

CLEARING THE AIR

Reducing air pollution in the West Midlands

Eamonn Ives and Ryan Shorthouse

 bright blue

CLEARING THE AIR

Reducing air pollution in the West Midlands

Eamonn Ives and Ryan Shorthouse



The moral right of the authors has been asserted. All rights reserved. Without limiting the rights under copyright reserved above, no part of this publication may be reproduced, stored or introduced into a retrieval system, or transmitted, in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), without the prior written permission of both the copyright owner and the publisher of this book.

Bright Blue is an independent think tank and pressure group for liberal conservatism. Bright Blue takes complete responsibility for the views expressed in this publication, and these do not necessarily reflect the views of the sponsor.

Director: Ryan Shorthouse

Chair: Matthew d'Ancona

Members of the board: Diane Banks, Philip Clarke, Alexandra Jezeph, Rachel Johnson, Richard Mabey

Design: Chris Solomons

First published in Great Britain in 2018

by Bright Blue Campaign
ISBN: 978-1-911128-35-9

www.brightblue.org.uk

Copyright © Bright Blue Campaign, 2018

Contents

	About the authors	2
	Acknowledgements	3
	Executive summary	4
1	Introduction	18
2	Methodology	35
3	Air pollution in the West Midlands	38
4	Transport policies to tackle air pollution in the West Midlands	53
5	New policies	73
	Annex: Polling questions	90

About the authors

Eamonn Ives

Eamonn Ives is a Researcher at Bright Blue. His work concentrates primarily on energy and environment policy. At Bright Blue, Eamonn has co-authored four previous publications, and writes extensively for Bright Blue's quarterly magazine, *Centre Write*, and its energy and environment blog. He has also featured on *The Telegraph*, *ConservativeHome*, *BrexitCentral*, *HuffPost*, *The Independent*, *Stylist Magazine*, and *The Times Red Box*.

Ryan Shorthouse

Ryan Shorthouse is the Founder and Chief Executive of Bright Blue. Ryan was previously a Research Fellow for the think tank the Social Market Foundation and was part of the team that won Prospect Magazine's Think Tank of the Year in 2012. At the SMF, he authored ten research papers and designed innovative policies on childcare, welfare, public service reform, higher education and health.

Acknowledgements

This report has been made possible with the generous support of the European Climate Foundation. The views expressed in this publication do not necessarily reflect the views of the sponsor.

We would like to give special thanks to Wilf Lytton for his advice, and Sam Hall for helping to design the structure of the report and the polling methodology.

We would also like to thank Andrew Child and Andrea Lee for their thoughts and advice during the writing of the report.

Opinium conducted the polling for this report and we would like to thank their team for their care and attention to detail. James Crouch and Jack Tadman provided vital assistance with the design of the questions and with the analysis.

The polling included an online survey of 4,007 UK adults, including 351 living in the West Midlands region, and was conducted between 28th February and 5th March 2018.

Executive summary

Thankfully, people living in the United Kingdom enjoy much cleaner air than they once did, due in part to pioneering legislation such as the Clean Air Acts of 1956, 1968, and 1993. But, even today, a growing evidence base demonstrates that the scale and consequences of air pollution in this country are deeply concerning. Exposure to air pollution is associated with significant negative impacts on human health and productivity.

Air pollution is a concentration of harmful gaseous and non-gaseous pollutants within the atmosphere. The air pollutants which are the biggest contributors to UK air pollution include carbon monoxide (CO), nitrogen oxides (NO_x), particulate matter (PM), and sulphur dioxide (SO₂). But there are other air pollutants, including ozone (O₃), benzene (C₆H₆), ammonia (NH₃), non-methane volatile organic compounds (NMVOCs), mercury (Hg), polycyclic aromatic hydrocarbons (PAHs), and as well as lead (Pb) and other heavy metals such as arsenic (As), cadmium (Cd) and nickel (Ni). The nature and effects of air pollution differ across the country because of different types and concentrations of pollutants within local atmospheres.

As Chapter One outlines in detail, the UK must comply with several EU-derived legal hourly, daily or annual limits on the main air pollutants. The deadline for meeting the limits for Nitrogen Dioxide (NO₂), which is a form of NO_x, was not met in several zones across

the country. This year, 37 out of 43 zones in the UK were found to be transgressing NO₂ limits. This failure over NO₂ in many zones prompted the environmental advocacy charity, ClientEarth, to commence what would become several years of proceedings against the UK Government. Earlier this year, the High Court ruled yet again that the air quality plans from Government were insufficient in terms of achieving compliance with NO₂ limits, and were therefore unlawful. Yet another air quality plan was published by the Government in October 2018. But ClientEarth have so far described it as “pitiful” and claimed that it will likely result in further delays before meaningful action is taken.

Today, achieving air quality compliance is in truth to a large extent a devolved matter, despite the requirements on and challenges against the UK national government. The Environment Act 1995 requires local authorities to carry out reviews and assessments of air quality in their area. When a review identifies an exceedance of any given pollutant, the offending local authority must declare an ‘Air Quality Management Area’ (AQMA) and draw up an Action Plan to address the issue. Last year, 71% of local authorities had AQMAs, the vast majority of which are for NO₂ emissions.

Focus of this research

This report seeks to understand the scale, causes and consequences of air pollution in the ‘West Midlands’, specifically in the West Midlands Combined Authority (WMCA), before proposing new transport policies for the WMCA and its constituent local authorities to adopt to help reduce air pollution in the area.

The WMCA was formally created in 2016, with the Conservative Party candidate, Andy Street, inaugurated as its first Mayor the following year. Today, the WMCA represents around 2.8 million people, and consists of seven local authorities: Birmingham City Council, City of Wolverhampton Council, Coventry City Council, Dudley Metropolitan

Borough Council, Sandwell Metropolitan Borough Council, Solihull Metropolitan Borough Council, and Walsall Council. The WMCA is part of the wider ‘West Midlands region’, which is made up of 30 local government districts, across six ceremonial counties: Herefordshire, Shropshire, Staffordshire, Warwickshire, Worcestershire, and the ‘West Midlands county’, which is formed of the constituent local authorities of the WMCA.

Chapter One illustrates that the Mayor of the WMCA has, following two devolution deals signed with the UK Government in 2015 and 2017, several powers over policy areas, especially transport, which relate to air pollution in the region. Nonetheless, individual constituent local authorities of the WMCA do still exercise significant powers over air pollution, including on transport policy. For instance, local authorities are responsible for the establishment of Clean Air Zones (CAZs). Following a UK Government announcement in 2015, Birmingham City Council is due to introduce a CAZ – alongside four other cities across the UK – in 2020.

The different pollutants that cause air pollution derive from several different sources, but road transport is a major cause, especially of NO_x and PM. Transport, unlike other major sources of air pollution, is also a very devolved policy area, with local and combined authority governments acquiring an increasing number of different powers pertaining to it. That is why our focus for the report is on reporting existing – and proposing new – transport policies for the various West Midlands authorities.

Methodology

This report seeks to answer the following four research questions:

1. What is the scale of air pollution in the West Midlands?
2. What are the main causes and consequences of air pollution in the West Midlands?

3. What do the public in the West Midlands think about the extent of, and policies on, air pollution?
4. What new transport policy measures could be adopted by the WMCA and its constituent local authorities to reduce air pollution in the West Midlands?

In order to answer these questions, we employed a number of research methods, which are described in detail in Chapter Two. First, we conducted an extensive literature review of the main UK and international evidence on air pollution, and on the powers available to different tiers of government within the UK to address air pollution. Second, we consulted with a number of leading experts, academics, politicians, special advisers, opinion formers, campaigners, and business representatives, especially from within the West Midlands. Third, we commissioned a nationally representative poll of UK adults, which included 351 respondents from the West Midlands. This was undertaken to explore public attitudes on air pollution, and policies to tackle air pollution (see the Annex for the full list of questions). The polling was conducted by Opinium.

These research methods enabled us to identify: the scale of, consequences of and attitudes towards air pollution in the West Midlands (Chapter Three); and, the historical and current transport policies which have been adopted to reduce air pollution in the WMCA and in its respective local authorities, as well as elsewhere in the world (Chapter Four).

Scale of air pollution in the West Midlands

The available evidence, albeit slightly dated and limited, suggests that air pollution is greater in the WMCA than the rest of England.

- The Department for Environment, Food and Rural Affairs (DEFRA) maintains a Daily Air Quality Index (DAQI) which

monitors air pollution in an area, and assigns a number to that area based on available data, on a scale of one to ten, with a higher number representing more air pollution. Research on different local authorities in or just outside of the WMCA found that the number of times a DAQI rating of at least 'four' (indicating 'moderate' to 'very high' air pollution levels) was recorded in 2016 was 40 incidences. This does, admittedly, represent a decline from a peak of 60 incidences in 2011, but this level of air pollution is higher than most other regions of the UK.

- Annual anthropogenic PM_{2.5} concentrations were slightly more than 12% higher in the average local authority in the WMCA (11.1 µg/m³) than the rest of England (9.9 µg/m³) in 2014.
- The average local authority in the WMCA had higher average PM_{2.5} (11.1 µg/m³) than the average local authority across all Combined Authorities in England (9.6 µg/m³) in 2014.

Consequences of air pollution in the West Midlands

The available evidence, albeit slightly dated and limited, suggests that the WMCA experiences, compared to the rest of England, relatively higher rates of preventable diseases and deaths that are associated with exposure to air pollution.

- The WMCA had, on average, among those aged 75 and under a higher incidence level of preventable respiratory disease (22.1 per 100,000) and cardiovascular disease (57.2 per 100,000) – both which are strongly associated with exposure to air pollution – than the rest of England (18.6 and 46.7 per 100,000 respectively) between 2014 and 2016.
- The average fraction of deaths attributable to long-term exposure to PM_{2.5} across the WMCA was 6.2%, compared to 5.6% for the whole of England, in 2010.

Public attitudes towards air pollution in the West Midlands

Our polling reveals that 72% of adults in the West Midlands region are 'concerned' (the net responses of 'somewhat concerned' and 'very concerned') about the impact of air pollution on the health of themselves and others. The only other regions in England which register higher levels of concern are London (80%) and the South West (73%).

The sources of air pollution which respondents in the West Midlands region are most concerned about are heavy industry (45%), diesel vehicles (32%), and coal-fired power stations (31%). The order of these responses was in line with the rest of the country.

We asked respondents to choose up to three options from a predetermined list of commonly cited impacts or consequences of poor air quality, or policies to reduce it. The effect chosen by most people in the West Midlands region was the harm air pollution can have for people's health (43%), closely followed by the strain on the NHS from lung and heart conditions caused by air pollution (42%). After that, a quarter state that the economic benefit of developing cleaner industries and technologies should be kept in mind when discussing tackling air pollution. The order of these responses was in line with the rest of the country.

The vast majority of respondents in the West Midlands region (58%) think that Central Government should be the most responsible actor for tackling air pollution. In fact, only 4% of adults in the West Midlands region think devolved government is most responsible, only 3% think local authorities, and only 1% of adults think metro mayors. But this is not to say that respondents believe these different devolved governments have no responsibility – just that primary responsibility should be with the UK national government. Regardless, this report is of the view that local government, including the WMCA and the local authorities of which it is comprised, do and should play a leading role in tackling air pollution.

Transport policies in the West Midlands

The newly established WMCA and its constituent local authorities have different powers over transport policy, including road, rail, buses and cycling and walking.

The constituent local authorities in the WMCA have had for several decades various transport policies to tackle air pollution. In fact, six of the seven constituent local authorities in the WMCA were mandated to establish AQMAs in the 2000s.

There have certainly been examples of innovative and forward-thinking transport policies to take action on air pollution in some local authorities of the West Midlands historically. But, admittedly, many of these historical reports on air quality consisted of vague and unambitious assertions – commonly, stating a desire to simply ‘promote’ walking, or cycling, or use of public transport.

Encouragingly, perhaps reflective of an improved understanding about the scale and consequences of air pollution and the efficacy of different solutions to reducing it, reports written and policies adopted by local authorities in the WMCA in recent times have become relatively more detailed, and ambitious.

Birmingham City Council, for instance, is introducing a charging CAZ in 2020. The City of Wolverhampton Council plans to upgrade all its buses to Euro VI emissions standards by 2021-22. Dudley Metropolitan Borough Council is introducing 20 miles per hour speed limits on more of its roads.

The Mayor of West Midlands also has announced, even implemented, several policies to both improve different forms of public transport, thus making them more attractive than private transport, and to reduce the pollution that derives from all forms of public and private transportation.

On trains and trams, the number of carriages and frequency of journeys will be increased, stations and lines will be reopened, and improvements will be made to the standard of the rail stock. On buses,

bus lanes on major routes will be reviewed with an aim of speeding up services, and the rollout of contactless and smart payments will be accelerated. Bus fares will also be reviewed to ensure they are affordable for working people, and there will be a push for higher standards with regards to engine cleanliness. On cycling, the Mayor has pledged to increase overall spending on cycling by forty-fold, whilst upgrading cycle routes and infrastructure. On road travel, the Mayor has pledged to support the development of autonomous and electric vehicles in the West Midlands, and to lobby Central Government to ensure that individuals and companies who currently use polluting vehicles will be supported to transition to cleaner models.

How local and combined authorities can tackle air pollution through transport policies

Based on analysis of the different transport policies of the WMCA and its constituent local authorities, as well as overseas examples, the report presents a typology of four categories of transport policy interventions available to local and combined authorities to reduce air pollution.

- **Making existing transportation less polluting.** Actions which can be taken to minimise the amount existing transport contributes to pollution. For example, lowering speed limits, or retrofitting bus fleets to minimise the emissions they generate.
- **Financial incentives to use cleaner transportation.** Providing financial incentives or subsidies to encourage individuals to use cleaner forms of transportation, such as cycling and using the bus network. For example, subsidising the cost of public transport, or establishing cycle-to-work schemes which allow individuals to minimise their tax liability.
- **Increasing the convenience of cleaner transportation.** Measures which increase the attractiveness of using cleaner forms of transportation, such as improving the efficiency and quality of

public transport. For example, by cracking down on anti-social behaviour on public transport, or establishing 'smart' ticketing systems which permit multi-modal travel.

- **Deterring the use of polluting transportation.** Increasing the costs, or reducing the desirability, of using transport that particularly pollutes the air. For example, charging CAZs or increasing parking charges.

New policies

In Chapter Five, we make nine transport policy recommendations to be adopted by the WMCA or its constituent local authorities to help reduce air pollution in the West Midlands.

When formulating policies, we applied three key tests that had to be met. First, policies should be fiscally responsible; they should not necessitate large amounts of additional central or local government spending. Second, policies should not be financially regressive; the poorest should not find new costs burdensome, and they should benefit the most from new subsidies. Third, policies should respect human freedom; generally, individuals themselves should decide whether they should carry out certain conduct, but policy makers can price into certain conduct the externality costs of it.

Recommendation one: Extend the Clean Air Zone (CAZ) scheduled for Birmingham for 2020 to all relevant parts of the WMCA and transfer responsibility for it from Birmingham City Council to the WMCA.

Birmingham City Council is currently consulting on introducing a CAZ for vehicles entering its city centre by at least January 2020. But the city of Birmingham is not the only area within the WMCA which is afflicted by air pollution.

We recommend that the WMCA is afforded primary responsibility for administering the CAZ. The CAZ should be introduced in the relevant parts of the town and city centres of the WMCA which, as a minimum,

consistently exceed the national daily and annual limit values for the air pollutants, which currently derive from the EU Ambient Air Quality Directive (2008/EC/50).

The CAZs should be designed collaboratively across all constituent local authorities in a way which affords maximum uniformity, and thus ease of use to individuals who may need to travel into different CAZs. Exemptions from the charging for entering the CAZs should apply to vulnerable and low-income groups, as well as drivers of vehicles with cleaner engines.

Recommendation two: Enable local and combined authorities to strive for ‘reasonable profits’ from their CAZs to fund a local diesel scrappage scheme or charging points for EVs.

Local authorities are prohibited from setting charges in CAZs so as to be a means of raising revenues. If any surplus is generated from CAZs, they must be reinvested “to facilitate the achievement of local transport policies”.

We recommend that the Government enables local authorities and metropolitan combined authorities to strive for ‘reasonable profits’ from their CAZs, as long as they are directed towards the following objectives:

- a) a local diesel scrappage scheme;
- b) charging points for EVs;
- c) local transport objectives, as currently defined

We propose that reasonable profits should be first allocated to a local diesel scrappage scheme or charging points for EVs, before authorities are allowed to use reasonable profits for other local transport objectives.

Recommendation three: Introduce a local diesel vehicle scrappage scheme in the WMCA.

We recommend that the WMCA utilises money from the government's new Clean Air Fund, alongside any reasonable profits from its CAZ, to launch a local diesel vehicle scrappage scheme.

The WMCA would be responsible for offering the grant (as well as the manufacturer matching the grant, if possible), and it would be up to the WMCA as to what price the grant was set at. The diesel cars that are being scrapped should have been owned for at least 12 months. The scheme would apply only to residents of the WMCA.

If there are concerns about the total cost of the local diesel scrappage scheme, there are options that WMCA should consider in order to limit expenditure. For instance, there might be a time and budget limit that applies to the diesel scrappage scheme. The WMCA might also consider introducing stricter eligibility for scrapped vehicles – for example, for the oldest, most polluting cars. Conditions could also be applied to the grant that is received, stipulating that it must be spent on something in particular. For example, the WMCA could stipulate that it needs to be spent on certain types of greener transport – for example, cycling equipment or public transport vouchers. Or, limiting it further, it might be that WMCA states that beneficiaries from the scheme could only use their grant towards the cost of a new petrol hybrid or fully electric vehicle.

Recommendation four: Subsidise the retrofitting of diesel taxis to run on liquified petroleum gas.

Retrofitting petrol or diesel taxis to run on liquified petroleum gas can reduce emissions and reduce running costs. It has been argued that doing so represents a more economic option than taxi drivers switching directly to fully electric vehicles, which can cost up to £60,000. However, the upgrades can still be expensive for individuals to undertake.

We recommend that the WMCA establishes and funds a time-limited

concessionary finance scheme for taxi owners using the most polluting vehicles to retrofit them to run on liquified petroleum gas.

Recommendation five: Transfer licensing of taxis and private hire vehicles (PHVs) across the constituent parts of the West Midlands county to the WMCA.

Outside of London's 33 local authority districts, taxis and PHVs are licensed by local authorities. Within London's 33 local authority districts, Transport for London (TfL) is responsible for licensing. This joined-up approach better allows for consistency of regulating taxis and PHVs, especially with regards to emissions standards of the vehicles.

Therefore, we recommend that the power for taxi licensing becomes vested within the WMCA, rather than the seven individual constituent local authorities of the WMCA.

Recommendation six: Increase the stringency of licencing for taxis and PHVs based upon emissions standards.

A landmark regulation was introduced in January 2018 by TfL, which stipulated that all taxis presented for licensing for the first time will need to be zero emission capable. TfL also has regulations about the maximum age which a vehicle can be issued a licence for.

We recommend that the WMCA follows TfL's lead in taxi and PHV licensing regulations. The WMCA should set a date after which all new vehicles presented for taxi and PHV licensing should be zero emission capable. The WMCA should also mandate that the age limit for already licensed solely fossil fuel vehicles is set at 10 years, in order to prevent the oldest models from remaining on the road. For solely fossil fuel vehicles seeking to be licensed for the first time, the age limit should be set at 18 months, so as to prevent aging models from being adopted into the sector in the first place.

Recommendation seven: Reflect the age and emissions standards of vehicles seeking to be licensed as taxis or PHVs in licensing costs.

In some of the constituent councils of the WMCA, applications for older vehicles to become licensed as taxis or PHVs are more expensive relative to newer vehicles. This partly incentivises the uptake of newer – and typically less polluting – vehicles as part of the taxi and PHV fleet.

We recommend that vehicles presented for licensing pay different charges in relation to their age and emissions rating. We propose that newer vehicles should pay less than older ones; above and beyond this, vehicles which are zero emission capable should incur a discounted licensing fee than would be the case for non-zero emission capable vehicles.

Recommendation eight: Introduce a non-charging CAZ for non-road mobile machinery (NRMM) across relevant parts of the WMCA.

