Climate Adaptation Plan
Newent

Final Submission

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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
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
NTC	Newent Town Council
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 Newent. 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 Newent are outlined in Table 1-1 below.

Table 1-1. Adaptation projects for Newent.

Adaptation project	Risk addressed - A.1	Timescale of projects - A.2	Prioritisation - A.3	Estimated cost and additional benefits - A.4		Barriers for implementation - A.5	Resources required and potential funding - A.6
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 NTC (social media channels) Existing activity
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)
NDP amendment / appendment	All risks	Less than 6 months	High	Low cost or no cost	Flood regulation Green economy Resilient infrastructure and communities Improved health Improve air quality Innovation and funding Low carbon behaviours Improved biodiversity and green spaces Clean water Reduce waste	Councillor Time Potentially bought in-service consideration	Councillor time
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	Urban Tree Challenge Fund Feasibility and Land acquisition Stakeholder engagement
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
Natural Flood Management (NFM)	H3 – Risks to people, communities and buildings from flooding	Less than 2 years	Medium	Medium cost (potentially very high depending on scale)	Flood regulation Green economy Resilient infrastructure and communities Innovation and funding Improved biodiversity and green spaces Clean water	Cost Lead time Scale Land acquirement Ownership Expertise	Esmée Fairbairn Foundation - Space for nature NfM - CABA funding guide Environment Agency: Local Levy Defra: Countryside Stewardship, Community Infrastructure Levy

Adaptation project	Risk addressed - A.1	Timescale of projects - A.2	Prioritisation - A.3	Estimated cost and additional benefits - A.4		Barriers for implementation - A.5	Resources required and potential funding - A.6
Invasive Non-Native Species (INNS) 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, could be undertaken by volunteers
Facilitating community retrofit and providing advice on retrofit.	H1 - Risks to health and wellbeing from high temperatures	Less than a year	Medium	Low or no cost	Green Economy Resilient Infrastructure and Communities Low carbon behaviours Improves local adaptive capacity	Ownership / management / technical difficulty	Councillor time and some funding required, potential to tap into existing Government funding (Energy Company Obligation 4 & Homes Upgrade Grant 2). Climate Action Fund – National Lottery Fund
Ecosystem services study	N18 – Risks and opportunities from climate change to landscape character	Less than a year	Medium	Medium	Resilient infrastructure and communities Improved health Low carbon behaviours Reduce waste	Relevance Councillor experience and ability Cost	Esmée Fairburn Foundation (example project funded in 2023: for Adur and Worthing District Councils)
Solar and/or green-heating scheme.	H6 - Risks and opportunities from summer and winter household energy demand	Less than 2 years	Low	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
Wi-fi enabled warm spaces	B6 - Risks to business from disruption to supply chains and distribution networks H3 – Risks to people, communities and buildings from flooding	Less than a year	Low	Medium	Green economy Resilient infrastructure and communities	Councillor experience and ability Identifying and securing a suitable space Cost	Existing - in terms of Councillor time and potentially suitable spaces FoDDC Rural England Prosperity Fund – Community Warm Space Grant

The table above outlines the identified priority adaptation projects for Newent Town Council. Further 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 Newent. 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.

To access each section, please click on the 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 Newent 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 Newent Town Council (NTC) 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

Newent is a small town in the Forest of Dean, with a population of 6,277 (ONS, 2021) [2]. Over 25% of the population is over 65, higher than the UK average of 18.6%. The population primarily resides in suburban areas. Its economy centres on healthcare, retail, agriculture, education, and construction. It has a mid-ranking in the Forest of Dean for social equity in comparison to other areas within the district.

Figure 1-2. View of Newent high street.

Newent is in a low-lying area situated south-east of the River Wye. The area's natural topography is relatively flat, and the town is surrounded by productive agricultural land. The town is at the confluence of a few minor watercourses - notably, Peacock Brook and Ell Brook which drain into the Severn catchment. Due to its geography and topography, Newent has historically suffered from flooding. Local street names, such as "Watery Lane", give some indication as to the extent and historical nature of flooding in Newent.

1.5.1 Future Climate Impacts in Newent

JBA has produced a Climate Risk Summary for Newent which should be referred to for an understanding of how climate change is expected to impact Newent. 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 Risk[3], 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.

2 Office for National Statistics, (2021). 2021 Census Data.
3 Climate Change Committee, (2021). Independent Assessment of UK Climate Risk

