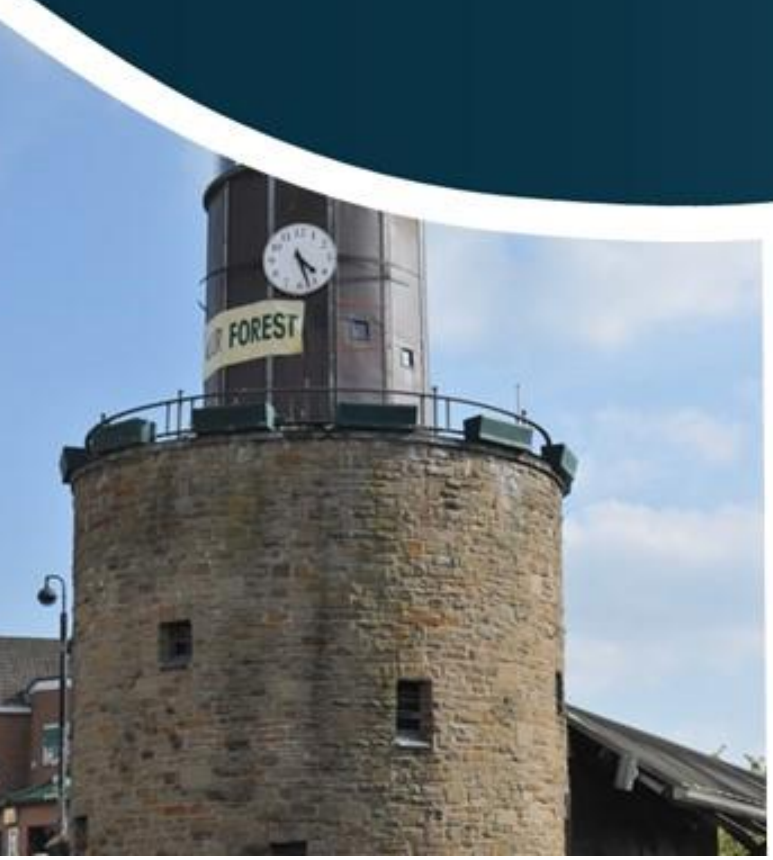
Climate Adaptation Plan
Cinderford

Final Submission

March 2024



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Carbon Footprint

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This report was issued to the Forest of Dean District Council; its contents do not necessarily reflect the position of the Council.

Contents

Abbreviations

CCC	Climate Change Committee
CCRA	Climate Change Risk Assessment
CCRA3	The Third UK Climate Change Risk Assessment
CTC	Cinderford Town Council
DLUHC	Department for Levelling Up Housing and Communities
FoDDC	Forest of Dean District Council
FoDCAP	Forest of Dean Climate Action Partnership
FVAF	Forestry Voluntary Action Forum
GCC	Gloucestershire County Council
GWT	Gloucestershire Wildlife Trust
HWT	Herefordshire Wildlife Trust
INNS	Invasive Non-Native Species
LAG	Local Action Groups
LLFA	Lead Local Flood Authority
LRF	Local Resilience Forum
NDP	Neighbourhood Development Plan
NFM	Natural Flood Management
NPPF	National Planning Policy Framework
ONS	Office for National Statistics
PPS	Planning Policy Statement
SFRA	Strategic Flood Risk Assessment
SuDS	Sustainable Urban Drainage
TCPA	Town and Country Planning Association
UKCP18	United Kingdom Climate Projections 2018
UKHSA	UK Health Security Agency
WWNP	Working With Natural Processes

Executive summary

This adaptation plan identifies a pipeline of fundable adaptation projects for Cinderford. The projects focus on addressing local climate change impacts, which have been identified through the Climate Risk Summaries, and stakeholder engagement with the Town Council.

The plan is laid out in a simple format to enable easy interpretation of the projects. The projects have been prioritised according to factors including cost, barriers, stakeholder engagement findings, and funding, to provide a balance of projects that are implementable and which address the most pertinent risks. Where appropriate the plan references other plans, policies and strategies of the Town Council, Forest of Dean District Council (FoDDC) or Gloucestershire County Council (GCC). Consideration is also given to relevant local actors who could assist in the delivery of projects. The climate risks addressed by each project and its benefits are clearly outlined with indicative costs and timescales.

The prioritised adaptation projects for Cinderford are outlined in Table 1-1 below.

Table 1-1. Adaptation projects for Cinderford.

Adaptation project	Risk addressed - 3.2	Timescale of actions - 3.3	Prioritisation - 3.4	Estimated cost and additional benefits - 3.5		Barriers for implementation - 3.6	Resources required and potential funding - 3.7
Local climate knowledge	All risks	Less than 6 months	High	Low cost or no cost	Resilient Infrastructure and communities Low carbon behaviours Benefits local adaptive capacity	Councillor time	Bought in service or no-cost social enterprise service (such as Climate Vision CIC) Gloucestershire County Council Greener Gloucestershire Community Fund
Local resilience plan climate actions addition	All risks	Less than 6 months	High	Low cost	Resilient Infrastructure and communities	Local resilience plan climate actions addition	All risks
Local heat alerts	H1 - Risks to health and wellbeing from high temperatures	Less than 6 months	High	Low or no cost	Improved health Resilient Infrastructure and Communities Benefits local adaptive capacity	Ownership	Led by CTC (social media channels) Existing activity
Urban Tree planting	H1 - Risks to health and wellbeing from high temperatures	Less than 2 years	High	Medium cost	Improved biodiversity and green spaces Flood regulation Improved air quality	Location Landowners Skills Responsibility	Funding required Feasibility and Land acquisition Stakeholder engagement
Solar and/or green-heating scheme.	H6 - Risks and opportunities from summer and winter household energy demand	Less than 2 years	High	Very high cost	Innovation and Funding Resilient Infrastructure and Communities Green Economy Co-benefits for decarbonisation, improved energy resilience	Cost / ownership / scale	Significant capital funding required, some funding available: AURORA project (FoDDC), Climate Action Fund - National Lottery Fund Gloucestershire County Council Greener Gloucestershire Community Fund
Outdoor learning	Multiple risks	Less than 6 months	Medium	Low cost	Resilient Infrastructure and communities	Ownership Infrastructure availability	Engagement with local schools required. Potential engagement with the Outdoor Weeks of Learning (OWLs) collaboration. Service could be part-funded by Co-op Local Community Fund Grant

Adaptation project	Risk addressed - 3.2	Timescale of actions - 3.3	Prioritisation - 3.4	Estimated cost and additional benefits - 3.5		Barriers for implementation - 3.6	Resources required and potential funding - 3.7
Allotments/ Community Gardens	ID1 – Risks to food availability, safety and quality from climate change overseas	Less than 2 years	Medium	Very high cost	Improved health Resilient Infrastructure and Communities Low Carbon Behaviours Reduced waste	Access to suitable and available land Skills	Awards For All and other Big Lottery funds Various resources required
INNS (Invasive non-native species) monitoring.	N2 – Risks to terrestrial species and habitats from pests, pathogens and invasive non-native species	Less than a year	Medium	Low or no cost	Clean water Improved Biodiversity and Green Spaces	Experience / technical ability	Manpower, no funding available but could be undertaken by volunteers
Ecosystem services	N18 – Risks and opportunities from climate change to landscape character	Less than a year	Medium	Medium cost	Linked to innovation and funding	Relevance/ local need	Would require grant funding, e.g., Esmée Fairbairn Foundation. Engagement required at district level.
Tap water refill scheme	H1 - Risks to health and wellbeing from high temperatures	Less than 2 years	Medium	Low cost or no cost	Clean water Reduced waste	Local need	Scheme grant funded

The table above outlines the identified priority adaptation projects for Cinderford Town Council. More details on each project can be found in section 3, below.

1 Introduction

1.1 Organisation of this document

This plan presents proposed adaptation projects for the town of Cinderford. Its purpose is to outline the anticipated locations, benefits, costs, timescales, and potential funding of the projects. Chapter 1 explains the background and context to this project, and its objectives. Chapter 2 provides an explanation of how projects are structured. Chapter 3 presents the individual projects. Finally, Chapter 4 gives an overview of the relevant plans, policies, and guidelines that have been considered.

You can navigate the document by clicking on the text boxes below.

Click here to go to an explanation of the adaptation projects structure

Click here to go to the Proposed Projects

Click here to go to the Relevant Plans, Policies & Guidelines

1.2 Background

The Forest of Dean District Council (FoDDC) has declared climate and ecological emergencies, signalling that immediate action is required. The adopted Climate Change Strategy and Action Plan[1] (2022-25) outlines how the Council needs to mitigate the magnitude of climate change impacts through carbon emissions reductions, while also preparing to address the impacts of 'locked in' climate change.

