



Bristol Climate &
Nature Partnership



Centre for
Sustainable
Energy



COMMUNITY
FUND

Community Climate Resilience Guide

For Pill Community Foundation

June 2026



Developing climate resilience guides

The development of this guide has been led by the Centre for Sustainable Energy. It aims to provide community organisations with climate risk information, practical ideas for managing impacts, and resources to engage local people. This helps organisations explore local priorities for change while engaging with their community. This engagement contributes to the development of a community climate and nature action plan, shaped by local context, needs and voices.

Please note that this guide is a prototype and this specific example was developed for Pill Community Foundation (PCF). PCF will use the resources in this guide to engage the community and ensure they have full ownership of the climate and nature action plan that's developed.

The Community Climate and Nature Action Programme partners will continue to test and develop the guide over the course of the project. This version is therefore not a final copy, but the first iteration of a new approach to support community organisations with climate resilience planning and action.

If you're interested in developing a guide for your local area or have any feedback, please get in touch by emailing communities@cse.org.uk.

About this guide

This guide aims to support community organisations with understanding how to prevent and adapt to the impacts of climate change in their area. This can help increase community resilience and wellbeing.

The guide includes practical resources for your organisation's planning and projects, and to help with communicating risk to people in your community. Where we've referenced data, we've included the source for it on that page. There is also a list of further resources and reading at the end. This is for signposting information that you might want more of.

This guide is part of [the Community Climate and Nature Action programme](#). If you have any questions about the guide, please contact the Centre for Sustainable Energy (CSE) by emailing your key contact or communities@cse.org.uk.

Contents



<u>Introduction</u>	3
----------------------------	----------

<u>About your area</u>	8
-------------------------------	----------

<u>Flooding</u>	15
------------------------	-----------

<u>Overheating</u>	30
---------------------------	-----------

<u>Drought and wildfire</u>	42
------------------------------------	-----------

<u>Further resources</u>	49
---------------------------------	-----------

This guide has been developed as a prototype and will be tested and refined with community partners over the next 1.5 years as part of phase three of the Community Climate Action and Nature project in the west of England. This version is therefore not a final copy, but a first prototype of a new approach to supporting community organisations with climate resilience planning and action.



Introduction

The impact and risks of climate change

Impacts of climate change

Changing and extreme weather patterns and are impacting our daily lives through impacts on nature, infrastructure and food.

Nature and biodiversity loss – More extreme weather and habitat loss makes it harder for wildlife to survive. Many animal and plant species are facing extinction. This will impact nature services we rely on, like pollination for food growing, and pollution breakdown for water purification.

Infrastructure – Damage to buildings and transportation from flooding will mean that people will be displaced and face leaving their home. Our global trade system also relies heavily on functioning transport, agriculture and energy systems, all of which will be affected by climate change.

Food supply and prices – Droughts and flooding are reducing farming yields and driving up food costs, meaning many people will struggle to reliably get food.

Sources: [WWF](#), [Sustainability Directory](#), [Rescue](#), [Met Office effects of climate change](#), [Met Office extreme weather](#).



Impacts of climate change

Climate change is also impacting people's physical and mental health, and their economic stability.

Physical health – Extreme heat affects those with health conditions, particularly heart and respiratory disease. Heatwaves are increasing mortality rates and making these conditions harder to manage, putting additional pressure on healthcare. The geographic spread of infectious diseases can change with shifting heat and rainfall patterns.

Mental health – People will experience more stress from the effects of extreme weather (such as heatwaves and flooding). This will particularly affect people in vulnerable circumstances. The threats and impacts of climate change can exacerbate existing mental health issues.

Economy – More extreme weather will make it difficult for industries that are reliant on stable weather (such as tourism, agriculture and construction) to function, impacting livelihoods.

Sources: [NHS](#), [Grantham Institute](#), [Petridou and Belfield 2025](#), [Mind](#), [Gov](#), [LSE](#), [World Bank](#).



Image: Chris Hallagher - Unsplash The Brown Cow, Bingley, UK November 2020

Climate risk and resilience

What makes a community more vulnerable?

Communities in the UK are increasingly vulnerable to climate hazards such as heatwaves and flooding.

Following a climate related hazard, how much a community is harmed is more **determined by community resilience than the scale of the hazard**. Resilience is about the capacity or ability to anticipate and cope with shocks, and to recover from their impacts.

Different social risk factors affect community resilience. These are social characteristics of a community which influence exposure or vulnerability to risk. For example, older people may be more affected by high temperatures, while reduced mobility and lower digital capability may make it harder to access support.

Another example is that Disabled people may have additional needs during evacuation plans for a flood or wildfire that should be accounted for during community plan development.



Examples of social risk factors

Personal

Age, education, employment, gender, ethnicity, English language, homelessness, disability.

Household

Family structure, renters, fuel poverty, socio-economic status, housing condition.

Societal

Infrastructure, access to medical services, crime rate, population density, community cohesion.



What do we know about climate risk?

Three factors determine the significance of a climate risk.

A **hazard** is a process or activity that may cause disruption, injury and damage.

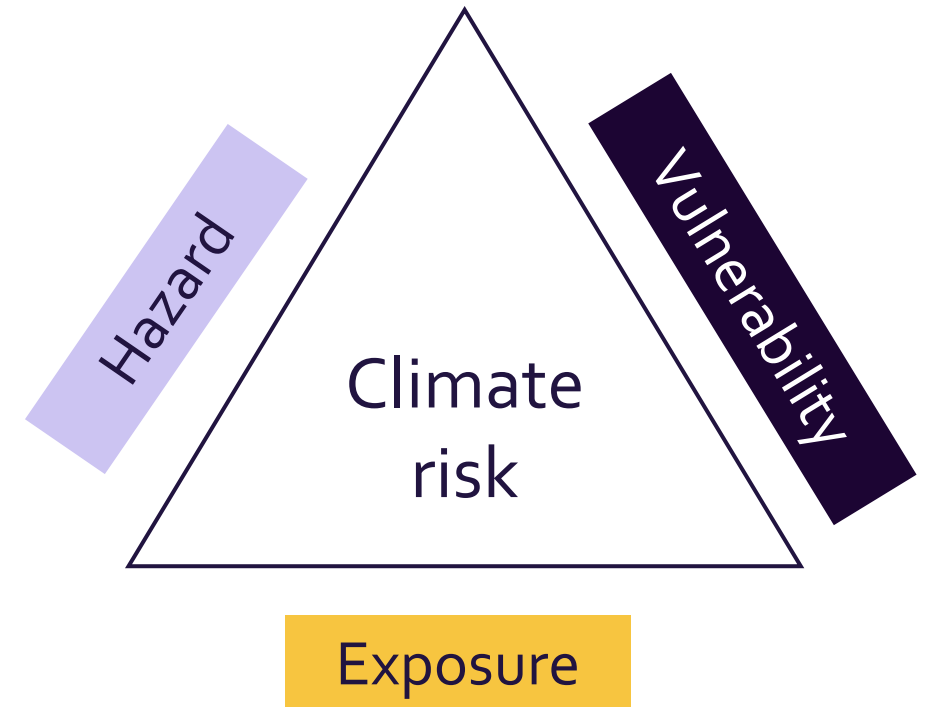
Examples: flooding, extreme heat, drought, wildfire.

Someone's **vulnerability** is determined by physical, social, economic, environmental and community factors. These can increase the susceptibility or resilience of a person to the effect of a hazard.

Examples: age, income, property type, disability.

Exposure is the amount and frequency that people, infrastructure, communities, and physical assets are in contact with the hazard.

Examples: coastal areas, low-lying area, urban areas with minimal green space.





About your area

Climate vulnerability and socio-economic context

About your area

People and places are impacted by climate change differently. Factors like climate vulnerability, deprivation and socio-economic status play a role.

Community organisations are essential for a just transition, ensuring the changes we make for the planet and nature are fair for people too. Understanding and addressing how climate impacts are felt unevenly is a vital part of this. Benefits and risks must be shared in an equitable way.

Knowing where in your community there is more vulnerability to climate hazards is essential. This will help you to create an engagement and action plan that reflects the needs of your community.

The next couple of pages highlight important context for your area, including relevant climate policies and plans already in place.



Climate Social Vulnerability

Understanding vulnerability to climate hazards in your area

CSE has created a map based on data in, [A Well-Adapted UK, a report from the Climate Change Committee](#).

The data is based on the idea that vulnerability to climate hazards varies across places. To understand this variation, a range of social and economic indicators are combined to summarise overall vulnerability.



Examples of the indicators used in the research are:

- Age: as young children and older people can be more affected by heat stress.
- Health: poor physical or mental health can worsen existing conditions, such as heart conditions during heatwaves, and complicate recovery.
- Housing type: certain housing types (e.g. high-rise flats, basements, temporary accommodation, homelessness) can increase exposure to heat or floods and limit options for people to adapt.
- Social networks: weak social networks (e.g. lone pensioners, lone parents, lack of school-based connections) can increase isolation and reduce coping capacity.
- Access to green space: limited access to green space in urban areas increases exposure to heat.

