



RHONDDA CYNON TAF COUNTY BOROUGH COUNCIL

CLIMATE CHANGE STEERING GROUP

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WHAT ACTION CAN BE TAKEN IN THE AIR QUALITY MANAGEMENT AREAS, TO ENSURE AIR QUALITY IMPROVES ACROSS THE COUNTY BOROUGH

REPORT OF THE DIRECTOR OF PUBLIC HEALTH, PROTECTION & COMMUNITY SERVICES DISCUSSION WITH THE CABINET'S CLIMATE CHANGE CHAMPION (COUNCILLOR RHYS LEWIS)

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1. PURPOSE OF REPORT

- 1.1 The purpose of this report is to consider what action can be taken in the Air Quality Management Areas, to ensure air quality improves across the County Borough.

2. RECOMMENDATIONS

- 2.1 It is recommended to note the contents of this report as part of the ongoing work of the Climate Change Cabinet Steering Group and recommend a way forward for Cabinet.

3. REASONS FOR RECOMMENDATIONS

- 3.1 The contents of this report provides key air quality information as required by the Discussion Paper 'Work Programme for the Climate Change Cabinet Steering Group'

4. BACKGROUND TO LOCAL AIR QUALITY MANAGEMENT

- 4.1 It has been understood for some time that the quality of air that people experience can have a substantial effect on their health and wellbeing. Since the first half of the 20th century, awareness amongst the general public of the importance of air quality has increased significantly. Originally emphasised within the UK by the visually dramatic sulphurous smog events of the 50s, then subsequently by the phasing out of anti-knocking lead in petrol during the 90s and up to the present day by photochemical smog associated with international cities such as Los Angeles, New Delhi and Beijing.

- 4.2 Although indoor air quality can be highly relevant to a person's health, by necessity Local Air Quality Management is focused upon the public's exposure to outdoor air pollutants¹.
- 4.3 The understanding of air quality has substantively evolved over time as the causes of air pollution have changed. Within Rhondda Cynon Taf, as is the case throughout Wales, Nitrogen Dioxide² [NO₂] and Particulate Matter³ [PM₁₀] are of the most concern, due to their ubiquitous prevalence and potential significant impact upon public health. Short-term exposure to elevated levels of Particulate Matter [PM₁₀] has been shown to cause eye, nose and throat irritation, asthma symptom exacerbation, headaches and nausea. Longer-term exposure has been linked to an increase in morbidity⁴ and higher mortality risks associated with heart disease, stroke, respiratory diseases, lung cancer, etc. The Committee on the Medical Effects of Air Pollutants (COMEAP) has established that short-term exposure to NO₂, particularly at high concentrations, is a respiratory irritant that can cause inflammation of the airways leading to, for example, cough, production of mucus and shortness of breath. Studies have shown associations of NO₂ in outdoor air with reduced lung development, and respiratory infections in early childhood and effects on lung function in adulthood.
- 4.4 Poor air quality is the largest environmental risk to public health in the [UK](#) and is a public health priority for [Wales](#). It has been estimated that the annual mortality burden of human-made air pollution in the UK is 28,000 to 36,000 deaths every year, in comparison 20,000 deaths have been attributed to alcohol related diseases and obesity is currently believed to be responsible for more than 30,000 deaths every year. It is understood that often the most vulnerable within our communities are most at risk from the potential effects of air pollutants and perversely are more often likely to experience it. The unborn child, children, the old, those suffering from certain common medical conditions and those on low incomes can be particularly [vulnerable](#) to poor air quality. Although the discussion on air quality focuses upon public health, poor air quality can also cause, agricultural and ecological damage, property devaluation and entrench economic disparity.
- 4.5 Acknowledging the strategic role local government can have in managing air quality, relevant legislation and associated regulations have been enacted. Notably the Clean Air Act 1993⁵, Environmental Protection Act 1990⁶,

¹ Seven 'pollutants of concern' relevant to Local Air Quality Management are Carbon Monoxide (CO), Benzene (C₆H₆), Butadiene (C₄H₆), Lead (Pb), Nitrogen Dioxide (NO₂), Particulate Matter (PM₁₀) & Sulphur Dioxide (SO₂)

² A gas made from Nitrogen and Oxygen, often formed by complex chemical interactions and heavily associated with emissions from high temperature combustion processes, in very high concentrations it can appear brownish and have an acrid odour but in concentrations normally encountered in the environment it is imperceptible.

³ Particulate Matter is a generic term to describe a complex mixture of solid and semi-liquid particles of varying size, shape and composition. A range of man-made and natural activities as well as the interaction of other air pollutants can produce Particulate Matter. PM₁₀ refers to Particle Matter of a size normally less than 10µm, which are invisible to the human eye, but can be inhaled into the airways and lungs of people.

⁴ The incidence of disease within the population

⁵ The regulation of emissions from certain small industrial and domestic sources of air pollution, however, it is widely acknowledged that the legislation may have become outdated and lacks relevance.

⁶ Mechanism to prevent or control certain types of statutory nuisance that can cause air pollution.

Environment Act 1995⁷, Pollution Prevention and Control Act 2000⁸ and the Well-being of Future Generations Wales Act 2015⁹. This has resulted in Rhondda Cynon Taf CBC having a number of statutory duties to not only prevent or control air pollution but also to actively assess and intervene to improve local air quality where it can.