This adaptation plan for Cinderford focuses on future climate change impacts in a local context. It identifies local measures that build resilience, as well as outlining how towns can support adaptation over the longer term for both humans and the natural environment.

This plan is primarily focused on adaptation to climate change, the process of adjustment to actual or expected climate and its effects, to moderate harm or exploit benefits. In effect, reacting to climate change to reduce risk. This plan does not primarily consider climate change mitigation (human interventions to reduce greenhouse gas emissions). However, opportunities to achieve mitigation co-benefits as the result of an adaptation project have been identified and highlighted where relevant.

[1] Forest of Dean District Council (2023), Climate Change Strategy and Action Plan The Forest of Dean Climate Change Strategy and Action Plan

1.3 Project Objectives

The objective of this plan is to provide a list of realistic, fundable projects that Cinderford Town Council (CTC) can undertake, support, and develop.

Other objectives include:

- Indicating the location and scale of projects.
- Highlighting appropriate sequencing of projects.
- Identifying adaptation, mitigation, and other benefits.
- Outlining indicative costs and funding sources.
- Engaging with any other town plans currently held by the Town Council or local community groups and higher-level plans, county council or sectoral.

1.4 Policy

This climate change adaptation process is embedded within the policies, strategies and plans of the town and district councils. See Figure 1-1 for an overview of how these plans and policies overlap and interact.

Figure 1-1. National, regional, and local plans overview.

1.5 Context: Cinderford

Cinderford is a small town in the Forest of Dean, with a population of around 11,000 (ONS, 2021)[2]. 21% of the population is over 65, higher than the UK average of 18.6%. The population primarily resides in urban areas. Its economy centres on healthcare, construction, and retail. For many years, coal mining was the main local industry.

Cinderford sits within the western edge of the Forest of Dean between the River Wye and the River Severn. Smaller local watercourses drain into the larger Severn and Wye catchments.

2 Office for National Statistics, (2021). 2021 Census Data.

Cinderford's natural topography is sloped, causing flood issues for low-lying areas proximate to Cinderford Brook. The Environment Agency identifies Cinderford Brook catchment as a rapid response catchment, meaning it has the potential to have a rapid reaction to rainfall, causing flash flooding which can pose a threat to life within the surrounding communities.

Figure 1-2 - View from Church Road, Cinderford

1.5.1 Future Climate Impacts in Cinderford

JBA has produced a Climate Risk Summary for Cinderford which should be referred to for an understanding of how climate change is expected to impact Cinderford. In recognition of Climate Leadership Gloucestershire's adoption of the Climate Change Committee's (CCC) principles for good adaptation policy sourced from the CCC's Independent Assessment of UK Climate Risk3, we have referenced headline projections to help the Forest of Dean Adapt to 2°C and assess the risks up to 4°C of warming. A snapshot of the front page is provided below in Figure 1-3.

3 Climate Change Committee, (2021). Independent Assessment of UK Climate Risk

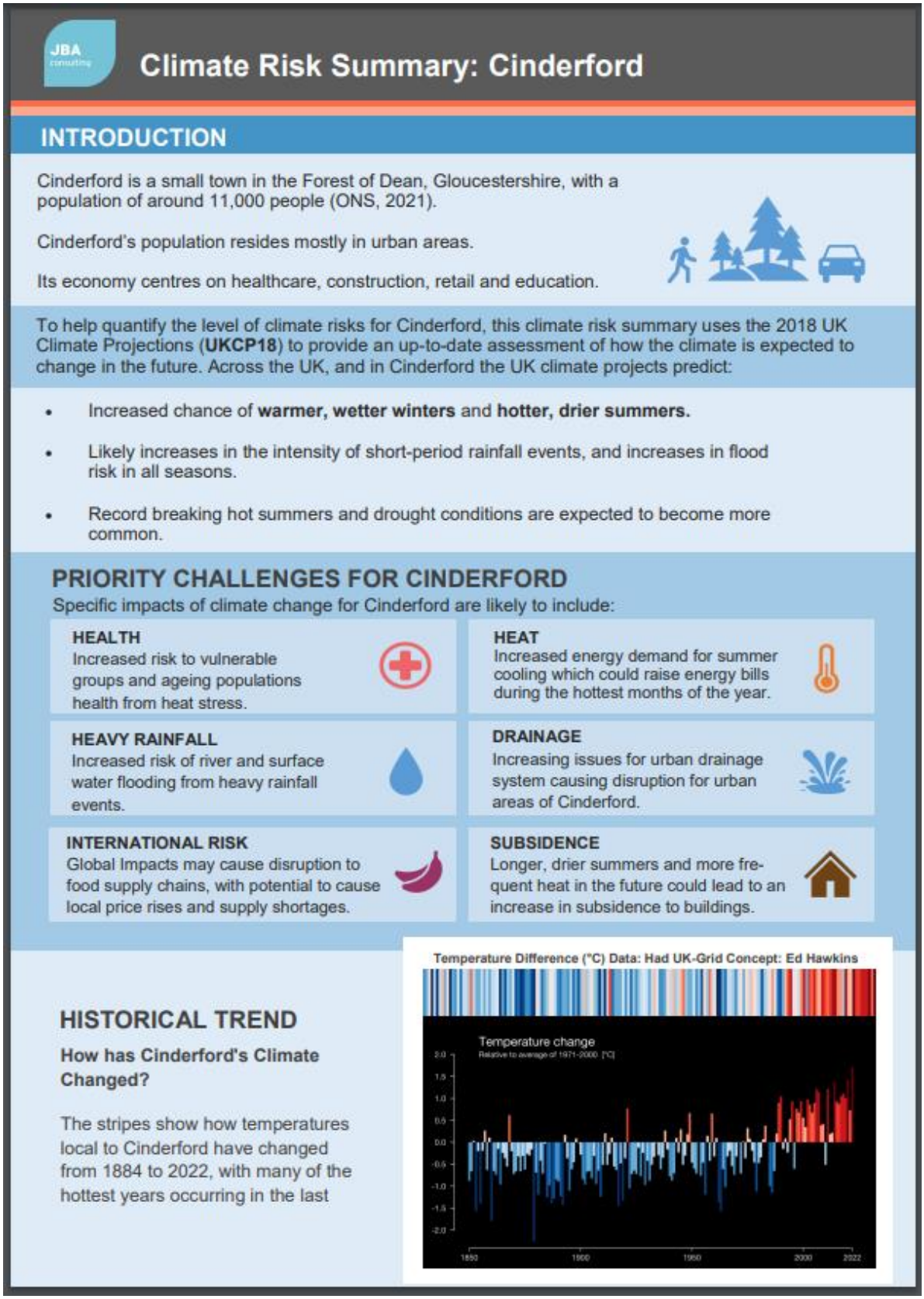

Figure 1-3. The front page of the Climate Risk Summary produced for Cinderford.

1.6 The prioritisation process

Our team have used the most recent, publicly available climate change information, along with local insights, to inform the adaptation plan process. Local insights and perspectives were gathered through an in-person stakeholder engagement event with Cinderford Town Council (CTC) on the 8th of November 2023.

At this meeting, the Council raised some of their key priorities for adaptation - these are detailed further in section 1.6.2.

1.6.1 Climate Change Risk Assessment Summary

The climate change risk assessment summary identifies the following priority risk areas for Cinderford:

- Health - Increased risk to vulnerable groups and ageing populations' health from heat stress.
- Flooding - Increased risk of river and surface water flooding from heavy rainfall events.
- Wind damage - future increases in storminess are likely to increase the frequency and intensity of damaging wind gusts to people and property.
- Drainage disruption - Increasing pressures on the urban drainage system due to rainfall intensity increase causing disruption for urban areas of Cinderford.
- Subsidence - Longer, drier summers and more frequent heat in the future could lead to an increase in subsidence to buildings.
- Energy demand - Increased energy demand for summer cooling which could raise energy bills during the hottest months of the year.
- Food supply chains - Global Impacts may disrupt food supply chains, with the potential to cause local price rises and supply shortages.

1.6.2 Stakeholder Engagement

The climate risk summaries were improved with local understanding, including an understanding of historical, current, and potential future climate change risk during a series of semi-structured interview workshops.

CTC identified several key local challenges:

- Risk and accessibility during extreme weather events.
- Flooding of roads and infrastructure proximate to Cinderford Brook.
- Demand for local services (a new hospital is being constructed locally).
- Vulnerabilities of an ageing population with pockets of deprivation.

