

Three Rivers District Council  
**Climate Emergency &  
Sustainability Strategy**



**WORKING TOGETHER  
FOR A BETTER FUTURE**

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**N.B.: further information, data, graphs and glossaries of key terms and acronyms can be found in the Supplementary Document.**

## **Executive Summary**

In 2019, Three Rivers District Council declared a Climate Emergency; committing to achieving carbon neutrality by 2030 for its own emissions and assisting the District to achieve net-zero carbon by 2045 at the latest.

The scientific evidence that climate change is happening is irrefutable. The average temperature at the surface of the Earth has now risen by about 1°C since the pre-industrial period, ocean temperatures are increasing, ice-caps are melting, sea-levels are rising, and extreme weather events are increasing in frequency and intensity worldwide. Limiting global temperature rise to 1.5°C to avoid the worst social, economic and environmental impacts of climate change and safeguard the planet for future generations will require radical action at all levels of government and society, and in every economic sector across the world. A post-pandemic Green Recovery presents a once-in-a-generation opportunity to redesign our economies and societies to be more resilient, sustainable and inclusive.

Following extensive public consultation, this Climate Emergency and Sustainability Strategy outlines how the Council aims to deliver and facilitate the changes needed to tackle the twin crises of climate change and biodiversity decline in the District while enabling greener, healthier lifestyles and a thriving local economy, in collaboration with local residents, businesses, community groups, voluntary organisations and partners.

The Strategy will embed the climate and ecological emergencies into the culture and decision making of the Council, reduce carbon emissions through regular measurement, minimise energy consumption and promote a transition to renewable energy. It will also enable and encourage sustainable modes of travel to reduce reliance on carbon-fuelled transport and improve local air quality. The new Local Plan will insist on the highest standards of design and construction and the Council will work with stakeholders to drive down emissions from existing buildings.

The Strategy seeks to protect and enhance Three Rivers' rich biodiversity by sensitively managing council-owned land while supporting landowners and residents to enhance and connect their green spaces for wildlife. To address the devastating impacts of overconsumption, the Strategy promotes the development of a circular economy; increasing reuse and recycling in the District to minimise waste entering landfill. Furthermore, the Strategy encourages sustainable food production and consumption, and the re-distribution of excess food through local food-sharing networks.

Water consumption in Hertfordshire is the highest in the country and this precious resource is extracted from the rarest of global habitats – chalk streams. Alongside over-abstraction, these unique habitats are further threatened by sewage and plastic pollution. This Strategy seeks to work with stakeholders to reduce water consumption, prevent water pollution, and reduce flood risks exacerbated by a changing climate.

Finally, and significantly, the Strategy aims to create communities, services, infrastructure and ecosystems that are resilient to the unavoidable impacts of climate change by increasing awareness of these impacts among residents and businesses, future-proofing council services and assets, adapting the natural and built environment, and fostering local food, energy and water self-sufficiency.

**Phil Williams,**  
**Lead Member for Environmental Services and Sustainability.**

## Introduction

In 2019, Three Rivers District Council declared a Climate Emergency and committed to achieving carbon neutrality by 2030 for its own emissions and assisting the District in reaching the legally-binding Government target of net-zero carbon by 2050 (at the latest).

The greenhouse gas emissions causing climate change are a product of our 'take-make-waste' extractive economy, which relies on polluting fossil fuels and fails to manage natural resources sustainably. Through this Strategy, Three Rivers District Council is committing to transform how it tackles the climate and ecological crises facing us.

This document provides a strategic framework for our subsequent Action Plan which will detail quantifiable, short-, medium- and long-term actions needed to meet our aims and objectives, and will share responsibility for the implementation to relevant Council departments and partners. The Action Plan will be dynamic and responsive to legislative, scientific and technical developments, and progress on delivering the action points will be regularly reviewed and reported on.

## The Strategy Consultation:

The Council was eager to ensure that residents, voluntary and business stakeholders in the local community were empowered to contribute to the Climate Change Strategy, and therefore undertook a month-long public consultation on the Strategy document in October 2020.

An online survey was circulated on the Council's website and social media, among local schools and Councillors, and by email to partner agencies. Additionally, Officers virtually attended Local Area Forums, the Environmental Forum, and school classes to discuss the strategy.

Encouragingly, the aims and objectives of the Strategy were widely endorsed, with a shared sense of urgency regarding the climate crisis, biodiversity loss and environmental degradation, giving the Council a clear mandate for immediate and decisive action.

## How the Consultation Influenced the Final Strategy:

- To reflect the collective sense of urgency among residents who passionately appealed for district-wide decarbonisation to be achieved *well* before 2050, the Strategy has been amended to adopt the more ambitious target of achieving net-zero for the District's emissions by 2045 *at the latest*, in order to increase our chances of limiting global warming to the crucial 1.5°C threshold outlined in the 2015 Paris Agreement.
- The consultation responses highlighted that the original Strategy document did not sufficiently address the issue of climate adaptation. We have therefore revised the Strategy to include an additional section dedicated to 'Adaptation and Resilience' and information on the likely impacts of climate change in Three Rivers.
- Our consultation revealed a popular interest in food production and consumption and its relationship to climate change and wider ecological issues such as biodiversity loss, in

acknowledgement of this, we have added in a new section to the Strategy titled 'Food and Agriculture'.

- In response to the recurring criticism that some of the language and terminology used in the Strategy was not accessible, the Strategy was edited to include a 'Glossary of Key Terms' where specialist terms such as 'decentralised energy' and 'circular economy' are fully-defined.

## **Chapter 2: Background - Why We Need This Strategy**

The scientific evidence that climate change is happening is irrefutable. The average temperature at the surface of the Earth has now risen by about 1°C since the pre-industrial period, ocean temperatures are increasing, polar ice-caps and glaciers are melting, sea-levels are rising, and extreme weather events are increasing in frequency and intensity worldwide.

2020 was declared the hottest year ever recorded by NASA. The world's seven hottest years on record have all occurred since 2014, and global temperatures have been above the 20th-century average for 44 consecutive years<sup>1</sup>, evidencing the striking long-term effect of global heating resulting from human activity.

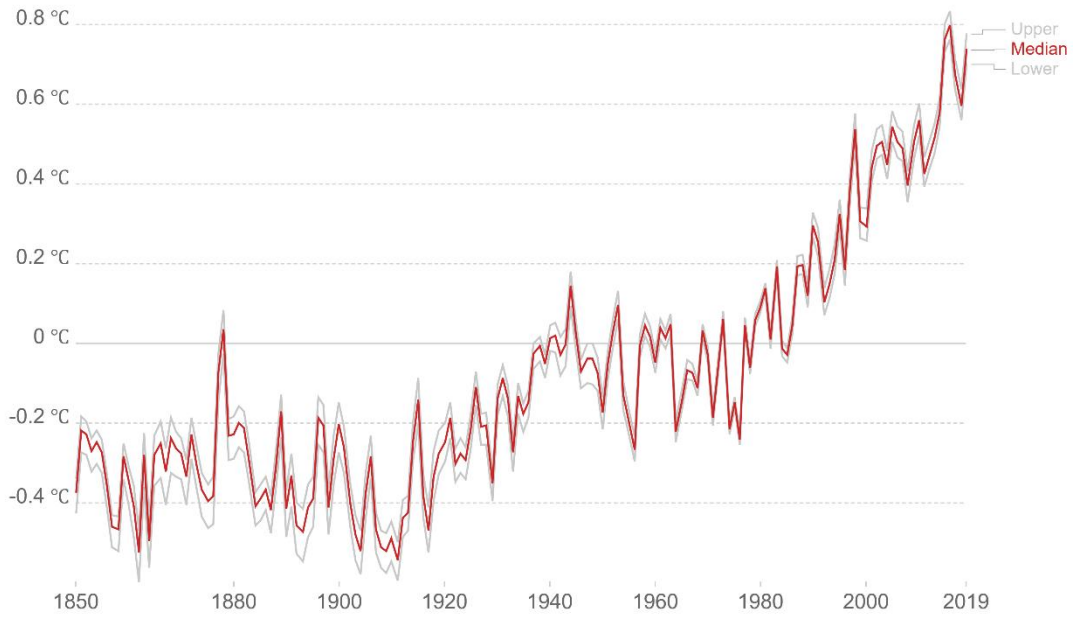
Meanwhile, in September 2016, atmospheric CO<sub>2</sub> concentrations surpassed 400 parts-per-million (ppm) - the last time the atmosphere was this rich in CO<sub>2</sub> was more than 3 million years ago, when the Earth was 2°– 3°C hotter and sea levels were 15–25 meters higher than today<sup>2</sup>. The concentration of carbon-dioxide in the atmosphere continues to climb ever-higher, and today stands at 414ppm<sup>3</sup>.

