

# Blackburn with Darwen Climate Change and Health Needs Assessment

2022



BLACKBURN  
*with*  
DARWEN  
BOROUGH COUNCIL

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**SUMMARY OF FINDINGS AND RECOMMENDATIONS**

	<b>Key Findings</b>	<b>Recommendations</b>
<p><b>Sound Decisions</b></p>	<p>Whilst climate friendly strategic direction exists at a corporate level within the council's corporate plan, three of the 10 public health strategic documents reviewed referenced any link to climate. Therefore, opportunities for greater policy links between public health and the council's climate emergency action plan exist. The council's recently updated social values policy and procurement strategy emphasises carbon emission considerations. Other local authorities in England have integrated carbon and environment considerations into council wide decision making which can provide learning for our organisation.</p>	<p>All public health strategic documents should give consistent consideration to the climate and ecological emergency.</p>
		<p>Public health commissioners should ensure familiarity with the new social values policy and procurement strategy for future public health procurements, and consider how it will be effectively implemented and monitored for the variety of commissioning that public health undertakes.</p>
		<p>The council workforce should be developed to understand the links between climate change and health and options for policy action to realise co-benefits for both climate and health.</p>
		<p>The local authority should consider developing an environment and climate decision making tool in partnership with those who would use it, and should balance thorough consideration with practicalities of use.</p>
		<p>Whilst health and environment priorities exist within the council's corporate plan, an explicit and reinforced Environment <i>and</i> Health in All Policies stance council wide should be reinforced in all decision making.</p>

<p><b>Resilient and Attractive Borough</b></p>	<p>Extreme events such as heatwaves, flooding and wildfires will likely increase in the future threatening the health of people in Blackburn with Darwen. The borough already sees higher than average rates of illnesses that are particularly susceptible e.g. high rates of cardiovascular disease and diabetes susceptible to heatwaves. High levels of deprivation make the borough more vulnerable, particularly to flooding. Consideration must be made to the effect of water, food and fuel insecurity now and in the future.</p>	<p>Public health should work with the planning department to consider climate mitigation and adaption measures including in terms of housing energy efficiency, overheating and flooding within new developments.</p>
		<p>Continue to support vulnerable residents via healthy homes initiatives including advice, support and grants to increase the energy efficiency of homes to realise co-benefits to environment and health</p>
		<p>Support residents to take up flood insurance</p>
		<p>Investigate and foster possibilities for grass roots community cooperative projects with co-benefits socially and environmentally, such as community renewable energy projects</p>
		<p>Focus resources on health protection of the elderly and vulnerable from the temperature effects of climate change including from heat and cold</p>
		<p>Develop key public health messages for the public during heatwaves and ensure to communicate heatwave alerts across the integrated care system in line with the Heatwave Plan for England</p>
		<p>Work with organisations including the Environment Agency to promote co-benefits of flood defences including net biodiversity gain and options for social prescribing</p>

	Strengthen and support emergency planning and preparedness structures both locally and through the local resilience forum.
	Plan for effective communications including in community languages in response to extreme events including flooding as per the Local Flood Risk Management Strategy
	Plan for drought e.g. supporting the vulnerable if provision of bottled water required
	Consider pro-active recommendations to the health sector including care homes in terms of indoor temperatures and ways to mitigate extreme heat
	Support the integrated care system to plan for future climate risks and increase resilience
	Exploit opportunities to promote wellbeing and outdoor activity with warmer weather including active travel, ensure that access to infrastructure and green space considers inequalities within the borough
	Where flooding cannot be prevented, explore ways to support the mental health of those affected
	Educate the public about wildfire risk and behaviours to reduce risk

		<p>Educate the public about UV protection</p>
		<p>Plan to support residents in times of increasing food prices, alongside recommendations for healthy and sustainable diet supporting work of the Blackburn with Darwen Food Resilience Reliance</p>
<p><b>Lean and Clean</b></p>	<p>Blackburn with Darwen has four air quality management areas and air quality in the borough is expected to improve over time due to improvements in vehicle emissions. However, there is no safe level of air pollution and it is unclear how air quality will react over time with climate change. We have above average levels of lung disease, cardiovascular disease and premature births which are conditions linked to poor air quality.</p>	<p>Continue to monitor air quality in the borough</p>
<p><b>Lean and Clean</b></p>	<p>Blackburn with Darwen has four air quality management areas and air quality in the borough is expected to improve over time due to improvements in vehicle emissions. However, there is no safe level of air pollution and it is unclear how air quality will react over time with climate change. We have above average levels of lung disease, cardiovascular disease and premature births which are conditions linked to poor air quality.</p>	<p>Continue work towards reducing levels of harmful pollutants, actions should be coordinated and evidence based. Actions which have co-benefits for air quality, physical and mental health and the climate include interventions to increase walking and cycling and reduce car use.</p>
<p><b>Travelling Lightly</b></p>	<p>Vehicle miles in the borough were steadily increasing before the pandemic and we have relatively low rates of walking and cycling compared to the rest of the North West. One in four residents said they would always walk, cycle or take public transport rather than drive short distances. Residents believe improved public transport could reduce car use.</p>	<p>Encourage an increase in use of walking and cycling for transport, including improving the capability, opportunity and motivation for people to choose to walk or cycle.</p>
<p><b>Travelling Lightly</b></p>	<p>Vehicle miles in the borough were steadily increasing before the pandemic and we have relatively low rates of walking and cycling compared to the rest of the North West. One in four residents said they would always walk, cycle or take public transport rather than drive short distances. Residents believe improved public transport could reduce car use.</p>	<p>Improve sustainable public transport links</p>

<b>Capturing More Carbon</b>	The borough has above average provision of open space in many domains, however, this is not spread evenly through the borough. Some neighbourhoods such as Blackburn East which are more built up have less access to green space.	Continue to consider quantity, quality and inequalities in green space provision throughout the borough
		Consider nature based social prescribing opportunities within the capturing carbon domain e.g. tree planting programmes
<b>Basis for Change</b>	The majority of residents in Blackburn with Darwen are very concerned or fairly concerned about climate change.	Progress plans for a Blackburn with Darwen citizens jury on climate change to allow residents to guide the council's plans towards a more sustainable borough

## Background

The evidence is indisputable, that human activity has warmed the planet rapidly<sup>1</sup>. Unless reductions in greenhouse gas emissions are made the planet will exceed the 1.5-2°C target temperature rise within the 21<sup>st</sup> century<sup>1</sup>. The average surface temperature in the UK has risen 1.2°C since the pre-industrial age, whilst there remains a goal to limit warming to 1.5°C globally preparations must be made for warming of up to at least 4°C<sup>2</sup>. It is recognised that climate change will have negative effects on health for the UK population. Risks include more extreme weather events including flooding, rising sea levels, heatwaves and draught, damage to global food supplies, changing patterns of infectious disease and risks to health from air pollution<sup>3</sup>.

Blackburn with Darwen Borough Council declared a climate emergency in 2019<sup>4</sup>. In this declaration the organisation recognised the impact of human activity on climate change, the risks to human and planetary health of a warming climate and the need for urgent action.

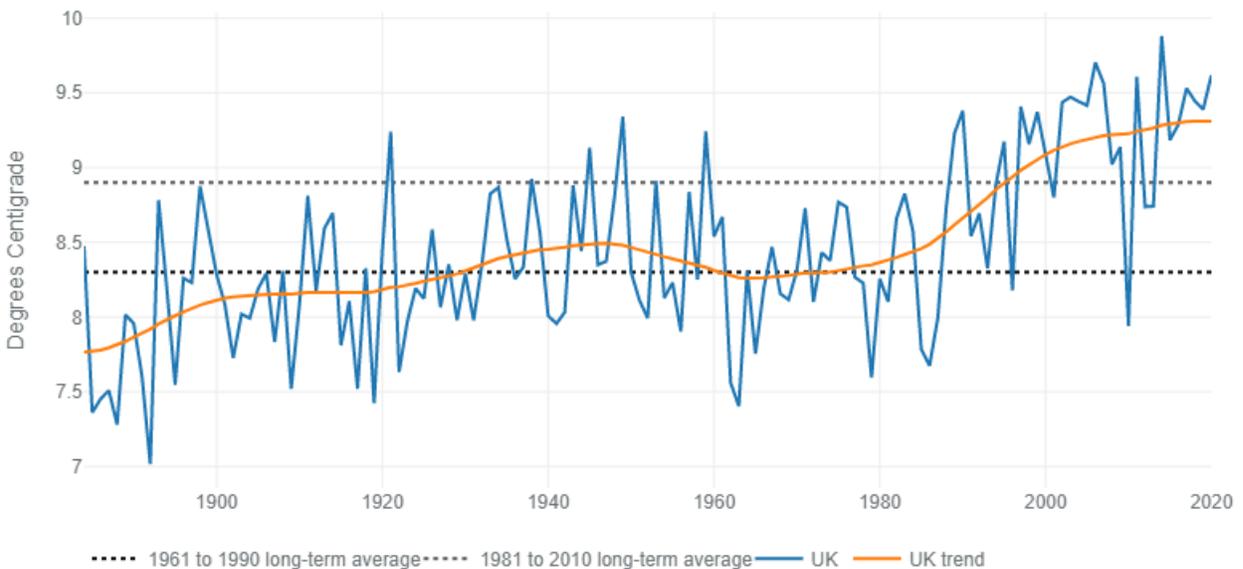


Figure 1 Annual mean temperature in the UK over time. Source: ONS climate change data portal <https://climate-change.data.gov.uk>



## Purpose of the Blackburn with Darwen Climate and health needs assessment

The threat that climate change poses to health and health inequalities is well recognised within the public health community on the global scale. However, understanding the vulnerabilities that Blackburn with Darwen has in the face of climate change at a local level has not been explored.

The purpose of this climate & health needs assessment is therefore to understand the vulnerabilities the borough has to the changing climate. This will aim to make clear the direct impact of climate change on the health of our borough, and therefore the importance of mitigation and adaption action in line with our Climate Emergency Action Plan. Vulnerabilities and needs will include those within council policy, current and future population health and the upstream influences on population behaviour. It will also include an aim to understand the public's views about climate change.

### Scope

Climate & health affect all council portfolios, and similar to a “health in all policies” (HiAP) approach<sup>5</sup>, an “environment in all policies” approach has been recommended to address issues around climate and sustainability<sup>6</sup>. Therefore, in order to define the scope of this assessment the areas for action laid out in the Council's Climate Emergency Action Plan (2019)<sup>7</sup> have been used to explore the needs in these areas. Whilst almost all actions related to climate change will also have some relation to health, this needs assessment will focus on needs and vulnerabilities that are directly related to population health in the main, and the council's public health activities. It is hoped that this will provide a form of blueprint for assessment and review within other council portfolios. Each domain will be accompanied by a set of recommendations based on the findings.

## ACTION SUMMARY

Blackburn with Darwen Borough Council will:

<b>Sound Decisions</b>	Account for emissions in decision making
	Revise procurement policies and procedures to ensure environmental impact is considered as part of all major procurements.
<b>Resilient &amp; Attractive Borough</b>	Align Council policy with our climate emergency objectives
	Review and update our plan to adapt to the changing climate to ensure a resilient borough
	Take what steps we can to facilitate improvement of homes in the borough to reduce emissions and tackle fuel poverty.
	Exploit the opportunities arising from the move to a low carbon economy
<b>Lean &amp; Clean</b>	Invest in clean energy and efficiency measures throughout the Council estate and support renewable energy generation in the borough
	Reduce the household waste generated in the borough, increase recycling and maximise the benefit from residual waste
<b>Travelling Lightly</b>	Reduce emissions from transport and increase active travel
<b>Capture more carbon Basis for change</b>	Work with landowners to plant more trees and protect and enhance natural carbon stores
	Work with residents and partners to raise awareness of and to take action to tackle climate change
	Identify a Climate Emergency Champion and provide regular reports on action plan progress to Council and residents
	Actively lobby the Government to provide the additional powers and resources needed to meet the 2030 target

Figure 2 Action summary of the Blackburn with Darwen borough council's Climate Emergency Action Plan

## Sound Decisions

The first key action area within the Blackburn with Darwen 2019 Climate Emergency Action Plan is Sound Decisions. This translates into decision making that takes into account impact on the climate and environment. To support this, strategic priorities and frameworks should be in place within the council. This includes procurement policies and procedures to ensure environmental impact is considered in major procurements as laid out in figure 2.

