

Cambridge City Council

Climate Change Risk & Vulnerability Assessment
and Adaptation Plan

2024

1. Introduction

1.1 Why climate change adaptation is important

- 1.1.1 Climate change has arrived. The world is now experiencing the dangerous impacts of a rapidly heating climate and further warming is inevitable, even on the most ambitious pathways for the reduction of global greenhouse gas emissions.¹
- 1.1.2 Across the UK, we expect to see:
- Warmer and wetter winters
 - Hotter and drier summers
 - More frequent and intense weather extremes
- Climate change will make these conditions more likely. The UK's weather will continue to be variable, but we will see more of this type of weather.²
- 1.1.3 The highest temperature recorded in Britain had been 38.7°C, recorded at the Botanic Gardens in Cambridge in July 2019. The record was beaten only 3 years later in 2022 when the country experienced a widespread and intense heatwave where the temperature exceeded 40 degrees for the first time. The Met Office issued its first red warning for extreme heat on 8 July, declared a national emergency on 15 July and a new UK record temperature was confirmed at 40.3 °C in Coningsby, Lincolnshire on 19 July 2022. The heatwaves caused substantial disruption to transport and there were nearly 25,000 wildfires across the country that year. More than 800 wildfires were recorded on 19 July alone, which destroyed homes and cars.³
- 1.1.4 Climate change adaptation is a term that describes measures that can be put into place to help us adapt to the changes in our climate that are now inevitable, such as increased temperatures and drought conditions, extreme weather events such as heatwaves and intense periods of rainfall and subsequent flash flooding.
- 1.1.5 In addition to efforts to reduce greenhouse gas emissions to mitigate climate change, local authorities have an important role to play in managing the risks and preparing and adapting to the impacts of severe weather and our changing climate. The climate has already changed, and further change is inevitable which will impact council services, from the buildings that the Council manages through to open spaces and the Council's role in emergency planning, as well as impacting on Cambridge residents, particularly those who are the most vulnerable.
- 1.1.6 Action to manage the unavoidable impacts of climate change and increase resilience will deliver wide ranging benefits, such as safeguarding Council finances and contributing to wider savings for partners, communities and businesses. Action to develop climate resilience can also deliver wider environmental benefits, including

¹ Committee on Climate Change (2021). *Independent Assessment of UK Climate Risk: Advice to Government for the UK's third Climate change Risk Assessment (CCRA3)*. www.theccc.org.uk/wp-content/uploads/2021/07/Independent-Assessment-of-UK-Climate-Risk-Advice-to-Govt-for-CCRA3-CCC.pdf.

² www.metoffice.gov.uk/weather/climate-change/climate-change-in-the-uk

³ www.bbc.co.uk/news/uk-england-64118239

protecting and enhancing landscapes and biodiversity and providing open space, which can support the delivery of health and wellbeing objectives.

- 1.1.7 In the light of the Government’s 2022 Climate Change Risk Assessment (CCRA)⁴, this Climate Change Risk and Vulnerability Assessment (CCR&VA) will help the Council to have a better understanding of the climate risks facing the city and the Council’s buildings and services, identify the city and the Council’s vulnerability to those risks and prioritise adaptation actions that will have the greatest benefit.

1.2 Policy context for climate change adaptation

National policy – Climate Change Risk Assessment and National Adaptation Programme

- 1.2.1 The UK Government is required, under the 2008 Climate Change Act, to publish a UK-wide CCRA every five years to inform the National Adaptation Plans. The Act stipulates that the Government must assess ‘the risks for the UK from the current and predicted impacts of climate change’.
- 1.2.2 To underpin the UK CCRAs, the Government commissions independent expert studies of the available evidence. The [Independent Assessment of UK Climate Risk \(CCRA3\)](#), published in June 2021, was commissioned from the Adaptation Committee, a committee of the Climate Change Committee. The Climate Change Committee’s [independent advice report](#) sets out the risks and opportunities facing the UK from climate change and informed the UK Government’s third, five-year assessment of the risks of climate change on the UK, UK Climate Change Risk Assessment 2022⁵, (known as CCRA3), by identifying 61 climate risks and opportunities.
- 1.2.3 The [Third UK Climate Change Risk Assessment Technical Report: Summary for England](#) summarises the CCRA3 Technical Report⁶ findings and how the climate in England is already changing:

Variable	Observed change in England
Average annual temperature	Increase of 0.9°C from mid-1970s to mid-2010s
Annual mean rainfall	Increase of 4.5% from mid-1970s to mid-2010s
Sunshine	Increase of 9.2% from mid-1970s to mid-2010s
Weather extremes	UK-wide increase in extreme heat events Little evidence yet on changes in extreme rainfall
Sea level rise	UK-wide increase of ~1.4mm per year since 1901 (16cm to date) ⁷

- 1.2.4 The risk assessment considers risks and opportunities cutting across multiple sectors of the economy and prioritises the following eight risk areas for action:
1. risks to the viability and diversity of terrestrial and freshwater habitats and species from multiple hazards

⁴ <https://www.gov.uk/government/publications/uk-climate-change-risk-assessment-2022>

⁵

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1047003/climate-change-risk-assessment-2022.pdf, HM Government, January 2022

⁶ www.ukclimaterisk.org/independent-assessment-ccra3/technical-report/

⁷ Third UK Climate Change Risk Assessment Technical Report: Summary for England, p11.

2. risks to soil health from increased flooding and drought
3. risks to natural carbon stores and sequestration from multiple hazards
4. risks to crops, livestock and commercial trees from multiple climate hazards
5. risks to supply of food, goods and vital services due to climate-related collapse of supply chains and distribution networks
6. risks to people and the economy from climate-related failure of the power system
7. risks to human health, wellbeing and productivity from increased exposure to heat in homes and other buildings
8. multiple risks to the UK from climate change impacts overseas

1.2.5 The National Adaptation Programme (NAP) is the Government’s strategy, produced every 5 years, and the Third National Adaptation Plan to address the main risks and opportunities identified in the risk assessment for England, was published in July 2023 and will run to 2028.

National guidance - for local authorities

1.2.6 Defra, in partnership with the Local Adaptation Advisory Panel⁸ (of which the Council is a member through the attendance by an officer of the Greater Cambridge Shared Planning Service) and the Association of Directors of Environment, Economy, Planning & Transport (ADEPT), published guidance for local government on preparing for a changing climate designed to assist local government with preparing for the impacts of change adaptation. It states that local government has a significant role to play in ensuring effective adaptation across all areas identified in the UK Climate Change Risk Assessment and the National Adaptation Programme, whether by providing local leadership, adapting the services they deliver, or through working collaboratively with others in their local area to achieve broader goals⁹.

1.2.7 Local Partnership’s Climate Adaptation Toolkit for Local Authorities and Risk Register Generator¹⁰, first developed in 2022 to support local authorities identify and produce a risk register, was used to assess the vulnerability of the city and the Council.

Local policy

Cambridge City Council Corporate Plan 2022-2027

1.2.8 Cambridge City Council agreed a new vision for Cambridge, approved at full council in July 2024. It is a clear vision for One Cambridge, Fair for All¹¹. This vision is particularly important from a climate risks perspective as climate change will disproportionately affect the most vulnerable and disadvantaged communities.

⁸ The LAAP was formed in 2011 by Defra to act as a forum for dialogue between local government, central government and arms-length delivery bodies. It made a significant contribution to shaping the role of local government in the first and second National Adaptation Programmes (NAPs). The LAAP is a group of 15 members including local authority representatives and partners and government departments.

⁹ www.adeptnet.org.uk/climategpg

¹⁰ <https://localpartnerships.gov.uk/our-expertise/climate-adaptation/>

¹¹ <https://www.cambridge.gov.uk/our-vision>

- 1.2.9 The Council's corporate plan for 2022-27 sets out four key priorities for the city over the next five years. Priority 1 is "Leading Cambridge's response to the climate and biodiversity emergencies and creating a net zero council by 2030"¹².

Climate Change Strategy 2021-26

- 1.2.10 The Council's Climate Change Strategy 2021-26¹³ includes an objective on adaptation to climate change, Objective 6: Supporting Council services, residents and businesses to adapt to the impacts of climate change. Appendix 1 details the progress towards the actions included in Objective 6.