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<sup>1</sup> <https://www.nasa.gov/press-release/2020-tied-for-warmest-year-on-record-nasa-analysis-shows>

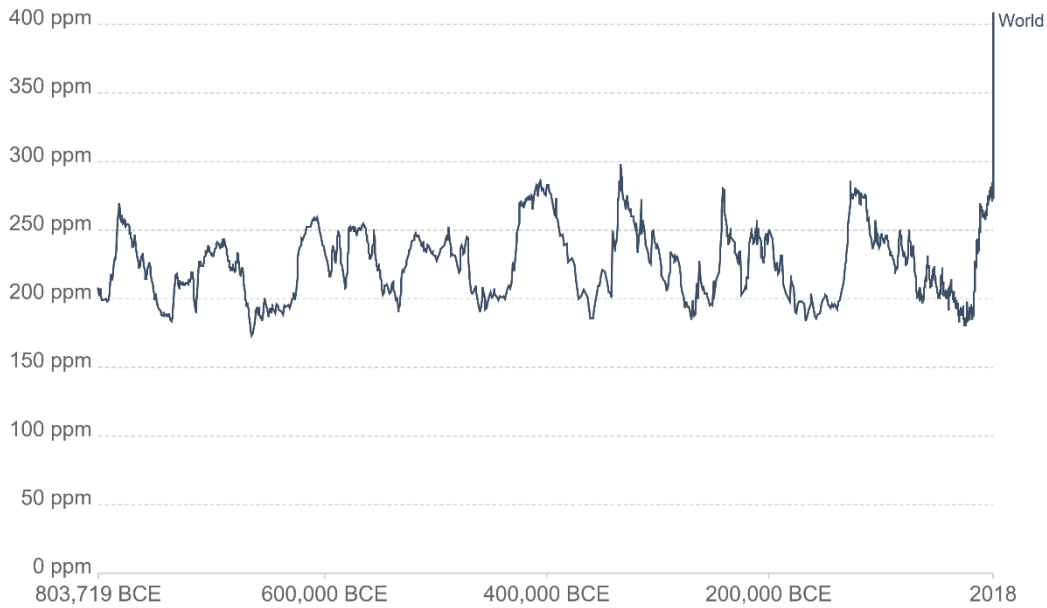
<sup>2</sup> <https://www.climate.gov/news-features/understanding-climate/climate-change-atmospheric-carbon-dioxide>

<sup>3</sup> <https://www.co2.earth/daily-co2>



Source: Hadley Centre (HadCRUT4) OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY  
 Note: The red line represents the median average temperature change, and grey lines represent the upper and lower 95% confidence intervals.

**Figure 1: Global average land-sea temperature anomaly relative to the 1961-1990 average temperature. Since the 1980s, average temperatures have exceeded the last century's average every year.**



Source: EPICA Dome C CO<sub>2</sub> record (2015) & NOAA (2018) OurWorldInData.org/co2-and-other-greenhouse-gas-emissions • CC BY

**Figure 2: Global average long-term atmospheric concentration of carbon dioxide (CO<sub>2</sub>), measured in parts per million (ppm). For millennia, atmospheric CO<sub>2</sub> never passed 300ppm but since the Industrial Revolution, CO<sub>2</sub> concentrations have rapidly increased, and now sit at over 400ppm.**

It is likely the UK will experience at least another half a degree temperature increase by 2050, and can expect 3cm to 27cm of sea-level rise varying regionally across the UK, a 10% increase in heavy rainfall, and a 50% chance of each summer being hotter than that of 2018.

<sup>4</sup> If global greenhouse gas emissions are brought rapidly to net-zero in the second half of this century, UK temperatures (and rainfall) could be kept close to their level in 2050. However, sea levels in the UK would continue to rise, as oceans respond more slowly to changes in global temperature.

If we take action to radically reduce greenhouse gas emissions now, we may be able to limit the increase in global surface temperature to 2°C above pre-industrial levels. Doing so will limit the burden we place on future generations, those in more vulnerable countries, protect our economies, and provide wider benefits to health, energy security and biodiversity.

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<sup>4</sup> <https://www.theccc.org.uk/2020/04/21/how-much-more-climate-change-is-inevitable-for-the-uk/>

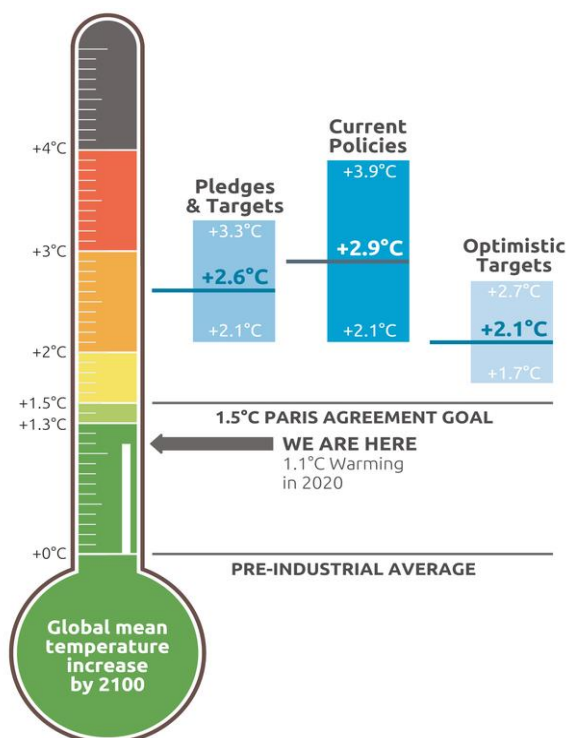
## The Policy Context:

The UK is a signatory to the 2015 Paris Agreement, a landmark piece of global climate change legislation which commits the international community to substantially reduce global greenhouse gas emissions in an effort to limit global temperature rise this century to below 2°C above pre-industrial levels. Furthermore, the Agreement emphasises pursuing efforts to limit the temperature increase to 1.5°C in order to avoid dangerous climate change.<sup>5</sup>

### The Significance of Limiting Warming to 1.5°C:

Put simply, climate-related risks to natural and human systems are higher with global warming of 2°C than with warming of 1.5°C.<sup>6</sup>

| Impacts at 1.5 Degrees Warming   | Impacts at 2 Degrees Warming   |
|--|--|
| A sea-ice-free Arctic summer is expected every 100 years.  | At least one sea-ice-free Arctic summer is expected every 10 years.                                    |
| About 14% of the world population will be exposed to severe heat waves at least once every five years. | About 37% of the world population will be exposed to severe heat waves at least once every five years. |
| An additional 350 million people living in urban areas will be exposed to severe drought.              | An additional 411 million people living in urban areas will be exposed to severe drought.              |
| Coral reef cover will decline between 70%-90% by 2050.   | Total loss of coral reefs.   |
| 6% of insects, 8% of plants and 4% of vertebrates will lose more than half their habitat range.        | 18% of insects, 16% of plants and 8% of vertebrates will lose more than half their habitat range.      |



Despite the Paris Agreement goal of limiting global warming to well below 2°C, under current policies we are more likely to be facing a 3°C to 4°C increase by the end of the century if we do not undertake rapid and significant emissions reductions.<sup>7</sup>

<sup>5</sup>[https://ec.europa.eu/clima/policies/international/negotiations/paris\\_en](https://ec.europa.eu/clima/policies/international/negotiations/paris_en)

<sup>6</sup> <https://www.ipcc.ch/sr15/>

<sup>7</sup> <https://climateactiontracker.org/publications/global-update-paris-agreement-turning-point/>



Nationally, the UK is committed under the Climate Change Act 2008 to achieve net-zero greenhouse gas emissions by 2050. Net-zero means reducing greenhouse gas emissions as close to zero as possible and offsetting any remaining emissions through schemes such as reforestation or carbon capture and storage.