Therefore, understanding our strategic “needs” as a public health department in regard to the above objective is vitally important. Stocktaking where we are now can then be used to put in place plans for the future.

In order to understand the current policy landscape key strategic Blackburn with Darwen Borough Council Public Health Department documents were reviewed for reference to climate change and actions to reduce carbon emissions and improve sustainability. The Council's Corporate Plan was also reviewed to understand the current overarching objectives of the organisation.

Key strategic documents reviewed:

- [Health & Wellbeing Strategy 2018-2021](#)
- [Eat Well Move More Strategy 2022-2025](#)
- [Local government declaration on healthy weight 2017](#)
- [Blackburn with Darwen Oral Health Improvement Partnership Strategy 2021 - 2026](#)
- [Joint strategic needs assessment | Blackburn with Darwen Borough Council](#)
- [Public health annual report 2018-2019](#)
- [Blackburn with Darwen Walking and Cycling Plan 2021-2024](#)
- [Tobacco Free Lancashire 2018-2023](#)
- [Blackburn with Darwen Integrated Sexual Health Strategy 2017-2020](#)
- [Blackburn with Darwen Safer Roads Strategy 2022-2026](#)
- [Blackburn with Darwen Corporate Plan 2019-2023](#)
- [Blackburn with Darwen contract and procurement procedure rules](#)

The Blackburn with Darwen Corporate Plan 2019-2023 includes within its 8<sup>th</sup> Priority on being a Transparent and Effective Organisation that the Council will “take active steps across all council departments to reduce our carbon footprint and be even more environmentally and ecologically aware”. Therefore, there is overarching corporate direction to consider climate and environment in decisions.

Of the 10 key public health strategic documents reviewed, three (the Blackburn with Darwen Walking and Cycling Plan, the Eat Well Move More Strategy and the Safer Roads Strategy) contained specific mention of climate change or the Climate Emergency Action Plan. The Health and Wellbeing Strategy 2018-2021 contained action on increasing active travel. The Joint Strategic Needs Assessment 2020 features information on active travel and air pollution. However, these documents do not highlight these topics in the context of climate change and

carbon emission reduction. Some of these documents were released prior to the publication of the most recent Corporate Plan and are currently being updated for 2022. There are plans in place to include issues around climate within the updated Health and Wellbeing Strategy.

In terms of the Council's contract and procurement procedure rules, these state that criteria for choice of provider should include "where appropriate, criteria that assess the impact on the economic, social and environmental well-being of the borough in accordance with any Social Value Policy which may be adopted by the Council". This is in line with the Social Value Act 2012 requiring the public sector to ensure the money it spends creates the "greatest economic, social and environmental value for local communities"<sup>8</sup>. The council's social values policy and procurement strategy was updated in March 2022 to include consideration of climate change and the council's commitment to net zero by 2030<sup>9</sup>. This includes considering alternatives available that would help the borough meet carbon targets, include questions to suppliers on the carbon neutral target as part of the social value questions, and work to understand the carbon footprint of contracts and how it might be reduced.

Therefore, whilst some strategic documents reference the link to climate change and the climate emergency action plan and strategic direction exists at a corporate level, there are opportunities for greater policy links. It is noted that many of the strategies were published before the council's corporate plan and before the Climate Emergency Action Plan. When strategies are updated there are opportunities to emphasise these policy links and potential co-benefits for health and climate. These are highlighted in table 1. Documents with specific potential include the new Health and Wellbeing Strategy, the JSNA, and future public health annual reports. Strategies such as the Eat Well, Move More, the Walking and Cycling Plan and the Safer Roads Strategy should ensure continued strong links to the climate agenda within future iterations. Whilst some strategies and work streams have less clear links to climate change such as the sexual health strategy, almost all will require procurement of services. This is where incorporating climate and sustainability into these decisions will link these agendas.

	Reference to climate change or carbon emissions	Reference to BwD CEAP or Declaration	Significant opportunity for links to be made with the CEAP
Health & Wellbeing Strategy 2018-2021	Red	Purple	Green
Eat Well Move More Strategy 2022-2025	Green	Green	Green
Local government declaration on healthy weight 2017	Red	Purple	Amber
Blackburn with Darwen Oral Health Improvement Partnership Strategy 2021 - 2026	Red	Red	Amber
Joint strategic needs assessment   Blackburn with Darwen Borough Council	Red	Purple	Green
Public health report 2018-2019	Red	Purple	Green
BwD Walking and Cycling Plan 2021-2024	Green	Green	Green
Tobacco Free Lancashire 2018-2023	Red	Purple	Amber
Blackburn with Darwen Safer Roads Strategy 2022-2026	Green	Green	Green
Blackburn with Darwen Integrated Sexual Health Strategy 2017-2020	Red	Purple	Amber
Blackburn with Darwen Corporate Plan 2019-2023	Green	Red	Green
contract and procurement procedure rules	Red	Purple	Green

Table 1. Red, Amber, Green rating of each strategy under 3 headings. Purple is not applicable due to publication prior to the CEAP. CEAP – Climate Emergency Action Plan

## Examples of decision making tools developed by other local authorities

### Chesterfield Borough Council

Chesterfield Borough Council have developed a tool that generates a report detailing the impact of the activity on climate change as well as taking into account the effect of the changing climate on the activity<sup>10</sup>. This is secondary to a commitment to consider climate change within all decision making and the council’s goal to become carbon neutral by 2030. The tool requires responses in multiple domains including land use, transport, energy, buildings, waste and climate adaption. A copy of the tool can be downloaded [here](#). The tool has been shared with other councils to adapt to their own needs.

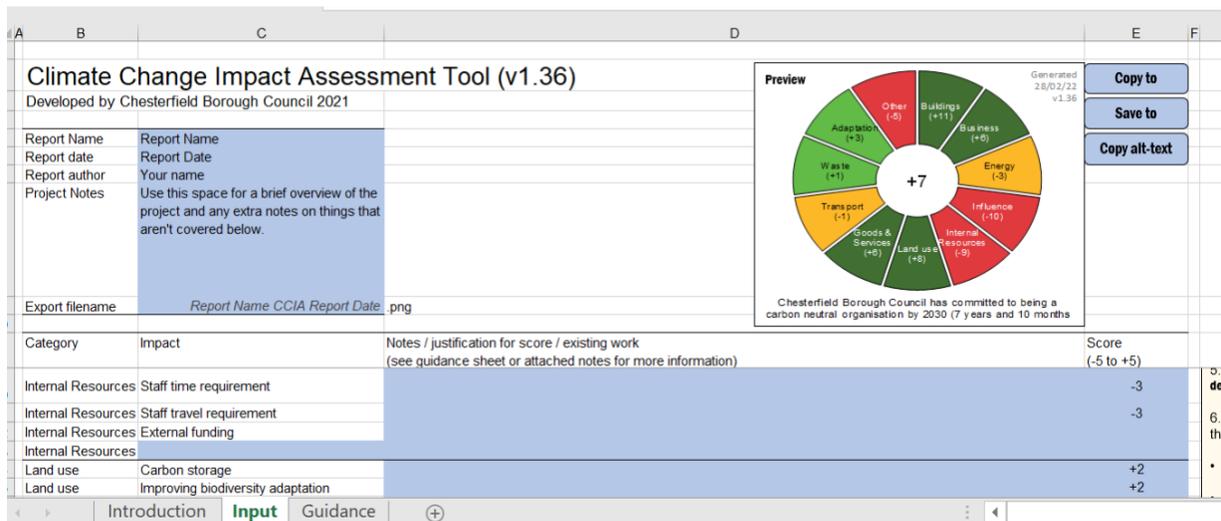


Figure 3 Screenshot of the Climate Change Impact Tool developed by Chesterfield Borough Council. Available to download from <https://www.chesterfield.gov.uk/health-and-environment/weather-and-climate-change/climate-change/climate-change-impact-assessment-tool.asp>

### Cornwall Council’s decision making wheel

Cornwall have created a decision wheel based on the Kate Raworth Doughnut Economics model<sup>11,12</sup>. The wheel has been embedded into council decision making and takes into account the environment (outer wheel) and social issues (inner wheel). Users of the tool complete questions to rate categories including on air quality, climate change adaption, biodiversity, health, wealth and crime. This then creates a red, amber, green rated wheel image. An example can be viewed [here](#) and below. There are plans to further integrate the wheel into lower level decision making within Cornwall council and into their comprehensive impact assessment process<sup>12</sup>.

# Decision making wheel

## Case study: The Saints Trail

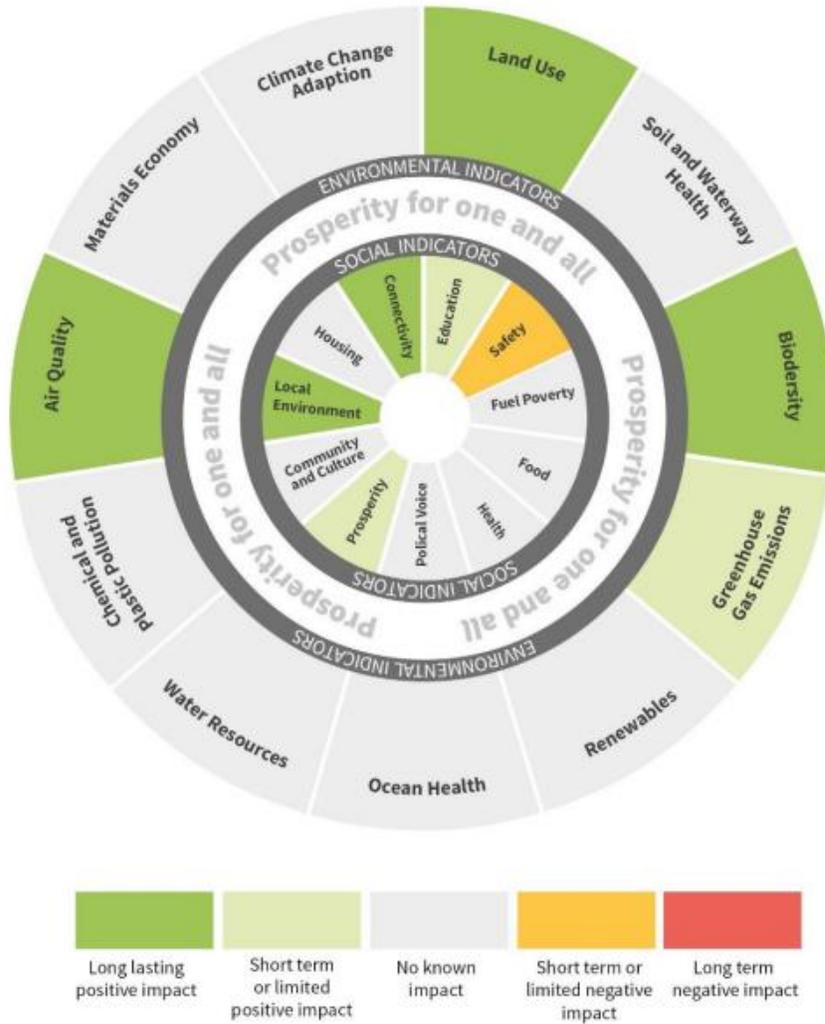


Figure 4 Example of Cornwall Council's decision making wheel

## Recommendations for sound decisions

- All public health strategic documents should give consistent consideration to the climate and ecological emergency. This should include links with the Climate Emergency Action Plan, co-benefits to health and climate and procurement considerations.
- Commissioning services is a vital part of the public health function and the local authority has opportunity to influence these services and their climate policies. Public health commissioners should ensure familiarity with the new social values policy and procurement strategy for future public health procurements, and consider how it will be effectively implemented and monitored for the variety of commissioning that public health undertakes.
- The council workforce should be developed to understand the links between climate change and health and options for policy action to realise co-benefits for both climate and health.
- The local authority should consider developing an environment and climate decision making tool in partnership with those who would use it, and should balance thorough consideration with practicalities of use. Learning from other local authorities is recommended.
- Whilst health and environment priorities exist within the council's corporate plan, an explicit and reinforced Environment *and* Health in All Policies stance council wide should be reinforced in all decision making.