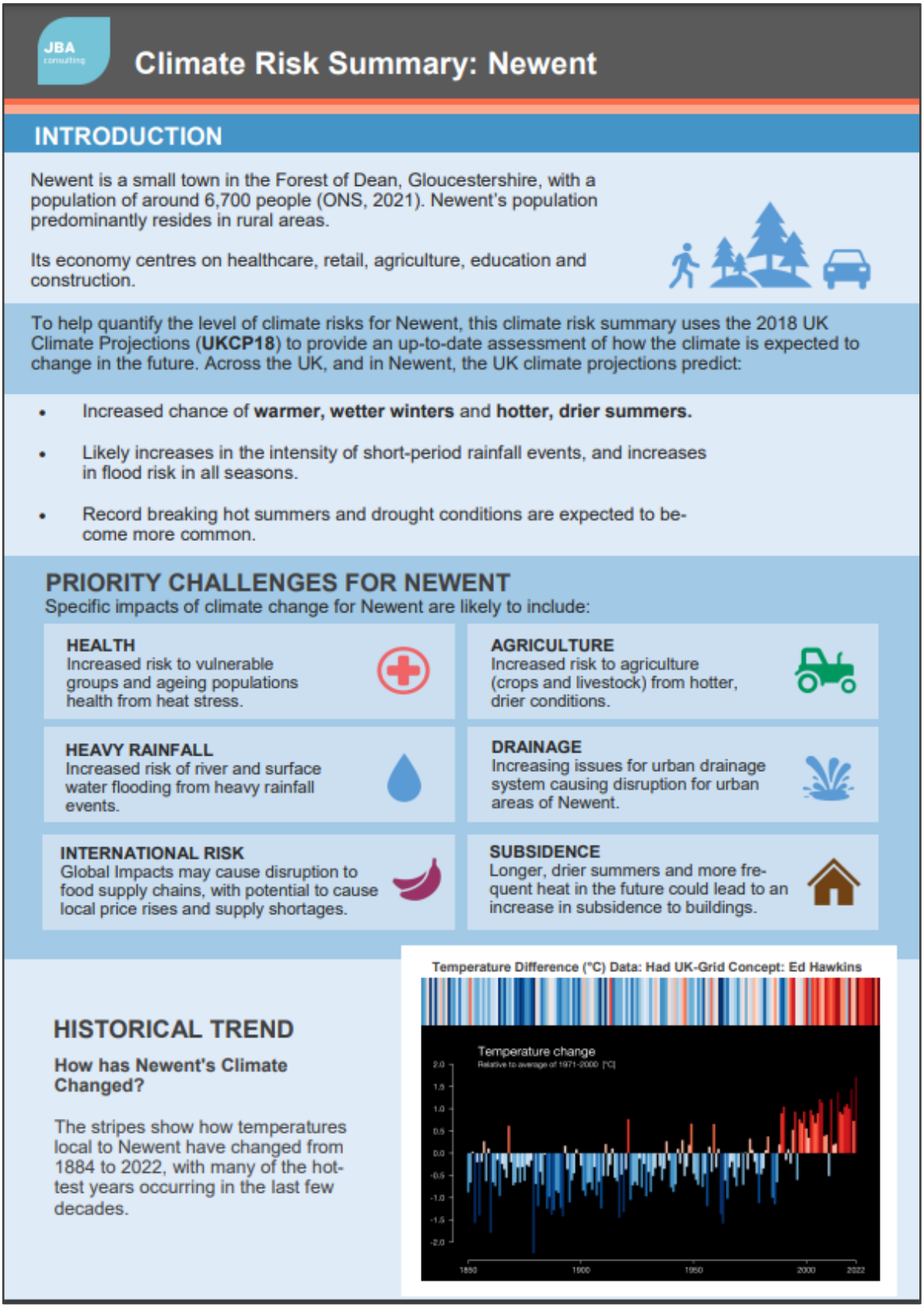


Figure 1-3 - The front page of the Climate Risk Summary produced for Newent.

1.6 The prioritisation process

We 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 Newent Town Council (NTC) 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 Newent:

- 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 Newent.
- 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 qualified against local understanding, including an understanding of historical, current, and potential future climate change risk during a series of semi-structured interview workshops.

NTC identified several key local challenges:

- Over the last ten years the most significant local risk has been flooding.
- Flooding is primarily fluvial (river-based) from Peacock Brook, although surface water flooding (rainfall-based) does occur on the roads surrounding Newent. The B4215 and B4216 were cited as key roads that suffer from surface water flooding.
- Local flood risk is exacerbated by sandy soils causing water to drain into watercourses more quickly. The area is also on top of an aquifer and local springs have been known to pop up in fields local to Newent.

- Vulnerabilities associated with an ageing population.

The council also noted several key priority adaptation themes:

- Reducing flood risk through flood risk interventions and improvements to existing flood risk management assets and drainage.
- Communications to increase community resilience to climate change.
- Improving climate knowledge across localities and for Councillors.

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 (UK 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 drawn out the key challenges and considerations for Newent.

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
No cost	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 Climate Change Adaptation Projects

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 Newent. Click on a project in the list below to be taken to the relevant section.

- Local heat alerts
- Local climate knowledge
- Neighbourhood Development Plan amendments
- Urban tree planting
- Tap water refill scheme
- Natural flood management (NFM)
- INNS (Invasive non-native species) monitoring
- Renewable energy or green heating
- Ecosystem services study
- Repair café / Wi-fi enabled warm spaces
- Advice on retrofit and facilitation of community retrofit

3.2 Project 1: Local heat alerts

Priority: High

As was highlighted in the climate risk summary compiled for Newent, 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. You can now sign up to receive alerts 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 (such as South Western Ambulance Charity community first responders) so that they can sign up for the alerts directly. This early warning system should support first responders and local health services 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 3-1 - Local heat alert 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.
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) [5] 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

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

Category	Detail
	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.