#### **Other Relevant National Policies:**

- **The Carbon Plan 2011** identifies the emission reductions needed in five key areas of the economy; buildings; transport; industry; electricity; and agriculture to meet targets.
- **The Clean Growth Strategy 2017** outlines the plan to decarbonise all sectors of the economy by 2050.
- **The 25 Year Environment Plan 2018** sets comprehensive goals and targets to improve the UK's air and water quality, and protect threatened plants, trees and wildlife.
- **The Resource and Waste Strategy 2018** outlines the actions the UK will take to minimise waste, promote resource efficiency and move towards a circular economy.
- **The Clean Air Strategy 2019** focuses on reducing industrial, agricultural and transport emissions and aims to reduce particulate matter emissions from solid fuel used in homes.
- **The Environment Bill 2020** aims to fill the environmental governance gap created by Brexit. It sets out new legal frameworks for air pollution, water quality, biodiversity conservation, waste and resource management, and the use of chemicals.

## **A Green Recovery from Covid-19:**

The health and economic impact of Covid-19 has starkly demonstrated the future that awaits us if we do not act immediately to halt the destruction of the natural world on which we depend.

Since its emergence, the coronavirus pandemic has had devastating consequences for lives and livelihoods globally, while also forcing a dramatic decline in greenhouse gas emissions as economic activity slowed considerably. According to the Global Carbon Project, 2020 saw carbon dioxide emissions decline by 2.4 billion tonnes - the biggest annual fall in CO<sub>2</sub> emissions since World War Two. The UK's own emissions fell by 13% in 2020<sup>8</sup> while our economy suffered the worst contraction in three centuries as GDP plummeted by 11.3%.<sup>9</sup>

Nevertheless, the trend of emissions reductions is only temporary, with emissions expected to rebound in 2021 and beyond as nations eagerly pursue economic recovery. Simply reviving the existing carbon-intensive, extractive economy will exacerbate the climate crisis, biodiversity loss and the consequent risk of recurring pandemics. Post-crisis recovery programmes thus present a once-in-a-generation opportunity to redesign our economies and societies to be more resilient, sustainable and inclusive.

Scientific opinion strongly connects the increasing prevalence of infectious disease outbreaks to environmental destruction and biodiversity loss. As wildlife habitats are destroyed and fragmented, wild animals are forced to live in closer proximity to humans and livestock, increasing the risks of transmission from animals to humans. Three quarters of all emerging infectious diseases originate from wild animals<sup>10</sup>. Meanwhile, climate change threatens to compound these risks by forcing species to migrate in pursuit of tolerable climatic conditions, which can introduce diseases to geographies they were previously not present in, making northerly, temperate regions more susceptible to tropical diseases such as Zika virus and Dengue fever<sup>11</sup>.

To avoid such risks, a sustainability-centred "Green Recovery" must be a priority. A Green Recovery presents an opportunity to invest in the creation of new jobs and low-carbon infrastructure; support innovation, re-skilling and retraining to expand the sustainable goods and services sector; and drive a shift in social norms and behavioural change.

Economic prosperity and environmental protection need not be conflicting aims. Investment in green jobs can support a thriving economy in the long-term; nearly 700,000 direct jobs could be created in England's low-carbon and renewable energy industry by 2030, rising to more than 1.18 million by 2050<sup>12</sup>.

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<sup>8</sup> <https://essd.copernicus.org/articles/12/3269/2020/#section1>

<sup>9</sup> <https://www.gov.uk/government/speeches/spending-review-2020-speech>

<sup>10</sup> <https://www.cdc.gov/onehealth/basics/zoonotic-diseases.html>

<sup>11</sup> <https://www.who.int/globalchange/summary/en/index5.html>

<sup>12</sup> <https://local.gov.uk/about/campaigns/re-thinking-local/re-thinking-local-skills-and-green-economy>

We can no longer ignore our interdependence with the environment and blindly return to destructive business-as-usual practices which contribute to the emergence of infectious diseases like Covid-19. The coronavirus pandemic has caused immense suffering globally but it has also enabled us to reimagine our world, and presents us with a unique opportunity to rebuild our economies and societies stronger, cleaner and more resilient.

The Council is committed to supporting a Green Recovery in Three Rivers and will ensure that the actions we implement as part of our response to the climate and ecological crises will simultaneously deliver sustainable development. In addition, we will undertake evidence studies to review the long-term impacts of Covid-19 in our District, and determine if policy changes are required to reflect the evidence found.



*“Humanity is waging war on nature. This is suicidal.*

*Nature always strikes back -- and it is already doing so with growing force and fury. Biodiversity is collapsing. One million species are at risk of extinction. Ecosystems are disappearing before our eyes.*

*Deserts are spreading.*

*Wetlands are being lost.*

*Every year, we lose 10 million hectares of forests.*

*Oceans are overfished -- and choking with plastic waste. The carbon dioxide they absorb is acidifying the seas.*

*Coral reefs are bleached and dying.*

*Air and water pollution are killing 9 million people annually – more than six times the current toll of the pandemic...*

*2020 is on track to be one of the three warmest years on record globally – even with the cooling effect of this year’s La Nina.*

*The past decade was the hottest in human history. Ocean heat is at record levels.*

*... Emissions are 62% higher now than when international climate negotiations began in 1990...*

*Today, we are at 1.2°C of warming and already witnessing unprecedented climate extremes and volatility in every region and on every continent.*

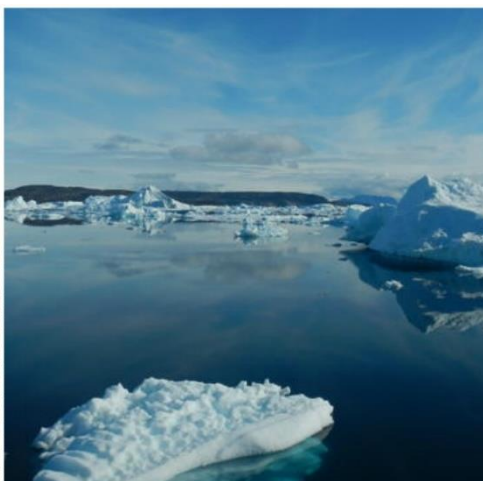
*We are headed for a thundering temperature rise of 3-5°C this century.*

*... Let’s be clear: human activities are at the root of our descent towards chaos.*

*But that means human action can help solve it.*

*Making peace with nature is the defining task of the 21st century. It must be the top, top priority for everyone, everywhere.”*

*- Antonio Guterres, UN Secretary General, State of the Planet Speech.*



# Our Key Achievements:

The extension of South Oxhey Leisure Centre achieved a "very good" BREEAM rating in recognition of its sustainable design.

We have secured Green Homes Grant funding to alleviate fuel poverty in 125 dwellings across the District.

Leavesden Country Park was awarded a national Bees' Needs Champion Award by DEFRA in 2020 for creating pollinator-friendly environments which attract and nurture local bee populations.

Three Rivers District has the highest number of publicly-accessible electric vehicle charging points in Hertfordshire, supporting the shift from carbonised travel.



We have installed: a cycle hub at Leavesden Country Park which offers a range of facilities including bike servicing and repairs, bike hire and cycling tuition; new high-density bike parks at local train stations; and cycle parking at every local retail centre.



Developed a comprehensive county-wide Water Action Plan in collaboration with all key water-related stakeholders to ensure sustainable water management.



Three Rivers has achieved 4 prestigious Green Flag awards which recognise well-managed, high quality green spaces which are safe, clean, sustainable and community-oriented.

Recycling rates in Three Rivers are the highest in Hertfordshire at 64.1% (2019/20).



Our flagship buildings have solar arrays and LED lighting, and Three Rivers House uses a ground-source heat pump for heating and comfort cooling.