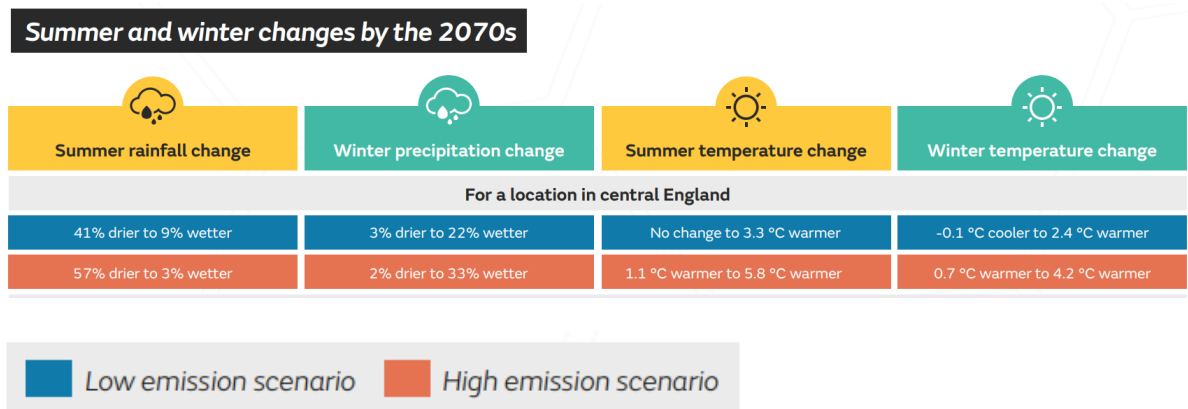
¹² www.cambridge.gov.uk/corporate-plan-2022-27-our-priorities-for-cambridge

¹³ www.cambridge.gov.uk/media/9581/climate-change-strategy-2021-2026.pdf

2. The Risks & Vulnerability Assessment

2.1 The risks for Cambridge and future climate vulnerability

2.1.1 The Met Office produced an infographic¹⁴ based on the UKCP18 (UK Climate Projections 2018) projections showing the projected summer and winter changes expected by the 2070s in the UK, including the projections for a location in Central England, such as Cambridge, based on low and high emissions scenarios:



*All results are for the 10th-90th percentile range for the 2060-2079 period relative to 1981-2000

2.1.2 There are a number of climate risks associated with these projections that will impact on Cambridge, from increasing flood risk, particularly in winter, to the impact of warmer temperatures on health and wellbeing.

2.1.3 Cambridge is in the top 2% of settlements at risk of surface water flooding in England with around 11,000 properties at risk across Cambridge. Climate change is likely to increase this number as the latest predictions are for a possible 33% increase in rainfall for the region.

2.1.4 Increases in the amount of rainfall, in the winter particularly, are predicted to increase the area of severe flood risk in Cambridge from the River Cam. Intense rainfall in short periods could lead to flash flooding, with recent experience of flooding in other regions suggesting that rainfall exceeding the local drainage capacity can be as great a risk as rivers bursting their banks. A predicted increase of 65% in river flows will mean more areas of Cambridge will be at risk of flooding from rivers and those affected could double.

2.1.5 Both surface water flooding and river flooding are likely to become more frequent and more damaging. The key impacts of any flooding would be:

- Public health and safety risks for residents
- Long-term physical and mental health impacts for residents
- Damage to buildings and infrastructure
- Disruption of the local economy through lost workdays, disruption of transport and supplies and insurance and repair costs

¹⁴ www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/ukcp/ukcp18-infographic-headline-findings-land.pdf

- Habitat changes and restoration costs
- 2.1.6 In summer, Cambridge can be one of the hottest places in the UK. Increased summer temperatures, which could be up to 5.8% warmer in the high emission scenario, could lead to more summer heat waves as experienced in 2019 and 2022, where record-breaking temperatures were recorded in Cambridge and Coningsby, Lincolnshire respectively. The summer of 2022 was exceptional for the UK and was the fourth warmest on record for the UK, with notable heatwaves in both July and August. The temperatures experienced during the UK's most recent hottest summers on record in 2003, 2006, 2018 and 2022 could become the norm by the 2050s. This would have significant impacts on people (particularly the most vulnerable), the economy and the environment.
- 2.1.7 Potential risks from increased summer temperatures include:
- Increased incidence of heat-related illnesses including heat stroke, exhaustion and cramps, and an increased risk of heat-related deaths
 - An increased health risk from water, vector and food borne diseases
 - An increase in the number of skin cancer cases and deaths
 - A loss of productivity for businesses due to overheating.
 - Increased energy consumption from cooling and refrigeration
 - Subsidence and heat-related damage or disruption to buildings, energy and transport networks
 - Increased risk of wildfires
 - Threat of extinction to some species, and the migration of some species, including the invasion of non-native species, pests and diseases for which we may not be prepared
- 2.1.8 Reduced summer rainfall, by up to a possible 57% in the high emission scenario, is a particular issue for Cambridge. According to a 2021 Environment Agency review¹⁵, the Cambridge Water Supply Area is classified as being in 'Severe Water Stress', meaning that current or future water demand is, or is likely to be in the future, a high proportion of the available rainfall in the area, resulting in potentially significant environmental effects, including a potential threat to future supply.
- 2.1.9 Climate impacts and extreme weather events can affect anyone, but some people have the potential to be more affected than others. Research by the Joseph Rowntree Foundation found that poverty can increase the vulnerability of individuals and communities to climate impacts¹⁶. The factors that make people vulnerable to the impacts of climate change are most acute amongst particular groups, typically older people, lower-income groups and tenants. The extent to which individuals are able to cope with the impacts of climate change is influenced by the interaction between personal factors (e.g. health, age), social factors (e.g. income, neighbourhood cohesion, isolation), and environmental factors (e.g. building quality, green space). It is therefore important to consider the vulnerability of individuals and communities to climate change risks, and to focus on building the long-term resilience of vulnerable people and communities to climate change risks, rather than short-term disaster responses.
- 2.1.10 Trees play an important role in the setting of Cambridge, and also have a range of environmental benefits including providing evaporative cooling and helping to reduce atmospheric pollution. The shade provided by urban trees is valuable, especially to

¹⁵ www.gov.uk/government/publications/water-stressed-areas-2021-classification

¹⁶ www.jrf.org.uk/climate-change-and-social-justice-an-evidence-review

pedestrians and cyclists. Increasing this tree-shade can improve people's health and wellbeing and encourage more active travel during periods of hot weather. However, climate change poses a range of threats to trees¹⁷. It is likely that climate change will adversely affect the impact of existing pests and diseases on trees. Hotter, drier summers for example, may stress individual trees making them more susceptible to infection. Increased storm frequencies and summer drought will lead to tree losses¹⁸.

2.2 The Risks to Council Services

2.2.1 Using the risks identified in the 2022 CCRA, this Climate Change Risk and Vulnerability Assessment will help us to have a better understanding of the most important climate risks facing the city, the actions the Council is currently taking with partners, and possible future adaptation actions that will have the greatest benefit across the city.

2.2.2 The Technical Report¹⁹ for the third Climate Change Risk Assessment (CCRA3) identifies sixty-one climate risks and opportunities cutting across multiple sectors of our society, as outlined by the Committee on Climate Change in its Independent Assessment of UK Climate Risk and detailed at 1.2.5. It identifies a wide range of potential costly impacts of climate change including on health and productivity, affecting many of our households, businesses and public services, and prioritises the following eight risk areas that require the most urgent attention:

- Risks to the viability and diversity of terrestrial and freshwater habitats and species from multiple hazards (Priority Risk Area 1)
- Risks to soil health from increased flooding and drought (Priority Risk Area 2)
- Risks to natural carbon stores and sequestration from multiple hazards, leading to increased emissions (Priority Risk Area 3)
- Risks to crops, livestock and commercial trees from multiple climate hazards (Priority Risk Area 4)
- Risks to supply of food, goods and vital services due to climate-related collapse of supply chains and distribution networks (Priority Risk Area 5)
- Risks to people and the economy from climate-related failure of the power system (Priority Risk Area 6)
- Risks to human health, wellbeing and productivity from increased exposure to heat in homes and other buildings (Priority Risk Area 7)
- Multiple risks to the UK from climate change impacts overseas (Priority Risk Area 8)

2.2.3 The 61 risks and opportunities have been included in Local Partnership's Risk Register, part of their Climate Adaptation Toolkit for Local Authorities²⁰, developed in 2022 to support local authorities to assess their changing vulnerability due to climate change. The Risk Generator has been used to determine the weather-related risks mapped against the different council service areas, and who they are a risk to e.g. businesses, residents, infrastructure and nature.

¹⁷ Cambridge City Council (2015). *Why Trees Matter*. www.cambridge.gov.uk/sites/default/files/why-trees-matter.pdf

¹⁸ Cambridge City Council (2015). *Tree Strategy 2016 to 2026: Part 1*. www.cambridge.gov.uk/sites/default/files/tree-strategy-2016-part-1.pdf

¹⁹ Technical Report for the CCRA3 www.ukclimaterisk.org/independent-assessment-ccra3/technical-report/

²⁰ <https://localpartnerships.org.uk/climate-adaptation/>

2.2.4 27 of the 61 risks were determined to be relevant risks for the Council to consider the impacts for the city and the Council's services. In discussion with relevant officers, the impact and likelihood of these risks were scored using the Council's Risk Management Scoring Matrix and a risk rating score produced. The Climate Risk and Vulnerability Assessment spreadsheet (at Appendix 2) captures the specifics of the risk as it relates to the city and the Council's services, and the actions already being taken by the Council to mitigate the impacts. It also captures possible future actions that have been identified as part of the discussions with departments during the process. Using the Risk Register, the impact and likelihood of each of the potential impacts has been scored by officers using the Council's Risk Scoring Matrix (Appendix 3), in order to generate a risk score to help identify priority risks that the Council faces.

