Adaptation Reporting Power

Trial Project

Darlington Borough Council

December 2024

Introduction

The Climate Change Act 2008 is a legally binding framework for the UK to mitigate and adapt to the impact of climate change. The Act requires a Climate Change Risk Assessment (CCRA) to be carried out every five years with a National Adaptation Programme (NAP) which responds to the risks highlighted within the CCRA.

Under the Climate Change Act, public bodies must report on the steps that they are taking to respond to climate change. In 2024, local authorities have been invited for the first time to take part in the 4th round of reporting.

As a local authority, we owe a duty to our residents to ensure we can continue to deliver the services they rely on, despite a changing climate. We need to prepare for what we can see and be ready for what we can't see. The effects of climate change are already being felt, but the future forecast depends on actions taken locally, nationally and globally.

We must also be mindful that the impacts of climate change are felt disproportionately by our most vulnerable residents.

Tackling climate change is one of the key principles in our council plan. The council has declared a climate emergency, and we have set our target to 2040, that gives us just 16 years to tackle our emissions.

Alongside that, we have committed to become a resilient council. This report follows a risk assessment on all our services against risks identified in the CCRA.

Organisational profile

Darlington Borough Council is a unitary authority within the Tees Valley Combined Authority and north east England regions and is the gateway to the regions via national rail, road and international air transport infrastructure.

The council delivers borough and district-level services to residents and businesses in the borough of Darlington such as housing, children and adult services, planning, waste collection and environmental health.

The council's vision is for Darlington to be one of the best places to live, learn, work and invest in the UK, with a strong and sustainable economy, healthy thriving communities and opportunities for all.

Under the devolution deal, the combined authority has responsibilities around inward investment, employment and skills, transport, tourism, and business growth.

The council's police and fire services are shared with County Durham as is our hospital provision.

The Borough is being transformed by ambitious plans to grow the economy supported by a strong foundational economy, the relocation of HM Treasury and the creation of the Darlington Economic Campus, and investment in the town centre and train station.

However, it is still an extremely challenging time with residents, communities and businesses feeling the legacy of Covid 19, high inflation and the cost of living pressures.

In 2019, the Council declared a climate emergency for its own operations. A strategy and action plan were developed, which included adaptation actions. Following the local elections of 2023, the climate emergency declaration was revisited and the ambitions revised. The date for council operations to be carbon neutral was brought forward to 2040. The declaration included a pledge for the council to adapt to climate change and added more emphasis on external engagement.

The council's carbon neutral declaration covers our electricity and gas use, fleet and business travel using officers' own vehicles, streetlights and signs.

Our adaptation actions, in contrast, cover the entirety of the council's duties.

Governance, management and strategy

Our climate change declaration was a Council decision, putting the overall ownership at the highest level. The climate change team sits within the economy portfolio, with the portfolio holder acting as champion and ambassador within the elected Members. A 6-monthly report is presented to Cabinet and Council with an external update report published on the website annually.

The actions in the action plan are allocated to a responsible officer and lead assistant director (or director, depending on the department). These officers provide reports on their respective actions.

A separate Member-led climate change working group was established following the first climate change declaration. This group brings a member of each of the political parties together, with the Leader of the Council and the portfolio holder responsible for climate change, to discuss matters with officers in the climate change team and provide advice and guidance.

Climate change is one of the core principles in the council plan and is included as a compulsory section in Cabinet and Council reports.

The majority of adaptation actions in the current action plan have been drawn from ADEPT's Good Practice Guidance for Local Government. We also carried out a resilience review for some of our services in 2022, adding actions arising from that review. Further actions identified from the current risk assessment will be added to the action plan at its next update.

We are not currently benchmarked against ISO/BSI standards, but we are using the APSE performance networks climate change benchmarking module.

Understanding risks and challenges

As a public body, we have a duty to ensure that we can continue to deliver our services. The COVID pandemic demonstrated that we can adapt to circumstances to ensure that our residents are safe. Climate change adds another dimension in that a lot of the impacts are still not clearly known and are dependent on decisions and actions taken on a national and international level.

However, we are used to risk assessing our work and also ensuring we have business continuity plans. The difference now, is that we need to look to the future to plan ahead.

Our corporate risk assessment currently includes two entries relating to climate change:

- *Failure to meet the Council's commitment to becoming Carbon neutral by 2040*
- *Managing the impact of severe weather events*

The adaptation entry is currently under consideration to acknowledge the need to address projected global temperature increases.

Risk assessment scope

The risk assessment covers all areas of the council's work including housing, children and adult services, business development, environmental health, highways management and public health.

We have carried out a risk assessment using the CCRA identified risks and using the forecasted impacts from the Local Climate Adaptation Tool and Met Office projections.

As an inland authority, we have removed risks relating to coastal issues. We also have removed the risk relating to migration through conflict due to climate change. We would treat this as we do when receiving any refugees due to conflict.