The town council also noted several key priority adaptation themes:

- Reducing risk to infrastructure and community buildings from extreme weather.
- Adapting community infrastructure to increase resilience to climate change.

- Creating new and accessible amenity-friendly green spaces.

2 Adaptation projects - structure

A summary of the adaptation projects identified in this plan can be found in the executive summary at the start of this document.

2.1 Primary risk addressed

For each adaptation project, a 'primary risk addressed' has been identified. The risks addressed relate to the 61 risks and opportunities identified in the third UK national climate change risk assessment (CCRA3), conducted by the CCC[4].

2.2 Additional benefits

For each adaptation project, a range of additional benefits have been identified. Additional benefits arise from enhancing adaptive capacity and/or addressing other challenges. They include:

- Flood Regulation
- Green Economy
- Resilient Infrastructure and Communities
- Improved Health and Wellbeing
- Improved Air Quality
- Innovation and Funding
- Low Carbon Behaviours
- Improved Biodiversity and Green Spaces
- Reduced Waste
- Clean Water

2.3 Timing of adaptation projects

Table 2-1 below outlines the high-level timing of adaptation projects.

Table 2-1 - Timing of adaptation projects

Timing	Description
Immediate	Less than 6 months
Short	Less than a year
Medium	Less than two years
Long	Less than five years.

4 Climate Change Committee (2022), The Third UK Climate Change Risk Assessment. UK CCRA3 - Technical Report.

This section will also note and consider potential synergies with any other policy action, neighbouring projects or processes which have been highlighted during the stakeholder engagement and desk-based review process.

2.4 Prioritised projects

For each project, the plan considers feasibility and the need for urgent short-term actions. The stakeholder engagement process has helped to draw out the key challenges and considerations for Cinderford.

To aid in prioritisation, priority risks and urgent adaptation has been determined from assessment at a national level. 61 risks and opportunities were identified in CCRA3, all of which overlap with local authority service delivery, with eight priority risk areas identified as requiring the most urgent attention:

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

Adaptation projects that address and overlap with some of the above priority risk areas have been assigned a higher priority for the local area. Adaptation projects have also been classified according to CCC definitions for adaptation (behavioural, data and R&D, institutional, financial, engineered solutions, nature-based solutions, new or emerging technologies).

Adaptation projects were scored according to cost, benefits, barriers, funding, stakeholders, and qualitative information gathered. Once ranked, the two highest scoring priority adaptation projects for each of the defined adaptation typologies were taken forward as priority projects for the Town.

2.5 Estimated costs (and benefits)

Estimated adaptation project costs have been evaluated by JBA senior technical specialists, these values have been informed by research and our past experience for adaptation costs for town councils and other local authorities.

Table 2-2 - Estimated project costs key

Costs	
Extremely high	<£1M required for the project or approach
Very high	£100-250k required for the project or approach
High	Over £100k required for the project or approach
Medium	Between £25k and £100k required for the project or approach
Low	Under £25k required for the project or approach
Existing	To be met from existing and pre-identified resources

2.6 Barriers for the implementation of adaptation projects

Barriers to the projects are outlined here, these can reflect gaps in adaptive capacity, potential funding or understanding. They can also reflect barriers in the form of knowledge of climate change risk and adaptation. For example, knowledge of adaptation options, impacts, risks, evidence, and adaptation priorities. Where possible the plan references specific actions that councillors can take.

2.7 Resources required, potential funding and update period

This section of the table highlights the need for project owners, potential avenues of funding (4.1.2) and the timeframes in which the project should be reviewed and updated. For example, a project may be recommended to be updated every 5 years to ensure they reflect strategic and policy directions and can learn from the experiences of those delivering similar projects.

3 Proposed Climate Change Adaptation Projects for Cinderford

3.1 Summary of projects

The following section provides further information on the climate change adaptation projects which have been prioritised and identified in Table 1-1 for Cinderford. Click on a project in the list below to be taken to the relevant section.

- Local climate knowledge
- Invasive Non-Native Species (INNS) Monitoring
- Ecosystem services study
- Tap water refill scheme
- Local resilience planning
- Local heat alerts
- Urban tree planting
- Allotments
- Outdoor learning
- Renewable energy or green heating

3.2 Project 1: Local Climate Knowledge

Priority: High

A high priority adaptation project for Cinderford is to provide climate change adaptation training for councillors and develop the community's climate knowledge. This will support addressing all CCRA3 priority risks through enhancing local adaptive capacity to climate change, as the management of the climate risks identified in section 1.6 and their impacts will fall in part to the Cinderford councillors.

This project will also enhance local adaptive capacity as a wider understanding of the consequences of climate change may generate more community support for other adaptation and mitigation measures that the Council proposes, and increased knowledge should allow Councillors to propose more appropriately targeted actions.

Broadening community climate knowledge will help everyone prepare for the reasonably foreseeable changes. Cinderford can expect to see a range of climate impacts under both the medium and high emission scenarios, as outlined in more detail in Cinderford's Climate Risk Summary.

We propose extending the scope of the project to include a specific focus on climate-resilient water management strategies. This addition would involve training councillors and the community in effective water conservation measures, such as metering, enhancing water efficiency, and promoting rainwater harvesting. By integrating this water management guidance into the broader climate change adaptation training, this would empower Cinderford's residents with practical knowledge and strategies to mitigate water shortages resulting from climate variability.

Table 3-1. Local climate knowledge details

Category	Detail
Primary risk addressed	More than 60 risks and opportunities were identified in CCRA3, all of which have a touchpoint with improving local climate knowledge.
Additional benefits	With the upcoming revision of the Local Neighbourhood Development Plan (NDP), equipping the councillors with the knowledge and skills for adapting to climate change will facilitate the development of an adaptation theme throughout the NDP. The councillors can also share their learning with the local community, building overall community resilience and local adaptive capacity. Additional Benefits • Resilient infrastructure and communities • Low carbon behaviours • Benefits local adaptive capacity. Enhancing local climate knowledge will help the local population to understand the potential impacts due to climate change that are projected for the future in their local area and ways of increasing resilience to manage the effects.
Suitable locations	Existing community hubs and communication channels could facilitate the sharing of climate change resources to the local community (such as the Forest Voluntary Action Forum (FVAF) community centre).
Timescale	Immediate - The project could be achieved within less than 6 months once the service contract is in place to provide the training and resources.
Cost	Low - There are likely to be initial costs associated with the procurement and delivery of the services. The services could be procured or provided by a no-cost social enterprise (such as Climate Vision CIC). Once the councillors are equipped with the knowledge and resources, information can be shared through existing communication channels.

Category	Detail
Assumptions, uncertainty and funding	Communications and sharing of climate change knowledge needs to be adapted to the different populations in the town. For example, younger people are known to be more aware of climate change so might be interested in learning about different aspects to those who are less aware and would benefit more from a broad understanding. Councillor time is key for the success of this adaptation project: a substantial amount of Councillor time will need to be set aside to both learn more about climate change and to disseminate climate knowledge throughout the community. Funding could be available for this project through Gloucestershire County Council's Greener Gloucestershire Community Fund. This fund is eligible for Town Councils and applicants can apply for £2000-£5000. The deadline for applications is Monday the 26th of February at 10AM.
Monitoring	A yearly review of climate related resources will ensure that the most up-to-date information is being provided. It will also be useful to review alongside any releases of updated climate datasets from the UK Met Office.

3.2.1 Actions and responsibilities

Table 3-2. List of actions and responsible parties

Action	Responsible party
Procurement of services	Town Council
Councillors undertake climate change adaptation training	Town Council and service provider
Development of climate change resources	Town Council (potentially assisted by the service provider, depending on the contract scope)
Communications of climate change knowledge	Town Council (assisted by FoDDC and other potential stakeholders if collaboratively approached)
Maintenance of resources	Town Council

3.3 Project 2: Invasive Non-Native Species (INNS) Monitoring

Priority: Medium

INNS monitoring is an adaptation project with links to local risks in the natural environment (Ash tree dieback). According to Berry & Brown (2022)[5] the combined risk elements for INNS (climate and non-climate) suggest that the magnitude of this risk is increasing across the UK. There is a need locally to improve preparedness, surveillance of INNS and to address risks, especially for forestry.

The council should lead the formation of a local action group, aligning with other groups in the Non-Native Species Secretariat (NNSS). This project should work alongside the needs, expertise, and guidance of other relevant stakeholders, such as Gloucestershire Wildlife Trust (GWT), Herefordshire Wildlife Trust (HWT) and the Forest Voluntary Action Forum (FVAF).