2.3 The Risks that apply to Cambridge City Council:

Natural Environment and Assets

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).
N02	Risks to terrestrial species and habitats from pests, pathogens and invasive species
N03	Opportunities from new species colonisations in terrestrial habitats
N04	Risk to soils from changing climatic conditions, including seasonal aridity and wetness.
N11	Risks to freshwater species and habitats from changing climatic conditions and extreme events, including higher water temperatures, flooding, water scarcity and phenological shifts.
N12	Risks to freshwater species and habitats from pests, pathogens and invasive species
N18	Risks and opportunities from climate change to landscape character

Infrastructure

I01	Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures
I02	Risks to infrastructure services from river, surface water and groundwater flooding
I07	Risks to subterranean and surface infrastructure from subsidence
I08	Risks to public water supplies from reduced water availability
I10	Risks to energy from high and low temperatures, high winds, lightning

Health, Communities and the Built Environment

H01	Risks to health and wellbeing from high temperatures
H03	Risks to people, communities and buildings from flooding
H05	Risks to building fabric
H06	Risks and opportunities from summer and winter household energy demand

H07	Risks to health and wellbeing from changes in air quality
H09	Risks to food safety and food security
H10	Risks to water quality and household water supplies
H11	Risks to cultural heritage

Business and Industry

B01	Risks to businesses from flooding
B03	Risks to business from water scarcity
B04	Risks to finance, investment and insurance including access to capital for businesses
B05	Risks to business from reduced employee productivity due to infrastructure disruption and higher temperatures in working environments
B06	Risks to business from disruption to supply chains and distribution networks
B07	Opportunities for business from changes in demand for goods and services

International Dimensions

ID01	Risks to UK food availability, safety, and quality from climate change overseas
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2.4 Vulnerability Assessment

2.4.1 Using the Council's Risk Management Scoring Matrix, the risks, as they related to the multiple relevant service areas, were assessed and rated for:

- the probability, or likelihood, of the impact occurring and
- the magnitude, or consequence, of the impact should it occur

The score for the probability of occurrence was then multiplied by the score of the impact or consequence of occurrence to give the risk score. The majority of total risk scores are low or medium.

2.4.2 The climate change impacts that present the greatest risks to the Council and the city, the risks scored as significant and high in the Climate Risk and Vulnerability Assessment spreadsheet, are:

BO3	Risks to business from water scarcity	GCSPS new development	12
HO3	Risks to people, communities and buildings from flooding	GCSPS new development	12
HO3	Risks to people, communities and buildings from flooding	(City Services Group) Asset Management Team - Housing and Sheltered Housing	20
HO3	Risks to people, communities and buildings from flooding	3CBC	12
I08	Risks to public water supplies from reduced water availability	(Communities Group) Environmental and Public Health	12
N01	Risks to terrestrial species and habitats from changing climatic conditions and	(City Services Group) Streets & Open Spaces	15

	extreme events, including temperature change, water scarcity, wildfire, flooding, wind, and altered hydrology (including water scarcity, flooding and saline intrusion)		
N02	Risks to terrestrial species and habitats from pests, pathogens and invasive species	(City Services Group) Streets & Open Spaces	15
N03	Opportunities from new species colonisations in terrestrial habitats	(City Services Group) Streets & Open Spaces	15
N04	Risk to soils from changing climatic conditions, including seasonal aridity and wetness	(City Services Group) Streets & Open Spaces	12
N05	Risks and opportunities for natural carbon stores, carbon sequestration from changing climatic conditions, including temperature change and water scarcity	(City Services Group) Streets & Open Spaces	15
N11	Risks to freshwater species and habitats from changing climatic conditions and extreme events, including higher water temperatures, flooding, water scarcity and phenological shifts	(City Services Group) Streets & Open Spaces	20
N12	Risks to freshwater species and habitats from pests, pathogens and invasive species	(City Services Group) Streets & Open Spaces	20
N18	Risks and opportunities from climate change to landscape character	GCSPS	12

3 Managing the Risks – Climate Change Adaptation Actions

3.1 Current Adaptation Actions

3.1.1 The Council recognises that in addition to reducing carbon emissions, it is also important to ensure that Cambridge adapts to the impacts of climate change, including increased summer temperatures and overheating; water shortages and droughts; and flood events.

3.1.2 The Council is already taking action to manage some of the predicted risks facing Cambridge, to mitigate the impacts on council services and to support residents and communities who are most vulnerable and least able to take steps to manage risks themselves. These 12 actions are detailed under Objective 6 of the [Climate Change Strategy 2021-26 Action Plan](#): ‘Supporting Council services, residents and businesses to adapt to the impacts of climate change’ and are listed below and at Appendix 1. Progress on these actions can be viewed in the progress reports on the Council’s website: www.cambridge.gov.uk/climate-change-strategy.

- 6.1. Developing an Environmental Management System (EMS) for Environmental Services activity and seek ISO40001 accreditation. This will include a focus on reducing water consumption, potentially through reduce plant watering and sourcing water through rainwater harvesting systems for plant watering and public toilets.
- 6.2. Working with Cambridge Water to promote water saving messages to residents and businesses
- 6.3. Promoting the use of council pools/ paddling pools/ splash pads in the event of hosepipe bans in conjunction with the local water company, to encourage residents to utilise council facilities instead of using water to fill up garden paddling pools etc.
- 6.4. Requiring new housing to meet the water efficiency standards in the current Local Plan (maximum of 110 litres/person/day) and explore where higher standards may be needed in the new Local Plan.
- 6.5. Exploring opportunities to manage climate risks through policies in the new Local Plan, subject to the outcomes of the current national consultation on planning reforms. This could include water efficiency policies to help reduce water consumption and manage water resources; designing buildings that are simple to keep cool; and Sustainable Drainage Systems (SUDs) measures to help reduce flood risk.
- 6.6. Increasing the tree canopy cover through tree planting and protection on public and private land, and using parks, open spaces and other green infrastructure in the city to help regulate temperatures.
- 6.7. Providing advice to residents on how to reduce health risks during heatwaves.
- 6.8. Working with Cambridgeshire County Council and other partners in the Cambridgeshire & Peterborough Flood and Water Management Group (CP FloW) to manage climate change-related flood risks.
- 6.9. Delivering a measurable biodiversity net gain on the City Council’s estate

through enhanced management of existing Local Nature Reserves and making parks and housing open spaces more hospitable to wildlife through creation of meadows, scrub and woodland.

- 6.10. Engaging and influencing individuals, institutions and businesses to take steps to make their land more hospitable and permeable to wildlife and help create a citywide network of sites.
- 6.11. Implementing projects to manage water courses and improve biodiversity, including a project to improve rare chalk stream habitats in Cambridge. Initial work will focus on Cherry Hinton Brook, Vicars Brook at Coe Fen, and Coldham's Brook on Stourbridge Common.
- 6.12. Move to cease the use of herbicide on grass road verges and trial using a new grass cutting and collecting machine, which will reduce cuttings left on verges, reduce the fertility of the soil for wildlife and support biodiversity.

3.2 Future approaches to climate change adaptation

- 3.2.1 The Council has recently added a specific adaptation risk to the Council's Corporate Risk Register: Failure to manage the impacts of a changing climate.

Causes:

1. Local impacts of climate change, including increased incidence of flooding, water shortages, heatwaves and other extreme weather events
2. Failure by the Council to plan and prioritise action to manage the local impacts of climate change
3. Failure of joint plans and solutions with statutory partners to manage the local impacts of climate change

Consequences:

1. Negative impacts on residents from extreme weather events, including financial loss, health impacts and disruption
2. Negative impacts on businesses from extreme weather events, including financial loss, health impacts and disruption
3. Impact on the ability of the Council to provide key services

Risk control:

1. Climate change adaptation risk register and associated actions developed
2. Climate change risks included in Council business continuity plans
3. Climate change risks addressed by partners in the Local Resilience Forum

- 3.2.2 Our climate is changing and the impacts from it are likely to affect most of us in some way during our lifetimes, as detailed at 3.2.1. It is therefore vital that we work with local partners and communities in Cambridge to ensure that we are prepared for likely changes and are able to adapt to them as far as possible.

- 3.2.3 Partners include the Environment Agency, Cambridgeshire County Council, The Greater Cambridge Partnership, Cambridgeshire and Peterborough Combined

Authority, Cambridge Water and academic partners such as the University of Cambridge and the Global Sustainability Institute at Anglia Ruskin University.

- 3.2.4 The Council is a member of the Local Adaptation Advisory Panel Steering Group, which works with DEFRA to integrate climate change adaptation into national policy and the work of local authorities including informing the National Adaptation Programme.
- 3.2.5 The Met Office's Local Authority Climate Service (LACS) is being funded as a 1-year pilot by Defra (Department for Environment, Food and Rural Affairs) through the 3rd National Adaptation Programme. The LACS will provide Local Authorities (LA's) across the UK with local climate information to inform adaptation planning comprises 3 parts which the Council are keen to use to better understand and communicate the city's climate change profile and projected impacts. when they are available
- **Climate Projections Explorer** – to explore climate information for the local authority area.
 - **Local Authority Climate Report** – a factsheet style report summarising results from key climate variables for the local authority area.
 - **Local Authority Community Site** – a website hub providing supporting information on how to use the tools, case studies and signposting to further information on climate change and adaptation.