## Resilient and Attractive Borough

This chapter attempts to understand the needs of and risks to the borough under the theme resilient and attractive borough. This encapsulates extreme weather events, water quality and supply, food safety and security, fuel poverty and risks from vector borne diseases.

### Extreme weather events

Extreme weather events are predicted to become more common in the UK with ongoing climate change<sup>13</sup>. This includes warmer and wetter winters and hotter and drier summers. There will be increased risk of heatwaves, floods, draughts and wildfires<sup>13</sup>. All of which will impact on the health of residents in the borough.

### Heatwaves

All of the UK's ten warmest years have occurred since 2002<sup>14</sup>. The hottest day on record was in England in 2019 at 38.7°C<sup>15</sup> and it is predicted that we will continue to see increased temperatures in the decades to come.

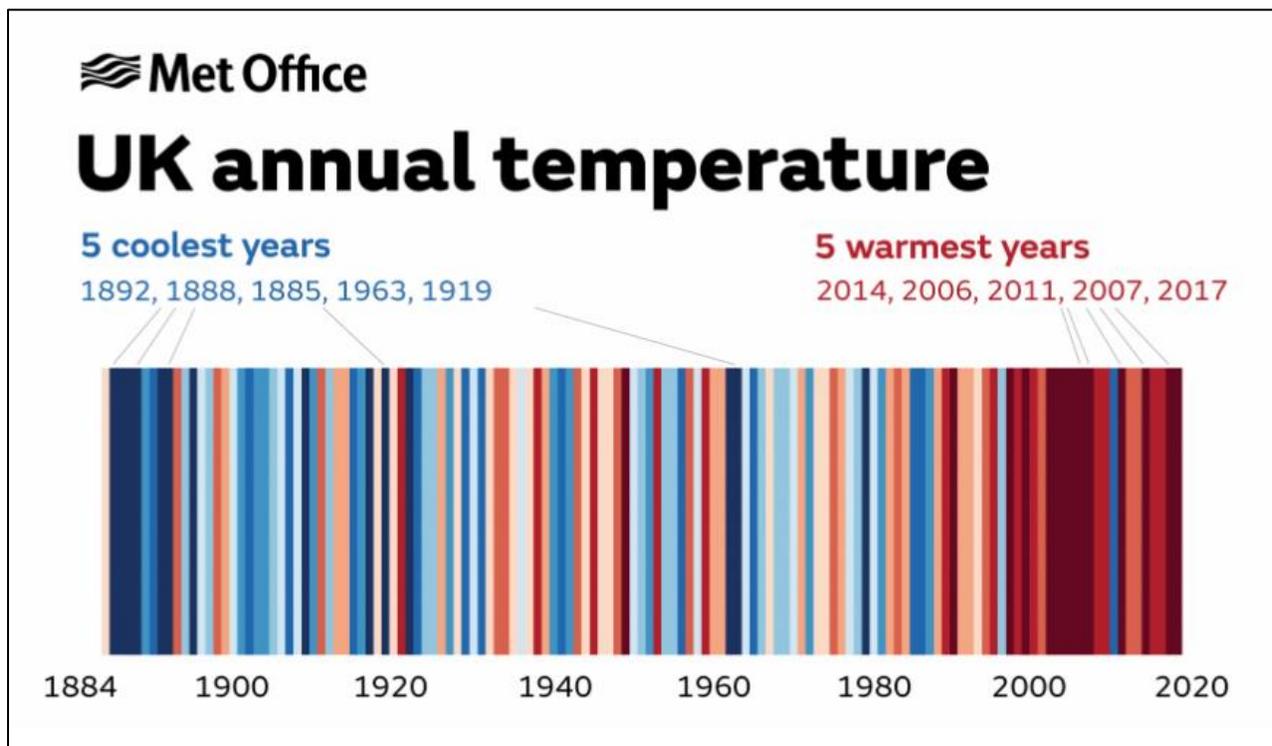


Figure 5 Source: <https://www.metoffice.gov.uk/about-us/press-office/news/weather-and-climate/2019/state-of-the-uk-climate-2018>

### What will the effect be

Hot summers like that seen in 2018 are due to occur every other year by 2050 in the UK, which is estimated to lead to 7,000 heat related deaths each year if no adaption made<sup>13</sup>. Modelling studies predict an increase in the rate of heat-related deaths in the North West from 2.0 per 100

000 per year to 3.7 per 100 000 in the 2050s<sup>16</sup>. However there is a lack of precision in these estimates, and these are dependent on what mitigation measures are taken.

Heat related deaths can be caused by increased concentration of the blood leading to clotting, there is also pressure put on the heart to pump blood to extremities to improve cooling. At extreme heat the body’s proteins cannot function which can lead to cell death<sup>17,18</sup>. Heat can also increase the risk of air pollution particularly ground level ozone, increase risk of wild fires and coincide with drought<sup>16</sup>.

There may be a reduction in cold temperature and winter related deaths in the future with rising temperatures however evidence is limited<sup>13,19</sup> and this is likely to be offset by an aging population<sup>16</sup>.

*Who will be affected*

There is evidence that the elderly will have the greatest increase in mortality from heat related deaths in the UK in the coming decades<sup>19</sup>. The health protection of the elderly from the temperature effects of climate change has been recommended as a priority by researchers<sup>19</sup>.

Population size and structure are therefore important to understand when assessing current and future climate related health need. The population of Blackburn with Darwen is expected to increase marginally and age overall over the next 20 years (figures 6 & 7). The Blackburn with Darwen mid-year population estimate for 2022 is 149 272, this increases to 149 802 in 2040<sup>20</sup>. It is estimated that 6.6% of the population in mid-2022 will be 75 years or older. This is predicted to increase to 9.0% in 2040<sup>20</sup>. However, predictions of future population structures depend on estimates of fertility, life expectancy and migration patterns and may vary from those predicted.

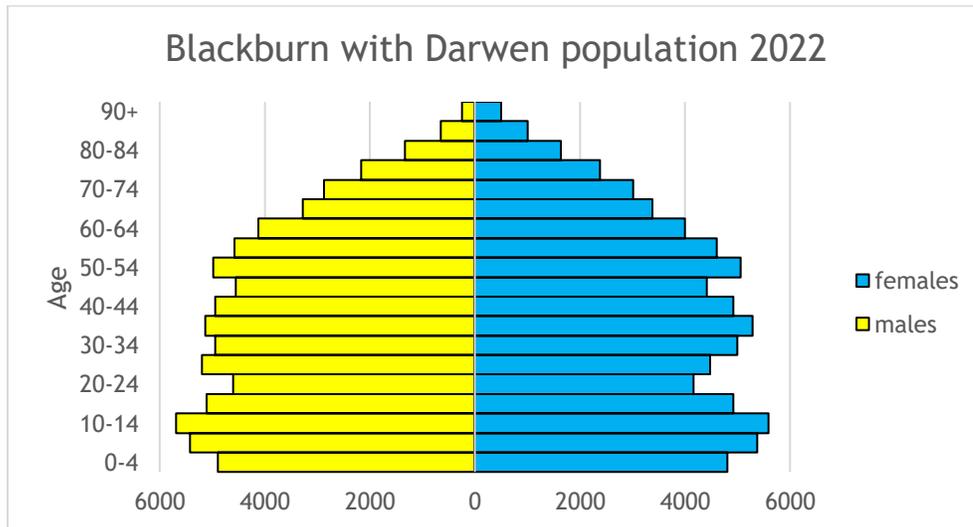


Figure 6 Source: ONS

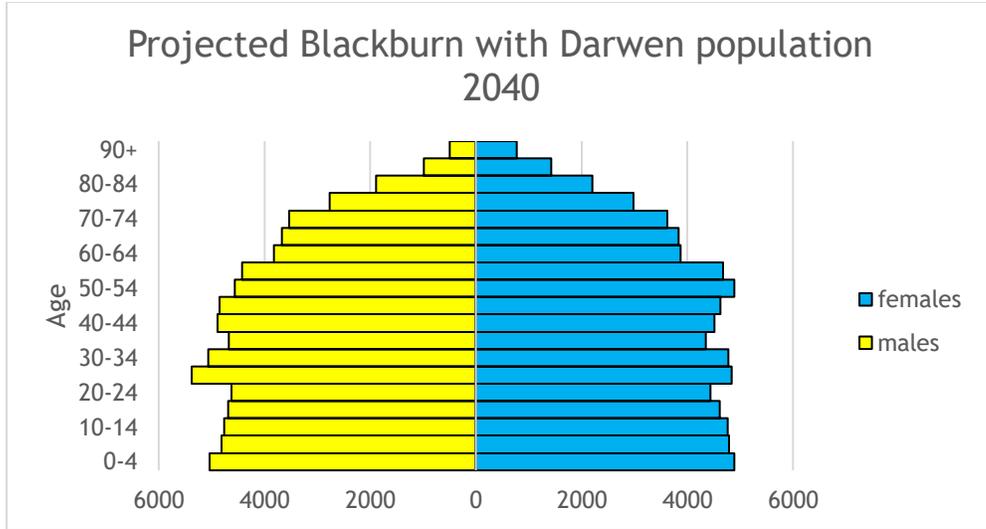


Figure 7 Source: ONS

*Maternal health*

Evidence exists for increased risks for maternal health with increased heat, including increased risk of preterm birth<sup>16</sup>. In Blackburn with Darwen during the period 2016-18 the rate of premature births (born <37 weeks) was 91.1 per 1000, this was higher than the regional (83.5 per 1000) and the national (81.2 per 1000) rates<sup>21</sup>. The 2019 neonatal and stillbirth rate for the borough is also higher than regional and national averages, however the confidence intervals around his estimate are wide 8.6 per 1000 (95% CI 5.0-13.8)<sup>21</sup>.

*Mental health*

There is limited evidence that there may be increased risk of suicide associated with increased heat, and it may worsen symptoms of mental illness<sup>16</sup>. Blackburn with Darwen has higher rates of mental illness including depression compared to regional and national averages (figure 8). The suicide rate in Blackburn with Darwen over the period 2018-2020 is 9.3 per 100 000 people which is in line with regional and national averages<sup>22</sup>.

Depression: Recorded prevalence (aged 18+) 2020/21

Proportion - %

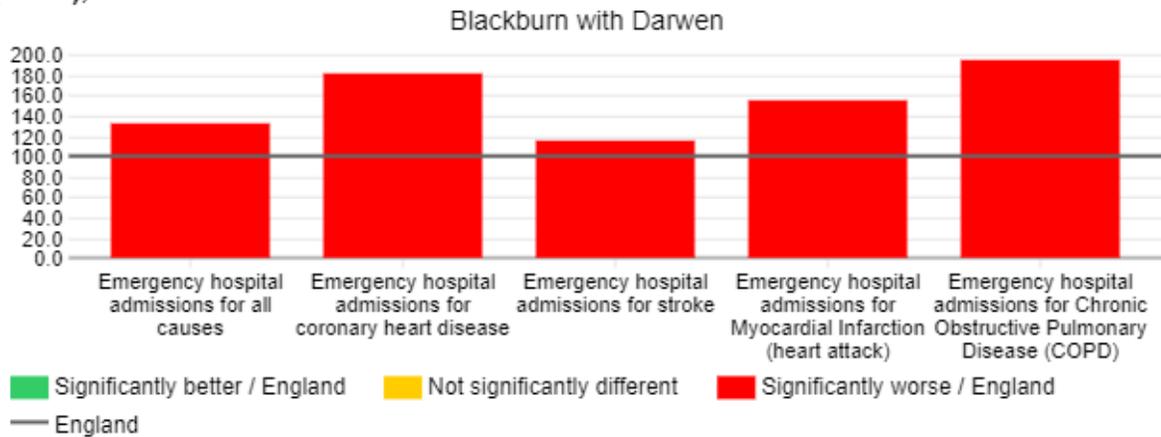
Area	Recent Trend	Count	Value	99.8% Lower CI	99.8% Upper CI
England	↑	5,955,865	12.3	12.3	12.3
Lancashire and South Cumbria NHS region	↑	219,010	15.2*	15.2	15.3
NHS Blackpool CCG	↑	28,009	19.8	19.5	20.1
NHS Chorley And South Ribble CCG	↑	24,959	16.7	16.4	17.0
NHS Blackburn With Darwen CCG	↑	21,420	15.7	15.4	16.1
NHS West Lancashire CCG	↑	14,075	15.2	14.8	15.6
NHS Greater Preston CCG	↑	26,072	15.2	14.9	15.5
NHS Fylde & Wyre CCG	↑	22,466	15.0	14.8	15.3
NHS Morecambe Bay CCG	↑	41,157	14.2	14.0	14.4
NHS East Lancashire CCG	↑	40,852	13.4	13.2	13.6