We do need to note, also, that there are some risks where we will see the impact, but we have no power to change the situation. For example, water quality and supplies issues are the responsibility of the water company. Our social care teams may have to deal with knock-on impacts of additional care requirements, but they cannot solve the underlying issue. Our children and adult services, and public health teams may see considerable changes in demand for services where the impacts are felt disproportionately.
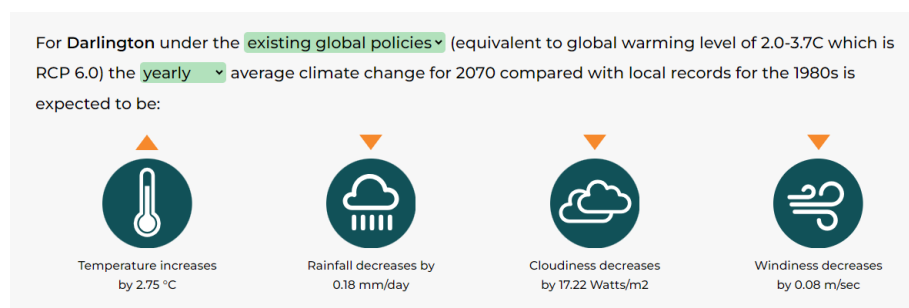
We have begun work on a tool to capture the costs and opportunities of severe weather impacts on Darlington. We have trialled it with one team, but it still needs a lot more work across the Council and including the Local Resilience Forum, before it can be rolled out.

We have also included actions that were already in our climate change action plan and have mapped those against the risks identified by the CCRA. We do have a few actions that do not directly map against the risks but are things we would like to do. We have omitted them from this risk assessment as they do not directly relate to the requested response.

We have completed a deep dive into the risks facing our adult services teams (see Appendix A). Darlington has an increasingly aging population, as well as some of the most deprived areas in England. As a result, we are concerned about the pressures that will face our teams.

Risk assessment scenarios

We have used the Local Climate Adaptation Tool to identify the scenarios for Darlington. Under RCP6.0, existing global policies will result in an equivalent global warming level of at least 2°C by 2070. For this reason, we have removed the mid-century projection and are preparing for a minimum global temperature increase of 2° before the end of the century.

For **Darlington** under the existing global policies ⌄ (equivalent to global warming level of 2.0-3.7C which is RCP 6.0) the yearly ⌄ average climate change for 2070 compared with local records for the 1980s is expected to be:

Temperature increases by 2.75 °C

Rainfall decreases by 0.18 mm/day

Cloudiness decreases by 17.22 Watts/m2

Windiness decreases by 0.08 m/sec

In a worst-case scenario (RCP8.5), temperatures are likely to increase to more than 3.2° by 2070. We will therefore also include a 4° rise in our risk assessment and planning. As technologies emerge and improve, we will hopefully see the likelihood of this reducing. But we still need to include the worst-case possibility in our forward planning.

For **Darlington** under the [worst case scenario ⌄] (equivalent to global warming level of 3.2-5.4C which is RCP 8.5) the [yearly ⌄] average climate change for 2070 compared with local records for the 1980s is expected to be:

Temperature increases by 4.13 °C	Rainfall decreases by 0.15 mm/day	Cloudiness decreases by 21.49 Watts/m2	Windiness decreases by 0.05 m/sec

Note: Yearly average climate change does not always reflect the extremes of summer and winter. Change the drop down menu above to see the predictions for the different seasons.

We are also using the new Met Office Local Authority Climate Service, particularly for sharing information amongst our councillors and staff and in talks we give to the local community.

		0.6°C GWL Baseline 1981-2000	1.0°C GWL Recent Past 2001-2020	1.5°C GWL Paris Agreement	2°C GWL Guidance: Prepare	4°C GWL Guidance: Assess risks
	TEMPERATURE	°C	°C	°C change	°C change	°C change
	Summer Maximum Temperature	27.5 27.2 to 27.8	29.2 28.5 to 30.3	+2.4 +0.8 to +3.0	+2.8 +1.7 to +5.0	+6.6 +4.7 to +8.0
	Summer Average Temperature	14.5 14.5 to 14.5	15.4 15.2 to 15.8	+1.2 +0.9 to +1.8	+1.9 +1.2 to +2.3	+3.9 +3.3 to +4.4
	Winter Average Temperature	3.7 3.7 to 3.7	4.4 4.1 to 5.1	+1.0 +0.6 to +1.4	+1.3 +0.7 to +1.8	+2.7 +1.8 to +3.3
	Winter Minimum Temperature	-8.3 -8.8 to -8.1	-6.6 -7.9 to -5.1	+2.8 +1.0 to +3.8	+3.0 +2.1 to +4.8	+5.8 +4.6 to +6.2
	Annual Average Temperature	8.8 8.8 to 8.8	9.6 9.5 to 9.8	+1.1 +0.9 to +1.2	+1.6 +1.2 to +1.7	+3.2 +2.7 to +3.6
	PRECIPITATION	mm/day	mm/day	% change	% change	% change
	Summer Precipitation Rate	1.76 1.75 to 1.77	1.79 1.58 to 2.01	+5 -18 to +11	-5 -15 to +9	-21 -31 to -8
	Winter Precipitation Rate	1.63 1.63 to 1.64	1.70 1.53 to 1.83	+2 -11 to +11	+3 -12 to +19	+10 -1 to +20

Hazard identification and risk screening

We set up a task and finish group to work through the risk assessment. We explained how rising global temperatures are likely to affect Darlington and worked through each risk to identify how our teams and services are likely to be affected.

The risk analysis and evaluation section below, sets out each of the risks that we consider relevant to us, how we expect them to affect us and the score we have given for present day, 2° and 4° scenarios.

We chose not to include a mid-century scenario as global temperature increases would indicate 2° before the end of the century, so we feel it prudent to prepare for that as a likely outcome.