3.3 Conclusion

- 3.3.1 In recent years Cambridge has been affected by summer heatwaves and record temperatures, and in future Cambridge is likely to experience more frequent and intense weather extremes, hotter and drier summers, and higher winter rainfall leading to an increased risk of surface water and river flooding. The UK Climate Change Risk Assessment identifies priority risk areas resulting from a changing climate, which range from risks to human health and wellbeing, to risks to food production, the economy and supply chains for goods and services. In the Council's Climate Change Risk and Vulnerability Assessment we have used tools developed by Local Partnerships for local authorities to identify 27 key risks that could affect Council services or impact on the city of Cambridge in the short and long term. We have carried out a vulnerability assessment to assess the level of risk for each of these areas, and we have identified actions, activities and control measures to help manage and mitigate these risks.

3.4 Updates

- 3.4.1 This Risk and Vulnerability Assessment will be refreshed at least every 5 years and by September 2029

Appendix 1: Current actions in Climate Change Strategy 2021-26 to deliver Objective 6 – ‘Supporting Council services, residents and businesses to adapt to the impacts of climate change’ (as of September 2024):

Ref	Action	Resources	Milestone 1	Milestone 2	Milestone 3	Completion date	Target
6.1	Developing an Environmental Management System (EMS) for Environmental Services activity and seek ISO40001 accreditation. This will include a focus on reducing water consumption, potentially through reduce plant watering and sourcing water through rainwater harvesting systems for plant watering and public toilets.	Existing staff resource	Audit and draft an EMS for S&OS.	Implement and carry out first assessment of EMS effectiveness	Modify EMA and seek achievement if accreditation to ISO 14001	March 2022	March 2022
6.2	Working with Cambridge Water to promote water saving messages to residents and businesses	Existing staff resource	Communications prepared to coincide with upcoming national awareness days			Ongoing to March 2026	Water consumption of homes and businesses reduced
6.3	Promoting the use of council pools/ paddling pools/ splash pads in the event of hosepipe bans in conjunction with the local water company, to encourage residents to utilise council facilities instead of using water to fill up garden paddling pools etc.	Social media and web-based messaging.	This action will only be implemented if there is a hosepipe ban and will come into actioning then	N/A	N/A	N/A	Ongoing
6.4	Requiring new housing to meet the water efficiency standards in the current Local Plan (maximum	Existing service budgets	Autumn 2021 - consultation on preferred	Autumn 2023 - consultation on draft Greater Cambridge		Ongoing until adoption of the Greater	All housing developments to achieve 110

Ref	Action	Resources	Milestone 1	Milestone 2	Milestone 3	Completion date	Target
	of 110 litres/person/day) and explore where higher standards may be needed in the new Local Plan.		options including options related to enhanced levels of water efficiency	Local Plan		Cambridge Local Plan	litres/person/day
6.5	Exploring opportunities to manage climate risks through policies in the new Local Plan, subject to the outcomes of the current national consultation on planning reforms. This could include water efficiency policies to help reduce water consumption and manage water resources; designing buildings that are simple to keep cool; and Sustainable Drainage Systems (SUDs) measures to help reduce flood risk.	Existing service budgets	Autumn 2021 - consultation on preferred options including options related to designing for a changing climate and flood risk and sustainable drainage	Autumn 2023 - consultation on draft Greater Cambridge Local Plan	Proposed submission consultation (Autumn 2024) with Submission to Secretary of State for examination (Summer/Autumn 2025)	Following examination	
6.6	Increasing the tree canopy cover through tree planting and protection on public and private land, and using parks, open spaces and other green infrastructure in the city to help regulate temperatures.	Existing service budgets and grant funding (e.g. Urban Tree Challenge, Local Authority Treescape Fund, Interreg 2 Seas)	Complete our commitments to the Nature Smart Cities across the 2 Seas project – extended to March 2023 (completed)	New tree strategy. 2026	2% increase in tree canopy cover. 2050	2050	330.3 tCO ₂
6.7	Providing advice to residents on how to reduce health risks during heatwaves	Existing staff resources	Communications prepared to coincide with summer / usual heatwave			Ongoing to March 2026	Increased awareness of health risks during heatwaves

Ref	Action	Resources	Milestone 1	Milestone 2	Milestone 3	Completion date	Target
			periods				
6.8	Working with Cambridgeshire County Council and other partners in the Cambridgeshire & Peterborough Flood and Water Management Group (CP FloW) to manage climate change-related flood risks.	Existing staff resources	Continuing to work with the partnership including inputting into the local flood risk management strategy action plan – October 2021 deadline for review of the most recent draft	Local flood risk management strategy action plan approval due- December 2021	Action plan approved 2022	Objectives to delivered by 2027	
6.9	Delivering a measurable biodiversity net gain on the City Council's estate through enhanced management of existing Local Nature Reserves and making parks and housing open spaces more hospitable to wildlife through creation of meadows, scrub and woodland.	Adoption and implementation of new Biodiversity Strategy and Action Plan- existing revenue budgets, S106 and EIP projects.	Review LNR management plans 2023 - 2026			Ongoing	Measurable biodiversity net gain on the City Council's estate
6.10	Engaging and influencing individuals, institutions and businesses to take steps to make their land more hospitable and permeable to wildlife and help create a citywide network of sites.	Adoption and implementation of new Biodiversity Strategy and Action Plan- existing revenue budgets, S106 and EIP projects.	Partner with Cambridge Conservation initiative on evidence based local projects and citizen science			Ongoing. Strategy through to 2030	Ongoing

Ref	Action	Resources	Milestone 1	Milestone 2	Milestone 3	Completion date	Target
6.11	Implementing projects to manage water courses and improve biodiversity, including a project to improve rare chalk stream habitats in Cambridge. Initial work will focus on Cherry Hinton Brook, Vicars Brook at Coe Fen, and Coldham's Brook on Stourbridge Common.	Existing Drainage revenue, EIP and S106. Combined Authority Grant. Additional external grants e.g. Anglian Water Get River Positive, OFWAT, Cambridge Water, Natural England and Environment Agency	August 2023 - CPO Sign off of Greater Cambridge Chalk Stream Project	September 2023 - Creation of external partner stakeholder group	Stakeholder and technical workshops to understand opportunities and constraints and priority action	March 2026	Ongoing
6.12	Move to cease the use of herbicide on grass road verges and trial using a new grass cutting and collecting machine, which will reduce cuttings left on verges, reduce the fertility of the soil for wildlife and support biodiversity.	New resource secured on a temporary contract	Scope the use of a Trial following the Council Motion on the 22 July 2021.	Report to Committee in late 2021 or early 2022	Trial underway in agreed locations Spring 2022	March 2022	January 2023 Review of trial from 2022

Appendix 2 – Climate Risk and Vulnerability Assessment

	Risk ID	Risk / Opportunity		Service Area	Specific Risk	Risk/ Opportunity Score			Work Currently Underway to Address Risk	Active control measures (to reduce the risk)
	CCRA risk ref	CCRA risk	Urgency (CCRA defined)	Council service area	Specific risks for the service area, relevant to the authority	Impact	Likelihood	Total Risk Score	Actions already being undertaken	Proposed actions/ activity to mitigate the risk, relevant to the authority
Business and Industry	B01	Risks to businesses from flooding	HIGH	(Place Group) Commercial properties	Not currently been an issue, very few properties near river. Water ingress from downpours can cause issues with roofs. Surface water flooding can cause issues - need to ensure guttering is cleared. Few incidents related to extreme weather.	4	2	8	Planned preventative maintenance and undertake repairs annually - e.g. gutter clearance and drainage jetting/ unblocking - to prevent standing water.	EA flood risk maps. Consulting these could be used to identify any changes to existing flood risks. Planning are able to provide a layer on our GIS mapping - if required.
	B03	Risks to business from water scarcity	MED	(Place Group) Commercial properties	Could be impacts on water supplies to buildings let to businesses by the Council going forward. Own redevelopment programme may be affected in	5	1	5	Not currently looking at retrofitting water efficiency measures to Council buildings. Some of the newer properties have rainwater harvesting in	Could identify high users of water in existing Council fully-managed properties - to discuss how they could improve in the future e.g. Dales Brewery + Gwydir Ent Centre. (Not applicable to self-contained commercial properties where tenants are responsible for own

					the future. Existing portfolio - no issues.				place + low flush WCs + sensor operated taps - some have been retrospectively introduced. Tenants are often responsible for their own plumbing.	plumbing and heating installations and utility supplies)
B03	Risks to business from water scarcity		GCSPS - new development only	Interruptions to water supply due to water scarcity.		3	4	12	Policy targets are already in place to require water efficiency in new commercial development, linked to the BREEAM Standard (requires a 55% reduction in water use compared to baseline). Ongoing work is also underway in this area in collaboration with Government, Cambridge Water and the Environment Agency (Water Scarcity Group). New planning	Application of policy requirements for water reduction to all new commercial schemes (5 Wat01 credits = 55% reduction in baseline water use). Implementation of further measures developed by the Water Scarcity Group (e.g. water offset) once these become available.