Figure 8 Recorded prevalence of depression source: OHID Mental Health and Wellbeing JSNA - OHID (phe.org.uk)

*Cardiovascular disease and diabetes*

People with cardiovascular disease and diabetes are at increased risk of mortality in during heatwaves<sup>23,24</sup>. Blackburn with Darwen has higher rates of emergency admissions for cardiovascular disease including myocardial infarction and stroke compared to national levels (Figure 9). The prevalence of coronary heart disease is 3.5% (99.8% CIs 3.4, 3.6) compared to the England average of 3.0% (99.8% CIs 3.0, 3.1)<sup>25</sup>. Our premature mortality (under 75 years) from cardiovascular disease is also relatively high at 62.5 per 100 000, the fourth highest of all the CCGs in the country<sup>25</sup>. The prevalence of stroke and transient ischaemic attack is 1.8% (99.8% CIs 1.7, 1.9) similar to that of national rates at 1.8%<sup>26</sup>. We have a prevalence of heart failure at 0.8% (99.8% CIs 0.8, 0.9) compared to national prevalence of 0.9% (99.8% CIs 0.9, 0.9)<sup>26</sup>. We have higher prevalence of diabetes at 8.8% (99.8% CI 8.6, 9.1) compared to 7.1% nationally (99.8% CI 7.1, 7.1)<sup>27</sup>.

**Emergency Hospital admissions, 2015 to 2016, to 2019 to 2020, Standardised Admission Ratio (SARs),**



*Source: Hospital Episode Statistics (HES) NHS Digital*

*Figure 9 Emergency admissions for all causes, cardiovascular disease and COPD. Source: OHID Local Health*

#### *Renal disease*

Those with renal disease are at increased risk of mortality in hot weather<sup>23</sup>. Blackburn with Darwen currently has relatively low prevalence of chronic kidney disease (3.3% compared to 4% nationally)<sup>25</sup>.

#### *Injuries & accidents*

There is evidence that increased heat can lead to an increase in unintentional accidents and injuries<sup>16,28</sup>. During 2020/21 Blackburn with Darwen had a relatively high rate of admissions compared to regional and national averaged caused by unintentional and deliberate injuries in children aged 0-14 (129.6 per 10,000)<sup>21</sup> and we have the highest rate in the North West of people killed and seriously injured on our roads (211 per billion vehicle miles)<sup>22</sup>.

#### *Occupational health*

Heat has been shown to increase risk of accidents in the workplace<sup>16</sup>. There would also be risks from heat injury including heatstroke however data on this in the UK is lacking. Heat can lead to discomfort in the workplace, lead to absenteeism and reduced productivity<sup>16</sup>.

#### *Malignant melanoma*

Melanoma is the 5<sup>th</sup> most common cancer in the UK. The most important risk factor for melanoma is ultra violet radiation exposure and it is predicted that 86% of cases are caused by over exposure to ultra violet radiation in the UK<sup>29</sup>. Intense bursts of UV exposure including sunburn have been shown to cause increase risk compared to chronic exposure. There is concern that warmer weather due to climate change may increase the risk of melanoma in the UK due to increased intense exposure to UV<sup>29</sup>. To receive the health benefits of sun exposure for vitamin D production it should not be necessary for individuals to tan or burn<sup>29</sup>.

The age-standardised incidence rate of malignant melanoma over the period 2017-19 in Blackburn with Darwen was 21.7 per 100 000 (CIs 17.2, 27.0). This compares to the England rate of 27.9 (CIs 27.6, 28.2)<sup>30</sup>. Rates of melanoma are found to be lower in more deprived groups and lower in Black and Asian ethnic groups compared to White. Incidence rates of melanoma are projected to rise in England over the next decade<sup>29</sup>.

#### *COVID-19*

Heatwaves and COVID-19 affect the elderly and vulnerable, and it is hypothesised that the greater than expected excess mortality observed during the heatwave periods in the summer of 2020 may have resulted from an amplifying effect of the two<sup>31</sup>.

#### *Where will be affected*

Where the effects of heat will be felt most depends on the environment, housing and individual factors. Higher risk areas include urban areas where there is a risk of heat island effects, housing with poor ventilation including new build housing and flats and people living in residential care<sup>16</sup>.

Risk of heat and overheating in homes has been recognised as one of the highest priorities by the independent assessment of UK Climate Risk report released in 2021<sup>13</sup>. Building regulations poorly align to this risk<sup>13</sup>. England is estimated to require an additional 345 000 new homes each year, however lack of sufficient building standards and quality risk “locking in” risk from poor quality homes for decades to come<sup>16</sup>. This includes risks from over-heating, damp, flooding, other weather damage and higher heating bills and energy demand<sup>16</sup>. Risks have been identified in terms of the overheating of buildings if fitted for energy efficiency and net zero without consideration of ventilation and requirement for cooling<sup>16</sup>.

Risk from over-heating in homes is complex, for example insulation can both increase indoor heat and keep heat out<sup>16</sup>. More energy efficient buildings and flats are thought to be at particular risk<sup>16</sup>. Occupant behaviour also has an impact for example opening windows, however consideration such as fear of crime will affect this<sup>16</sup>. Overall heat will also be impacted by urban density and heat island effects.

Almost half (47%) of the borough’s housing stock is made up of terraced properties<sup>32</sup>, with some of the most densely populated areas characterised by pre-1900 terraced properties. High proportions of the borough’s Indian and Pakistani heritage residents live in such areas. Analysis has identified Blackburn with Darwen as one of the 20 local authorities with the highest proportion of concealed families<sup>33</sup>, which include multi-generational and multi-family households. Whilst 6.2% of the borough’s households are overcrowded, compared to 3.6% regionally<sup>34</sup>.

#### *Impact on health inequalities*

The elderly, those with pre-existing health conditions and those living in residential care are most at risk of increased heat-related mortality. These are groups which may spend more time in their homes and less able to adapt their environments. There is little current evidence that heat will affect people disproportionately based on income. However, the consequences of future reliance on mechanical cooling of homes and the associated cost of this must be anticipated.

Those on lower incomes may not be able to afford the cost of retrofitting or of powering air conditioning units, and therefore suffer greater effects of heat<sup>16,35</sup>.

Benefits of warmer weather may include increased outdoor and physical activity. However, it is important to note the inequalities in access to good quality green and blue space, with evidence showing those from disadvantaged areas with a higher proportion of minoritised ethnicities with poorer access to such spaces<sup>36</sup>.

### *Impact on health services*

Heatwaves can have multiple negative effects in hospital settings including<sup>16</sup>:

- Discomfort for patients, staff and visitors
- Disruption or failure of IT services, laboratory services and refrigeration services (including morgue facilities)
- Degradation or loss of medicine

Indoor temperatures in NHS hospitals above 26°C are not uncommon, however data on the extent of any overheating in hospitals nationally is incomplete<sup>16</sup>. Risks in healthcare settings are not only due to a concentration of people vulnerable to overheating such as the elderly and the unwell, but also due to heat producing equipment, building design and barriers to ventilation for example in secure units<sup>16</sup>. There are also infection prevention control considerations with the use of fans for cooling for example which risk circulating infectious disease including COVID-19<sup>37</sup>.

Similar risks exist in care homes and other care facilities. There is no statutory internal maximum temperature for care schemes, and there is evidence of a lack of awareness of how to manage warm temperatures in these settings<sup>16</sup>.

Consideration of heating and overheating in homes is an important consideration for those who receive care at home<sup>13</sup>.

Increasing frequency of heatwave events may also put increased demand on healthcare services due to the population health effects of extreme heat<sup>16</sup>.

## Flooding

### *What will the effect be*

Flooding can occur from river, coastal, surface or ground water. Climate change is predicted to increase flooding risk particularly around coastal areas<sup>16</sup>. In areas at risk of surface water flooding like Blackburn with Darwen the increase in rainfall along with decrease in green space is expected to increase the risk from this type of flooding<sup>16</sup>.

Health related risks from flooding include<sup>16</sup>:

- Death or injury from flood events.
- Long term and severe impacts on mental health and wellbeing from flooding, displacement, and being affected by flooding. This is likely the most significant effect and the estimated intangible value of this is 20% of the cost of direct residential damage<sup>16</sup>.
- Illness from biological and/or chemical contaminants arising from floods.

- Disrupted access to employment, education, health services and wider facilities.
- Loss of recreational and leisure amenity and cultural heritage.

*Who will be affected*

Rural towns and small urban settlements have been identified as at particular risk from flooding in the UK<sup>16</sup>. Minoritised ethnicities have also been identified as particularly at risk of being exposed to flooding (figure 10)<sup>16</sup>.



Figure 10 Ratio of the 20% most socially vulnerable households exposed to frequent flooding compared to all households broken down by ethnicity. Source: UK Climate Risk Independent assessment Technical report chapter 5.

*Where will be affected*

The Neighbourhood Flood Vulnerability Index is made up of multiple domains including age, health, mobility, property tenure, crime and social networks to understand how able local areas would be able to cope with flooding<sup>38</sup>. This index demonstrates that the most disadvantaged communities are most vulnerable to the effects of flooding, areas in Blackburn central ward have been placed in the acute category (figure 11).

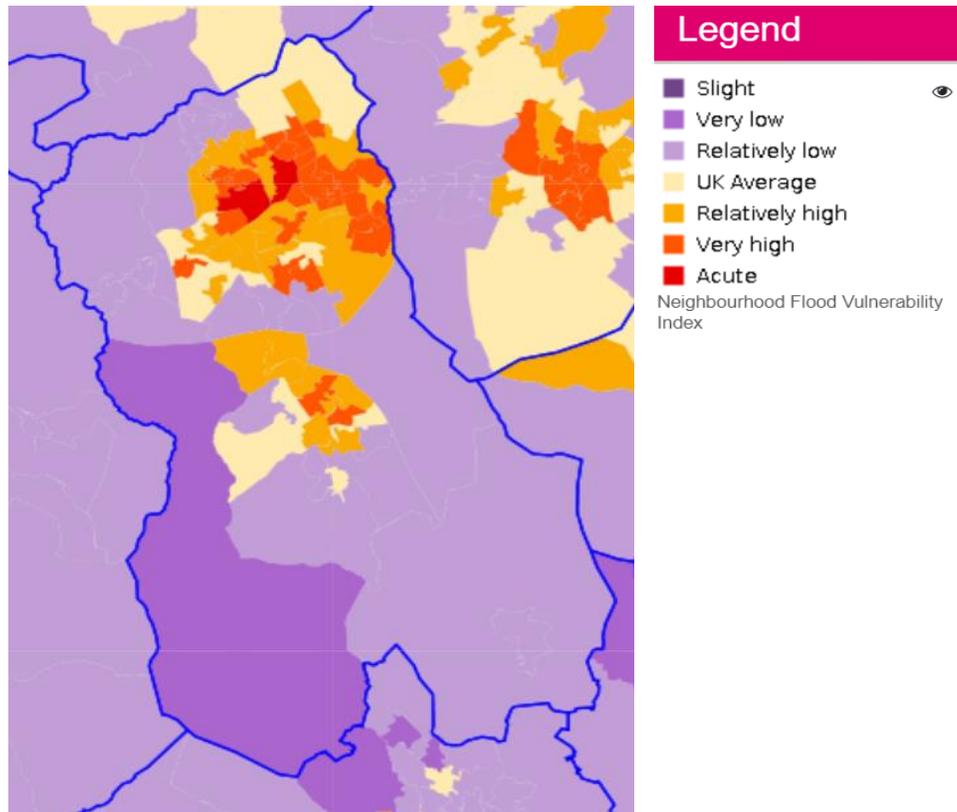


Figure 11 Neighborhood Flood Vulnerability Index for Blackburn with Darwen. Source: *The Spatial Tool for Climate Just - assessing the geography of England's vulnerability to climate change*

The risk of flooding across the Blackburn with Darwen Borough Council area is varied as assessed in the 2021 Strategic Flood Risk Assessment<sup>39</sup>:

The main fluvial (river) risk comes from the River Darwen that runs through the northern section of the borough affecting Cherry Tree, Hollin Bank, Lower Darwen and parts of Darwen town centre. The River Blakewater in the north of the borough affecting the southern part of Blackburn town centre, and Belmont or Eagley Brook in the south western section of the Blackburn with Darwen council boundary affecting Belmont.