There are no provisions for tackling emissions from NRMM in the Birmingham City Council’s CAZ consultation. NRMM is defined as any “mobile machine, item of transportable industrial equipment, or vehicle which is: a) not intended for carrying passengers or goods on the road; b) installed with a combustion engine”. Examples of NRMM include excavators, back-up power generators, fork lifts, and industry trucks. Yet, NRMM can be a significant source of air pollutant emissions.

London has a ‘low emission zone’ for NRMM. This NRMM low emission zone is distinct from the CAZ for vehicles, in terms of the standards it imposes and the parts of the city which it covers. Importantly, it is a ‘non-charging’ CAZ, which just sets minimum emissions standards and expects all parties to adhere to them. We recommend that the WMCA introduces, in relevant places, a separate non-charging CAZ for NRMM, akin to the one in London.

Recommendation nine: Make bus licencing in the WMCA contingent on more stringent emissions standards being met.

Buses can be a significant source of air pollution in urban areas. Incidentally, because of the powers conferred to them in the Bus Services Act 2017, Metro mayors have a range of powers with regards to buses – such as the routes they can take, fares, and emissions standards.

We recommend that the WMCA mandates stricter emissions standards for buses operating within the most polluted areas. For franchises with buses which operate inside the proposed WMCA CAZ, licensing should be contingent on ensuring the bus stock is at least Euro VI.

Conclusion

Air pollution is a major danger to the health of individuals in the West Midlands. The evidence suggests that those living in the West Midlands experience higher levels of air pollution and worse consequences from it. Concern for air pollution in the West Midlands is widespread amongst the public, and many believe that not enough is being done to resolve it.

Time for the WMCA and its constituent local authorities to be bold. They should ensure that this region is not left behind London and lead the way in introducing new, ambitious transport policies to tackle air pollution in the West Midlands. People in the West Midlands need and deserve cleaner air urgently.

Chapter 1: Introduction

Air pollution is a concentration of harmful gaseous and non-gaseous pollutants within the atmosphere. The Department for Environment, Food and Rural Affairs (DEFRA) – the department within government which has primary responsibility for upholding air quality standards in the United Kingdom – maintains a Daily Air Quality Index (DAQI). The DAQI monitors air pollution in an area, and assigns a number to that area based on available data, on a scale of one to ten, with a higher number indicating worse air pollution.¹ The DAQI is made up of a basket of different gaseous and non-gaseous pollutants: nitrogen dioxide (NO₂), sulphur dioxide (SO₂), ozone (O₃), and particulate matter (PM).

PM is microscopic solid or liquid matter suspended within the air. Often, PM is referred to in terms of its size, comprising of fine particulate matter (known as PM_{2.5}), and coarse particulate matter (known as PM₁₀). For example, PM₁₀ refers to particulates measuring ten micrometres or less in diameter, and PM_{2.5} refers to particulates measuring two and a half micrometres or less in diameter.² There are other gradations of PM such as PM₁ and PM_{0.1}. However, these gradations are much less frequently used. The PM is not only dangerous in and of itself, but also in the way in which it can combine

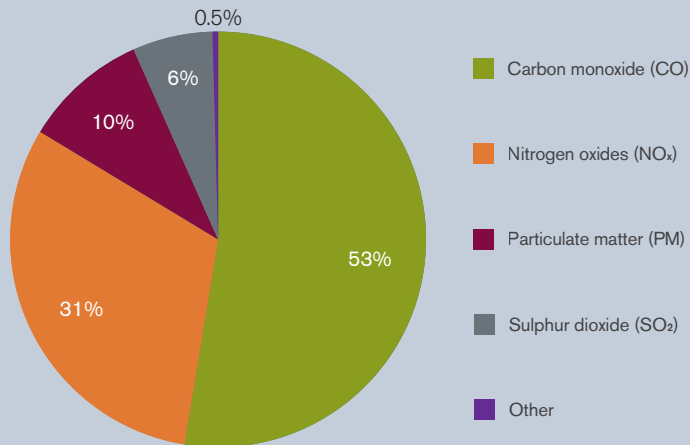
1. Department for Environment, Food and Rural Affairs, “Daily Air Quality Index”, <https://uk-air.defra.gov.uk/air-pollution/daq> (2018).

2. World Health Organization, “Ambient (outdoor) air quality and health”, [http://www.who.int/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](http://www.who.int/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health) (2018).

with the other gaseous pollutants to create toxic aerosols, which may then be inhaled.³

There are also other air pollutants. Those pollutants which are covered in various sources of legislation pertaining to air quality in the UK include: nitrogen oxides (NO_x),⁴ benzene (C₆H₆), ammonia (NH₃), non-methane volatile organic compounds (NMVOCs), mercury (Hg), polycyclic aromatic hydrocarbons (PAHs), and carbon monoxide (CO), as well as lead (Pb) and other heavy metals such as arsenic (As), cadmium (Cd) and nickel (Ni).⁵

Chart 1.1. Emissions of air pollutants covered under Directive 2008/50/EC and Directive 2004/107/EC in the UK (kilotonnes), 2016



Source: National Atmospheric Emissions Inventory, "Overview of air pollutants", <http://naei.beis.gov.uk/overview/ap-overview> (2018).⁶

3. National Atmospheric Emissions Inventory, "Overview of air pollutants", <http://naei.beis.gov.uk/overview/ap-overview> (2018).

4. NO₂, mentioned above, is a type of NO_x.

5. Air Quality Standards Regulations 2010. See: http://www.legislation.gov.uk/ukxi/2010/1001/pdfs/ukxi_20101001_en.pdf.

6. NO_x is expressed here as NO₂ emissions; PM is the cumulative total of PM₁₀ and PM_{2.5} emissions; Other comprises of C₆H₆, Pb, As, Ca, Hg, Ni, and PAHs; PAHs is expressed here as benzo[a]pyrene emissions, which is a commonly used indicator species for total PAH levels.

Air pollutant concentrations tend to be recorded with the unit $\mu\text{g}/\text{m}^3$. This states the amount of a pollutant in one cubic meter of air, by mass in micrograms (one millionth of a gram). But the total mass of pollutants in the air in a given year can also be estimated, using kilotonnes. Chart 1.1 below provides a graphical representation of the contribution different pollutants make to overall air pollution in the UK.

As can be seen in Chart 1.1, four pollutants covered under Directives 2008/50/EC and 2004/107/EC (see Box 1.1 below for further details) dominate air pollution in the UK: CO (1512.19 kilotonnes, 53%); NO_x (892.92 kilotonnes, 31%); PM (278.35 kilotonnes, 10%); and SO₂ (179.16 kilotonnes, 6%). In Chart 1.1., 'Other' comprises of C₆H₆, which, at 12 kilotonnes, makes up less than 0.4%, and the remaining six pollutants (Pb, As, Ca, Hg, Ni, PAHs), which make up less than 0.006% of the total.

Though air pollution can be analysed across the country, it is important to emphasise that it is a localised environmental problem. This means that different localities may have different types and concentrations of pollutants within their atmospheres.⁷ It also means that the consequences which air pollution can have will differ depending on the respective areas in which it is found. Variations in air pollution may be due to proximity of an area to emitters of air pollution, as well as other phenomena, such as climate and the weather. Roadsides, for instance, will tend to have considerably higher quantities of pollutants associated with vehicles, such as NO_x and PM, than areas further away from dense traffic.⁸ Similarly, towns and cities with major maritime ports may experience higher SO₂ pollution, as this is a pollutant particularly associated with fuel used in the shipping industry.⁹

7. Department for Environment, Food and Rural Affairs and Public Health England, "Air quality: a briefing for directors of Public Health", <https://laqm.defra.gov.uk/assets/63091/defrairqualityguide9web.pdf> (2017), 26.

8. Department for Environment, Food and Rural Affairs, "Clean Air Strategy 2018", https://consult.defra.gov.uk/environmental-quality/clean-air-strategy-consultation/supporting_documents/Clean%20Air%20Strategy%202018%20Consultation.pdf (2018), 14.

9. Air Quality Expert Group, "Impacts of shipping on UK air quality", https://uk-air.defra.gov.uk/assets/documents/reports/cat11/1708081025_170807_Shipping_Report.pdf (2017).

Growing evidence in recent decades of the consequences of air pollution, especially on human health and productivity – as well as public awareness of it – has meant different layers of government have, due in part to campaigning from the public and civil society, introduced a variety of more ambitious policy measures to try to improve air quality.¹⁰ In fact, PM has been identified by the World Health Organization to be particularly detrimental to human health – so much so that they now recommend far stricter limit values for PM than have been adopted by organisations like the EU.¹¹

Indeed, recent Bright Blue research found that a majority (60%) of UK adults wanted air pollution reduction targets to be strengthened after the UK's leaving of the European Union (EU), and that a majority (56%) thought that policies to reduce air pollution were not currently strong enough and should be scaled up.¹² Other Bright Blue research, conducted earlier this year, found that a clear majority (71%) of UK adults are either 'somewhat' or 'very concerned' about air pollution for

10. Committee on the Medical Effects of Air Pollutants, "Statement on the evidence for the effects of nitrogen dioxide on health", https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/411756/COMEAP_The_evidence_for_the_effects_of_nitrogen_dioxide.pdf (2015), 1; Byeong-Jae Lee, Bumseok Kim and Kyuhong Lee, "Air pollution exposure and cardiovascular disease", *Toxicology Research*, Vol. 30, No. 2 (2013), 71-75; Robert D. Brook et al., "Air pollution and cardiovascular disease", *Circulation*, Vol. 109, Iss. 21 (2004), 2655-2671; Robert, D. Brook et al., "Particulate matter air pollution and cardiovascular disease", *Circulation*, Vol. 121, Iss. 21 (2010), 2331-2378; Public Health England, "New tool calculates NHS and social care costs of air pollution", <https://www.gov.uk/government/news/new-tool-calculates-nhs-and-social-care-costs-of-air-pollution> (2018); Royal College of Physicians and Royal College of Paediatrics and Child Health, "Every breath we take: the lifelong impact of air pollution", <https://www.rcplondon.ac.uk/file/2916/download?token=5dnlDovZ> (2016), xiii; World Health Organization, "Health effects of particulate matter: policy implications for countries in eastern Europe, Caucasus and central Asia", http://www.euro.who.int/__data/assets/pdf_file/0006/189051/Health-effects-of-particulate-matter-final-Eng.pdf (2013), 6; Alzheimer's Society, "Dementia research news – spring 2017", https://www.alzheimers.org.uk/info/20056/our_care_and_cure_research_magazine/971/dementia_research_news_-_spring_2017 (2017); University of Oxford, "Toxic air pollution nanoparticles discovered in the human brain", <http://www.ox.ac.uk/news/2016-09-07-toxic-air-pollution-nanoparticles-discovered-human-brain> (2016); David Buck and Sarah Gregory, "Improving the public's health", https://www.rbkc.gov.uk/pdf/air_quality_cost_effective_actions_full_report.pdf (2013), 46; Fiona Harvey, "Air pollution linked to much greater risk of dementia", *The Guardian*, 18 September, 2018.

11. World Health Organization, "Ambient (outdoor) air quality and health", [http://www.who.int/en/news-room/fact-sheets/detail/ambient-\(outdoor\)-air-quality-and-health](http://www.who.int/en/news-room/fact-sheets/detail/ambient-(outdoor)-air-quality-and-health) (2018).

12. Sam Hall, "Green conservatives? Understanding what conservatives think about the environment", <https://static1.squarespace.com/static/56d9b584f8ba31e9937bd55/t/58e0120629687f5bed11e5ae/1491079692193/Green+conservatives%3F.pdf> (2017).

their own health, and that of other people.¹³

Legal responsibilities on air pollution

Much of the current regulations pertaining to air pollution in the UK actually derive from the EU. Specifically, Directive 2008/50/EC sets legally bindings ‘limits’ for ambient (outdoor) air pollutant concentrations, including all the main pollutants, such as NO₂ and PM.¹⁴ Directive 2004/107/EC, more commonly known as the ‘Fourth Daughter Directive’, sets ‘limits’ for levels in ambient air of certain heavy metals and PAHs. Box 1.1 below illustrates the legal hourly, daily, or annual ‘limits’ for the main air pollutants set out by the Directives.

‘Limits’ refer, in EU law pertaining to air pollution, to “a level fixed to be attained within a given period and not to be exceeded once attained”.¹⁵ This is in contrast to ‘targets’, which refer to “a level fixed to be attained where possible over a given period”.¹⁶

13. Eamonn Ives, “Public polling analysis of attitudes towards the impact of and policies on air pollution”, <http://brightblue.org.uk/eamonn-ives-public-polling-analysis-of-attitudes-towards-the-impact-of-and-policies-on-air-pollution/> (2018).

14. NO₂ is a type of NO_x.

15. European Parliament and Council, “Directive 2008/50/EC on ambient air quality and cleaner air for Europe”, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:152:0001:0044:EN:PDF> (2008).

16. Ibid.

Box 1.1. Selected air pollutant limit values set out in Directives 2008/50/EC and 2004/107/EC

Pollutant	Concentration ($\mu\text{g}/\text{m}^3$, unless stated)	Averaging period	Permitted annual exceedances
Fine particulate matter ($\text{PM}_{2.5}$)	25	Annually	N/A
Coarse particulate matter (PM_{10})	50	Daily	35
	40	Annually	N/A
Nitrogen dioxide (NO_2)	200	Hourly	18
	40	Annually	N/A
Sulphur dioxide (SO_2)	350	Hourly	24
	125	Daily	3
Carbon monoxide (CO)	$10 \text{ mg}/\text{m}^3$	Maximum daily eight hour mean	N/A
Lead (Pb)	0.5	Annually	N/A
Benzene (C_6H_6)	5	Annually	N/A
Ozone (O_3)	120	Maximum daily eight hour mean	25 days averaged over three years
Arsenic (As)	$6 \text{ ng}/\text{m}^3$	Annually	N/A
Cadmium (Cd)	$5 \text{ ng}/\text{m}^3$	Annually	N/A
Nickle (Ni)	$20 \text{ ng}/\text{m}^3$	Annually	N/A
Polycyclic aromatic hydrocarbons (PAHs)	$1 \text{ ng}/\text{m}^3$ (expressed as concentration of Benzo(a)pyrene)	Annually	N/A

Source: European Parliament and Council, "Directive 2008/50/EC on ambient air quality and cleaner air for Europe", <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:152:0001:0044:EN:PDF> (2008); European Parliament and Council, "Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclic aromatic hydrocarbons in ambient air", <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32004L0107&from=EN> (2005).

The UK Government also has separate 'targets' for certain air pollutants, above and beyond EU-derived limits.¹⁷ For instance, on $\text{PM}_{2.5}$, there is a target for concentrations at urban background in UK

17. Department for Environment, Food and Rural Affairs, "National air quality objectives and European Directive limit and target values for the protection of human health", https://uk-air.defra.gov.uk/assets/documents/Air_Quality_Objectives_Update.pdf (2018).

urban areas to be reduced by 15% between 2010 and 2020. For O₃, there are two targets: one for 120 µg/m³ not to be exceeded by more than 25 times a year averaged over three years, and one for 18,000 µg/m³ based on AOT40, calculated on hourly values from May to July.¹⁸

Achieving compliance with EU-derived air pollution regulations in England is the responsibility of DEFRA, which also has a coordinating role for the rest of the UK.¹⁹ Part IV of the Environment Act 1995 and Part II of the Environment (Northern Ireland) Order 2002 requires the UK Government and devolved administrations to produce national air quality strategies²⁰ – the last of which for the UK was published in 2007.²¹

In order to assess compliance with air quality targets, the UK is divided into 43 different zones.²² There are 28 ‘agglomeration zones’ – specific, relatively urban areas, such as ‘Greater London Urban Area’ and ‘West Midlands Urban Area’ – and 15 ‘non-agglomeration zones’, which are larger areas of the country such as ‘South East’ and ‘Northern Ireland’.²³

Annex XI of Directive 2008/50/EC set out dates by which the limits for different air pollutants had to be met.²⁴ Provisions were made available in Directive 2008/50/EC to allow EU member states to apply for time extensions where they were not going to meet limit values, provided that credible and workable emission reduction plans were

18. AOT40 is a technical term which refers to the sum of the differences between hourly O₃ concentration and 40 parts per billion for each hour when the concentration exceeds 40 parts per billion during a relevant growing season, for example, for forests and crops. See: <https://www.eea.europa.eu/help/glossary/eea-glossary/aot40>.

19. Department for Environment, Food and Rural Affairs, “UK and EU air quality policy context”, <https://uk-air.defra.gov.uk/air-pollution/uk-eu-policy-context> (2018).

20. *Ibid.*

21. Department for Environment, Food and Rural Affairs, “The Air Quality Strategy for England, Scotland, Wales and Northern Ireland”, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/69336/pb12654-air-quality-strategy-vol1-070712.pdf (2007).

22. Department for Environment, Food and Rural Affairs, “Air pollution in the UK 2017”, https://uk-air.defra.gov.uk/library/annualreport/viewonline?year=2017_issue_1#report_pdf (2018).

23. *Ibid.*, 40.

24. European Parliament and Council, “Directive 2008/50/EC on ambient air quality and cleaner air for Europe”, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:152:0001:0044:EN:PDF> (2008).

also drawn up.²⁵

For example, the deadline for NO₂, a version one of the largest and most dangerous air pollutants (NO_x) in the UK (as shown in Chart 1.1), was 1st January, 2010.²⁶ The UK, however, failed to meet this deadline for certain zones. Thus, in 2011, the Government asked the European Commission (EC) for a postponement of the 2010 deadline for meeting annual and hourly limit values for NO₂ in a number of air quality zones. The EC agreed to the request, but only for some zones, on the basis that the UK had not shown how limit value compliance could be achieved either on or before 1st January, 2015.²⁷ However, eight years after the initial deadline passed, there are still 37 out of 43 zones in the UK found to be transgressing NO₂ standards set out in Directive 2008/50/EC.

This failure over NO₂ in many zones prompted the environmental advocacy charity, ClientEarth, to commence what would become several years of proceedings against the UK Government.²⁸ In April 2015, the Supreme Court ruled that the UK Government was indeed in breach of its obligations under EU law, and ordered it to produce an Air Quality Plan which would achieve compliance with NO₂ limits in the shortest time possible.²⁹

The updated Government plan was duly released later in 2015. However, ClientEarth registered dissatisfaction with it for several reasons (such as the overly optimistic modelling for future emissions reductions), and once again challenged the Government through the courts. In November 2016, the High Court ordered DEFRA to publish

25. Louise Smith, "Brexit and air quality", <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-8195> (2018), 16.

26. *Ibid.*

27. European Commission, "Commission decision of 25.6.2012 on the notification by the United Kingdom of Great Britain and Northern Ireland of a postponement of the deadline for attaining the limit values for NO₂ in 24 air quality zones", http://ec.europa.eu/environment/air/quality/legislation/pdf/uk2_no2_en.pdf (2012).

28. Louise Smith, "Brexit and air quality", <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-8195> (2018).

29. *Ibid.*

a modified Air Quality plan, to be put to the EC by 31st July, 2017.³⁰

The Government did publish its final Air Quality plan on 26th July, 2017. Controversially, the plan delegated responsibility for tackling air pollution to local authorities, and, asked them to consider measures other than implementing charging Clean Air Zones (CAZs) to achieve compliance with air quality targets. This is despite DEFRA's own evidence at the time demonstrating that charging CAZs are the most effective ways to do so.³¹ In light of this, ClientEarth decided to pursue further judicial action against the Government.

In February 2018, the High Court ruled yet again that the measures included in the Government's new air quality plan were insufficient in terms of achieving compliance with NO₂ limits, and were therefore unlawful. Consequently, the High Court ordered the Government to issue a 'supplement' to this plan, which was published on 5th October, 2018.³²

This latest plan states that ten local authorities – including Dudley Metropolitan Borough Council, Solihull Metropolitan Borough Council, Sandwell Metropolitan Borough Council, and the City of Wolverhampton Council – will be assisted by central government to bring forward new measures to reduce air pollution.³³ For example, councils will retrofit buses so that they produce fewer emissions, and commence campaigns to instigate behavioural change amongst individuals to reduce air pollution.³⁴ It also states that eight other local authorities will carry out further studies on how to tackle persistent

30. *ClientEarth v. Secretary of State for the Environment, Food and Rural Affairs* [2016] EWHC 2740; Louise Smith, "Brexit and air quality", <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-8195> (2018).

31. Department for Environment, Food and Rural Affairs and Department for Transport, "UK plan for tackling roadside nitrogen dioxide concentrations: technical report", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/632916/air-quality-plan-technical-report.pdf (2017), 15.