Risk analysis and evaluation

The tables below outline how the risks are likely to affect Darlington Borough Council and the wider borough, for each of the CCRA risks identified. The full risk assessment is in Appendix B. At present, we have no mechanism for identifying costs of adaptation actions. We are, however, looking at ways of assessing costs of current severe weather impacts – based on the events we are seeing today. Once we have that in place, we will hopefully be able to extrapolate future costs based on increasing likelihood of occurrences.

Business

Key risk code	Key risk description	Our mapped risks	Risk score Present day	Risk score +2° scenario	Risk score +4° scenario
B1	Risks to business sites from flooding	• Fail to develop sites • Lack of capital receipts	Moderate (8)	Major (12)	Major (15)
B3	Risks to businesses from water scarcity	• Impact on production • Staff health issues	Moderate (6)	Moderate (6)	Moderate (8)
B4	Risks to finance, investment and insurance including access to capital for businesses	• Increased demand, increased costs for services, employees and availability with insufficient funding to cover them	Minor (2)	Major (12)	Major (15)
B5	Risks to business from reduced employee productivity due to infrastructure disruption and higher temperatures in working environments	• Staff health issues • Production capacity • Sales impacts	Minor (2)	Major (12)	Major (15)
B6	Risks to business from disruption to supply chains and distribution networks	• Production capacity • Business failure to adapt • Fall in business sales	Moderate (9)	Moderate (6)	Major (16)
B7	Opportunities for business from changes in demand for goods and services	• New market opportunities	Moderate (8)	Major (10)	Major (12)

Health

Key risk code	Key risk description	Our mapped risks	Risk score Present day	Risk score +2° scenario	Risk score +4° scenario
H1	Risks to health and wellbeing from high temperatures	• Risk to vulnerable people • Heat related illness • New diseases	Moderate (6)	Major (15)	Severe (20)
H10	Risks to health from poor water quality or supply interruptions	• Risk to water quality due to algal bloom • Water borne diseases	Major (10)	Manor (10)	Major (12)
H11	Risks to cultural heritage	• Damage to cultural assets • Subsidence/cracking • Flooding	Minor (2)	Moderate (4)	Moderate (6)
H12	Risks to health and social care delivery from extreme weather	• Staff availability (illness) • Staff health issues • Disruption to transportation and infrastructure leading to interruptions in social care services, home visits and hospital access	Major (12)	Major (16)	Severe (20)
H13	Risks to prison and education services from extreme weather	• Staff availability (illness) • Staff health issues • Disruption to transport & infrastructure leading to interruption in service	Minor (3)	Moderate (9)	Major (12)
H2	Opportunities for health and wellbeing from higher temperatures	• Less impact of cold	Moderate (6)	Moderate (8)	Moderate (8)
H3	Risks to people, communities and buildings from flooding	• Impact on services • Staff health issues	Moderate (8)	Major (12)	Major (16)
H5	Risks to building fabric	• Cracking and subsidence • Damp leading to health issues	Minor (2)	Moderate (4)	Moderate (6)

Key risk code	Key risk description	Our mapped risks	Risk score Present day	Risk score +2° scenario	Risk score +4° scenario
H6	Risks and opportunities from summer and winter household energy demand	• Increased cooling demand • strain on energy infrastructure driving up energy prices ∴ increased risk of fuel poverty. Milder winters (may be offset by periods of extreme cold) • Underuse of heating systems - risk of system inefficiency or unexpected failures when needed • Shifts/fluctuations in seasonal energy demands vs supply eg cooling putting strain on renewable resources	Moderate (6)	Moderate (9)	Severe (20)

H7	Risks to health and wellbeing from changes to indoor and outdoor air quality	• Increased air tightness reducing natural ventilation – increase of indoor pollutants (e.g. carbon dioxide, VOCs, and radon) may lead to respiratory diseases and issues.
		• increased humidity/intense storms – flooding, damp indoor environments, mould growth - health impacts through allergic reactions, asthma attacks, and other respiratory problems
		• Increased use of air conditioning can circulate indoor air pollutants if not properly maintained - bacteria and mould may be spread - causing respiratory health issues.
		• Irritation of respiratory system, lung function, and worsening of existing heart conditions through:
		   o Increase of ground-level ozone (smog)
		   o increase of particulate matter from more frequent wildfires
		   o longer pollen seasons
		   o increased power plant emissions (due to higher cooling demands)
			Moderate (4)	Moderate (8)	Major (12)

H8	Risks to health from vector borne diseases	• Novel vector borne diseases	Moderate (8)	Major (10)	Major (12)
H9	Risks to food safety and food security	• Food poisoning due to failure of refrigeration systems or increase in pests Potential supply chain issues Disruption to production Wholesale/Retail distribution impacts	Moderate (8)	Major (12)	Major (16)