3.2.1 Actions and responsibilities

Table 3-2 - List of actions and responsible parties.

Action	Responsible party
Advertisement and engagement promoting heat (and cold) alerts (Weather-Health Alerting System)	Newent Town Council (NTC) - Communications role; Local resilience officer/volunteer.
Investigate whether the Newent Doctors' Practice has signed up to Heat Alerts.	NTC
Amend existing Community Emergency Plan to take account of Weather-health alerting system	NTC
Assemble a list of vulnerable residents and investigate best methods of contact for extreme heat alerts.	NTC, Local resilience officer/volunteer
Engagement with LRF to ensure Weather-health alerting system is integrated where needed.	Local Resilience Forum (LRF), NTC

3.3 Project 2: Local Climate Knowledge

Priority: High

A high priority adaptation project for Newent 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 Newent 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. Newent can expect to see a range of climate impacts under both the medium and high emission scenarios, as outlined in more detail in Newent'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 Newent's residents with practical knowledge and strategies to mitigate water shortages resulting from climate variability.

Table 3-3 - Local climate knowledge details.

Category	Detail
Primary risk addressed	More than 60 risks and opportunities were identified in UK CCRA3, all of which have a touchpoint with improving local climate knowledge.
Additional benefits	With the development 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 should facilitate the sharing of climate change resources to the local community. Councillors implied there is an appetite for training. Particularly online training, to account for those that may not be able to attend training during working hours of the day.
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.

3.3.1 Actions and responsibilities

Table 3-4. 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

3.4 Project 3: Ensure Neighbourhood Development Plan (NDP) features climate change adaptation

Priority: High

We recommend that this project seeks to incorporate climate change adaptation and adaptation planning into Newent's Neighbourhood Development Plan (NDP). This could be achieved through integrating the potential local climate risks into development decisions. We understand that NTC's NDP is already in-development, that local surveys have been undertaken and that an experienced policy writer has been procured.

However, there are still opportunities for NTC to strengthen the in-draft NDP. For example, NTC should clearly outline the expected climate impact information they will require from applicants during pre-application discussions and ensure that this information is accessible to applicants and the community. These requirements should be clearly stated in the planning pre-application process. Integrating climate impact considerations at an early stage might help avoid cumulative impacts, such as surface water flooding resulting from drainage with insufficient capacity to meet expected future requirements.

Integrating climate risk considerations and adaptation planning into the NDP will prevent future developments (such as housing projects) increasing risks to existing developments or constrain future adaptation projects.

Importantly, this project also helps to ensure that Newent's NDP aligns with National Planning Policy Framework (NPPF) guidance, as demonstrated by the quote below.

Paragraph 153 of the NPPF states that:

'Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating from rising temperatures. Policies should support appropriate measures to ensure the future resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.'

Table 3-5. Neighbourhood development plan amendment details

Category	Detail
Primary risk addressed	More than 60 risks and opportunities were identified in UK CCRA3, all of which have a touchpoint with Newent's NDP to further consider climate change and climate change adaptation.
Additional benefits	An effective and up-to-date NDP is important in ensuring that decisions fully reflect the need to manage the effects of climate change in Newent Additional benefits: • Resilient infrastructure and communities • Low carbon behaviours • Benefits local adaptive capacity. Recognising these issues is central to delivering resilient places, good plans can ensure a variety of additional benefits.
Timescale	This intervention has been labelled as Immediate. NTC are currently drafting their NDP and there is an immediate opportunity to conduct this project.
Cost	The cost has been categorised as low, we anticipate based on past consultancy experience that these works would not exceed the low cost threshold. NTC has already succeeded in procuring an experienced policy writer to support the development of their NDP.
Assumptions, uncertainty and funding	• Funding could be accessed through existing sources or through a government backed neighbourhood planning source. • Through neighbourhood planning (via Locality) all groups (e.g., Parish or Town Councils) undertaking a neighbourhood plan or neighbourhood development order are eligible to apply for up to £10,000. • Technical support can also be provided (on top of grant funding). • DLUHC have extended the full support programme for this scheme into 2023/24.
Monitoring	As a part of monitoring successful climate adaptation integration into the NDP, NTC should monitor the outcomes of adaptation measures to help build the case for further adaptation projects. It should also monitor where the integration of the climate change guidance in the NDP has led to a material change to developments.

3.4.1 Actions and responsibilities

Table 3-6 actions and responsible parties.

Integrate relevant principles and best practice from national guidance such as from the TCPA (2023[6]) into future NDP	Town Council, FoDDC and consultancy
Explore the potential of the use of nature-based solutions in the design of a new design of development[7]	Town Council
Integrate resilience into the plan e.g., stating future flood levels based on the climate change allowances or promoting design of property level flood resilience.	Town Council & FoDDC

6 The Climate Crisis – A Guide for Local Authorities on Planning for Climate Change

7 Environment Agency - Use nature-based solutions to reduce flooding in your area

3.5 Project 4: Urban tree planting

Priority: High

We propose that Newent should 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 reduce local air temperatures.