### **Chapter 3: Our Progress to Date**

The Council has been working towards the aims and objectives of the Green Expectations Strategy 2015 - 2019, working to address economic development, partnerships, inclusion, education and promotion and health. There has been significant progress across Three Rivers:

- Purchased and restored the Withey Beds – one of few remaining wetland habitats in Hertfordshire.
- Single-use plastics have been significantly reduced across Council operations.
- As active members of the Hertfordshire Refill Scheme, we have over 20 Refill stations around the district to make it easier to refill on the go.
- As an active member of WasteAware (the campaign branch of the Hertfordshire Waste Partnership), we run public awareness campaigns throughout the year, work to make waste collection across the district more consistent, and lobby waste producers and policymakers.
- We separate all waste from our public litter bins for recycling.
- We convert the District's food waste into electricity and fertiliser at a local Anaerobic Digestion plant.
- We process garden waste products in to compost and have an annual compost giveaway for residents.
- The local walking and cycling strategy has helped develop and create safe, efficient and accessible transport networks in the District to encourage sustainable transport.
- The Better Buses Programme provides essential local bus services which up to 2020 had replaced nearly 80,000 car journeys annually (saving an estimated 40% of carbon emissions with the same journeys made by a small car).

#### **Since 2020 we have:**

- Secured Green Homes Grant funding to alleviate fuel poverty by improving energy efficiency in 125 dwellings across the District.
- Helped residents recycle 64.1% of their waste – the highest in Hertfordshire (2019/20).
- Developed a comprehensive county-wide Water Sustainability Action Plan in collaboration with all key water-related stakeholders to ensure sustainable water management.
- Worked to enhance natural habitats across the District; Leavesden Country Park was awarded a national Bees' Needs Champion Award by DEFRA for creating pollinator-friendly environments which attract and nurture local bee populations.
- Facilitated the development of local climate and environmental action groups to advance community-led sustainability initiatives, in collaboration with Friends of the Earth Watford and Three Rivers Groups.
- Appointed two dedicated officers responsible for the development and implementation of the Strategy and Action Plan for the Council's own operations and the District.

## Local Impacts:

It is important to understand that there is a delay between emissions being added to the atmosphere and the resultant change in global temperature.

We know that even if we stop emitting all greenhouse gases immediately, the emissions produced over the last century commit us to a certain degree of global warming in the long-term due to the inertia of the climate system and tipping points.

There is already mounting evidence of a changing climate in the UK with life-cycle events occurring prematurely (e.g. when flowers bloom or pollinators emerge), rising sea-levels encroaching on coastlines, floods devastating local communities, and unprecedented heat waves harming people's health and well-being. Climate projections suggest such events will become more severe and widespread as climate change progresses, with profound implications for our way of life. Therefore, it is vital that we adapt to the impacts of climate change that are now unavoidable while simultaneously acting to mitigate further climate change by reducing greenhouse gas emissions.<sup>13</sup>

Adaptation involves anticipating the adverse effects of climate change and taking appropriate action to prevent or minimise the damage they can cause, while taking advantage of any opportunities that may arise.

The UK Climate Change Projections suggest that over the next few decades, Three Rivers may experience:

- A 2°C increase in average annual temperatures.
- Temperatures on the warmest day in summer could increase by up to 5°C.
- Hotter, drier summers with up to 25% less rainfall.
- Warmer, wetter winters with up to 22% more rainfall.
- Higher frequency and intensity of extreme weather events, such as heatwaves and severe flooding episodes.

At a county level, Hertfordshire is vulnerable to the impacts of climate change due to its location within the driest region of the UK, its high population density, pressures from housing and economic development, and its physical characteristics, such as the mix between urban settlements and rural landscapes, and the predominance of clay soil. Together, these impacts represent risks to the built environment, natural environment, human health and the economy<sup>14</sup>.

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<sup>13</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/758983/Climate\\_change\\_impacts\\_and\\_adaptation.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/758983/Climate_change_impacts_and_adaptation.pdf)

<sup>14</sup> <https://www.hertfordshire.gov.uk/microsites/building-futures/a-sustainable-design-toolkit/technical-modules/climate-change-adaptation/basic-principles.aspx>

# How the Climate Could Change In Three Rivers With 2°C and 4°C of Warming:

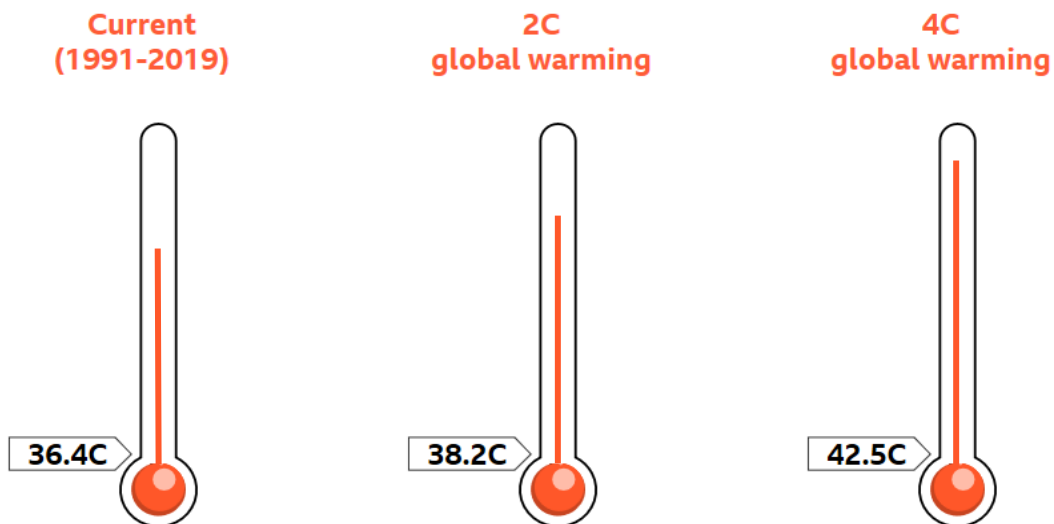
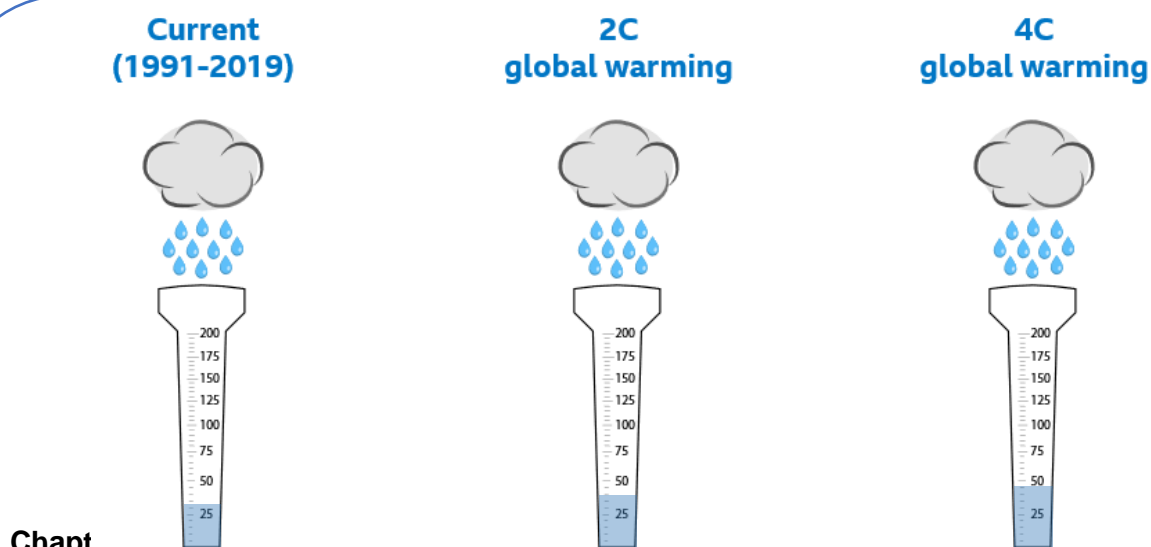


Figure 1: If global average temperatures increase 2°C above pre-industrial levels, the hottest summer day in Three Rivers District could be ≈38.2°C. If global temperatures rise by 4°C, it could be ≈42.5°C.



Figure 2: In the past 30 summers, there were 5 days above 25°C per month on average in Three Rivers District. If global temperatures rise by 2°C, there could be 9 days. With a 4°C rise, there could be 18 days.



## Chart

Figure 3: On the wettest winter day of the past 30 years, 32mm of rain fell in Three Rivers District. At a 2°C rise, this could be about 39mm, with a 4°C rise, it could be about 45mm - 38% more than today.



**Three Rivers District Council declared a climate emergency in 2019 and have committed to achieving net-zero for its own emissions by 2030, and will implement plans to ensure the District achieves net-zero by 2045 at the latest.**

The aims and objectives in this Strategy all follow a hierarchy of action which recognises the three broad spheres of influence that Three Rivers District Council can have: Leading, Enabling and Inspiring.