									conditions have been developed linked to mitigation measures, including conditions related to water re-use.	
B04	Risks to finance, investment and insurance including access to capital for businesses	LOW	HDA + (Corporate Group) Finance (access to finance for corporate projects)	Difficulty in accessing finance for projects deemed to be at high risk from climate risks. Impact is lower than the private sector as external funding not currently sought. New build standards are higher than building regulations, so if external funding was required this is more likely to be accepted.	4	1	4	Continuous review of the Sustainable Housing Design Guide	2024 update of Sustainable Housing Design Guide	
B05	Risks to business from reduced employee productivity due to infrastructure disruption	MED	(Corporate Group) HR	Ability to access a workplace/ transport not as necessary as previously - approx. 80% WHF. Impact on employees	3	3	9	Starting waste collections rounds earlier, giving out bottled water and sunscreen to staff who work outdoors and	Could let staff know where our cooler office locations are for those who can work from other locations. Looking into procuring a welfare vehicle and more vehicles with air con as vehicle fleet is replaced	

		and higher temperatures in working environments			productivity during heat waves needs to be considered.				<p>providing refillable bottles to outdoor working staff, water provided on the vehicles. Allow staff who work outdoors to take adequate breaks in hot weather to cool down. Invested in lightweight, breathable PPE suited to the role. Flexible in terms of WFH for some staff - working hours can be adjusted or can work from Mandela House room 101 which is air conditioned. Publish information and Emergency Planning Manager attends all severe weather teleconferences with Met office and other Cat 1 responders and works with managers of relevant teams</p>	<p>over time. Will provide awareness training to help staff spot heat related exhaustion/ stress and provide basic training on related first aid measures.</p>
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									to cascade info regarding severe weather.	
B06	Risks to business from disruption to supply chains and distribution networks	HIGH	(Corporate Group) Procurement	Some supply chains, if disrupted, could be problematic for the Council. More likely to be affected by flooding that warmer weather - deliveries etc.	4	2	8	Ensure we have multiple suppliers for critical suppliers to increase resilience.	Could look at developing tenders to ensure we are covering climate change risks - how will we ensure supply chains ensure resilience to climate change, where relevant and proportionate. Opportunities to run awareness sessions on social value etc. - so could include climate risk awareness - to develop their skills and capabilities around that. Could reach our commercial tenants with this information e.g. a welcome pack.	
B07	Risks to business from disruption to supply chains and distribution networks	HIGH	Economic Development	Disruption from melting roads etc. could affect deliveries for supply chains. Lack of awareness amongst the supply chain of the need to consider adaptation is an issue. Linked to business continuity planning, but not always addressed e.g.	2	3	6	Green Business Programme is supporting business to develop NZ plans (5-year business plan developed) to provide sustainable good and services - already raising awareness of the importance of reducing emissions and climate change/	Could put alerts out to local businesses during heatwaves, as we do for the public. Opportunities to run awareness sessions on social value etc. - so could include climate risk awareness - to develop their skills and capabilities around that. Could reach our commercial tenants with this information e.g. Welcome Pack. Help businesses to plan into their strategy a longer-term response to changes in climate to be prepared for changes in demand/	

					climate risks.				impacts.	analysing trends.
	B07	Opportunities for business from changes in demand for goods and services	MED	(Corporate Group) Procurement + Economic Development	Local business productivity is affected due to lack of preparedness in business planning e.g. ignoring warnings of future weather/ climate conditions and/or losing opportunities for sales-growth arising from rising demand for products or services linked to climate change - to maximise opportunity e.g. ice cream sales	2	3	6	Green Business Programme is supporting business to develop NZ plans (5-year business plan developed) to provide sustainable good and services - already raising awareness of the importance of reducing emissions and climate change/ impacts.	Could look at the design of future programmes e.g. Green Business Programme and Sustainable City Grants - will look to focus on risks an adaptation to cc and look to deliver against new funded programmes in the future.
Health, Communities & the Built Environment	H01	Risks to health and wellbeing from high temperatures	HIGH	(Communities Group) Environmental and Public Health + Communities	Risk of heat and poor air quality episodes causing risks to health - affecting vulnerable groups with respiratory issues e.g. asthma and COPD - are acerbated	2	3	6	Alerts with forecasts come into the council - impact on our air quality monitoring - advice over social media + available on the weather forecast. National alerts can be signed	Ensuring, where possible, funding and advice is directed to insulating homes - to keep them cooler in the future. May need to provide 'Cool spaces' in the future - to provide cooler, air-conditioned spaces, manage overcrowding of cool spaces, if run (possible locations?), in the future.

								up to. Advice is to stay indoors.	
H01	Risks to health and wellbeing from high temperatures		(City Services) Asset Management Team	Risks to existing council housing tenants of overheating is currently unknown due to the wide variety of property types within the portfolio.	2	2	4	None	None
H01	Risks to health and wellbeing from high temperatures		(Communities Group): Sheltered Housing	Provide support to tenants where necessary to help them to stay well, healthy and independent in their homes. Some schemes are currently very warm in hot weather.	4	2	8	Provide advice to tenants and non-supported tenants around staying hydrated. Provide 1:1 support (help and advice to stay well via mainly face to face visits, some phone call) to some residents - choice to access council support - support plan. Social media (Facebook) used - advice on how to stay cool in hot weather.	Have a sheltered housing newsletter - every 4 months - could incorporate staying cool advice. Have electronic notice boards - will be able to put messages on there. Could look into providing cool hubs - within the schemes, for other older people to access (activities are also opened up to others in the community). PG suggested he could enquire with John Conroy whether they'd be able to provide TM59 assessment with focus on overheating for our domestic portfolio, particularly the sheltered housing, but also reach out to other consultancies to enquire about comprehensive overheating/ thermal comfort analysis.

	H01	Risks to health and wellbeing from high temperatures		GCSPS - new development only	Risks to human health from buildings overheating	3	3	9	Guidance on reducing the risk of overheating included in the Greater Cambridge Sustainable Design and Construction SPD. More detailed climate change adaptation policy being developed as part of the emerging Greater Cambridge Local Plan, and overheating in new housing is now dealt with via Part O of the Building Regulations - compliance is regulated by Building Control. Where officers have concerns about the risk of overheating, Part O Assessments are required to be submitted as part of planning applications for	Promote the cooling hierarchy for all developments to ensure passive design measures to reduce risk of overheating are prioritised. Require Part O Assessments for any schemes where risk of overheating is a concern (e.g. schemes with single aspect units). Promote urban greening as an additional measure to help reduce the risk of overheating.
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									<p>new homes. Overheating Assessments for new residential buildings delivered directly by the Council have been prepared in accordance with the Building Regulations (Approved Document Part O) since June 2022. The adoption of Passivhaus standards (as far as practicable) in new build residential developments delivered directly by the Council helps to mitigate against overheating. The Passivhaus Planning Package (known as 'PHPP') is an energy modelling tool which includes an assessment of factors that can contribute to</p>	
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									and alleviate overheating. This model is used as a design and assessment tool on current and future new build housing schemes delivered directly by the Council.	
H01	Risks to health and wellbeing from high temperatures		(Place Group) HDA	Risks to new council housing tenants and community centres and commercial buildings associated with regeneration projects.	4	2	8		Ensuring compliance with Part O of building regulations and continuous review of overheating models. Continuing working with CIP and its technical advisers to design out overheating risk.	
H03	Risks to people, communities and buildings from flooding	HIGH	(City Services) Asset Management Team	Flooding of council owned and managed buildings also has the potential to impact on the delivery of council services.	3	1	3			

	H03	Risks to people, communities and buildings from flooding		GCSPS new development only (work led by Cambridgeshire County Council as lead local flood authority with input from Streets and Open Spaces)	It is important to ensure that consideration to all forms of flood risk are given to projects delivered via partnership working on projects such as the transport infrastructure projects being delivered by the Greater Cambridge Partnership.	4	3	12	Policies and guidance already in place for new development (Cambridge Local Plan, SuDS Adoption Guide and Cambs Flood and Water SPD). Do we need to develop any specific criteria for corporate projects?	
	H03	Risks to people, communities and buildings from flooding		(City Services Group) Asset Management Team - Housing and Sheltered Housing	Flooding of council owned and managed buildings has the potential to impact on the delivery of council services and those living in the Council's sheltered housing and Council housing stock.	5	4	20	None	More involvement with new builds and the drainage strategy to be able to bring in the EA
	H03	Risks to people, communities and buildings from flooding		3CBC	Reducing the risk of flooding - checks are needed to ensure that new developments do not lead to	4	3	12	Building Regulation applications - check compliance for surface water drainage -	working with current legislation - no future proposed changes.

