

North Somerset Council

Report to Council

Date of Meeting: 16 April 2024

Subject of Report: Climate Emergency Strategy and Action Plan update and progress report

Town or Parish: All

Officer/Member Presenting: Annemieke Waite, Executive Member for Climate, Waste and Sustainability

Key Decision: N/A

Recommendations

1. Support the adoption of the Climate Adaptation Strategy.
2. Support the development of the Net Zero Pathway.
3. Note the progress on existing projects to tackle climate change, which are also summarised in this report.

1. Summary of report

This report provides an update on progress against the actions in the council's Climate Emergency Strategy and Action Plan. The report provides an overview of the Climate Adaptation Strategy and requests Full Council to support the adoption of this strategy. The report also outlines the development of the Net Zero Pathway for the council's emissions and requests Full Council support for its further development.

2. Policy

In 2019 NSC declared a climate emergency and the ambition of becoming a Net Zero council and area by 2030. In November 2022, Full Council adopted a refreshed Climate Emergency Action Plan (CEAP) that identifies priority areas aimed at decarbonisation:

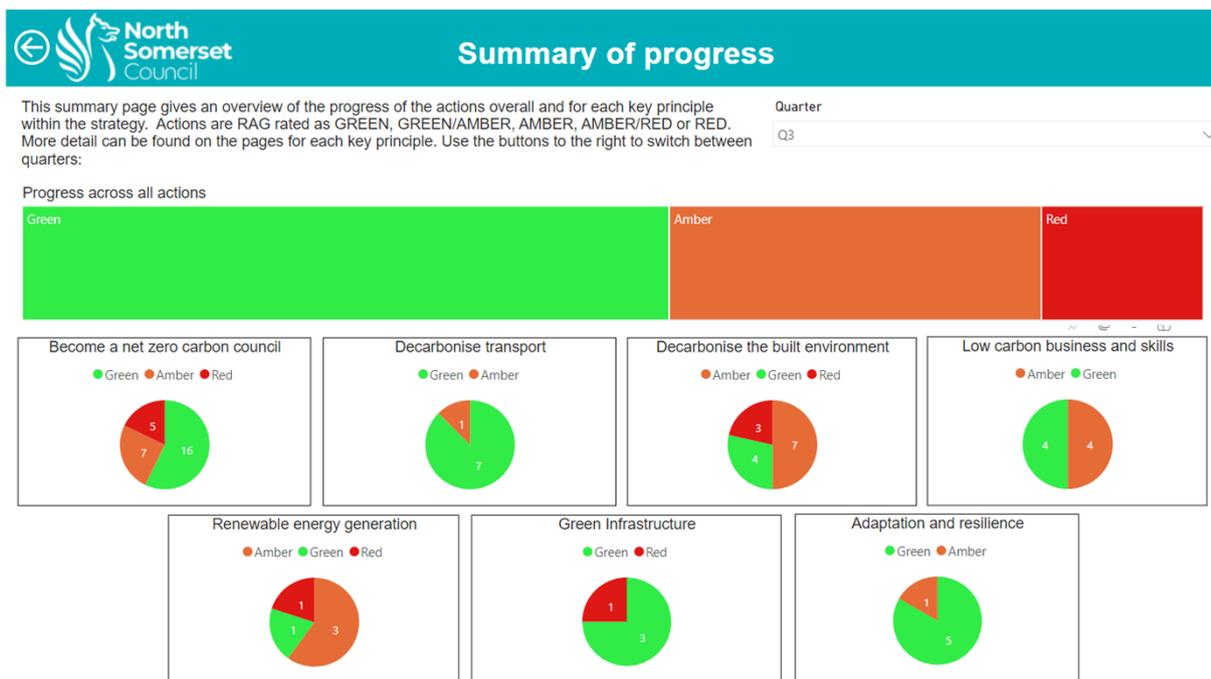
- Become a net zero carbon council
- Decarbonise transport
- Decarbonise the built environment
- Low carbon business and skills
- Renewable energy generation
- Resources and waste
- Adaptation and resilience
- Replenish our carbon stores.

3. Details

3.1. Progress against the Climate Emergency Action Plan (CEAP).

Progress on the CEAP is monitored on a quarterly basis and is part of the corporate performance framework. The progress against actions is publicly available and can be found on the council website¹. Figure 3 provides an overview of current progress across all eight priorities of the CEAP.

Figure 1. Summary of progress.



Whilst the overall progress against actions in the CEAP is on track, it is evident that there are areas of concerns around the council’s own estate and fleet, the built environment and renewable energy generation. These are further described below.

The CEAP progress report to Full Council on 19th September 2023 provided an update on the council’s own and the North Somerset area’s annual emissions and indicated a lack of progress against the 2030 net zero target². It is a priority for the council to address the risks and areas of concern in order to continue to make progress towards the 2030 target.

3.2. Projects and provision update

1. Become a net zero carbon council

Carbon Literacy

The carbon literacy numbers are improving, in particular, following the success of Carbon Literacy Action Day (CLAD) on 4th December. Almost 200 individuals from 80 businesses attended the event and received their accreditations. The event was acknowledged by the Carbon Literacy Project and NSC was awarded a CLAD Catalyst award and attracted positive media engagement.

¹ [Our plans to tackle climate change | North Somerset Council \(n-somerset.gov.uk\)](https://www.n-somerset.gov.uk/our-plans-to-tackle-climate-change/)

² [Committee Report NSC \(moderngov.co.uk\)](https://www.moderngov.co.uk/committees/2023/09/19/committee-report-ns-council/)

Own Estate

- The delivery of the Salix Public Sector Decarbonisation Scheme (PSDS) for the Campus building is on track. The successful implementation of the project will reduce the council's emissions by 120 tonnes of CO₂ equivalent (tCO₂e) per year.
- Salix PSDS application for Hutton Moor has been successful. The project secured £2.3m and will reduce the council's footprint by 300 tCO₂e per year. £129k was secured through Sports England for Solar PV at Hutton Moor. The PV system is estimated to save 28.17 tCO₂e per year.
- The accommodation strategy will support the delivery of the hybrid working to incorporate energy savings within council buildings.
- An Energy Manager has been appointed and started at NSC in January. This will allow the council to develop energy management plans for its own assets, support with emissions reduction, and develop proposals for renewables.
- An Energy Strategy is being developed for the council's energy use reduction and generation of renewable energy. The strategy will form a part of the Net Zero Pathway.
- Climate Impact Assessment for the council's decision-making process has been developed and is undergoing internal consultation.

Own Fleet

- The introduction of 3-weekly residual waste collection is being consulted on for potential implementation in 2024/25. The reduction in journeys made by NSEC fleet will reduce emissions from their Scope 1.
- The EV salary sacrifice scheme uptake is seeing a gradual increase.
- £306k was secured through the Libraries Improvement Fund for a new EV library outreach vehicle to replace the existing mobile library.

Behaviour change and engagement

- WECA led climate engagement campaign is being developed in partnership with the four West of England UAs. The campaign is based on the segmentation work available through Britain Talks Climate Toolkit³.
- The segmentation of North Somerset based on the Britain Talks Climate Toolkit has been completed.

Areas for improvement:

- Limited progress has been made on reviewing staff travel. To mitigate the gaps the Accommodation Strategy will be looking at ways to reduce staff commuting and increase the roll out of EV charging points to increase use of EV pool cars.

2. Transport

- £15m Zero Emissions Bus Regional Areas funding was secured through First Bus and Department for Transport to deliver electric buses for X1 and X4 bus services. Progress against delivery of the Bus Service Improvement Plan
- Positive progress made on delivery of the Pier to Pier Way, expected to be complete by end May.
- Construction phase for liveable neighbourhoods in Weston-super-Mare Central has been agreed.
- Electric Vehicle charging strategy has been adopted.

³ [Britain Talks Climate: a toolkit for engaging the British public on climate change - Climate Outreach](#)

3. Built environment

- Bright Green Homes scheme is being delivered to support the decarbonisation of the 87 low income, off-gas properties.
- The partnership funding bid to Innovate UK with Bristol City Council was successful for £3.5m. The programme is being delivered and will allow to develop the Local Area Energy Plans for the WoE region.
- Thermal Imaging Cameras project launched in partnership with libraries. The project has 155 reservations for the service that is now fully booked until next autumn.

Areas for improvement:

- Work delayed on targeting Private Rented Sector for home improvement.
- Development of the regional domestic retrofit strategy is delayed.
- Overall delays in progress on energy efficiency improvements of the NS housing stock.
- Green skills, particularly in relation to retrofit upskilling.

To unlock opportunities for mitigating the gaps, council will work with relevant partners on the West of England level to develop a domestic retrofit strategy that will incorporate development of green skills, engagement, supply chain and financing options.

4. Business and skills

- UKSPF funded Net Zero Business grants programme. The first round has seen 8 local organisations receive a grant to help decarbonise their buildings which when all completed will save 50 tonnes CO₂e each year. Some outcomes of the grant so far include Squarebird who installed mechanical ventilation to improve temperature regulation in their offices, Bradley's Juices who had Solar PV installed and Mendip Activity Centre who upgraded their insulation and had Solar PV installed. The second round of the grant has commenced with successful applicants receiving a free carbon survey from Future Leap. The second round of the capital grants will open for applicants in a few months.
- The SME's Net Zero Support Guide and a dedicated business support page have been developed and is available online⁴.
- The partnership funding bid to Innovate UK with WECA was successful for £600k to deliver the Local Industrial Decarbonisation Plan for the Avonmouth Cluster.