The council should coordinate willing volunteers to undertake training for tree-surveys, such as those done by Observatree (under guidance from the Woodland Trust). Following engagement, the council should scope potential actions for this project, if resources are limited, awareness and communication of the risks of INNS could be a good starting point.

Table 3-3. INNS monitoring details.

Category	Detail
Primary risk addressed	N2 - Risks to terrestrial species and habitats from pests, pathogens and invasive non-native species.
Additional benefits	• Clean water • Improved biodiversity and green spaces Local community interest could help to identify other opportunities and adaptation projects. Mitigation performed locally could reduce INNS risks across the Forest of Dean. Local interest might help leverage other opportunities and adaptation projects.
Timescale	Medium - The expected lead in time for volunteering activities could be up to two years. Engagement could be integrated into this timescale.
Cost	Low or No Cost - Funding likely to be available (as listed by the GB Non-Native Species Secretariat (NNSS)). Although would likely incorporate volunteering network arrangement.
Assumptions,	The formation of a local action group might require a large time

5 Berry and Brown, (2021). Natural Environment and Assets. In: The Third UK Climate Change Risk Assessment Technical Report [Betts, R.A., Haward, A.B. and Pearson, K.V. (eds.)]. Prepared for the Climate Change Committee, London

Category	Detail
uncertainty and funding	commitment from willing volunteers, although previous links with GWT as a part of the Love Your Cinderford Brook project might be useful. Other volunteering arrangements, such as through Observatree, might be more accessible, though could require a lead in time (~1 year) and would be respective of the desired surveying arrangement of the Woodland Trust. The none native species secretariat outlines many sources of funding for local action groups (LAGs), this can be found within their LAG toolkit here: https://www.nonnativespecies.org/local-action-groups-lags/toolkit/
Monitoring	Following the engagement process, councillors could monitor the number of volunteers, volunteering activities and frequency of local interventions to determine success. This should be completed on a yearly basis.

3.3.1 Actions and responsibilities

Table 3-4. List of actions and responsible parties.

Action	Responsible party
General awareness of INNS	Town Council
Engagement with GWT to determine ongoing work, potential for volunteering and the potential of a NNSS aligned new Local Action Groups (LAGs).	Town Council, Volunteers, Gloucester Wildlife Trust
Engagement with the FVAF	Town Council, Forest Voluntary Action Forum
Awareness of other volunteering programmes (e.g., Observatree)	Town Council

3.4 Project 3: Ecosystem Services Study

Priority: Medium

A data and research and development based, medium priority adaptation project recommended for Cinderford is an ecosystem services study. This will support the assessment of CCRA3 priority risk N18, evaluating the risks and opportunities from climate change to landscape character.

Following guidance from the Institution of Environmental Sciences will help to ensure that the study provides robust and clear evidence. Findings from the study will help to support the placement of the natural environment at the heart of decision-making and will assist in optimising the benefits from ecosystems[6]:

Example ecosystem services include:

- Provisioning services - e.g. food and fresh water
- Cultural services - e.g. recreation and tourism
- Regulatory services - e.g. flood and climate regulation
- Supporting services - e.g. habitats and soil formation.

In line with the Climate Risk Summary, Cinderford can expect to see an increased chance of warmer, wetter winters and hotter, drier summers, with record breaking hot summers and drought conditions expected to become more common. There are also likely increases in the intensity of short-period rainfall events. These projected changes are likely to modify landscapes, it is therefore crucial to understand the current baseline to enable monitoring of future changes.

Table 3-5. Ecosystem services study - details.

Category	Detail
Primary risk addressed	N18 – Risks and opportunities from climate change to landscape character
Additional benefits	• Green economy • Improving biodiversity and green spaces • Innovation and funding Undertaking an ecosystem services study will benefit the green economy by identifying opportunities, as well as improving biodiversity and green spaces. The survey results will provide useful evidence for developing future policies and ensuring the benefits of the local ecosystems are maximised for building community resilience to climate change.
Suitable	The assessment can be undertaken across the town, in all areas

6 Institution of Environmental Sciences, (2013). Ecosystem services assessment: How to do one in practice

Category	Detail
locations	that host an ecosystem, primarily green spaces and environments. Conducting an assessment will be particularly useful for areas that are marked for development.
Timescale	Short - This project could be completed within a year once the areas for survey have been identified. Regular monitoring will be ongoing.
Cost	Medium - Initial costs will be high as the primary survey is completed, then will be reduced as the areas are monitored regularly.
Assumptions, uncertainty and funding	• The outline cost for this adaptation project has been based on expert judgement and past project experience. • Monitoring will need to be regular and ongoing to ensure changes are understood and plans adapted. This may be reliant on volunteer support. • The Esmée Fairbairn Foundation has previously provided funding for ecosystem services studies. • Undertaking a study might not be relevant for all areas across the town.
Monitoring	The surveyed areas will need to be monitored on a yearly basis. This will allow any negative changes to be caught early and mitigations to be put in place. Also, regular monitoring will develop an extensive evidence base that can be drawn upon for the development of future plans and policies. Monitoring may be reliant on volunteer support.

3.4.1 Actions and responsibilities

Table 3-6. List of actions and responsible parties.

Action	Responsible party
Identify areas where the study will be conducted	Town Council with support from FoDDC, local groups, Gloucester Wildlife Trust, Natural England and Forestry England
Engage with landowners and community groups	Town Council
Apply for funding	Town Council
Conduct assessment	Town Council / bought in service
Regular monitoring	Town Council supported by volunteers

3.5 Project 4: Tap water refill scheme

Priority: Medium

A medium-tier priority for Cinderford is the installation of a tap water refill scheme. This would engage with the Cinderford community to encourage people to carry reusable water bottles, supporting people finding and using refill stations. Promotion and engagement are central to the success of community refill schemes, and the Council would need to identify organisations within the community who would support their efforts and provide refill locations. These organisations can be cafés, restaurants, zero waste shops, other businesses, or any community buildings willing to provide refills to the local community.

The CCRA3 noted that climate change is likely to increase heat-related mortality. Increasing access to freely available drinking water helps to reduce heat stress, while providing additional benefits in terms of reducing waste and therefore carbon emissions, and potentially also leading to increased footfall in town centres and therefore increased economic activity. As such, this adaptation project helps address those increased heat risks to health (CCRA3 Risk H1), while also providing co-benefits for the environment and local economy.

Table 3-7. Tap water refill details

Category	Detail
Primary risk addressed	Contributes to addressing H1 - Risks to health and wellbeing from high temperatures.
Additional benefits	• Clean water • Reduced waste. There are benefits for human health from the provision of freely available public drinking water in urban areas. These benefits will be especially apparent during heatwave events. There are also associated benefits for mitigation, including a reduction in waste and therefore carbon emissions. There are also potential benefits for the local economy as refill schemes can lead to increased footfall in town centres and can encourage interactions with local businesses[7].
Suitable locations	Refill stations can be shops, cafés, businesses, community buildings, public water fountains, libraries and other local businesses and publicly owned buildings.

7 Refill, Refill Stations How to Guide

Category	Detail
	So long as the location has a publicly accessible water point where the public can enter and refill with tap water, either directly or by having the bottle refilled by a member of staff, then that location can be registered as a publicly accessible water point. A refill scheme can be started in any area where one does not already exist. Refill schemes engage with the local community and sign post them to the Refill app to help them locate refill stations so that they can work to access freely available drinking water. There are refill schemes across the UK and the world, operating at a range of scales.
Timescale	Medium - However, an ambitious approach could see this action completed quicker than this. The time taken to get a scheme up and running will depend upon both the local need for the scheme, local buy-in (businesses, residents and visitors) and the number of suitable locations.
Cost	Low to No Cost - A refill scheme could be free to set up so long as there are sufficient refill stations within the surrounding area. Installations of public water fountains could be relatively costly (<£5,000) and would likely require consultation with FoDDC at a minimum.
Assumptions, uncertainty and funding	The scope and cost of this adaptation project is dependent on local need, local buy-in and the ability to find and identify suitable locations. Funding pots for this project may be tied to other initiatives such as local regeneration and town planning. It is important the preventative action is taken to try to ensure that urban heat risk is minimised in the future. This could be achieved through changes to planning requirements for any new developments.
Monitoring	Monitoring of the tap water refill scheme is relatively straightforward. Adding local refill stations to the Refill app can assist the monitoring of this project. Feedback from the local businesses that host a refill station can also provide data on the number of people engaged with the scheme.