					surface water flooding				proposal e.g. for small extension or large residential or non-residential development - have to make sure discharge of water from the building discharges to a suitable place - to reduce the risk of flooding. Carry out inspections of building and drainage work to make sure it is being installed correctly/ satisfactorily and discharges to a suitable location. Planning rules already set their standard on the in respect to storm water discharge. Building control has their own set of standards (usually met if its gone through planning which not everything needs to e.g. Permitted	
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									Development).	
H03	Risks to people, communities and buildings from flooding		(City Services Group) Streets & Open Spaces	Responsible for managing the water courses (excluding main river albeit some river structures and situations) and have flood management responsibilities alongside other authorities. Flood management authority which covers land drainage. Increase in water levels possibility and frequency of high-water levels - could increase the rate of degradation of flood risk assets we have responsibility for managing - could change siltation regimes etc. Risk to fail to meet statutory obligations. Taking on	2	2	4	Liaise with stakeholders and flood risk management partners regularly to ensure that we are working in alignment with policy requirements locally. Inspecting and maintaining city council assets through a monitored process. Technical flood risk and land drainage advice provided to GCSWP service for new development.	Asset Register and database - improvements would be beneficial - should a flood event occur there are comprehensive records to be referred to and to enable us to ensure comprehensive maintenance and identify priorities. Opportunities to use the green spaces the council manages to manage differently to help mitigate and reduce flood risk locally e.g. tree pits and management e.g. decompaction. May need to increase the capacity of SUDs in the future.	

				responsibility for managing more of the SUDs - designed to cater for a certain storm event - now wouldn't meet the policy requirements of the capacity of what they would need to provide.					
H03	Risks to people, communities and buildings from flooding		(City Services Group) HDA	Building in areas susceptible to flood risk	4	1	4	Strenuous flood risk assessments required for every planning submission. Continuing working with CIP to ensure early review of flood risk	
H03	Risks to people, communities and buildings from flooding		Local Resilience Forum.	More flooding occurring in summer from downpours, previously was winter.	4	2	8	Residents close to the river can sign up to receive and Emergency Planning Manager receive email alert - Floodline. EPM attends Severe weather tele-conference - Warn & Inform messages.	Could be helpful to have a means of contacting residents at risk to advise on action to take to be them to be prepared in the event of flooding. LRF looking at a regional solution - emergency warning mass notification.

									Warn + Inform contacts those on the vulnerable persons register. Put out info/ share messages in council webpages/ social media.	
H05	Risks to building fabric	MED	(City Services Group) Asset Management Team	Climate impacts may lead to degradation of building fabric (e.g. due to flooding) of Council buildings and housing stock	2	2	4		None	
H06	Risks and opportunities from summer and winter household energy demand	HIGH	(City Services Group) Sheltered Housing and Asset Management Team - Housing	Lower winter energy demand from reduced need for heating, higher summer demand from need for fans and cooling (which we would want to avoid).	2	2	4		New HRA/CIP developments where MVHR units are installed to Passivhaus standard. New buildings need to comply with Part L of the BG - covers conservation of fuel and power e.g. insulation and efficiencies of heating and hot water systems - BC ensure that	None

									buildings meet certain standards in thermal performance and energy efficiency.	
H07	Risks to health and wellbeing from changes in air quality	MED	(Communities Group) Environmental and Public Health	The scale of development coming forward in Cambridge could lead to a worsening of air quality and with the revocation of the AQMA powers to implement continued improvements could be challenged as legislation and national policy doesn't currently support seeking air quality improvements beyond LAQM objective levels. The transboundary nature of air pollution, most notably for PM 2.5 means that it is difficult to deliver	3	3	9	The council will be revoking the AQMA in 2024 under advisement from DEFRA as objective levels have now been secured for all pollutants The Greater Cambridge Air Quality Strategy has committed to work towards WHO Air Quality Guidelines with interim targets to be achieved within the lifetime of the document (2024-2029). The Strategy has been developed with SCDC to streamline approach to addressing air quality across	Monitoring & Assessment of pollutants across the district is ongoing with annual reporting to DEFRA on the state of air quality across the district and actions in place to improve air quality. This is a statutory requirement under LAQM. Continue to engage and work closely with key stakeholder to deliver improved air quality and continue to work with the Greater Cambridge Shared planning service to maintain air quality through development control process	

				<p>improvements as sources originate from outside the district. More extreme weather can influence pollutant levels both positively and negatively, windier weather can aid dispersion locally but can lead to long range pollution such as Saharan dust. Extreme temperatures are often associated with pollution episodes which impact on health. Long term exposure can reduce life expectancy predominantly through cardiovascular and respiratory diseases and lung cancer. Short term exposure can impact lung</p>				<p>both districts which given transboundary nature of air pollution is beneficial. Monitoring and assessment is ongoing and actions including electrification of transport and heat will reduce local emissions. Wider promotion on 'better burning' across the district is ongoing and investigating potential to expand SCA across full district to simplify enforcement where required and have better controls on wood stoves being installed to reduce emissions. Planning controls are in place to design out air quality impacts of new developments</p>	
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					function, exacerbate asthma, increases in respiratory and cardiovascular hospital admissions and mortality.				where possible including mechanical ventilation is areas of poorer air quality.	
H09	Risks to food safety and food security	MED	(Communities Group) Environmental and Public Health	New crop pathogens and climatic impact on pollinator life cycles. Food poisoning increases. Food poisoning outbreak	3	2	6	FSA would be monitoring any potential effects of new pathogens being introduced in the food chain and UKHSA will look at the data of number of infections to spot trends. Local authorities are informed through food alerts from the FSA and NOIDs from the UKHSA. Local authorities also conduct own sampling programmes and take part in Regional/National studies to identify any problems in their area.	Raise awareness to businesses of the FSA Food Alerts system and increase sampling regime.	

	H09	Risks to food safety and food security		Communities Group, Corporate Group - PPU??	lack of local food production leads to food shortages, poor nutrition.	3	3	9	Allotments, community gardens and community orchards provide opportunities for small scale local food production. New provision bought forward in growth sites through existing policies. City Council supports Cambridge Sustainable Food and CoFarm (external). encourage programmes that educate around growing food at home.	Food growing opportunities - increase growing spaces / increase drought tolerant planting schemes, share knowledge and skills in growing food production / self-sufficiency. Emergency food provision via Food Bank / Food Hubs / Co-Farm: Providing funding and support to local charity eco-system to support those most at risk and vulnerable.
	H09	Risks to food safety and food security		GCSPS - new development only	Impact of new development on land for food production	1	1	1	CCS action 5.7: Using guidance in the Sustainable Design and Construction Supplementary Planning Document (SPD) to encourage developers to incorporate food growing in new	Application of policy to protect open spaces and provide new open spaces as part of new development. Pre-application engagement with developers to encourage the inclusion of informal areas of food growing as part of landscape design.

									housing and non-residential development (e.g. providing fruit trees, roof top gardens and growing space as part of landscape design). Allotments are also protected from development under policy 67 of the Local Plan (Protection of Open Space).	
H10	Risks to water quality and household water supplies interruptions	MED	GCSPS - new development only	Interruptions to water supply due to water scarcity.	2	3	6	Policy targets are already in place to require water efficiency in new residential development). Ongoing work is also underway in this area in collaboration with Government, Cambridge Water and the Environment Agency (Water Scarcity Group). New planning conditions have	Application of policy requirements for water reduction to all new residential schemes (a design standard of water use of no more than 110 litres/person/day, ideally water use below this level). Implementation of further measures developed by the Water Scarcity Group (e.g. water offset) once these become available.	

									been developed linked to mitigation measures. New developments have to provide a water efficiency calculation to BC on their applications - water use restricted to 110l/p/d.	
H10	Risks to water quality and household water supplies interruptions		(City Services Group) Asset Management Team	Could be impacts on water supply to Council housing stock. Hosepipe bans have been an issue in the past.	2	2	4	Have had a water efficiency study (Water Environmental) - made recommendations which we are incorporating into our pilot. New build focuses on reducing consumption.	planning to roll out we measures as part of our planned work delivery.	
H11	Risks to cultural heritage	HIGH	GCSPS - Conservation Team who have statutory duties in relation to heritage assets)	Risks to heritage assets from climate risks (e.g. flood damage or risk from subsidence)	2	2	4	As part of our policy to protect and enhance the heritage assets of Greater Cambridge, we maintain a Listed Buildings at Risk Register containing details of	The overarching purpose is to work alongside owners to ensure that the listed buildings identified are made weathertight and structurally sound and are no longer considered to be 'at risk'. The listed buildings are then subsequently removed from our Listed Buildings at Risk Register.	