5. ASSESSING LOCAL AIR QUALITY IN RHONDDA CYNON TAF

- 5.1 Local Air Quality Management can cut across many areas of Local Government. Although primarily it has relevance to Public Health, it can also have a role within Environmental Regulation & Enforcement, Development Control, Housing, Highways, Fleet Management, Corporate Estates, Ecology and Education.
- 5.2 Statutory [guidance](#) provides detailed instruction on how local authorities should go about assessing air quality to confirm if any [Air Quality Objectives](#) are being exceeded¹⁰. These Air Quality Objectives relate to outdoor locations where air pollutants are most likely to be elevated and where the public¹¹, irrespective of who they are, is likely to be present for long enough to be potentially effected by them. If an Air Quality Objective is not achieved, guidance sets out how Local Authorities should go about considering the implementation of actions to work towards achieving future compliance.
- 5.3 Having regard to guidance, published national assessment, local understanding, desktop analysis and current technical capabilities, the Local Authority has developed a network of air quality monitoring locations throughout its area. Since the millennium, it has examined over 134 locations with current¹² monitoring arrangements assessing 55 targeted roadside locations for Nitrogen Dioxide [NO₂] and one specific area of interest for Particulate Matter [PM₁₀] associated with a local quarry.
- 5.4 The current monitoring network makes use of several different approved automatic¹³ and non-automatic¹⁴ monitoring techniques. With the gathered data routinely published [online](#) collaboratively with Welsh Government. It is not always possible, either as a result of logistics or resources, to monitor all relevant locations and in certain circumstances the Local Authority has, where appropriate, had regard to computer ‘modelling’ to indicate the likely levels of air pollutants at particular locations.
- 5.5 Every year, the Local Authority [publishes](#) online an annual Air Quality Progress Report. This provides the preceding years ratified monitoring data, an overview

⁷ Legal framework for Local Air Quality Management, including the duty to assess and intervene.

⁸ Permitting of certain industrial activities and their emissions.

⁹ Enshrines the seven “Well-being Goals” and the importance of sustainable development.

¹⁰ Absolute concentration values(s) set for each relevant pollutant over specific exposure periods

¹¹ This does not include workers but does include the public attending a workplace (e.g. a library)

¹² As of January 2020

¹³ Analyses the air pollutant at location and provides a real-time indication of its concentration.

¹⁴ Requires subsequent analysis in a laboratory to determine the air pollutants concentrations.

of actions that could affect local air quality and an assessment of current Local Air Quality Management.

- 5.6 As a result of the integration of the Future Generations ethos, a dual approach to Local Air Quality Management is developing. This burden reduction approach recognises that for many air pollutants, the less people are exposed to them, the better it will be in terms of public health. The Future Generations agenda has also led to the consideration of air quality holistically, rather than in isolation, as part of the multi-agenda approach with particular emphasis on local transport, noise, climate change, active travel and green-infrastructure.
- 5.7 Adverse environmental noise can also markedly affect public health. In recognition of the close relationship between areas of elevated levels of air pollution and human-made environmental noise, Local Air Quality Management also evaluates its role in achieving Noise Action Plan Priority Area [NAPPA] improvements. There are a number of [NAPPAs](#) within Rhondda Cynon Taf, many of these areas have also been declared Air Quality Management Areas.
- 5.8 In recognising the importance of health inequality and local air quality, the Local Authority has assisted its partners, Public Health Wales, Cwm Taf Morgannwg UHB, Natural Resources Wales and Merthyr Tydfil CBC, with the development of the Health and Air Pollution Risk Assessment/Area Prioritisation ([HAP-RAP](#)) analytical tool. This has been used to identify those communities¹⁵ within Rhondda Cynon Taf that may be most vulnerable to the effects of poor air quality and where measures focused to improve air quality may provide the greatest overall benefit.

6. LOCAL AIR QUALITY MANAGEMENT AREAS AND THE TREND IN AIR QUALITY

- 6.1 The levels of air pollution [experienced](#) locally can be as a result of a number of different types of sources, both within the Borough and further afield¹⁶. Generally local Nitrogen Dioxide [NO₂] levels are primarily influenced by road traffic sources. Nationally air quality has generally improved over time as the adoption of new technology, macroeconomic change and regulation has reduced the amount of total air pollution emitted. Nitrogen Dioxide [NO₂] levels, have not improved as quickly as had been expected. In RCT a worsening trend in Nitrogen Dioxide [NO₂] was observed for several years after the Millennium. Most likely due to substantial local and regional urbanisation, associated traffic growth and the increase in use of diesel cars. Since then the trend has stabilised and more recently shown some general signs of gradual improvement.
- 6.2 It is expected that as cleaner technology and sustainable mass transport options become available levels of air pollution will reduce, however, significant uncertainty is attached to how society, and its transport options, will change.

¹⁵ Priority clusters were associated with Ferndale/Tylorstown/Llwynypia, Cymmer and Penrhiwceiber/Miskin

¹⁶ Both pollutants can be heavily influenced by transboundary pollution events (emissions of air pollution that has crossed great distances before arriving locally).