3.5.1 Actions and responsibilities

Table 3-8 List of actions and responsible parties

Action	Responsible party
Identify suitable local businesses and locations	CTC
Engaging with the community and signing up suitable locations to act as refill stations	CTC, local businesses and volunteers
Funding application	CTC
Delivery	CTC (assisted by willing local businesses and residents)
Maintenance	CTC, local business owners & volunteers

3.6 Project 5: Local Resilience Planning

Priority: High

We recommend developing a Community Resilience Plan to consider climate change. Whilst Local Resilience Forums (LRFs) will hold a key role for district-wide emergency responses, and Local Authorities are responsible for risk management, local communities are encouraged to produce resilience plans by county and district councils and emergency services.

By developing a Community Resilience Plan which considers climate change and adaptation to climate change, Cinderford can help to ensure that they have prepared for the identified local climate change impacts, as per Cinderford's Climate Risk Summary.

The Coleford Town Council Community Resilience Plan can serve as a useful starting point and template[8].

Table 3-9. Local resilience planning details.

Category	Detail
Primary risk addressed	This project contributes someway to addressing the more than 60 risks and opportunities which were identified in CCRA3. All of the identified risks have a touchpoint with local community resilience.
Additional benefits	• Resilient infrastructure and communities Resilience plans are also a key aspect of building the local competences that are associated with adaptive capacity. For example, providing clear identification and powers in relation to specific risks (these may not all be council owned e.g., surface water flooding) or assigning roles and responsibilities for certain risks will help facilitate organisational capabilities, a key pillar of local adaptive capacity.
Timescale	Short - Medium - The timescale for this is dependent on local resources and councillor time. This project could be undertaken within a year. Co-development with other local councils could reduce the development time further.
Cost	Low to No Cost - Based on our consultancy experience, and from other plans, the town council should expect the cost of developing or appending to a pre-existing plan to be low. The main cost is likely to be Councillor time.
Assumptions, uncertainty	• The largest barrier to the production of the plan will be councillor time and sharing responsibilities.

8 Coleford Town Council, (2021). Community Resilience Plan

Category	Detail
and funding	• We would anticipate that the above actions could use pre-existing town council resources. • The Forest of Dean Adaptation toolkit could help facilitate the development and appending of current and future resilience plans.
Monitoring	Monitoring for future climate related resilience planning should be carried out on a long-term basis. This could align with the updated national climate change risk assessment (CCRA), which will have more of a local focus, and will be updated on a 5 yearly basis with the next (4th) cycle (CCRA4) being issued in 2027.

3.6.1 Actions and responsibilities

Table 3-10. List of actions and responsible parties.

Action	Responsible party
Work with Local Resilience Forums (LRFs) to identify opportunities, integrate regional resilience policy and influence local adaptation action.	Town Council
Integrate relevant national adaptation priorities into local resilience and emergency planning	Town Council
Integrate a climate change adaptation-risk register within resilience plans to list potential risks to council services from future climate change	Town Council

3.7 Project 6: Local heat alerts

Priority: High

As highlighted in the climate risk summary compiled for Cinderford, the town faces a future with increased risks to health and wellbeing from high temperatures. There were more than 4,500 heat-related deaths recorded in England during the summer heatwaves of 2022. There are also records of productivity loss, with some reports from the 2010 heatwaves estimating a productivity loss of £770 million.

A new system for heat health warnings to account for extreme heat has recently been issued by the National Severe Weather Warning Service. This Weather-Health Altering System was developed jointly between the Met Office and the UK Health Security Agency (UKHSA), with the aim of delivering the new dedicated platform available here.

An analysis undertaken for the CCC placed the average benefit to cost ratios for heat alerts and heatwave planning to be at 10.5:1 (benefit: cost). As such, we propose that the town council sets up a system to direct these alerts towards local health services and professionals or provides the information to the relevant first responders so that they can sign up for the alerts directly. This early warning system should support first responders in coping with the increased service demand of extreme weather events. A plan for the alerts to be communicated to vulnerable groups within the local community, based on (for example) a register of elderly or immunocompromised people, would also increase wider community resilience as sharing the information would allow individuals and their carers to adjust behaviours. As the Weather-Health Alerting System includes both heat-health and cold-heath alerts, this single adaptation project would be beneficial in both summer and winter months.

Table 3-11. Local heat alerts details.

Category	Detail
Primary risk addressed	Aligns with the CCC's high priority areas for adaptation as identified in CCRA3: H1 - Risks to health and wellbeing from high temperatures.
Additional benefits	• Improved health • Increased resilience of local health care systems • Benefits local adaptive capacity. Developing a system to communicate heat alerts to local health care services and professionals will provide the early warnings required to implement contingency plans. This will improve local health outcomes and the local resilience of the community's healthcare systems. This will benefit local adaptive capacity using existing channels.

Category	Detail
Suitable locations	• Provided at a local scale, warnings would be issued through town council communications channels to vulnerable people living independently in the community as well as in care settings. • Engagement with the new local hospital management and care homes throughout the town might be beneficial for uptake. • Local alerts may be of interest to volunteers/the public to understand the potential impact on the local services (in some cases due to heat effects on workforces).
Timescale	Immediate - The town council should communicate the new weather-health alerting system and check integration into local resilience planning.
Cost	Low or no cost - this should be done through pre-existing channels and with pre-existing resources. Time for engagement will be required if the above is integrated into local resilience planning.
Assumptions, uncertainty and funding	Councillor time and ownership is a consideration. The Adverse weather health plan (UKHSA, 2023)[9] has implementation planning for 2024, the plan states that states that local organisations and partnerships should have up to date service delivery plans which cover preparedness, resilience, and response to adverse weather events. These should consider the latest cold, heat and flooding guidance and should be reviewed by October 2024.
Monitoring	Whilst heat alerts should be communicated on a rolling basis, awareness around local heat alerts should be monitored through surveyed uptake or recording the number of interested parties engaged on a yearly basis through communications channels. A range of UKHSA guidance and training resources for staff and the public are freely available. These are outlined in the Adverse Weather Health Plan (2023) under appendices 2, 3 and 4. These include guidance for care home managers/workers, teachers, H&SC professionals, event organisers, the general public, third sector workers and for local authorities.

9 UK Health Security Agency, (2023). Adverse Weather and Health Plan.

3.7.1 Actions and responsibilities

Table 3-12. List of actions and responsible parties.

Action	Responsible party
Advertisement and engagement promoting heat (and cold) alerts (Weather-Health Alerting System)	Town Council (Communications role); Local resilience officer/volunteer.
Assemble a list of vulnerable residents and investigate best methods of contact for extreme heat alerts.	CTC, Local resilience officer/volunteer
Engagement with LRF to ensure Weather-Health Alerting System is integrated where needed	Local Resilience Forum (LRF), Town Council

3.8 Project 7: Urban tree planting

Priority: High

We propose that Cinderford undertake an urban (or peri-urban) tree planting initiative to address heat risks to health (CCRA3 Risk H1) through the provision of shade and the creation of 'cool islands'. CCRA3 noted that climate change is likely to increase heat-related mortality. There are additional benefits of increased urban tree planting, as it presents an opportunity to support biodiversity recovery as well as carbon sequestration.

Cinderford can expect an average summer temperature rise of 1.7°C by 2050 under a medium emissions scenario, with an average summer temperature rise of up to 2.6°C by 2050 under a high emissions scenario. The frequency of extreme heatwave events is projected to rise to 1.4 events a year by 2050 under a medium emissions scenario, rising up to 2.3 events a year for the same period under a high emissions scenario. Further details on the impacts of climate change can be found in Cinderford's Climate Risk Summary. These impacts emphasise the need for the local area to be ready for average and extreme events as soon as 2050.

In instances where urban tree planting is not possible, urban shading can be provided through other means such as shade canopies, shelters and sails.

In some instances, it may be appropriate to remove existing hard landscaping to facilitate tree planting. This should be conducted in collaboration with FoDDC and GCC, as appropriate. Pre-existing tree planting locations should be adequately protected, and retained when future-proofing developments so that new trees may be planted.

For peri-urban tree planting, there may be opportunity to engage with the ongoing Severn Treescapes project, led by several partnered wildlife trusts (including GWT). It supports land managers, farmers and communities to access funding to plant, grow and manage woodlands and trees across these landscapes.

Table 3-13. Urban tree planting details.