32. *Ibid.*, 25.

33. Department for Environment, Food and Rural Affairs and Department for Transport, "Supplement to the UK plan for tackling roadside nitrogen dioxide concentrations", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/746100/air-quality-no2-plan-supplement.pdf (2018).

34. *Ibid.*

air quality problems. Commenting on this supplementary plan, ClientEarth have so far described it as “pitiful” and claimed that it will likely result in further delays before meaningful action is taken.³⁵

The role of local and Combined Authorities in tackling air pollution

In 2009, the Local Democracy, Economic Development and Construction Act was passed by the then Labour Government.³⁶ This allowed for certain central government responsibilities to be devolved to local authorities. Thus, today, achieving air quality compliance is in truth to a large extent a devolved matter, despite the requirements on and challenges against the UK national government.

The Environment Act 1995 requires local authorities to carry out reviews and assessments of air quality in their area.³⁷ When a review identifies an exceedance of any given pollutant, the offending local authority must declare an ‘Air Quality Management Area’ (AQMA) and draw up an Action Plan to address the issue.³⁸ Also, it will be required to provide Air Quality Annual Status Reports (AQASRs) which detail progress on addressing air pollution. As of July 2017, 71% of local authorities had AQMAs, the vast majority of which are for NO₂ emissions.³⁹ However, local authorities are not obliged to meet the objectives which they set in Action Plans.⁴⁰

The Localism Act 2011,⁴¹ passed under the previous Coalition Government, paved the way for the creation of ‘combined authorities’

35. ClientEarth, “New pollution plan reveals toxic air in England worse than feared”, <https://www.clientearth.org/new-pollution-plan-reveals-toxic-air-in-england-worse-than-feared/> (2018).

36. Local Democracy, Economic Development and Construction Act 2009, *Ch. 20*. See: http://www.legislation.gov.uk/ukpga/2009/20/pdfs/ukpga_20090020_en.pdf.

37. Environment Act 1995, *Ch. 25*. See: https://www.legislation.gov.uk/ukpga/1995/25/pdfs/ukpga_19950025_en.pdf.

38. Department for Environment, Food and Rural Affairs, “Air pollution in the UK 2016”, https://uk-air.defra.gov.uk/library/annualreport/viewonline?year=2016_issue_2 (2017), 14.

39. *Ibid.*

40. Environmental Protection UK, “Air Quality Strategy”, <http://www.environmental-protection.org.uk/policy-areas/air-quality/air-pollution-law-and-policy/air-quality-policy/> (2018).

41. Localism Act 2011, *Ch. 20*. See: http://www.legislation.gov.uk/ukpga/2011/20/pdfs/ukpga_20110020_en.pdf.

(legal aggregations of multiple local authorities), the first of which was the Greater Manchester Combined Authority.⁴² Further, the Cities and Local Government Devolution Act 2016 allowed for Combined Authorities to exercise a wider range of powers and functions, and to also directly elect Metro mayors.⁴³

In 2016, the West Midlands Combined Authority (WMCA) was formally created, with the Conservative Party candidate, Andy Street, inaugurated as its first Mayor the following year. Today, the WMCA represents around 2.8 million people, and consists of seven local authorities: Birmingham City Council, City of Wolverhampton Council, Coventry City Council, Dudley Metropolitan Borough Council, Sandwell Metropolitan Borough Council, Solihull Metropolitan Borough Council, and Walsall Council.⁴⁴ The WMCA makes up the West Midlands ceremonial county, and covers some, though not all, of the ‘West Midlands region.’⁴⁵ Also in the ‘West Midlands region’ are the ceremonial counties of Herefordshire, Shropshire, Staffordshire, Warwickshire, and Worcestershire. Box 1.2 explains the structure of the WMCA in detail.

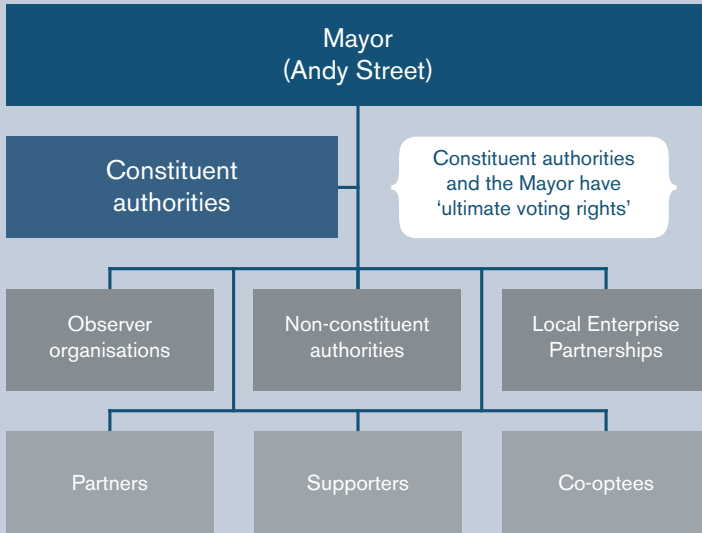
42. Mark Sandford, “Combined authorities”, <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN06649> (2017), 3.

43. Cities and Local Government Devolution Act 2016, *Ch.* 1. See: http://www.legislation.gov.uk/ukpga/2016/1/pdfs/ukpga_20160001_en.pdf.

44. West Midlands Combined Authority, “The Mayor’s Role”, <https://www.wmca.org.uk/who-we-are/meet-the-mayor/the-mayors-role/> (2018).

45. As defined in the Nomenclature of Territorial Units for Statistics (NUTS) – a geocode standard for referencing subdivisions of countries for statistical purposes, as used by the European Union.

Box 1.2. Organisation of the WMCA



Constituent authorities: Birmingham City Council; City of Wolverhampton Council; Coventry City Council; Dudley Metropolitan Borough Council; Sandwell Metropolitan Borough Council; Solihull Metropolitan Borough Council; Walsall Council.

Non-constituent authorities: Cannock Chase District Council; North Warwickshire Borough Council; Nuneaton and Bedworth Borough Council; Redditch Borough Council; Rugby Borough Council; Shropshire Council; Stratford-on-Avon District Council; Tamworth Borough Council; Telford and Wrekin Council; Warwickshire County Council.

Observer organisations: Herefordshire Council; The Marches Local Enterprise Partnership; West Midlands Fire and Rescue Authority; West Midlands Police and Crime Commissioner.

Local Enterprise Partnerships: Black Country Local Enterprise Partnership; Coventry and Warwickshire Local Enterprise

Partnership; Greater Birmingham and Solihull Local Enterprise Partnership.

Partners: Black Country Chamber of Commerce; Coventry and Warwickshire Chamber of Commerce; Greater Birmingham Chambers of Commerce; Highways England; HS2; Midland Metro Alliance; Midlands Connect; Midlands Engine; West Midlands Academic Health Science Network; West Midlands Growth Company; West Midlands Rail Executive; West Midlands Women's Voice.

Supporters: Improvement and Efficiency West Midlands; Sustainability West Midlands; West Midlands Combined Universities; West Midlands Housing Association Partnership.

Co-optees: Trades Union Congress.

Source: West Midlands Combined Authority, "Who we are: WMCA interactive chart", <https://www.wmca.org.uk/who-we-are/structure> (2018); West Midlands Combined Authority, "Who we are", <https://www.wmca.org.uk/who-we-are/> (2018).

There are several powers which the WMCA can exercise as a combined authority. Fiscally, for example, it can set a precept on local council tax bills to fund mayoral work, and it can also borrow money in order to deliver economic regeneration and housing.⁴⁶ In terms of development, the Mayor has compulsory purchase powers (the ability to acquire land without the owner's agreement in return for compensation), and can establish 'Mayoral Development Corporations', which have authority over planning applications in a given locality.⁴⁷ Other combined authorities, such as the Greater Manchester Combined Authority, which has the most extensive devolution deal of all combined authorities,

46. Department for Communities and Local Government, "Devolution: a mayor for the West Midlands. What does it mean?", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/608524/Plain_English_Guides_to_Devolution_West_Midlands.PDF (2017), 7.

47. *Ibid.*, 10.

have powers over health and social care provision.⁴⁸

Local authorities do still retain many powers of their own, however. They still, for example, have responsibilities over local licensing laws and planning permission. The constituent local authorities of the WMCA also have the power to hold the Mayor to account, and block decisions coming from the Mayor's office. Doing so, however, may be contingent on achieving 'supermajorities' of two-thirds (or, in the case of the WCMA, five-sevenths) where necessary – such as when decisions, particularly fiscal ones, impact upon all constituent authorities.⁴⁹

In 2015, the then Chancellor of the Exchequer, the Rt Hon George Osborne, signed a devolution deal with the constituent members of the WMCA.⁵⁰ It conferred a number of new powers to the WMCA, over such areas as housing, skills and employment, transport, and public sector reform.⁵¹ The agreement made reference to the possible implementation of low emissions zones and CAZs as part of its transport strategy.⁵² In 2017, the current Chancellor of the Exchequer, the Rt Hon Philip Hammond MP, announced a second devolution deal for the WMCA.⁵³ This included over £260 million of spending pledges on such areas as housing, construction and skills training, and transportation policy.⁵⁴

This second deal between HM Treasury and the WMCA was far more expansive than the first in terms of the powers which it granted to the Mayor of the WMCA in order to deal with air pollution. It stated, for

48. National Audit Office, "Mayoral combined authorities", <https://www.nao.org.uk/wp-content/uploads/2017/07/Mayoral-combined-authorities-interactive.pdf> (2017), 2.

49. *Ibid.*, 11.

50. HM Treasury and West Midlands Combined Authority, "West Midlands Combined Authority Devolution Agreement", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/477421/West_Midlands_devolution_deal_unsigned_final_web.pdf (2015).

51. *Ibid.*

52. *Ibid.*, 17.

53. HM Treasury and West Midlands Combined Authority, "West Midlands Combined Authority: a second devolution deal to promote growth", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/662138/A_Second_Devolution_Deal_for_the_West_Midlands.pdf (2017).

54. *Ibid.*; Mark Sandford, "Devolution to local government in England", <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN07029> (2018), 19-20.

example, that the “Government will participate in a partnership with the WMCA and any local authorities required to develop local plans to achieve improvements in air quality”.⁵⁵ It also went on to declare that Government officials from DEFRA, and the Department for Transport (DfT), would help in developing proposals for detailing air quality monitoring, and in designing and implementing a comprehensive strategy for improving air quality across the West Midlands region.⁵⁶

The Mayor of the WMCA has a number of powers over policy areas, especially transport, which relate to air pollution in the region.⁵⁷ For example, the Mayor has responsibility for the ‘Key Route Network’ of the most important local roads in the WMCA, although not over strategic roads, which remains the responsibility of Highways England.⁵⁸ The Mayor also has control over the region’s Local Transport Plan, which details how the WMCA will manage traffic jams and congestion.⁵⁹

In terms of public transport, the Mayor has significant powers over the bus network, following the successful passing of the Bus Services Act 2017.⁶⁰ Similar to what is the case in London, the Mayor can determine bus franchising, and has the power to set routes, timetables, and fares.⁶¹ The WMCA also has a tram network, which the Mayor has responsibility over.

Nonetheless, individual constituent local authorities of the WMCA do still exercise significant powers over air pollution. For example, they have powers to control domestic burning, first granted under

55. *Ibid.*, 10.

56. *Ibid.*, 10-11.

57. Department for Communities and Local Government, “Devolution: a mayor for the West Midlands. What does it mean?”, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/608524/Plain_English_Guides_to_Devolution_West_Midlands.PDF (2017), 8.

58. *Ibid.*

59. *Ibid.*

60. *Ibid.*, 9; Bus Services Act 2017, *Ch.* 21. See: http://www.legislation.gov.uk/ukpga/2017/21/pdfs/ukpga_20170021_en.pdf.

61. Department for Communities and Local Government, “Devolution: a mayor for the West Midlands. What does it mean?”, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/608524/Plain_English_Guides_to_Devolution_West_Midlands.PDF (2017), 9.

the Clean Air Act 1956.⁶² They can also set emissions restrictions for construction under planning powers. They also have significant powers with regards to transport policy. For instance, local authorities are responsible for the establishment of CAZs. As will be detailed in Chapter Four, Birmingham City Council is due to introduce a CAZ in 2020. Licensing, for instance of taxi and PHV standards, is also a matter decided upon at the local authority level.⁶³

Currently, therefore, both the WMCA and its respective local authorities have different powers, especially with respect to transport policy, for tackling air pollution in the region.

Focus of this research

This report seeks to understand the scale, causes and consequences of air pollution in the ‘West Midlands’, specifically in the WMCA. It then proposes potential new transport measures to tackle air pollution which could be adopted by the WMCA and its respective local authorities.

This report seeks to answer the following four research questions:

1. What is the scale of air pollution in the West Midlands?
2. What are the main causes and consequences of air pollution in the West Midlands?
3. What do the public in the West Midlands think about the extent of, and policies on, air pollution?
4. What new transport policy measures could be adopted by the WMCA and its constituent local authorities to reduce air pollution in the West Midlands?

62. Clean Air Act 1956, *Ch. 52*. See: http://www.legislation.gov.uk/ukpga/1956/52/pdfs/ukpga_19560052_en.pdf.

63. Department for Communities and Local Government, “Devolution: a mayor for the West Midlands. What does it mean?”, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/608524/Plain_English_Guides_to_Devolution_West_Midlands.PDF (2017), 11.

The report is structured as follows:

- **Chapter Two** describes the methodologies employed, including an extensive literature review, expert stakeholder consultation, and public polling;
- **Chapter Three** outlines the scale of air pollution in the West Midlands, as well as its main causes and consequences. It also examines public attitudes to air pollution in the West Midlands;
- **Chapter Four** details the actions on transport policy that are currently being taken to reduce air pollution in the West Midlands by the WMCA and its respective local authorities, revealing a typology of transport policy interventions to reduce air pollution;
- **Chapter Five** recommends new transport policies that could be adopted by the WMCA and its respective local authorities for reducing air pollution in the West Midlands.

Chapter 2: Methodology

This report examines the scale of, causes of, consequences of, and public attitudes towards air pollution in the ‘West Midlands’, specifically WMCA. It concludes with transport policy recommendations, primarily for the WMCA, to reduce air pollution in the region.

This chapter explains in detail the methods employed to answer the research questions specified at the end of Chapter One.

Research techniques

We employed three research methods for this report.

- **Literature review.** An extensive literature review was conducted of existing UK and international evidence. This included:
 - Relevant academic work;
 - Think tank, civil society, and industry reports;
 - National and local government data, research, and policy papers.
- **Expert stakeholder consultation.** Bright Blue consulted with a number of leading academics, health professionals, politicians, opinion formers, campaigners and researchers, especially in the West Midlands. In particular, we consulted with representatives from local governments and the WMCA, as well as representatives from manufacturers and other businesses based in the West Midlands.
- **Public polling.** A nationally representative poll of UK adults, which included 351 respondents from the West Midlands, was undertaken to explore public attitudes towards the impact of

climate change and air pollution (see the Annex for the full list of air pollution questions). The polling was conducted by Opinium.

Polling

Polling was undertaken by Opinium through online interviews and conducted between 28th February and 5th March, 2018. It consisted of one large nationally representative sample of 4,007 UK adults. From this overall sample, we also produced two subsets, each individually weighted. The first was a sample of 1,422 British adults who were Conservative voters in the 2017 General Election. The second was a sample of 1,508 UK adults aged under 40. Each data set (the overall sample and the two subsets) was individually weighted in terms of age, gender, and region to reflect a nationally representative audience.

The polling allowed us to test and analyse the views of up to 351 people living in the ‘West Midlands region’. This included their views on such questions as to what extent a respondent was concerned about the impact of air pollution on the health of themselves and others, what sources of air pollution a respondent was most concerned about, whether a respondent thought the Government is currently doing enough to tackle air pollution, and who a respondent thought ought to be most responsible for dealing with air pollution.

Box 2.1 outlines the full cross-breaks used in the polling.

Box 2.1. Complete polling cross-breaks

- Gender
- Age
- Region
- Socio-economic grade
- Area
- 2017 General Election vote
- 2015 General Election vote
- EU Referendum vote

Finally, as already briefly described in Chapter One, it should be noted that the ‘West Midlands region’ is not strictly synonymous with the rest of the WMCA.

The ‘West Midlands region’ is made up of 30 local government districts, across six ceremonial counties: Herefordshire, Shropshire, Staffordshire, Warwickshire, Worcestershire, and the ‘West Midlands’ ceremonial county, which is formed of the constituent local authorities of the WMCA.

In terms of population, in 2017, the West Midlands region comprised of an estimated 5,751,000 people.⁶⁴ Of this number, an estimated 2,834,000 lived within the constituent local authorities of the WMCA.⁶⁵ Thus, in population terms, the WMCA is roughly half of the West Midlands region. The WMCA also contains many of the West Midlands’ largest towns and cities, such as Birmingham, Coventry, Walsall and Wolverhampton.

We are confident that the attitudes expressed from the polling of people living in the West Midlands region reflects those living in the WMCA. Likewise, we are confident that the policies we advocate for the WMCA are likely to improve air pollution across the West Midlands county and region. Throughout the report, we refer to West Midlands and WMCA synonymously; but, on occasions, the data that is reported requires us to distinguish between the West Midlands region and the WMCA, which we will make clear.

64. University of Birmingham, “West Midlands: databook 2017”, <https://www.birmingham.ac.uk/Documents/college-social-sciences/business/research/city-redi/west-midlands-databook-2017.pdf> (2017), 7-10.

65. Ibid.

Chapter 3: Air pollution in the West Midlands

Having in the introductory chapter identified what air pollution is, and the responsibilities of different layers of government in reducing it, including the WMCA and its constituent local authorities, this chapter outlines the scale of, consequences of, and public attitudes towards air pollution, specifically in the West Midlands.

Scale of air pollution in the West Midlands

Air pollution is a serious problem in the West Midlands. As mentioned in Chapter One, DEFRA maintains a Daily Air Quality Index (DAQI) which monitors air pollution in an area, and assigns a number to that area based on available data, on a scale of one to ten, with a higher number representing more air pollution.⁶⁶ The DAQI is made up of a basket of different air pollutants, those being: NO₂, SO₂, O₃, PM_{2.5}, and PM₁₀.

Research on different local authorities in or just outside of the WMCA⁶⁷ found that the number of times a DAQI rating of at least ‘four’ (indicating ‘moderate’ to ‘very high’ air pollution levels) was recorded

66. Department for Environment, Food and Rural Affairs, “Daily Air Quality Index”, <https://uk-air.defra.gov.uk/air-pollution/daq> (2018).

67. The specific piece of research referenced included some non-constituent WMCA local authorities, which are located in the periphery of the seven constituent WMCA local authorities.

in 2016 was 40 incidences.⁶⁸ This does, admittedly, represent a decline from a peak of 60 incidences in 2011, but this level of air pollution is higher than most other regions of the UK. The area including the local authorities in or just outside the WMCA has significantly higher air pollution than others: most Combined Authorities were below 20 incidences in 2016.⁶⁹

Identifying the exact air pollutants causing this relatively high level of air pollution in and just around the WMCA is difficult. Unfortunately, there is a general paucity of detailed data on air pollution in the UK. Indeed, one of the measures detailed in the Government's most recent draft Air Quality Strategy was to provide £10 million of investment to "improve modelling, data and analytical tools to give a more precise picture of current and future air quality" in the UK.⁷⁰

Reporting specific air pollutants is therefore challenging and limited because the data is highly fragmented. Better information, however, does tend to exist for the pollutants which are some of the biggest contributors to UK air pollution, and are most commonly focused upon, namely PM and NO_x. Specifically, data on PM and NO_x can be shown at the local level.

It should also be noted that PM and NO_x are also highly associated with transport. DEFRA estimates that transport is responsible for 51% of NO_x emissions (rising to at least 80% of 'near roadside' emissions), and is a principal source of PM pollution.⁷¹ This is of particular relevance for the purposes of this report, given that many of the local authorities in the WMCA also regard transport as a leading, if not

68. Sustainability West Midlands, "Combined Authority sustainability benchmarking", <http://www.sustainabilitywestmidlands.org.uk/wp-content/uploads/WMCA-Sustainability-Metrics-Report-vFinal-July-2017.pdf> (2017), 25.