Surface water risk is spread across the whole of the Blackburn with Darwen borough. The main areas of risk are primarily centred around the main rivers. The areas with the highest levels of groundwater vulnerability are located primarily in the northern section of the council boundary affecting areas such as Blackburn town centre, Mill Hill, Bank Top, and Little Harwood. There are also areas affected within the rest of Blackburn with Darwen Borough Council boundary such as Darwen town centre, Eccleshill, Whitehall and Belmont.

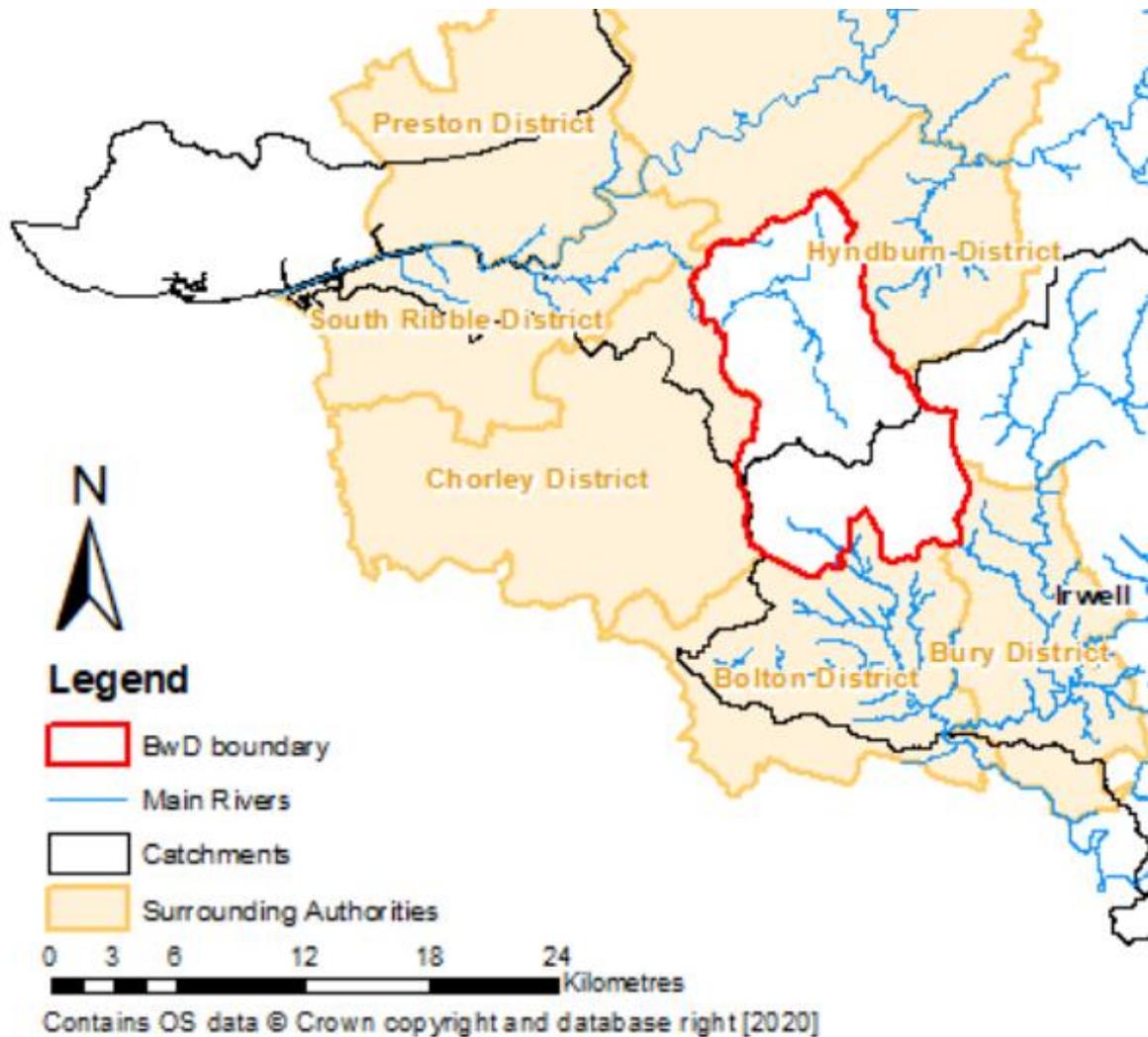


Figure 12 Source: 2021 Strategic Flood Risk Assessment

### *Impact on health inequalities*

Flood vulnerability is a function of both geographical vulnerability to flooding and levels of social deprivation. The ratio of uninsured loss to income is higher in more vulnerable populations<sup>16</sup>. Minoritised ethnicities have been identified as particularly at risk along with areas with high levels of social deprivation such as Blackburn with Darwen<sup>16</sup>. High levels of deprivation have been identified as a particular issue in Lancashire’s flood risk management strategy due to poorer quality housing at higher risk, reduced effectiveness of communications and lower insurance coverage<sup>40</sup>.

### *Impact on health services*

A significant number of healthcare assets including hospitals, care homes and GP practices are at risk of flooding in the UK<sup>16</sup>. Flooding can directly affect the provision of care via flooding of premises or indirectly by disrupting transportation or production of goods e.g. vaccines.

Disruption of utilities e.g. power supply caused by flooding can cause significant disruption to the provision of care<sup>16</sup>. Flooding has been shown to impact ambulance response times and reduce healthcare system capacity<sup>16</sup>.

## Wildfires

### *What will the effect be*

Wildfires pose a direct risk to human health through burns, smoke inhalation, poor air quality and mental health implications. Along with threats to buildings and services including critical infrastructure like motorways, wildfires may also contaminate reservoirs, and the burning of peat in moorland which may contain heavy metals risk contaminating water supplies<sup>16</sup>.

Recent wildfires seen in and around the borough include the Darwen Moor fire in 2020 which decimated populations of rare birds the habitat of which may take 10-15 years of recover<sup>41</sup>. The Winter Hill and Saddleworth Moor fires in 2018 took weeks to put out and worsened air quality around the North West including raised levels of ozone, particulate matter and carbon monoxide<sup>42</sup>.

The number of days conducive to wildfires are expected to increase with climate change with 50% of summer days experiencing high fire weather indices by 2069<sup>16</sup>. As weather becomes warmer and use of green space increases, human activity may increase the risk of wildfires<sup>16</sup>.

### *Who will be affected*

Wildfires can be unpredictable and the effect will depend on the location of the fire and direction of smoke travel, as well as what building and services are affected.

### *Where will be affected*

The forestry commission England has demonstrated that wildfires in England can occur on various land types, including in built up areas and gardens. During the period 2009-2017 North West England experienced the greatest number of wildfires compared to other regions in the UK<sup>43</sup>.

### *Impact on health inequalities*

There is little evidence on how wildfires may interact with social inequality in the UK. However, issues related to reduced levels of insurance are likely to be relevant.

### *Impact on health services*

Wildfires risk affecting healthcare infrastructure, staff, as well as any burden from unwell individuals.

## Water quality and supply

Increased precipitation and flooding is likely to increase levels of faecal indicator organisms in bathing waters which may increase risk of infectious disease including diarrhoeal diseases<sup>16</sup>. There is also to be predicted increase in harmful algal blooms.

Based on projections the UK faces a water supply-demand deficit when we reach the 2050s based on a 2-4°C warming scenario. Any interruption of water supply would affect vulnerable members of the community including the elderly, the very young and those with physical and mental health conditions<sup>16</sup>.

## Food safety and supply

### *What will the effect be*

It is recognised that extreme weather events will leave often global food supply chains (and the supply chains of many goods) at risk<sup>13</sup>. Additionally, threats to UK agriculture include soil quality, and the risk of extreme weather on crops and livestock<sup>13</sup>.

Therefore, both domestic and global food production and supply chains will be threatened.

Food is a vital determinant of health and the UK imports significant proportion of its fruit and vegetables from climate vulnerable countries (32% in 2013)<sup>16</sup>. Any disruption to the just-in-time supply chain of food to the UK, particularly of fresh produce, threatens availability and price. Any food insecurity can lead people to buy cheaper, longer shelf life and often more calorific and unhealthy food options. Increased prices of food and particularly healthy food is a significant concern<sup>16</sup>.

Food safety may be affected by climate change through increased risk of pathogens and contamination secondary to changing temperatures and weather. There is evidence that bacteria such as campylobacter and salmonella are affected by temperature however it is unclear how this will be borne out in future in the UK<sup>16</sup>. Flooding may risk chemical run off and contamination of crops, and changes in concentrations of toxins in seafood for example may be observed<sup>16</sup>.

There may be opportunities in the UK with increasing temperatures for increased domestic food production, however disruption may also be experienced through heat stress to crops and livestock and increased precipitation<sup>16</sup>. A greater reliance on local food production and use of more northerly soils may change the mineral composition of foods which brings potential benefits but also risks including contamination with lead, copper and industrial residues<sup>16</sup>.

There may be opportunities for healthy eating spurred on by public concern over climate change, healthier diets with reduced meat consumption and increased plant based foods have also been shown to have reduced environmental impacts<sup>44</sup>.

## 2021 Food Foundation Survey Results

**8% of adults in Blackburn with Darwen** skipped food for a whole day or more in the previous month or indicated they were hungry but did not eat because they could not afford or get access to food.

### **18% of adults in Blackburn with Darwen:**

- Sought help accessing food
- Skipped or shrank meal
- Gave a reason for not having enough food

**17% of adults in Blackburn with Darwen** were very worried or fairly worried about getting food.

### *Impact on health inequalities*

There is a significant problem with food poverty in the UK. In Blackburn with Darwen according to a survey commissioned by the Food Foundation in 2021 8% of adults had experienced hunger in the past month due to lack of access to food, 18% struggled to access food and 17% had worry about access to food<sup>45</sup>. It is likely that food insecurity secondary to climate change including price rises will impact the most deprived and increase inequalities. There is already significant inequality in the proportion of income that deprived families are required to spend on food compared to affluent families (15% compared to 7%)<sup>16</sup>. Analysis has demonstrated that deprived families cannot afford to eat as per government guidelines for healthy eating, with a requirement to spend 42% of income after housing costs on food to fulfil recommended requirements<sup>16</sup>.

### *Deprivation and fuel poverty*

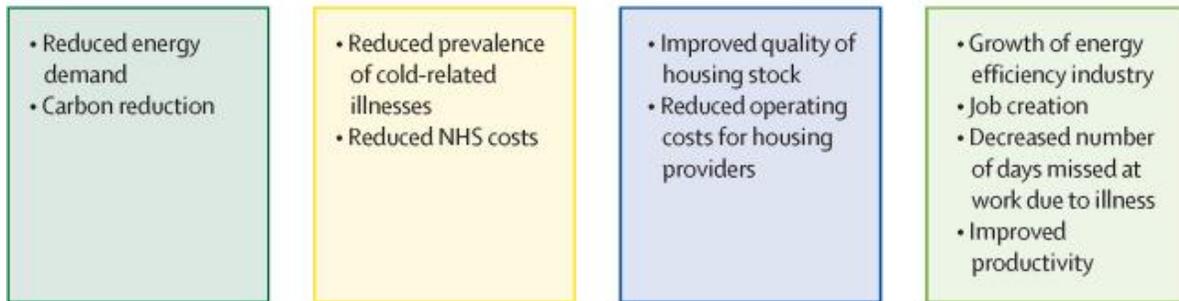
The borough contains some of the most deprived areas in England, ranking 9<sup>th</sup> most deprived of the lower tier local authorities in the country<sup>46</sup>. However, there is significant variation across the borough with 33 small areas falling within in the most deprived decile in England and 10 small areas within the 30% least deprived in England (one within the least deprived decile). Around 36% of the borough's residents live in areas falling within the most deprived decile. It is estimated that 16.4%, or just under 10,000 households in the borough experience fuel poverty<sup>47</sup>. Although households in fuel poverty can be found across all areas of the borough, particularly high proportions are seen to the north and east of Blackburn town centre.

