.15 Pontypridd Town Centre AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
2.3	-1.2	1+

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



14.16 Treforest AQMA

Needed Reduction in NO_2 (%)[1]	Calculated 5-year Trend[3] (%)	Predicted Compliance (years) [4]
Nil	-1.2	Near Term

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

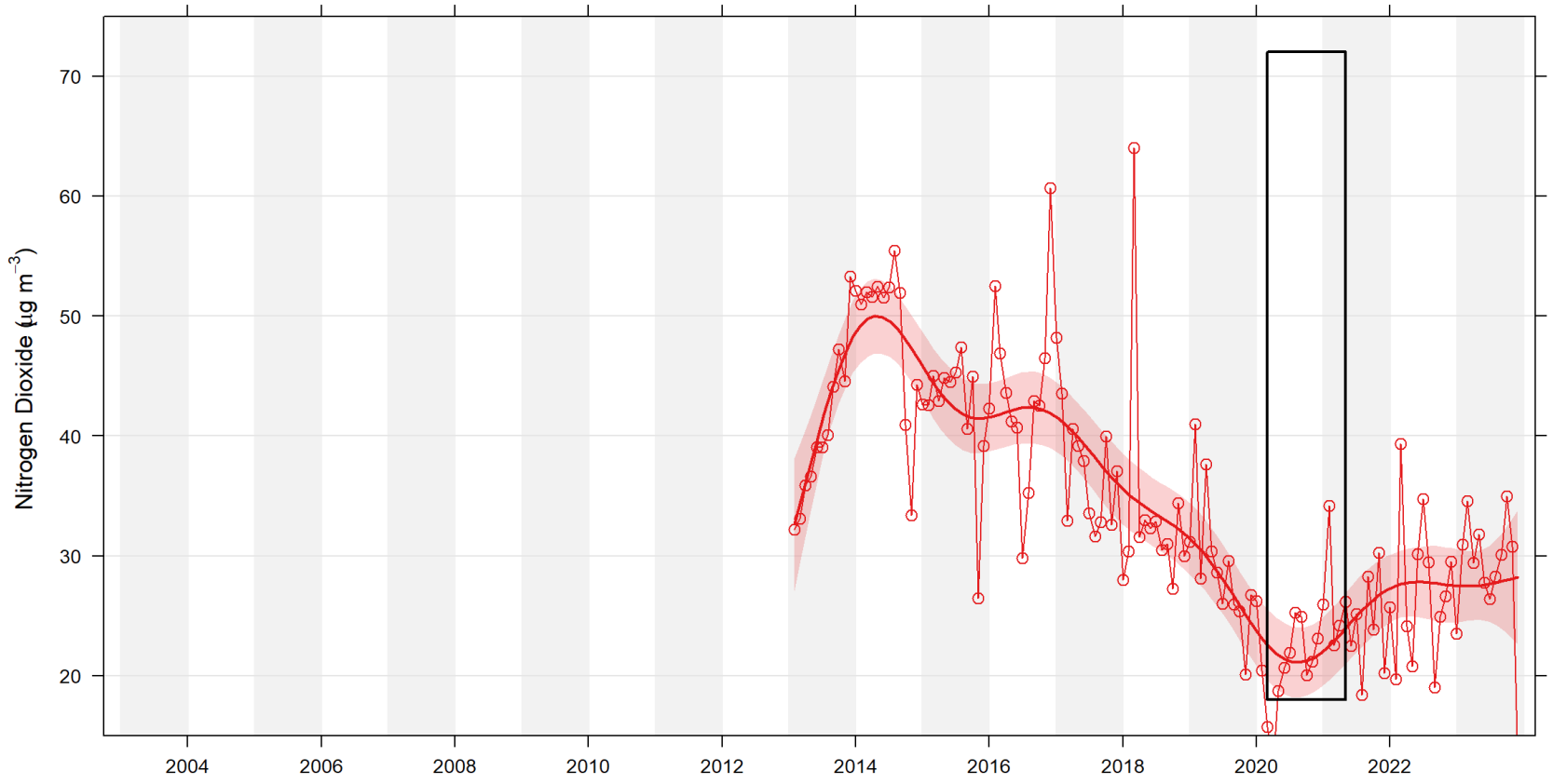


Table Notes

(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**	
Reserve	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 Llwynypia AQAP

Llwynypia 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
	OP2	Green Synchronism, to include policy's and actions that support ecology and biodiversity, within Rhondda Cynon Taf, 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

15.1.4 Tonyrefail AQAP

Tonyrefail 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
	OP2	Green Synchronism, to include policy's and actions that support ecology and biodiversity, within Rhondda Cynon Taf, 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

15.1.5 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 Aberdare Town Centre AQAP

Aberdare Town Centre 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
	OP2	Green Synchronism, to include policy's and actions that support ecology and biodiversity, within Rhondda Cynon Taf, 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

15.2.2 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	Behavioural measures to influence travellers, to include the dissemination of information to support active travel and public transport as well as	2023	Delivery of schemes to increase travel information
				Favourable perspective of current public transport operators
				Delivery of schemes to increase modal shift

		information on practices that can reduce the impact of all travel options.		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 Broadway AQAP

Broadway 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
	OP2	Green Synchronism, to include policy's and actions that support ecology and biodiversity,	2024	Delivery of green infrastructure and biodiversity policies

		within Rhondda Cynon Taf, 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.		
	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 Church Village AQAP

Church Village 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
	OP2	Green Synchronism, to include policy's and actions that support ecology and biodiversity, within Rhondda Cynon Taf, 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

15.3.3 Cilfynydd AQAP

Cilfynydd 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
	OP2	Green Synchronism, to include policy's and actions that support ecology and biodiversity, within Rhondda Cynon Taf, 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

15.3.4 Llanharan AQAP

Llanharan 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
	OP2	Green Synchronism, to include policy's and actions that support ecology and biodiversity, within Rhondda Cynon Taf, that help to support existing or new green infrastructure which may support air quality improvements or protections	2024	Delivery of green infrastructure and biodiversity policies

		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

15.3.5 Mwyndy AQAP

Mwyndy AQAP Actions				
Type	**Ref**	**Description**	**Implementation Year**	**Action Monitoring Method**
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
	OP2	Green Synchronism, to include policy's and actions that support ecology and biodiversity, within Rhondda Cynon Taf, 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

15.3.6 Nantgarw AQAP

Nantgarw AQAP Actions				
Type	**Ref**	**Description**	**Implementation Year**	**Action Monitoring Method**
Re	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
	OP2	Green Synchronism, to include policy's and actions that support ecology and biodiversity, within Rhondda Cynon Taf, 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

15.3.7 Nightingales Bush AQAP

Nightingales Bush AQAP Actions				Action Monitoring Method
Type	**Ref**	**Description**	**Implementation Year**	
Implement	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

15.3.8 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 so as to favour greater traffic flow along Gelliwastad Rd.	2023	% relevant bias adjustment made
				% change in average speed within Pontypridd 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

15.3.9 Treforest AQAP

Treforest AQAP Actions				Action Monitoring Method
Type	**Ref**	**Description**	**Implementation Year**	
Implement	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
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
	OP2	Green Synchronism, to include policy's and actions that support ecology and biodiversity, within Rhondda Cynon Taf, 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

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