Infrastructure

Key risk code	Key risk description	Our mapped risks	Risk score Present day	Risk score +2° scenario	Risk score +4° scenario
I1	Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures	- Network failures - Power cuts - Loss of communications - inability to disseminate emergency messages - Inability to get emergency services where they need to be - Hospitals etc cut off	Moderate (6)	Major (12)	Major (16)
I10	Risks to energy from high and low temperatures, high winds, lightning	- Power cuts - knock on impacts to people with medical equipment - Damage to power lines - Damage to gas pipes causing leakages	Moderate (6)	Major (12)	Major (16)
I12	Risks to transport from high and low temperatures, high winds, lightning	- Road closures - Damage to road surface - Increased potholes	Moderate (6)	Major (12)	Major (16)
I13	Risks to digital from high and low temperatures, high winds, lightning	- Potential connectivity issues disrupting business - Problems with healthcare buttons	Moderate (6)	Major (12)	Major (16)
I2	Risks to infrastructure services from river, surface water and groundwater flooding	- Impact on production - Fail to develop sites - Impact on services - Customer facing teams unable to reach clients	Moderate (6)	Moderate (6)	Major (12)
I4	Risks to bridges and pipelines from flooding and erosion	- Inc risk to life - Inc risk to services - Inc health risks/disease - Customer facing teams unable to reach clients	Moderate (6)	Moderate (6)	Major (12)
I5	Risks to transport networks from slope and embankment failure	- Inc risk to life - Inc risk to services - Customer facing teams unable to reach clients	Moderate (6)	Major (10)	Major (12)

Key risk code	Key risk description	Our mapped risks	Risk score Present day	Risk score +2° scenario	Risk score +4° scenario
I7	Risks to subterranean and surface infrastructure from subsidence	• Transport and business disruption, damage to assets • Customer facing teams unable to reach clients	Moderate (6)	Moderate (6)	Major (12)
I8	Risks to public water supplies from reduced water availability	• Water not available for public consumption - potential knock-on impacts of dehydration and other health issues • Schools closed because of lack of water • Care homes/day centres closed because of lack of water • Water restrictions in place for countryside/environment teams • Businesses reliant on water for processes unable to function	Minor (3)	Moderate (6)	Moderate (9)
I9	Risks to energy generation from reduced water availability	• No current council owned renewable energy generation	Minor (1)	Minor (1)	Minor (1)

International Dimensions

Key risk code	Key risk description	Our mapped risks	Risk score Present day	Risk score +2° scenario	Risk +4° scenario
ID1	Risks to UK food availability, safety, and quality from climate change overseas	• Potential supply chain issues • Disruption to production • Wholesale/retail distribution • Stock not available for council outlets	Moderate (8)	Major (12)	Major (16)
ID2	Opportunities for UK food imports or exports due to global climate change	• Changes to food supply chain sector efficiencies	Moderate (4)	Moderate (6)	Moderate (8)
ID3	Risks and opportunities to the UK from climate-related international human mobility	• Skills demand and supply • Housing supply • school places • Availability of medical care	Minor (3)	Moderate (6)	Moderate (9)

Key risk code	Key risk description	Our mapped risks	Risk score Present day	Risk score +2° scenario	Risk +4° scenario
ID7	Risks from climate change on international trade routes	• Supply chain impacts • Fall in productive capacity	Moderate (6)	Moderate (9)	Major (12)
ID8	Risks to the UK finance sector from climate change overseas	• Insurance • Investments	Moderate (8)	Major (10)	Major (12)
ID9	Risk to UK public health from climate change overseas	• Risk of disease from migration/holidays	Minor (3)	Moderate (4)	Moderate 5)

Nature

Key risk code	Key risk description	Our mapped risks	Risk score Present day	Risk score - end of century (+2°) scenario	Risk score - end of century (+4°) scenario
N1	Risks to terrestrial species and habitats from changing conditions	• Inc colonisation of invasive non-native species • Decrease in habitat • Changes in distribution/range • Reduction in connectivity • Decrease in habit heterogeneity • Change in phenology	Moderate (4)	Major (8)	Severe (20)
N11	Risks to freshwater species and habitats (water temp, flooding, scarcity)	• Inc colonisation of invasive non-native species • Decrease in habitat • Changes in distribution/range • Reduction in connectivity • Decrease in habit heterogeneity • Change in phenology	Moderate (4)	Major (8)	Severe (20)

Key risk code	Key risk description	Our mapped risks	Risk score Present day	Risk score - end of century (+2°) scenario	Risk score - end of century (+4°) scenario
N12	Risks to freshwater from pests, pathogens, and invasive nonnative species	• Inc colonisation of invasive non-native species • Inc colonisation of new invasive non-native species • Increase disease/emerging diseases • Increased competition - reduction in native biodiversity • Increase in algal blooms - decreased oxygen	Moderate (4)	Major (8)	Severe (20)
N13	Opportunities to freshwater species and habitats from new species colonisations	• Increased food opportunities • Hybrid vigour through hybridisation • Increase habitat/niche available	Minor (3)	Moderate (6)	Major (12)
N18	Risks and opportunities from climate change to landscape character	• Changes in crop cycles/type of food grown and longer growing season • Invasive species colonisation	Minor (3)	Moderate (6)	Major (12)
N2	Risks to terrestrial species and habitats from pests, pathogens and invasive species	• Inc colonisation of invasive non-native species • Inc colonisation of new invasive non-native species • Increase disease/emerging diseases • Increased competition - reduction in native biodiversity	Moderate (4)	Moderate (8)	Severe (20)
N3	Opportunities from new species colonisations in terrestrial habitats	• Increased food opportunities • Hybrid vigour through hybridisation • Increase habitat/niche available	Minor (3)	Moderate (6)	Major (16)
N4	Risk to soils from changing climatic conditions, including seasonal aridity and wetness	• Desertification • Flood washing out nutrients • Alteration of soil composition - pH, particle size • Food supply capacity reduction • Nutrient decline through increased respiration	Moderate (8)	Major (12)	Severe (20)