									<p>buildings which are known to be 'at risk' through neglect and decay, or which are vulnerable to becoming so. The register indicates the address of the property in question and the condition of the listed building.</p> <p>The listed buildings have all been assessed against our selection criteria, based on the assessment criteria used by Historic England. The listed buildings identified as being at risk are included on the Listed Buildings at Risk Register and we also maintain a watching brief register, where listed buildings vulnerable to</p>	
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									<p>being identified as 'at risk' are resurveyed on an annual basis.</p> <p>The Listed Buildings at Risk Register highlights and records the listed buildings in a format which is accessible to the public and building owners. The register forms a framework through which to approach owners and begin a dialogue with a view to securing necessary maintenance and urgent repair works to their listed buildings, to secure the survival of the listed building.</p>	
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Infrastructure	I01	Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures	HIGH	(Place Group) HDA	Lifts and door entry systems, heating and hot water not working and failure of communal heating plants.	4	1	4	Every development before planning permission reviews electricity, gas and water capacity. Electricity and gas capacity currently durable and meets demand. Concerns over water capacity. Continually review the capacity and ways to reduce consumption of water in new build properties. Already provide some back-up generators on some developments as required by asset managers.	
	I01	Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures		3C ICT	Risks of IT outages due to overheating of servers,	4	1	4	Server Rooms are cooled by appropriately sized chillers, where appropriate these covered by redundancy. The sizing of	Temperatures monitored constantly, Efficiency and effectiveness of cooling solutions assessed periodically

									<p>chillers is assessed and where appropriate being replaced. Project underway to replace supporting infrastructure for once datacentre and as Servers replaced by more efficient hardware, consuming less power and producing less heat - requirement for cooling is reduced and actually downsizing the chillers. This actually makes them more efficient and less likely to fail.</p> <p>power reduction contributes to wider climate change objectives, which also reduces risk.</p>	
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	I01	Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures		(City Services Group) Asset Management Team - Corporate buildings	Loss of national utilities including internet. Risk from flooding - water pumps not working during flooding. Loss of plant rooms for communally heated new build properties.	4	1	4	Have some plant and server rooms with backup power supplies - UPS Uninterruptable Power Supplies (including emergency call lines - lifts and emergency call lines in sheltered housing).	Planned for a generator to provide back-up power at the new Operational Hub has been considered and the infrastructure supports this.
	I01	Risks to infrastructure networks (water, energy, transport, ICT) from cascading failures		(City Services Group) Streets & Open Spaces	Impacts on watercourses and drainage systems maintained by the Council.	2	2	4		
	I02	Risks to infrastructure services from river, surface water and groundwater flooding	HIGH	(City Services Group) Asset Management Team - Corporate buildings	Flash flooding - drainage networks overwhelmed.	3	3	9		
	I02	Risks to infrastructure services from river, surface water and groundwater flooding		City Services Group - Streets & Open Spaces	Links to impacts on watercourses and drainage systems maintained by Streets and Open Spaces	3	3	9		

107	Risks to subterranean and surface infrastructure from subsidence	MED	(City Services Group) Asset Management Team - Corporate and Housing buildings	no significant sites in the city	1	1	1	none	
107	Risks to subterranean and surface infrastructure from subsidence		Local Resilience Forum.	Risk from water ingress into underground services, cables and pipelines as well as risk from rising water table in areas at risk from flooding. Large water table - reaches outside the city area - can still rise long after significant rainfall and cause issues	2	2	4	CPLRF Climate Change and Sustainability group are monitoring the risks	
108	Risks to public water supplies from reduced water availability	HIGH	(Communities Group) Environmental and Public Health	Reduced water availability to commercial premises would increase in the risk of contamination as washing of hands, cleaning of equipment/premises is critical to food safety. Failure to take	3	4	12	Should commercial premises be impacted by the means to control contamination due to a reduction in water and is satisfied the threshold of imminent risk of injury to health has been	

				action may lead to food poisoning outbreaks.				reached, statutory notices can be served to prohibit the operation, or the premises may choose to voluntarily close.	
108	Risks to public water supplies from reduced water availability		(City Services Group) Streets & Open Spaces	Water supply shortages also have the potential to impact on the work of S&OS - particularly planting of new trees by the Tree Team.	2	2	4	Have already changed operations to be less demanding for water.	
108	Risks to public water supplies from reduced water availability		Local Resilience Forum.	Water supply shortages also have the potential to impact on our emergency planning response. Risk to cattle on council land - water provided from the mains.	4	2	8	South Staffs Water would activate their emergency plan (loss of utilities) and provide pop-up water supply water stations with bottled water. Work closely with other Cat 1 responders and Warn + Inform.	
110	Risks to energy from high and low temperatures , high winds, lightning	MED	(City Services Group) Asset Management Team	Own PV efficiency may reduce in very high temperatures or be affected by	4	1	4	All high buildings have lightning protection installed with regular risk	None

					significant subzero temperatures and snowfall.				assessment. Modern SPV installations are installed to withstand extreme weather and are built to IP6 standard and are self-cleaning	
	110	Risks to energy from high and low temperatures , high winds, lightning		Local Resilience Forum.	Loss of power utilities could impact pumping stations on new developments - could lead to build up of foul water and lead to a sewage problem.	4	2	8	Have a severe weather emergency plan - in place with the CPLRF. Have a loss of utilities plan - takes into consideration loss of power. UKPN will trigger their emergency plan.	
International Dimensions	ID01	Risks to UK food availability, safety, and quality from climate change overseas	HIGH	(Communities Group) Environmental and Public Health	The UK remains broadly stable from most risks. Risks to food security is posed by increased international volatility, climate change and biodiversity loss. These risks have intensified in recent years and brought	3	2	6	H09: Allotments, community gardens and community orchards provide opportunities for small scale local food production. New provision bought forward in growth sites through existing policies. City Council supports Cambridge	

					shocks to the wider supply chain. Inflated energy and fertiliser prices following Russia's invasion of Ukraine drove up production costs in 2022, creating a challenging business environment for the food sector. Impacts on supply chains from geopolitical instability in the Middle East present risks, including some increased costs for inputs, but so far the impacts to UK food supply have been limited. Source: UK Food Security Index 2024 - GOV.UK (www.gov.uk)				Sustainable Food and CoFarm (external)	
Environment &	N01	Risks to terrestrial species and habitats from	HIGH	(City Services Group) Streets & Open Spaces	State of Nature report (2023) highlights key impacts to	3	5	15	Biodiversity Strategy (add link) seeks to manage LNRs in	Wider engagement to residents businesses institutions - to recognise the threats and to influence

		<p>changing climatic conditions and extreme events, including temperature change, water scarcity, wildfire, flooding, wind, and altered hydrology (including water scarcity, flooding and saline intrusion)</p>		<p>habitats and species, including observed changes in distribution. The increase of extreme weather events such as droughts may limit our ability to retain long grass areas for biodiversity in parks and open spaces and calls for vegetation removal along residential boundaries on our already small LNRs. Uncertainty is making it difficult to programme management tasks. Also seeing invasive species e.g. Hemlock which likes the bare ground that exist in these conditions and so are becoming a management issue.</p>				<p>favourable condition to allow species to adapt, colonise and disperse. Parks' Biodiversity Toolkit seeking to create new corridors and stepping stones through our parks and open spaces using external grants, S106 and EIP scheme. Local Plan policies seek to protect best sites and enhance onsite habitats through adopted Biodiversity SPD and emerging BNG processes. Partnership working with Cambridge Nature Network (https://cambridge.naturenetwork.org/) and wider Local Nature Recovery Strategy. Tree Strategy (www.cambridge.gov.uk/tree-</p>	<p>them to do more - would be beneficial but is resource dependent.</p>
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									strategy) seeks to manage using the urban forest concept and increase tree canopy cover on both public and private land. Articles go into Cambridge Matters and other engagement activities. Been providing Biodiversity training to Streets & Open Spaces operatives - why and how we need to do it - in conjunction with University Estate team and local Wildlife Trust.	
N02	Risks to terrestrial species and habitats from pests, pathogens and invasive species	HIGH	(City Services Group) Streets & Open Spaces	Existing invasive species become more prevalent due to changing environment and ecosystem or new invasive species colonise, impacting on native flora and	3	5	15	Moved away from use of pesticides to control invasive species wherever possible - trialling different techniques without the use of chemicals.	Any outbreak of Oak processionary moth will follow FC guidance. Ash Dieback in the city is being monitored and sample data collected and publish on the council's Tree data - Cambridge City Council webpage (/www.cambridge.gov.uk/tree-data).	

				fauna. e.g. Hemlock which likes the bare ground that exist in these conditions and so are becoming a management issue. Can thwart our ambitions to increase biodiversity by reducing success of establishment. Potential significant loss of tree canopy through new pathogens.				Planning advise on what not to put into planned schemes e.g. box hedging (pathogen-prone). Tree strategy seeks to diversify tree stock and plant climate resilient species. The council will source its trees from suppliers who are either certified under the Plant Healthy Certification Scheme (https://planthealthy.org.uk/) (or have applied to become certified) or who have passed a Ready to Plant (https://readytoplant.fera.co.uk/) assessment provided by Fera Science Ltd.	
N03	Opportunities from new species colonisations	MED	{City Services Group) Streets & Open Spaces	New species are colonising as a direct result of climate change	3	5	15	Biodiversity Strategy seeks to manage LNRs in	Could increase work with local species recorders and environmental record centres to understand