5. Natural Environment

- £140k through Avon Climate Tree Fund continues to support the increase of tree canopies in the region.
- The Biodiversity Net Gain business case has been developed and is pending the legislation confirmation from the central government.
- Working alongside the Long Ashton Nature Community and Environment (LANCE) Trust and a team of around 150 volunteers, the Natural Environment team planted almost 2km of diverse hedgerow last week at Bridge Farm, Long Ashton.

6. Renewables

- Solar Together Round 2 has been successful with NS's highest number of registrations in the West of England. The Solar PV installations are taking place over the next months with 1487 planned across WoE. 54 installations to date in NS with 449 planned.

⁴ [Net zero business support | North Somerset Council \(n-somerset.gov.uk\)](https://www.n-somerset.gov.uk/net-zero-business-support/)

- The new Energy Manager is reviewing previous work to assess the potential for renewables on NSC buildings and land and will prepare recommendations on investments.

Areas for improvement:

- Opportunities for council owned renewables need to be identified as well as projects to support community energy. The emerging energy strategy will consider investment options to progress the generation of renewables in the region.

3.2. Climate adaptation strategy

Following the initial work that we detailed in our [previous report](#) to the council, we have made progress towards completing a draft of the Climate Change Adaptation Strategy. The development of the Climate Change Adaptation Strategy follows the UK government's Climate Change Act 2008⁵, which created a framework for building the UK's ability to adapt to climate change, including:

- A UK-wide climate change risk assessment that must take place every five years.
- A national adaptation programme must be in place and reviewed every five years to address the most pressing climate change risks to the UK.

Adaptation has been identified as a key action in NSC's Climate Emergency Action Plan.

Climate change adaptation refers to the process of adjusting our ways of living to cope with the current or expected impacts of climate change⁶.

In North Somerset, we are already experiencing and are expecting to see more impacts of climate change including:

- Warmer and drier summers likely to break temperature records⁷
- Wetter and warmer winters
- More extreme weather events including devastating flooding⁸
- Sea level rise

The purpose of climate change adaptation is to help ensure that we can respond to and build resilience to the impacts of climate change.

The North Somerset Adaptation Strategy considers:

- Climate projections
- Flood risks
- Heat Vulnerability
- Economic Impacts

The strategy includes the assessment of the key climate-related risks for North Somerset in line with the Third National Adaptation Framework⁹ and UK Climate Risk Assessment¹⁰, as

⁵ [Climate Change Act 2008 \(legislation.gov.uk\)](https://legislation.gov.uk)

⁶ [IPCC AR6 WGII Annex-II.pdf](#)

⁷ [Record breaking 2022 indicative of future UK climate - Met Office](#)

⁸ [Climate change insights, health and well-being, UK - Office for National Statistics \(ons.gov.uk\)](https://ons.gov.uk)

⁹ [The Third National Adaptation Programme \(NAP3\) and the Fourth Strategy for Climate Adaptation Reporting \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

¹⁰ [UK Climate Change Risk Assessment 2022 \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

well as a detailed action plan. Whilst developing the adaptation strategy, several themes were identified, and the actions have been organised around these ideas:

1. Governance

The theme sets out actions for North Somerset Council to deliver and monitor the Climate Adaptation Strategy, as well as setting out policies to support adaptation implementation. The section underlines the importance of council's partnership working and engagement.

2. Infrastructure, Transport and Assets

The actions include adaptation measures to improve the local highways network, to reduce the region's vulnerability to flooding and overheating, and set out commitments to improve vulnerability of transport and own assets.

3. Natural Environment

The principle includes set of actions the council can deliver or act as an enabler to, to support nature recovery, reduce flood and heat risks through delivery of council's Green Infrastructure Strategy.

4. Health, Communities and the Built Environment

The theme is exploring actions the council could take or enable that can support wider outcomes of North Somerset Residents including climate justice, improving health and wellbeing and adapting the housing stock.

5. Business and Industry

Actions include understanding the evidence behind business and industry vulnerabilities to climate change, as well as, setting out initiatives to engage local businesses in adapting to climate change impacts.

The draft adaptation strategy is in Appendix 1.

3.3. Net Zero Pathway

Work is progressing well on a Net Zero Pathway, which will map out the council's emissions and use this intelligence to create a prioritised programme of actions to bring us to Net Zero. It is anticipated that the work will conclude in the Spring.

The section below sets out emissions and progress to date.

The Council aspires to reach net zero for at least Scopes 1 and 2 at an earlier date than 2030 if possible. Good progress has been made over the years since 2018/2019 (Table 2), however the pace of reduction is slow.

Table 2. Emissions associated with Council's activities.

	2018/19	2019/20	2020/21	2021/22	2022/23	Change since base year
Scope 1						
Own buildings	1,158	1,044	1,182	1,210	894	-23%
Own transport	2,018	2,083	1,958	1,974	1,673	-17%

	Leased buildings	1,408	1,164	710	1,188	1,147	-19%
	Total Scope 1	4,584	4,291	3,850	4,372	3,714	-19%
	Scope 2 (Purchased Electricity)						
Scope 2	Own buildings	1,429	1,314	1,025	1,051	952	-33%
	Leased buildings	758	705	265	422	514	-32%
	Streetlights, traffic control, other buildings, miscellaneous	2,001	1,791	1,064	733	608	-70%
	Owned electric vehicles	22	22	14	20	20	-8%
	Total Scope 2	4,209	3,831	2,368	2,226	2,095	-50%
	Total Scope 1 and 2	8,793	8,122	6,218	6,598	5,809	-34%
	Scope 3						
Scope 3	Buildings	4,214	4,283	3,802	3,835	3,058	-27%
	Transmission & distribution	288	260	176	155	151	-47%
	Business travel	138	162	150	225	217	57%
	Outsourced activities	770	768	673	770	990	29%
	Employee commuting	733	699	174	421	556	-24%
	Water	57	53	34	15	13	-78%
	Total Scope 3	6,200	6,226	5,009	5,421	4,985	-20%
	Total Gross Emissions	14,993	14,348	11,227	12,019	10,794	-28%

Based on the Greenhouse Gas protocol¹¹ and recommendations provided by Committee for Climate Change in the progress report to UK Parliament, officers are pursuing a series of actions to help put in place the right leadership and actions to accelerate delivery. Net Zero Pathway will seek to quantify and address the most significant sources of the council's emissions and to prioritise the most effective actions and resources within the Climate Emergency Action plan to address them. Each workstream and action will be assessed as to their level of impact on the reduction in emissions. The pathway will allow a more robust monitoring of progress and provide opportunities for the Council to take action and prioritise decisions.

The Net Zero Pathway will consider the measurable actions the council can take to reduce its Scope 1 and 2, and will suggest options for Scope 3 reduction in line with the 2030 target.

The key principles of the pathways will include:

¹¹ [ghg-protocol-revised.pdf \(ghgprotocol.org\)](https://ghgprotocol.org/)

- Asset prioritising in line with the Strategic Asset Management Plan and Planned and Preventative Maintenance Programme.
- Energy Strategy
- Alignment of funding
- Reduction in mileage for the council's own fleet
- Electrification of the council's own fleet
- Reduction in staff business travel and commuting (and/or reduction in emissions created by that travel)
- Carbon offsetting.

The pathway will assign ownership to multiple services across NSC to maximise the external funding opportunities and rationalise energy use.

4. Consultation

The report was developed in consultation with the Climate Emergency Project Officer group.

5. Financial implications

The recommendations of this report do not in themselves have direct financial implications. The Action Plan includes a section on financial considerations and existing and potential funding support for initiatives.

To deliver net zero carbon and to transition to a low emissions area, additional funding will be required. Where this requires funding from council budgets, proposals will be subject to normal financial governance and decision-making, including the preparation of costed business cases. The business cases will also need to consider the potential costs of inactivity on climate change, including lost revenue and impact to life.

6. Legal powers and implications

The recommendations of this report do not, in themselves, have legal implications. As initiatives within the Action Plan are further developed, there may be legal implications for the council. These will be considered through formal governance arrangements and decisions as required by the council's constitution.

7. Climate Change and environmental implications

The aim of this report is to address the Climate Emergency and deliver a net zero council and area by 2030.

8. Risk Management

The Climate Emergency is recognised as a key corporate risk which the Strategy and Action Plan will help to address. There are risks associated with the Climate Emergency in terms of extreme weather and sea level rise as well as risks which reduce the Council's ability to meet the net zero target by 2030 target. These include:

Risk	Inherent risk score	Residual likelihood	Residual impact	Residual Risk score	Comments
Inability to meet the NSC's area Net Zero Target	HIGH	5	5	HIGH	The progress against targets to achieve the net zero target for NSC's area by 2030 is off track. The re-confirmation of target and further acceleration of delivery is required. The progress relies on position of central government and funding availability.

9. Equality implications

No specific Equality Impact Assessment has been completed for this progress update, however a number of national- and international studies (IPCC¹²) point to the impacts of climate change falling most heavily on the most disadvantaged members of society.

Individual projects will be subject to EIAs as required.

10. Corporate implications

The climate emergency is a cross-cutting issue and a corporate priority; all services will be required to assist in delivery of the Strategy and Action Plan.

Directorate Action Plans for the Climate Emergency are in place across all services.

11. Options Considered

Not to adopt the climate adaptation strategy – rejected, as evidence suggests increased temperatures will continue causing adverse impacts to NS areas.

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Appendices:

Appendix 1. DRAFT Climate Adaptation Strategy.

Background Papers:

Climate Emergency Action Plan [n-somerset.gov.uk/sites/default/files/2023-03/31208 Climate Emergency Action Plan ACC.pdf](https://n-somerset.gov.uk/sites/default/files/2023-03/31208_Climat_Emergency_Action_Plan_ACC.pdf)

¹² [Climate Change 2022: Impacts, Adaptation and Vulnerability | Climate Change 2022: Impacts, Adaptation and Vulnerability \(ipcc.ch\)](https://www.ipcc.ch/report/ar6/wg2/)

Appendix 1. Draft Climate Adaptation Strategy.