- 6.3 Although the vast majority of Rhondda Cynon Taf is believed to experience good air quality, very specific local circumstances can result in levels of Nitrogen Dioxide that can exceed an Air Quality Objective. This has resulted in sixteen, comparatively small areas within the County Borough declared as Air Quality Management Areas [AQMAs]. They cover a range of different urban areas from some town centres to the length of certain streets or even a small number of properties close to particularly busy roads or junctions. Currently the largest AQMA in the County Borough covers 207 properties within the Aberdare Town Centre, whereas, the smallest covers one property near a very busy road junction at Mwyndy. It is also the case that not all AQMAs, or parts of the same AQMA, may experience the same degree of elevated air pollution. At present it is believed the Cymmer, Ferndale and Nightingales Bush AQMAs may experience the highest observed levels of air pollution, whereas, Aberdare, Tonyrefail and Treforest may be much closer to achieving compliance.
- 6.4 It can be difficult to make meaningful comparisons of the number, size and severity of AQMAs between Welsh Local Authorities. For instance, Rhondda Cynon Taf may observe a larger number of AQMAs when compared to Cardiff, which has four AQMAs, or Swansea, which has one AQMA, however, the AQMAs declared in these two cities cover much greater areas and numbers of people. In general terms Rhondda Cynon Taf is ranked 13th best for levels of Nitrogen Dioxide [NO₂] out of the 22 Local Authorities in Wales¹⁷.
- 6.5 The reasons for the AQMAs are varied but are invariably associated with road traffic emissions. Although the reasons can be very location specific, they often include the importance of local topography and the urban environment. The volume, speed and composition of road traffic, as well as the management of this traffic, along roads within, or nearby to, each AQMA are also key factors. Some strategic arterial roads, for instance the A470 and the A4119, have a demonstrable effect at certain vulnerable locations. Table A in Appendix 1 provides further detail on each Air Quality Management Area within Rhondda Cynon Taf, including the number of properties in each area, the improvement required and the key air quality related factors.

7. IMPROVING LOCAL AIR QUALITY

- 7.1 At the local level action can be taken to improve air quality, often in conjunction with other agendas, both at locations where levels of air pollutants are elevated and more generally throughout the community. With regards to the Air Quality Management Areas, the Local Authority has adopted individual Air Quality Action Plans [AQAPs] that advocate cost-effective/cost-beneficial actions that would work towards the aspiration of compliance with the Air Quality Objectives. These actions are varied, and include specific actions relating to an Air Quality Management Area, to more far reaching actions that could improve air quality more widely. Several of these actions have already been implemented, however, it has not been possible to advance all actions to date.

¹⁷ Population weighted exposure to Nitrogen Dioxide.

- 7.2 Appendix 1 Table B contains a list of various practical improvement actions that could deliver air quality improvement within the Air Quality Management Areas and potentially more broadly throughout the County Borough. Having regard to local circumstances and the often transport related issues associated with improving air quality, some potential viable actions have been identified from the list in Table B for further detailed consideration with the relevant partners. These have been listed with additional information within Appendix 1 Table C.

8. FUTURE OPPORTUNITIES & CHALLENGES FOR LOCAL AIR QUALITY

- 8.1 To enable effective assessment of local air quality, over time the Local Authority has put in place a targeted monitoring network. This has enabled an evidenced based approach to policy formation, decision making and improvement actions. Supporting not only Local Air Quality Management duties directly but also other priority agendas as well as sustainable local development. Due to continued resource pressures, this network has inevitably been optimised to meet statutory requirements and the monitoring network may not currently satisfy the wider public interest in air quality or developing policy areas. In addition, as monitoring equipment approaches 'end of life', decisions will be required on further investment or rationalisation of the monitoring infrastructure.
- 8.2 Sustainable economic development and the potential future adoption of 'cleaner' technologies will likely advance improvement in local air quality over time. However, without intervention, the most vulnerable communities may be the last to experience the anticipated improvement¹⁸. With the lack of dedicated external grant funding and the prioritisation of other activities, resourcing improvement actions is likely to be a substantive barrier to progressing Local Air Quality Management. Additionally, although it is acknowledged that many departments of the Local Authority could positively impact local air quality it has been challenging to provide a coordinated holistic approach in the consideration and implementation of improvement actions. This has led to the identification and delivery of 'win-win' multi-agenda outcomes becoming an increasingly important factor in obtaining potential funding and raising awareness of understanding the need to improve air quality across a variety of policy areas and decision makers.
- 8.3 Cross-agenda delivery has had a recognised role in local air quality management for some time. For instance, due to significant investment cost it would be unlikely that the Church Village Bypass would have been a viable action to improve air quality in isolation, however, its viability to improve local amenity and drive economic development enabled this project to go forward. In doing so, this has had a dramatic role in improving local air quality and environmental noise within a number of communities along the B4595. The inclusion of active travel links via the Community route also reflected the

¹⁸ Cleaner technology can include a range of innovative solutions, including renewable energy, the uptake of low emission vehicles, alternative powered domestic heating, the use of information technology to reduce travel need, improve travel options (i.e. single-trip hire schemes) or facilitate more efficient coordinated travel. The use of some forms of cleaner technology may incur an initial cost or technological awareness, which the poorest or most vulnerable in society may find challenging.

consideration of sustainable travel options when planning the by-pass road and the impact on the local community.