Newent 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 2.0°C by 2050 under a high emissions scenario. The frequency of extreme heatwave events is projected to rise to 2 events a year by 2050 under a medium emissions scenario, rising up to 3.1 events a year for the same period under a high emissions scenario. Further details on the impacts of climate change can be found in Newent'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. NTC has a quantity of semi-mature trees in its inventory, with potential for planting in suitable locations, as previously explored with FoDDC.

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 3-7 - Urban tree planting details.

Category	Detail
Primary risk addressed	Contributes to addressing 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[8]. 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[9], performed by a qualified arboricultural consultant would be required to assess the best locations for urban tree planting, taking account of local design codes. • Introducing Neighbourhood Development Plan (NDP) policies that promote urban tree planting in suitable locations. • Planting could be facilitated in other locations in Newent 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. • Planting would be more suitable for amenity areas, as several areas are tree saturated. Planting features could facilitate seating arrangements, as councillors noted a lack of seating for older residents.
Timescale	Short to Medium - It is worth noting that there is 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 NTC want to plant trees in 2024 to 2025, an application needs to be submitted no later than 11:59pm on 30 June 2024.

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

Category	Detail
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 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.

3.5.1 Actions and responsibilities

Table 3-8. List of actions and responsible parties.

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

3.6 Project 5: Tap water refill scheme

Priority: Medium

A medium-tier priority for Newent is the installation of a tap water refill scheme. This would engage with the Newent 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 3-9 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[10].
Suitable locations	Refill stations can be shops, cafés, businesses, community buildings, public water fountains, libraries and other local businesses and publicly owned buildings. So long as the location

10 Refill, Refill Stations How to Guide

Category	Detail
	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. Given the number of businesses in the centre of Newent there a range of potentially suitable locations. 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 may 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.

3.6.1 Actions and responsibilities

Table 3-10 List of actions and responsible parties

Action	Responsible party
Identify suitable local businesses and locations. Check which outlets are already in the scheme and expand and advertise availability.	NTC
Engaging with the community and signing up suitable locations to act as refill stations	NTC, local businesses and volunteers
Funding application	NTC
Delivery	NTC (assisted by willing local businesses and residents)
Maintenance	NTC, local business owners & volunteers

3.7 Project 6: Natural flood management (NFM)

Priority: High

Natural flood management (NFM) has been identified as a key adaptation project for Newent, to help address the increased risks to people, communities, and buildings from flooding (UK CCRA3 - H3).

NFM encompasses a range of interventions that seek more sustainable approaches to managing flood water using natural features and processes. These aim to reduce the risk of flooding by slowing the flow of and storing water throughout the catchment and landscape. Some key NFM interventions include ponds, scrapes, woodland planting, hedges, and leaky barriers.

NFM interventions can vary greatly in size and scale. Large-scale NFM interventions can cover entire catchments, cost significant sums of money, require a high degree of cross-agency collaboration, and take years to complete. By comparison, smaller scale interventions can be delivered for a relatively low cost, only need to cover small areas, can be delivered by solitary organisations and can be up and running in a relatively short period of time. For this adaptation plan, all discussions of NFM focuses on small-scale interventions.

There are several excellent resources that can assist in improving understanding both of NFM interventions, and in identifying which approaches may be suitable for a local area[11].

Previous works have been completed to prevent flooding incidents in Newent. For example, the installation of Scraggs Bank Bund, which provides water retention during heavy rainfall to impede the flow of Peacock Brook. However, due to climate change the potential for a 1% annual exceedance rainfall event is likely to increase by 25% by 2050[12], therefore more work will need to be completed locally to adapt to increased flooding in Newent, as identified within local flood risk management strategy (see 5.5.1).

11 Wren, E., et al. (2022). The Natural Flood Management Manual.
Farming and Wildlife Advisory Group, Natural Flood Management Information Sheets
Catchment Based Approach, What is Natural Flood Management?
Yorkshire Dales Rivers Trust, Natural Flood Management

12 Severn Vale Management Catchment peak rainfall allowances - Environment Agency 2022

Table 3-11 - NFM details

Category	Detail
Primary risk addressed	NFM helps to address the priority risk "H3 – Risks to people, communities and buildings from flooding", as identified by the Climate Change Committee (CCC).
Additional benefits	• Flood regulation • Green economy • Resilient infrastructure and communities • Innovation and funding • Improved biodiversity and green spaces • Clean water NFM delivers a range of co-benefits beyond just helping to alleviate and reduce flood risk. Effective NFM interventions can help to improve biodiversity through the creation of habitat, or improvement of existing habitat. NFM can also help to improve water quality and the surrounding resilience of the environment, communities and infrastructure.
Suitable locations	• For NFM interventions to be effective and for them to not be maladaptive (make things worse), their location and choice of intervention needs to be carefully considered before installation. • We recommend that at a minimum, NTC speak to FoDDC and GWT when considering suitable NFM interventions around Newent. Ideally, all interventions should be informed by a design process and consider datasets such as the Working with Natural Processes (WWNP) potential maps. • NTC councillors recommended several areas for exploration.
Timescale	Medium - However, this could be longer or shorter depending on the chosen intervention. For example, installation of a pond could be achieved relatively quickly and can provide benefits immediately after installation. However, woodland planting may take significantly longer to become established and may not provide benefits for some time thereafter.
Cost	Medium - The cost of the intervention will depend on the size and scale of the intervention, smaller interventions such as small scrapes or ponds could be relatively cheap to install. However, larger interventions, such as tree planting or installation of leaky barriers, could be quite expensive.