Source: [Sayers et al. \(2025\) Spatial indicators of vulnerability to climate related hazards in the UK.](#)

Climate Social Vulnerability

Using the CSE map

When the indicators are combined, this shows how the characteristics of people and their local community can affect how badly they're impacted during a flood or heatwave.

This isn't about the hazard itself, but how vulnerable people are to harm if they come into contact with the hazard. The level of vulnerability will depend on social and economic factors, like the examples in the [list on page ten](#).

We can use this data to compare geographical areas to each other. This helps understand which neighbourhoods are more or less vulnerable, and where action is most needed.

For the map, we've made a scale that goes from one to five. A score of one shows lower overall vulnerability to a hazard and a score of five shows higher vulnerability.

[Access the Climate Social Vulnerability map here.](#)



Image: [Nik Ramzi Nik Hassan on Unsplash](#)

Pill

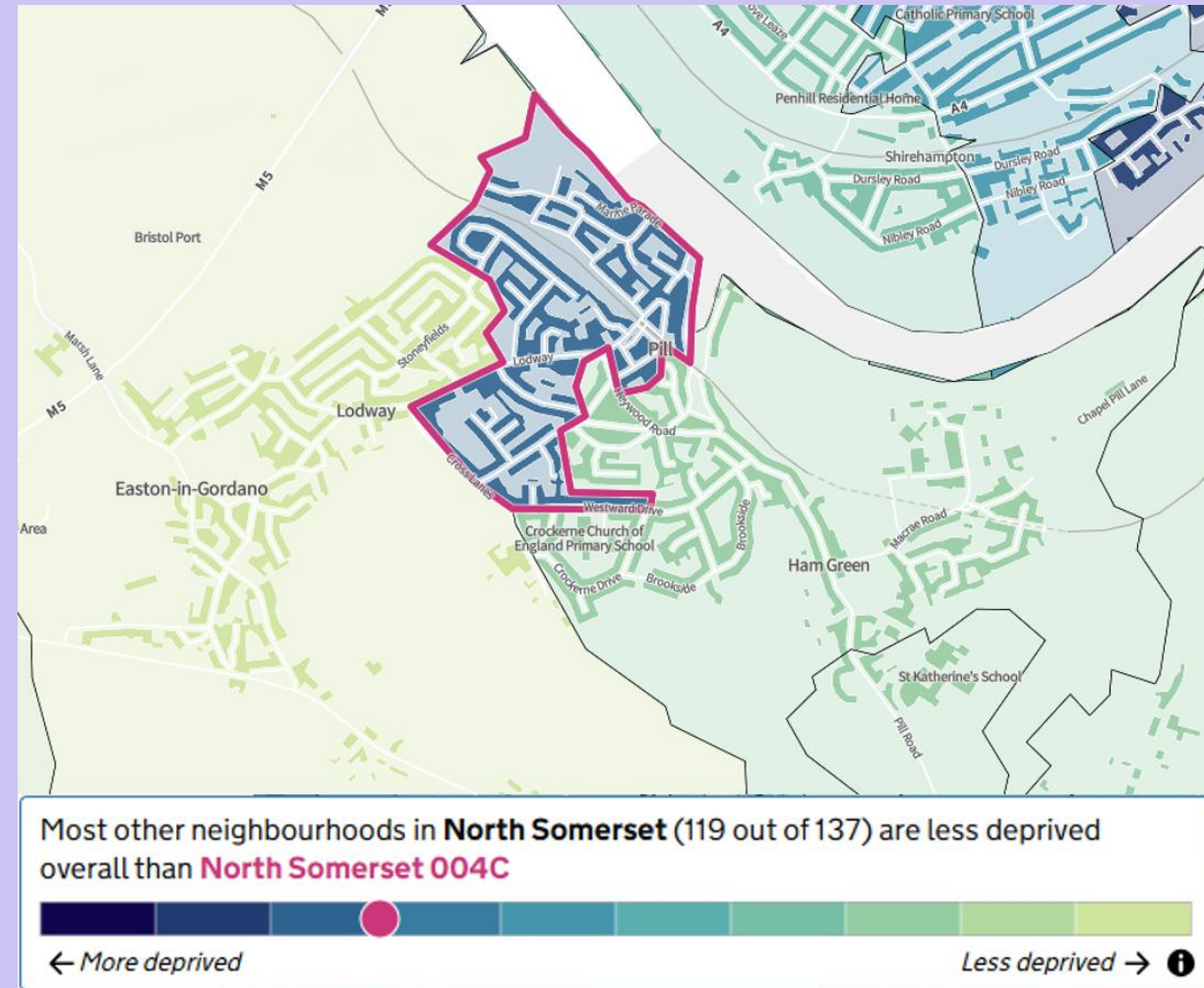
Understanding your communities' context

The Index of Multiple Deprivation (IMD) is the official measure of relative deprivation for neighbourhoods in England, ranking them from most to least deprived. It combines 39 indicators across seven themes of income, employment, education, health, crime, housing, and living environment, to identify areas in need of support.

Many of the indicators used by the IMD reflect an area's social vulnerability and **this can help predict people's resilience to climate hazards** like overheating and flooding.

The area of Pill indicated by the pink outline in the map is more deprived than most neighbourhoods within North Somerset. The North Somerset local authority district contains 137 other neighbourhoods. 87% of neighbourhoods in this area are less deprived than this Pill neighbourhood. However, Pill has a wide variety of community assets to draw on to strengthen the community response and resilience to climate impacts.

Source: [Climate Just](#), [IMD website](#).



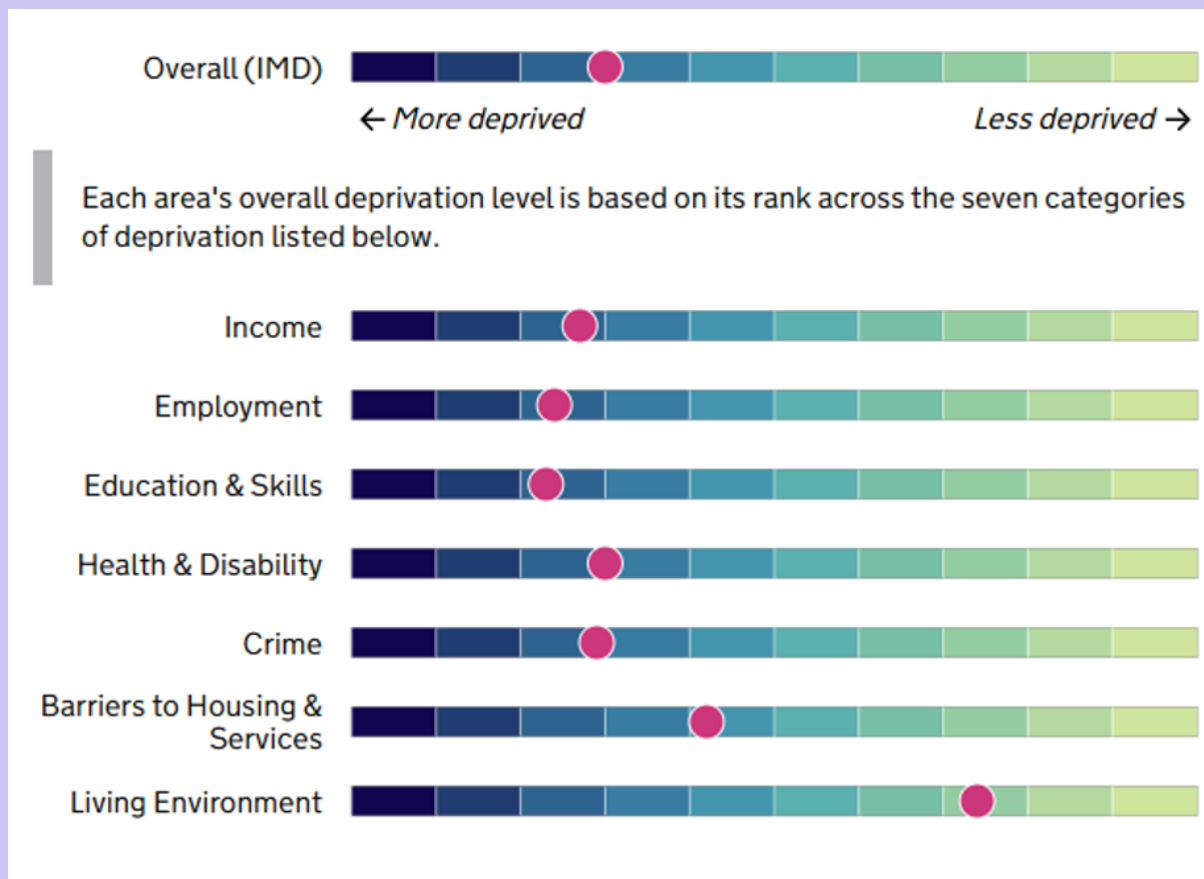
This image shows the IMD rank for the most deprived area of Pill and its surrounding areas.