69. Ibid.

70. Department for Environment, Food and Rural Affairs, "Clean Air Strategy 2018", https://consult.defra.gov.uk/environmental-quality/clean-air-strategy-consultation/supporting_documents/Clean%20Air%20Strategy%202018%20Consultation.pdf (2018), 19.

71. Department for Environment, Food and Rural Affairs, "Clean Air Strategy 2018", https://consult.defra.gov.uk/environmental-quality/clean-air-strategy-consultation/supporting_documents/Clean%20Air%20Strategy%202018%20Consultation.pdf (2018), 12, 14.

primary, sector responsible for general air pollution in their area.⁷² And, as will be explained later, our recommendations will focus on transport policy.

In 2014, Public Health England (PHE) published for the first time detailed and highly-granular statistics which provided key information on levels of anthropogenic PM_{2.5} concentrations.⁷³ It showed that annual mean anthropogenic PM_{2.5} in the average (median) WMCA local authority was estimated at 11.1 µg/m³. This means that annual mean anthropogenic PM_{2.5} concentrations are slightly more than 12% higher in the average WMCA local authority than the rest of the country. Table 3.1 below outlines the annual mean anthropogenic PM_{2.5} levels in each of the seven constituent local authorities which make up the WMCA in 2014, and how much this differs from the average for the whole of England.

72. Birmingham City Council, “2016 Air Quality Annual Status Report (ASR)”, https://www.birmingham.gov.uk/download/downloads/id/8999/air_quality_annual_status_report_2016.pdf (2017); Coventry City Council, “2017 Air Quality Annual Status Report (ASR)”, http://www.coventry.gov.uk/downloads/file/27350/2017_air_quality_annual_status_report_asr (2018); Dudley Metropolitan Borough Council, “2017 Air Quality Annual Status Report (ASR) for Dudley MBC”, <https://www.dudley.gov.uk/media/7177/annual-aqr-2017.pdf> (2017); Sandwell Metropolitan Borough Council, “2017 Air Quality Annual Status Report (ASR) for Sandwell Metropolitan Borough Council”, http://www.sandwell.gov.uk/download/downloads/id/26229/air_quality_annual_status_report_2017.pdf (2017); Sandwell Metropolitan Borough Council, “Sandwell Metropolitan Borough Council Air Quality Action Plan 2018-2023”, http://www.sandwell.gov.uk/download/downloads/id/26079/air_quality_action_plan_2018_-_2023.pdf (2017); Solihull Metropolitan Borough Council, “2017 Air Quality Annual Status Report (ASR)”, <http://www.solihull.gov.uk/Portals/0/StrategiesPlansPolicies/Air-Quality-Status-Report-2017.pdf> (2017); City of Wolverhampton Council, “2017 Air Quality Annual Status Report (ASR) for City of Wolverhampton Council”, <http://www.wolverhampton.gov.uk/CHttpHandler.ashx?id=13926&p=0> (2017); Walsall Council, “2016 Air Quality Annual Status Report (ASR)”, https://go.walsall.gov.uk/Portals/0/images/importedddocuments/air_quality_annual_status_report_2016_walsall_council.pdf (2017).

73. Public Health England, “Estimates of mortality in local authority areas associated with air pollution”, <https://www.gov.uk/government/news/estimates-of-mortality-in-local-authority-areas-associated-with-air-pollution> (2014).

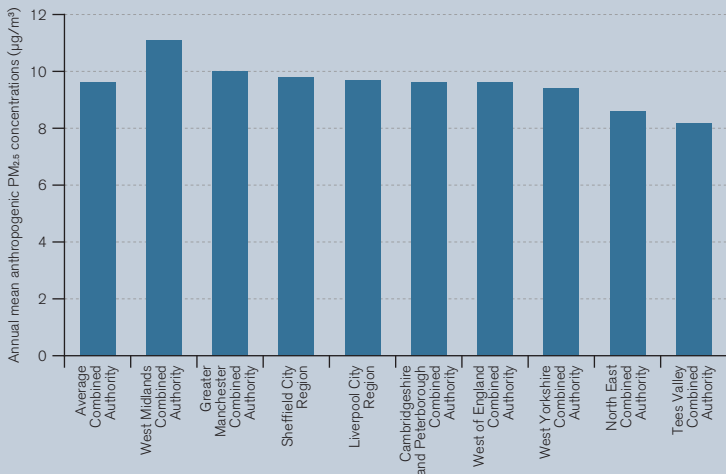
Table 3.1. Levels of annual anthropogenic PM_{2.5} in the WMCA, 2014

WMCA Constituent Authority	Mean annual anthropogenic PM _{2.5} (plus percentage difference with national average)
Birmingham City Council	11.4 µg/m ³ (↑15.2%)
Coventry City Council	11.1 µg/m ³ (↑12.1%)
Dudley Metropolitan Borough Council	10.5 µg/m ³ (↑6.1%)
Sandwell Metropolitan Borough Council	12.2 µg/m ³ (↑23.2%)
Solihull Metropolitan Borough Council	10.7 µg/m ³ (↑8.1%)
Walsall Council	11.3 µg/m ³ (↑14.1%)
City of Wolverhampton Council	10.2 µg/m ³ (↑3%)
Average WMCA local authority	11.1 µg/m ³ (↑12.1%)
Average for whole of England	9.9 µg/m ³

Source: Public Health England, "Estimating local mortality burdens associated with particulate air pollution", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf (2014), 10-13.

Compared to the rest of the other combined authorities in England, the WMCA ranks as the worst in terms of annual mean anthropogenic PM_{2.5} concentrations in 2014. Chart 3.1 below shows the full list of estimated averages (medians) for a local authority in each of the combined authorities in England.

Chart 3.1. Annual mean anthropogenic PM_{2.5} concentrations (µg/m³) in the average local authority in each combined authority in England, 2014



Source: Public Health England, “Estimating local mortality burdens associated with particulate air pollution”, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf (2014).

As can be seen in Chart 3.1, the average local authority in the WMCA had an annual mean anthropogenic PM_{2.5} concentration of 11.1 µg/m³ in 2014, making it the highest of all combined authorities in England. Thus, the average WMCA local authority had annual mean anthropogenic PM_{2.5} concentrations over 15% higher than the average local authority across all combined authorities in England (9.6 µg/m³) in 2014.

Greater London is not included in the list because it is not technically a combined authority. However, for the sake of comparison, the average local authority across all of London’s 32 boroughs had a mean anthropogenic PM_{2.5} concentration of 12.7 µg/m³ in 2014.

Consequences of air pollution in the West Midlands

As was highlighted in Chapter One, there is a substantial body of evidence which points to major impacts of air pollution on human health.

On health, Tables 3.2 and 3.3 illustrate the prevalence of both preventable cardiovascular and respiratory diseases in those aged 75 years old or under in the seven constituent authorities of the WMCA, from 2014 to 2016. These years are the latest for which data are available. Preventable respiratory and cardiovascular diseases have a multitude of causes. Yet, research suggests there is a strong correlation between levels of air pollution – particularly from PM and NO_x – and prevalence of these preventable conditions.⁷⁴

Table 3.2. Under 75 mortality rate from cardiovascular diseases considered preventable, 2014-16

WMCA Constituent Authority	Count	Directly standardised rate per 100,000 (plus percentage difference with national average)
Birmingham City Council	1,333	63 (↑34.9%)
Coventry City Council	400	57.8 (↑23.8%)
Dudley Metropolitan Borough Council	406	47.4 (↑1.5%)
Sandwell Metropolitan Borough Council	479	68.6 (↑46.9%)
Solihull Metropolitan Borough Council	227	39.2 (↓16.1%)
Walsall Council	396	59.1 (↑26.6%)
City of Wolverhampton Council	381	65.4 (↑40%)
Average for WMCA	517	57.2 (↑22.5%)
Whole of England	63,811	46.7

Source: Public Health England, "Public health outcomes framework: 4.04ii – Under 75 mortality rate from cardiovascular diseases considered preventable", <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000044/pat/6/par/E12000005/ati/102/are/E08000025/iid/40402/age/163/sex/4> (2018).

74. Byeong-Jae Lee, Bumseok Kim and Kyuhong Lee, "Air pollution exposure and cardiovascular disease", *Toxicology Research*, Vol. 30, No. 2 (2013), 71-75; Robert D. Brook et al., "Air pollution and cardiovascular disease", *Circulation*, Vol. 109, Iss. 21 (2004), 2655-2671; Robert, D. Brook et al., "Particulate matter air pollution and cardiovascular disease", *Circulation*, Vol. 121, Iss. 21 (2010), 2331-2378.

Table 3.3. Under 75 mortality rate from respiratory diseases considered preventable, 2014-16

WMCA Constituent Authority	Count	Directly standardised rate per 100,000 (plus percentage difference with national average)
Birmingham City Council	476	23.7 (↑27.4%)
Coventry City Council	167	24.6 (↑32.3%)
Dudley Metropolitan Borough Council	177	20.7 (↑11.3%)
Sandwell Metropolitan Borough Council	162	24.2 (↑30.1%)
Solihull Metropolitan Borough Council	71	17.7 (↓4.8%)
Walsall Council	148	22.1 (↑18.8%)
City of Wolverhampton Council	125	22 (↑18.3%)
Average for WMCA	189.4	22.1 (↑18.8%)
Whole of England	24,989	18.6

Source: Public Health England, "Public health outcomes framework: 4.07ii - Under 75 mortality rate from respiratory disease considered preventable", <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework/data#page/3/gid/1000044/pat/6/par/E12000005/atii/102/are/E08000025/iid/40702/age/163/sex/4> (2018).

As both Table 3.2 and 3.3 indicate, when compared to the national average for the whole of England, six of the seven constituent local authorities have higher incidence levels of these preventable diseases between 2014 and 2016. Worryingly, some – including Sandwell Metropolitan Borough Council, Birmingham City Council, and the City of Wolverhampton Council – have considerably higher rates of these preventable diseases than across the whole of England. It is worth noting that, for Sandwell Metropolitan Borough Council and Birmingham City Council in particular, these are also local authorities with significantly high annual concentrations of anthropogenic PM_{2.5}, as shown in Table 3.1.

Most severely, air pollution has been linked to premature death.⁷⁵ Air

75. Committee on the Medical Effects of Air Pollutants, "Statement on the evidence for the effects of nitrogen dioxide on health", https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/411756/COMEAP_The_evidence_for_the_effects_of_nitrogen_dioxide.pdf (2015), 1; Byeong-Jae Lee, Bumseok Kim and Kyuhong Lee, "Air pollution exposure and cardiovascular disease", *Toxicology Research*, Vol. 30, No. 2 (2013), 71-75; Robert D. Brook et al., "Air pollution and cardiovascular disease", *Circulation*, Vol. 109, Iss. 21 (2004), 2655-2671; Robert D. Brook et al., "Particulate matter air pollution and cardiovascular disease", *Circulation*, Vol. 121, Iss. 21 (2010), 2331-2378.

pollution contributes towards premature death in a number of different ways – for example, particulate matter can trigger asthma attacks,⁷⁶ and prolonged exposure to dirty air has been found to reduce lung capacity,⁷⁷ and cause cardiovascular disease.⁷⁸ More recent research has even linked air pollution to the onset of dementia,⁷⁹ and cancer.⁸⁰

A seminal report published jointly by the Royal College of Physicians and Royal College of Paediatrics and Child Health in 2016 estimated that poor ambient air quality in the UK was responsible for an estimated 40,000 premature deaths a year.⁸¹

In 2014, PHE estimated that, across the WMCA, 1,460 excess deaths were caused by excess particulate air pollution, and almost 16,000 lost life-years.⁸² Over a third of these deaths were estimated to be in Birmingham City Council (520), followed by 198 in Sandwell Metropolitan Borough Council, 173 in Dudley Metropolitan Borough Council, 168 in Coventry City Council, 155 in Walsall Council, 139 in the City of Wolverhampton Council, and 107 in Solihull Metropolitan Borough Council.⁸³ Of course, PM – as the pollutant these figures refer to – is not the only air pollutant that is linked to premature death. Therefore, these figures could actually be conservative estimates for the total impact of air pollution on premature deaths in the WCMA (although caution must be paid to the possibility of double-counting,

76. Asthma UK, “Air pollution”, <https://www.asthma.org.uk/advice/triggers/pollution/> (2018).

77. Bert Brunekreef and Stephen Holgate, “Air pollution and health”, *The Lancet*, Vol. 360, Iss. 9341 (2002), 1233-1242.

78. Robert D. Brook et al., “Particulate matter air pollution and cardiovascular disease”, *Circulation*, Vol. 121, No. 21 (2010), 2331-2378.

79. Anna Oudin et al., “Traffic-related air pollution and dementia incidence in northern Sweden: a longitudinal study”, *Environmental Health Perspectives*, Vol. 124, No. 3 (2016), 306-312.

80. Andrea Martoni, “Air pollution and cancer”, in Fabio Capello and Antonia Vittorino Gaddi (eds.), *Clinical Handbook of Air Pollution-related Diseases* (Cham: Springer, 2018); Kat Lay, “Air pollution linked to higher mouth cancer risk”, *The Times*, 10 October, 2018.

81. Royal College of Physicians and Royal College of Paediatrics and Child Health, “Every breath we take: the lifelong impact of air pollution”, <https://www.rcplondon.ac.uk/file/2916/download?token=5dnlDovZ> (2016).

82. Jonathan Walker, “Unclean air is costing 1,500 lives in West Midlands”, *Birmingham Post*, 14 July, 2014; Public Health England, “Estimating local mortality burdens associated with particulate air pollution”, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf (2014).

83. *Ibid.*

which can be a pathology in quantifying the impacts of air pollution).⁸⁴

Other data confirm that the West Midlands is experiencing a higher fraction of deaths attributable to air pollution on average than the rest of England. This can be shown by focusing on the link between exposure to PM_{2.5} and premature deaths. As Table 3.4, below, shows the fraction of deaths attributable to long-term exposure to anthropogenic PM_{2.5} air pollution in each region of the WMCA in 2010 was higher than the average for the whole of England. The average local authority within the WMCA had a rate 11% higher than the national average, but in the worst offending local authority – Sandwell Metropolitan Borough Council – it is over 23% higher.

Table 3.4. Fraction of deaths attributable to long-term exposure to anthropogenic PM_{2.5} in the WMCA, 2010

WMCA Constituent Authority	Fraction of deaths attributable to long-term exposure to anthropogenic PM _{2.5} (%) (plus percentage difference with national average)
Birmingham City Council	6.4% (↑14.3%)
Coventry City Council	6.2% (↑10.7%)
Dudley Metropolitan Borough Council	5.9% (↑5.4%)
Sandwell Metropolitan Borough Council	6.9% (↑23.2%)
Solihull Metropolitan Borough Council	6.0% (↑7.1%)
Walsall Council	6.4% (↑14.3%)
City of Wolverhampton Council	5.8% (↑3.6%)
Average WMCA local authority	6.2% (↑10.7%)
Average for whole of England	5.6%

Source: Public Health England, "Estimating local mortality burdens associated with particulate air pollution", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/332854/PHE_CRCE_010.pdf (2014), 10-13.

84. Heather Walton et al., "Understanding the health impacts of air pollution in London", https://www.london.gov.uk/sites/default/files/HIAinLondon_KingsReport_14072015_final_0.pdf (2015); Bart Ostro, "Outdoor air pollution: assessing the environmental burden of disease at national and local levels", https://www.who.int/quantifying_ehimpacts/publications/ebd5.pdf (2004).

The data, albeit slightly dated, suggests that the WMCA experiences, compared to the rest of England, relatively higher under 75 mortality rates from cardiovascular disease considered preventable, relatively higher under 75 mortality rates from respiratory disease considered preventable, and relatively higher proportions of deaths attributable to long-term exposure to anthropogenic PM_{2.5}.

Public attitudes to air pollution in the West Midlands

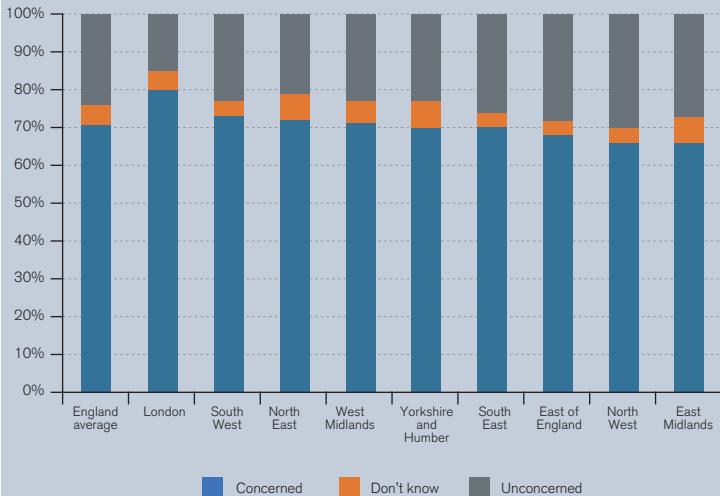
Air pollution not only impacts upon health and productivity, but also public attitudes. We sought to understand the extent of public concern in the West Midlands region about air pollution, based on the polling which we conducted, the methodology of which was outlined in Chapter Two.

As Chart 3.2 below demonstrates, 72% of respondents in the West Midlands region are ‘concerned’ about the impact of air pollution on the health of themselves and others. The term ‘concerned’ here relates to the net responses of ‘somewhat concerned’ and ‘very concerned’. We apply this approach to the reporting of polling data in all instances henceforth. Respondents in the West Midlands region, therefore, are marginally more concerned than the national average about the health impacts of air pollution (71%). The only regions with noticeably higher levels of concern are London (80%) and the South West (73%). Respondents in the West Midlands region are significantly more concerned than those in regions such as the North West and the East Midlands (66%).

Chart 3.3 further below illustrates the sources of air pollution which respondents in the West Midlands region are most concerned about. When asked to pick their top three, 45% of adults in the West Midlands region chose heavy industry, 32% chose diesel vehicles, and 31% chose coal-fired power stations. The sources which we polled which registered the least concern were outdoor wood fires (2%), open wood fires in people’s homes (6%), and wood-burning stoves (6%).

Interestingly, although the exact causes of air pollution in the

Chart 3.2. Concern for the health impacts of pollution on a respondent or their family, by region

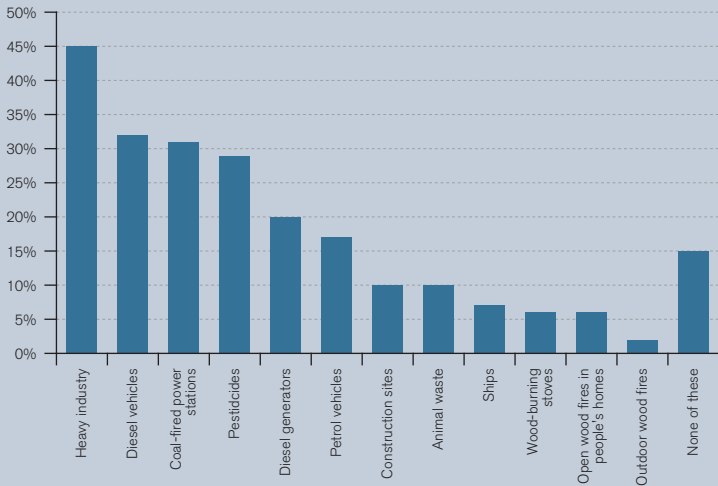


Base: 351 adults in the West Midlands region

West Midlands have not been monitored sufficiently or quantified, many local authorities report in their AQASRs and Action Plans (as mentioned in Chapter One) that transport is the leading cause of air pollution in their area.⁸⁵

85. Birmingham City Council, “2016 Air Quality Annual Status Report (ASR)”, https://www.birmingham.gov.uk/download/downloads/id/8999/air_quality_annual_status_report_2016.pdf (2017); Coventry City Council, “2017 Air Quality Annual Status Report (ASR)”, http://www.coventry.gov.uk/downloads/file/27350/2017_air_quality_annual_status_report_asr (2018); Dudley Metropolitan Borough Council, “2017 Air Quality Annual Status Report (ASR) for Dudley MBC”, <https://www.dudley.gov.uk/media/7177/annual-aqr-2017.pdf> (2017); Sandwell Metropolitan Borough Council, “2017 Air Quality Annual Status Report (ASR) for Sandwell Metropolitan Borough Council”, http://www.sandwell.gov.uk/download/downloads/id/26229/air_quality_annual_status_report_2017.pdf (2017); Sandwell Metropolitan Borough Council, “Sandwell Metropolitan Borough Council Air Quality Action Plan 2018-2023”, http://www.sandwell.gov.uk/download/downloads/id/26079/air_quality_action_plan_2018_-_2023.pdf (2017); Solihull Metropolitan Borough Council, “2017 Air Quality Annual Status Report (ASR)”, <http://www.solihull.gov.uk/Portals/0/StrategiesPlansPolicies/Air-Quality-Status-Report-2017.pdf> (2017); City of Wolverhampton Council, “2017 Air Quality Annual Status Report (ASR) for City of Wolverhampton Council”, <http://www.wolverhampton.gov.uk/CHttpHandler.ashx?id=13926&p=0> (2017); Walsall Council, “2016 Air Quality Annual Status Report (ASR)”, https://go.walsall.gov.uk/Portals/0/images/importedddocuments/air_quality_annual_status_report_2016_walsall_council.pdf (2017).