Key risk code	Key risk description	Our mapped risks	Risk score Present day	Risk score - end of century (+2°) scenario	Risk score - end of century (+4°) scenario
N5	Risks/opportunities for natural carbon stores, carbon sequestration and GHG emissions from changing climatic conditions, including temperature change and water scarcity	• Desertification • Flood washing out nutrients • Alteration of soil composition - pH, particle size • Increased wetland areas • Potential carbon storage ability of new species	Moderate (8)	Major (12)	Severe (25)
N6	Risks and opportunities for agricultural and forestry productivity from extreme events and changing climatic conditions (including temperature change, water scarcity, wildfire, flooding, coastal erosion, wind)	• Inc colonisation of invasive non-native species • Economic risks • Loss of ancient woodlands • Change in woodland type and associated insect/bird species	Moderate (8)	Major (12)	Severe (25)
N7	Risks to agriculture from pests, pathogens and invasive nonnative species	• Inc colonisation of invasive non-native species • Inc colonisation of new invasive non-native species • Increase disease/emerging diseases • Increased competition - reduction in native biodiversity • Economic risks • reduction in food security	Moderate (8)	Major (12)	Severe (25)
N8	Risks to forestry from pests, pathogens, and invasive non-native species	• Inc colonisation of invasive non-native species • Inc colonisation of new invasive non-native species • Increase disease/emerging diseases • Increased competition - reduction in native biodiversity • Economic risks	Moderate (8)	Major (12)	Severe (25)
N9	Opportunities for agricultural and forestry productivity from new/alternative species becoming suitable	• Potential longer growing season, more productivity • Increase in food security • Cleaner wood fuel • Improved economic outcomes	Moderate (4)	Moderate (8)	Major (16)

Risk management

All reports going to Cabinet or Council are required to complete an assessment of how the project is both affected by and affects climate change. This has recently been improved so that it is a more detailed and exact measure, but we recognise we still have a way to go to fully meet this challenge.

The risk register is reported annually to the Audit Committee, although meetings are held quarterly with issues raised as they arise.

Interdependent and cascading risks

As stated previously, there are risks identified in the CCRA that will impact on Darlington Borough Council and our residents and businesses, but where we are not in control of the required measures.

In many cases we already have established relationships with the necessary partners and we will be discussing these issues with them. As we move towards ever increasing global temperatures, the actions needed will need to be enacted together, not least because of resource issues.

There is still a gap in our understanding of cascading risks, both nationally and locally. In the past there have been difficulties in sharing information due to security risks; however, we will need to find a way round this if we are to ensure all areas are safe.

Adaptation action plan and implementation

Our completed risk assessment is attached at Appendix B.

We have assessed our services against the risks identified in the Climate Change Risk Assessment and have included new actions as well as actions we had previously identified from our internal resilience review. These actions are reported against every six months, to both Cabinet and Council.

Appendix A

Climate Change Risk Assessment for Adult Social Care in the UK

Climate change poses significant risks to adult social care in the UK. As the country faces rising temperatures, more frequent extreme weather events, and changing precipitation patterns, these impacts can exacerbate vulnerabilities among older adults and those with disabilities who rely on social care services. A comprehensive risk assessment for adult social care in the context of climate change would examine a variety of factors, including health impacts, infrastructure resilience, resource availability, and service delivery. Below is a breakdown of the key risks and considerations for adult social care in the UK:

Health and Wellbeing Impacts
Heatwaves and Rising Temperatures

Risk: Older adults and those with pre-existing health conditions are more vulnerable to extreme heat. Heat-related illnesses such as heatstroke, dehydration, and cardiovascular issues can increase during periods of prolonged heat.

Mitigation: Implementing cooling measures in care homes, ensuring access to hydration, and improving ventilation are crucial steps.

Cold Weather and Increased Storms

Risk: Vulnerable populations may face greater risks from cold snaps and storms, which can cause hypothermia, respiratory conditions, and increased social isolation.

Mitigation: Ensuring adequate heating, warm clothing, and insulation in homes, as well as emergency response plans during storms, can mitigate these risks.

Air Quality and Pollution

Risk: Rising temperatures and urban pollution can exacerbate respiratory conditions, such as asthma and chronic obstructive pulmonary disease (COPD), which are more prevalent among older people.

Mitigation: Air quality monitoring, reducing indoor pollutants, and promoting green spaces can help manage air quality risks.

Disruption to Social Care Services
Extreme Weather Events

Risk: Flooding, storms, and heatwaves may disrupt transportation and infrastructure, leading to interruptions in social care services, home visits, and hospital access.

Mitigation: Developing robust contingency and emergency response plans to ensure continuity of care during extreme weather events is essential. This includes setting up transportation alternatives and having telehealth services where possible.

Workforce Challenges

Risk: Care workers may face greater physical and emotional strain due to extreme weather, which can increase absenteeism and turnover, impacting care quality.

Mitigation: Workforce planning that includes adequate training on climate-related health issues and ensuring that care workers have access to climate-safe working conditions (e.g., personal protective equipment for heatwaves or storms) can help.

Infrastructure and Building Resilience
Care Home and Housing Resilience

Risk: Many care homes and social housing units for older adults may not be adequately prepared for climate extremes, such as heatwaves, flooding, or power outages. Buildings may lack sufficient insulation, cooling, or flood defences.