- 8.4 By using, where appropriate, a 'win-win' multi-agenda outcome approach it is not only possible to deliver the obvious actions that could directly improve air quality but also bring together a range of experiences and expertise to enable the identification of potentially cost-effective solutions that deliver a wider range of sustainable benefits. For example, the utilisation of grant funding¹⁹ to deliver improved/repared street lighting serving the active travel access route to Pontypridd High School. This action benefited a number of agendas, including local engagement (action identified after engagement with the High School), active travel (further improving safety and reducing perceived barriers to the use of the designated active travel route), air quality & climate change (by enabling active travel this may directly reduce dependency on vehicle and associated air pollution and carbon emissions) and biodiversity (it was possible to tailor the action so as its impact on nocturnal wildlife could be reduced).
- 8.5 It is likely that Climate Change, with an increasingly erratic climate, may negatively impact upon future air quality, potentially by making elevated air pollution episodes more frequent and more intense. As such, a need to consider novel yet deliverable solutions is paramount with sustainable transport, green infrastructure and behavioural change seen as representing significant potential in delivering broad improvement. These broader actions need to be considered alongside appropriate local traffic management solutions to benefit air quality by improving and influencing traffic flow in key areas.
- 8.6 Current public interest in Local Air Quality Management can mean that the air quality agenda could become a strong agent for positive change. As air quality understanding and expectations has evolved, Welsh Government policy in this area has also rapidly developed. Currently the Welsh Government is [consulting](#) upon a number of changes to how Local Air Quality Management may be delivered, these proposed changes may have the potential to alter the Council's statutory obligations and require reconsideration of how it goes about delivering Local Air Quality Management duties in the future.

9. CARBON REDUCTION

- 9.1 The interaction between Air Pollution and Climate Change is complex, with inextricable overlap between both agendas. It is likely that many actions to improve air quality will have a complimentary effect in tackling Climate Change, particularly in respect of reducing vehicle use through more sustainable travel options. However, not all actions to improve air pollution will reduce greenhouse gas emissions and vice versa. For instance, the building of a new road to divert road traffic from an area where air pollution may be elevated, could result in traffic growth along the new road and an overall increase in greenhouse gas emissions. As with the Church Village bypass and the proposed Llanharan Bypass, incorporating active travel measures are key design factors in providing sustainable travel options for communities. Wherever possible, those

¹⁹ Local Authority Single Revenue Grant 2017-18

actions that improve both agendas should be prioritised and efforts made to jointly assess both air quality and climate change impacts during the evaluation of improvement actions.

10. EQUALITY AND DIVERSITY IMPLICATIONS

10.1 This report is informative, as such an Equality Impact Assessment is not required. As air quality improvement actions (or inaction) has the potential to affect certain groups, during the compilation or review of an Air Quality Action Plan(s), a proportionate Equality Impact Assessment will be included.

11. CONSULTATION

11.1 This report has been produced to provide air quality information as required by the Work Programme for the Climate Change Cabinet Steering Group and, as such, no formal consultation is necessary.

11.2 Local Air Quality Management is, at various stages, subject to statutory consultations, including formal annual review by Welsh Government, and the maintenance of certain information within a public register. The Local Authority is currently planning, in accordance with statutory guidance to review, and where necessary to modify, all sixteen Air Quality Action Plans in 2020 to ensure their appropriateness.

12. FINANCIAL IMPLICATIONS

12.1 This report is informative only and does not commit any resources to any particular course of action.

12.2 Currently only a limited air quality monitoring budget is maintained and there is no dedicated budget for improvement action delivery.

13. LEGAL IMPLICATIONS

13.1 This report on air quality is informative only and is not a decision making report with regards to any Local Air Quality Management obligations.

13.2 Annual Air Quality Progress Reports are statutory reports which the Local Authority is obliged to produce. Air Quality Action Plans are statutory plans and may place the Local Authority under certain obligations, including the need to work towards delivering the identified actions so as to achieve compliance to an Air Quality Objective. During the formation or review of the Air Quality Action Plan a provisional assessment of the need for a Strategic Environmental Assessment [SEA] will be undertaken.

13.3 Welsh Government retains a number of reserve powers, including legal direction, to ensure Local Authorities undertake their Local Air Quality Management duties. It has previously clarified the likely scenarios as to when and how it may use some of these powers. In recent times, Welsh Government has exercised legal direction powers under Section 85 of the Environment Act

1995 requiring, separately, Cardiff CC and Caerphilly CBC to undertake certain assessments and advance certain improvement actions, that may have significant local impact, in relation to Local Air Quality Management.