Category	Detail
Primary risk addressed	H1 - Risks to health and wellbeing from high temperatures.
Additional benefits	• Improved biodiversity and green spaces • Flood regulation • Improved air quality. Urban greenspace, such as woodland, parks and gardens, can create a 'cool island' effect to counteract urban heat islands, reducing surrounding local air temperatures by between 1.5 and 3.5°C[10]. There are associated, well-researched benefits to air quality, biodiversity, and mental health.
Suitable locations	• Feasibility studies, aligned with the latest research from Forest Research[11], performed by a qualified arboriculture consultant would be required to assess the best locations for urban tree planting, taking account of local design codes. • Revisiting Neighbourhood Development Plan (NDP) policies to promote urban tree planting in suitable locations. • Planting could be facilitated in other locations in Cinderford using tree planters, for example on suitably wide pavements. This would require permission and approval from the appropriate bodies such as FoDDC and Gloucestershire County Council.
Timescale	Short to medium - It is worth noting that there is also a time lag between planting and realising the benefits of tree planting as trees take time to grow and mature, and this in turn is dependent on appropriate maintenance. The Urban Tree Challenge Fund is open for applications. If CTC want to plant trees in 2024 to 2025, an application needs to be submitted no later than 11:59pm on 30 June 2024.
Cost	Medium - Tree planting schemes can be very expensive. There are a range of costs including the trees, labour for planting, subsequent maintenance, assessment of suitable locations by a suitably qualified individual and the potentially significant cost of

10 Public Health England (2020), Improving access to greenspace a new review for 2020.
Improving access to greenspace a new review for 2020
11 Forest Research (2021), Trees, greenspace and urban cooling.
Trees, greenspace and urban cooling

Category	Detail
	purchasing land if there is not already available land.
Assumptions, uncertainty and funding	• The scope of this adaptation project and cost of the adaptation is limited to available land, action ownership and cost. • Tree planting is not a panacea solution, planting regimes themselves will be affected by climate change. If done incorrectly, planting can cause biosecurity issues. • Planting will help aid urban heat risk but is not a substitute for public health activities, such as those that encourage behavioural change for high-risk groups and give information to caregivers of vulnerable individuals. • It is important the preventative action is taken to try to ensure that urban heat risk is minimised in the future. This could be achieved through changes to planning requirements for any new developments. • The government Urban Tree Challenge Fund (https://www.gov.uk/guidance/urban-tree-challenge-fund) or another tree planting grant scheme (of which there are others e.g., Urban Tree planting http://www.treesforcities.org/). • Funding could also be drawn from sources such as developer contributions (section 106) as tree planting could be undertaken to support clean air objectives (reducing local pollution).
Monitoring	The town council could monitor the success of urban tree planting by keeping a record of planting and installations. Establishing a tree monitoring programme following planting would help determine tree establishment and potential issues which can then be managed. There may be monitoring opportunities through encouraging public reporting, or through engaging with local groups.

3.8.1 Actions and responsibilities

Table 3-14. List of actions and responsible parties.

Action	Responsible party
Identify verges and/or strips of acquirable land	CTC
Engage with GWT contact to discuss opportunities around tree planter rainwater harvesting/SUDS	CTC, GWT (Gloucestershire Wildlife Trust)
Urban Tree Planting Feasibility Study	CTC (stakeholder consideration likely required from FoDDC, Highways England and Forestry England).
Funding application	CTC
Delivery	CTC (assisted by FoDDC and other potential stakeholders if collaboratively approached)
Tree Maintenance	CTC & local volunteers

3.9 Project 8: Allotments

Priority: Medium

We recommend the provision and expansion of local Allotments and community gardens in Cinderford. Doing so will help to address risks to food availability (as identified as a priority area for adaptation in CCRA3 - ID1 – Risks to food availability, safety and quality from climate change overseas).

During engagement, local councillors noted the keenness for future allotment arrangements in the area. Through town council ownership, and in partnership with the local community this project could be facilitated through an allotment association. Undertaking this project would also align with Cinderford's Biodiversity policy (2023), aiding council operations in the adoption of low impact / nature positive practices.

CTC should foster the design of climate resilient allotments, as well as building resilience into existing allotments. Growing practices that improve soil moisture capacity and water use will provide effective adaptation against climate change[12]. Allotment establishment should also consider ecological design principles, such as crop rotation and composting, avoiding the use of pesticides and chemicals.

12 Ayling et al., 2021 - Allotments in the Future: Building Resilience to Climate Change through Improved Site Design and Efficient Water Practices

Table 3-15. Allotments details.

Category	Detail
Primary risk addressed	ID1 - Risks to food availability, safety and quality from climate change.
Additional benefits	• Improved health • Resilient infrastructure and communities • Low carbon behaviours • Reduced waste The project would have additional benefits for health, building community links and promoting local resilience. Allotments may also benefit the immediate environment, including support for pollinators and could provide some carbon sequestration benefit. As CCRA3 (Challinor & Benton, 2022) states, populations at highest risk of lack of economic access to food are also those most those most at risk of obesity and malnutrition. Therefore, addressing food access inequality and access to fresh produce, will likely have the co-benefit of reducing vulnerability to the risk of decreasing nutritional quality of food produced due to climate change.
Suitable locations	• Well-drained land with good soil is required. The land would need to be large enough for several allotments. • Potential expansion adjacent to town-council owned community orchard (overgrown area - potential site allocated for renewal).
Timescale	Short - Medium: A new site may need planning authority approval for change of use. Time would also have to be given to negotiate purchase or long lease from the current owner, construct fencing, vehicle access, install water standpipe, divide land, form a ruleset, publicise availability and to organise allotment agreements. There would also likely be a need to keep a waiting list, oversee maintenance and availability to resolve any issues.
Cost	High - Costs will depend on the need for amenities and maintenance. The council could charge an annual rent to cover water supply, maintenance, and repairs. To account for main costs (such as land).

Category	Detail

Assumptions, uncertainty and funding	• Assume town council could interact with neighbouring councils to gain advice/useful contacts.
	• Town Council could also engage with National Allotment Society for guidance.
	• The Government-led Community Ownership Fund could be suitable for this site, as it seeks to support voluntary and community groups to take ownership of assets and amenities at risk of being lost and run them for the benefit of the local community.
	• Town Councils have certain powers/opportunities around Allotment. For example: Duties to provide allotments, Power to improve and adapt land for allotments, and to let grazing rights
	  ○ Local Government Act 1972 s.124(1) (acquire land)
	  ○ Small Holdings and Allotments Act 1908 s.26 (make improvements)
	• Assumed local demand.
	• Funding from grant award: Awards For All or another lottery fund - e.g., www.nsalg.org.uk/allotment-info/funding-advice/

Monitoring	To maintain the orderly running of this project, it is likely that waiting lists, plot information and maintenance would have to be handled frequently. The formation of an allotment association should allow for more responsive monitoring, especially for maintenance and maintaining a link to the council. Although to monitor success, plot usage should be observed on a yearly basis.

3.9.1 Actions and responsibilities

Table 3-16. List of actions and responsible parties.

Action	Responsible party
Acquire land.	CTC
Site clearance, fencing, access, mapping and water supply works.	Contractors (or skilled volunteers)
Formation of an allotment association.	CTC
Establish waiting list, organise maintenance and repairs.	CTC

3.10 Project 9: Renewable energy or green heating project

Priority: High

During the formation of the adaptation plans, it was recognised that future actions could also benefit local decarbonisation efforts. Adaptation and mitigation should go hand in hand[13]. Therefore, we recommend that this project centres around upgrading town council buildings, through renewables, decarbonised heating, or energy efficiency actions. It has been categorised as a low priority action.

Within the district, the Forest of Dean District Council is facilitating a community energy project in the area through the Centre for Sustainable Energy.

The AURORA project, a Forest Energy Community Initiative is funded by the European 'Green Deal' initiative[14]. Collaboration with the initiative will benefit Cinderford, allowing guidance for citizen led, bottom-up energy projects, such as a community solar energy project.

There are further opportunities, from other funding schemes dedicated towards the public sector which could also be accessed by Cinderford, this includes programmes that could deliver energy efficiency and heat decarbonisation projects within their non-domestic buildings.

13 Local Government Association - Accelerating Adaptation
14 AURORA, Forest Energy Community Initiative

Table 3-17. Renewable energy or green heating details.