Pill

Index of Multiple Deprivation

This graphic shows the relative ranking across the seven themes mentioned on page 12, from 'Less deprived' to 'More deprived'. Five of these themes (income, employment, education, health, crime) fall into the third most deprived banding on the scale. This neighbourhood is most deprived in relation to education and skills. Most other neighbourhoods in North Somerset (122 out of 137) are less deprived on this theme.

The high level of relative deprivation experienced in this area of Pill will likely reduce residents' ability to cope with and adapt to the risks and impacts of climate change such as flooding and overheating. For example, they may lack resources to change their housing to make it more comfortable and resilient, such as adding insulation, shading and improving drainage. However, Pill's community assets can enable people to adapt and become resilient to climate impacts.



This image shows the IMD rank across different categories for the pink highlighted areas of Pill (pink), in the map on [page 12](#).

Climate policies – North Somerset

What's already happening in your area

In early 2019, North Somerset Council declared a climate emergency, and then in November 2019 published their first climate emergency strategy and action plan.

The current version of this plan outlines the following key principles:

1. Become a net zero carbon council.
2. Decarbonise transport.
3. Decarbonise the built environment.
4. Low carbon business and skills.
5. Renewable energy generation.
6. Resources and waste efficiency.
7. Adaptation and resilience.



The council has a [climate action plan dashboard](#) which provides details on the range of actions they are taking under these key principles.

You can read the full [climate strategy](#) and [action plan reports](#) on North Somerset Council's website.

The council have also developed a climate change adaptation strategy and action plan. This sets out the adaptations needed to protect North Somerset against the effects of extreme weather while continuing to deliver their services effectively. Here is a link to the [adaptation strategy](#), which you can also read on the council's website.

There's also an information sheet for residents. This outlines the actions everyone can take to minimise the impacts of extreme weather events caused by climate change. It is aimed at helping to build resilience as a community. You can download this [public advice information sheet](#) from the council's website.



Flood risk

How flooding could affect your area now and in the future

Flood risk

Causes of flooding

- Climate change causes rising sea levels and warmer temperatures. This means the atmosphere holds more moisture, resulting in more frequent and intense storms and record-breaking rainfall.
- Heavy and lengthy rainfall saturates the soil. Once the ground cannot absorb any more, water flows over the surface and overwhelms rivers and lakes.
- Surface water flooding from heavy, sudden downpours, often during summer thunderstorms, overwhelm local drainage systems and sewers.
- Storm surges and high tides cause coastal flooding. It happens when low atmospheric pressure and strong winds push seawater inland. This can breach coastal defences.
- Human activity through urban development has reduced natural green spaces, replacing them with surfaces that can't absorb water. Building homes on natural floodplains also increases home directly in the path of rising waters.



Impacts of flooding

- Thousands of homes and businesses are flooded annually. It causes structural damage, destroys possessions, and leads to significant insurance and repair bills.
- Floodwaters can close roads, disrupt rail networks, and knock out power supplies and water treatment plants.
- Floodwater often contains harmful bacteria from overflowing sewage. Trauma of losing possessions, relocating, and living in damp homes causes severe, long-lasting anxiety and mental health distress.

Factors that impact flood risk

Flooding is driven by a combination of physical geography, weather patterns, and human activities. We can:

- Remove impermeable surfaces so water can drain away.
- Stop deforestation and plant more trees and shrubs.
- Ensure drainage systems are in good working order.

Flood risk

Statistics and maps for your area

The following data – taken from the government's long term flood risk service – outlines two types of flood risk, covering both the present day and future predictions:

1. **Surface water flood risk** is sometimes known as flash flooding. It happens when rainwater can't drain away through normal drainage systems. It can happen in places you don't expect, like up hills, and it's hard to predict.
1. **Rivers and sea flood risk** is about low-lying areas close to rivers or the sea that are more likely to flood when water levels rise. Flood defences can help reduce the chance of flooding but cannot completely prevent it. Sometimes they can fail and water could spill over the top of them.



Overall flood risk

Overall, the centre of Pill and an area next to the river Avon has the highest risk of flooding from surface water, and rivers and sea. This high risk covers both the present day, and the future period 2040 – 2060. See the maps on the next four pages for more information.

The risk rating is determined by the chance of a flood occurring each year:

- High: More than 3.3%.
- Medium: Between 1% and 3.3%.
- Low: Between 0.1 and 1%.
- Very low: Less than 0.1%

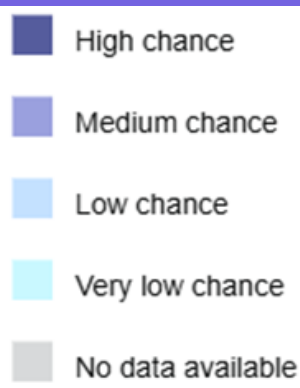


Surface water flood risk

This map shows flood risk from surface water for the present day. The flood risk is focussed on the following streets:

Avon Road, Marine Parade, Mariners Way, Underbanks, Watch House Road, Bank Place, Mount Pleasant, Eirene Terrace, parts of Brookside, Westward Drive, Heywood, Rudgleigh Road, Bull Lane, Water Lane, Churchpath Road, Cross Lanes and Lodway.

To see the full maps, [visit the government's online flood risk service.](#)



Present Day



Surface water flood risk

This map shows flood risk from surface water for 2040-2060. The flood risk has increased, with the most increased risk occurring for the following streets:

Avon Road, Marine Parade, Mariners Way, Underbanks, Watch House Road, Bank Place, Mount Pleasant, Eirene Terrace, parts of Brookside, Westward Drive, Heywood, Rudleigh Road, Bull Lane, Water Lane, Churchpath Road, Cross Lanes and Lodway.

To see the full maps, [visit the government's online flood risk service](#).



2040-2060



Rivers and sea flood risk

This map shows flood risk from the river and sea for the present day. The flood risk is focussed on the following streets:

Avon Road, Marine Parade, Mariners Way, Underbanks, Watch House Road, Bank Place, Mount Pleasant and Eirene Terrace. These streets are located closest to the River Avon and Pill harbour inlet.

To see the full maps, [visit the government's online flood risk service.](#)