		in terrestrial habitats			(State of Nature 2023). Potential to help displaced species to colonise the City through habitat enhancement and creation. Links to N01 specific risks. E.g. invertebrates are the quickest to disperse with CC, others their population will increase, birds, particularly wetland birds e.g. Little Egrets becoming more common.				favourable condition to allow species to adapt, colonise and disperse. Parks Biodiversity Toolkit seeking to create new corridors and stepping stones through our parks and open spaces using external grants, S106 and EIP scheme. Local Plan policies seek to protect best sites and enhance onsite habitats through adopted Biodiversity SPD and emerging BNG processes. Partnership working with Cambridge Nature Network and wider Local Nature Recovery Strategy. Aim to create diverse habitats structure to accommodate new colonisers.	species movements to and future colonisation scenarios - a possible future project in partnership with Cambridge Nature Network, Cambridge Conservation Initiative (www.cambridgeconservation.org) or Cambridge Conservation Forum (www.cambridgeconservationforum.org.uk)? Could be changes needed to site management to accommodate or restrict species.
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N04	Risk to soils from changing climatic conditions, including seasonal aridity and wetness	HIGH	(City Services Group) Streets & Open Spaces	Risk varies across City with changes in geology influencing soil types. Clay soils have potential for increased risk of tree related subsidence claims. Parks and public open spaces soils at increased risk of deterioration due to existing pressures of compaction from vehicles, events and footfall.	3	4	12	Limited work other than decompaction / aeration around specific mature trees.	Potential to review existing management practices such as leaf collection, grass cutting and events to improve soil condition, increase resilience and potential natural capital services such absorbing surface water runoff. Soil Management Plan required for existing sites?
N05	Risks and opportunities for natural carbon stores, carbon sequestration from changing climatic conditions, including temperature change and water scarcity	HIGH	(City Services Group) Streets & Open Spaces	Risk of tree loss through climatic stresses and new pathogens, resulting in loss of tree carbon store. Potential to influence re-wetting of peat along the Fen edge through Planning Service and future offsite BNG requirements. Habitats need to	3	5	15	Potential for offsite BNG sites (peat sites) offering carbon sequestration along with new and restored habitats identified through the emerging Local Nature Recovery Strategy and currently being looked at (outside of city	

				be in good condition to sequester and hold carbon.				boundary) - responsibility of the CPCA - being delivered by County and the Local Nature Partnership and supporting authorities e.g. Cambridge City.	
N11	Risks to freshwater species and habitats from changing climatic conditions and extreme events, including higher water temperatures, flooding, water scarcity and phenological shifts	HIGH	(City Services Group) Streets & Open Spaces	Climate change likely to worsen existing poor flow and water quality of the City's rivers and chalk streams. Conversely flash floods push species out of suitable habitats, particularly where there is no adjacent natural habitat within their flood plains.	4	5	20	Greater Cambridge Chalk Stream Project (3-year 2023 - 26) seeks to build on past watercourse restoration projects, both in channel and within the wider floodplain and catchment - including a regenerative farm aquifer recharge demonstration site. Cross boundary partnerships required to achieve this. Awarded watercourse maintenance contract has specification to	With more resources - could look at all our water courses and review current management plans and projects based on the successes of the chalk stream projects

									retain and enhance inchannel and bank side habitats.	
N12	Risks to freshwater species and habitats from pests, pathogens and invasive species	HIGH	(City Services Group) Streets & Open Spaces	Existing invasive species become more prevalent due to changing environment and ecosystem or new invasive species colonise, impacting on native flora and fauna. Some species such as Floating Pennywort or Signal Crayfish also have potential to damage riverside infrastructure, increase flood risk or block navigation.	4	5	20	Greater Cambridge Chalk Stream Project (3-year 2023 - 26) setting up an invasive species stakeholder working group including citizen science monitoring and reporting. Local Nature Reserve volunteer team continue to tackle invasives on LNRs. Tackling site affected by extensive burrowing by signal crayfish - trying to speed up flow etc. to deter. Awarded watercourse maintenance contract includes guidance, method statements and	With more resources - could look at all our water courses and review current management plans and projects based on the successes of the chalk stream projects	

									reporting lines should invasive be discovered.	
N18	Risks and opportunities from climate change to landscape character	MED	GCSPS	Landscape character is defined through national and local guidance. Stress and loss of trees due to tree diseases, e.g. ash die back etc. will be the issue for the city - inability to re-plant large trees due to highways issues and for them to get established - water scarcity. Drier weather will mean streams may dry out/ have less water - will affect the vegetation along the water courses, trees will thrive and others will decline. Impacts from changing farming practices e.g. future solar and wind farms - will	3	4	12	BNG legislation - forcing developed to pay more attention to landscape - and give more landscape than before - enabling us to retain existing landscape on projects - not able to do before. Moving away from native to adaptable species of trees - species selection. More weight being given to ability and likelihood for the developer to maintain their landscape - requiring them to maintain their landscapes for longer (BNG is a 30-year programme). SUDs designs	Promote urban greening as an additional measure to help reduce the risk of overheating/ heat island effect. Designing areas of planted areas, trees, with shade pockets - more flexible use. Reducing reliance on avenues of monoculture - to be more resilient e.g. to disease - by diversifying planting.	

				<p>alter the character of farmland. Other infrastructure e.g. transport (highways and EW rail) biodigesters / waste incinerators, wastewater treatment - may become an issue. Perception of what the landscape should look like is changing - reduced planting etc due to water scarcity. - perception may change further. SUDs and Swales used - visible - an opportunity to look more holistic/ natural habitat.</p>				<p>have to take into account increase in rainfall. Big infrastructure have to do landscape and visual impact assessments - includes assessment of landscape character. Policies on requiring developments to be in keeping with existing landscape character (and high quality). Government is responsible for shift from agriculture to energy production and infrastructure (e.g. rail developments). Council's tree strategy (2016-26) has been helpful to get more trees planted - refer to it in the SPD.</p>	
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Appendix 3 - CAMBRIDGE CITY COUNCIL - RISK MANAGEMENT SCORING MATRIX

Risk Scoring Matrix

Our risk appetite is illustrated on our Risk Scoring Matrix.

The matrix illustrates where risks sit once their likelihood and impact scores are multiplied.

Impact	5	5-10 Medium	5-10 Medium	12-15 Significant	16-25 High	16-25 High
	4	1-4 Low	5-10 Medium	12-15 Significant	16-25 High	16-25 High
	3	1-4 Low	5-10 Medium	5-10 Medium	12-15 Significant	12-15 Significant
	2	1-4 Low	1-4 Low	5-10 Medium	5-10 Medium	5-10 Medium
	1	1-4 Low	1-4 Low	1-4 Low	1-4 Low	5-10 Medium
		1	2	3	4	5
Likelihood						

Below is the summary text and guidance included in the 4Risk system.

Score	Impact	Description
5	Critical	The consequences of this event occurring could cause the failure of a number of services or result in the Council having its powers removed through government intervention. The level of financial impact is likely to be over £500,000 in any year.
4	Significant disruption &/or damaging	Significant – the consequence of such an event occurring could cause the failure of the service or bring the Council into serious disrepute. The level of financial impact is likely to be up to £500,000 in any year.
3	Noticeable effect	This type of risk event would have a significant impact on a service's ability to provide its full range of activities. The result of this is that the integrity of the service/Council would be called into question by, for example an inspection service. The level of financial impact is likely to be up to £300,000.
2	Some limited disruption	These types of events can normally be dealt with through the normal day to day management of the service and internal control mechanisms. The level of financial impact is likely to be up to £50,000 in any year.
1	Virtually no impact	These events may be recognized internally but generally have no external impact and can be resolved quickly. The level of financial impact is likely to be under £5,000 in any year.

Score	Likelihood	Description
5	Dead Cert	In this case the event(s) may have already happened in the relatively recent past. Without controls it will happen again and may even occur despite controls. Projected increase in insurance premiums
4	Probable	The event is more likely to happen than not but there remains some possibility it will not. The chance of occurrence may be around 75%+.

3	Strong possibility	There is an even chance that this event may occur. (A probability would be around one in two, (50%)).
2	Some possibility	These events are not likely to occur but there remains some possibility it will. (A probability of a one in ten chance of this event occurring (10%)).
1	Little chance	These events will only occur in exceptional circumstances. (A probability of less than one in fifty (2%).

Risks can be assessed and scored at three stages:

- The **inherent risk** is what could happen before any mitigating controls are used - *the worst case scenario*
- The **residual risk** is what could happen after our controls have been implemented - *where we are today*
- The **target risk** is what we could achieve if we implement further actions - *where we could be in the future*

We score risks on the 4Risk system at the **residual risk** stage - *where we are today*. This helps us to understand what our greatest risks are, and how to prioritise resources best.

Risk Category	Risk Description	Virtually no impact	Some limited disruption	Noticeable effect	Significant disruption & / or damaging	Critical
	Score	1	2	3	4	5
Business Continuity	Failure to adequately plan and manage processes for unforeseen events (Civil Emergency Plan, Business Continuity Plans, IT failure)	Insignificant disruption on internal business – no loss of customer service. Less than 1 hour.	Some disruption on internal business only – no loss of customer service. Interruption of half a day.	Noticeable disruption to Council – would affect customers (loss of service no more than 48 hours).	Major disruption to the Council – serious damage to organisation’s ability to service customers (loss of service for more than 48 hours but less than seven days).	Loss of service delivery for more than seven days.
Environmental	Failure to properly identify/manage environmental impact.	Minimal or no impact on the environment.	Minor impact on the environment.	Moderate impact on environment.	Major impact on environment.	Catastrophic impact on environment.