Mitigation: Retrofitting care facilities with better insulation, installing flood defences, air conditioning, and improving ventilation systems can reduce vulnerabilities. Green infrastructure like gardens and tree planting can also mitigate heat impacts.

Energy Security

Risk: Power outages due to storms or other extreme weather events can lead to significant disruptions in care, especially for those reliant on medical devices or temperature regulation.

Mitigation: Backup power generators and resilience planning for energy supplies are essential to ensure continuity in care settings during outages.

Economic Impacts
Increased Costs

Risk: Climate-related events can increase operational costs for care providers due to property damage, increased energy use (heating and cooling), and higher insurance premiums. This could place further financial strain on the adult social care system, which is already under pressure.

Mitigation: Investing in resilience measures can reduce long-term costs associated with climate impacts.

Increased Demand for Services
Worsening Health Outcomes

Risk: Climate change may lead to an increase in chronic health conditions and mental health issues among vulnerable populations, resulting in greater demand for social care services. Heat-related stress, increased respiratory issues, and mental health crises during extreme weather events may strain already limited resources.

Mitigation: Expanding social care services, investing in training for staff on climate-related health risks, and increasing community support services will be essential.

Social Isolation and Vulnerability

Risk: Extreme weather events can increase social isolation for older adults, particularly those living alone or in rural areas. Inadequate transportation, flooding, or heat may prevent access to essential services or social support networks.

Mitigation: Improving community-based care, creating social support networks, and using technology to maintain connections during extreme weather can help reduce social isolation.

Water and Food Security
Water Scarcity

Risk: Prolonged droughts and heatwaves could lead to water shortages, impacting both drinking water availability and hygiene in care settings.

Mitigation: Water-saving measures, contingency planning for water supplies, and access to alternative sources during crises are key actions.

Food Security

Risk: Climate change may disrupt food supply chains, leading to shortages or higher costs of food, which could particularly impact vulnerable populations dependent on social care for their nutritional needs.

Mitigation: Ensuring food security through better procurement, local sourcing, and contingency planning for supply chain disruptions is critical to maintaining care standards.

Mental Health and Wellbeing
Psychosocial Stress

Risk: The impacts of climate change, such as displacement due to flooding, isolation during extreme weather, or loss of loved ones, can lead to increased anxiety, depression, and other mental health conditions among care recipients.

Mitigation: Providing access to mental health services, peer support programs, and crisis intervention plans will be important to address the psychological impacts of climate change on vulnerable populations.

Policy and Governance
Regulatory Requirements

Risk: The evolving climate crisis may necessitate new regulations regarding building standards, care quality, and environmental sustainability in the social care sector.

Mitigation: Social care providers will need to stay abreast of changes in legislation and incorporate climate adaptation and mitigation strategies into their operations.

Cross-Sector Collaboration

Risk: Effective management of climate-related risks requires collaboration between health, housing, transport, and emergency services, which may face bureaucratic challenges.

Mitigation: Integrated climate resilience planning and collaboration among local authorities, NHS services, and community organizations are essential for a comprehensive approach.

Recommendations for Adaptation

Risk Mapping: Social care services should conduct climate risk assessments to identify specific vulnerabilities in their region (e.g., flood-prone areas, heatwave risks).

Infrastructure Upgrades: Investment in resilient infrastructure, such as cooling systems in care homes and better energy efficiency measures, will be crucial.

Capacity Building: Training social care staff on climate-related health risks and emergency preparedness should be a priority.

Community Support: Strengthening community-based care networks to reduce isolation during extreme weather events will improve overall resilience.

Policy Integration: Climate resilience and adaptation must be embedded into national and local policy for adult social care, with funding to support these initiatives.

Using Climate Risk and Impact Information to Identify and Screen for Relevant Risks

In the context of adult social care, effectively identifying and screening for climate risks involves a structured approach that focuses on relevant climate-related threats and their potential impacts on care recipients, staff, infrastructure, and service delivery. Here's how climate risk and impact information is used to create a targeted list of relevant risks and keep it up to date:

Risk Identification Process
Data Sources

Climate Projections: Use data from UK-specific climate models (e.g., UK Climate Projections 2018 - UKCP18) to understand future climate scenarios, such as rising temperatures, increased frequency of heatwaves, flooding, and extreme weather.

Historical Data: Analyse historical weather and climate impacts on social care services. For example, review the effects of past heatwaves, cold snaps, or floods on care home operations, staff availability, and patient health outcomes.

Vulnerability Assessments: Identify key vulnerabilities among the populations served (e.g., elderly, disabled, those with chronic health conditions), as well as infrastructure vulnerabilities (e.g., location of care homes in flood-prone areas).

Screening Criteria

Relevance to Operations: Only risks that have a direct or indirect impact on service delivery (e.g., care home operations, staff availability, transport for care services) are considered relevant.

Likelihood and Impact: Assess each identified risk in terms of its likelihood (probability of occurrence) and potential impact (severity of the outcome) on the adult social care sector. High-likelihood, high-impact risks are prioritized.

Time Horizon: Risks are classified as short-term (1–5 years), medium-term (5–15 years), or long-term (15+ years), to ensure both current and future risks are accounted for.

Geographic Relevance: Some risks (e.g., flooding) may be more location-specific, while others (e.g., heatwaves) are more widespread. Geographic vulnerability of service areas is factored into the screening process.

Consultation with Experts

Collaborate with climate scientists, public health officials, and infrastructure specialists to ensure that all relevant climate risks are identified. Engaging with local authorities or national bodies such as Public Health England or the Environment Agency ensures that risk assessments are comprehensive and relevant.