Category	Detail
Primary risk addressed	H6 - Risks and opportunities from summer and winter household energy demand.
Additional benefits	• Innovation and funding • Resilient infrastructure and communities • Green economy Undertaking a decarbonisation project will help facilitate the transition to net zero locally (and to meet government targets). There are other additional benefits to this project, including building capacity for innovation and funding locally, improving the resilience of community infrastructure and supporting the Gloucestershire green economy.
Suitable locations	• Currently, for Cinderford, there are many Solar PV panels fitted to council properties. However, there is ambition locally for a community energy project. • Heat decarbonisation projects have not been explored in the area, but there are potential non-domestic buildings, such as recently taken on community buildings (acquired with UK Shared Prosperity Funds).
Timescale	Medium to Long - Depending on the scale of the project, it could take one year to five years to undertake the above actions to completion.
Cost	High - The associated costs of energy schemes regardless of funding arrangements are likely to be high - although final capital expenditure will be project scale dependent. Projects could experience challenges around costs, ownership and planning.

Category	Detail
Assumptions, uncertainty and funding	• Engagement with the AURORA Project/Forest Community Energy (FCE) would help to provide a useful template for how a scheme could be undertaken in Cinderford. • Alternatively, funding or net zero and renewable energy projects might be best accessed through the South West Net Zero Hub, which details funding and financing opportunities. This funding usually includes costing for feasibility studies. • Local heat decarbonisation of public buildings could be facilitated through several different funds, a similar example of a local funded scheme (at a Parish Council level) in Gloucestershire was facilitated by the South West Energy Hub, which awarded Oaksey Parish Council a £14,000 Rural Community Energy Fund (CEF) grant to assess feasibility and to install a ground source heat pump. • Any project(s) developed through CEF funding should be designed to be at least 50% community owned. • Cinderford has already carried out extensive renewables works on public buildings, so will have capability to continue mitigation work. • Longer term ambitions around community energy (e.g., onshore wind) could take longer and would be dependent on addressing planning impacts identified by the affected local community and general community support. • FoDDC Rural England Prosperity Funding, covering themes such as the climate crisis, or the Gloucestershire County Council Climate Change Community Fund (in development) might be a feasible avenue for funding this project.
Monitoring	Monitoring and evaluation of this project should be undertaken to check progress against planned milestones, to understand how well various schemes are developing and delivering on their objectives, and to analyse how the scheme has performed against its intended impacts. This includes added capacity (for renewable schemes) or energy efficiency gains (for heat decarbonisation).

3.10.1 Actions and responsibilities

Table 3-18. List of actions and responsible parties.

Action	Responsible party
Continued engagement with the AURORA Project/Forest Community Energy (FCE) scheme to determine community owned possibilities for Cinderford	CTC, Forest of Dean District Council and local interested groups.
Evaluate avenues for heat decarbonisation of council owned buildings.	CTC
Set up a working group with representatives from the local community to assess the practicalities of community ownership.	CTC, Community groups.
Application for funding, such as future rounds of the Public Sector Decarbonisation Scheme (Salix) or the Community Energy Fund (CEF) through the South West Net Zero Hub	CTC

3.11 Project 10: Outdoor Learning

Priority: Low

We recommend that CTC facilitate and support local outdoor learning school activities. Facilitation should take the form of assisting local schools in identifying sources of funding for this activity and acting a link between schools and experts on nature such as Gloucestershire Wildlife Trust (GWT), Forestry England and the FoDDC.

During stakeholder engagement with CTC, the importance of learning in nature was discussed. Additionally, within Cinderford a lack of learning in nature was noted as a gap for younger students. Increasing opportunities for climate education and access to nature is central to the Department for Education's ambition for the United Kingdom as 'The World-Leading Education Sector in Sustainability and Climate Change by 2030'[15].

This project would align with the town's Biodiversity policy, to enhance and promote biodiversity. In addition, the proximity of the Town council to the forest is an opportunity for learning around sustainable forest management through hands-on activities.

15 Department for Education, (2023). Sustainability and Climate Change: A Strategy for the Education and Children's Services Systems.

Table 3-19. Outdoor learning details.

Category	Detail
Primary risk addressed	This project contributes to addressing the 18 risks relating to the natural environment identified in CCRA3.
Additional benefits	• Resilient infrastructure and communities Outdoor learning facilitates opportunities to participate and learn about climate change, resilience and biodiversity. This enables children and young people to translate knowledge into positive action to improve their local communities.
Timescale	Long - Due to closed application periods, it is anticipated that this action could take a significant amount of time. Until application periods reopen this project is effectively on hold.
Cost	Low to No Costs - Councillor time is the major consideration in terms of cost.
Assumptions, uncertainty and funding	• We propose that following facilitation and setup, ownership of this project is transferred to schools. • The 'Outdoors Essentials Grant' offered by Ernest Cook Trust could help enable Primary, Special and Secondary Schools to enable them to get their pupils learning outdoors (e.g., pay travel costs). • Priority is given to schools with underserved pupils in areas of high deprivation. This is a consideration for schools in Cinderford (GL is a feasible postcode). • An award of £500 is offered to Primary and Special Schools and a double award of 2 x £500 (£1,000) to Secondary Schools. • It is anticipated that the OWL Collaboration programme, and the Outdoor Essentials grant will continue. Applications are currently closed. However, the council should stay aware of social media channels and this webpage for new of further rounds in 2024.
Monitoring	A yearly review of available information and funding avenues should be undertaken to update local schools on available opportunities. This would ensure that the most up-to-date information is being provided. Schools could monitor the uptake of outdoor learning curriculum activities, over a longer period, to report successes or areas for improvement.

3.11.1 Actions and responsibilities

Table 3-20. List of actions and responsible parties.

Action	Responsible party
Facilitate engagement with Forestry England to learn about facilities in the Forest of Dean	CTC
Engage with Gloucester County Council for support to seek future opportunities for local schools	CTC
Engage with the Outdoor Weeks of Learning (OWLs) collaboration to seek future opportunities for local schools	CTC
Engage with local schools to gauge interest in potential outdoor learning activities	CTC

4 Adaptive Capacity: Cinderford

4.1.1 Adaptive capacity

Cinderford's adaptive capacity includes the current capacity of the Town Council, the community and any others who may be expected to support the implementation of adaptation projects. It considers human, technical, financial, informational resources, and other capabilities.

The adaptive capacity characteristics in the table below have been informed by the ISO14091/2021 standard, Adaptation to climate change - Guidelines on vulnerability, impacts and assessment.

Table 4-1 below provides a high-level indication of the current adaptive capacity of Cinderford, informed by stakeholder engagement with CTC. The projects detailed in section 3 have considered the capacity characteristics and should lead to improvements in local adaptive capacity in the future.

The adaptive capacity characteristics should also be considered when monitoring the projects detailed within this plan and used as a framework to inform the development of new projects in the future.

Table 4-1: Adaptive capacity characteristics and current adaptive capacity

Adaptive Capacity Characteristics	Current Adaptive Capacity
Leadership and commitment for climate change adaptation	There is not a lead for climate change or climate change adaptation locally. Though there is an understanding of resilience (and emergency response) which could be drawn upon.
Ability to identify risks	There is an emergency plan, which is dated but as an overall framework remains useful. The town council is in the process of revisiting the plan, which could potentially identify climate risks for the area.
Capability to act	The local community responds well to shocks, this was evidenced by response locally to COVID. Although other organisational work slowed during this period. There are involved groups such as the Forest Growers Association and the Forest Voluntary Action Forum.

Adaptive Capacity Characteristics	Current Adaptive Capacity
Influence on decision making	Though there is a motivation to do more locally and the emergence of successful projects, e.g., rainwater harvesting, climate change adaptation is not yet influencing decision making.
Accessible expertise	Some expertise through regional group engagement can be accessed. Local training was mentioned as being applicable.
Engagement with local groups	There is engagement with local groups and interested parties.
Collaboration with other councils and interested parties	There is some regional connectivity although conversations have been dulled by COVID related issues. There has been recent engagement with the AURORA Project/Forest Community Energy (FCE) with several community groups, Cllrs. and interested parties.
Learning and recording - improving decisions over time	There were no noted monitoring or project learning platforms for recording decision-making.
Financial resources	There is small emergency fund. However, this has not been considered as a response to climate change. The fund has received a small initial investment, but there is a motivation to add to the fund annually.

4.1.2 Funding

The Society of Local Council Clerks have compiled a list of potential funding sources available for climate and environmental action and adaptation. These vary from Section 106 and 137 agreements and the Community Infrastructure Levy, to grants and the National Lottery Fund. The grants have been categorised, and some relevant examples are detailed below in the table below.

Table 4-2. List of funding sources and typologies.