Present Day



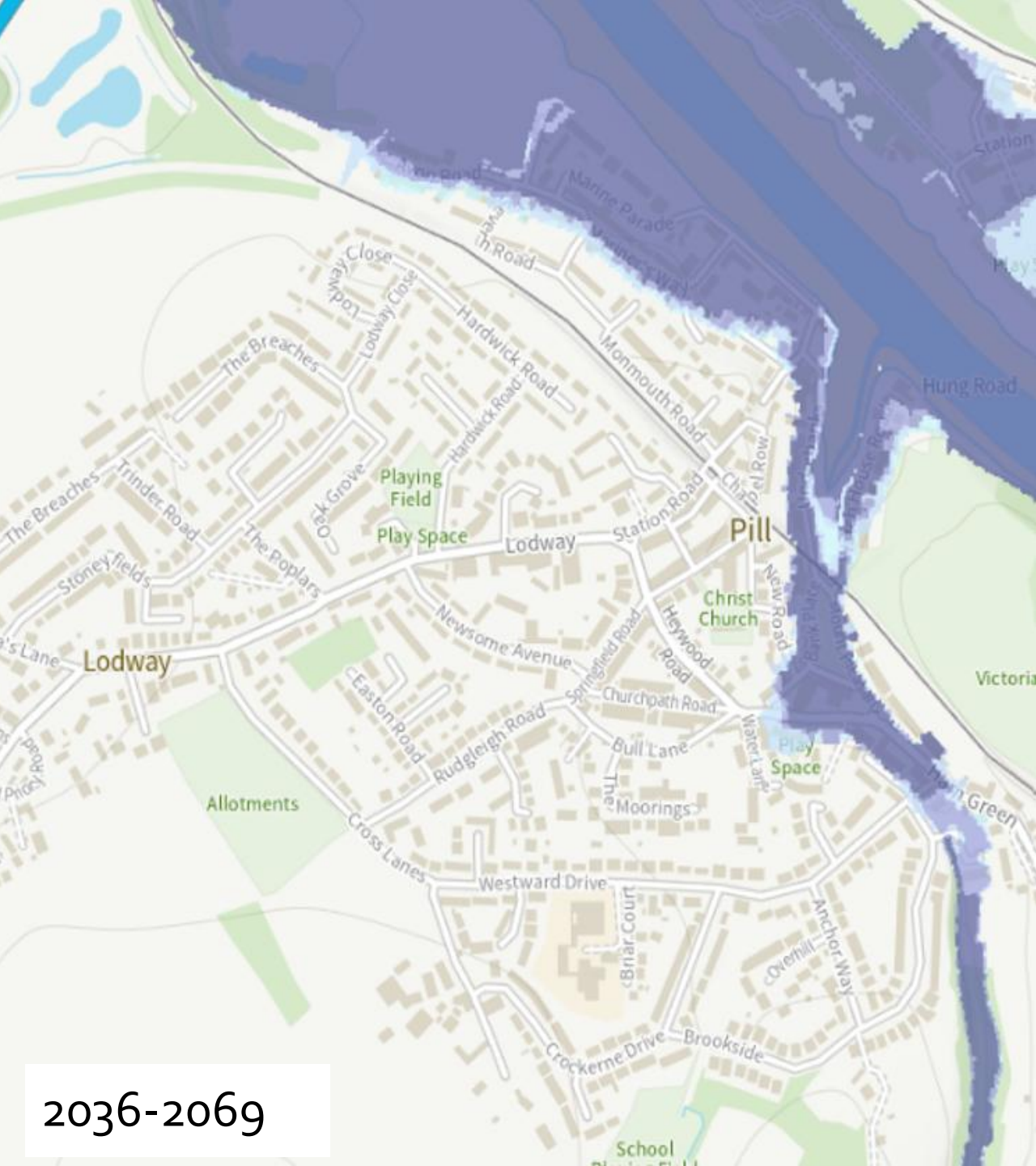


Rivers and sea flood risk

This map shows flood risk from rivers and sea for 2036-2069. The flood risk has increased, with the most increased risk occurring for the following streets:

Avon Road, Marine Parade, Mariners Way, Underbanks, Watch House Road, Bank Place, Mount Pleasant and Eirene Terrace. These streets are located closest to the River Avon and Pill harbour inlet.

To see the full maps, [visit the government's online flood risk service.](#)



2036-2069





Flood adaptation

Adjusting to the impacts of flooding

Community awareness

Before a flood, these actions could protect your community.

Planning ahead will help to keep people safe and aware of what needs to happen during a flood. Working with other organisations or your local council you could develop a community flood plan. [This guide](#) from The Flood Hub can support you through the process. It includes thinking about:

- Communicating with residents during a flood and sharing important information that will keep people safe.
- Emergency routes and evacuation points. Having systems in place will help people know what to do and stay calm.
- Gathering information for people in vulnerable circumstances. This could include Disabled people, older people or those with English as a second language who may need additional help.
- Asking for volunteers to help with communication, administration or moving possessions or furniture.
- Complying with GDPR if you're collecting personal information.



To help you plan your response, think about what a flood would look like in your area. You can use the maps on the previous pages to help. Think about:

- Installing water level trigger points on a bridge or lamppost.
- The condition of any local flood defences.
- The direction a flood could come from.
- The latest river, sea, groundwater and rainfall levels.
- How to help people in your community using resources in this guide.

Personal flood plan

Follow this checklist to prepare for a flood.

Before a flood

- ☐ Keep valuables safe. Waterproof boxes can protect important documents, electronics or sentimental items.
- ☐ Know how to turn off utilities such as electricity, gas and water supplies.
- ☐ Maintain your home and garden to stop unwanted water entering your home. Clear out gutters regularly, don't concrete over gardens and soil.
- ☐ Purchase air brick covers and door guards to temporarily place across gaps.
- ☐ Know your community's flood plan and evacuation route.
- ☐ Keep important numbers safe.
- ☐ Alert your local council if you need assistance during a flood.

After a flood warning

- ☐ Pack a bag of essentials. Make sure you have water, food, portable chargers, a torch, warm and waterproof clothing plus any baby or pet care items.
- ☐ Turn off your gas, electricity and water supplies, if it's safe to do so – don't touch an electrical switch if you're standing in water.
- ☐ Move your family, vehicles, pets and important items to safety, for example upstairs or to higher ground.
- ☐ If you have them, use flood protection products, for example flood barriers or air brick covers.
- ☐ Follow advice from your local council or the emergency services – you may be asked to evacuate.

During a flood

- ☐ Keep calm and wait for instructions from your local council or emergency services.
- ☐ Don't go into any water. Entering water is dangerous – items become dislodged, water is murky and hard to see and there's a risk of electric shock.

Preparing your building

Impacts and changes

Flood water can enter a home or community building in many ways and can cause significant damage. Impacts include:

- Undermined foundations.
- Damage to walls and floors.
- Damage to furniture.
- Damp and mould.

It can take months for everything to dry out.

An independent flood risk survey can advise on changes you can make to prevent and adapt to flood risk. This could include raising electrics above ground level, having a flood barrier for doors, or installing valves on toilets and drains that only allow water to move in one direction away from the building.

Sources: [UK Flooding Support and Advice](#), [The Flood Hub](#), Retrofitting for flood resilience - a guide to building and community design, Edward Barsley



Managing water

The following measures can help absorb heavy rainfall.

Water butts

These collect rainwater for uses other than drinking water such as watering plants. This can help reduce water scarcity during dry weather. Water butts can also be used to delay rainwater from entering central drainage systems, which helps manage overwhelm when there's high rainfall.

Permeable paving

These absorbent surfaces help control water as soon as it hits a surface. They have high infiltration rates improves infiltration rates which can reduce surface water run-off and improve moisture levels in the ground. Materials include porous asphalt, resin-bound materials, permeable block paving and gravel.

Find out more about sustainable drainage in [The Flood Hub resources](#).

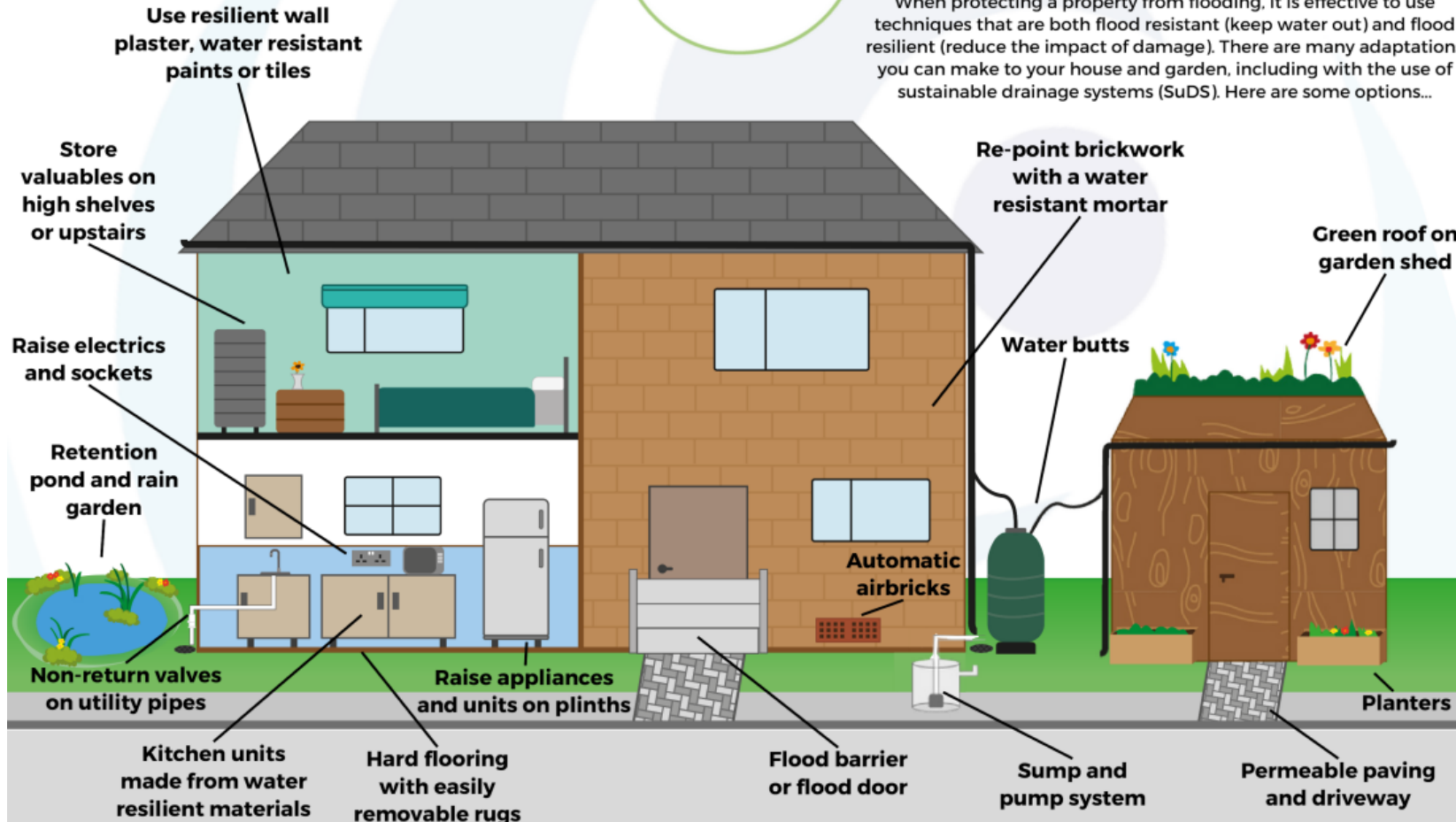
Preparing your building



Flood Resilient House



When protecting a property from flooding, it is effective to use techniques that are both flood resistant (keep water out) and flood resilient (reduce the impact of damage). There are many adaptations you can make to your house and garden, including with the use of sustainable drainage systems (SuDS). Here are some options...