## **Enable and Engage**

**Aim: To inspire all stakeholders and residents of Three Rivers to work together to achieve carbon neutrality, build climate resilience and adopt sustainable choices and lifestyles.**

Climate change is a collective action problem requiring us all to make changes to our lifestyles to reduce our impact on the planet. Our consultation revealed that local people were enthusiastic about involving the community in realising the goal of net-zero, and recognised the importance of collaborative action by the Council with a range of stakeholders.

Three Rivers together with the community have an opportunity to lead a new low-carbon future enabling cleaner, healthier lifestyles where the local economy thrives through the growth of sustainable and green businesses. We recognise the key role that the Council has in inspiring local people to be part of the change and take pride in their area; contributing to the enrichment of local biodiversity and altering habits to reduce their carbon, water and ecological footprints. It is also vital that we support and collaborate with local people, council tenants and businesses to increase awareness of and preparedness for the unavoidable impacts of climate change in Three Rivers.

### **Objectives:**

- Embed the climate and ecological emergencies into the culture and decision making of the Council so that the environmental impacts of all council projects, policies, procurements and services are considered.
- Continue to consult with residents, council tenants and stakeholders on climate change and sustainability issues and initiatives.
- Engage with local businesses, council tenants, relevant corporates, schools, faith groups, youth groups, parish councils, highways, and campaign and conservation groups to inspire and support each other in adopting pro-environmental behaviours, for example water and energy conservation, waste reduction, and sustainable food consumption.
- Reduce our community's vulnerability to the impacts of climate change and take advantage of any opportunities that arise.
- To regularly review and measure our successes against our Strategy and Action Plan to inform residents and stakeholders of the changes being made across the District and their contribution to fighting the climate and ecological emergency.

## Energy

**Aim: Minimise energy-related emissions in the District through reducing consumption, improving efficiency and transitioning to renewable energy sources to achieve net-zero targets (2030 – council emissions, 2045 – district-wide emissions).**

Energy can be generated using renewable sources such as solar, wind and hydro power, biomass, combined heat and power plants (CHP). Renewable energy projects can generate lasting cost and carbon savings, and protect against future energy price rises. They can also deliver broader social objectives such as ensuring security of supply and addressing fuel poverty.

In the next 15 years, the energy demand of the country is expected to be the same or marginally decrease.<sup>15</sup> In order to meet future energy needs and our net-zero emissions commitment before 2045, a significant amount of alternative sources will need to be deployed within Three Rivers District.

### Objectives:

- Regularly monitor and review council and district energy-related emissions to inform decision-making in achieving the net-zero targets.
- Assess options for decentralised renewable energy generation within council operations and the wider district, working either independently or in partnership.
- Share learnings from the Council and across industry with stakeholders and residents in the District to inspire and support others to start their own decentralised energy projects, or switch to a green energy provider.
- Utilise financial support measures wherever possible to install low-carbon energy technologies across Council buildings, and publicise relevant funding opportunities available to residents and businesses.

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<sup>15</sup> [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/794590/updated-energy-and-emissions-projections-2018.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/794590/updated-energy-and-emissions-projections-2018.pdf)

## Sustainable Design and Construction

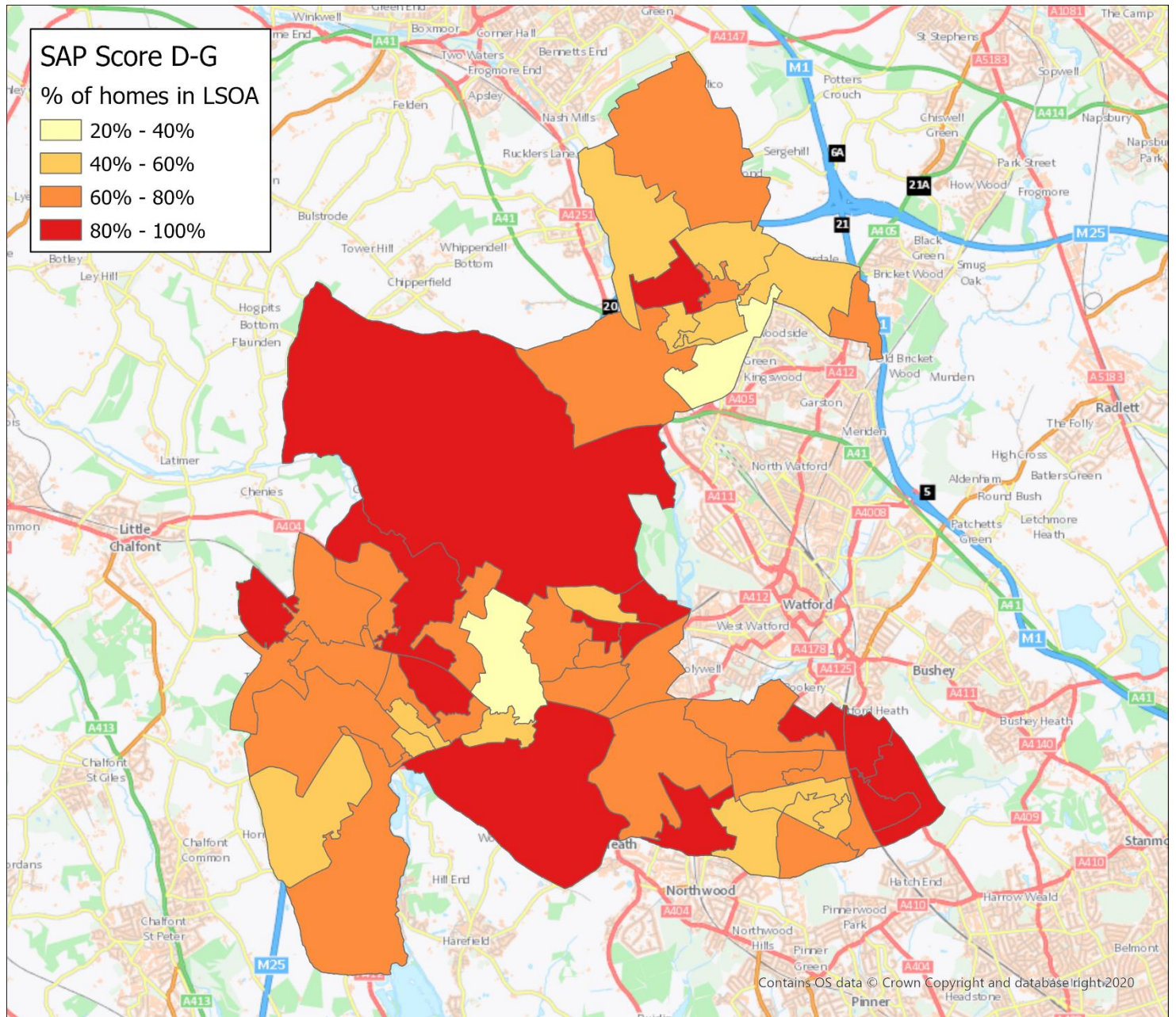
**Aim:** The highest standards of sustainable design and construction should be achieved to create adaptable buildings which are resilient to the effects of climate change, and minimise the use of natural resources over the intended lifetime of a development.

### Objectives:

- Require major developments to submit a Sustainability Statement to demonstrate how the development will mitigate and adapt to climate change over its lifetime, minimise construction related waste and adhere to the sustainability requirements stipulated by the Local Plan.
- Require all new commercial developments, and residential developments of one unit and above to produce an Energy Statement demonstrating how a minimum of 20% less carbon dioxide emissions than Building Regulations Part L requirements (2013) will be achieved.
- Require the integration of renewable energy within any new council developments, and (where possible) within public and private sector developments.
- Lobby government to ensure Building Regulations do adopt the Future Homes Standard by 2025 to ensure new build homes are future-proofed with low carbon heating and exceptional levels of energy efficiency.
- Expect all proposals for development to be designed sensitively to build in resilience to extreme weather events by managing flood risk, enhancing the Green and Blue Infrastructure Network, and optimising passive solar gain, whilst reducing the risk of overheating. Furthermore, development must protect and enhance existing social and community facilities, provide new facilities where necessary and provide essential infrastructure, including (but not limited to) transport, education, health, utilities, waste facilities, waste water, leisure, cultural and community facilities.
- For major non-residential developments, proposals should aim to achieve BREEAM 'Excellent' as a minimum with the ambition to achieve "Outstanding."
- Require new development to provide waste and recycling facilities in accordance with the Council's Solid Waste Storage/Collection Guidance.
- Encourage consideration of sustainability in small scale building extensions, renovations and retrofits.
- Require the provision of sustainable low- and zero-carbon transport infrastructure in new developments.
- Support off-site manufacturing of residential or commercial construction.