Categorisation of funding type	Funding source
Broader climate change	Climateworks Foundation, Lush Charity Pot Funding
Energy use, storage, and creation	Thrive Renewables Collective Capital for Community Energy Groups VCSE (voluntary, community and social enterprise organisations) Energy Efficiency Scheme
Energy advice	Energy Saving Trust Energy Redress Scheme, E.O.N Next Fund
Environmental justice, campaigning and grassroots action	Friends of the Earth Climate Action Fund
Nature and land use	Ernest Cook Trust, Postcode Local Trust
Biodiversity Net Gain	BNG credits

This is not an exhaustive list. For more information, please see this document. The Council could also seek advice from Forest Climate Network who work locally to bring together expert advice on local change, community-based regeneration and climate action.

5 Relevant plans, policies, and guidelines

This section outlines the local, district and county level plans, polices and strategies that have been identified as relevant and pertinent to the projects included within this plan.

5.1 Forest of Dean District Council Core Strategy (2012) - Cinderford Settlement Policies (7.11-19)

5.1.1 Relevant passages:

Ensure new development uses resources efficiently, providing the impetus for change and leading by example under the guiding principles set out in the Core Strategy. Where possible it will retain and enhance buildings, groups of buildings or other features that are of historical importance especially where these contribute to the character of the town.

To enable the rejuvenation of the town centre by the implementation of the business plan, and by using public and private investment to make the centre more attractive for all users, using environmental improvements (including public art), whilst taking advantage of new retail and other proposals.

To provide significantly improved community facilities, to serve both the local population and also a wider catchment area.

5.2 Cinderford Town Council - Biodiversity Policy (2023)

Policy entails actions and monitoring considering:

- Planning applications
- Land and property management
- Local Community
- Partners

The object of this policy is to work towards conserving and enhancing the biodiversity of the Council's area. The Full Council and any committees of the Council will consider sustainability, environmental impact and biodiversity when making decisions and will develop and implement policies and strategies as required. In particular, the Council will aim to improve the biodiversity of the area in the following ways:

- Consider the potential impact on biodiversity represented by planning applications.
- Manage its land and property using environmentally friendly practices that will promote biodiversity. **(Aligns with Urban tree planting project)**
- Support local businesses and council operations in the adoption of low impact / nature positive practices. **(Aligns with Tap water refill scheme)**

- Encourage and support other organisations within Cinderford Town to manage their areas of responsibility with biodiversity in mind.
- Support residents and local organisation activities to enhance and promote biodiversity. **(Alignment with Allotments)**

5.3 Cinderford Brook Catchment (Drybrook, Cinderford, Ruspidge & Soudley) Rapid Response Plan - September 2020

This plan focuses on flash flooding within the Cinderford Brook Catchment are (affecting the communities of Drybrook, Cinderford, Ruspidge & Soudley) and the specific response arrangements to such a flooding incident.

Individual sections entail:

- Flood warning and forecasting
- Emergency response; Standby, plan activation, command and control, supporting emergency plans, places of safety and rest, road closures, emergency services rendezvous points, health and safety response.
- Community Engagement and awareness
- Post-flooding, training etc.

5.4 Gloucestershire County Council documents

Gloucestershire County Council (GCC) are the Lead Local Flood Authority for the county. The responsibilities for local flood risk management are detailed in Figure 5-1.

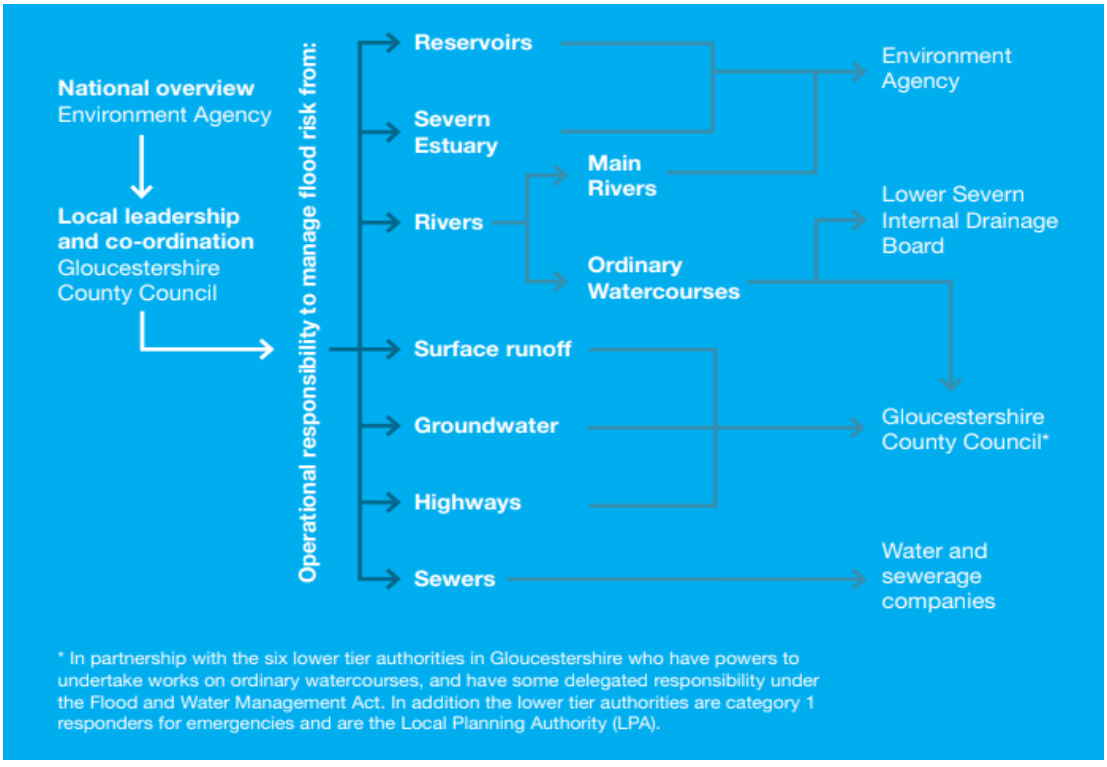

Figure 5-1: Responsibilities for flood risk management[16]

5.4.1 Local Flood Risk Management Strategy[16]

GCC has a leadership and coordinating role in flood risk management across the County, in their role as LLFA. The strategy was adopted in 2014, and has a 10-year period.

The six key strategic objectives for the Local Strategy are:

- improve our understanding of local flood risk;
- put in place plans to manage these risks;
- avoid inappropriate development and ensure new development does not increase flooding elsewhere;
- increase public awareness of flooding and encourage local communities to take action;
- ensure close partnership working and co-ordination with other risk management authorities in Gloucestershire, and;
- support response to, and recovery from, flooding incidents.

Within the 2022-23 and 2023-24 implementation plan[17], it is detailed that more than 100 properties in Cinderford are at a high risk of surface water flooding (1 in 30 year). The calculated risk remains high, and a scheme has been completed. The proposed method of alleviation was an overflow weir at Steam Mills which was completed in 2014[18].

5.4.2 Strategic Flood Risk Assessment[19]

The SFRA has been prepared to support the application of the Sequential Test (by the Councils) outlined in Planning Policy Statement 25: Development and Flood Risk (PPS25), and to provide information and advice in relation to land allocations and development control. Where it is found that some sites can only be placed in 'medium' or 'high' risk areas, a Level 2 SFRA is required which carries out the 'Exception Test' as set out in PPS 25. The 'Exception Test' is only appropriate for use when there are large areas in flood zones 2 and 3, where the sequential test alone cannot deliver acceptable sites and where some continuing development is necessary for wider sustainable development reasons.

5.4.3 Sustainable Drainage: A Design and Adoption Guide[20]

16 Key documents | Gloucestershire County Council
17 Glos comms strategy (gloucestershire.gov.uk)
18 16-17-pdf-12-mb.pdf (gloucestershire.gov.uk)
19 Strategic Flood Risk Assessment
20 Sustainable Drainage - A Design and Adoption Guide (gloucester.gov.uk)

This Design and Adoption Guide sets out the requirements and design process for SUDS using examples that show how SUDS features can enhance the landscape. The guidance considers the Design and Adoption of SUDS as follows:

- The Principles of Sustainable Drainage describes the main ideas and concepts that must be understood to deliver high quality SUDS.
- The Design of SUDS explains how natural drainage informs SUDS design and provides a Design Process that integrates SUDS concepts and SUDS Design Standards into the development sequence set out in The SUDS Manual.
- SUDS Components are the features used to control runoff as it flows through development towards an outfall and are described in detail to clarify requirements for attractive and easily maintained SUDS.

Landscape Design complements the appearance and management aspects of SUDS and must be integrated at every planning stage highlighting the multidisciplinary character of SUDS design.

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