14. LINKS TO THE CORPORATE AND NATIONAL PRIORITIES AND THE WELL BEING OF FUTURE GENERATIONS WALES ACT

- 14.1 Local air quality management statutory guidance for Wales incorporates the principles and ways of working associated within the Well-being of Future Generations Act. By abiding by this guidance and utilising methods that acknowledge and promote sustainable multi-agenda delivery, the Council is demonstrating commitment to the principles of the Act.
- 14.2 The Future Generation agenda will also have a key role in how the Local Authority considers air quality, reinforced by guidance requiring that as part of its assessment duties the Local Authority must have regard to the benchmarking of progress against [National Indicator No.4](#). “the level of Nitrogen Dioxide in ambient air”. In contrast to the upper limit driven approach of Local Air Quality Management, the National Indicator drives an alternative burden reduction approach aimed at achieving a reduction in the population weighted general level of Nitrogen Dioxide throughout Rhondda Cynon Taf. Progress in achieving improvement will be gauged against milestones, the achievement of which will be reported in a “Future Trends Report” produced by Welsh Government. In working with its health related partners, the Local Authority has drawn upon expertise and analysis to help identify those communities which may benefit the most from an active approach to improve local air quality, whilst also seeking to fulfil the Local Authorities statutory obligation on local air quality management.
- 14.3 Having regard to the Council’s corporate priorities, air quality improvement and potential actions to bring this about, are likely to have significant relevance to helping some of our most vulnerable residents, encouraging healthier lives and helping to support improved prospects for our children and young people. With regard to creating proud places to live in RCT, improving air quality is a potential priority alongside with making the most of green infrastructure and capitalising upon major sustainable transport regeneration.

15. CONCLUSION

- 15.1 This supporting report provides information relevant to what actions are available to improve air quality in RCT and its contents should be considered as part of the main Discussion Paper - Work Programme for Climate Change Cabinet Steering Group.

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Appendix 1

In the below Tables: -

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

↑ = upward trend/increase in emission, ↓ = downward trend/decrease in emission

Table A: Details on each Air Quality Management Area within Rhondda Cynon Taf

Area	AQM As	No. of Properties	HAP-RAP Priority	NAPPA	Improvement Needed	5 year Trend ²⁰	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	Cymer	146	✓	✓	***	↑	**	**		**		**	**	*	**	**			**		**
	Ferndale	102	✓	✓	***	↔	**	**				**		*	**	**			**	**	*
	Llwynypia	28	✓	✓	**	↓	**	**				**	**						**	*	*
	Tonyrefail	20			*	↔	*	*		**		**	**		**		*		**	*	*
	Tylorstown	65	✓	✓	***	↓	**	**		*		**		*	**		**		**	**	**
Cynon	Aberdare	270			*	↓	**					**	**	*							
	Mountain Ash	57	✓		***	↔	**	*	*	*			**	*					**	*	**
Taf	Broadway ²¹	259			**	↓	**						**					*			
	Church Village	21			**	↓	**						**				*		**		
	Cilfynydd	173		✓	***	↔	**		*		*				*					*	
	Llanharan	7			*	↓	**					**							**		*
	Mwynydy	1		✓	***	↓	**		*		*		**								
	Nantgarw	8			**	↓	**		*	**			**								*

²⁰ As air quality can fluctuate from year to year, a medium term consideration of the trend is necessary, this can also mean that interventions to improve air quality (e.g. A470 speed restrictions) can take some time before monitoring data robustly demonstrates any local effect.

²¹ The Broadway AQMA is to be amended to reduce its size to approximately 156 properties.

Nightingales Bush	11	✓	** **	↑	** ** **		*		** **										
Pontypridd	84	✓	** **	↑	** **	**			*	** **	*								
Treforest	8	✓	*	↓ ↓	** ** **		*		*										*

Table B: List of practical improvement actions

Actions that are considered more viable are highlighted in **bold**, actions that have already been completed are marked with a **C**

Action Type	Action	Air Quality Impact			Other Impact				Cost	Cost Effectiveness		Further Consideration in relation to AQ
		AQMA	Within Area of Concern	Regional	Noise	Climate change	Economic	PSB Priorities		In AQMA	Regionally	
New & Major Reconfiguration of Roads	Church Village – A473 Relief Rd	Church Village	** *	** *	↓ ↓	↑ ↑	** *		** *	*	**	C
	Porth Rhondda Fawr Lower Relief Rd	N/A	** *	** *	↓ ↓	↑ ↑	** *	*	** *	*	*	C
	Llanharan Bypass	Llanharan	** *	*	↓ ↓	↑ ↑	**		** *	*	*	** *
	Mt Ash Cross-Valley Link	Mt Ash	**	**	↓	↑	**		** *	*	*	**
	Pontypridd Partial Pedestrianisation	Pontypridd	**	*	↓ ↓	↓			*	**		C
	Ely Valley Rd Dualling	N/A		**	↓	↑	**		** *	*	*	*
	Llwydcoed – Heads of the Valley Reconfiguration	N/A		*	↓	↑	**		** *		*	*
	Treorchy Relief Rd	N/A	*	**	↓	↑	*		** *		*	*
Traffic Management Improvement	Cardiff Rd Signal Improvement reduce congestion along Cardiff Rd northbound	Aberdare	*	*					*	**		C

	Oxford St Signal Improvement reduce congestion along Oxford St northbound (no effect to New Rd)	Mt Ash	*	*			*		*	**		C
	Broadway North Signal Improvement & Increased Junction Capacity (right-turn from Broadway North) reduce congestion along Broadway northbound	Broadway	*	*			*		*	**		C
	Partridge Rd Jct Signal Improvement reduce congestion along Partridge Rd southbound	Llwynypia	*	*			*		*	**		** *
	Mill St Signal Improvement reduce congestion along Mill St northbound	Tonyrefail	*	*			*		*	**		**
	Dyffryn Terrace Signal Improvement reduce congestion along Dyffryn Tce westbound	Church Village	*	*			*		*	**		**
	Off-Road Bus Stops reduce disruption to traffic flow within the area caused by bus waiting	Church Village Tonyrefail Tylorstown	**	*	↑	↓	*		**	**		**