Category	Detail
Assumptions, uncertainty and funding	• The scope and cost of this adaptation project is dependent on available land, action ownership, cost and ownership of the intervention post-installation. • NFM interventions that are incorrectly or inappropriately installed can have a negative impact on flood risk and serve to make existing problems worse. It is important to ensure that interventions are suitable for their chosen location. • There are a range of public and private funding opportunities available for NFM and funding pots are regularly coming online. The Environment Agency's NFM Programme, which ran from September to November of this year, is one example.
Monitoring	Monitoring of NFM interventions is an important element of any NFM project as this is how the effectiveness of the intervention is measured. One of the main ways in which an NFM intervention can be monitored is whether it is effectively holding and storing water during and following high rainfall. More sophisticated monitoring can be achieved through use of methods such as infiltration tests pre and post intervention, time lapse photography, calculation of storage volume using design and water depth measurements and rainfall simulation and measurement. However, these methods are likely to be overly complex and cumbersome given the likely scale of NFM interventions.

3.7.1 Actions and responsibilities

Table 3-12 - Actions and responsibilities

Action	Responsible party
Seek advice from Farming & Wildlife Advisory Group SouthWest (FWAG SouthWest)	NTC and FoDDC.
Identify suitable local areas for NFM	NTC, GWT and collaboration with FoDDC
Engaging with stakeholders, community and land owners	NTC, GWT, Lower Severn Internal Drainage Board, FoDDC and collaboration with local land-owners and the community
Funding application	NTC, in collaboration with FoDDC/GWT
Delivery	Depending on the scale of the intervention either: NTC, potentially supported by local volunteers. Or, for larger interventions, suitably qualified contractors.
Maintenance	Dependent on the location of the intervention, but in the short term likely to be NTC or FoDDC

3.8 Project 7: Invasive Non-Native Species (INNS) Monitoring

Prioritisation: Medium

INNS monitoring is an adaptation project with links to local risks in the natural environment (Ash tree dieback). According to Berry & Brown (2022)[13] 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.

Councillors noted that Herefordshire and Gloucester Canal Trust have in the past done riparian tree planting in the area, to replace the trees lost from ash tree dieback. However, by training more individuals locally, future issues surrounding planting from INNS and diseases could be addressed without the need for assistance from outside the Council.

13 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

Table 3-13. Invasive Non-Native Species 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 might help leverage other opportunities and adaptation projects. INNS action, mitigation and monitoring would fit alongside local biodiversity policy (2023), as it would enable residents and local organisation activities to enhance and promote biodiversity. 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, uncertainty and funding	• The formation of a local action group might require a large time commitment from willing volunteers, links with GWT should be explored to try to mitigate this. • 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.

3.8.1 Actions and responsibilities

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

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

3.9 Project 8: Renewable energy or green heating project

Prioritisation: Low

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[14]. 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[15]. The initiative is aimed at promoting 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 Newent, this includes programmes that could deliver energy efficiency and heat decarbonisation projects within their non-domestic buildings.

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

Table 3-15 - Details for Renewable energy or green heating project

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 in Newent, there are no Solar PV panels fitted to council properties. However, there is ambition locally for more solar panels, using section 106 money made available by nearby development. • Heat decarbonisation projects have not been explored in the area, but there are potential non-domestic buildings, including an old chapel (workshop) and a newly built small recreation centre.
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 Newent. • 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 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. • Newent has not yet carried out extensive renewables works on public buildings, so will need to develop 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).

3.9.1 Actions and responsibilities

Table 3-16. 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 Newent or to identify other buildings suitable to accept PV panels.	NTC, Forest of Dean District Council and local interested groups.
Evaluate avenues for heat decarbonisation of council owned buildings.	NTC
Identify how S106 funds and community benefits from solar farms can be used.	NTC and Forest of Dean District Council.
Set up a working group with representatives from the local community to assess the practicalities of community ownership.	NTC, 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	NTC

3.10 Project 9: Ecosystem Services Study

Prioritisation: Medium

A data and research and development based, medium priority adaptation project recommended for Newent 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[16]:

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, Newent 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 3-17 - 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

16 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.