Domestic energy use accounts for 27% of carbon dioxide emissions in Three Rivers.

Over two-thirds of properties in Three Rivers are energy inefficient, with an EPC rating below a C.



Three Rivers District Council has secured Green Homes Grant funding to lift approximately 125 homes out of fuel poverty in 2021, and reduce energy-related carbon emissions.

## Efficiency of Existing Buildings

**Aim: Improve industrial, commercial and domestic energy efficiency in the District in existing buildings.**

Three Rivers District Council's vision is that the District should be a better place to live and work for everyone. The aims and priorities for the Council include reducing the carbon-footprint of the District and supporting our most vulnerable people. Improving the energy efficiency of homes and businesses in the District is key to delivering this.

### Objectives

- Publicise and assist the accessibility of any grants or incentive schemes which help reduce the carbon emissions of existing buildings including the Councils own and associated public buildings.
- Ensure utility contracts on Council-owned buildings utilise low-carbon energy tariffs.
- Support the retrofitting of buildings for energy efficiency where planning permission is required<sup>16</sup>.
- Work with the utility companies to improve energy efficiency in homes locally.
- Report on the implementation of residential energy efficiency measures in the District in line with the Home Energy Conservation Act.
- Encourage housing associations, commercial properties, and public buildings to adopt energy efficiency measures as soon as possible.

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<sup>16</sup> <https://www.threerivers.gov.uk/download?id=47493>

## Sustainable Travel and Air Quality

**Aim: Enable and encourage journeys made by sustainable transport modes to reduce carbon fuel reliance, improve local air and environmental quality and promote sustainability.**

Hertfordshire is the second most densely populated county in England and the County with some of the highest vehicle ownership levels in the country. 87% of residents have access to a car compared to 74% nationally.<sup>17</sup>

Three Rivers District Council is keen to encourage the switch to more sustainable transport modes such as walking, cycling and public transport (passenger transport reduces carbon emissions by about 58% for each trip) which will reduce greenhouse gas emissions, congestion, noise and air pollution, and improve health and wellbeing.

The Council is helping to reduce resident and commercial reliance on carbon-fuelled transport by working closely in partnership with relevant stakeholders, including Hertfordshire County Council to meet shared policy objectives.

Our key programmes to deliver more sustainable travel including- Better Busses, Walking and Cycling, Sustainable Travel Planning, Parking Management and Streetscape Improvement which are under continuous review and development.

TRDC monitors Nitrogen Dioxide (NO<sub>2</sub>) by diffusion tube at seven sites across the district, and has an Air Quality Management Area, and district-wide Air Quality Action Plan, which is due to be reviewed in January 2023.

### Objectives

- Enable and encourage cycling and walking trips to replace carbon fuelled trips, through our updated Walking & Cycling Network, by building new paths and upgrading existing paths, promoting routes to key local destinations, installing strategic infrastructure (including comprehensive cycle parking and other support facilities like Cycle Hubs), and creating promotional events with external partners.
- Continue to develop, promote and improve passenger transport and infrastructure (bus and rail) and the public experience and perception of services.
- Encourage fuel-efficient private hire vehicles and taxis.

Reduce environmental impacts arising from commercial transport (including Three Rivers Council), by promoting and supporting Travel Plans which encourage homeworking, shared mobility and new forms of travel (such as hydrogen and electric).

- Monitor and review air quality across the District to determine whether national air quality objectives are being met.

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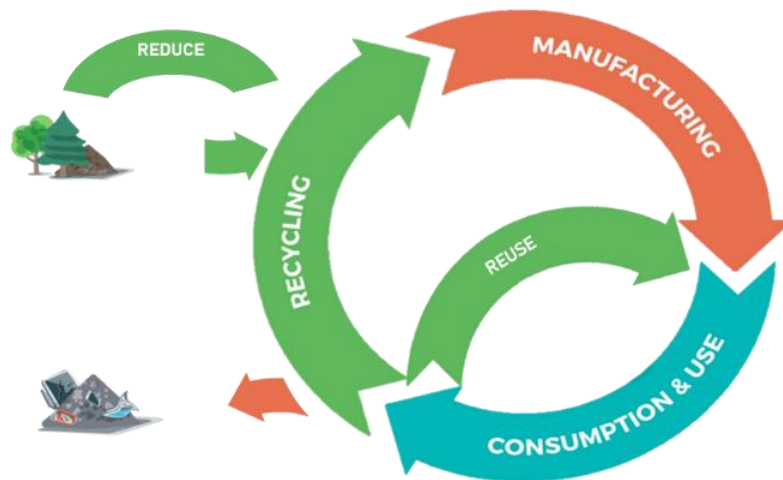
<sup>17</sup> <https://www.hertfordshire.gov.uk/media-library/documents/environment-and-planning/planning/planning-in-hertfordshire/ltp-sustainable-travel-strategy-for-schools-2018-19.pdf>

- Ensure that we request and where possible require the provision of sustainable low- and zero-carbon transport infrastructure in new developments.
- Continue to expand and encourage electric vehicle charging infrastructure around the District.



## Waste and a Circular Economy

**Aim:** To reduce the volume of waste produced and manage it sustainably through promoting a circular economy.



If the whole world lived like the UK – we would need 2.8 planet Earths to sustain us<sup>18</sup>. A 2020 study in the journal 'Nature' estimated that the mass of man-made materials such as plastic, bricks and asphalt now exceeds the total living biomass on Earth. The amount of plastic alone is greater in mass than all land animals and marine creatures combined.<sup>19</sup> Our ever growing consumerism and throw-away culture is unsustainable, and having a devastating impact on both people and planet.

While we will continue to work with the Herts Waste Partnership, the Waste Resource Action Programme (WRAP), the National Association of Waste Disposal Officers (NAWDO), the Local Authority Recycling Advisory Committee (LARAC), producers, and supermarkets to reduce waste production, the government is currently outlining a new Resources and Waste Strategy<sup>20</sup> in order to reduce and manage waste and reduce waste crime to minimise damage to our environment on a national scale. One area of the strategy is to reduce waste through sustainable production – targeting waste at the source they aim to do this through:

- Invoking the 'polluter pays' principle and extend producer responsibility (EPR) for packaging, ensuring that producers pay the full costs of disposal for packaging they place on the market
- Stimulate demand for recycled plastic by introducing a tax on plastic packaging with less than 30% recycled plastic. Although we currently recycle lots of plastic, if there is no use for it, it creates an issue – this tax on plastic content will create a demand for the recycle material.

### Objectives:

<sup>18</sup> [https://www.overshootday.org/content/uploads/2019/05/How\\_many\\_Earths\\_2019\\_English.pdf](https://www.overshootday.org/content/uploads/2019/05/How_many_Earths_2019_English.pdf)

<sup>19</sup> <https://www.nature.com/articles/s41586-020-3010-5>

<sup>20</sup> <https://www.gov.uk/government/publications/resources-and-waste-strategy-for-england/resources-and-waste-strategy-at-a-glance>

- Further reduce waste and increase proportion of recycling and reuse within Council operations, including contractors and suppliers we work with through policy change.
- Reduce the total amount of household and commercial waste produced, and minimise waste entering landfill and energy from waste plants through maximisation of reuse and recycling.
- Maintain our position as the highest recycling authority in Hertfordshire.
- Continue to be an active member of the Hertfordshire Waste Partnership - working as a county to make waste collections more consistent and efficient, as well as engaging with producers and national bodies to improve packaging and recyclability.
- Consider all suitable technology when replacing waste collection vehicles to reduce their carbon footprint, and continue to use them for promotion of reuse and recycling.
- Extend the plastic free policy of the Council by encouraging the local communities to adopt “plastic free” through supporting local low-waste businesses and refill points.
- Continue to engage with the community, and educate residents on recycling and reuse through schools, events, and social media campaigns.
- Reducing waste and alleviating food poverty by connecting retailers, hospitality and households to share edible excess food.
- To support and comply with the governments Resources and Waste Strategy.