Keeping the Risk Shortlist Up to Date
Regular Review and Monitoring

Annual Risk Reviews: Conduct an annual review of identified risks based on the latest climate projections and any new data on climate impacts in the UK (e.g., updated UKCP projections or reports from the Met Office).

Incident Tracking: Monitor and log any climate-related incidents that disrupt services, such as heatwaves, floods, or cold snaps, to assess whether certain risks are increasing in frequency or severity.

Policy and Regulatory Changes

Stay updated on any changes in government policy, building regulations, or social care standards related to climate adaptation and resilience. Integrating these changes into the risk assessment ensures compliance and preparedness.

Stakeholder Engagement

Regularly engage with frontline care workers, healthcare professionals, and local communities to gather feedback on emerging risks or vulnerabilities not previously identified. Their on-the-ground experiences can highlight unforeseen impacts (e.g., increased isolation during heatwaves).

Technological and Scientific Advances

Adopt advancements in climate risk assessment tools and technologies (e.g., GIS mapping for flood risks, heatwave prediction models) to refine and update the risk identification process.

List of Climate Risks Relevant to the Delivery of Adult Social Care

Heatwaves and Extreme Heat

Impact: Increased mortality and morbidity among vulnerable adults (e.g., heat stress, dehydration, cardiovascular events).

Relevance: Care homes, home care services, and hospitals face a higher demand for cooling systems and increased strain on staff.

Timeframe: Short to long term (increasing with frequency).

Flooding and Extreme Rainfall

Impact: Disruption to care home operations, transport for care services, damage to facilities, and displacement of vulnerable populations.

Relevance: Care facilities in flood-prone areas and communities reliant on transportation for social care services.

Timeframe: Short to long term.

Cold Snaps and Winter Storms

Impact: Increased respiratory illness, hypothermia, and disruption of services due to road closures or power outages.

Relevance: Rural areas, isolated individuals, and care settings lacking proper heating infrastructure.

Timeframe: Short to medium term.

Drought and Water Scarcity

Impact: Strain on water resources for care homes (e.g., hygiene, sanitation, and hydration), and potential disruptions to food supply chains.

Relevance: Care facilities and home care services requiring reliable access to water for basic needs.

Timeframe: Medium to long term.

Air Quality Deterioration (Linked to Heat and Urban Pollution)

Impact: Exacerbation of respiratory conditions, especially among those with pre-existing health issues (e.g., COPD, asthma).

Relevance: Urban care facilities and individuals with respiratory vulnerabilities.

Timeframe: Short to long term (increased frequency during heatwaves).

Increased Frequency of Infectious Diseases

Impact: Changes in climate (e.g., warmer temperatures) may increase the spread of vector-borne diseases or exacerbate seasonal flu outbreaks.

Relevance: High-density care facilities, where infection control is critical.

Timeframe: Medium to long term.

Power Outages (Due to Extreme Weather)

Impact: Loss of heating, cooling, or life-supporting medical equipment in care homes or domiciliary care settings.

Relevance: Facilities dependent on continuous power for critical care equipment.

Timeframe: Short to long term (especially during storms or heatwaves).

Food Security and Supply Chain Disruptions

Impact: Disruption to the supply of food, particularly fresh and nutritious items, due to extreme weather or climate impacts on agriculture.

Relevance: Vulnerable adults relying on social care for meal provision, including those with specific dietary needs.

Timeframe: Medium to long term.

Staffing and Workforce Pressures (Due to Climate-Related Strain)

Impact: Increased absenteeism or turnover of care workers due to heat stress, extreme weather, or travel disruptions.

Relevance: All areas of adult social care reliant on a stable workforce.

Timeframe: Short to medium term.

Mental Health Impacts (Due to Social Isolation or Climate Anxiety)

Impact: Increased rates of anxiety, depression, or cognitive decline among vulnerable adults due to climate-induced disruptions or isolation during extreme weather events.

Relevance: Care recipients already at risk of mental health decline.

Timeframe: Short to long term.

Examining Climate Change Impacts Threatening the Delivery of Functions in Adult Social Care

A comprehensive risk assessment in the adult social care sector must account for direct climate impacts (e.g., heatwaves, flooding) and interdependent and cascading risks that could affect the delivery of services. This multi-layered approach identifies how primary climate risks can trigger secondary and tertiary disruptions across interdependent systems, such as health services, transportation, energy, and food supply chains.

Direct Climate Change Impacts on Function Delivery

These are immediate risks that can disrupt the day-to-day operations of adult social care services. The risk assessment considers:

Extreme Heat: Direct impact on the health and well-being of vulnerable populations, such as the elderly and those with chronic conditions, increasing the likelihood of heat-related illnesses and mortality. This can lead to a surge in demand for medical and care services, overwhelming existing infrastructure and staff capacity.

Flooding: Immediate risks to care facilities in flood-prone areas, including the evacuation of care homes, damage to infrastructure, and the disruption of domiciliary care due to impassable roads.

Cold Snaps and Storms: Sudden drops in temperature and severe winter storms can lead to hypothermia, respiratory issues, and power outages, all of which affect both care recipients and the infrastructure (e.g., heating systems, transportation).