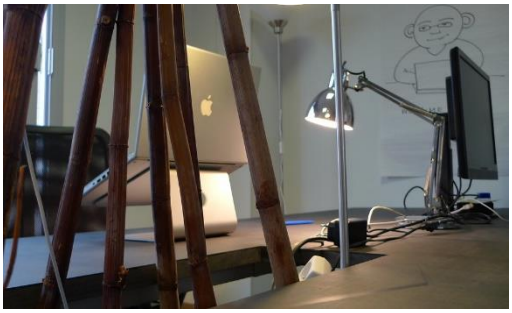
3.10.1 Actions and responsibilities

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

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

3.11 Project 10: Repair café / Wi-fi enabled warm spaces

Prioritisation: Low



An adaptation project identified as a low priority for Newent is to facilitate a Wi-Fi enabled space in a suitable location (most likely a Town Council owned building). Currently there is a Repair café up and running successfully in Newent at Memorial Hall. The repair café is a place where people can take ordinary household items that are no longer working, for them to be repaired, often at little to no cost.

We recommend the introduction of Wi-Fi enabled warm space, as a location that provides heating and free wireless connection to the internet. A Wi-Fi-enabled warm space also enables the possibility of home-working, enabling local business contingency plans to be more effective, and business to operate in a way that facilitates local resilience. This multifunctional space could be integrated into local emergency and resilience planning.

Table 3-19 - Repair café/Wi-fi enabled warm spaces - details

Category	Detail
Primary risks addressed	B6 - Risks to business from disruption to supply chains and distribution networks and, H3 – Risks to people, communities and buildings from flooding.
Additional benefits	• Green economy • Resilient infrastructure and communities. Currently, ‘warm spaces’ are being utilised as a community response to provide support to those struggling to heat their homes. The creation of a warm, Wi-Fi-enabled space would help to create more resilient communities in Newent.
Suitable locations	• Potentially, Newent Memorial Hall could be used as a warm space, it is currently in use for community functions, such as the repair café. • Funding might allow for other town-council owned properties to be realised as a warm space.
Timescale	Short - Timescale will depend on the size and scale of the intervention. However, this could be longer depending on funding availability, ownership arrangements and available spaces.
Cost	Low to Medium - Depending on the scale and need for feasible spaces, this scheme could entail low to medium costs. Engagement with GCC would help to determine potential costs and barriers to implementation.

Category	Detail
Assumptions, uncertainty and funding	• Ascertaining support from Cost of living crisis grant funding for UK charities & community groups and crisis grant funding for individuals & families or the National Lottery Grants is two potential pathways to realise this project. • The Co-op funding scheme would likely have to have some community group responsibility - the funding stream is closed currently, however it is anticipated a similar stream will be available in 2024.
Monitoring	There are practicalities for such schemes, which would factor into monitoring arrangements. For example, heating costs. The Centre for Sustainable Energy offers a heating cost calculator which might be beneficial for generating energy-use savings. Ongoing capacity could be monitored as an indicator during flood, storm events or general cold-weather use.

3.11.1 Actions and responsibilities

Action	Responsible party
Shortlist potential warm spaces	NTC
Engage with FoDDC or GCC around funding arrangements and learning from other schemes	NTC, FoDDC or GCC
Apply for funding streams in 2024	NTC
Develop a concise promotional strategy using social media and local channels.	NTC
Coordinate with stakeholders to prepare and furnish warm spaces.	NTC and community
Implement a simple monitoring system to track space use.	NTC
Develop strategies for long-term sustainability and explore partnerships for ongoing support.	NTC, FoDDC or GCC

3.12 Project 11: Advice on retrofit and facilitation of community retrofit

Prioritisation: Medium

Facilitating community retrofit and providing advice on retrofit has been identified as a medium priority adaptation project for Newent. For this project, we recommend that NTC disseminate information and advice on suitable retrofit measures to the residents of Newent.

Retrofit of homes focuses on improving the thermal efficiency (heat retention) of housing stock through a range of potential measures to properties. Measures include insulation (loft, cavity, internal and external wall insulation), switching to decarbonised heating supplies (air source and ground source heat pumps, for example), and reducing energy usage (smart heating controls, using more energy efficient lighting and appliances), amongst other things. Notably, age of property has been demonstrated by the ONS to be the single biggest factor associated with energy efficiency[17]. Insulation helps control the transfer of heat. Well-insulated homes take longer to heat up from the effects of the sun on its walls and roof in the summer.

To compound this, research has demonstrated that the UK has the oldest housing stock in Europe, if not the world[18]. Retrofit will therefore be an essential adaptation in helping to address heat risks to health (CCRA3 risk H1), whilst also providing co-benefits for decarbonisation (climate change mitigation) and the local economy.

Retrofit can be publicly or privately funded and financed, and there are a range of publicly available pots of funding which are currently available. There could be opportunities for NTC to assist in the dissemination of information regarding these pots of funding.

17 Office for National Statistics, (2022). Age of the property is the biggest single factor in energy efficiency of homes.

18 BRE Trust, (2017). The Housing Stock of the United Kingdom

Table 3-20 - Advice on retrofit and facilitation of community retrofit - details.