Introduction

In 2019 North Somerset Council declared a climate emergency with the aim to become a carbon neutral council and area by 2030. The same year the council adopted a Climate Emergency Strategy¹³ followed by a refreshed Climate Emergency Action Plan¹⁴ in November 2022. Climate change adaptation has been identified as one of the key priorities as part of the council's response to tackle climate change.

The development of the Climate Change Adaptation Strategy follows the UK government's Climate Change Act 2008¹⁵, which created a framework for building the UK's ability to adapt to climate change, including:

- A UK-wide climate change risk assessment that must take place every five years.
- A national adaptation programme which must be in place and reviewed every five years to address the most pressing climate change risks to the UK.

The strategy includes the assessment of the key climate-related risks for North Somerset in line with the Third National Adaptation Framework¹⁶ and UK Climate Risk Assessment¹⁷, as well as a detailed action plan with the following key principles:

1. Governance

The theme sets out actions for North Somerset Council to deliver and monitor the Climate Change Adaptation Strategy, as well as setting out policies that could be implemented to support climate adaptation implementation. The section underlines the importance of council's partnership working and engagement.

2. Infrastructure, Transport and Assets

The actions include climate change adaptation measures to improve the local highways network including strategic active travel routes, to reduce the region's vulnerability to flooding and overheating, and set out commitments to improve vulnerability of transport and own assets.

3. Natural Environment

The principle includes set of actions the council can deliver or act as an enabler to, to support nature recovery, reduce flood and heat risks through the delivery of the Council's Green Infrastructure Strategy.

4. Health, Communities and the Built Environment

The theme explores actions the council could take or enable that can support wider outcomes for North Somerset Residents including climate justice,

¹³ [North Somerset climate emergency strategy 2019.pdf \(n-somerset.gov.uk\)](#)

¹⁴ [North Somerset Council Climate Emergency Action Plan \(n-somerset.gov.uk\)](#)

¹⁵ [Climate Change Act 2008 \(legislation.gov.uk\)](#)

¹⁶ [The Third National Adaptation Programme \(NAP3\) and the Fourth Strategy for Climate Adaptation Reporting \(publishing.service.gov.uk\)](#)

¹⁷ [UK Climate Change Risk Assessment 2022 \(publishing.service.gov.uk\)](#)

improving health and wellbeing and embedding climate change adaptations into the housing stock.

5. Business and Industry

Actions include understanding the evidence behind business and industry vulnerabilities to climate change, as well as, setting out initiatives to engage local businesses in adapting to climate change impacts.

The climate change adaptation strategy takes in consideration the data available through the North Somerset Joint strategic needs assessment¹⁸ and supports with council's strategic vision by aligning with:

- North Somerset Council Corporate Plan
- Climate Emergency Action Plan
- Health and Wellbeing strategy¹⁹
- Flood Risk Management Strategy
- Green Infrastructure Strategy
- Local Plan²⁰
- Waste Management Strategy

What is climate change adaptation?

Climate change adaptation refers to the process of adjusting our lifestyles and practices to cope with the current or expected impacts of climate change²¹.

In North Somerset, current and projected impacts of climate change include:

- Warmer and drier summers likely to break temperature records²²
- Wetter and warmer winters
- More extreme weather events, including devastating flooding²³
- Sea level rise

Adapting to climate change adaptation aims to enhance our resilience to the impacts of climate change.

Why we need climate change adaptation?

North Somerset Council has emphasised climate change adaptation as a critical component of its Climate Emergency Action Plan. The plan highlights expected challenges such as more frequent floods, higher temperatures, extreme weather, water scarcity, and deteriorating air quality.

North Somerset Council's response to the climate emergency addresses not only the need to reduce emissions but also to prepare our communities and businesses for the realities of a changing climate. Successful climate change adaptation works alongside climate change mitigation to minimise the future effects of climate change while managing current ones and leveraging any potential benefits. Without taking

¹⁸ [Joint strategic needs assessment - overview | North Somerset Council \(n-somerset.gov.uk\)](https://www.n-somerset.gov.uk/joint-strategic-needs-assessment-overview/)

¹⁹ [Health and wellbeing strategy 2021-24 | North Somerset Council \(n-somerset.gov.uk\)](https://www.n-somerset.gov.uk/health-and-wellbeing-strategy-2021-24/)

²⁰ [Our Local Plan | North Somerset Council \(n-somerset.gov.uk\)](https://www.n-somerset.gov.uk/our-local-plan/)

²¹ [IPCC_AR6_WGII_Annex-II.pdf](https://www.ipcc.ch/report/ar6/wgii/annex-ii/)

²² [Record breaking 2022 indicative of future UK climate - Met Office](https://www.metoffice.gov.uk/news/2022/record-breaking-2022-indicative-of-future-uk-climate)

²³ [Climate change insights, health and well-being, UK - Office for National Statistics \(ons.gov.uk\)](https://www.ons.gov.uk/climate-change-insights-health-and-well-being-uk)

steps towards adaptation, the financial burdens of climate change will increasingly fall on households, businesses, and government.²⁴

National and Global Context

Across the last few decades, there has been increasing recognition of climate change impacts at both national and global levels, compelling governments and international bodies to act. This recognition has been formalized through a series of agreements, policies, and frameworks designed to address and mitigate the effects of climate change. Key international work in the past decade includes:

- **Paris Agreement 2015.** The climate change summit in Paris saw a landmark agreement being made between nearly 200 countries which agreed to cut emissions to attempt to limit the rise in global temperatures to less than 2°C. The deal united all the world's nations in a single agreement on tackling climate change for the first time in history.
- **The Intergovernmental Panel on Climate Change (IPCC) report 2018.** The report focused on the projected impacts of global warming of 1.5 °C above pre-industrial levels and related global greenhouse gas emission pathways. This aimed to strengthen the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty.
- **IPCC report 2021.** The IPCC published a subsequent report indicating that we are due to reach 1.5 degrees by 2040 revealing that climate change is happening faster than we expected and it is going to affect the whole world.

The UK has been proactive in addressing climate change through a series of legislative and policy measures that emphasize the need for both mitigation and adaptation. The **Climate Change Act 2008** saw the UK government set its own, legally binding, target for cutting emissions and tackling the climate crisis. Including through the National Adaptation Programme and Climate Risk Assessment as mentioned before. Since 2019, **over two thirds of local authorities have set a net zero target**, and across the country, the lexicon of the climate crisis is embedded in people's everyday lives.

Since the updated targets of the 2021 IPCC report, we have seen record breaking temperatures, catastrophic weather events and 2023's average temperature proved to be 1.5 degrees above the baseline temperature²⁵. Although this will have been influenced by the El Nino²⁶ that increases the temperatures in the Pacific Ocean and has direct impact on global weather. This situation highlights the complex link between international climate change policies, global temperature patterns and the actions we take locally.

In addition, there is strong evidence of direct links between climate impacts and public health²⁷. Extreme weather events will create additional pressure on local

²⁴ [The Third National Adaptation Programme \(NAP3\) and the Fourth Strategy for Climate Adaptation Reporting \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/91111/the-third-national-adaptation-programme-nap3-and-the-fourth-strategy-for-climate-adaptation-reporting).

²⁵ [World's first year-long breach of key 1.5C warming limit - BBC News](https://www.bbc.com/news/health-57111111)

²⁶ <https://www.metoffice.gov.uk/weather/learn-about/weather/oceans/el-nino>

²⁷ [Main Climate Change and Public Health Indicators: scoping review \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/91111/main-climate-change-and-public-health-indicators-scoping-review)

health services including increase in hospital admissions and mental health care²⁸. The Climate Change Committee's Climate risks assessment²⁹ estimated some of the economic and social impacts of extreme weather events in the last 10 years as seen in Table 3.

Table 3. CCC's examples from extreme weather events in the UK.

	Economic Damages	Deaths	Other environmental impacts
Summer Heatwaves	£770 million- total estimated productivity loss in 2010 heatwave	2500+ heat-related deaths were recorded during the summer of 2020 in England: the highest number since 2003	Localised fish die-offs due to de-oxygenation of streams and rivers during the 2018 heatwave
Flooding	£1.6 billion – overall cost of the 2015-16 winter floods	10-15 deaths recorded as a direct result of flooding in 2007	30% increase in topsoil degradation during winter 2015/16 floods in a sample of Scottish catchments
Drought	Economic costs of the 2012 drought were estimated at £1655 million in revenues and £96 million in profit	None recorded due to drought in the last 10 years	A net reduction in carbon uptake of ecosystems was observed during the 2018 drought across Europe
Wildfire	£32 million – agriculture sector losses from wildfire in 2020	No Direct deaths caused by wildfire in the last 10 years	174,000 tonnes of carbon estimated to have been lost from the Flow Country wildfire in Scotland 2019 ³⁰

Recent report from UK Health Security Agency³¹ further outlines the health impacts of climate change on UK population, indicating increase of mortality in the absence of adaptation measures. Figure 1 demonstrates UK heat and cold deaths for all ages at baseline (2007 to 2018) and projected for 2030s, 2050s and 2070s (based on bias corrected UKCP18 data). The bars represent the mean across the 12 climate model realisations and the error bars are minimum and maximum ranges of the scenarios. Population growth and ageing are included.

Figure 1. Annual temperature related death in UK.

²⁸ [A method for monetising the mental health costs of flooding \(publishing.service.gov.uk\)](https://publishing.service.gov.uk).