Interdependent Risks

Climate risks affecting the broader ecosystem of public services and infrastructure can have significant knock-on effects on adult social care. The risk assessment considers:

Healthcare System Strain: Extreme weather events, like heatwaves or floods, increase demand on the National Health Service (NHS) and emergency services. Overstretched healthcare resources directly affect social care services, which rely on timely medical interventions, coordination with hospitals, and emergency responses.

Transportation Disruptions: Many adult social care functions depend on reliable transport for staff and the delivery of home care services. Floods, storms, and heat-related damage to roads and public transport systems can delay or prevent care workers from reaching vulnerable individuals in their homes.

Energy Supply: The social care system depends heavily on reliable electricity for heating, cooling, medical equipment, and lighting. Climate-related power outages during extreme weather events can lead to cascading failures in care homes, where older adults rely on electrically powered devices (e.g., oxygen tanks, cooling units).

Water Supply and Sanitation: Droughts and water scarcity can strain sanitation systems in care homes and reduce access to clean drinking water, leading to health risks for the elderly and immunocompromised individuals.

Cascading Risks

Cascading risks occur when primary climate impacts trigger a series of subsequent disruptions across multiple sectors. The assessment evaluates:

Infrastructure Damage Leading to Service Gaps

For example, a flood may damage roads (transport disruption), cause power outages (energy disruption), and result in a care facility becoming inaccessible. This cascading effect could lead to a total breakdown in care delivery, impacting both in-home care services and those dependent on institutional care.

Supply Chain Failures Affecting Critical Resources

Extreme weather events may disrupt the supply chain for essential items such as food, medical supplies, and water. A drought or flood impacting agricultural production can lead to food shortages, affecting the nutrition of care home residents.

Medication shortages due to climate-related transport disruptions can hinder the effective management of chronic diseases in care recipients.

Impact on Workforce

Climate events may lead to absenteeism among care workers, either because of health issues (heat stress, cold-related illnesses) or because they are unable to travel due to disrupted transport networks. This could lead to understaffing and inadequate care delivery, particularly during periods of high demand (e.g., heatwaves or winter storms).

Mental Health Strain

Displacement due to climate disasters (e.g., flooding or storms) can lead to cascading social isolation, anxiety, and mental health issues, further burdening care services that must address both physical and psychological health needs.

Feedback Loops and Learning from Climate Risks

The assessment incorporates learning processes to ensure that experiences from previous climate events inform future risk management strategies. Key mechanisms include:

Capturing Learning from Climate Risk Management
Incident Reporting and Analysis

After each significant climate-related event (e.g., heatwave, flood), a structured debriefing session is held to collect data from all relevant parties—care workers, service managers, and emergency responders. This data is then used to evaluate how the event impacted service delivery, what disruptions occurred, and how effectively the response plan was implemented.

The lessons learned have input from frontline staff, care home managers, and local authorities.

Real-Time Monitoring and Adaptation

Continuous monitoring of climate-related risks is crucial. Tools such as weather forecasting models, early warning systems, and real-time data analytics (e.g., temperature and humidity monitors in care homes) are used to assess ongoing climate conditions and proactively address emerging risks.

Feedback from this data helps inform dynamic adjustments to service provision, such as reallocating staff, adjusting facility environments, and activating emergency protocols.

Post-Event Reviews and Case Studies

Following a climate event, formal reviews or case studies are developed, detailing the event's impact on service delivery, the effectiveness of the response, and lessons for future preparedness. These are shared across the sector to ensure a broad understanding of best practices and challenges.

Training and Capacity Building

The learnings from incident reports and reviews are integrated into staff training programs. This includes training on climate adaptation strategies (e.g., managing heat-related illnesses) and emergency preparedness (e.g., evacuation procedures during floods).

Annual training updates are provided to ensure that staff are informed of the latest climate risk data and management techniques.

Collaboration with External Partners

Learning is also captured through partnerships with other sectors and government bodies. Collaborating with local authorities, healthcare providers, and emergency services allows for the sharing of best practices and insights on managing cascading risks.

Participation in national or local climate resilience forums enables the care sector to remain informed about broader climate adaptation strategies and emerging risks.

Learning from Opportunities
Innovation and Pilot Programmes

The adoption of new technologies or strategies (e.g., telecare for remote monitoring, green building practices to improve energy efficiency) is monitored and evaluated for effectiveness. Successful pilots are scaled up and integrated into service delivery models.

Sustainable practices (e.g., water conservation measures, solar power installation) that improve resilience and reduce environmental impact are captured as best practices and shared with other facilities.

Conclusion

The UK's adult social care system faces significant challenges from climate change. By proactively addressing health impacts, infrastructure vulnerabilities, and service disruptions, the sector can improve its resilience to the growing climate risks. Adaptation strategies, supported by policy changes and investments, are essential to protect the wellbeing of vulnerable adults in the coming decades.

To ensure the adult social care system is prepared for the growing challenges of climate change, it is essential to maintain an up-to-date and focused risk assessment. By leveraging climate data, continuously monitoring impacts, and engaging with stakeholders, the sector can prioritise and address the most relevant risks, ultimately safeguarding vulnerable populations and maintaining service delivery.

The risk assessment for adult social care examines both direct climate impacts (e.g., heatwaves, floods) and interdependent and cascading risks across health, transport, and energy sectors. It uses a structured process of real-time monitoring, incident analysis, and feedback loops to capture learning and improve future risk management. By continuously integrating new knowledge and technologies, the sector can adapt to emerging climate risks and identify opportunities to improve service delivery resilience