“...about two-thirds of the material we scratched from the planet slipped through our fingers. More the 67 billion tons of hard-won stuff was lots, most of it scattered irretrievably. Plastic trash drifted into rivers and oceans; so did nitrates and phosphates leaching from fertilised fields. A third of all food rotted even as the Amazon was deforested to produce more. Think of an environmental problem, and chances are it's connected to waste”.



## **Biodiversity**

**Aim: To plan for net gains in biodiversity to address the ongoing Ecological Emergency, protect and enhance precious habitats and species, and utilise nature to build climate resilience.**

Three Rivers is home to a rich diversity of habitats and species which are protected and sustainably managed under site-specific Countryside Management Plans to enable wildlife to flourish and allow local communities to enjoy the health and wellbeing benefits that thriving ecosystems offer. However, the RSPB's 'State of Nature Report' 2019 found 41% of UK species are suffering declines in abundance and 1 in 10 species are threatened with extinction in Great Britain<sup>21</sup>. Meanwhile locally, Hertfordshire's unimproved grassland and wetland habitats are in retreat, threatening 19% of species in the County with extinction.<sup>22</sup>

An often forgotten element of biodiversity - soil - is vital to our very survival. Soil is home to a quarter of our planet's biodiversity and supports 95% of the world's food production, it also plays a crucial role in storing and purifying water and in mitigating climate change. In the UK, soil contains about 10 billion tonnes of carbon - approximately equal to 80 years of annual greenhouse gas emissions. Yet soil is threatened by degradation globally. In the UK alone, we lose 2.2 million tonnes of soil each year due to erosion<sup>23</sup>.

Biodiversity, including soil biodiversity, is critically important to our wellbeing and economic prosperity. Collectively, it provides us with a range of ecosystem services; from clean air and water, to pollination of our crops, flood prevention and fertile soils. Yet 30% of the vital services we get from ecosystems in the UK are in decline,<sup>24</sup> and these declines are exacerbated by a changing climate.

Fortunately, nature can play a crucial role in addressing the climate crisis – research shows that forests, wetlands and grasslands can deliver at least 30% of the emissions reductions needed by 2030 to prevent climate catastrophe.<sup>25</sup> Moreover, healthy soil can help mitigate climate change by storing carbon (soil sequesters three times as much carbon as the atmosphere), while also increasing our resilience to the impacts of climate change by helping to prevent flooding<sup>26</sup>.

### **Objectives:**

- Ensure that all TRDC-owned land is managed sustainably and for the benefit of biodiversity and soil health.
- Assess how biodiversity can be enhanced across the District to provide climate mitigation benefits and community resilience to the effects of climate change.

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<sup>21</sup> <https://nbn.org.uk/wp-content/uploads/2019/09/State-of-Nature-2019-UK-full-report.pdf>

<sup>22</sup> <https://www.hertswildlifetrust.org.uk/stateofnature>

<sup>23</sup> <https://publications.parliament.uk/pa/cm201617/cmselect/cmenvaud/180/180.pdf>

<sup>24</sup> UK National Ecosystem Assessment, <http://uknea.unep-wcmc.org,2011>

<sup>25</sup> <https://www.conservation.org/blog/why-is-biodiversity-important>

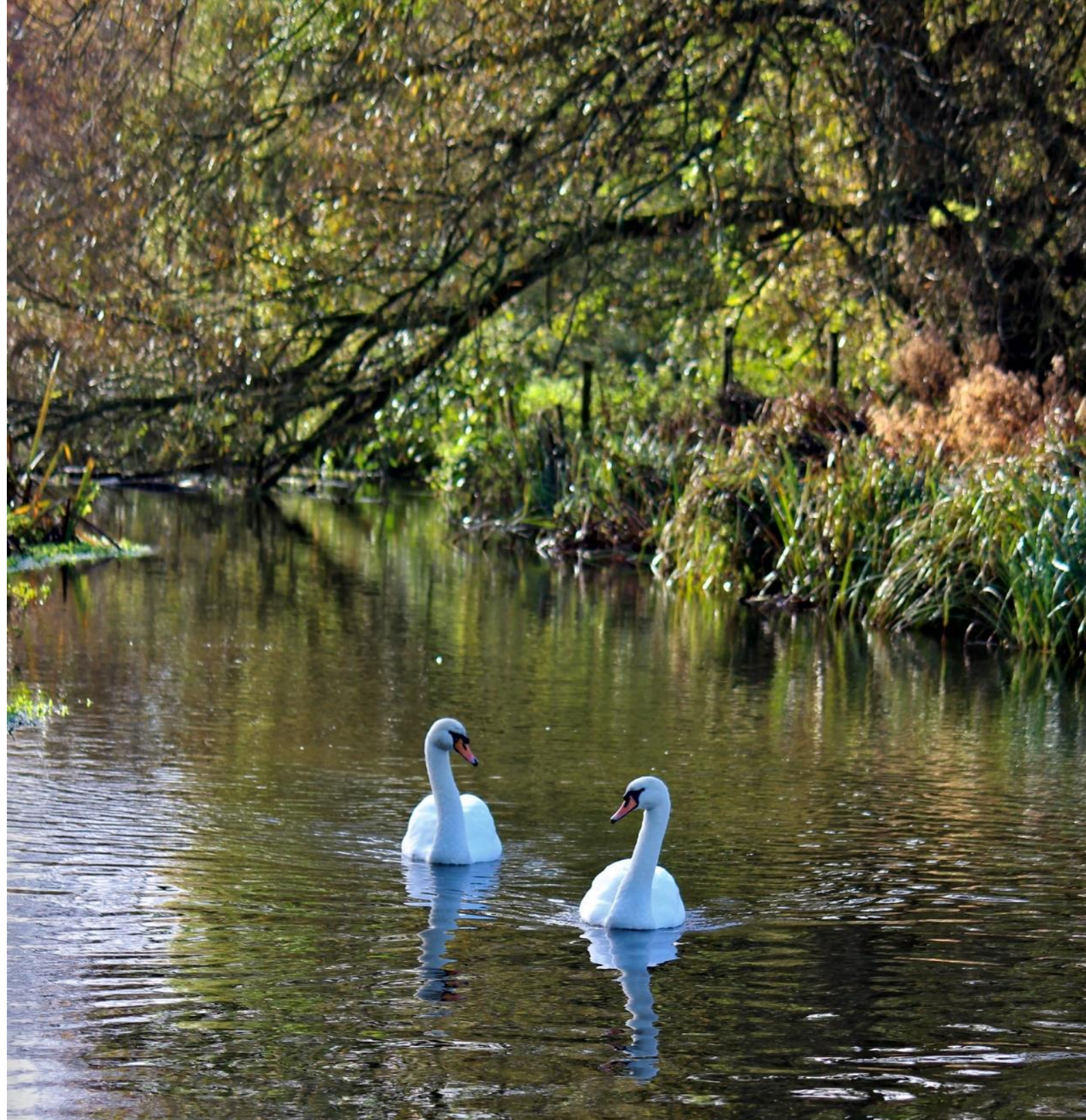
<sup>26</sup> [https://ec.europa.eu/environment/archives/soil/pdf/soil\\_biodiversity\\_brochure\\_en.pdf](https://ec.europa.eu/environment/archives/soil/pdf/soil_biodiversity_brochure_en.pdf)

- Encourage ecologically-resilient and varied landscapes to ensure habitats remain diverse and adaptable to the impacts of climate change, thereby safeguarding local flora and fauna.
- Require all new development in TRDC to result in a 10% net-gain for biodiversity (*preferably within the District*) and avoid the fragmentation, damage and isolation of existing habitats.
- Support landowners in the District to enhance their land for biodiversity through rewilding, tree planting, improving soil health, and creating wildlife corridors.
- Encourage local residents and householders in the District to improve their gardens and open spaces for biodiversity.

“We are wiping wildlife from the face of the planet, burning our forests, polluting and over-fishing our seas and destroying wild areas. We are wrecking our world – the one place we call home – risking our health and survival here on Earth. Now nature is sending us a desperate SOS and we cannot ignore it.”