Flow Controls	A470 Partial Speed Limit Reduction & Preserving Existing Green Barriers Reducing speed limit directly reduces traffic emissions with existing green barriers providing a physical break from air pollution (led by Welsh Government).	Broadway Cilfynydd Nightingales B. Pontypridd Treforest	** *	**	↓↓	↓↓ ↓	*		**	**	**	C
	Designated Off-Street Parking Reducing need for on-street parking and potential associated impediment to traffic flow	Cymmer Ferndale Tonyrefail Tylorstown	**	*		↑	*	*	** *	*	*	**
	Increased Parking Enforcement Restricting parking with associated enforcement at critical locations which can otherwise impede traffic flow	Cymmer Ferndale Tonyrefail Tylorstown	**	*	↓	↓	*	*	*	**	**	** *
Linked Transportation	Llanharan Park & Ride	Llanharan	*	**	↓↓	↓↓	**	*	*	*	*	C
	Abercynon Park & Ride	Cilfynydd Nightingales B. Treforest	*	**	↓↓	↓↓	**	*	**	*	**	C
	Taffs Well Park & Ride			**	↓↓	↓↓	**	*	*		*	C
	Rhondda Park & Ride	Llwynypia	*	**	↓↓	↓↓	**	*	**	*	**	**
Public Transport	South Wales Metro	Aberdare Broadway Cilfynydd Llwynypia Miskin Mt Ash Nantgarw Pontypridd Treforest	**	** *	↓↓ ↓	↓↓ ↓	** *	*	** *	*	**	** *
	Valley Lines Electrification	Broadway Pontypridd	*	**	↓↓ ↓	↓↓ ↓	** *	*	** *	*	**	**

	<p>Coordinated Train & Bus Journeys By enabling linked up public transport the effective travel range and hence usability may increase</p>	All	**	**	↓↓↓ ↓	↓↓↓ ↓	** *	* *	**	**	**	**	** *
	<p>Combined Public Transport Ticketing Combined ticketing options can reduce complexity to users</p>	All	**	**	↓↓↓ ↓	↓↓↓ ↓	** *	* *	**	**	**	**	** *
Active Travel	<p>Cycle lanes Increasing demarcated cycle lane provision to improve usability</p>	Aberdare Broadway Cymmer Ferndale Llanharan Llwynypia Mountain Ash Church Village Pontypridd Tonyrefail Tylorstown	*	**	↓↓↓	↓↓↓	*	* *	** *	*	**	**	**
	<p>School Routes Improvements Improvement to designated school active travel routes to improve usability and encourage use</p>	Aberdare Broadway Cymmer Ferndale Llanharan Llwynypia Mountain Ash Church Village Pontypridd Tonyrefail Tylorstown	**	**	↓↓↓	↓↓↓	*	* *	**	**	**	**	** *
	<p>Short Trip Active Travel Support Using innovative information technology and associated infrastructure to offer short term bicycle hire to support spontaneous travel choices.</p>	All	*	**	↓	↓	*	* *	**	*	**	**	**

Emission Controls	Taxi Emission Standards Cross-board licensing requirements stipulating an enhanced emission standard for the fleet	All	*	**	↓↓	↓↓↓ ↓	**	*	** *	*	*	** *
	School Transport Standards Contract requirements stipulating an enhanced emission standard for the fleet	All	**	** *	↓↓	↓↓↓ ↓	**	*	** *	**	**	** *
	RCT Fleet Standards Procurement rules stipulating an enhanced emission standard for the fleet	All	**	**	↓↓	↓↓↓ ↓	**	*	** *	**	**	** *
	Low Emission Zone Designating a geographical area (normally a town centre) that only a vehicle (or class of vehicles) meeting a specified emission standard can enter	Aberdare Pontypridd	**	*	↓↓	↓↓↓ ↓	*	*	** *	*	*	*
Indirect	Electric Vehicle Charging Installing or supporting the installation of wide-scale public or targeted charging points	All	** *	** *	↓↓↓ ↓	↓↓↓ ↓	**	* *	** *	*	** *	** *
	Green Infrastructure Using carefully designed trees and hedge planting to mitigate the flow of air pollution from a source to a relevant population	Aberdare Broadway Church Village Cilfynydd Mwyndy Nantgarw Pontypridd	**	** *	↓	↓↓↓ ↓	**	*	**	**	**	** *

Engineered	Hard Engineered Barriers Using solid barriers (such as acoustic barriers) to mitigate the flow of air pollution from a source to a relevant population	Cilfynydd Mwyndy Nantgarw Nightingales Bush Pontypridd Treforest	**	*	↓ ↓				** *	**	*	*
Behavioural	Travel Information Providing travel information to enable the public to make informed public transport choices	All	*	**			**	* *	*	**	** *	** *
	Staff Inducement LA workplace schemes that encourage travel planning or the uptake of active travel options	All	*	*	↓	↓ ↓		*	*	*	*	**
	School Engagement Improving awareness of the current situation amongst the young and the choices that can be made to improve things	All	*	*	↓	↓		*	*	*	*	**
	Clean Air Day Events Targeted events (centred around June) to reinforce the national messaging around Clean Air day	All	*	*	↓	↓		*	*	*	*	**
	Domestic Heating Inducement Targeting grant aid to enable solid fuel only users to adopt cleaner alternatives	All	*	**		↓ ↓		**	** *	*	*	*