Chart 3.3. Sources of air pollution which respondents are most concerned about, West Midlands region

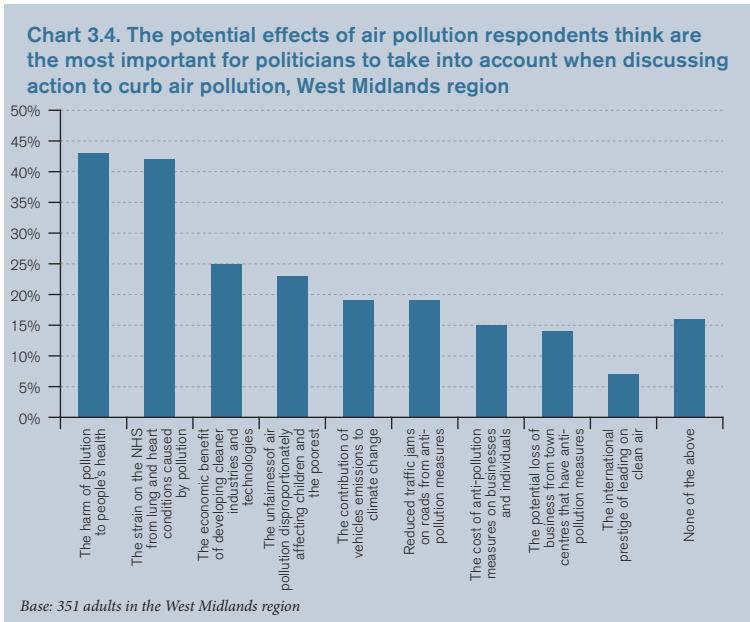


Base: 351 adults in the West Midlands region

Adults in the West Midlands region typically have broadly similar views to the rest of the country in terms of the sources of air pollution which they are most concerned about. However, two sources stood out as displaying the most variance in opinion. Whilst 38% of UK adults selected diesel vehicles as one of their top three most concerning sources, only 32% of adults resident in the West Midlands did. Similarly, whilst 22% of UK adults selected petrol vehicles as one of their top three most concerning sources, only 17% of adults resident in the West Midlands did. Interestingly, each of these are obviously both transport related.

We were keen to understand what adults in the West Midlands region thought were the most important effects of air pollution to consider when politicians are discussing the issue. We asked respondents to choose up to three options from a predetermined list of commonly cited impacts or consequences of poor air quality, or policies to reduce it. The effect chosen by most people was the harm air pollution can have for

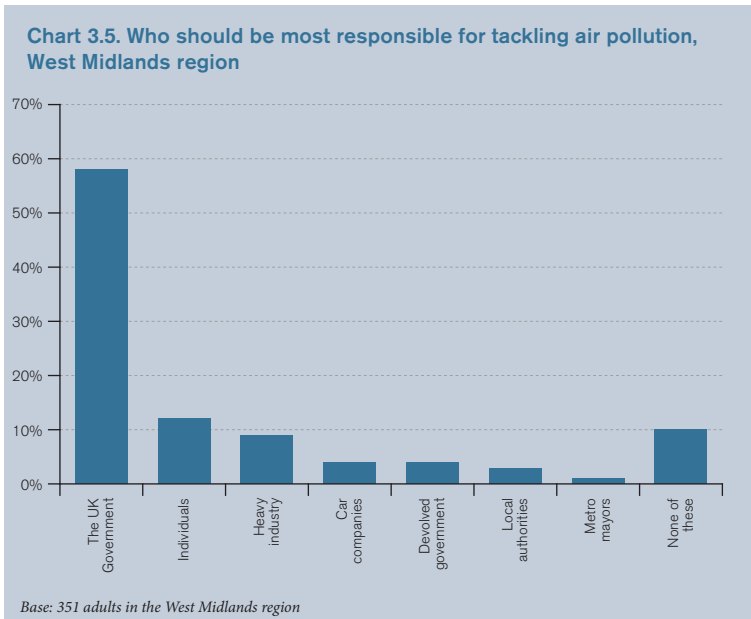
people’s health (43%), closely followed by the strain on the NHS from lung and heart conditions caused by air pollution (42%). After that, a quarter state that the economic benefit of developing cleaner industries and technologies should be kept in mind when discussing tackling air pollution. This is shown in Chart 3.4, below.



The least selected responses in the West Midlands region were the international prestige of leading on clean air (7%), the potential loss of business from town centres that have anti-pollution measures (14%), and the cost of anti-pollution measures on businesses and individuals (15%). Adults in the West Midlands region typically matched the rest of the country in terms of their views on the question of what potential effects politicians should take into account when discussing actions to curb air pollution.

Several different actors all have some role to play with regards to air pollution in the UK. As discussed in Chapter One, local authorities typically assume primary responsibility for ensuring that air quality targets are met, but our polling illustrated that a clear majority of respondents in the West Midlands region (58%) think that Central Government should be the most responsible actor for tackling air pollution, as can be seen in Chart 3.5 below. Indeed, more people selected this answer than all of the other responses combined. In fact, only 4% of adults in the West Midlands region think devolved government is most responsible, only 3% think local authorities, and only 1% of adults think metro mayors.

However, it must be recognised that with regards to this question, we asked who respondents thought should be *most* responsible. Therefore, it cannot be ruled out that respondents thought that other actors should also take some responsibility, even if not quite to the same degree as Central Government.



Respondents in the West Midlands region were generally in line with the national average in terms of who they thought should be most responsible for tackling air pollution. Yet whilst all regions overwhelmingly opt for the UK Government being the most responsible actor, there are still a few instances of regional differentiation in views. Interestingly, though perhaps not unexpectedly, London – for which their Mayor is now a prominent figurehead – was significantly more likely to believe the Mayor should be the most responsible actor, five percentage points higher than the national average.

Conclusion

Whilst Chart 3.5 shows that the majority of adults in the West Midlands region think that the UK Government should be most responsible for tackling air pollution, this report does assume that local government, including the WMCA, and the local authorities of which it is comprised, do and should play a leading role in tackling air pollution.

Considering the scale and consequences of air pollution in the West Midlands highlighted in this chapter, the next chapter considers the current powers and policies which the WMCA has to tackle the real and immediate problem of air pollution.

Chapter 4: **Transport policies to tackle air pollution in the West Midlands**

Chapter Three examined the scale of, consequences of, and public attitudes towards, air pollution within the West Midlands. This chapter outlines the historical and current transport policies which have been adopted to reduce air pollution in the WMCA and in its respective local authorities, as well as in other international cities. The chapter concludes with a typology of the different types of transport policy approaches that can be adopted to tackle air pollution.

As mentioned throughout this report, and especially in Chapter One, in recent years, there has been an increase in evidence and interest on the causes and consequences of air pollution. Unsurprisingly, central and local governments, including in the West Midlands, have responded to this, using in particular the transport powers they have.

The different pollutants that cause air pollution derive from a number of different sources, but road transport is a major cause, especially of NO_x and PM.⁸⁶ Transport, unlike other major sources of air pollution, is also a very devolved policy area, with local and combined authority governments acquiring an increasing number of different powers pertaining to it. That is why our focus for the rest of the paper is on

86. Department for Environment, Food and Rural Affairs, “Clean Air Strategy 2018”, https://consult.defra.gov.uk/environmental-quality/clean-air-strategy-consultation/supporting_documents/Clean%20Air%20Strategy%202018%20Consultation.pdf (2018).

reporting existing – and proposing new – transport policies for the various West Midlands authorities.

Historical transport policies to reduce air pollution in the West Midlands

As described in Chapter One, local authorities with AQMAs are obligated to produce AQASRs and Action Plans on air quality. Six of the seven constituent local authorities in the WMCA were mandated to establish AQMAs in the 2000s, and thus produce AQASRs and Action Plans accordingly. AQASRs and Action Plans provide details on air quality within the area in question and actions which the local authority has committed to implementing. Thus, in recent decades, local authorities in the West Midlands have discussed through these official reports, and have had transport policies for, improving air quality. Indeed, these reports represent much of the most authoritative information available on the transport policies which local authorities have implemented historically, or stated a desire to implement at the time.

Sandwell Metropolitan Borough Council, for example, released in 2009 an Action Plan for tackling poor air quality. Amongst measures it stated it had already implemented were policies such as: a general policy of using biodiesel up to a 5% blend were applicable; downsizing vehicles (by weight) where applicable to save fuel, and thus minimise emissions; and, running campaigns to promote car sharing across the authority.

The report also detailed a number of policies which the Council intended to implement to reduce air pollution, such as: greater red routing (with the intention of improving traffic flows) to reduce congestion; improving bus stops with better shelters and electronic display boards which show travel information in real time; upgrading pedestrian crossings; teaching council staff who use council vehicles to drive in a more environmentally sensitive fashion; and, improving the

council fleet in general to higher Euro standards.⁸⁷

Coventry City Council, similarly, have long had various different transport policies in place to reduce air pollution in its area. In its 2010 Action Plan, it included policies it had in place such as: more strictly enforcing parking violations (thus disincentivising private car travel); promoting ‘walking buses’ for children to and from local schools; and, relocating a taxi rank away from an already congested area, thereby lowering pollution concentrations and easing congestion.⁸⁸

In 2008, Birmingham City Council released an Action Plan of its own on measures which had been – or were at the time about to be – implemented to tackle air pollution. Incidentally, mentioned in this report was the possibility of the city centre congestion charging, somewhat similar to the current plans for the CAZ which is due for implementation in 2020, but other examples of transport policies included: encouraging more residents to live within the city centre (for which walking, cycling, or using public transport would consequently become a more viable mode of transport for residents); creating advanced stop lines for cyclists so as to give them a head start on motorised vehicles at junctions; and, a presumption in favour of mixed-use developments (whereby residents could more easily access shops and alike by foot, rather than needing to drive to and from them).⁸⁹

Dudley Metropolitan Borough Council in 2010 also published an Action Plan documenting the progress which it had made on improving air quality. Again, it included several policies which it had implemented to make alternatives to private motor travel more attractive, such as: improving junctions to make cyclists feel safer (and thus incentivise the uptake of cycling); enhancing footpaths and pavements (for example widening and resurfacing them, with the aim of promoting greater

87. Sandwell Metropolitan Borough Council, “Air Quality Action Plan”, http://www.sandwell.gov.uk/downloads/file/760/air_quality_action_plan_2009 (2009).

88. Coventry City Council, “2010 air quality progress report for Coventry City Council”, http://www.coventry.gov.uk/downloads/file/4096/progress_report_2010 (2010).

89. Birmingham City Council, “Air Quality Action Plan Progress Report 2007”, https://uk-air.defra.gov.uk/assets/documents/no2ten/Local_zone2_Birmingham_AQActionplan_1.pdf (2008).

levels of walking); and, developing priority bus lanes.⁹⁰

There have certainly been examples of innovative and forward-thinking transport policies to take action on dirty air in some local authorities of the West Midlands historically. Yet much of these historical reports on air quality consisted of vague and unambitious assertions – commonly, stating a desire to simply ‘promote’ walking, or cycling, or use of public transport.

Encouragingly, perhaps reflective of an improved understanding about the scale and consequences of air pollution and the efficacy of different solutions to reducing it, reports written and policies adopted by local authorities in the WMCA in recent times have become relatively more detailed, and ambitious.

Current transport policies to reduce air pollution in the West Midlands

All of the local authorities in the WMCA now have transport policies to specifically tackle air pollution. Box 4.1 below outlines the details of the current main transport policies adopted by each local authority within the WMCA.

Box 4.1. Current transport policies by local authorities in the WMCA to reduce air pollution

Birmingham City Council. An AQMA was established by this Council in 2005, as a result of excessive PM₁₀ and NO₂ levels. According to their 2016 AQASR, road transport is the primary source of air pollution in the area. The main transport policies they have already implemented to tackle air pollution, as described in their 2016 AQASR, include: increasing park and ride schemes; providing electric charging infrastructure; and, improving the bus

90. Dudley Metropolitan Borough Council, “2010 Air Quality Progress Report”, https://laqm.defra.gov.uk/documents/506_Dudley_MBC_Progress_Report_2010_1.1.pdf (2010).

fleet.⁹¹ Importantly, in 2015, the UK Government announced that a CAZ will be introduced in Birmingham (alongside four other cities: Derby, Nottingham, Southampton and Leeds) to improve air quality, specifically through reducing levels of NO_x.⁹² This CAZ will be introduced in 2020, and will be administered by Birmingham City Council.⁹³

Coventry City Council. An AQMA was established by this Council in 2009, as a result of excessive NO₂ levels. Road transport – specifically congestion – was identified as a key priority, in their 2017 AQASR, for addressing air pollution in Coventry. The main transport policies which have been introduced to tackle air pollution, as described in their 2017 AQASR, include: traffic flow improvements; creating better cycling infrastructure, such as dedicated cycling routes; and, creating a pedestrian thoroughfare from the railway station to the city centre to promote walking.⁹⁴ Ongoing measures include promoting ‘green travel plans’ amongst council staff (for example, encouraging car sharing and cycling, and teaching ‘defensive driving’), establishing park and ride schemes, and improving infrastructure around Coventry Station to increase capacity and thus make it a more attractive means of transportation.⁹⁵

Dudley Metropolitan Borough Council. An AQMA was established by this Council in 2007 for excessive NO₂ levels. Combustion, primarily from road vehicle engines, was identified

91. Birmingham City Council, “2016 Air Quality Annual Status Report (ASR)”, https://www.birmingham.gov.uk/download/downloads/id/8999/air_quality_annual_status_report_2016.pdf (2017).

92. A CAZ is an area “where only the cleanest vehicles are encouraged (through the use of vehicle emissions standards) and action is focussed to improve air quality”; Department for Environment, Food and Rural Affairs, “Improving air quality in the UK: talking nitrogen dioxide in our towns and cities”, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/486636/aq-plan-2015-overview-document.pdf (2015).

93. *Ibid.*

94. Coventry City Council, “2017 Air Quality Annual Status Report (ASR)”, http://www.coventry.gov.uk/downloads/file/27350/2017_air_quality_annual_status_report_asr (2018).

95. *Ibid.*

– in their 2017 AQASR – as the primary source of NO₂ in the local authority. The main transport policies which have been introduced to tackle air pollution, as described in their 2017 AQASR, include: utilising DEFRA funding to retrofit public transport vehicles; improving passenger information on public transport so as to make it a more attractive form of travel; campaigning against vehicle idling; and, introducing speed limits of 20 miles per hour on certain roads.⁹⁶ Also detailed in the report was a plan to introduce traffic management measures which improve traffic flow and reduce congestion, and to undertake resurfacing works in a number of locations which ought to incentivise cycling in the area.⁹⁷

Sandwell Metropolitan Borough Council. An AQMA was established by this Council in 2005 for excessive NO₂ levels. Road transport was identified as the primary source of air pollution in their 2017 AQASR. The main transport policies to tackle air pollution, as described in their 2017 AQASR, include: red routing major arterial routes; altering junctions to improve traffic flow, and thus reduce emissions; and, promoting a modal shift towards ‘active transport’ through policies such as improving road markings for cyclists, and maintaining or improving street lighting where necessary to ensure pedestrians feel safe.⁹⁸ Sandwell Metropolitan Borough Council also stated an intention to carry out a full review of council vehicle use with respect to emissions profiling, and to strengthen promotional and educational efforts amongst council

96. Dudley Metropolitan Borough Council, “2017 Air Quality Annual Status Report (ASR) for Dudley MBC”, <https://www.dudley.gov.uk/media/7177/annual-aqr-2017.pdf> (2017).

97. Ibid.

98. Sandwell Metropolitan Borough Council, “2017 Air Quality Annual Status Report (ASR) for Sandwell Metropolitan Borough Council”, http://www.sandwell.gov.uk/download/downloads/id/26229/air_quality_annual_status_report_2017.pdf (2017); Sandwell Metropolitan Borough Council, “Sandwell Metropolitan Borough Council Air Quality Action Plan 2018-2023”, http://www.sandwell.gov.uk/download/downloads/id/26079/air_quality_action_plan_2018_-_2023.pdf (2017).

staff regarding ultra-low emission vehicle technologies.⁹⁹

Solihull Metropolitan Borough Council. This Council is the only one in the WMCA to not have any declared AQMAs. But it does produce AQASRs to fulfil the requirements of the Environment Act 1995. The main transport policies to tackle air pollution, as described in their 2017 AQASR, include: creating dedicated bus- and bicycle-only lanes in the town centre; introducing an off-carriage cycle lane; piloting restrictions on traffic leaving or entering certain roads around schools at key times during term time; trialling electric vehicles (EVs) in the council fleet.¹⁰⁰ Also detailed in the AQASR was the intention to establish a bike loan scheme for council staff.¹⁰¹

City of Wolverhampton Council. An AQMA was established by this Council in 2005 for excessive NO₂ and PM₁₀ levels. The main transport policies to tackle air pollution, as described in their 2017 AQASR, include: rerouting traffic to take vehicles away from the city centre; pedestrianising city centre roads; upgrading all buses to Euro VI standards by 2021-22; upgrading traffic signals so as to give buses priority; and, changing 80 pelican crossings to puffin crossings, which should reduce the need for vehicles to stop and start (and thus lower emissions levels, given that accelerating and decelerating are relatively more intensive in terms of producing air pollutants).¹⁰²

Walsall Council. An AQMA was established by this Council in 2006 for excessive NO₂ levels. Afterwards, an AQMA was

99. Sandwell Metropolitan Borough Council, "2017 Air Quality Annual Status Report (ASR) for Sandwell Metropolitan Borough Council", http://www.sandwell.gov.uk/download/downloads/id/26229/air_quality_annual_status_report_2017.pdf (2017).

100. Solihull Metropolitan Borough Council, "2017 Air Quality Annual Status Report (ASR)", <http://www.solihull.gov.uk/Portals/0/StrategiesPlansPolicies/Air-Quality-Status-Report-2017.pdf> (2017).

101. Ibid.

102. City of Wolverhampton Council, "2017 Air Quality Annual Status Report (ASR) for City of Wolverhampton Council", <http://www.wolverhampton.gov.uk/CHttpHandler.ashx?id=13926&p=0> (2017).

established in 2008 for a discrete two-acre area for excessive PM₁₀. The Council, in their 2016 AQASR, has identified air pollution in areas within the vicinity of the M6 Motorway, and main arterial roads, as particularly problematic. The main transport policies to tackle air pollution, as described in their 2016 AQASR, include: participating in the DEFRA-funded West Midlands Low Emissions Towns and Cities Programme;¹⁰³ red routing certain roads to improve traffic flow; and, upgrading traffic signals to ease congestion.¹⁰⁴

As mentioned in Chapter One, the recently established WMCA also has several powers, including over transport in the region. Table 4.1 summarises the main powers the WMCA and its respective local authorities have over transport policy.

103. The Low Emissions Towns and Cities Programme is a partnership which involves all seven of the WMCA constituent authorities, and seeks to reduce emissions from road transport in order to improve air quality. Its stated intention is to promote the uptake of low emissions fuels and technologies, to share best practice across authorities, and to develop new tools and resources to tackle emissions.

104. Walsall Council, "2016 Air Quality Annual Status Report (ASR)", https://go.walsall.gov.uk/Portals/0/images/importedddocuments/air_quality_annual_status_report_2016_walsall_council.pdf (2017).