²⁹ [Independent Assessment of UK Climate Risk - Climate Change Committee \(theccc.org.uk\)](https://theccc.org.uk)

³⁰ The Third UK Climate Change Risk Assessment Technical Report

³¹ [Climate change: health effects in the UK - GOV.UK \(www.gov.uk\)](https://www.gov.uk)

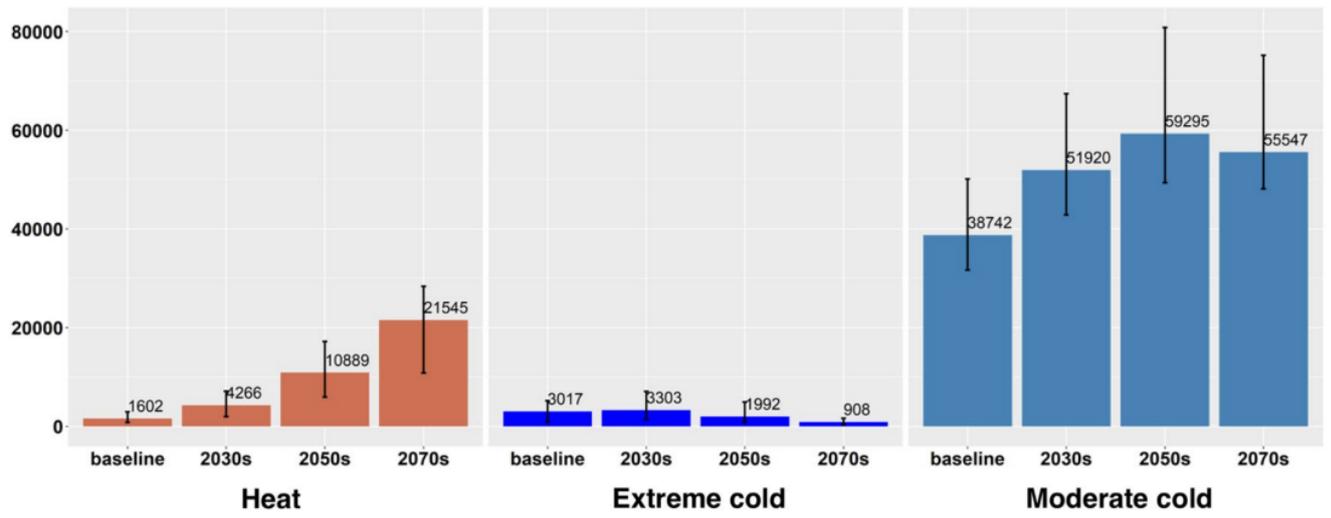
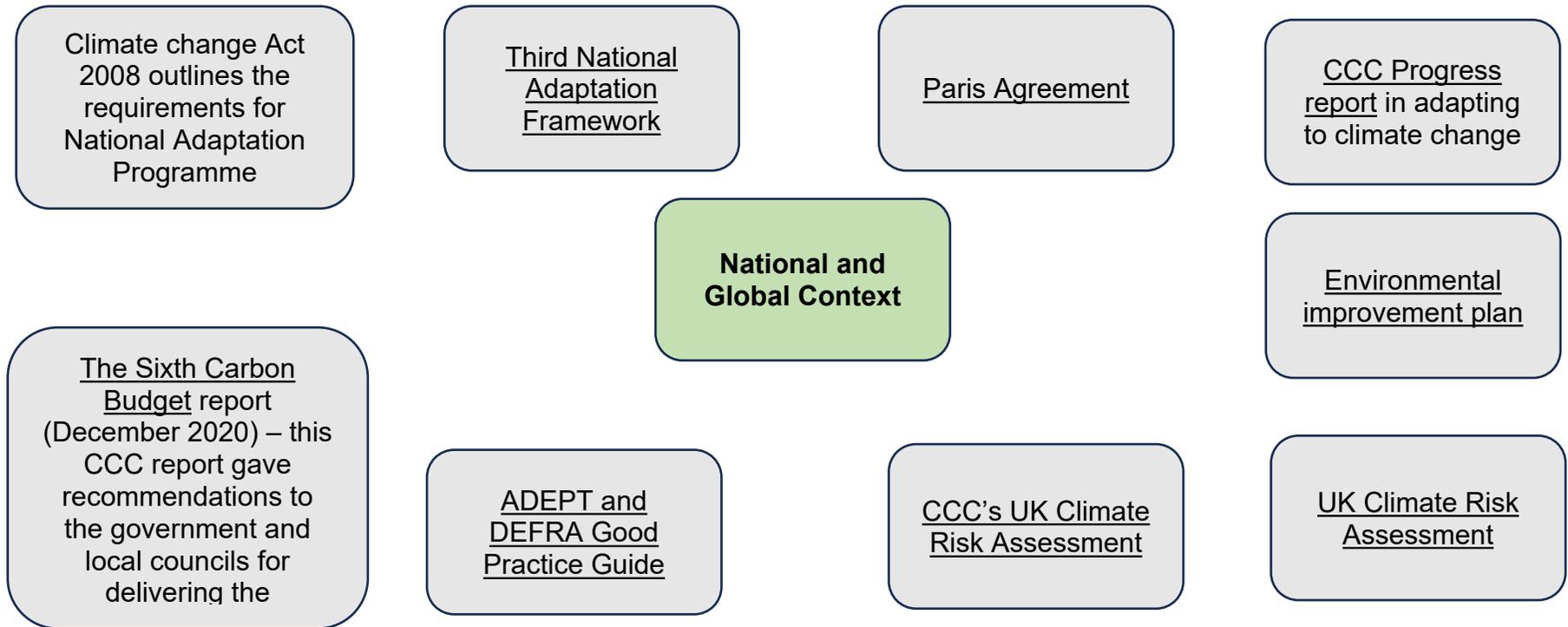


Figure 1. National and global context.



Climate Projections

The UK government's current Environmental Improvement Plan³² states that "while we aim to limit global warming to 1.5°C, evidence shows that we must be prepared for warming up to 4°C". The Climate Change Committee advice is to plan for 2°C of global warming and assess the risks for 4°C of global warming by 2100.

The climate projections continue to intensify. Whilst the projections depend on global actions aimed at reducing greenhouse gas emissions, the current trends for the South West of England from 2018 UK Climate Projections³³ predict a significant increase in temperatures in the second half of the century and are shown in the table below. The temperature projections shown below are calculated using the Representative Concentration Pathways (RCP) which are a calculation of a greenhouse gas concentration trajectory which the IPCC adopted and uses for their climate modelling and research.

Table 1. Temperature increases for South West.

	2050s RCP2.6 (50th percentile)	2050s RCP6.0 (50th percentile)	2080s RCP2.6 (50th percentile)	2080s RCP6.0 (50th percentile)
Mean Annual Temperature	up to +2°C	Between +2°C and +4°C	up to +2°C	up to +3°C
Mean Winter Temperature	up to +1°C	up to +2°C	up to +2°C	up to +3°C
Mean Summer Temperature	up to +2°C	Between +2°C and +4°C	Between +2°C and +3°C	up to +4°C

The Climate Impact tool³⁴ provides the data for several factors for 2°C and 4°C scenarios in England based on the UK Climate Risk Indicators³⁵, as seen in table below.

Table 2. England National Data.

Climate Impact	Effect of climate change	Present Day	By 2050 (+2C) scenario	By 2100 (+2C) scenario	By 2100 (+4C) scenario
Summer mean daily max temp	Warmer	20.4°C	+2.4°C	+3.7°C	+ 6.6°C
Summer mean rainfall	Drier	206 mm	-56 mm	- 66 mm	- 91 mm
Winter mean daily max temp	Warmer	7.5°C	1.5°C	2.1°C	3.4°C
Winter mean rainfall	Wetter	240 mm	+24 mm	+38 mm	+58 mm
Sea level rise (1981-2000 baseline)	Higher	+0.1 m	+0.4 m	+0.8 m	+1.2m

³² [Environmental Improvement Plan \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/671442/eip-2021-01-20.pdf)

³³ [UK Climate Projections \(UKCP\) - Met Office](https://www.metoffice.gov.uk/research/ukcp)

³⁴ [Climate impacts tool: guidance for Environment Agency staff \(publishing.service.gov.uk\)](https://www.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/671442/eip-2021-01-20.pdf)

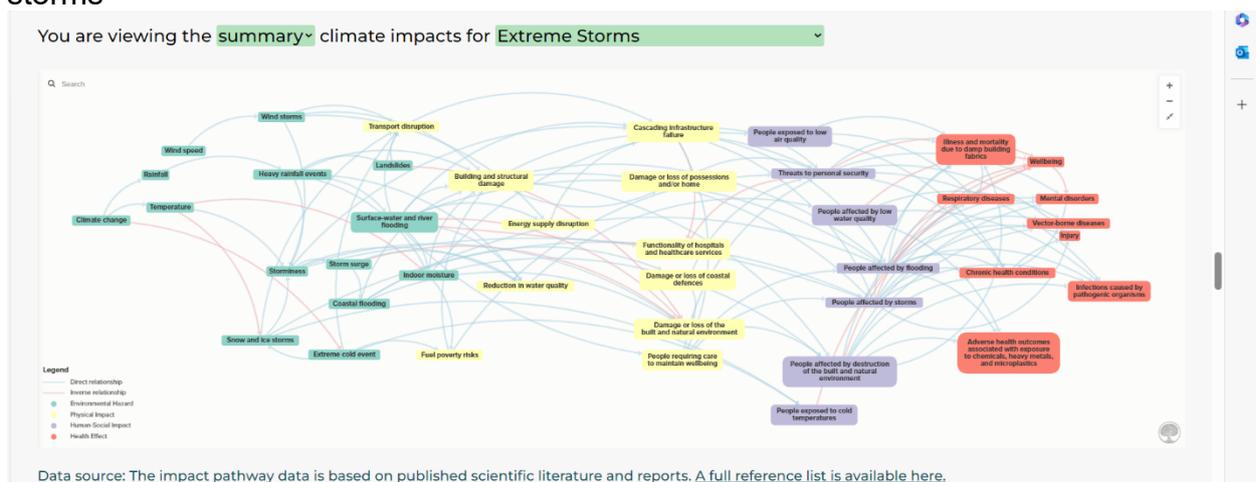
³⁵ [Climate Risk Indicators \(uk-cri.org\)](https://www.uk-cri.org/)