Higher winter temperatures may reduce heating costs however this depends on building insulation and the price of fuel. The estimates per household have been put at a reduction of £135 per household per year from 1990 baseline climate to 2050<sup>16</sup>. There will also likely be an increase in energy requirements for household cooling in the summer<sup>16</sup>.

There are examples around the UK of grass roots projects which address both issues of fuel poverty and the climate crisis. This includes Ambition Lawrence Weston a community group in Bristol with high levels of fuel poverty, which are investing in a community owned wind turbine which will provide both energy and financial returns for the area<sup>48,49</sup>.

■ Environment  
 ■ Health  
 ■ Housing  
 ■ Business and economy

**A**



**B**

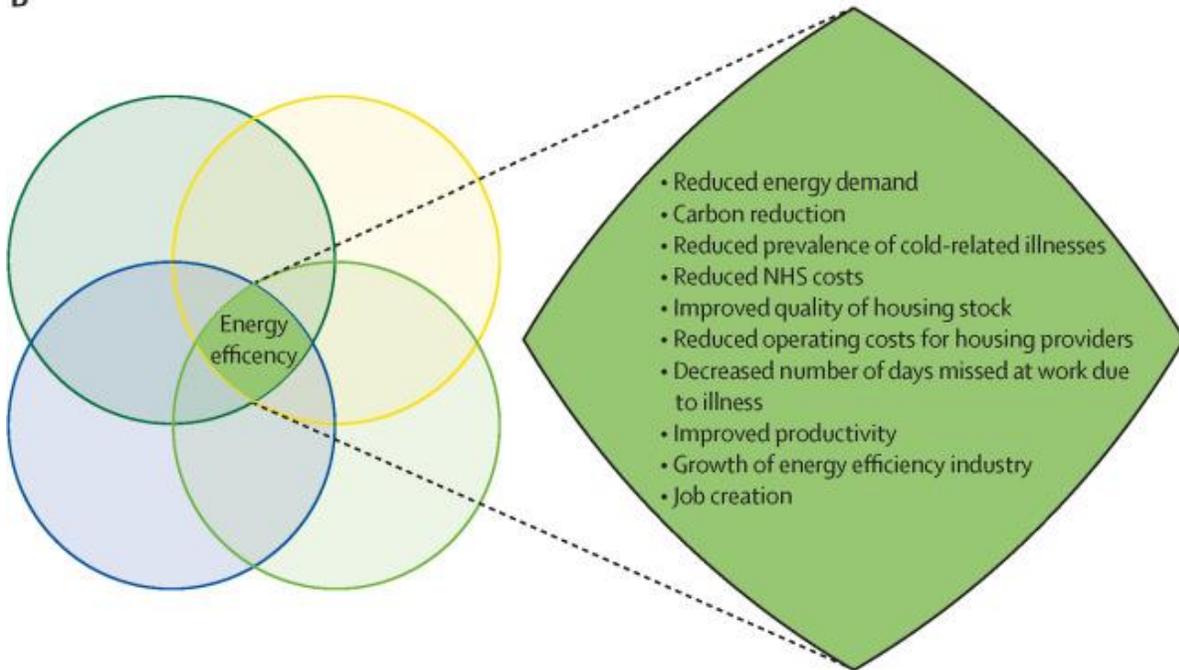


Figure 13 Benefits of improving the energy efficiency of the housing sector to different departments. Source: ennings, N., Fecht, D. & Matteis, S. D. Mapping the co-benefits of climate change action to issues of public concern in the UK: a narrative review. The Lancet Planetary Health 4, e424–e433 (2020).

## Risk of vector borne diseases

It is anticipated that warmer temperatures may increase the risk in the UK of vector borne diseases including Lyme disease, Chikungunya, Dengue and Zika.

Lyme disease is already established in the UK and is transmitted by ticks. The biting season for ticks is influenced by climate (temperature and humidity) and it is anticipated that climate change may alter patterns of Lyme disease if there is changing temperature alongside changing human behaviour such as greater outdoor recreation. Other factors less climate related such as wild animal populations also play an important role<sup>16</sup>.

Whilst mosquito species capable of transmitting malaria are present in the UK the current risk of endemic transmission of malaria is thought to be low. However, increased climate induced migration may increase the risk of introduction of the parasite into the population, and increased temperatures may increase likelihood of onwards transmission<sup>16</sup>.

Mosquitos which transmit arboviruses such as dengue are not endemic in the UK however warming climates may increase the risk of the establishment of these vectors and diseases. Nationally there is a focus on surveillance of both vectors and diseases in order to understand the risk to the population

## Recommendations for a resilient and attractive borough

### Infrastructure:

- Public health should work with the planning department to consider climate mitigation and adaption measures including in terms of housing energy efficiency, overheating and flooding within new developments.
- Continue to support vulnerable residents via healthy homes initiatives including advice, support and grants to increase the energy efficiency of homes to realise co-benefits to environment and health
- Support residents to take up flood insurance
- Investigate and foster possibilities for grass roots community cooperative projects with co-benefits socially and environmentally, such as community renewable energy projects

### Emergency Preparedness:

- Focus resources on health protection of the elderly and vulnerable from the temperature effects of climate change including from heat and cold
- Develop key public health messages for the public during heatwaves and ensure to communicate heatwave alerts across the integrated care system in line with the Heatwave Plan for England<sup>50</sup>
- Work with organisations including the Environment Agency to promote co-benefits of flood defences including net biodiversity gain and options for social prescribing

- Strengthen and support emergency planning and preparedness structures both locally and through the local resilience forum.
- Plan for effective communications including in community languages in response to extreme events including flooding as per the Local Flood Risk Management Strategy
- Plan for drought e.g. supporting the vulnerable if provision of bottled water required
- Consider pro-active recommendations to the health sector including care homes in terms of indoor temperatures and ways to mitigate extreme heat
- Support the integrated care system to plan for future climate risks and increase resilience

Health promotion:

- Exploit opportunities to promote wellbeing and outdoor activity with warmer weather including active travel, ensure that access to infrastructure and green space considers inequalities within the borough
- Where flooding cannot be prevented, explore ways to support the mental health of those affected
- Educate the public about wildfire risk and behaviours to reduce the risk
- Educate the public about UV protection
- Plan to support residents in times of increasing food prices, alongside recommendations for healthy and sustainable diet supporting work of the Blackburn with Darwen Food Resilience Reliance

# Lean and Clean

## Air Quality

### What will the effect be

There are many different types of air pollutants. The main risks for health in terms of outdoor air pollution are from particulates (PM<sub>2.5</sub> and PM<sub>10</sub>) and Nitrous Oxides (NO<sub>x</sub>). Higher ground level ozone concentrations can also have an acute effect on mortality<sup>16</sup>. Blackburn with Darwen has a level of fine particulate matter pollution (PM<sub>2.5</sub>) of 6µg/m<sup>3</sup> which is lower compared to regional (6.1µg/m<sup>3</sup>) and national 6.9µg/m<sup>3</sup>) levels<sup>51</sup>. However, no level is considered safe<sup>52</sup> and the WHO recommendation for PM<sub>2.5</sub> is an annual mean of 5µg/m<sup>3</sup>.

It is predicted that air quality will improve over time due to improved emission profiles of vehicles and net zero pathways<sup>16</sup>. Ground level ozone levels may decrease in the UK with climate change however this is not certain. It is overall uncertain how climate change and air quality will interact together in the future, as it is dependent on many factors.

It is unclear how indoor air quality will be affected by climate change. Higher temperatures may lead to more people opening windows and diluting pollutants however this depends on the outdoor quality and other factors such as noise and crime. Indoor air quality may worsen due to net zero policies on building insulation<sup>16</sup>. Indoor air quality can negatively affect lung and heart conditions.

Pollen counts may be affected with potential for pollen seasons to be prolonged, leading to increased consultations for asthma and allergic rhinitis symptoms. The phenomenon of thunderstorm asthma has also been recognised in the UK with high rates of presentations with respiratory symptoms to health services at the beginning of a thunderstorm thought to be linked to higher pollen counts, changes in humidity and air flows<sup>53</sup>.

4.3% of mortality in Blackburn with Darwen in 2019 is estimated to be attributable to particulate air pollution produced by humans. However there is considerable uncertainty around this estimate as it is difficult to accurately calculate the amount of particulate air pollution that is anthropogenic, and how much this contributes to mortality<sup>54</sup>.

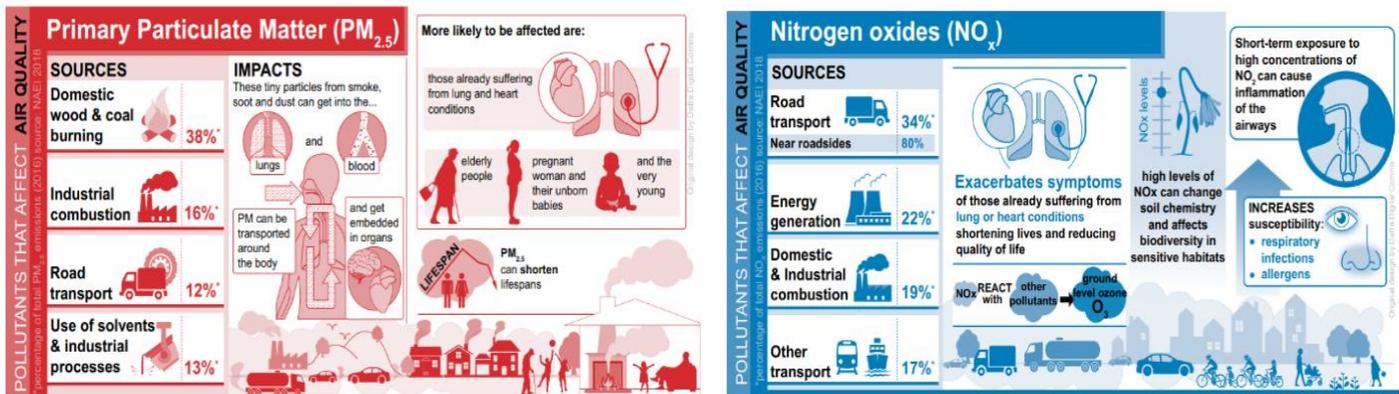


Figure 14 Source: DEFRA Clean Air Strategy 2019

*Who will be affected*

Air pollution is a risk factor for lung disease, cardiovascular disease, poor maternity outcomes and lung cancer among others (figure 15)<sup>55</sup>.