This graphic shows measures that can help make a home more flood resilient.

You can find out more about this in [The Flood Hub](#) resources or [download the original graphic](#) to print out.

Nature and flooding

How nature can reduce the risk of flooding

Natural flood management includes increasing green coverage like trees or restoring habitats like mudflats. This can help to absorb, slow and store rainfall.

These measures can hold back water and release it slowly, reducing floodwater and pressure on other flood defences (like flood walls). They can also benefit local biodiversity.



Green roofs

These use plants as surface cover and come in different types. They buffer and slow the movement of rainwater. This takes pressure off central water systems by reducing the volume of water going through them at peak times.

They can also increase biodiversity and reduce overheating. If you're putting green roofs on an existing building, think about the extra weight and ongoing maintenance. You could also install them on bike sheds or bus stops.

Green walls

These work in a similar way to green roofs and have similar benefits. They can slow water flow, improve biodiversity, reduce noise, and provide insulation and cooling benefits to the building and street.

There are two different types of system for green walls: climbing wall plants and container systems.



Choosing tree species to reduce flooding

If you're thinking about planting trees in your community, this table provides examples of the best species for managing flood risk.

Species	How it works
Willow	Good for riverbank areas and waterlogged soils. Their extensive, fibrous root systems can stabilise riverbanks and prevent erosion, while also absorbing large amounts of water.
Alder	One of the few native UK trees that thrive in waterlogged conditions. They are particularly effective in wet, marshy areas, where their deep root systems improve soil structure help water absorption.
Poplar	Fast-growing trees that are excellent for water uptake and often used in floodplain restoration projects. Their tall structure and vigorous root systems help manage saturated ground and reduce surface water runoff.
Silver birch	Highly adaptable and can thrive in both dry and damp conditions. Their root systems are particularly effective at improving soil structure and allowing water to penetrate more deeply into the ground.
Hornbeam	Hardy and can tolerate periods of waterlogging, making them suitable for flood-prone areas. Hornbeams help stabilise the soil, reducing the risk of erosion and improving water retention.

Managing water

Water capture and absorption

Swales

- Swales are shallow ditches and channels. Their functions include improving water absorption, providing a route to transport water away and filtering pollution.
- The sides of swales slope gradually, and they typically have a flat base which shallow water can flow along.
- Perforated pipe systems can be fitted within swales to limit standing water, and water-resistant liners added if aquifers beneath them need to be protected.
- Planting in swales helps slow water flow to mains drainage and improves soil stability.

Source: Retrofitting for flood resilience - a guide to building and community design, Edward Barsley



Photo credit: LDP Watersheds

Raingardens

- Raingardens are planted areas that can slow down rain run-off and help get more moisture into the ground through infiltration.
- They can be easy to incorporate, are used at various scales, look pleasant and can improve the general feel of a street or building.



Overheating risk

How hot temperatures could affect the area now and in the future

Overheating risk

Causes of overheating

- Climate change is driving rising global temperatures that have led to more intense, frequent heatwaves and warmer summers across the UK.
- Lots of hard surfaced areas like concrete and buildings, with little green space. In cities and towns this is called the 'urban heat island effect'. This means urban areas experience higher temperatures and can lack night-time cooling.

Impacts of overheating

- Excessive indoor heat heavily stresses the cardiovascular and respiratory systems, worsening underlying health conditions like diabetes, heart disease, and asthma.
- Prolonged heat exposure leads to exhaustion, dehydration, dizziness, heat cramps, and heatstroke.
- High overnight temperatures disrupt sleep patterns, causing fatigue, poor concentration, and aggravated psychiatric symptoms.



Factors that increase overheating risk

- Top-floor flats and loft rooms can be significantly warmer because heat rises. Uninsulated or poorly insulated roofs absorb heat.
- Internal heat production: generated from appliances, ovens, lighting.
- Apartments with no cross ventilation or security and noise concerns that prevent people leaving windows open at night.
- Building orientation: rooms that face south or have large windows and get a lot of direct sunlight.

Overheating risk

Statistics and maps for your area

The following maps are taken from DEFRA (Department for Environment, Food and Rural Affairs) to show overheating projections in Pill for the year 2050.

The maps are based on the following assumptions:

- There have been no changes to properties (like insulation or shading) to reduce heat impacts.
- Zero carbon emissions will be achieved by 2100.
- Average global temperatures have risen by an estimated 1.6°C.

However, if you [open the maps online](#), you can change certain factors like improving insulation and shading on properties to see how this reduces temperature. This can help evidence the need for these measures in your community.

Source: [DEFRA overheating maps](#)





Indoor nighttime hours over 26°C

This map shows the percentage of indoor nighttime hours during the summer months (April - September) where temperatures are higher than 26°C as defined by the TM59 method. 14.6% is the percentage for the area outlined in black. This is the equivalent to 187 hours of overheating, or seven days and 19 hours.

Temperatures over 26°C affect our ability to sleep, which links to poor health outcomes. Flats and homes that can't cross ventilate will overheat more, as will bungalows as the map assumes ground floor windows will be closed at night for security.

14.6% of summer nighttime hours in North Somerset 004C LSOA will exceed 26°C by 2050 under climate change projection RCP2.6, assuming no adaptations
(median % value for all building types) ⓘ



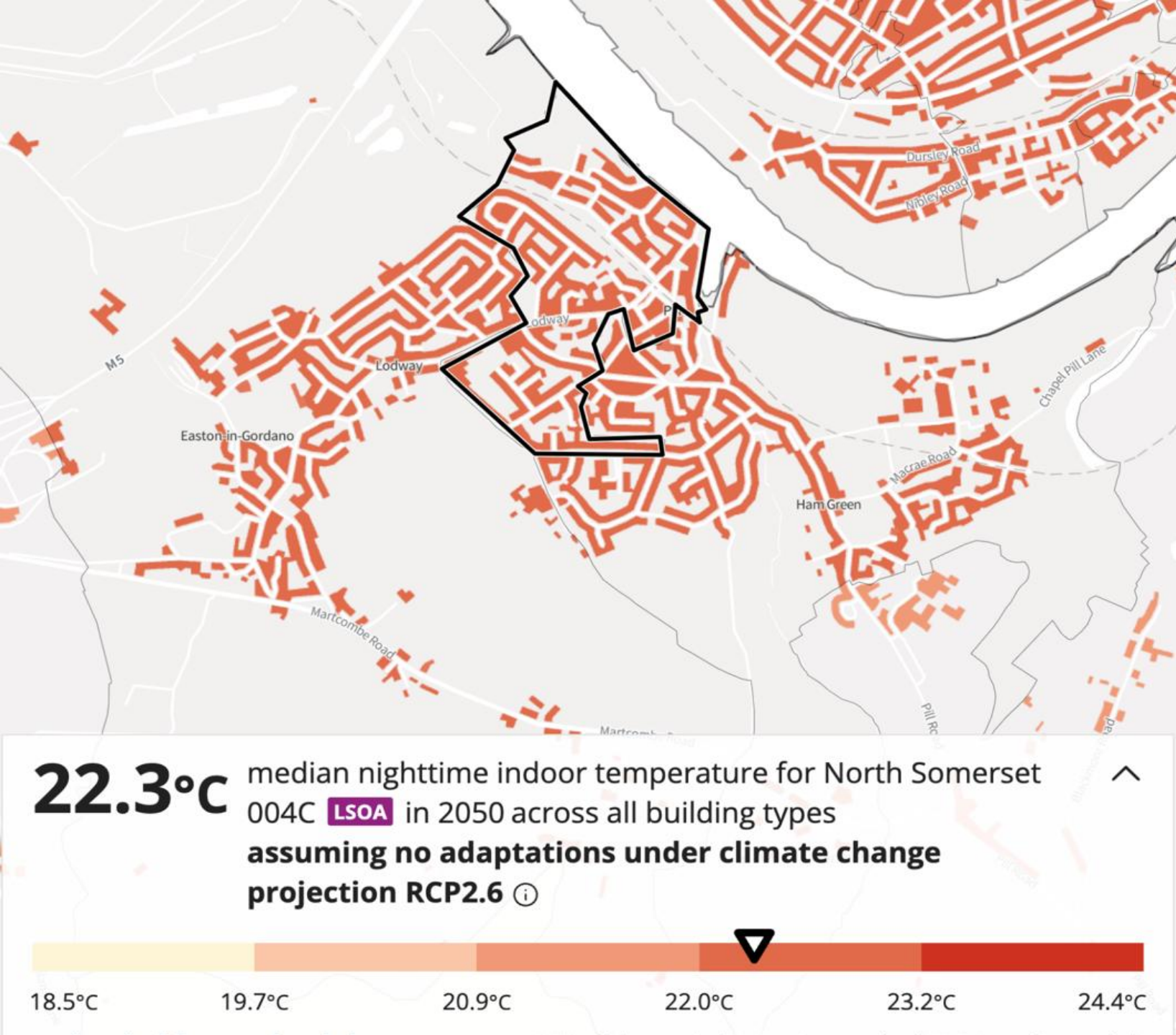


Nighttime indoor temperature

This map shows the median (middle of the range) indoor temperature at nighttime hours during the summer months (April - September). The value for the area outlined in black is 22.3°C.