Hot days – chance of reaching 40°C	Hotter more often	Once a century	Once every 20 years	Once every 3-15 years	Once every 3-15 years
Peak rainfall intensity (1981-2000 baseline)	Heavier		+45%		+50%
Peak river flow (1981-2000 baseline)	More extreme		+35%		+127%
Low river flow (1981-2000 baseline)	More extreme		-60%		-85%

Impacts for North Somerset

The effects of climate change will vary across the UK as each area is defined by a distinct blend of geography, climate, and human infrastructure that responds uniquely with the changing environmental conditions. Recognising this, the University of Exeter's European Centre for Human Health has teamed up with Cornwall Council, The Alan Turing Institute, and Then Try This to develop the Local Climate Adaptation Tool (LCAT). This tool uses scientific research to predict changes in local climates, identify potential health and community impacts, pinpoint who may be most at risk, and suggest effective ways to adapt. With the insights provided by the LCAT, we can gain a clearer picture of how climate change could specifically affect North Somerset. This includes understanding the health risks, social issues, and physical damage that various climate events could cause in the area as well as understanding how these impacts are all connected. The figure below includes a summary of the climate impacts for extreme storms in North Somerset.

Figure 2. Local Climate Adaptation Tool summary of climate impacts for extreme storms

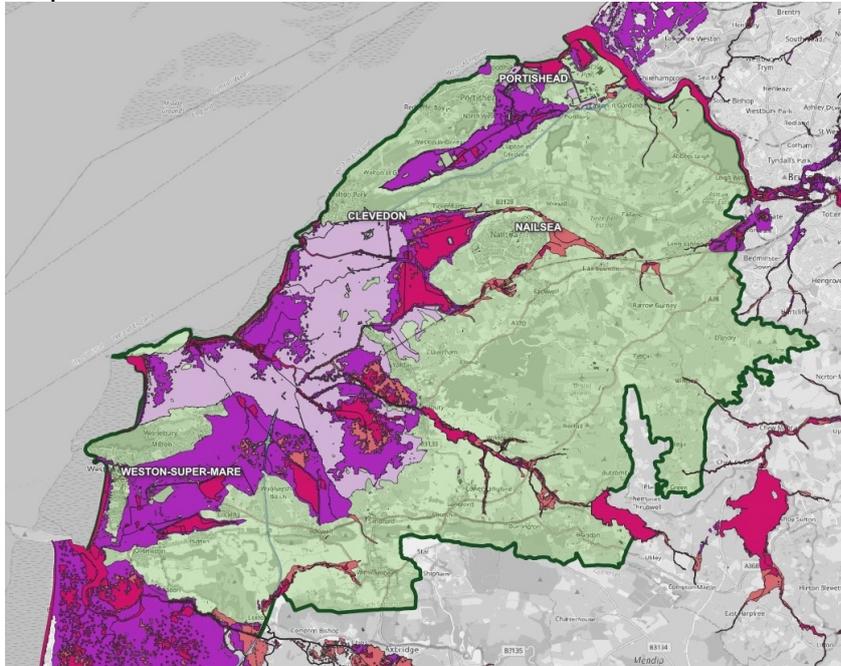


Flood Risk

The sea level rise will have significant impacts for prosperity, health and wellbeing of North Somerset population. 4,300 properties in the region are at medium risk of flooding (between 1% and 3.3% chance of happening each year, also known as a 1

in 100-year event)³⁶. Without flood defences in place, approximately a quarter of the area of North Somerset is at risk of flooding. Whilst the tidal flood defence network across the area is well-developed, sea level rise will still increase the risk of flooding. By 2080, without improvements to flood defences, as many as 63,000 properties could be at risk³⁷. Map 1 below shows the potential flooding in North Somerset linked to extreme storm events by 2100 including sea level rise and taking account of flood defences.

Map 1. Flood risk in North Somerset.



Heat Vulnerability

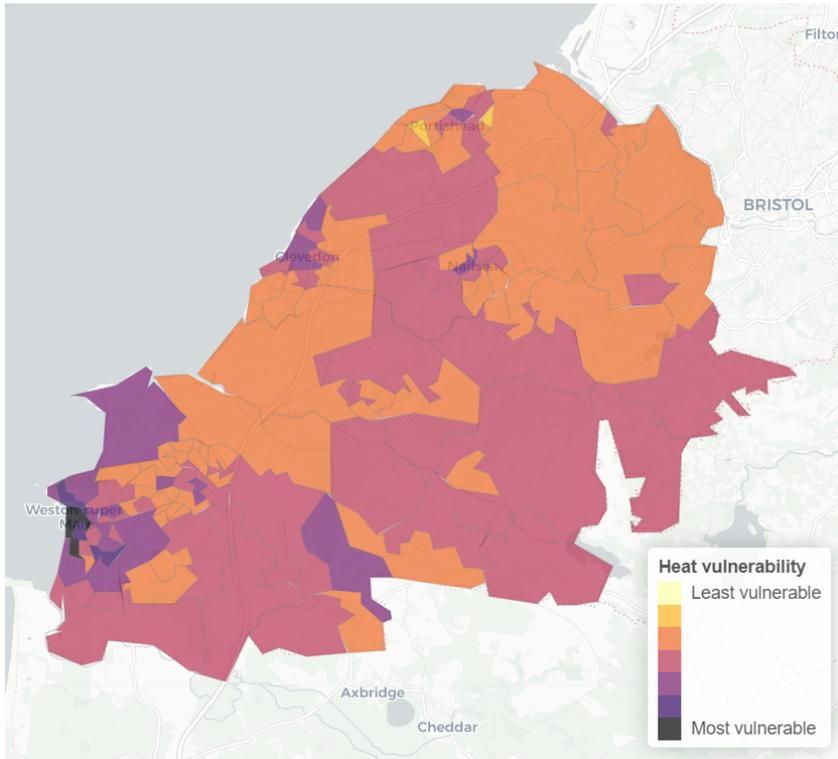
The increase in global temperatures forecast rising temperatures in North Somerset, that could lead to extreme weather events such a heat waves. The Map 3 demonstrates areas in North Somerset where social vulnerability and exposure to heat coincide. The data is based on the Emergency Planning Tool methodology³⁸ that takes in account age and health, income, mobility, crime as well as physical environment and housing characteristics.

Map 3. Social and heat vulnerabilities in North Somerset.

³⁶ [Local Flood Risk Management Strategy | North Somerset Council \(n-somerset.gov.uk\)](https://www.n-somerset.gov.uk/local-flood-risk-management-strategy/)

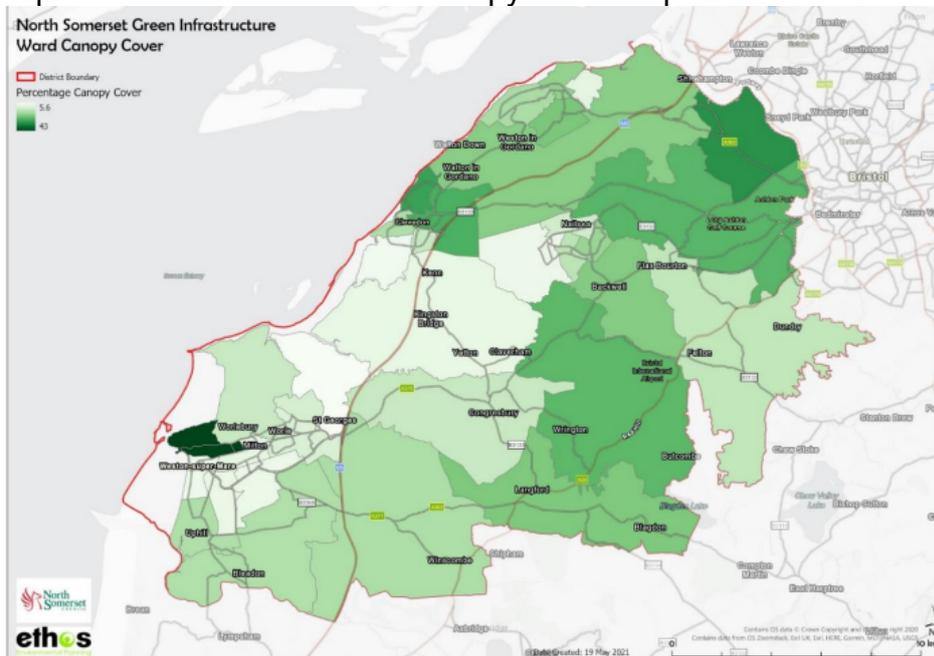
³⁷ [Learn more about this area's flood risk - Check your long term flood risk - GOV.UK \(check-long-term-flood-risk.service.gov.uk\)](https://www.gov.uk/check-long-term-flood-risk-service)

³⁸ [Emergency Planning Tool \(shinyapps.io\)](https://shinyapps.io/)



There are several factors that can increase heat vulnerability that includes housing characteristics and green spaces. North Somerset Council’s Green infrastructure strategy³⁹ explores current tree canopy cover (Map 4) and sets measures towards increasing the green infrastructure assets.