Table 4.1. The powers that WMCA and the different local authorities have over different aspects of transport policy

	WMCA or TfWM	Constituent local authorities
Road transport	<ul style="list-style-type: none"> - Managing the West Midlands' key route network – the most important roads which run through the whole of the WMCA 	<ul style="list-style-type: none"> - Setting taxi and private hire vehicle age and emissions regulations - Implementing CAZs to charge drivers for the pollution they create - Enforcing anti-idling laws
Rail	<ul style="list-style-type: none"> - Managing the West Midlands Metro - Managing the Swift travelcard 	
Cycling and walking	<ul style="list-style-type: none"> - Managing the West Midlands' key route network 	<ul style="list-style-type: none"> - Configuring road layouts to make cyclists feel safer - Installing cycling facilities - Configuring road layouts to make cyclists feel safer - Installing cycling facilities - Improving public realm to incentivise walking (for example, better pavements and street lighting) - Educating children through cycle proficiency schemes in schools
Buses	<ul style="list-style-type: none"> - Franchising powers over buses – conferring the ability to decide routes, timetables, fares, emissions standards, and quality of stock - Managing the West Midlands' key route network - Managing the Swift travelcard 	

Transport policies of the WMCA to tackle air pollution

In 2016, Transport for West Midlands (TfWM) was established.¹⁰⁵ Formally, it is an arm of the WMCA, and is responsible for coordinating investment in transport across the region.¹⁰⁶ Tackling air pollution is a

105. Transport for West Midlands, “TfWM launched to implement £4 billion of transport infrastructure”, <https://www.tfwm.org.uk/news/tfwm-launched-to-implement-4-billion-of-transport-infrastructure/> (2016).

106. West Midlands Combined Authority, “Transport”, <https://www.wmca.org.uk/what-we-do/transport/> (2018).

core aim of both the WMCA and the TfWM.

Since coming into being, TfWM has overseen the delivery of a number of improvements to – particularly public – transport in the WMCA. In 2016, it published ‘Movement for Growth’ a strategy which set out a number of objectives to achieve in the region, with a view to making the West Midlands an engine for economic growth, improving the health and quality of life of people living in the West Midlands, and – most importantly – to deliver clean air.¹⁰⁷ This complements other TfWM initiatives, such as the publication of a 50-point plan for enhancing bus services,¹⁰⁸ and a comprehensive ‘Cycling Charter’ to incentivise the uptake of cycling in the region.¹⁰⁹

Most recently, selected achievements of TfWM include: the introduction of an integrated smartphone app which makes using public transport in the WMCA more convenient;¹¹⁰ striking a partnership with ‘nextbike’ to deliver a bike-share scheme across parts of the WMCA;¹¹¹ and, extending the Swift smart travelcard (similar to London’s Oyster cards) to neighbouring parts of the WMCA.¹¹²

The first and current Mayor of the WMCA, Andy Street, published an election manifesto which included tackling air pollution as one of its key pledges.¹¹³ He vowed to improve three main alternatives to private transport: trains and the metro, buses, and cycling and walking. As

107. West Midlands Combined Authority, “Environmental Strategy: think global: act local 2014-2019”, <https://www.wmca.org.uk/media/1392/environmental-strategy-2014-2019-pdf-2017-version.pdf> (2017).

108. West Midlands Combined Authority, “West Midlands Bus Alliance: 50 deliverables for Bus Alliance”, <https://www.tfwm.org.uk/media/2568/bus-alliance-deliverables.pdf> (2016).

109. Transport for West Midlands, “Cycling”, <https://www.tfwm.org.uk/development/cycling/> (2018).

110. Transport for West Midlands, “Travelling on a Whim – revolutionary app is launched in West Midlands”, <https://www.tfwm.org.uk/news/travelling-on-a-whim-revolutionary-app-is-launched-in-west-midlands/> (2018).

111. Transport for West Midlands, “nextbike chosen to deliver West Midlands bike-share scheme”, <https://www.tfwm.org.uk/news/nextbike-chosen-to-deliver-west-midlands-bike-share-scheme/> (2018).

112. Transport for West Midlands, “Green light for Swift in Redditch”, <https://www.tfwm.org.uk/news/green-light-for-swift-in-redditch/> (2018).

113. Andy Street, “Andy Street’s renewal plan for the West Midlands”, [https://andy4wm.co.uk/-/media/Documents/Andy-Street-West-Mids-Renewal-Plan2-\(003\).ashx?la=en](https://andy4wm.co.uk/-/media/Documents/Andy-Street-West-Mids-Renewal-Plan2-(003).ashx?la=en) (2017), 15.

Table 4.1 has already illustrated, the WMCA has most responsibility for policies on rail and bus travel, with some responsibility over policies on cycling and walking.

The measures proposed by the Mayor include ones that generally improve these forms of transportation, thus making them more attractive than private transport, thereby reducing air pollution as people shift away from private transport. But there are also proposed measures that reduce the pollution that derive from these different forms of transportation.

On trains and trams, his manifesto states that he will be pushing Network Rail and rail operators to: increase the number of carriages and frequency of trains, as well as reopening stations and lines, and generally improving the standard of the rail stock (such as ensuring carriages have free WiFi and charging plugs).¹¹⁴ Indeed, TfWM have detailed plans which would triple the size of the tram network to 33 miles in length, and has already undertaken feasibility studies for the creation of several new railway stations.¹¹⁵ Altogether, TfWM states that £1.3 billion is being invested into the tram system across the West Midlands over the next decade.¹¹⁶ In terms of delivering cleaner rail capacity, the WMCA played host to the UK's first battery-powered tram in 2018, and, more recently, plans were outlined to acquire up to 50 more such trams in the future.¹¹⁷

On buses, his manifesto states that he will: review bus lanes on major routes with an aim of speeding up services; accelerating the rollout of contactless and smart payments across the WMCA network; reviewing bus fares to ensure they are affordable for working people;

114. *Ibid.*, 12.

115. West Midlands Combined Authority, "The West Midlands Combined Authority: annual plan 2018/2019", <https://www.tfwm.org.uk/media/2813/wmca-annual-plan.pdf> (2018), 37.

116. Transport for West Midlands, "Midland Metro extensions", <https://www.tfwm.org.uk/development/midland-metro-extensions/> (2018).

117. Transport for West Midlands, "More battery-powered trams on the way", <https://www.tfwm.org.uk/news/more-battery-powered-trams-on-the-way/> (2018).

and, pushing for higher standards with regards to engine cleanliness.¹¹⁸ Recent examples of improvements to bus services in the WMCA include the £680,000 revamping of St Paul’s bus station in Walsall,¹¹⁹ the introduction of lower emissions buses and retrofitted buses in Dudley,¹²⁰ and the approval of plans to introduce at least 20 hydrogen powered buses in Birmingham.¹²¹ In August 2018, figures showed that bus passenger satisfaction was increasing for a number of different metrics, including up 7% with respect to value-for-money, compared to a year previously.¹²² An estimated 800,000 more younger people, for whom bus travel costs have been recently discounted, are using the bus network in 2018 – up 11% compared to last year.¹²³

On cycling, Street’s manifesto pledged to: increase overall spending on cycling by forty-fold through obtaining new Central Government funding; upgrade cycle routes and signage; and, improve bicycle storage facilities at railway stations and in new major developments.¹²⁴ Street outlined his ambition for 5% of all journeys in the WMCA to be made by bicycle by 2023, up from the current level of just 1%.¹²⁵ Since becoming elected, Street has called on the Transport Minister, Jesse Norman MP, to increase investment in cycling in the region, with a focus on infrastructure. He also called for traffic enforcement powers

118. Louise Butcher and Tom Rutherford, “Bus Services Act 2017”, <http://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-7545> (2017); Andy Street, “Andy Street’s renewal plan for the West Midlands”, [https://andy4wm.co.uk/-/media/Documents/Andy-Street-West-Mids-Renewal-Plan2-\(003\).ashx?la=en](https://andy4wm.co.uk/-/media/Documents/Andy-Street-West-Mids-Renewal-Plan2-(003).ashx?la=en) (2017), 15.

119. Transport for West Midlands, “£680,000 improvements underway at St Paul’s bus station”, <https://www.tfwm.org.uk/news/680-000-improvements-underway-at-st-paul-s-bus-station/> (2018).

120. Transport for West Midlands, “Quicker, greener and better value bus services planned for Dudley”, <https://www.tfwm.org.uk/news/quicker-greener-and-better-value-bus-services-planned-for-dudley/> (2018).

121. West Midlands Combined Authority, “The West Midlands Combined Authority: annual plan 2018/2019”, <https://www.tfwm.org.uk/media/2813/wmca-annual-plan.pdf> (2018), 40.

122. Transport for West Midlands, “Bus passenger satisfaction riding high in the West Midlands”, <https://www.tfwm.org.uk/news/bus-passenger-satisfaction-riding-high-in-the-west-midlands/> (2018).

123. *Ibid.*; Transport for West Midlands, “Another reason to celebrate for 16 to 18-year-olds”, <https://www.tfwm.org.uk/news/another-reason-to-celebrate-for-16-to-18-year-olds/> (2018).

124. Andy Street, “Andy Street’s renewal plan for the West Midlands”, [https://andy4wm.co.uk/-/media/Documents/Andy-Street-West-Mids-Renewal-Plan2-\(003\).ashx?la=en](https://andy4wm.co.uk/-/media/Documents/Andy-Street-West-Mids-Renewal-Plan2-(003).ashx?la=en) (2017), 15.

125. *Ibid.*

to be devolved directly to the WMCA, making it easier to prosecute those who endanger cyclists and pedestrians.¹²⁶ Street has also overseen the establishment of a bike-sharing scheme, similar to the one seen in London since 2010, across the WMCA.¹²⁷

Whilst too early to make conclusions about the impact of Street's policies to increase the uptake of cycling, figures suggest that it is slowly becoming more popular amongst adults living in the WMCA: ¹²⁸ rates of cycling amongst adults in the WMCA increased in the year between 2015-16 and 2016-17 by: 2.7% for those cycling at least once per month; 1.3% for those cycling at least once per week; 8.3% for those cycling at least three times per week; and by 4.3% for those cycling at least five times per week.¹²⁹

The WMCA also, as Table 4.1 illustrates, has some powers over road transport. Devolution means that the Mayor is responsible for the WMCA's Key Route Network, totalling nearly 370 miles of road, which carries half of all car, public transport, and freight movement in the WMCA.¹³⁰ The Mayor pledged to support the development of autonomous and electric vehicles in the West Midlands, and to lobby Central Government to ensure that individuals and companies who currently use polluting vehicles will be supported to transition to cleaner models, suggesting a vehicle scrappage scheme as a potential

126. Transport for West Midlands, "Mayor urges Government to increase investment in cycling and walking", <https://www.tfwm.org.uk/news/mayor-urges-government-to-increase-investment-in-cycling-and-walking/> (2018).

127. Transport for West Midlands, "nextbike chosen to deliver West Midlands bike-share scheme", <https://www.tfwm.org.uk/news/nextbike-chosen-to-deliver-west-midlands-bike-share-scheme/> (2018).

128. Cycling and walking statistics in England are collected for an annual period running from and to mid-November of each year. Therefore, Andy Street would have been in post for six of the twelve months in the period 2016-17 for these data.

129. Department for Transport, "Walking and cycling statistics, England: 2017", <https://www.gov.uk/government/statistics/walking-and-cycling-statistics-england-2017> (2018); Department for Transport, "Walking and cycling statistics, England: 2016", <https://www.gov.uk/government/statistics/walking-and-cycling-statistics-england-2016> (2018).

130. West Midlands Combined Authority, "The West Midlands Combined Authority: annual plan 2018/2019", <https://www.tfwm.org.uk/media/2813/wmca-annual-plan.pdf> (2018), 37.

solution.¹³¹

Presently, TfWM is working alongside partners to produce a ‘Highway Investment Plan’, which will present a long-term programme for improving the Key Route Network – for example by identifying major congestion hotspots and bottlenecks.¹³² According to TfWM’s own figures, £5.8 million of work was undertaken in 2017-18 relating specifically to improving highways.

‘Park and ride’ schemes – whereby motorists drive to a car park, before switching to public transport – can help in reducing the amount of cars driving into city and town centres. TfWM is reviewing current park and ride schemes across the WMCA: identifying where new park and ride schemes could be implemented, and where existing ones could be enhanced and increased. TfWM has an objective of delivering 3,000 additional park and ride spaces by 2021.¹³³

In September 2018, TfWM published a comprehensive ‘Congestion Management Plan’, which outlined the different ways in which congestion could be better tackled in the WMCA through three distinct pillars: improving capacity (such as expanding the West Midlands Metro and opening new railway stations); improving efficiency (such as using technology to more rapidly respond to and rectify traffic incidents which cause congestion, and encouraging use of the M6 Toll); and managing demand (such as promoting car sharing, or using technology to more strategically plan journey routes which minimise congestion in particular areas).¹³⁴

131. Department for Transport, “Walking and cycling statistics, England: 2017”, <https://www.gov.uk/government/statistics/walking-and-cycling-statistics-england-2017> (2018); Department for Transport, “Walking and cycling statistics, England: 2016”, <https://www.gov.uk/government/statistics/walking-and-cycling-statistics-england-2016> (2018).

132. Transport for West Midlands, “Congestion Management Plan”, <https://www.tfwm.org.uk/media/2917/congestion-management-plan.pdf> (2018), 26.

133. *Ibid.*

134. *Ibid.*, 3.

How local and combined authorities can tackle air pollution through transport policies

Having established the different powers and progress that both the WMCA and its respective local authorities have over transport policy to reduce air pollution, this report will now highlight the main levers of transport policy available to different local and combined authority governments to tackle air pollution. To support with the creation of this typology, we first identify examples of different transport policies from cities in comparable countries, as outlined in Box 4.2.

Box 4.2. Case studies of transport policies to address air pollution from other cities in comparable countries

Copenhagen, Denmark. Investment in cycling infrastructure in Copenhagen, the capital of Denmark with a population of 775,000, has led to the proportion of trips made to places of work or study by bicycle increase from 30% in 1998 to 45% in 2014.¹³⁵ In fact, bicycles now outnumber cars in the city.¹³⁶ Specific investments in cycling include: the creation of cycle superhighways; altering traffic lights at junctions to enable ‘green waves’ (whereby a cyclist travelling at roughly 12 miles per hour will encounter fewer red lights, and thus make quicker average journey times); and, requiring commercial developments to have 0.5 bicycle parking spaces per employee.¹³⁷ Copenhagen’s city administration also leads by example: it has a fleet of bicycles which certain city staff use for their jobs (such as

135. Rachel Hesketh, Laura Jones, Saba Hinrichs-Krapels, Ali Kirk and Sophie Johnson, “Air quality improvement initiatives in other cities: a brief review of evidence to inform the Westminster City Council Air Quality Task Group”, <https://www.kcl.ac.uk/sspp/policy-institute/publications/Air-quality-improvement-initiatives-in-other-cities.pdf> (2017), 20; Chloe Chaplain, “The European cities leading the way in car-free living in a bid to tackle toxic air pollution”, <https://www.standard.co.uk/news/transport/the-european-cities-leading-the-way-in-carfree-living-in-a-bid-to-tackle-toxic-air-pollution-a3658216.html> (2017).

136. Ibid.

137. Rachel Hesketh, Laura Jones, Saba Hinrichs-Krapels, Ali Kirk and Sophie Johnson, “Air quality improvement initiatives in other cities: a brief review of evidence to inform the Westminster City Council Air Quality Task Group”, <https://www.kcl.ac.uk/sspp/policy-institute/publications/Air-quality-improvement-initiatives-in-other-cities.pdf> (2017), 23.

park maintenance workers).¹³⁸

Amsterdam, the Netherlands. Amsterdam is the capital city of the Netherlands, and, with over 850,000 citizens, its most populous municipality. In order to stimulate the uptake of EVs, citizens in Amsterdam can request when buying an EV that a charge point is installed in a location convenient for them.¹³⁹ Not all requests are successful, for example stipulations are in place to prevent too many charge points being located in one area.¹⁴⁰ But this policy has undeniably helped to establish Amsterdam as one of the leading regions for EV use in the world.¹⁴¹ It not only leads to the uptake of EVs by making life easier for prospective EV owners, but also has the added benefit of better ensuring that the best value for money is achieved when deploying charging infrastructure, because it will be likely located near to where the demand will be greatest.¹⁴²

Paris, France. Paris is the capital city of France, and is home to over 2.2 million residents. In response to high air pollution, Parisian authorities have experimented by limiting traffic driving into the city through a system of allowing only either odd or even numbered registration plates to do so on a given day.¹⁴³ This approach has been adopted on four separate occasions in the past two decades, but in response to a prolonged air pollution episode in late 2016, the first ever ‘multiday’ alternation (whereby the alternation lasts for two or more consecutive days) was

138. *Ibid.*, 22.

139. International Energy Agency, “Global EV outlook 2017: two million and counting”, <https://www.iea.org/publications/freepublications/publication/GlobalEVO Outlook2017.pdf> (2017), 37.

140. Bart Vertelman and Doede Bardok, “Amsterdam’s demand-driven charging infrastructure”, https://www.amsterdam.nl/publish/pages/799470/planam-03-2016_art2_2_1.pdf (2016).

141. Dale Hall, Marissa Moultak and Nic Lutsey, “Electric vehicle capitals of the world: demonstrating the path to electric drive”, https://www.theicct.org/sites/default/files/publications/Global-EV-Capitals_White-Paper_06032017_vF.pdf (2017).

142. *Ibid.*

143. Katie Forster, “Paris bans cars with even plates in third day of transport restrictions to ease air pollution”, <http://www.independent.co.uk/news/world/europe/paris-banned-cars-even-number-plates-pollution-latest-public-transport-air-smog-bans-a7462621.html> (2016).

implemented.¹⁴⁴ Airparif – the air quality monitoring network for Île-de-France, the governmental region of France which contains the city of Paris – estimated that the measure cut air pollution by 2% overall, rising to 6% near to major traffic routes.¹⁴⁵ However, residents can always get around the ban by buying second cars or (albeit fraudulently) switching registration plates.¹⁴⁶ Furthermore, there were reports of ill-enforcement by the police, which would ultimately reduce the scheme’s effectiveness.¹⁴⁷

New York City, Los Angeles and San Francisco, United States of America. In the American cities of New York, Los Angeles, and San Francisco (respectively the first, second and 13th most populous cities in America), dynamic, demand-responsive parking charges have been implemented to try to deter people from driving into the city, and more efficaciously ration parking spaces so as to reduce congestion.¹⁴⁸ Dynamic parking charges refers to the practice of charging people more to park their vehicle during peak times, when demand for spaces is highest. Research examining downtown Los Angeles estimated that 34% of cars are cruising looking for parking spaces, so the idea of using price discrimination should free up spaces for those willing to pay the higher fee, and cut traffic congestion accordingly.¹⁴⁹ Initial results from one pilot of dynamic parking charges indicate a 12% average

144. Audureau Aurélie, “Pollution: circulation alternée reconduite ce jeudi à Paris et en banlieue”, *Le Parisien*, 8 December, 2016; Le Monde, “Paris connaît le plus long et intense pic de pollution hivernal depuis dix ans”, https://www.lemonde.fr/pollution/article/2016/12/07/paris-connaît-le-plus-long-et-le-plus-intense-pic-de-pollution-hivernal-depuis-dix-ans_5044804_1652666.html (2016).

145. BBC News, “Car pollution in cities – do number plate schemes work?”, <https://www.bbc.co.uk/news/world-europe-38236926> (2016).

146. *Ibid.*

147. Henry Samuel, “Paris orders drivers with even number plates off the road”, *The Telegraph*, 17 March, 2014.

148. Rachel Hesketh, Laura Jones, Saba Hinrichs-Krapels, Ali Kirk and Sophie Johnson, “Air quality improvement initiatives in other cities: a brief review of evidence to inform the Westminster City Council Air Quality Task Group”, <https://www.kcl.ac.uk/sspp/policy-institute/publications/Air-quality-improvement-initiatives-in-other-cities.pdf> (2017), 22.