The optimal temperature for sleeping is 18°C for adults and temperatures above this can impact the quality and duration of sleep. Poor quality sleep can have negative impacts on people's health and wellbeing.

Sources: [DEFRA overheating maps](#), [Sleep Foundation](#).





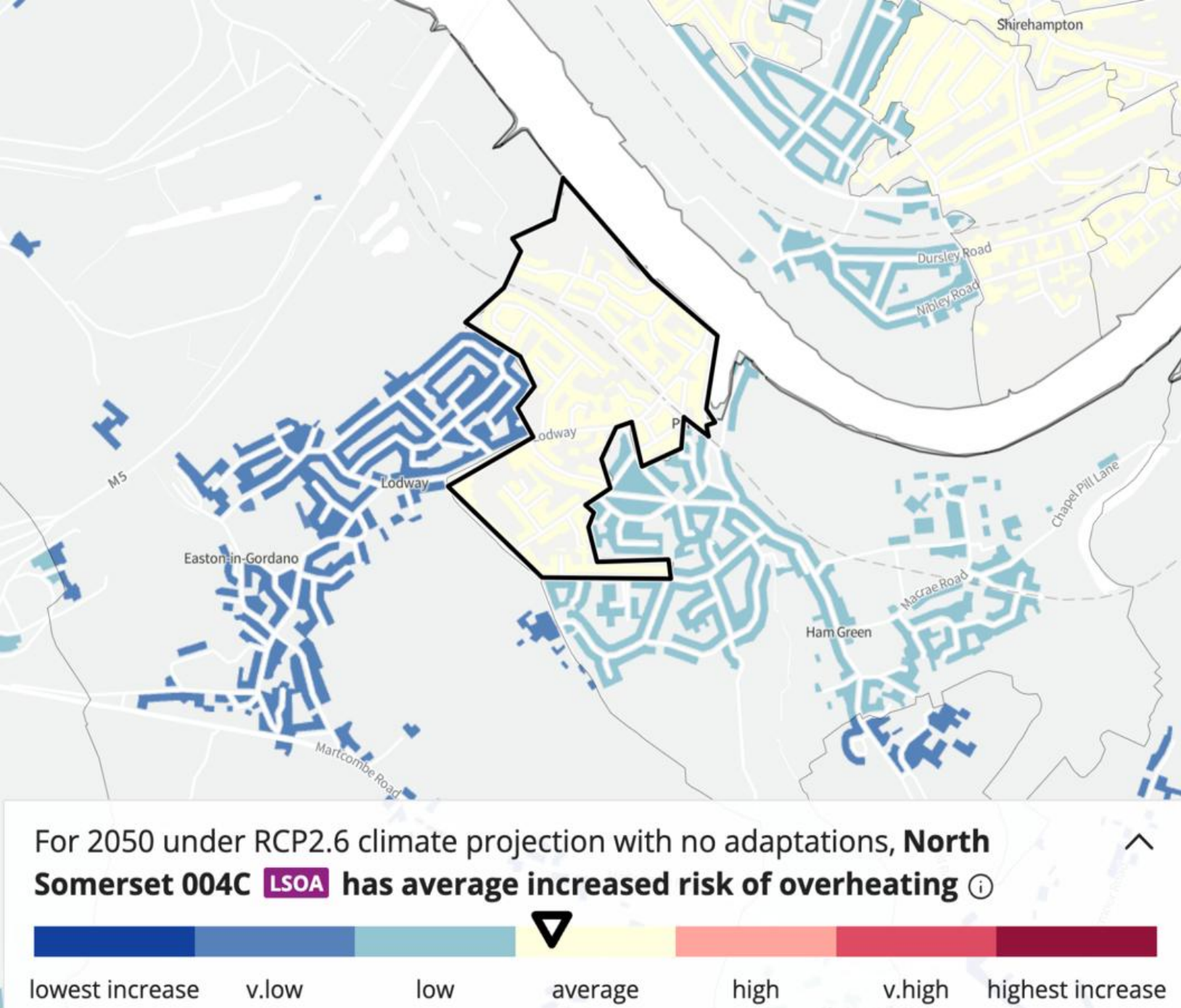
Social vulnerability

The Social Vulnerability Index (SVI) looks at risk factors like age, income and health. When it's combined with temperature projections, we can understand how vulnerable an area is to temperature changes overall.

The increased risk of overheating shown on this map is calculated by combining the SVI with the projected percentage of summer nighttime hours over 26°C.

The area of Pill outlined in black shows an average increased risk of overheating compared to its neighbouring areas which are either low or very low risk.

Source: [DEFRA overheating maps](#)





Overheating adaptation

Adjusting to the impacts of hot temperatures

Community awareness

Before a heatwave, these actions could protect your community.

Planning ahead will help to keep people safe and aware of what needs to happen during extreme heat. Think about:

- **Vulnerability mapping:** Identifying areas with high heat risk and vulnerable populations (such as the elderly) to target support.
- **Community check-ins:** Establish a network to check on the elderly, those with disabilities, and vulnerable people during heatwaves.
- **Communication:** Educate residents on heat health risks and simple, behavioural changes to keep homes cool. You can [download CSE's engagement posters](#) to help with this.
- **Design together:** Involve residents in improving public spaces and green areas to ensure they are comfortable and safe e.g. creating shaded seating.



Think about whether you or another organisation can provide a '**cool space**' such as a library, village hall or shaded park that can be maintained below 26°C. Consider installing active cooling systems (like air con or air-to-air heat pumps) to help with this.

Monitor temperatures inside public buildings, especially where people spend most time. Keep them as cool as possible and have cold water and ice available.

Keeping cool in hot weather

Follow this checklist to reduce the risk of overheating.

Outside your home

- ☐ Plant fast-growing climbing plants like ivy around windows and doors.
- ☐ Plant trees and tall shrubs in external areas.
- ☐ Install external openable shutters around windows and doors.

Inside your home

Block heat from outside

- ☐ Put leafy green indoor plants by windows.
- ☐ Install fabric blackout blinds.
- ☐ Close windows, curtains and blinds during the day.
- ☐ Use insulation to block heat from entering the building.

Reduce inside heat sources

- ☐ Avoid using ovens, dishwashers and clothes dryers during the hottest part of the day.
- ☐ Use kitchen and bathroom extractor fans to remove hot air.

Manage temperature and use space differently

- ☐ Open windows at night to let cool air in.
- ☐ Install ceiling fan or standing fan.
- ☐ Consider working or sleeping in cooler, lower-level rooms.

Create cool items

- ☐ Freeze a hot water bottle.
- ☐ Use a wet towel on your shoulders.
- ☐ Put your feet in ice water.
- ☐ Put your fan in front of a bowl of icy water.

Nature and overheating

How nature can reduce the risk of overheating

Urban or built-up areas can be warmer than surrounding rural or green areas. Heat is created or held by buildings, transport and people and can get trapped. Increasing green infrastructure can reduce this urban heat island effect.

One third of heat related deaths in cities could be prevented by reaching a tree cover of 30%. Check the [Tree Equity Score](#) for your area to understand tree cover in your area.



Green infrastructure

Green infrastructure includes trees, parks, green roofs or walls, gardens, allotments, and wetland areas.

It can help moderate temperatures through:

- Plants releasing water vapour which cools the air. This is called transpiration.
- Reflecting more solar energy than artificial surfaces.
- Providing shade and storing less heat.
- Promoting air circulation.

Green spaces can reduce temperatures by up to 4°C at night and up to 3°C during the day, with cooling effects extending hundreds of meters beyond their boundaries.

The shape, density, arrangement and type of plant can influence the amount of cooling experienced.

Improving green coverage

What to consider in your planning

Trees provide the greatest daytime cooling, whereas grasses and shrubs cool most effectively at night when they can release heat trapped during the day.

Complex shapes and very dense canopy cover (the area of tree cover when viewed from above) can reduce effectiveness at night because the warmer air gets trapped.

Trees should be intermixed with grasses and shrubs to promote the release of heat at night while still offering daytime shade. High soil moisture is essential for any plants to sustain its cooling effect.

Local people can also maximise existing green spaces like front and back gardens by avoiding paving over them and introducing greater plant diversity through wildflower planting.