Category	Detail
Primary risk addressed	This project contributes to addressing the priority risk H1 - Risks to health and wellbeing from high temperatures.
Additional benefits	• Green economy • Resilient infrastructure and communities Retrofit also delivers mitigation co-benefits, as homes that are insulated require less energy for heating and therefore produce less carbon emissions.
Suitable locations	Currently, there is funding is available for a range of measures through a range of different publicly available funding pots. Funding for properties in the Forest of Dean is administered and managed through the Warm and Well scheme which is managed by Severn Wye Energy Agency on behalf of the seven Local Authorities in South Gloucestershire and Gloucestershire. Given the complexity of the funding requirements and the fact that the eligibility criteria for funding is constantly changing it is advised residents who want to explore the possibility of retrofit for the property they live in should contact Warm and Well.
Timescale	Short to Medium - The engagement element could be achieved within a year, as existing communication networks can be utilised to engage with the community on retrofit, once the suitable areas have been identified. Installing retrofit measures may take longer than a year, due to the funding process and delivery of the measures by suitable contractors.
Cost	Low to No Cost - Whilst retrofit itself can range in cost from <£1000 - >£25,000 per property, depending on the retrofit measures, age of the property and complexity of the installation. Provision of advice on retrofit and helping to facilitate retrofit in the community has been categorised as a "Low or no cost" project, as apart from Councillor time there are no identified costs.

Category	Detail
Assumptions, uncertainty and funding	• This adaptation project assumes that NTC would be able to engage with and support the Warm and Well scheme administered by Severn Wye Energy Agency. • This project assumes that NTC will not be funding or administering retrofit, instead, they will be providing advice on retrofit and directing residents to suitable pots of funding and more information. • Funding for retrofit has varied greatly in the past decade in England. It is possible that funding pots may go offline quickly and that publicly available funding may be withdrawn.
Monitoring	NTC could monitor this project by recording the number of properties they have engaged with and whether engagement has led to the installation of retrofit measures.

3.12.1 Actions and responsibilities

Action	Responsible party
Identify suitable local areas for retrofit	NTC, in collaboration with FoDDC
Engaging with the members of the community and acting as a source of knowledge on retrofit	NTC, in collaboration with FoDDC and local land-owners and the community
Funding application	Warm and Well
Delivery	Suitably qualified contractors.
Maintenance of the retrofit measure	Homeowner

4 Adaptive Capacity: Newent

4.1.1 Adaptive capacity

Newent'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 Newent, informed by stakeholder engagement with NTC. 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	Whilst there was no noted lead for climate change adaptation at this council level, although there is council leadership for environmental matters. Responsibilities under the emergency plan were also mentioned during discussion.
Ability to identify risks	Whilst there is good awareness of the impact of flooding on the local area, other risk identification was secondary in terms of awareness.
Capability to act	During flood events, local businesses coped well. There is a community sense of 'coming together in times of need', though this action was noted as needed organising and nurturing.
Influence on decision making	Currently, despite some decisions overlapping with climate change adaptation considerations, the concept has limited impact on decision-making in the area, instead mitigation has played more of a role.
Accessible expertise	There is an aspiration to draw on more expertise in the area, though could be improved by a more joined up approach with local partnerships e.g., FoD Climate Action Partnership.

Adaptive Capacity Characteristics	Current Adaptive Capacity
Engagement with local groups	NTC noted engagement with several groups around the area of different organisational scales, including Newent Cycle group, Gloucester Highways and Gloucester Canal Trust. NTC try to use links with local groups where possible to raise awareness and gather information.
Collaboration with other councils and interested parties	NTC has engaged (on an individual basis) with other interested parties, including FoD Climate Action Partnership and Forest Climate Network, although more work is needed for communication internally to meaningfully engage with other councils and community groups. The willingness of NTC for a joined-up approach with other town councils was noted.
Learning and recording - improving decisions over time	NTC have completed environmental projects in the past, although these could be recorded for learning through a project portfolio.
Financial resources	NTC noted limited financial resources, except for section 106 funds. Although any usage would have to overlap with reducing pollution/clean air related uses. NTC stated more planting was a consideration.

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

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

Categorisation of funding type	Funding source
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 Newent Town Council - Action on Climate Change – Plan Feb 2023

A document and several objectives created by Newent Town Council's Climate Change Working Group in conjunction with Newent Climate Group at a meeting on 6th December 2021. Planning & Environment Priorities are 1.1: 4.1: 4.3: 5.3: 6.1

- Objective 1 – Reduce the Town Council's carbon footprint to net zero by 2030.
- Objective 2 – 50% of the parish's electricity to be generated from renewable sources within the parish by 2030. **(Aligns with Renewable Energy or Green heating project**)
- Objective 3 – Encourage active travel and sustainable transport
- Objective 4 – Reduce energy demand and waste in the parish
- Objective 5 – Increase carbon capture through tree planting and land management. **(Aligns with Urban tree planting project)**
- Objective 6 – Community Engagement

5.2 5.1 Newent Town Council - Response to the Biodiversity Duty - Oct 2023

Actions and Monitoring considering:

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

Newent has produced a draft model plan, assigning different actions to other locations.