149. James Glasnapp et al., “Understanding dynamic pricing for parking in Los Angeles: survey and ethnographic results”, https://link.springer.com/chapter/10.1007/978-3-319-07293-7_31 (2014).

increase in drivers being able to find parking spaces, which would almost certainly have positive consequences for air quality in the locality.¹⁵⁰

Madrid, Spain. Madrid is the capital city and most populous municipality of Spain, with some 3.2 million residents (rising to 6.5 million when including the wider metropolitan area). In 2017, the Mayor of Madrid, Manuela Carmena, released ‘Plan A’ in a bid to reduce air pollution, as well as greenhouse gases.¹⁵¹ Backed up with €543.9 million, the plan included measures to reduce speed limits, upgrade vehicle fleets, and disincentivise car use.¹⁵² A key proposal which Mayor Carmena’s has ushered in is the gradual pedestrianisation of one of Madrid’s busiest roads, the Gran Vía.¹⁵³ The authorities of Madrid predict the complete pedestrianisation of the road by 2019 could cut traffic across the city by 20% as people switch to alternative modes of transport, such as cycling or using public transport.¹⁵⁴

The powers that local and combined authorities have both in the West Midlands and in other areas shows that tackling air pollution – at a local or mayoral level – can be done through a number of different transport policy approaches. Broadly, they fall into one of four categories. Figure 4.1 demonstrates, in graphic form, the categories of transport powers local and combined authorities have to reduce air pollution.

150. Manzell Blakeley and William Carry, “Jackson Heights PARK Smart: one year evaluation”, <http://www.nyc.gov/html/dot/downloads/pdf/2014-06-10-jackson-heights-park-smart.pdf> (2014).

151. Madrid, “El Plan A incluye 30 medidas para reducir la contaminación y los gases de efecto invernadero”, <https://www.madrid.es/portales/munimadrid/es/Inicio/Actualidad/Noticias/El-Plan-A-incluye-30-medidas-para-reducir-la-contaminacion-y-los-gases-de-efecto-invernadero?vgnextfmt=default&vgnextoid=0b67d88ac07ca510VgnVCM20-00001f4a900aRCRD&vgnnextchannel=a12149fa40ec9410VgnVCM100000171f5a0aRCRD#> (2017).

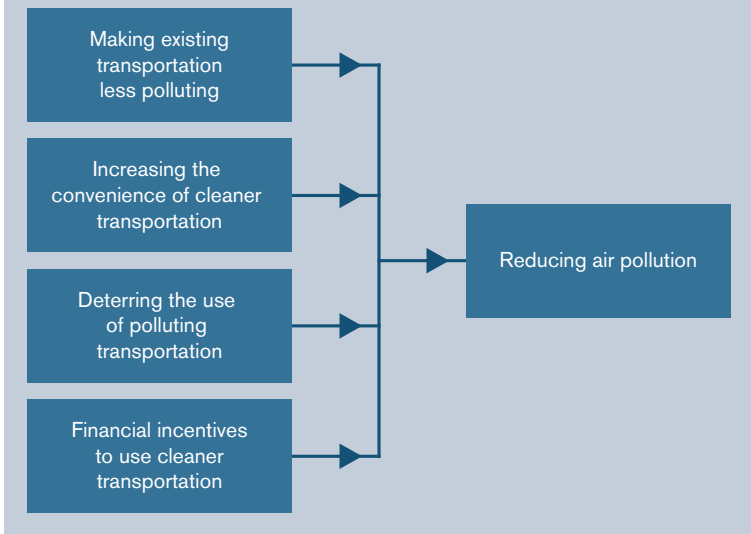
152. Ibid.

153. Feargus O’Sullivan, “Madrid prepares for its greenest year yet”, <https://www.citylab.com/environment/2018/01/madrid-prepares-for-its-greenest-year-yet/549575/> (2018).

154. Ibid.; Sebastian Maan, “Madrid’s mayor is determined to clean up its air – by pedestrianizing its biggest shopping street”, <https://www.citymetric.com/horizons/madrid-s-mayor-determined-clean-its-air-pedestrianising-its-biggest-shopping-street-2717> (2017).

- **Making existing transportation less polluting.** Actions which can be taken to minimise the amount existing transport contributes to pollution. For example, lowering speed limits, or retrofitting bus fleets to minimise the emissions they generate.
- **Financial incentives to use cleaner transportation.** Providing financial incentives or subsidies to encourage individuals to use cleaner forms of transportation, such as cycling and using the bus network. For example, subsidising the cost of public transport, or establishing cycle-to-work schemes which allow individuals to minimise their tax liability.
- **Increasing the convenience of cleaner transportation.** Measures which increase the attractiveness of using cleaner forms of transportation, such as improving the efficiency and quality of public transport. For example, by cracking down on anti-social behaviour on public transport, or establishing 'smart' ticketing systems which permit multi-modal travel.
- **Deterring the use of polluting transportation.** Increasing the costs, or reducing the desirability, of using transport that particularly pollutes the air. For example, charging CAZs or increasing parking charges.

Figure 4.1. The categories of transport powers local and combined authorities have to reduce air pollution



Conclusion

This chapter has outlined the transport powers, pledges and policies of the WMCA and its constituent local authorities to reduce air pollution. Drawing on this, and case studies from cities overseas, we have identified the main categories of transport interventions available to local and combined authorities to tackle air pollution. This framework will guide the policies that we recommend in the next and final chapter for the WMCA and its local authorities to adopt. Though progress has been made, it is undoubtedly the case – as outlined in Chapter Three – that the WMCA and its local authorities still need to do more to tackle the pressing and dangerous problems of excessive air pollution in the West Midlands.

Chapter 5: New policies

Chapter Four identified different transport policies which can be adopted by local and combined authorities – including in the West Midlands – to reduce air pollution.

In this chapter, we propose new transport policies for the WMCA and its constituent local authorities to adopt so that they can build upon their existing work to reduce air pollution in West Midlands. Though these policies are directed at the WMCA and its constituent local authorities, they could be adapted and applied elsewhere in the country.

Policy approach

As already outlined in Chapter One, there are several different sources of air pollution. Reforming transport policy in the West Midlands, therefore, is important but ultimately insufficient to reduce air pollution. However, transport policy is the key focus of this paper.

When formulating policies, we applied three particular key tests that had to be met:

- **Fiscal responsibility.** Policies to tackle air pollution should be fiscally prudent in that they do not necessitate excessively large amounts of central or local government spending. This being said, both central and local governments should approach the challenge of poor air quality holistically, and recognise the potential savings which stand

to be made in terms of lower health costs, and the potential benefits which stand to be realised in terms of higher productivity, for example.

- **Progressivity.** Policies to tackle air pollution should be financially progressive. This is true for both costs and subsidies. Where additional charges are being levied, they should not be burdensome for the least well off. Where public subsidy is being made available for cleaner alternatives, that help should be prioritised towards the least well off. It should also be kept in mind that the very poorest in society already suffer the most from air pollution.¹⁵⁵
- **Respecting human freedom.** Policies to tackle air pollution should not excessively curb human freedom. Sometimes, it is right to ban or seek to curtail certain conduct because of the harm caused to others. But, generally, individuals themselves should decide whether they should carry out certain conduct. Having said that, policy makers can price into certain conduct the externality costs of it.

The last chapter identified four types of policy interventions available to governments to reduce air pollution: financial incentives to use cleaner transportation; increasing the convenience of cleaner transportation; deterring the use of polluting transportation; and, making existing transportation less polluting. The recommendations in this chapter fall into these different categories. Some of them, in fact, fall into more than one category.

Our proposed policies are as follows:

Recommendation one: Extend the Clean Air Zone (CAZ) scheduled for Birmingham for 2020 to all relevant parts of the WMCA and transfer responsibility for it from Birmingham City Council to the WMCA.

Birmingham City Council is currently consulting on introducing a

155. Daniela Fecht et al., "Associations between air pollution and socioeconomic characteristics, ethnicity and age profile of neighbourhoods in England and the Netherlands", *Environmental Pollution*, Vol. 198 (2015), 201-210.

CAZ for vehicles entering the city centre by at least January 2020.¹⁵⁶ The Council has proposed a CAZ to be implemented on all of the roads within the A4540 Middleway ring road, and would be in operation all day, every day.¹⁵⁷

Liabile vehicles will be charged between £6-12 for cars per day, to £50-100 for buses, coaches, and heavy goods vehicles per day, depending on emissions standards.¹⁵⁸ Some vehicles will be exempt from the charge, including Euro 6 diesel cars, Euro 4 petrol cars, as well as hybrid, electric and liquefied petroleum gas engines.¹⁵⁹ Motorcycles and mopeds will need to have an engine which is at least Euro 3 to be exempt.¹⁶⁰

Different types of CAZs have different emissions standards. The Government laid out four of these (ranked A to D, with D being the most stringent class) in its Clean Air Zone framework, published in 2017.¹⁶¹ The proposed Birmingham CAZ should be a Class D CAZ, and its emissions standards would be the same as the London Ultra-Low Emission Zone. These emissions standards are outlined in Table 5.1, below.

156. Birmingham City Council, "A clean air zone for Birmingham", https://www.birminghambeheard.org.uk/economy/caz_organisation/ (2018).

157. *Ibid.*, 9.

158. *Ibid.*, 10.

159. Since 1992, new vehicles sold in the European Union have had a 'Euro' standard, which refers to the minimum emissions standards which a vehicle must adhere to. Euro 6 is the sixth incarnation of the Euro standards. To conform with Euro 6 standards, a petrol car would need to produce no more than 1.0g/km of CO, 0.06g/km of NO_x, 0.005g/km of PM; Birmingham City Council, "A clean air zone for Birmingham", https://www.birminghambeheard.org.uk/economy/caz_organisation/ (2018), 9.

160. *Ibid.*

161. Department for Environment, Food and Rural Affairs and the Department for Transport, "Clean Air Zone framework", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/612592/clean-air-zone-framework.pdf (28-31).

Table 5.1. Emissions standards for a Class D CAZ

Vehicle type	Emissions standard
Motorcycles, mopeds, motorised tricycles and quadricycles (L category)	Euro 3
Cars and small vans (not exceeding 1,205 kilogrammes unladen weight)	Euro 4 (if petrol) or Euro 6 (if diesel)
Larger vans, 4X4 light utility vehicles, motorised horseboxes and pickups (exceeding 1,205 kilogrammes unladen and not exceeding 3,500 kilogrammes GVW (gross vehicle weight))	Euro 4 (if petrol) or Euro 6 (if diesel)
Average for whole of England	Council
Ambulances and motorcaravans (2,500 kilogrammes to 3,500 kilogrammes GVW)	Euro 4 (if petrol) or Euro 6 (if diesel)
Minibuses (more than eight passenger seats, not exceeding 5,000 kilogrammes GVW)	Euro IV (if petrol) or Euro VI (if diesel)
Lorries, motorised horse boxes, breakdown and recovery vehicles, snow ploughs, gritters, refuse collection vehicles, road sweepers, concrete mixers, fire engines, tippers, removals lorries (exceeding 5,000 kilogrammes GVW)	Euro VI

Source: Department for Environment, Food and Rural Affairs and the Department for Transport, "Clean Air Zone framework", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/612592/clean-air-zone-framework.pdf (28-31).

But the city of Birmingham is not the only area within the WMCA which is afflicted by air pollution, as detailed in Chapter Three. In fact, our research found that Sandwell Metropolitan Borough Council had higher mean anthropogenic PM_{2.5} levels than Birmingham City Council, and that Coventry City Council fared worse in terms of its under-75s mortality rate from preventable respiratory diseases than Birmingham City Council (see Tables 3.1 and 3.3 respectively).

Currently, Birmingham City Council has responsibility for the CAZ. This is different to the case in London, where the Mayor has responsibility for congestion charging zones, which are spread out over a number of different local authorities. We recommend that the same approach is taken in the West Midlands, with the WMCA being

afforded primary responsibility for the CAZ. We believe doing so would allow the CAZ to be more effectively administered and would better allow for the introduction of a CAZ across the WMCA.

The city of Birmingham was selected to have a CAZ because it was one of six cities in England projected to exceed its NO₂ limit values for 2020.¹⁶² But it has already been established that Birmingham is not alone in the WMCA as an area which experiences particularly elevated levels of PM and NO₂. We therefore recommend that CAZs are introduced in the relevant parts of town and city centres of the WMCA which consistently exceed the national daily and annual limit values for the air pollutants detailed in the EU Ambient Air Quality Directive (2008/EC/50) (see Box 1.1). In fact, the Government in its latest Clean Air Strategy outlined ambitions to comply with more stringent limits on PM, as set out by the World Health Organization.¹⁶³ This could be something which is considered by the WMCA when deciding where the CAZ should apply.

CAZs should be designed collaboratively across all constituent local authorities in a way which affords maximum uniformity, and thus ease of use to individuals who may need to travel into different CAZs.

It is important that CAZs do not impose additional costs on the poorest in society, or those who are vulnerable and particularly rely on their vehicle to get around – for example, Blue Badge holders. For these people, there is a legitimate case for certain exemptions or discounts to the charge to be made applicable. This is already the case for existing congestion charges, including in the London, and would help to prevent the policy from being regressive.¹⁶⁴

162. Department for Environment, Food and Rural Affairs, “Improving air quality in the UK: tackling nitrogen dioxide in our towns and cities”, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/486636/eq-plan-2015-overview-document.pdf (2015), 15.

163. Department for Environment, Food and Rural Affairs, “Clean Air Strategy 2018”, https://consult.defra.gov.uk/environmental-quality/clean-air-strategy-consultation/user_uploads/clean-air-strategy-2018-consultation.pdf (2018).

164. Transport for London, “Discounts & exemptions”, <https://tfl.gov.uk/modes/driving/congestion-charge/discounts-and-exemptions> (2018).

Recommendation two: Enable local and combined authorities to strive for ‘reasonable profits’ from their CAZs to fund a local diesel scrappage scheme or charging points for EVs.

Under the Transport Act 2000, and the amendments made to it under Part VI of the Local Transport Act 2008,¹⁶⁵ local authorities are prohibited from setting charges in CAZs so as to be a means of raising revenues. If any surplus is generated from CAZs, they must be reinvested “to facilitate the achievement of local transport policies”.¹⁶⁶

We recommend that the Government amends the Transport Act 2000 to enable local authorities and metropolitan combined authorities to pursue ‘reasonable profits’ from their CAZs, as long as they are directed towards the following objectives:

- a) a local diesel scrappage scheme;
- b) charging points for EVs;
- c) local transport objectives, as currently defined

We propose that reasonable profits should be first allocated to a local diesel scrappage scheme or charging points for EVs, before authorities are allowed to use reasonable profits for other local transport objectives.

Recommendation three: Introduce a local diesel vehicle scrappage scheme in the WMCA.

In 2009, the then Labour Government introduced a year-long vehicle scrappage scheme (VSS) to act as an economic stimulus following the

165. Local Transport Act 2008, *Ch.* 26. See: http://www.legislation.gov.uk/ukpga/2008/26/pdfs/ukpga_20080026_en.pdf.

166. Transport Act 2000, *Ch.* 38. See: http://www.legislation.gov.uk/ukpga/2000/38/pdfs/ukpga_20000038_en.pdf; Department for Environment, Food and Rural Affairs and the Department for Transport, “Clean air zone framework: principles for setting up clean air zones in England”, https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/612592/clean-air-zone-framework.pdf (2017), 27.

Financial Crash.¹⁶⁷ It offered £1,000 towards the purchase cost of new vehicles in exchange for the scrapping of another vehicle (given it was over ten years old, in working condition, and had been owned by the current owner for at least 12 months).¹⁶⁸ The manufacturer of the new vehicle being purchased also matched the Government by providing a £1,000 discount, provided it was part of the VSS. Almost 400,000 vehicles ended up being scrapped under the VSS.¹⁶⁹

Representatives from Birmingham City Council have recently spoken of their desire to revive the VSS in order to tackle emissions from diesel cars.¹⁷⁰ Pressure has also been put on the Government from various sources to introduce a nation-wide scrappage scheme for diesel cars. Last year, the Mayor of London, Sadiq Khan, published a detailed policy report setting out the case for a 'National Vehicle Scrappage Fund'.¹⁷¹ Clean air campaigners such as Greenpeace, the British Lung Foundation, and industry bodies such as the AA, have remarked that a scrappage scheme for diesel cars is necessary to control air pollution and compensate drivers who bought diesel vehicles in good faith.¹⁷²

Yet, the Government has stated that it had no plans for bringing forward a national scrappage scheme.¹⁷³ However, it has made clear that local scrappage schemes are viable for attracting government money

167. Louise Butcher, "Vehicle scrappage schemes", <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/CBP-8091> (2017), 6.

168. *Ibid.*, 7.

169. Department for Business, Innovation and Skills, "Car scrappage scheme in 2009", <http://webarchive.nationalarchives.gov.uk/20150401151120/https://www.gov.uk/government/publications/car-scrappage-scheme-in-2009> (2014).

170. Carl Jackson, "Car scrappage scheme call as Birmingham pollution charge moves forward", <https://www.birminghammail.co.uk/news/local-news/car-scrappage-scheme-call-birmingham-14836210> (2018).

171. Transport for London, "Proposal for a National Vehicle Scrappage Fund", <http://content.tfl.gov.uk/proposal-national-vehicle-scrappage-fund.pdf> (2017).

172. Ashley Cowburn, "Government rules out national diesel scrappage scheme in 'tyre-burning U-turn'", *The Independent*, 24 March, 2018.

173. *Ibid.*

from the Clean Air Fund, announced earlier in 2018.¹⁷⁴

We recommend that the WMCA utilises money from the government's Clean Air Fund to launch a local diesel vehicle scrappage scheme, similar to the historic VSS. The cost of the scheme could also be funded, at least in part, out of the reasonable profits generated by the introduction of a CAZ across the WMCA. The WMCA would be responsible for offering the grant (as well as the manufacturer matching the grant, if possible), and it would be up to the WMCA as to what price the grant was set at.¹⁷⁵ The diesel cars that are being scrapped should have been owned for at least 12 months. The scheme would apply only to residents of the WMCA.

If there are concerns about the total cost of the local diesel scrappage scheme, there are options that WMCA should consider in order to limit expenditure. For example, there might be a time and budget limit that applies to the diesel scrappage scheme. The WMCA might consider introducing stricter eligibility for scrapped vehicles – for example, for the oldest, most polluting cars. The WMCA might also consider applying conditions to the grant that is received, stipulating that it must be spent on something in particular. For example, the WMCA could stipulate that it needs to be spent on certain types of greener transport – for example, cycling equipment or public transport vouchers. Or, limiting it further, it might be that WMCA states that beneficiaries from the scheme could only use their grant towards the cost of a new petrol hybrid or fully electric vehicle.

It should also be noted that some manufacturers – such as Renault¹⁷⁶

174. Department for Environment, Food and Rural Affairs, "Clean Air Fund: published as part of the government response to the consultation on additional measures to support individuals and businesses affected by local nitrogen dioxide plans", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693239/clean-air-fund-gov-resp-section2-separated.pdf (2018), 3; Will Date, "Defra launches £220 million clean air fund", <https://www.airqualitynews.com/2018/03/28/defra-launches-220-million-clean-air-fund/> (2018).

175. In 2009, the Government's VSS was set at £1,000. Taking inflation into account, that would now be roughly £1,300 – which may be a suitable guide for the WMCA to follow should it wish to introduce its own targeted VSS for the most polluting diesel cars.

176. What Car?, "Latest 2018 scrappage scheme deals", <https://www.whatcar.com/news/latest-2018-scrappage-scheme-deals/n15860> (2018).

– already have voluntary scrappage schemes of their own for certain vehicles in place. Where these are present, the WMCA should be mindful of replacing them at their own expense. Instead, where applicable, individuals hoping to scrap their car through the WMCA should be directed to the manufacturer already offering scrappage.

Recommendation four: Subsidise the retrofitting of diesel taxis to run on liquified petroleum gas.

Retrofitting petrol or diesel taxis to run on liquified petroleum gas can reduce emissions and reduce running costs.¹⁷⁷ It has been argued that doing so represents a more economic option than taxi drivers switching directly to fully electric vehicles, which can cost up to £60,000.¹⁷⁸ However, the upgrades can still be expensive for individuals to undertake (roughly between £8,000 and £10,000).¹⁷⁹

We recommend that the WMCA establishes and funds a time-limited concessionary finance scheme for taxi owners using the most polluting vehicles to retrofit them to run on liquified petroleum gas. The money for this could come from, at least in part, the reasonable profits generated by the introduction of a CAZ across the WMCA.

Recommendation five: Transfer licensing of taxis and private hire vehicles (PHVs) across the constituent parts of the West Midlands county to the WMCA.