Consider species type

Tree species differ in their cooling ability due to leaf colour, area, thickness, roughness, and canopy structure. You could increase plant diversity in existing green spaces.



Reduce heat absorption

Trees with high transpiration rates, broad leaves, wide canopies, and high heat reflectivity are most effective.



Location matters

Site conditions (soil quality, water availability, pavement type) are critical; stressed trees provide less cooling.



Maximise benefits

Proper species selection and site preparation (adequate soil, water, rooting space) are essential for maximising benefits.



Choosing tree and shrub species

If you're thinking of planting trees and shrubs in your community, this table provides examples of the best species for cooling.

Impact	Species	How it works
Greater daytime cooling potential	Small-leaved lime and Turkish hazel.	High transpiration and leaf area. Effective in both parks and street settings. Water availability and soil conditions important to maximise cooling.
Daytime cooling	Young tree species: Callery pear and midland hawthorn.	Can provide three to four times more daytime cooling than some other commonly planted species due to high transpiration, and wide canopy with high leaf area index.
Nighttime cooling	Common lime, English oak, silver birch, Norway maple, horse chestnut, European beech, Japanese cherry.	Continue releasing water vapour into early hours of night, provide cooling beyond daytime effects.
Enhanced cooling effect	Hairy-leaved species: Stachys byzantina and Salvia officinalis.	Have lower leaf surface temperatures compared to other species, enhancing their cooling effect.
Low-level greenery	Murraya exotica L. and general lawn cover.	Shrubs and lawn have significant night-time cooling. Lawns reduce ground-level, heat-trapping radiation, creating temperatures much cooler than concrete, even at night.

Sources: [Forest Research](#), [Urban Forestry and Urban Greening](#), [Arboriculture & Urban Forestry](#), [Urban Green-Blue Grids](#), [Urban Climate](#), [Nature Scientific Reports](#), [RHS](#).



Wildfire risk

Preventing and preparing for wildfires

Wildfire risk

Causes and risk management

Wildfires have become more frequent, widespread, and intense in the UK. Increased temperatures with long periods of dry weather can increase the risk of uncontrolled fires breaking out. These can include smaller areas of grass fire or larger wildfires, both in urban and rural areas of the UK.

Climate change means we're more likely to experience prolonged periods of hot weather, so it's important to take precautions and know how to stay safe during a wildfire.



Reducing the risk of wildfires

Most wildfires are started by human behaviour during hot weather. People can prevent the risk of wildfires by:

- Taking your litter home.
- Discarding cigarettes carefully. Never throw cigarette ends on the ground or out of car windows.
- Ensuring there is no glass lying in direct sunlight.
- Not having campfires or barbecues in the countryside. Only have them in safe designated areas.
- Avoiding having bonfires in very dry weather. If you must have a bonfire, follow Devon & Somerset Fire Rescue Service's [bonfire safety advice](#).
- Talking to your children about the dangers of playing with fire and matches. Keep matches and lighters stored well away from children.

[This poster](#) from StayWise can help communicate wildfire prevention to your community.



Preventing wildfires

Follow this checklist to prevent and prepare for wildfires.

Preventing wildfires at home

- ☐ Regularly check your home for fire hazards.
- ☐ Look out for exposed firewood, leaf clutter, and dead and overhanging branches.
- ☐ Clear flammable debris – like dead leaves – from gutters.
- ☐ Check for spaces between roof tiles or within your home where burning embers could become lodged.
- ☐ Make sure that flammable substances (including fertilisers and pesticides) are safely stored.
- ☐ Check that all fire exits and property exit routes are clear.

Prepare for the risk of wildfire

- ☐ Pack a bag of essentials. Make sure you have water, food, chargers, a torch, warm and waterproof clothing plus any baby or pet care items.
- ☐ Have an escape plan for your safety in the event of a wildfire.
- ☐ Make sure your family members (or members of staff, if you run a community group in a rural area) know what to do and where to assemble, including how you will round up and care for pets and domestic animals in the event of a wildfire.
- ☐ If appropriate, discuss this escape plan with your neighbours.
- ☐ If you live in a rural area, make sure your home number or name is clearly visible from the road, so the firefighters can easily locate your address in the event of a fire. Read Devon & Somerset Fire Rescue Service's [wildfire advice for living in a rural area](#).
- ☐ Check the current wildfire risk in your area (based on weather conditions) using the [Met Office Fire Severity Index](#).

What to do during a wildfire

Key actions to take if you see a wildfire

- Stay calm.
- Ensure you are in a safe location (away from vegetation and smoke).
- If you are in your car, close all windows and vents.
- If you are at home, put yourself in a place of safety – do not try to put out the fire yourself and keep doors and windows closed but unlocked.
- Call 999 immediately. Tell the fire control the location, size, and any relevant information including the address, OS reference, or What3Words location.
- If you are advised to evacuate, or if you think you are in danger, evacuate immediately. Don't wait to be told to evacuate. The fire may spread too fast for officials to issue evacuation orders.
- If you are not trained and equipped to fight a wildfire, do not put your life at risk. Leave right away: delay could be deadly.



- If you cannot take your pets with you, confine pets and service animals to one room.
- Have enough fuel or charge in your car, and face your vehicle in the direction of escape, shut your car doors and close the windows, have your key ready, or leave it in the ignition.
- Wear protective clothing – sturdy shoes, long cotton or woollen trousers, long-sleeved shirts, and gloves. Carry a damp handkerchief to protect your face. Carry wet towels to cover your head or bare skin or to wrap your feet, in case you need to run through a small area of fire.



Drought risk

Preventing and preparing for droughts

Drought risk

Causes and risk management

Drought conditions are when an area experiences a prolonged period of shortages in water supply. Droughts can last for months or even years. They can happen after an extended period of unusually low rainfall when reserve water levels fall.

If you think an area of the UK is experiencing drought, it's best to check with the local authority or Environment Agency. If a drought has been declared, restrictions on water use may be in place.





What to do during a drought

Follow this checklist to reduce the risk of droughts and understand what to do if a drought occurs.

Save water to reduce the risk of droughts

- ❑ Repair dripping taps by changing washers – one drop per second wastes 2,700 gallons per year.
- ❑ Use spare water for plant watering.
- ❑ Take shorter showers and cutting out baths.
- ❑ Replace your showerhead with a low flow version.
- ❑ Use dishwashers only when they're full. Use the 'light' cycle and try not to rinse plates beforehand.
- ❑ Use washing machines when they're full.
- ❑ Evidence shows grassy lawns grow back when it rains. Try to live with a brown lawn. Shrubs and trees are more water-tolerant than we think.
- ❑ Avoid washing your car if possible.
- ❑ Get a water butt. When it does rain, you'll have a supply especially for your garden, plants and car.

What to do during a drought

- ❑ **Stay informed:** Regularly check the water company website, social media, and the news. Sign up to the [Priority Services Register](#) if you need extra help, for example if you're older or have an existing health problem or disability.
- ❑ **Maintain hygiene:** Continue to wash hands as an effective way to prevent disease. Use hand sanitiser or wipes if handwashing isn't available. Take showers instead of baths.
- ❑ **Stay hydrated:** Don't reduce water intake to conserve water. Continue to drink from the tap until advised otherwise. If supply is interrupted your water company should provide an alternative. Always carry water when it's hot and look out for neighbours, family or friends.
- ❑ **Reduce respiratory problems:** If you use an inhaler, carry it in hot, dry weather. Air quality may be poor and pollen counts could also be high. If wildfire smoke is affecting air quality, keep windows and doors closed.



Further resources

More resources to help you prepare for climate risks and support your community



Ideas for action

This page provides prompts for thinking about climate resilience in your work.

Climate risks	Flooding	Overheating	Nature actions
What are the risks in your local community?	How can you support households to prepare for flooding risks?	How could you communicate tips for staying cool to local people?	Where could you increase tree or shrub planting and who could you work with on a project?
Look at the 'about your area' statistics: which parts of the communities are more vulnerable?	How can you bring together key people or organisations in the area to help prepare for flood risk?	Could you provide a cool space in summer, or work with another organisation on this?	How can you use the Avon Wildlife Trust nature and biodiversity guide to support nature actions?
Who do you need to prioritise when developing an action plan and how can you engage with them?	What community spaces or buildings in the area could be at flood risk? Consider spaces like healthcare homes where lots of vulnerable people might be.	Where might there be risks of wildfires in the area and how can you communicate preventative actions to people?	How can you engage local people in increasing green cover in the local area?