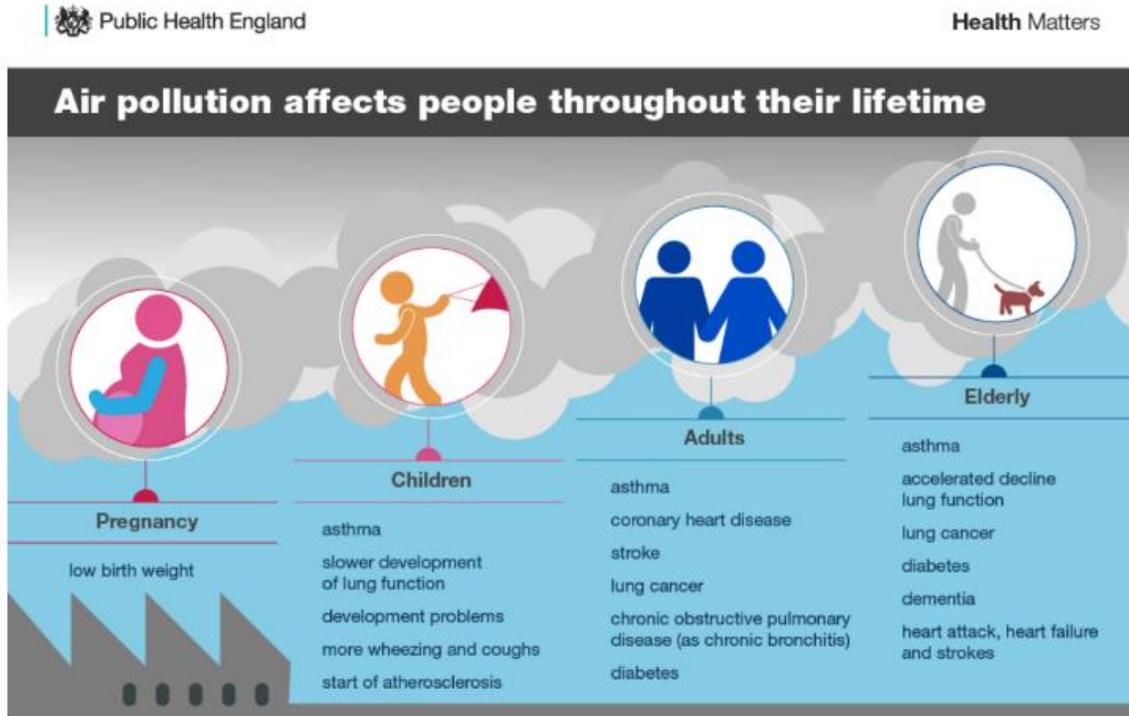


Figure 15 Source: <https://www.gov.uk/government/publications/health-matters-air-pollution/health-matters-air-pollution>

As discussed in the heatwaves section Blackburn with Darwen has relatively high rates of cardiovascular disease and premature births. Blackburn with Darwen has relatively high rates of respiratory mortality considered preventable (figure 16). It also has a higher prevalence of asthma at 7.7% compared to nationally at 6.4%<sup>26</sup>. Our prevalence of COPD is 2.2% compared to 1.9% nationally.

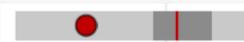
Indicator	Period	Blackburn		Region	England	England		
		Count	Value	Value	Value	Worst	Range	Best
Under 75 mortality rate from respiratory disease (3 year range)	2017 - 19	196	58.1	44.7	33.6	77.5		13.7
Under 75 mortality rate from respiratory disease (1 year range)	2020	55	46.8	40.6	29.4	77.2		9.7
Under 75 mortality rate from respiratory disease considered preventable (2019 definition) (3 year range)	2017 - 19	115	34.7	27.1	20.2	45.4		6.5
Under 75 mortality rate from respiratory disease considered preventable (2019 definition) (1 year range)	2020	30	25.8	24.1	17.1	53.7		5.7
Under 75 mortality rate from respiratory disease considered preventable (2016 definition)	2016 - 18	130	40.1	25.8	19.2	45.9		7.3

Figure 16 Source: UKHSA Fingertips

### *Where will be affected*

Air quality is currently monitored at 47 sites across the borough<sup>56</sup>. Blackburn with Darwen has 4 air quality management areas (AQMA), this number decreased from 8 in recent years. The four remaining AQMAs exceed the target for annual mean nitrogen dioxide levels<sup>56</sup>.

### *Impact on health inequalities*

More deprived households are more likely to be exposed to higher levels of air pollution, particularly NO<sub>2</sub> due to higher levels from busy roads<sup>16</sup>. Individuals in these households are also more likely to be vulnerable to the effects of air pollution due to underlying health conditions and behaviours. Modelling studies have demonstrated that even as air quality improves over time, that inequalities in air quality will remain until 2050<sup>16</sup>. Three of the four air quality management areas in the borough are in a ward with a higher index of multiple deprivation score compared to the English average<sup>57</sup>.

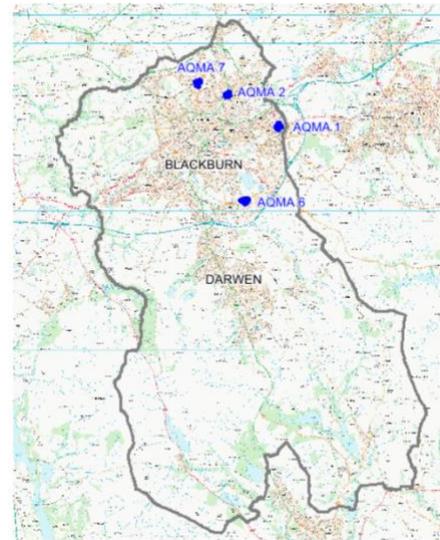


Figure 17 Air quality management areas in the borough

### *Impact on health services*

It remains unclear how air pollution levels will react with climate change and climate policy over time. However, it would be assumed that improved air quality would reduce demand on the health service. Episodes of high pollen counts which may be prolonged due to climate change can increase presentation to health services including primary care, and the phenomenon of thunderstorm asthma as discussed above has been shown to increase emergency demand.

### **Recommendations for a Lean & Clean borough**

- Continue to monitor air quality in the borough
- Continue work towards reducing levels of harmful pollutants, actions should be coordinated and evidence based. Actions which have co-benefits for air quality, physical and mental health and the climate include interventions to increase walking and cycling and reduce car use.

## Travelling Lightly

COVID-19 significantly affected travel, with a reduction seen in all types. In 2019 however transport was the largest emitter of greenhouse gasses 122 million tonnes of CO2 equivalent<sup>58</sup>.

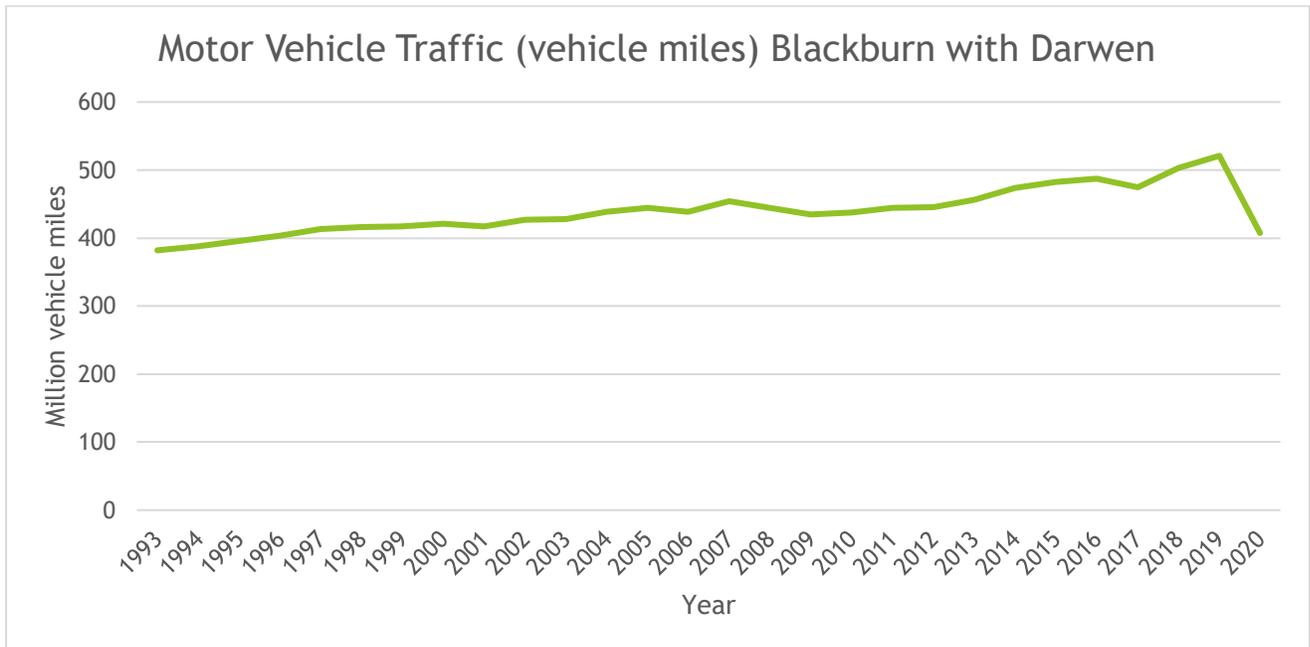


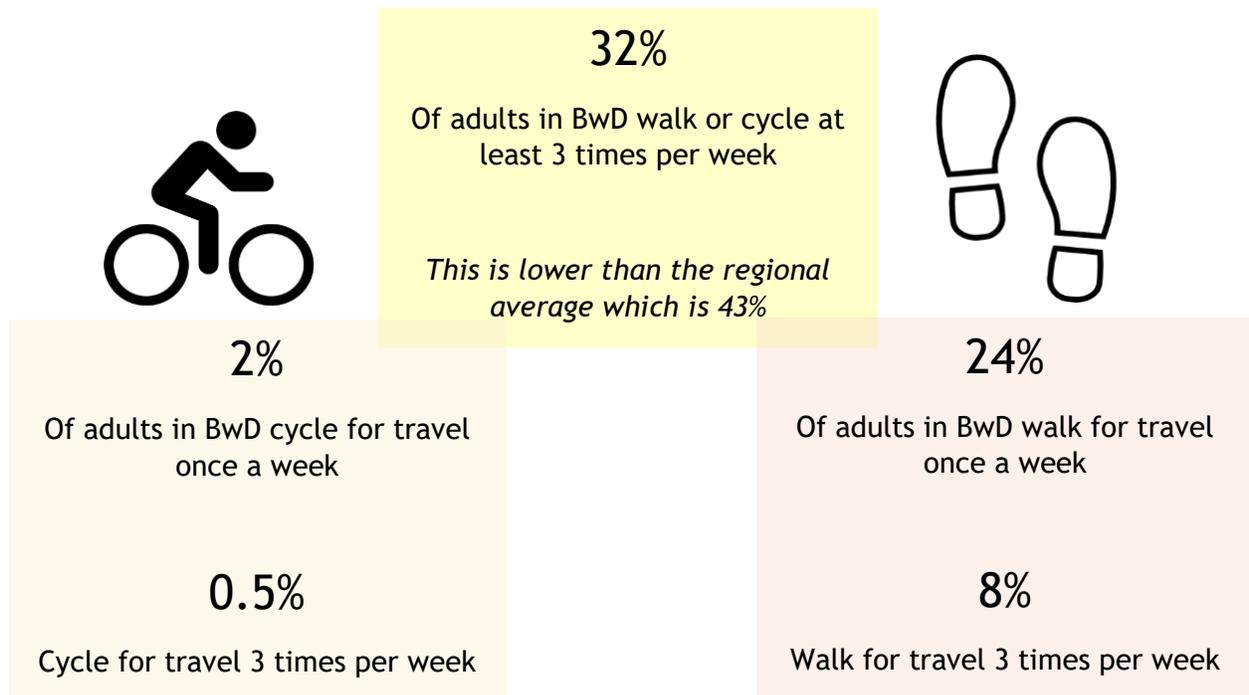
Figure 18 Vehicle miles travelled over time. Data source: Department for Transport

As demonstrated in figure 18 vehicle miles have been increasing over time in Blackburn with Darwen, with a dip seen in 2020 due to the COVID-19 pandemic<sup>59</sup>. According to the 2011 census Blackburn with Darwen has relatively low car ownership with around 400 cars/vans per 1000 people and 70% of households owning a car or van<sup>60</sup>. More recent survey data demonstrates an average of 1.4 cars/vans per household in Blackburn with Darwen<sup>61</sup>. This compares to the North West average of 1.2 per household<sup>62</sup>. The least deprived households in the borough are more likely to have more cars per household, with an average of 1.7 in the least deprived quintile and 1.1 in the most<sup>61</sup>. Over half of Blackburn with Darwen use a car or van a least once a day<sup>61</sup>.

Emissions from vehicles are set to continue to decline due to cleaner engines and the transition to electric vehicles. However, this does not eliminate the pollution that occurs from break, tyre and road wear<sup>63</sup>. It also does not address the problem of sourcing compounds such a lithium and cobalt used in electric car batteries which are having negative environmental and social effects globally<sup>64</sup>. Therefore, alternative forms of transport mainly walking and cycling have been identified as a key area to realise co-benefits for health and the environment<sup>63</sup>.