For councils outside of the 33 London local authority districts, taxis and PHVs are licensed by local authorities.¹⁸⁰ Within London's 33 local authority districts, Transport for London (TfL) is responsible for licensing. This joined-up approach better allows for consistency of regulating taxis

177. Steve Einton, "Birmingham switching 63 diesel cabs to LPG", <https://www.airqualitynews.com/2016/05/06/birmingham-switching-63-diesel-cabs-lpg/> (2016).

178. Ibid.; Holly Birditt, "Converting London black cabs to LPGAutogas will deliver air quality benefits as well as saving cabbies money", <https://www.calor.co.uk/news/converting-london-black-cabs-lpgautogas-will-deliver-air-quality-benefits-well-saving-cabbies-money/> (2016).

179. Will Date, "Cost 'barrier' to low-emission taxi switch", <https://www.airqualitynews.com/2017/06/13/cost-barrier-to-low-emission-taxi-switch/> (2017).

180. Louise Butcher, "Taxi and private hire vehicle licensing in England", <https://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN02005> (2018).

and PHVs, especially with regards to emissions standards of the vehicles. Importantly, it also prevents against local authorities pursuing a race to the bottom in terms of ease of licensing to attract individuals to license with them, rather than another local authority. Table 5.2 further below details the licensing standards in different local authorities in the WMCA.

This is why we recommend that the power for taxi licensing becomes vested within the WMCA, rather than the seven individual constituent local authorities of the WMCA.

Recommendation six: Increase the stringency of licencing for taxis and PHVs based upon emissions standards.

In recent years, a number of measures have been introduced by TfL in a bid to reduce the amount of air pollution which is generated by London's taxi fleet.¹⁸¹ A landmark regulation was introduced in January 2018, which stipulated that all taxis presented for licensing for the first time will need to be zero emission capable (meaning that they have CO₂ emissions of no more than 50g per kilometre and a minimum zero emission range of 30 miles).¹⁸² TfL has also introduced other measures to incentivise the uptake of cleaner taxis, such as part-funding the Government-led Plug-in Taxi Grant (which gives taxi drivers up to £7,500 off the price of a zero-emission capable taxi), and allocating £42 million to a taxi delicensing scheme (which offers owners of the most polluting taxis up to £5,000 to stop driving it).¹⁸³

Table 5.2 shows the current emissions and age regulations for licensing taxis and PHVs in each of the individual local authorities which comprise the WMCA. As can be seen, regulations pertaining to vehicles' minimum emission standards and age (which has obvious correlation with a vehicle's emissions) are scant, and where they do exist are varied.

181. Transport for London, "Cleaner greener taxis", <https://tfl.gov.uk/modes/driving/ultra-low-emission-zone/cleaner-greener-taxis> (2018).

182. Ibid.

183. Ibid.

Table 5.2. Emissions and age standards for taxi and PHV licensing in the constituent local authorities of the WMCA

WMCA Constituent Authority	Emissions standards Taxis PHVs	Age standards Taxis	PHVs
Birmingham City Council ¹⁸⁴	Currently, there are no minimum emissions standards. However, from 2020, vehicles applying to be licensed for the first time with petrol engines must be Euro 4 or zero emission capable, and those with diesel engines must be Euro 6 or zero emission capable.	Vehicles applying to be licensed for the first time must be less than 14 years old. There is no age limit for vehicles applying for relicensing.	Vehicles applying to be licensed for the first time must be less than eight years old. There is no age limit for vehicles applying for relicensing.
Coventry City Council ¹⁸⁵	Currently, there are no minimum emissions standards. However, a policy for minimum emissions is being internally drafted.	Only vehicles less than five years old can be licensed for the first time. Vehicles more than ten years old will not be re-licensed.	Vehicles which are more than six years old will not be licensed.
Dudley Metropolitan Borough Council ¹⁸⁶	None specified above those as part of the general MOT test	None specified	
Sandwell Metropolitan Borough Council ¹⁸⁷	None specified above those as part of the general MOT test	None specified	
Solihull Metropolitan Borough Council ¹⁸⁸	None specified above those as part of the general MOT test	None specified	
Walsall Council ¹⁸⁹	None specified above those as part of the general MOT test	None specified	
City of Wolverhampton Council ¹⁹⁰	None specified above those as part of the general MOT test	None specified	

184. Private communication; Birmingham City Council, "Proposals to introduce emission standards for taxi and private hire vehicles", <https://www.birminghambeheard.org.uk/place/proposals-to-introduce-emission-standards-for-taxi/> (2017).

185. Private communication; Coventry City Council, "Vehicle proprietors information document 054 (Hackney carriage and private hire)", http://www.coventry.gov.uk/download/downloads/id/26440/vehicle_proprietors_information_document.pdf (2018).

186. Dudley Metropolitan Council, "Hackney carriages: a guide for licence applications, drivers and owners", <https://www.dudley.gov.uk/media/7265/hackney-carriage-guide-for-applicants-drivers-and-owners-july-14.pdf> (2014); Dudley Metropolitan Council, "Private hire vehicles: a guide for licence applicants, drivers and owners", <https://www.dudley.gov.uk/media/7274/private-hire-guide-for-applicants-drivers-and-owners-july-14.pdf> (2014).

187. Sandwell Metropolitan Borough Council, "Private hire and hackney carriage licensing policy: the policy handbook", http://www.sandwell.gov.uk/downloads/file/24922/private_hire_and_licensing_handbook (2018), 47.

188. Private communication; Solihull Metropolitan Borough Council, "Private hire vehicle licence – guidance notes", http://www.solihull.gov.uk/Portals/0/licensing/PHV_guidance.pdf (2013), 1.

189. Walsall Council, "Taxi vehicle licence", https://go.walsall.gov.uk/taxi_vehicle_licence (2018).

190. City of Wolverhampton Council, "Hackney carriage vehicle licence", <http://www.wolverhampton.gov.uk/article/2891/Hackney-Carriage-Vehicle-Licence> (2018); City of Wolverhampton Council, "Private hire vehicle conditions of licence", <http://www.wolverhampton.gov.uk/CHttpHandler.ashx?id=11864&p=0> (2018).

We recommend that the WMCA follows TfL's lead in taxi and PHV licensing regulations based, in part, upon emissions standards. The WMCA should set a date after which all new vehicles presented for taxi and PHV licensing should be zero emission capable. The WMCA should also mandate that the age limit for already licensed solely fossil fuel vehicles is set at 10 years, in order to prevent the oldest models from remaining on the road. For solely fossil fuel vehicles seeking to be licensed for the first time, the age limit should be set at 18 months, so as to prevent aging models from being adopted into the sector in the first place.

It should also be noted that, given the extent of EV manufacturing – including of EV taxis – in and around the WMCA, stricter mandating of emissions standards could present an economic opportunity for the West Midlands.

Recommendation seven: Reflect the age and emissions standards of vehicles seeking to be licensed as taxis or PHVs in licensing costs.

In some of the constituent councils of the WMCA, such as City of Wolverhampton Council,¹⁹¹ Sandwell Metropolitan Borough Council,¹⁹² and Walsall Metropolitan Borough,¹⁹³ applications for older vehicles (say, vehicles over five years old) to become licensed as taxis or PHVs are more expensive relative to newer vehicles (roughly £50 more per vehicle, rising to over £90 in some cases). Whilst somewhat indirectly, this partly incentivises the uptake of newer – and typically less polluting – vehicles as part of the taxi and PHV fleet.

We recommend that vehicles presented for licensing pay different charges in relation to their age and emissions rating. Under Article 13 of EU Directive 2006/123/EC, which in the UK is enforced through

191. City of Wolverhampton Council, "Hackney carriage and private hire vehicle and operators licence fees", <http://www.wolverhampton.gov.uk/CHttpHandler.ashx?id=12753&p=0> (2018).

192. Sandwell Metropolitan Borough Council, "Taxi and minicab licences", http://www.sandwell.gov.uk/info/200176/business/359/taxi_and_minicab_licences/3 (2018).

193. Walsall Council, "Taxi licensing – fees & charges – 1st April 2015", <https://go.walsall.gov.uk/Portals/0/Uploads/Licensing/taxi%20consult/FEES%20-%20TAXI%20LICENSING%202015.pdf> (2015).

the Provision of Services Regulations 2009, any fees levied by licensing authorities must be “reasonable and proportionate to the cost of the authorisation procedure and cannot be dissuasive”.¹⁹⁴ This would rule out licensing authorities levying excessively high charges on the most polluting or oldest vehicles from being licensed, above and beyond what the costs associated with licensing vehicles are. However, newer and less polluting vehicles could have their licensing costs effectively subsidised. We propose that newer vehicles should pay less than older ones; above and beyond this, vehicles which are zero emission capable should incur a discounted licensing fee than would be the case for non-zero emission capable vehicles.

Recommendation eight: Introduce a non-charging CAZ for non-road mobile machinery (NRMM) across relevant parts of the WMCA.

There are no provisions for tackling emissions from NRMM in the Birmingham City Council’s CAZ consultation. NRMM is defined as any “mobile machine, item of transportable industrial equipment, or vehicle which is: a) not intended for carrying passengers or goods on the road; b) installed with a combustion engine”.¹⁹⁵ Examples of NRMM include excavators, back-up power generators, fork lifts, and industry trucks.¹⁹⁶

Yet, NRMM can be a significant source of air pollutant emissions – in London, for example, it is estimated that NRMM used on construction sites alone contributes some 7% of NO_x emissions, 14% of PM_{2.5} and 8% of PM₁₀.¹⁹⁷

194. The European Parliament and the Council of the European Union, “Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the internal market”, <https://eur-lex.europa.eu/legal-content/EN/TEXT/PDF/?uri=CELEX:32006L0123&from=EN>; Provision of Services Regulations 2009. See: https://www.legislation.gov.uk/ukdsi/2009/9780111486276/pdfs/ukdsi_9780111486276_en.pdf.

195. Vehicle Certification Agency, “Outline of Non-road mobile machinery (NRMM) emissions regulations”, <http://www.dft.gov.uk/vca/other/non-road-mobile-mach.asp> (2018).

196. *Ibid.*

197. NRMM.London, “London’s ‘low emission zone’ for non-road mobile machinery”, <http://nrmm.london/> (2018).

The former Mayor of London, Boris Johnson MP, introduced a ‘low emission zone’ for NRMM, with stipulations on emissions of NRMM in certain cases.¹⁹⁸ The NRMM low emission zone is distinct from the CAZ for vehicles, in terms of the standards it imposes and the parts of the city which it covers. Importantly, it is not a ‘charging’ CAZ (whereby emitters of air pollution can pay for the pollution they create), but rather a ‘non-charging’ one which just sets minimum emissions standards and expects all parties to adhere to them.

NRMM being used on the site of any major development within Central London is must comply with Stage IIIB of EU Directive 97/68/EC as a minimum, and any NRMM being used outside of Central London but within Greater London must comply with Stage IIIA of the Directive.¹⁹⁹ From September 2018, NRMM within Central London must comply with Stage IV of the Directive, and NRMM within Greater London must comply with Stage IIIB of the Directive.²⁰⁰

We recommend that the WMCA introduces, in relevant places, a separate non-charging CAZ for NRMM, akin to the one in London. We also recommend that a similar two-tiered approach is taken by the WMCA, with the most polluted areas subject to Stage IIIB immediately, rising to Stage IV over time.

Recommendation nine: Make bus licencing in the WMCA contingent on more stringent emissions standards being met.

The Bus Services Act 2017 granted sweeping powers to the Metro mayors of combined authorities with regards to buses – including the routes they can take, fares, and emissions standards – much in the

198. Mayor of London, “Construction site equipment to meet tough new air quality standards”, <https://www.london.gov.uk/press-releases/mayoral/building-site-air-quality> (2015); the NRMM CAZ was distinct from the vehicle CAZ in London, as indeed would be the case for our proposed NRMM CAZ to be introduced in the WMCA.

199. NRMM.London, “Cleaner construction machinery for London”, <http://nrmm.london/content/cleaner-construction-machinery-london> (2018).

200. Ibid.; for details of EU Directive 97/68/EC, see: https://ec.europa.eu/growth/sectors/automotive/environment-protection/non-road-mobile-machinery_en.

same as the Mayor of London has been able to.²⁰¹ Already, the WMCA has an ambition of having all buses operating in the region to be at least Euro V by May 2020.²⁰²

However, the relative difference between Euro IV buses and Euro V buses is much less significant than the difference between Euro V buses and Euro VI buses, as can be seen in Figure 5.1.²⁰³

Figure 5.1. Emissions standards of Euro vehicle rankings.

Euro stage	NO _x (g/kWh)	PM (g/kWh)
Euro IV	3.5	0.025
Euro V	2	0.025
Euro VI	0.43	0.010
Whole of England	24,989	18.6

Source: Transport and Environment, "Don't breathe here: beware the invisible killer", https://www.transportenvironment.org/sites/te/files/publications/Dont_Breathe_Here_report_FINAL.pdf (2015), 46-48.

Euro V buses produce 1.5 times fewer NO_x emissions than Euro IV buses, and there is no difference in the amount of PM which Euro IV and Euro V buses produce. Euro VI buses, however, are 2.5 times cleaner in terms of PM than Euro V buses, and 4.66 times cleaner in terms of NO_x. Comparing Euro IV and VI buses, the latter produce nearly 7 times less NO_x.

We recommend that the WMCA mandates stricter emissions standards for buses operating within the most polluted areas. For franchises with buses which operate inside the proposed WMCA

201. Bus Services Act 2017, Ch. 21. See: http://www.legislation.gov.uk/ukpga/2017/21/pdfs/ukpga_20170021_en.pdf; Department for Transport, "The Bus Services Act 2017: new powers and opportunities", https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664318/bus-services-act-2017-new-powers-and-opportunities.pdf (2017).

202. West Midlands Combined Authority, "West Midlands Bus Alliance: 50 deliverables for Bus Alliance", <https://www.tfwm.org.uk/media/2568/bus-alliance-deliverables.pdf> (2016).

203. Euro V standards have been in force since 2008, and mandate an emissions limit of 2g/kWh for NO_x and 0.025 g/kWh for PM. Euro VI standards have been in force since 2013, and mandate an emissions limit of 0.43 g/kWh for NO_x and 0.01 g/kWh for PM.

CAZ, licensing should be contingent on ensuring the bus stock is at least Euro VI.

Conclusion

Figure 5.2 summarises all of our policy proposals.

Figure 5.2. Tackling air pollution in the West Midlands.

Recommendation	Policy intervention typology category			
	Financial incentives to use cleaner transportation	Increasing the convenience of cleaner transportation	Deterring the use of polluting transportation	Making existing transportation less polluting
Extend the Clean Air Zone (CAZ) scheduled for Birmingham for 2020 to all relevant parts of the WMCA and transfer responsibility for it from Birmingham City Council to the WMCA			✓	
Enable local and combined authorities to strive for 'reasonable profits' from their CAZs to fund a local diesel scrappage scheme or charging points for EVs		✓	✓	
Introduce a local diesel vehicle scrappage scheme in the WMCA	✓			
Subsidise the retrofitting of diesel taxis to run on liquified petroleum gas	✓			
Transfer licensing of taxis and PHVs across the West Midlands county to the WMCA			✓	
Increase the stringency of licencing for taxis and PHVs based upon emissions standards			✓	

Reflect the age and emissions standards of vehicles seeking to be licensed as taxis or PHVs in licensing costs		✓	
Introduce a non-charging CAZ for NRMM across relevant parts of the WMCA		✓	
Make bus licencing in the WMCA contingent on more stringent emissions standards being met		✓	

Air pollution is a major danger to the health of individuals up and down the United Kingdom. In urban areas like the WMCA, the pernicious consequences it can have are all the more concentrated. Indeed, concern for air pollution in the West Midlands is widespread amongst the public, and many believe that not enough is being done to resolve it.

Achieving cleaner air in the WMCA will not be easy, and will invariably require a number of changes to achieve it – from individuals, local companies, and the relevant authorities. Greater understanding of the sources of air pollution has allowed society to begin to mitigate atmospheric emissions, and to develop technologies which should help to further bring down the concentrations of pollutants in the air.

The recommendations on transport policy which have been set out in this report seek to help the WMCA to better achieve its vision for cleaner air in the West Midlands. They aim to assist a transition to cleaner alternatives in transport and other sectors, whilst also promoting the West Midlands’ unique strength in EV and clean technology manufacturing.

Annex: Polling questions

- 1) In a normal week, which of the following modes of transport do you use? Pick as many as apply.
- Walking
 - Petrol vehicle
 - Bus
 - Diesel vehicle
 - Overground train
 - Bicycle
 - Underground/Metro
 - Taxi
 - Tram
 - Hybrid or electric vehicle
 - Coach
 - Other
 - None of these

2) **You mentioned you do not use a hybrid or electric vehicle. Which of the following factors, if any, are preventing you from buying an electric or hybrid vehicle? Choose all that apply to you.**

- High upfront cost
- Lack of charging points on the road network
- Concern about short battery life
- Lack of funds to buy any car
- Lack of suitable charging space at home
- I cannot drive
- No need or wish to buy any car
- Concern about poor performance
- Not available second-hand
- Never considered it
- Preference for familiar brands or models
- Unattractive designs of electric vehicles
- Don't really understand what they are
- Another factor

3) **To what extent are you concerned about the impact of air pollution on your and other people's health?**

- Very concerned
- Somewhat concerned
- Not very concerned
- Not at all concerned
- Don't know

4) Which of the following sources of air pollution are you most concerned about? Pick up to three.

- Heavy industry
- Diesel vehicles
- Coal-fired power stations
- Pesticides
- Petrol vehicles
- Diesel generators
- Construction sites
- Animal waste
- Wood-burning stoves
- Ships
- Open wood fires in people's homes
- Outdoor wood fires
- None of these

5) To what extent do you agree or disagree with the following statements about pollution? [Strongly agree, Somewhat agree, Neither agree nor disagree, Somewhat disagree, Strongly disagree, Don't know]

- Air pollution is a significant health risk to me and my family
- The government is not doing enough to protect me and my family from air pollution
- The UK should have cleaner air than other European countries
- The government should reduce air pollution below its current levels
- Stronger air pollution laws are an economic opportunity for the UK to develop cleaner industries
- I would be more likely to vote for a political party that would cut air pollution
- I'm not really worried about levels of air pollution

6) Which, if any, of the following measures would you support to tackle air pollution?

- Creating more green spaces and planting more trees in urban areas
- Investing in public transport to encourage more people to use it
- Encouraging farmers to use fewer pesticides
- Offering diesel vehicle owners money off a new electric vehicle
- Banning the use of polluting vehicles in city centres
- Ending tax breaks for diesel used in generators and machinery
- Banning the burning of polluting solid fuels, such as coal or wet wood, in urban homes
- Higher road and fuel taxes for polluting vehicles
- New charges for polluting vehicles driving in city centres
- Building more bike lanes in areas where there is high pollution
- Banning the sale of new petrol and diesel cars in the next ten years (those who already own a petrol car could continue to use it)
- Subsidising public transport for owners of polluting vehicles
- Higher parking fees for polluting vehicles
- Reducing the number of parking spaces in areas with high levels of pollution
- None of the above

7) Which of the following potential effects of air pollution do you think are the most important for politicians to take into account when discussing action to curb air pollution? Pick up to three.

- The harm of pollution to people's health
- The strain on the NHS from lung and heart conditions caused by pollution
- The economic benefit of developing cleaner industries and technologies
- The unfairness of air pollution disproportionately affecting children and the poorest
- The contribution of vehicles emissions to climate change
- Reduced traffic jams on roads from anti-pollution measures
- The cost of anti-pollution measures on businesses and individuals
- The potential loss of business from town centres that have anti-pollution measures
- The international prestige of leading on clean air
- None of the above

8) Who do you think should be most responsible for tackling air pollution?

- The UK government
- Individuals
- Heavy industry
- Car companies
- Local authorities
- Devolved government
- Metro mayors (e.g. Mayor of London, Mayor of Greater Manchester)
- None of the above

Air pollution, especially in urban areas, is one of the most pressing environmental issues of our time. A growing evidence base shows that exposure to air pollution is associated with significant negative impacts on human health and productivity.

This report examines the scale of, consequences of and public attitudes towards air pollution in the West Midlands. It concludes by proposing new transport policies for the West Midlands Combined Authority (WMCA) and its seven constituent local authorities to adopt to reduce air pollution in the region.

Bright Blue Campaign
brightblue.org.uk

ISBN: 978-1-911128-11-3