Ideas for action



Ten action ideas for your organisation

1. Using the data, identify people and places in your community that are more vulnerable to climate hazards, prioritise them when you're making plans.
2. Use the engagement resources and prompts in this guide to start conversations about climate risks like overheating and flooding while you're creating your community climate and nature action plans.
3. Create a community preparedness plan for heatwaves or floods and work with the local council and other relevant organisations on this.
4. Identify volunteers or community networks that can support people during a climate hazard.
5. Host a workshop or meeting to explore the themes in this guide with local partners, to encourage collaboration and understand how others can contribute to community resilience.
6. Provide or identify a warm or cool space for people during summer or winter. Think about other spaces that could be places of community safety such as schools or village halls.
7. Start a tree planting or greening project that addresses flooding or overheating risk.
8. Prepare an awareness project or campaign for changes people can make at home so it's cooler in summer and warmer in winter.
9. Prepare an awareness project or campaign about the causes of wildfires, and how people can reduce the risk of starting one. For example, telling people to avoid BBQs in dry, grassy spaces.
10. Prepare an awareness project or campaign about how households can prepare for flood risk, if it's a significant hazard in your area.

Resources for winter

Supporting people with winter resilience

While climate change will bring hotter and drier summers, winter weather will also be affected. Winter storms, heavy rainfall and cold weather can exacerbate fuel poverty and increase the risk of damp and mouldy homes.

Mould can grow when condensation builds up from inadequate ventilation, inadequate heating, cold spots from lack of insulation and excessive moisture production. This can be bad for people's health.

Support people to stay warm for less with [this advice leaflet](#) from CSE and encourage people in vulnerable circumstances or with any additional needs to sign up for the [Priority Services Register](#).

CSE has a wide range of energy leaflets covering different home energy topics. You can [download these](#) for free and share with your community.



Think about whether you or another organisation can provide a '**warm space**' such as a library or village hall in the winter.

Consider what community building activities you could offer in a warm space. This could include lunch clubs, craft activities or other social events. These can help reduce social isolation in the colder months.

[This Government toolkit](#) can help when thinking about setting up a warm space or you can find an existing space near you on the [Warm Welcome website](#).

Glossary



Definitions of words used in this guide

Word	Definition
Adaptation	Actions or activities that help reduce vulnerability to the current or expected impacts of climate change.
Climate change	Long-term shift in the Earth's average temperatures and weather conditions. Human activities are causing world temperatures to rise, posing serious threats to people and nature.
Drought	Defined by a lack of water. Unlike most other extreme weather, drought tends to build up over time and can last from as little as a few weeks up to several years.
Hazard	A process or activity that may cause disruption, injury and damage. Examples include: flooding, extreme heat, drought, wildfire.
Heatwave	An extended period of hot weather relative to the expected conditions of the area at that time of year, which may be accompanied by high humidity. A UK heatwave threshold is met when a location records a period of at least three consecutive days with daily maximum temperatures meeting or exceeding the heatwave temperature threshold .
Flooding	Flooding involves overflowing or accumulation of water onto land that is normally dry. It can happen within minutes and may last days, weeks or many months.
Just transition	When changes are made to a place for the planet and nature are fair for all the people who live there too.
Mitigation	Actions or activities that limit emissions of greenhouse gases from entering the atmosphere.
Resilience	Capacity or ability to anticipate and cope with shocks, and to recover from their impacts.
Wildfire	Uncontrolled blaze in natural land such as grass, heath, peat or forest.



Glossary

Definitions of words used in flooding and overheating statistics

Word	Definition
TM59	The percentage of summer (April - September) nighttime hours where temperatures exceed 26°C , based on the TM59 method which looks at temperature regulation in residential buildings.
Social Vulnerability Index	A combined score developed by UCL that looks at how vulnerable an area is to temperature changes, based on factors including age, income, ethnicity and underlying health risks.
Social Vulnerability Index - Decile	A scale from one to ten used to compared the Social Vulnerability Index of different areas, with 1 being the lowest vulnerability and 10 the highest.
Nighttime indoor temperature	The estimated average temperature in bedrooms during the summer months (April - September), which shows potential overheating. TM59 (hours over 26°C) provides a more accurate assessment of the impact of the internal temperature on people.
Combined hours over 26°C & SVI	Combining the percentage of hours over 26°C (TM59 method) with Social Vulnerability Index (SVI) highlights areas that will be at the highest risk from the impacts of climate change.
Median	The median is the middle value in a dataset, separating the higher half from the lower half.
The Index of Multiple Deprivation (IMD)	The official measure of relative deprivation in England and is part of a range of outputs in the Indices of Deprivation (IoD). The framework includes a wide range of living conditions to define deprivation. People may be living in poverty if they lack the financial resources to meet their needs, whereas people can be regarded as deprived if they lack any kind of resources, not just income. In the IoD, 'deprivation' is about people's unmet needs, whereas 'poverty' is about the lack of resources required to meet those needs or socially perceived necessities. These needs may change over time, but relative deprivation remains



Further resources

Climate adaptation

Resource	Description	Link
The Climate Change Committee	The UK's independent advisor on climate change	Find out more on their website
Climate Data Portal	Climate datasets and maps	Explore on the Met Office
UK Climate Projections	Models showing how the climate is likely to change in future	Explore on the Met Office
UK Green Building Council	How can we adapt buildings to climate change?	Explore the framework
West of England Combined Authority	Impact of climate change on the West of England	Read the report and explore resources
Local Climate Adaptation Tool	Evidence-based data and map about climate impacts	Explore the tool
Climate Just	Practical information and tools about climate vulnerability and disadvantage	Explore the resources
Local Impacts Tool	A detailed look at what climate change might look like in your area	Explore the maps
The UK Climate Resilience Programme	Resources to support understanding climate risk	Access the resources



Further resources

Flood

Resource	Description	Link
Environment Agency Flood Plan	A personalised guide on how to prepare for a flood	Access the resource
British Red Cross	Guidance on how to prepare and manage flooding in your home	Read the guidance
The Flood Hub	A community toolkit on how to prepare and respond to flooding in your community	Access the toolkit
UK Government Community Flood Risk	Guidance on how your community can prepare and manage flooding	Read the guidance
UK Government Flood Risk Tool	A tool to check your long-term flood risk via your postcode	Explore the tool
UK Government Flood Risk Map	A map to show long-term flood risk	Explore the map
UK Government	Using nature-based solutions to reduce flooding in your local area	Read the guidance



Further resources

Heat, drought and wildfire (1)

Resource	Description	Link
Severn Wye Staying Cool in Summer	Tips on staying cool in warm weather with BSL interpretation	Get the tips
UK Government Heat-Health Alert Card	Summary action card for the voluntary and community sector on hot weather	View the card
UK Government Guidance on Impacts of Drought	Information on the health impacts of drought in England	Read the guidance
British Red Cross	How you can prepare for drought in the UK	Read the guidance
British Red Cross	How to prevent wildfires and stay safe	Read the guidance
National Fire Chiefs Council	How to prevent wildfires and stay safe	Read the guidance
DEFRA Overheating Maps	Maps showing the impact of climate change on future temperatures inside homes	Explore the tool



Further resources

Heat, drought and wildfire (2)

Resource	Description	Link
Friends of the Earth Heatwaves Exposure Maps	Map showing areas most likely to be exposed to extreme heat in future heatwaves and areas at risk	View the map
Climate Change Committee Overheating Risk in UK homes	A report on how to address overheating in UK homes	Read the report
MOSL Drought Restrictions in the UK	A map showing live data on any existing restriction to water use in the UK	View the map
TCPA Guide to Overheating	What communities can do to address overheating	Read the guide
Shade the UK	Adapting the built environment to protect the vulnerable	Access the resources
United Nations Environment Programme	Energy efficiency and nature-based solutions for responding to heatwaves	Access the resources
Forest Research	The role of urban trees and greenspaces in reducing urban air temperatures	Read the report



Further resources

Nature-based solutions

Resource	Description	Link
Tree Equity Score UK	Urban tree canopy cover indicator to help show and address disparities in urban tree distribution in the UK	Access the tool
Nature Based Solutions Initiatives	Resources to help support and enhance the implementation of nature-based solutions to climate change	Access the resources
WWF – Nature Based Solutions	Case studies to help show how nature-based solutions can work in the UK	Read the case studies
Somerset Wildlife Trust	Guidance on how communities can implement climate adaptation plans and support wildlife	Read the guidance



Further resources

Making your buildings more climate resilient

Resource	Description	Link
CSE energy advice leaflets	Advice on saving energy and keeping warm in your home	Access the leaflets
CSE webinars on retrofitting community buildings	Webinars on how best to retrofit your community building	Watch the webinars
CSE webpage on improving community buildings	Guidance and a resource for you to undertake your own DIY energy survey	Access the resources
Historic England	Guidance and resources on retrofitting historic buildings	Access the resources
Department for Energy Security and Net Zero	A comprehensive guide on retrofitting residential buildings	Read the guide
South West Net Zero Hub Toolkit	A toolkit on getting started with a retrofit project	Read the guide
UK Health Security Agency	Understanding and addressing the health risks of damp and mould	Read the guidance
Historic England	Advice and case studies to support retrofit in historic buildings	Access the resources
Bristol Climate and Nature Partnership	Improving home retrofit for Disabled people	Explore the resources

This guide is part of the Community Climate & Nature Action Project, kindly supported by the National Lottery's Climate Action Fund.

Coordinated by



In collaboration with