- Tanya Steele, Chief Executive WWF





There are just 200 chalk streams on Earth. Over 85% of these rare habitats are found in England, 10% of which are located in Hertfordshire.

The River Gade and the River Chess in Three Rivers District are chalk streams.

Chalk streams have a delicate and unique ecology which supports a wide range of species, including some of our most threatened wildlife like brown trout, water voles, and water crowsfoot.

However, our chalk streams are at risk from over-abstraction, pollution and climate change.

## Water and Flooding

**Aim: Reduce water consumption, prevent contamination of our river network, and mitigate and provide resilience to the increasing risk of flooding due to climate change.**

Water and energy are inextricably linked, with water and waste water services contributing nearly 3% of the UK's CO<sub>2</sub> emissions. The effect of climate change indicates a 5% loss of water resource available by 2035 which will have a significant impact on water resources in the UK. Water is typically taken for granted, however, the system is under pressure.

The East of England is the UK's driest region, and Hertfordshire is one of the driest counties with average rainfall returning only two thirds the national average. People in Hertfordshire use more water than any other county in the UK (8% above the national average at 153 litres / per person day).<sup>27</sup>

Chalk Stream in Crisis 2020 produced by The Rivers Trust reported low flows and chronic over abstraction which means chalk streams are at extreme risk. Many of these globally-rare habitats already have long dry sections, some in our area for many years. In addition, the sewage overflows and pollutants which end up in the rivers and affect local habitats means our three rivers in the District are under severe pressure. They need intervention to preserve them and their vital habitats, and their ability to continue to supply us with quality drinking water into the future.

Areas within Three Rivers are at risk of flooding from rivers, surface water, groundwater, sewers and reservoirs. Warmer, wetter winters and more severe weather as a result of climate change are likely to further increase the risk of flooding in the future.

To assess the level of risk, the Council, in conjunction with adjoining authorities in South West Hertfordshire, commissioned a Strategic Flood Risk Assessment (SFRA). Over 2400 properties in Three Rivers are at high risk of flooding. The Colne and Gade catchments were identified as highly sensitive.

### Objectives:

- Assess the Council's water consumption across its estate and implement measures and targets to achieve substantive reductions.
- Require new development to adopt the toughest Building Regulation water efficiency target of 110 litres per household per day and for non-residential development to achieve a rating of BREEAM excellent for water efficiency.
- Work in partnership on a catchment-scale with key stakeholders including environmental charities, catchment partnerships and neighbouring local authorities to protect and enhance local rivers and the habitats which surround them.

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<sup>27</sup> <https://www.hertfordshire.gov.uk/microsites/building-futures/a-sustainable-design-toolkit/technical-modules/water/water-facts.aspx>



- Reduce consumption by working with Affinity Water to produce comprehensive actions plans to reduce water consumption and leakage, aid the adoption of compulsory water metering, and installation of water saving devices.
- Lobby central Government to ensure the proposed Environment Bill is robust with regard to mandatory water efficiency labelling for appliances, the Extended Producer Responsibility Scheme, and tightening of Building Regulations regarding water efficiency targets.
- Facilitate water company visits to schools to provide education on the value of water-saving behavioural change, 'Bin it – don't block it' campaigns, highlighting the link between water consumption, waste and the health of chalk rivers.
- Require a Flood Risk Assessment to be completed for development proposals of 1ha or greater in an area within Flood Zone 1 and for any proposals of development within Flood Zones 2 and 3, and prevent development in areas at significant risk of flooding.
- Refuse development if it is subject to unacceptable flood risk or if it would exacerbate flood risk on site or elsewhere.
- Require Surface Water Drainage Strategies for all major development and where appropriate, for minor developments.
- Work with the Local Lead Flood Authority to assess the sites within the District which are susceptible to flooding then work with stakeholders, farmers and land managers to reduce the flood risk using natural flood management and sustainable drainage systems.

## Adaptation and Resilience

**Aim: Create communities, services, infrastructure and environments that are resilient to the unavoidable impacts of the Climate and Ecological crises.**

There is growing evidence that even with ambitious mitigation action, between 1.4°C and 2.3°C of warming above pre-industrial levels is now “locked in” to the Earth’s atmospheric system due to the greenhouse gases we have already emitted and the melting of glaciers and ice caps which decreases the planet’s capacity to reflect incoming solar radiation. This “committed warming” means some climate change impacts such as extreme heat and flooding events are likely unavoidable.<sup>28 29</sup>

In light of this, it is crucial we adapt and develop resilience to the impacts of climate change that are now inevitable alongside our efforts to mitigate further climate change by reducing greenhouse gas emissions.

In the context of climate change, resilience is the ability of a system or community to absorb stresses and maintain function in the face of shocks such as extreme weather events, while adapting, reorganising, and evolving into more desirable configurations that improve the long-term sustainability of the system, leaving it better prepared for future climate impacts.

Fostering local resilience will require extensive collaboration between the Council, residents, public, private, and voluntary sector organisations, and partners across a wide range of concerns including energy, food and water supply, public health, transport and emergency services.

### Objectives:

- Make council services adaptable to extreme weather events and the effects of a changing climate, including the emergence of new pests and diseases.
- Reduce flood risk, and ensure sustainable water supply through engagement with key stakeholders (*as described in the Water section*).
- All proposals for development will be designed sensitively to build in resilience to extreme weather events and a changing climate (*as described in the Sustainable Design and Construction section*).
- Adapt landscapes to provide summer shading, mitigate the ‘urban heat island’ effect, and to slow heavy rainfall to reduce flooding.
- Protecting, improving, increasing, and connecting habitats to help nature thrive and withstand new pressures.
- Encourage local food production through the development of community gardens, allotments, orchards, and support of home grown food, with co-benefits for tackling eco-anxiety.

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<sup>28</sup> <https://www.nature.com/articles/s41558-020-00955-x>

<sup>29</sup> <https://openknowledge.worldbank.org/bitstream/handle/10986/20595/9781464804373.pdf?sequence=3&isAllowed=y>

- Encourage renewable energy generation within the District, working either independently or in partnership to encourage greater energy self-sufficiency.
- Reducing waste of edible excess food and alleviating food poverty by connecting retailers, the hospitality sector, and households in local food-sharing networks.
- Engage with local businesses, council tenants, relevant corporates, schools, faith groups, youth groups, parish councils, highways, and campaign and conservation groups to inspire and support each other in adopting pro-environmental behaviours, for example water and energy conservation, waste reduction, and sustainable food consumption.

## Food and Agriculture

**Aim: Encourage sustainable food production and consumption in the district, and engage with farmers to improve habitat networks.**

Food contributes an estimated 21-37% of global greenhouse gasses and agriculture is a driver of deforestation, biodiversity loss, declines in fresh water availability, and pollution of our water systems. Of the food we eat, livestock presents one of the largest issues – using around a third of crop land globally, and causes around 15% of global emissions<sup>30</sup>.

Food is a highly complex, globalised system, with every stage of its lifecycle impacting our planet – from the cropland we use to feed livestock and the waste they produce, to the monocultures and synthetic fertilisers, right through to the global transportation and packaging systems – not to mention the waste created between farm and table with 4 million tonnes of edible food going to waste each year in the UK. In order to keep our emissions below 1.5 degrees, we need a shift in what we eat: buying seasonal, locally produced foods to reduce emissions and improve self-sufficiency in the District.

Agricultural land also has a significant part to play in fighting the Ecological Crisis with hedgerows and field margins hosting wildflowers for pollinators and providing increasingly important wildlife corridors.

### Objectives:

- Identify sites for biodiversity enrichment and habitat networks with land owners and farmers to maximise opportunities for biodiversity gain and climate adaptation.
- Publicise local sustainable food producers to connect with food retailers, hospitality, and residents.
- Encourage local food production through the development of community gardens, allotments, and orchards, with co-benefits for mental health, and enable the creation of these sites in new developments and regeneration projects.
- Engage with local businesses, relevant corporates, schools, faith groups, and youth groups, to inspire and support each other in adopting sustainable food consumption.
- Encourage and support community and school workshops on food growing, permaculture, food waste, food-related carbon footprints, and cooking with locally-produced, seasonal foods.

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<sup>30</sup> <https://www.theguardian.com/commentisfree/2019/oct/08/climate-change-food-global-heating-livestock>