Map 4. North Somerset Ward canopy cover map.



Local context

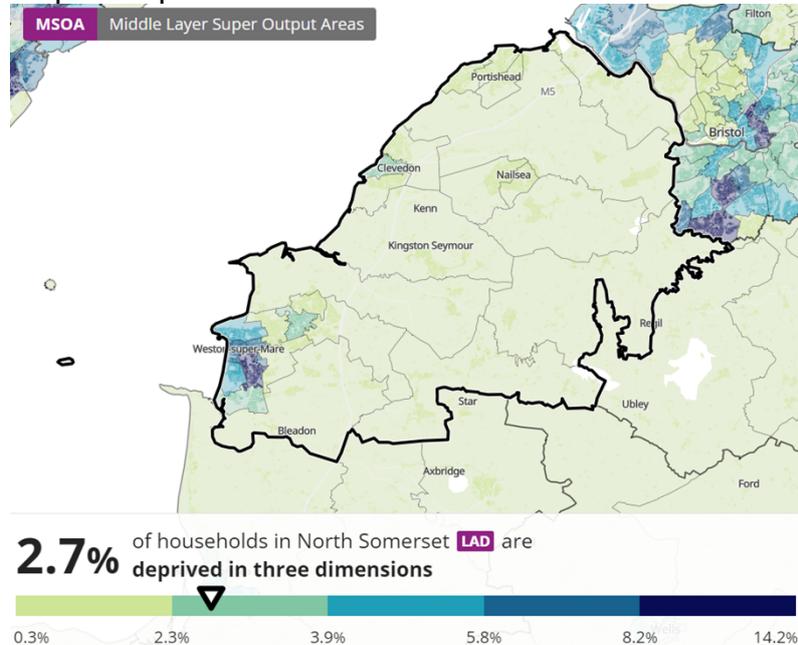
Who will be affected the most?

³⁹ [Green Infrastructure Strategy | North Somerset Council \(n-somerset.gov.uk\)](https://www.n-somerset.gov.uk/green-infrastructure-strategy/)

Based on the climate projections and vulnerability maps, it is evident that certain wards in North Somerset will be affected by the impacts of climate change more than others.

North Somerset has an aging population and local areas facing significant health and socio-economic deprivation (Map 5). This means that large numbers of our residents are particularly vulnerable to the impacts of climate change, and at the same time many will not have the resources to be able to prepare.

Map 5. Deprived households in three dimensions⁴⁰.



As can be seen from the maps above, this challenge is further exacerbated by the fact that the impacts of climate change for North Somerset are likely to be most severe in those wards that are the most deprived.

The mapping above shows that a large proportion of these challenges are consistent across wards affected by climate change, increasing the issue of inequalities.

The consequences of no further action to support climate change adaptation will further increase the persistent inequalities gap in the region and create further challenges for disadvantaged communities and people with protected characteristics.

Climate Risk Assessment

The strategy includes the assessment of the key climate-related risks for North Somerset in line with the Third National Adaptation Framework⁴¹ and UK Climate Risk Assessment⁴². As part of the strategy development, several internal and external workshops were held to identify and assess the risks in North Somerset. The urgency score definitions can be seen in Table 4.

Table 4. Urgency scores definition.

Category	Definition
More Action Needed	New, stronger or different Government action, whether policies, implementation activities or enabling environment for climate

⁴⁰ [Household deprivation - Census Maps, ONS](#)

⁴¹ [The Third National Adaptation Programme \(NAP3\) and the Fourth Strategy for Climate Adaptation Reporting \(publishing.service.gov.uk\)](#)

⁴² [UK Climate Change Risk Assessment 2022 \(publishing.service.gov.uk\)](#)

	<p>change adaptation, over and above those already planned, are beneficial in the next five years to reduce climate risks or take advantage of opportunities. This will include different responses according to the nature of the risks and the type of climate change adaptation:</p> <ul style="list-style-type: none"> • Addressing current and near-term risks or opportunities with low and no-regret options (implementing activities or building capacity). • Integrating climate change adaptation in near-term decisions with a long life-time or lock-in. Early adaptation for decisions with long lead-times or where early planning is needed as part of adaptive management.
Further Investigation	<p>On the basis of available information, it is not known if more action is needed or not. More evidence is urgently needed to fill significant gaps or reduce the uncertainty in the current level of understanding in order to assess the need for additional action. Note: The category of 'Research Priority' in CCRA2 has been replaced with 'Further investigation' in CCRA3. This is because of some confusion following CCRA2 that 'Research Priority' only denoted that more research was needed, when in fact the urgency is to establish the extent to which further climate change adaptation is required.</p>
Sustain Current Action,	<p>Current or planned levels of activity are appropriate, but continued implementation of these policies or plans is needed to ensure that the risk or opportunity continues to be managed in the future.</p>
Watching Brief	<p>The evidence in these areas should be kept under review, with continuous monitoring of risk levels and climate change adaptation activity (or the potential for opportunities and climate change adaptation) so that further action can be taken if necessary.</p>

Based on the Local Partnerships climate risk tool⁴³ and internal consultation workshops, the risks and opportunities in North Somerset associated with climate change have been outlined in Table 5. The urgency score has been determined through internal consultation workshops based on data availability, local knowledge and level of investment in place. The risks and opportunities below are specific to North Somerset, however, fall in line with the UK wide climate risk assessment.

Table 5. Climate Risk Assessment for North Somerset.

Risk or Opportunity	Risk ID	Description	Urgency score
Infrastructure			
Risk	I01	Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures	More Action Needed
Risk	I02	Risks to infrastructure services from river, surface water and groundwater flooding	More Action Needed
Risk	I03	Risks to infrastructure services from coastal flooding and erosion	Further Investigation
Risk	I04	Risks to bridges and pipelines from flooding and erosion	Further Investigation

⁴³ [Climate adaptation toolkit and risk generator \(localpartnerships.gov.uk\)](https://localpartnerships.gov.uk)

Risk	I05	Risks to transport networks from slope and embankment failure from water saturation	More Action Needed
Risk	I07	Risks to subterranean and surface infrastructure from subsidence	Further Investigation
Risk	I08	Risks to public water supplies from reduced water availability	More Action Needed
Risk	I10	Risks to energy supplies from high and low temperatures, high winds, lightning	Further Investigation
Risk	I11	Risks to offshore infrastructure from storms and high waves	Sustain Current Action, Watching Brief
Risk	I12	Risks to transport from high and low temperatures, high winds, lightning	More Action Needed
Risk	I13	Risks to digital connectivity from high and low temperatures, high winds, lightning	Further Investigation
Natural Environment			
Risk	N01	Risks to terrestrial species and habitats from changing climatic conditions and extreme events, including temperature change, water scarcity, wildfire, flooding, wind, and altered hydrology (including water scarcity, flooding and saline intrusion).	More Action Needed
Risk	N02	Risks to terrestrial species and habitats from pests, pathogens and invasive species	More Action Needed
Opportunity	N03	Opportunities from new species colonisations in terrestrial habitats	Further Investigation
Risk	N04	Risk to soils from changing climatic conditions, including seasonal aridity and wetness.	More Action Needed
Risk	N05	Risks and opportunities for natural carbon stores, carbon storage from changing climatic conditions, including temperature change and water scarcity	More Action Needed
Risk	N06	Risks to agricultural and forestry productivity from extreme events and changing climatic conditions (including temperature change, water scarcity, wildfire, flooding, coastal erosion, wind and saline intrusion).	More Action Needed
Risk	N07	Risks to agriculture from pests, pathogens and invasive species	More Action Needed
Risk	N08	Risks to forestry from pests, pathogens and invasive species	More Action Needed
Opportunity	N09	Opportunities for agricultural and forestry productivity from new/alternative species becoming suitable.	Further Investigation
Risk	N10	Risks to aquifers and agricultural land from sea level rise, saltwater intrusion	Further Investigation