	Development Control Adopting planning policies that places sustainable development and the 'agent of change' principles firmly within the LDP	All	*	**	↓↓	↓↓	**	**	*	**	**
Reactive	Relocation of Population Removing, possibly via CPO, those members of the public that reside within the smaller AQMAs	Llanharan Mwyndy Nantgarw Nightingales B. Treforest	** *		↓			** *	**		*
	Do Nothing	All	*	*				*	*	*	*

Table C: Potentially viable actions that could deliver air quality improvement

No.	Deliverability	Action	Area	Impact					Aligned with PSB Priority	Likelihood Without Prioritisation
				AQMA	Regional AQ	Noise	Climate Change	Financial		
1	Near Term Deliverable	Traffic Light Signal Improvements Traffic management (especially of road junctions) can result in local traffic congestion which in turn can result in locally elevated levels of air pollution. The Church Village, Llwynypia and Tonyrefail are likely to be affected by existing light controlled traffic management measures that could have the potential to be modified or upgraded to either allow more efficient management or to benefit the worst case area of the AQMA at potential slight detriment to elsewhere.	Rhonda Taff	*	*	-	-	*	-	*
2	Near Term Deliverable	Increased Parking Enforcement Illegally parked cars along	Rhonda	**	*	↓	↓	*	-	*

		<p>narrow carriageway roads can lead to significant short-term congestion when traffic cannot smoothly pass the temporary obstruction. Cymmer, Ferndale, Tonyrefail and Tylorstown have, to some degree, parking restrictions to prevent impediment. To maintain their relevance it is necessary to enforce the restrictions. Consider possible targeted enforcement actions in these areas (potentially at the expense of enforcement elsewhere).</p>								
3	Near Term Deliverable	<p>Travel Information Providing readily digestible travel information (e.g. public transport area options leaflet) can improve awareness and help the public pick sustainable travel options. Compiling and dissemination of information can be a useful element in helping to improve uptake.</p>	RCT	*	**	↓	↓	*	*	**

4	Near Term Deliverable	<p>School Engagement Future change is most likely to be brought about by today's young people, informing young people at an early stage of the relevance of air quality and its part in the environment can not only bring about change in the present but also help make the change sustainable for the future. School engagement could include incorporating local environmental information (i.e. air quality) into the current syllabus, advancing</p>	RCT	*	*	↓	↓	*	-	*
5	Near Term Deliverable	<p>Development Control Policies Air Quality can be dramatically affected by future development, likewise future development can play both a direct and supportive role in advancing local air quality management. Placing air quality and noise within LDP policy and consideration of specific</p>	RCT	*	**	↓↓	↓↓	**	-	*

		Supplementary Planning Guidance (SPG) could help safeguard current improvements and deliver sustainable future communities.								
6	Near Term Deliverable	Clean Air Day Events Delivering a series of events in associated with the nationally planned Clean Air Day in June. Events could comprise of a range of actions including supportive press release and signposting to national or regional events, ULEV demonstrations, school/community engagement, street party takeover or no-car day, etc. High profile events (no-car days) tend to have a greater effect in larger urban areas and may not be appreciated/practical for all members of the community.	RCT	*	*	↓	↓	*	-	*
7	Medium Term Possible	Llanharan Bypass New road infrastructure that bypasses the centre of Llanharan (the	Taf	** *	*	↓↓	-	** *	-	***

		location of the AQMA). The new road will be designed in accordance with modern practices so as to minimise congestion and maintain where possible distances from existing residences. It is likely the vast majority traversing the existing Bridgend Road will be displaced onto the new Bypass dramatically reduced the local sources of air pollution. Active travel routes and links will be incorporated in the design.								
8	Medium Term Possible	Off-Road Bus Stops Busses stopping along narrow carriageway roads can lead to significant short-term congestion when traffic cannot pass the temporary obstruction (this can be most observed for projected bus stops). Church Village, Tonyrefail and most notably Tylorstown have current bus stops that can impede traffic flow. By moving	Rhonda Taff	**	*	↑	↓	**	-	*

		<p>the bus stop into an engineered lay-by or less obstructed area or re-designating nearby parking to allow the bus to move out of the flow of traffic this may reduce congestions.</p> <p>However, due to local urban layout or service requirements it may not be possible to deliver this action</p>								
9	Medium Term Possible	<p>South Wales Metro</p> <p>A regional scheme to deliver substantive sustainable public transport options across several strategic corridors within RCT.</p>	RCT	**	** *	↓↓ ↓	↓↓ ↓	***	*	***
10	Medium Term Possible	<p>School Routes Improvements</p> <p>The likelihood of use of active travel routes can rely upon a number of factors, including distance, facilities, awareness and users perception. It may be possible for a number of improvements (surfacing, lighting, signposting, bike storage, awareness raising, walking-bus assistance,</p>	RCT	**	**	↓↓	↓↓	**	*	*

		etc) to be considered which could reduce current dependence on short distance private transport.								
11	Medium Term Possible	Short Trip Active Travel Support Using innovative information technology and associated infrastructure to offer short term bicycle hire to support spontaneous travel choices, for instance NextBike in Cardiff. This could be designed to encourage mixed active travel and public transport options.	RCT	*	**	↓	↓	**	**	*
12	Medium Term Possible	Staff Inducement Large employers (like RCT) can play an important part in incentivising their staff to pick sustainable travel options during the commute. This could include travel planning, car share, bike to work, etc)	RCT	*	*	↓	↓↓	*	-	**
13	Aspirational	Designated Off-Street Parking Legally parked cars along narrow carriageway roads can lead to significant long-	Rhonda	**	*	-	↑	***	*	*