The proportion of adults in Blackburn with Darwin who walk or cycle at least 3 times a week is estimated at 32% (compared to the North West average of 43%)<sup>65</sup>. 2% of adults in Blackburn with Darwen cycle for travel once a week, and 0.5% three times per week<sup>65</sup>. A minority of residents own a bicycle or use it regularly<sup>61</sup>. 6% of BwD residents use a bike weekly compared to 18% of Lancaster residents<sup>61</sup>.

24% of adults in BwD walk for travel once a week, 8% walk for travel three times per week. These figures are also lower than the North West average<sup>65</sup>. One in four residents said they would always walk, cycle or take public transport rather than drive short distances<sup>61</sup>. Cheaper and more frequent public transport was thought to be the best way to reduce car use in a recent survey of residents, however two in five people thought nothing would help to reduce car use<sup>61</sup>.



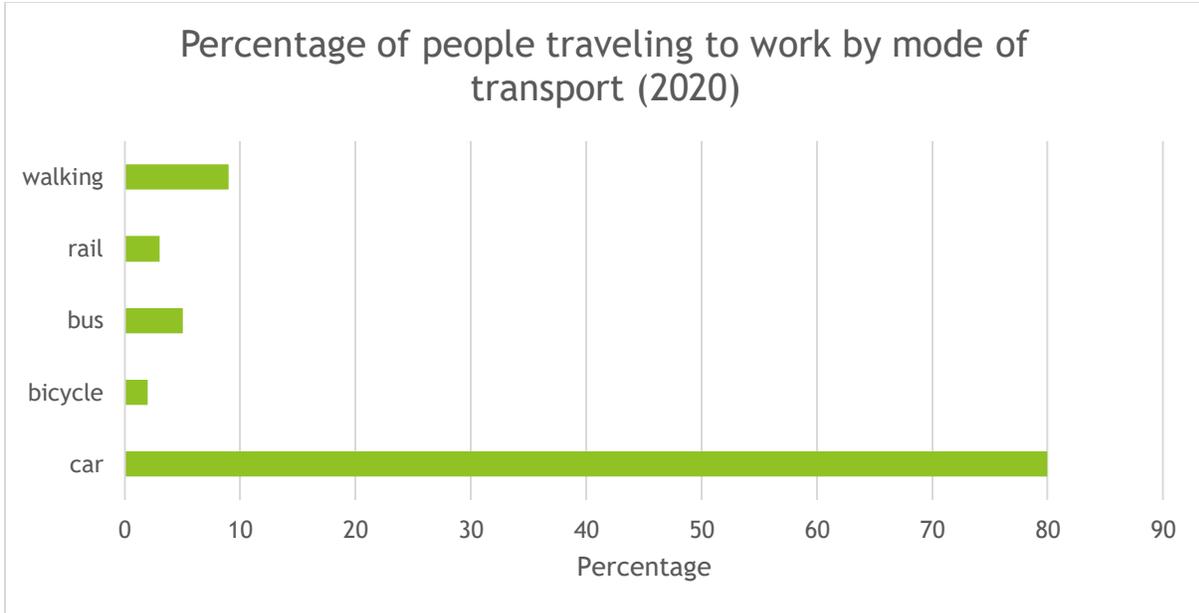


Figure 19 Percentage of people traveling to work by mode of transport In 2020 in the North West outside of Greater Manchester and Merseyside. Source: GOV.UK<sup>66</sup>.

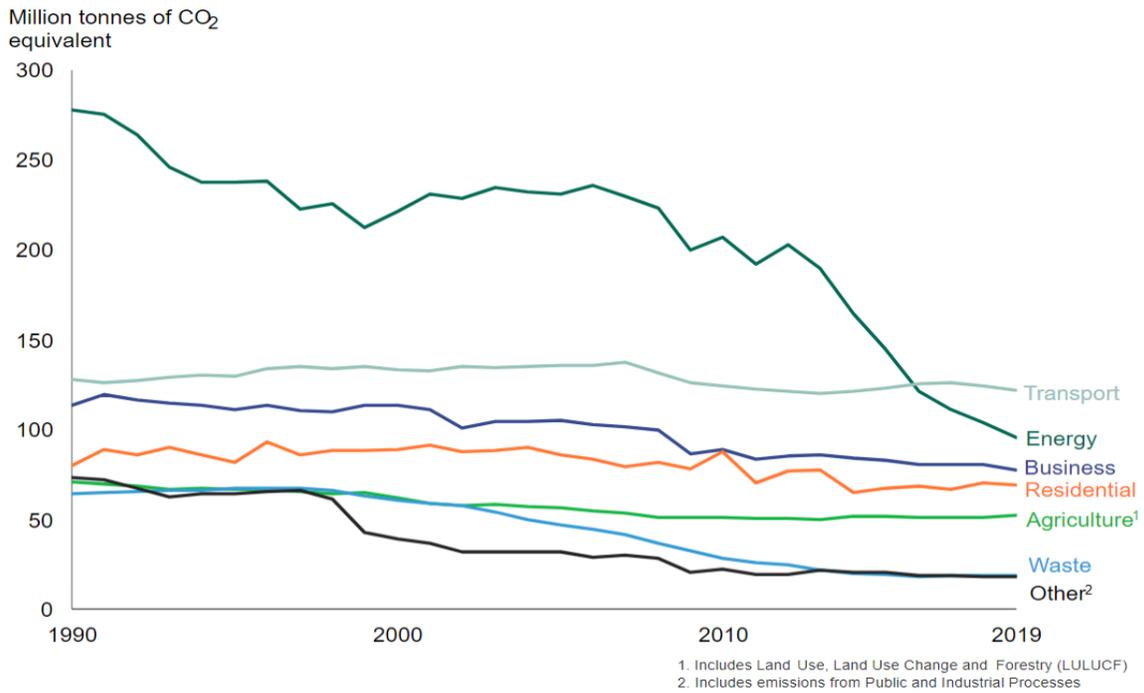


Figure 20 Greenhouse gas emissions per sector. Source: <https://www.gov.uk/government/statistics/transport-statistics-great-britain-2021/transport-statistics-great-britain-2021>

## Recommendations for Travelling Lightly

- Encourage an increase in use of walking and cycling for transport, including improving the capability, opportunity and motivation for people to choose to walk or cycle.
- Improve sustainable public transport links

## Capturing More Carbon

### *Public open space and health in Blackburn with Darwen*

Spending time in green and blue space is recognised as important to health, both mental and physical<sup>36</sup>. It has also been recognised as vital to preserve and enhance natural spaces to address the climate and ecological emergency through carbon capture via trees and peatlands, improving air quality and reducing urban heat island effects<sup>67</sup>.

The Blackburn with Darwen Open Space Audit provides information on the quantity, quality and accessibility of open spaces in the Borough. In particular, it identifies those areas of the borough with a surplus or deficit of open space compared to the Borough-wide average provision rates<sup>68</sup>. It also sets out the quality of the open space in the borough and priorities for improvements. The borough has above average provision of open space in many domains, however, this is not spread evenly through the borough. Some neighbourhoods such as Blackburn East which are more built up have less access to green space. There is acknowledgement that a focus on quality of open space is vital in such areas. Information from the green space audit is fed into the borough's local plan.

<b>Typology</b>	<b>Fields in Trust quantity standard (ha/1000population)</b>	<b>Average Provision Rate (APR) in Blackburn with Darwen (ha/1000 population)</b>
Allotments	No standard set	0.09
Amenity greenspace	0.60	0.66
Cemeteries	No standard set	N/A
Civic Spaces	No standard set	N/A
Green and blue corridors	No standard set	N/A
Natural & semi-natural greenspace	1.80	3.03
Parks & gardens	0.80	1.86
Provision for children & young people	0.25	0.04

Figure 21 Comparison of the borough's average provision rates with national standards. Source: Open Space Audit 2021

# Blackburn Town Centre Open Spaces Map



**BLACKBURN BID**  
business improvement district

Blackburn with Darwen  
**5 WAYS TO WELLBEING**

Illustrated by *Orsola Hunt*

### *Linking carbon capture activities and health*

Capturing carbon through nature based activities predominantly involves the planting and protecting of trees and protecting and restoring peatlands which also sequester carbon. Work is underway to understand the borough's potential for these activities including areas available and funding available. There are opportunities within this work to link to nature based social prescribing initiatives<sup>69</sup>. These have the potential to improve health through focussing on holistic wellbeing, spending time in nature and giving the community more ownership over action to improve the borough's carbon footprint.

### **Capturing more carbon recommendations**

- Continue to consider quantity, quality and inequalities in green space provision throughout the borough
- Consider nature based social prescribing opportunities within the capturing carbon domain e.g. tree planting programmes

## Basis for Change

In a recent UK wide survey 38% of people were said to be “very concerned” about climate change and 45% “fairly concerned”<sup>70</sup>. This compares to 30% of Blackburn with Darwen residents feeling “very concerned and 47% “fairly concerned”<sup>61</sup>. Women and those over 65 were more likely to be very concerned in BwD.

The general public recognise the importance of government action along with that of businesses and the general public (figure 22). 59% of people thought that citizens assemblies on the topic of climate change are a good thing<sup>70</sup>.

In the North West 73% of people were very worried or somewhat worried about the impact of climate change in a survey done Nov 2021 by the ONS<sup>71</sup>. 37% said they felt very anxious or somewhat anxious about the future of the environment in the past month. 75% said they had made a lot of changes or some changes to their lifestyle to help tackle climate change. Among the people who had not made changes, 41% thought large polluters should change before individuals, 28% thought changes that they made will not impact on climate change, and 21% said it was too expensive to make changes<sup>71</sup>.

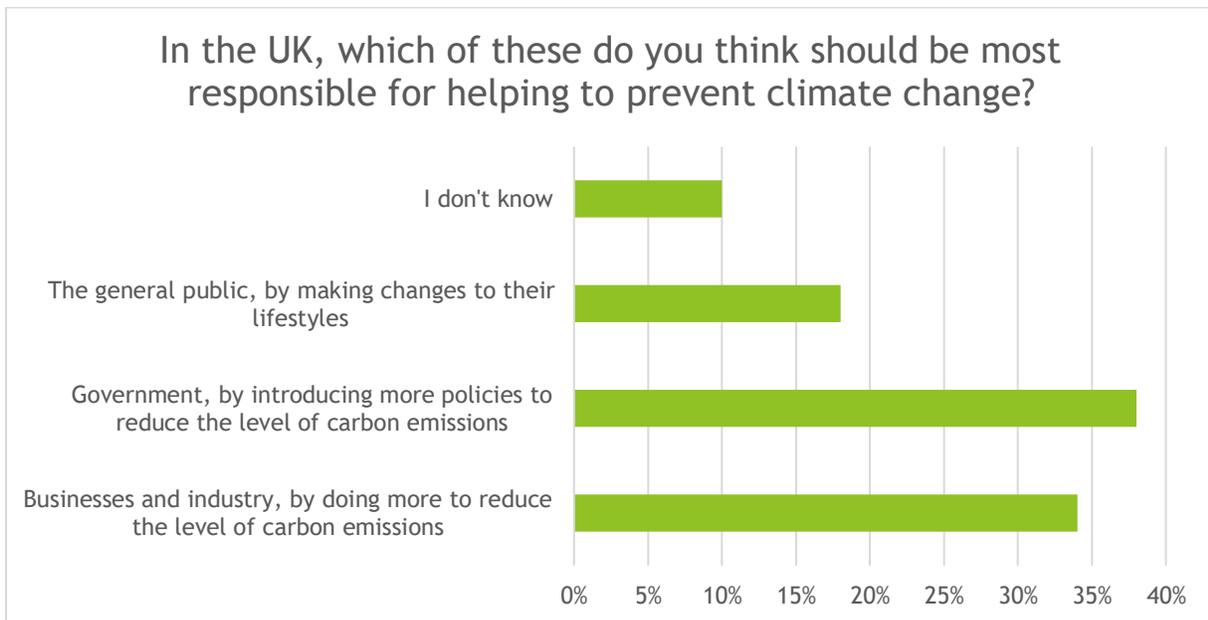


Figure 22 Source: Climate change and net zero: public awareness and perceptions. GOV.UK

## Recommendations for a Basis for Change

- Progress plans for a Blackburn with Darwen citizens’ jury on climate change to allow residents to guide the council’s plans towards a more sustainable borough

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