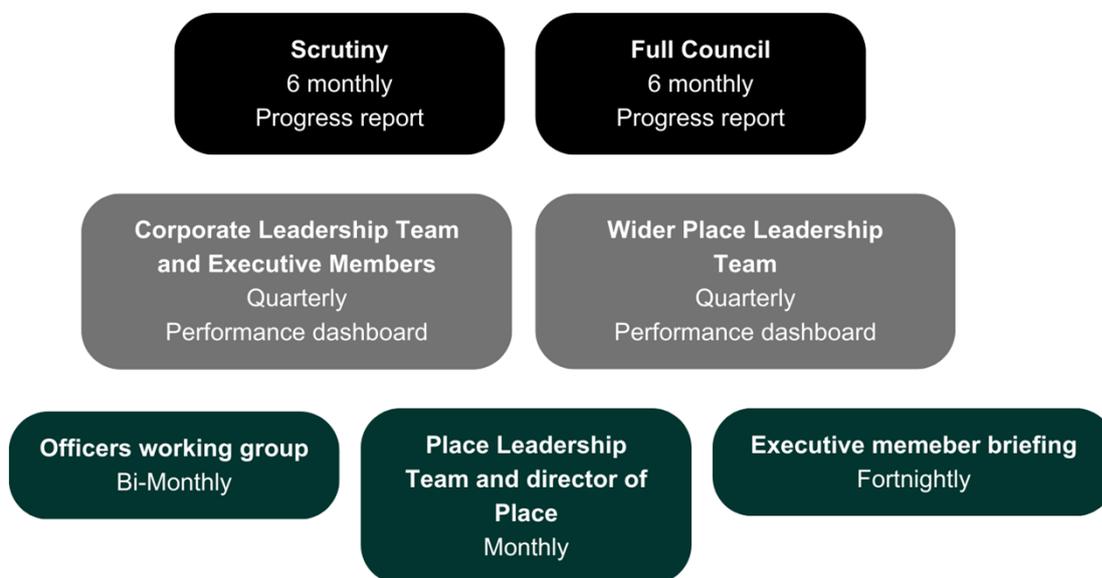
Risk	N11	Risks to freshwater species and habitats from changing climatic conditions and extreme events, including higher water temperatures, flooding, water scarcity and phenological shifts.	More Action Needed
Risk	N12	Risks to freshwater species and habitats from pests, pathogens and invasive species	More Action Needed
Opportunity	N13	Opportunities to freshwater species and habitats from new species colonisations	Sustain Current Action, Watching Brief
Risk	N14	Risks for marine species, habitats and fisheries from changing climatic conditions, including ocean acidification and higher water temperatures.	More Action Needed
Opportunity	N15	Opportunities to marine species, habitats and fisheries from changing climatic conditions	Further Investigation
Risk	N16	Risks to marine species and habitats from pests, pathogens and invasive species	More Action Needed
Risk	N17	Risks to coastal species and habitats due to coastal flooding, erosion and climate factors.	More Action Needed
Health, Communities and Built Environment			
Risk	H01	Risks to health and wellbeing from high temperatures	More Action Needed
Opportunity	H02	Opportunities for health and wellbeing from higher temperatures	Further Investigation
Risk	H03	Risks to people, communities and buildings from flooding	More Action Needed
Risk	H04	Risks to the viability of coastal communities from sea level rise	More Action Needed
Risk & Opportunity	H06	Risks and opportunities from summer and winter household energy demand	More Action Needed
Risk	H07	Risks to health and wellbeing from changes in air quality	Further Investigation
Risk	H08	Risks to health from vector-borne disease	More Action Needed
Risk	H09	Risks to food safety and food security	Further Investigation
Risk	H10	Risks to water quality and household water supplies	Further Investigation
Risk	H11	Risks to cultural heritage	More Action Needed
Risk	H12	Risks to health and social care delivery	More Action Needed
Risk	H13	Risks to education and prison services	More Action Needed
Business and industry			
Risk	B1	Risks to businesses from flooding	More Action Needed

Risk	B2	Risks to businesses and infrastructure from coastal change from erosion, flooding and extreme weather events	More Action Needed
Risk	B3	Risks to business from water scarcity	Further Investigation
Risk	B4	Risks to finance, investment and insurance including access to capital for businesses	Sustain Current Action, Watching Brief
Risk	B5	Risks to business from reduced employee productivity due to infrastructure disruption and higher temperatures in working environments	Further Investigation
Risk	B6	Risks to business from disruption to supply chains and distribution networks	More Action Needed
Opportunity	B7	Opportunities for business from changes in demand for goods and services	Further Investigation

North Somerset Climate Adaptation Action Plan 2024-2029

The action plan was developed based on a number of factors, including the evidence-based approach, national policy, internal workshops with technical and specialist teams. The action plan will be monitored by North Somerset Council through the Climate Emergency Governance Structure (Figure 2) in place and will be reported to the full council on a six-monthly basis. The performance against actions will be publicly available through data dashboard on council website⁴⁴.

Figure 2. Climate Change Adaptation Governance.



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The strategy includes the assessment of the key climate-related risks for North Somerset in line with the Third National Adaptation Framework⁴⁵ and a detailed action plan with the following key principles:

1. Governance

The theme sets out actions for North Somerset Council to take to deliver and monitor the Climate Change Adaptation Strategy, as well as sets out policies that could be implemented to support climate change adaptation implementation. The section underlines the importance of council's partnership working and engagement.

2. Infrastructure, Transport and Assets

The actions include climate change adaptation measures to improve local highways network to reduce region's vulnerability to flooding and overheating; and set out commitments to improve vulnerability of transport and own assets.

3. Natural Environment

This includes a set of actions council can deliver or encourage to support nature recovery, reduce flood and heat risks through delivery of council's Green Infrastructure Strategy.

4. Health, Communities and the Built Environment

The theme is exploring actions the council could take or enable that can support wider outcomes of North Somerset Residents including climate justice, improving health and wellbeing and embedding climate change adaptations in the housing stock.

5. Business and Industry

Actions include understanding the evidence behind business and industry vulnerabilities to climate change, as well as, setting out initiatives to engage local businesses in adapting to climate change impacts.

Actions identified within the five principles will support North Somerset Council to implement support for local residents, businesses, natural environment and infrastructure, and are directly linked to risks associated with climate change. Given limited funding opportunities and internal resources, the action plan identifies potential delivery partners and funding opportunities that could support plan implementation.

The actions priorities are linked to the risk assessment and are identified as Very High (VH), High (H), Medium (M). The action plan timescales identified as short (next 2 years), medium (2-10 years) and long (over 10 years).

⁴⁵ [The Third National Adaptation Programme \(NAP3\) and the Fourth Strategy for Climate Adaptation Reporting \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

12.

Governance							
Theme	Actions	Delivery lead	Potential partners	Potential funding	Timescales	Priority	Risk N
Resources, training, and capacity building	Set up Climate Change Adaptation working group	Climate Team	Climate and Sustainability partnership	Existing revenue resource	Short	M	N/A
	Integrate climate change adaptation as a key theme at main partnership groups	All	Climate and Sustainability Partnership, North Somerset Together; North Somerset Partnership (NSP), Food Alliance, Cost of Living group.	Existing revenue resource	Short	M	N/A
	Identify and map longer-term decisions and investment opportunities across service areas to align funding to build resilience to climate change	Climate Team	Climate and Sustainability partnership	Existing revenue resource	Medium	H	N/A

Policies, strategies and risk management	Integrate climate change adaptation measures in Local plan through specific policies and supplementary guidance	Planning policy team	N/A	Existing revenue resource	Short	VH	N/A
	Ensure climate change adaptation and resilience-related planning policy is complied with through planning applications process.	Development Management		Existing revenue resource		VH	
	Ensure climate risks assessment is embedded in the corporate risk assessment	Climate Team	N/A	Existing revenue resource	Short	M	N/A
Partnerships and engagement	Work with partners to identify key contacts to share priorities for climate change adaptation	Climate Team	Climate and Sustainability partnership	Existing revenue resource	Short	M	N/A
	Create a climate change adaptation page with resources.	Climate Team	N/A	Existing revenue resource	Short	M	N/A

	Support external organisations with development of climate change risk assessment and adaptation plans	Climate Team	Climate and Sustainability partnership	Existing revenue resource	Medium	VH	N/A
	Establish communication campaigns on climate change adaptation measures including flood awareness, water reduction, wildlife friendly gardens etc.	Climate Team Policy and Partnership team	Climate and Sustainability Partnership; NS Together; NSP Food Forum Wessex Water Economy Team	Existing revenue resource UK Shared Prosperity Fund Quartet Foundation	Short	M	N/A
Infrastructure, Transport and assets							
Highways	Map the local road network to identify vulnerabilities such as flood risks, heat and subsidence. Starting with strategic routes, bus corridors, routes to stations and strategic active travel routes.	Highways & Transport	Internal Draining Boards, Wessex Water, Environment Agency	Existing revenue resource	Medium	VH	I01, I02, I03, I04, I07, I12

	Assess bridges for vulnerabilities especially following extreme weather events	Highways & Transport		Existing revenue resource	Medium	VH	I04, I05, I12
	Assess culverts for vulnerabilities especially following extreme weather events	Highways & Transport		Existing revenue resource	Medium	VH	I04
	Undertake the review of approaches to highways maintenance to ensure they are resilient to future climate	Highways & Transport		Existing revenue resource	Medium	H	I01, I05, I12
	Develop Resilient Highways strategy	Highways & Transport		Existing revenue resource	Short	H	I04, I05
Assets owned by the council	Ensuring our own property is adapted to climate change e.g. improved drainage, flood defences etc	Projects and Property team	N/A	External funding required	Medium	VH	H01, H03, H04, H06,
	Embed climate change adaptation and resilience into the design and planning for new infrastructure	Projects and Property team	N/A	Existing revenue and capital resource	Short	H	H01, H02, H03, H06,

	[new policy out for consultation]						
	Embed climate change adaptation and resilience into the council's capital programme for new assets.	Projects and Property team, Planning Policy team	N/A	Existing revenue and capital resource	Short	VH	B1, B6, H03
	Ensure existing council assets have a vulnerability assessment	Projects and Property team	N/A	Existing revenue resource	Short	VH	H12, H13
	Create an adaptation plan for our existing buildings based on the vulnerability assessment and update SAMP				Short	VH	
Transport	Ensure business continuity through provision of services in extreme weather events and climate change	BSIP / Integrated Transport Unit	WECA / Weston Gateway / First	Existing revenue resource BSIP	Short		I01, I05, I12
	Include climate change adaptation measures into the development of JLTP5	Transport Policy	N/A	Existing revenue resource	Short	VH	I01, I05, I12
	Map active travel routes and PROW	Transport Policy		Existing revenue resource	Short		I01, I05, I12

	and their vulnerabilities						
Natural Environment							
Biodiversity	Introduce Biodiversity supplementary planning document	Planning Policy Team			Short	H	N01, N03, N04, N09,
	Ensure the Biodiversity Net Gain planning policy is complied with through the planning application process	Development Management		Existing revenue resource			N08, N01
	Roll out BNG across the region.	Natural Environment			Medium	VH	N03, N07, N08
	Integrate climate change adaptation principles into the Green Infrastructure Strategy	Natural Environment			Short	VH	N03, N07, N08
	Identify and map less mobile species as a result of climate change	Natural Environment	DEFRA		Long	H	N01, N02, N03, N07, N08, N09
	Support the delivery of West of England's local nature recovery strategy.	Natural Environment			Medium	H	N03, N07, N08