In particular, Newent Town 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 /Natural flood management)**
- support local businesses & council operations in the adoption of low impact practices.
- support residents and local organisation activities to enhance and promote biodiversity. **(Alignment with INNS Monitoring)**

5.3 Newent Town Council - Strategic Plan - Adopted by Council 24.10.22

The Strategic Plan outlines the current and future plans of the Town Council for 2023-2028

Relevant policies:

- Progress development of the Neighbourhood Development Plan - ongoing **(Ties to NDP project)**.
- Implementation of the agreed Climate Emergency Policy & Strategy - on-going **(Links to Local climate knowledge project)**
- Implement recommendations from the 5 year tree survey (years 2-5)
- Enhance wildlife areas at various locations in the town **(Aligns with Urban tree planting**).
- To provide a community facility building at the Recreation Ground

5.4 Tree Charter (2019)

In July 2019, Newent Town Council signed the Tree Charter supported by the Woodland Trust and National Association of Local Councils.

- Sustain landscapes rich in wildlife
- Plant for the future
- Celebrate the power of trees to inspire
- Grow forests of opportunity and innovation
- Protect irreplaceable trees and woods
- Plan greener local landscapes **(Aligns with Urban tree planting)**
- Recover health, hope and wellbeing with the help of trees
- Make trees accessible to all
- Combat the threats to our habitats **(Alignment with INNS Monitoring)**
- Strengthen our landscapes with trees **(Alignment with Ecosystem services)**

5.5 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.

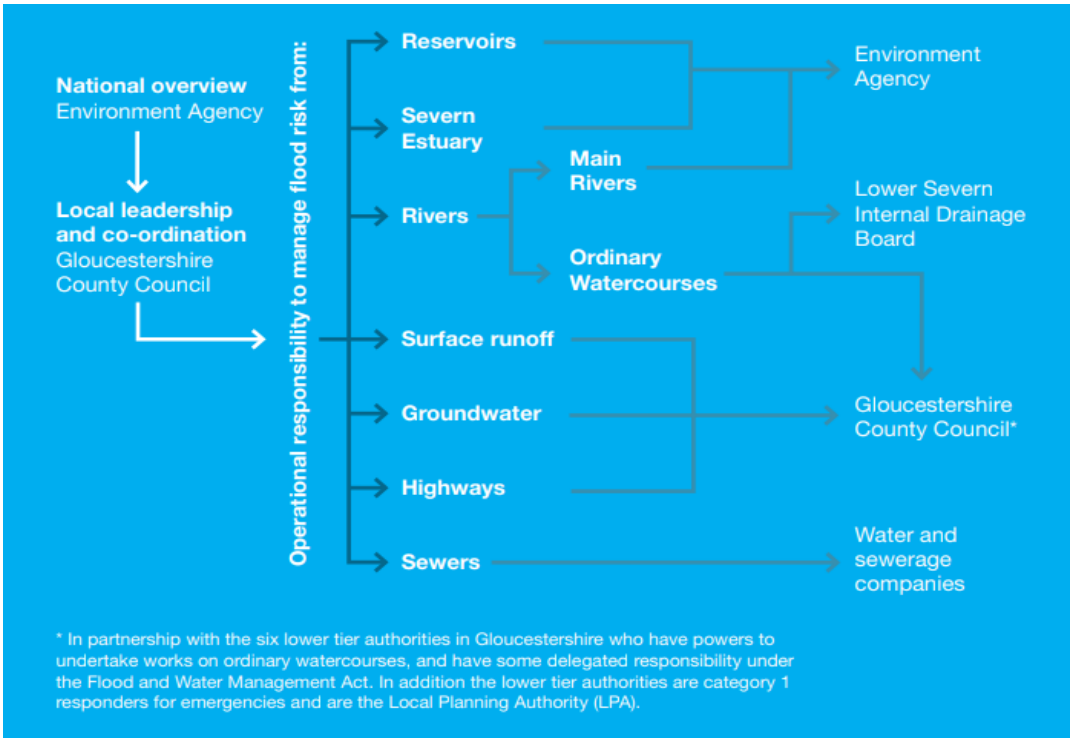


Figure 5-1: Responsibilities for flood risk management in Gloucestershire[19].

5.5.1 Local Flood Risk Management Strategy[19]

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[20], it is detailed that more than 75-100 properties in Newent are at a high risk of surface water flooding (1 in 30 year). The calculated risk is medium to high, and a scheme has been completed. The proposed method of alleviation was drainage at Peacock Brook. This is a drainage study and

19 Key documents | Gloucestershire County Council
20 Glos comms strategy (gloucestershire.gov.uk)

defect resolution, alongside upstream Natural Flood Management interventions. There are 6 properties at risk in Peacock Gardens, and the number at risk in the town centre is to be confirmed. The estimated scheme cost is £20,000 but outline design and costing is not yet complete. The initial study is complete. The culverts surveyed are in fair condition and numerous highway drainage defects have been identified. As a result, Highways are pursuing improvements in 2024/25. The NFM delivery plan has been identified and is progressing to delivery.

5.5.2 Strategic Flood Risk Assessment[21]

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.

5.5.3 Sustainable Drainage: A Design and Adoption Guide[22]

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.

21 Strategic Flood Risk Assessment
22 Sustainable Drainage - A Design and Adoption Guide (gloucester.gov.uk)

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