		<p>term congestion when traffic cannot smoothly pass the frequent obstruction. Cymmer, Ferndale, Tonyrefail and Tylorstown have parking arrangements that can impede traffic flow. Due to urban layout, local residents may have no option but to park on the road. By creating a designated space to enable off-street parking in coordination with restructuring current local parking provisions it may be possible to remove the obstruction. Future proofing could enable this provision to include EV charging points bringing this vital future technology to communities that may otherwise experience significant role-out challenges. As free space is at a premium it may be the case that spatial repurposing will be necessary, this could be targeted at under</p>							
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		utilised land use (long term empty properties) but may be limited by the need to ensure community cohesion.								
14	Aspirational	Coordinated Train & Bus Journeys The linking of bus and train journeys can significantly improve the desirability and likelihood of use of public transport options. This could be particularly beneficial for areas where train services have been withdrawn in the past. Would likely require multi-level engagement (LA cannot deliver in isolation).	RCT	**	**	↓↓↓ ↓	↓↓↓ ↓	**	*	**
15	Aspirational	Combined Public Transport Ticketing Single ticketing could significantly improve the desirability and likelihood of use of public transport options by reducing fare complexity and service uncertainty.	RCT	**	**	↓↓↓ ↓	↓↓↓ ↓	**	*	**
16	Aspirational	Taxi Emission Standards Locally licensed taxi and private	RCT	*	**	↓↓↓	↓↓↓ ↓	**(* *)	*	***

		<p>hire vehicles can comprise an important part of the local fleet, especially in urban hubs. Most operators may be able to make use of LEV technology, albeit current fleet options and costs may not encourage early uptake. New licensing policy could enable the early adoption of LEV technology and also support wider acceptance of LEV technology. However, mandating adoption could bring forward financial implications, at least in the short-term, for operators. It may be necessary to coordinate any intervention with actions to improve local charging infrastructure, reduce capital barriers and consistency across other licensing authorities to maintain a functional market.</p>								
17	Aspirational	<p>School Transport Standards Bus transport can significantly</p>	RCT	**	** *	↓↓	↓↓↓ ↓	***	-	*

		<p>contribute to elevated levels of air pollution with improvements to the fleet may have a disproportionately better effect on local air pollution. Although the public bus fleet is of a relatively modern standard (Euro V and above), it can take some time (end of vehicle life) for similar standards to be adopted by the dedicated school bus transport fleet. Contracting of service provisions could look to set fleet emission standards that would potentially not otherwise be achieved in the quickest possible timeframe. It is likely such action would require premium payments and could have significant short term consequences to current providers (that it may become WG policy for LEV bus transport to be adopted by 2028).</p>							
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18	Aspirational	<p>RCT Fleet Standards</p> <p>The LA makes use of a large dedicated mixed fleet, some of which could make use of LEV technology (this would require both vehicle and infrastructure changes). New procurement rules could be considered that prioritises future LEV adoption (if suitable infrastructure is available). Not only could this have a direct improvement it could also demonstrate the option to other large fleet operators (UHB) and help establish local charging infrastructure.</p>	RCT	**	**	↓↓	↓↓↓	***	-	**
18	Aspirational	<p>Electric Vehicle Charging</p> <p>LEV (preferably EV) are considered a vital component in delivering sustainable low polluting future transport. It is likely that one factor in the adoption of LEVs is the availability of charging infrastructure. It is also the case that some areas of RCT may prove more</p>	RCT	** *	** *	↓↓↓	↓↓↓	***	-	*

		challenging, due to urban layout and deprivation, in technology role out. Targeted public intervention to establish a charging network may help encourage uptake.								
19	Aspirational	Green Infrastructure Although local green infrastructure is unlikely to be of a scale to directly affect air pollution production within RCT. It can be potentially used, in very carefully considered scenarios (inappropriate use could make matter worse), for instance to mitigate the flow of air pollution and protect local residents or to provide areas where the public can easily access that that are markedly lower in air pollution when compared to the locality. For instance, the A470, in part, observes benefit from existing green infrastructure separating the local community from this major source of	RCT	**	** *	↓	↓↓ ↓	**	-	*

		<p>Nitrogen Dioxide. It is possible that certain places (e.g Ysgol Evan James (Pontypridd), Parclewis (Broadway), Cymmer Jnr. (Cymmer)) could benefit from "green walls" which create a barrier between a road and nearby people. The preservation and improvement of potential 'tranquil spaces' (eg Aberdare Park, Ynysangharad Park) can enable the public to 'escape' everyday air pollution exposure. The use of green infrastructure to reduce power usage at buildings can also help to reduce the sources of some local air pollution</p>							
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