Green infrastructure	Continue to support the number of tree planting initiatives to adapt to extreme heat and reduce flood risks	Natural Environment	Forest of Avon Trust Avon Wildlife Trust	Trees for Climate fund UKSPF Local community funding	Medium	VH	N04, N05, N06, N09,
	Explore peatland restoration in line with the England Peat Action Plan ⁴⁶	Natural Environment	West of England Nature Partnership Bristol Avon Catchment Partnership	DEFRA – Lowland Agricultural Peat Water Discovery Project	Short	VH	N04, N05
	Ensure green infrastructure, nature conservation, trees and woodlands planning policy is complied with through the planning application process	Development management		Existing revenue resource		H	N01, N04, N06, N08
Parks and open spaces	Continue with rewilding initiatives to increase tree planting and tall grass management to increase biodiversity, to better adapt to changing climate, and	Natural environment	Local communities	Income from the sale of BNG units from development	Long term	H	N01, N02, N04, N05,

⁴⁶ [England Peat Action Plan \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)

	to provide shade and cool areas for visitors.						
Flood risk	Collaborate as part of the Severn Estuary Coastal Group and South West Coastal Group on a refresh of the Shoreline Management Plans that seeks to provide greater clarity on existing policy unit and provide a health check on others.	Natural Environment	Severn Estuary Coastal Group South West Coastal Group		Short	VH	N09, N10, N11, N12, N13, N14, N15, N16, N17
	Engage with residents in high risk communities about flood preparedness and raising awareness of the flood warning scheme	Natural Environment	Environment Agency DEFRA	DEFRA	Short	VH	I03, H04
	Ensure that the flood risk, sustainable drainage and rivers, watercourses and springs planning policy is complied with through the planning application process.	Development Management		Existing revenue resource			I02, I03, I04
Health, Communities and Built Environment							

Public Health	Develop climate change adaptation health and wellbeing plans or embed climate change adaptation into the new Health and Wellbeing strategy	Public Health	Health and Wellbeing Board	Existing revenue resource	Short	VH	H01, H02, H03, H04, H07, H08, H12, H13
	Investigate and collate data on population and health in relations to climate risks including air quality, health inequalities, mental health etc. To be used in JSNA.	Public Health Business Intelligence		Existing revenue resource	Short	VH	H01, H03, H04, H07, H08
	Ensure monitoring of health indicators such as air pollution, food safety, invasive species	Public Health	DEFRA?	Existing revenue resource	Long	H	H01, H03, H04, H07, H08
	Update health workplaces programmes with advice around	Public Health		Existing revenue resource	Medium	M	H01, H02, H03,

	working in extreme weather events						H12, H13
	Update communications with different partners and colleagues (eg health visitors, school health teams, VSCE) to be able to adapt protocols in events such as heat waves and cold weather. Including information detailing the relationship between climate impacts and health inequalities.	Public Health		Existing revenue resource	Short	M	H12, H13
Health and Social care	Assess care homes for vulnerability risks of heating and flooding; develop actions plans where required						H01, H03, H04, H12,
	Assess flood risks for residents with home care; develop action plans for capital investments and						H03, H04, H10, H12

	operational procedures where required						
	Embed climate risks in all commissioning processes						, H12, H13
Built Environment	Develop policies to reduce climate risks. Relevant policies: local green space, high quality design, climate change adaptation and resilience, renewable and low carbon energy generation, flood risk, sustainable drainage, green infrastructure, active travel routes	Planning Policy		Existing revenue resource	Short	VH	H04, H03, H11, I03
	Promote energy and water security and flood resistance to social housing providers and private landlords	Housing Adaptations and Improvements Team, Private Rented Housing Team			Medium	H	H03, H04, H06, H10, H11

	Ensure home retrofitting programmes include climate change adaptation measures such as shading, water efficiency, better ventilation etc	Housing Adaptations and Improvements Team	Centre for Sustainable Energy, Bristol City Leap	Connected for warmth	Medium	VH	H03, H04, H06, H10, H11
Just Transition	Ensure policy and plans developed to address climate risk involve those most likely to be affected	Climate Team	N/A		Short	VH	H03, H04
	Focus the flood risk management schemes into the areas most affected by flood risk					VH	H03, H04,
	Identify the most vulnerable groups to climate change in the region	Climate Team Public Health			Short	VH	H07, H12, H13,
	Work with communities in the most vulnerable areas to establish resilience programmes	Climate team			Medium	VH	H01, H03, H06, H07, H09
	Support education and awareness	Communications team	Weston college		Short	VH	H13, H07,

	raising around climate change adaptation to all residents through our communications	Climate team	Schools Further Education providers				H10, H01, H03
Business and Industry							
Business engagement	Communicate key risks of climate change adaptation measures including for flooding, heatwaves, and reducing water and energy use to businesses.	Economy team and Climate Emergency Team	Hive Growth Hub Visit West	UKSPF	Short	H	B1, B2, B3, B4, B5, B6, B7,
	Ensure there is consistent messaging on climate change adaptation and green transition throughout all business support	Economy team	Hive Growth Hub IBB Economic Steering Group	Existing revenue resource	Short	H	B1, B2, B3, B4, B5, B6, B7,
	Explore funding opportunities to help businesses build climate change adaptation and resilience measures	Economy team	N/A	UKSPF	Short	H	B1, B2. B6, B7

	Explore funding opportunities to establish local food supply chains which will improve food security	Economy team	Food and Drink Forum Growth Hub WERN	UKSPF	Medium	H	B6, H09
	Work with agencies that are leading on rural and farmers engagement to identify opportunities for land management to improve the resilience of sites	Natural Environment	DEFRA NFU	Existing revenue resource	Short	H	B1, B2, B3
Evidence	Outline the links between climate change opportunities and economic growth in development of economic plan	Economy team	N/A	Existing revenue resource	Short	M	B7
	Build on Eunomia report to identify critical at risk businesses	Economy team	Future Leap	Existing revenue resource		VH	B1, B2, B3, B4, B5
	Ensure climate change adaptation is included in development of the new economic plan	Economy team	Growth Hub Economic Steering Group	Existing revenue resource	Short	H	B4

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13. Glossary

Climate justice is a term which acknowledges that the impacts of climate change will have disproportionately harmful impacts on more vulnerable groups in society.

Built environment refers to the human-made surroundings that provide the setting for human activity, ranging in scale from buildings and parks or green space to neighbourhoods and cities that can often include their supporting infrastructure, such as water supply or energy networks

Carbon footprint is the amount of carbon emitted by an individual or organisation in a given period of time, or the amount of carbon emitted during the manufacture of a product.

Carbon neutral is a process where there is no net release of CO₂. Achieving carbon neutrality is often done through carbon offsetting schemes.

Carbon sink is any process, activity, or mechanism that absorbs more carbon dioxide from the atmosphere than it releases. Forests, oceans, and soil are the world's largest natural carbon sinks.

Decarbonisation is reducing the amount of greenhouse gas emissions that an activity produces, as well as increasing the amount that is being absorbed. Commonly used when referring to buildings and energy.

Emissions are any release of gases such as carbon dioxide which cause global warming.

Global warming is the steady rise in global average temperature in recent decades, which experts believe is largely caused by human-produced greenhouse gas emissions.

Greenhouse gases (GHG's) are gases in the atmosphere, which absorb thermal infra-red radiation emitted by the Earth's surface, the atmosphere and clouds e.g. water vapour, carbon dioxide, methane and nitrous oxide.

IPCC is The Intergovernmental Panel on Climate Change is a scientific body established by the United Nations and the World Meteorological Organisation.

Just Transition is defined by The International Labour Organization (ILO)⁴⁷ as: "Greening the economy in a way that is as fair and inclusive as possible to everyone concerned, creating decent work opportunities and leaving no one behind."

Net Zero is a term used to describe any process where there is no net release of carbon dioxide (CO₂). Achieving net zero is usually done by reducing emissions as much as feasibly possible, then offsetting the remainder.

Renewable energy is energy derived from natural sources that are constantly being replenished, such as wind, sunlight, the flow of moving water, and geothermal heat.

Retrofit refers to any improvement work on an existing building to improve its energy efficiency, making them easier to heat, able to retain that heat for longer, and replacing fossil fuels with renewable energy.

For more information on other commonly used terminology please refer to:

- [The Climate Dictionary: An everyday guide to climate change](#)
- [Glossary – Climate Change: Vital Signs of the Planet](#)

⁴⁷ [International Labour Organization \(ilo.org\)](https://www.ilo.org)

14. Further Information Sources and Tools

Tools

[Climate Just Tool](#)

[Climate Risk Indicators Explorer](#)

[Emergency Planning Tool](#)

[Flood risk checker, GOV.UK](#)

[Flood risk maps for rivers and sea in England](#)

[Local Climate Adaptation Tool](#)

[Sign up for flood warnings](#)

[Tree Equity Score Tool](#)

Information sources

[ADEPT and DEFRA Guidance for local authorities](#)

[Climate ADAPT: summary of UK resources](#)

[Climate Change Projections over land](#)

[Climate Change Risk Assessment and Adaptation Guidance, GOV.UK](#)

[Climate Impact Tool: Guidance for Environment Agency Staff](#)

[Environmental Improvement Plan 2023](#)

[Independent Assessment of UK Climate Risks \(Climate Change Committee\)](#)

[Intergovernmental Panel on Climate Change \(IPCC\)](#)

[National Flood and Coastal Erosion Risk Management Strategy for England](#)

[National Framework for Water Resources](#)

[The Third National Adaptation Programme](#)

[UK Climate Change Risk Assessment 2022](#)