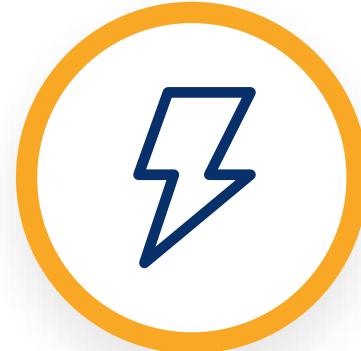


# The Reading Climate Emergency Strategy 2020-25

November 2020



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# FOREWORD

by Co-Chairs of the Reading Climate Change Partnership

“So please, treat the climate crisis like the acute crisis it is and give us a future. Our lives are in your hands.

– Greta Thunberg (2019)



As the new decade began, the impacts of a changing climate were making headlines around the world. The wildfires, floods and extremes of temperature now being experienced are all worryingly consistent with what the climate science has been predicting. In 2018 the Intergovernmental Panel on Climate Change (IPCC) concluded that to limit global warming to 1.5 degrees – considered necessary to avert the most catastrophic impacts – would require ‘rapid, far-reaching and unprecedented changes in all aspects of society’. Through the declaration of a climate emergency in February 2019, and commitment to the goal of a net zero carbon Reading by 2030, our community has embraced the call to action laid down by the IPCC.

Reading has a proud history of taking action on climate change – since 2005, carbon emissions per person have fallen by 52% in the borough, the 4th largest reduction of any local authority in England. Reading Borough Council has reduced its own carbon footprint by 62.5% since 2008 and many other partners in Reading have made significant steps on the journey to net zero carbon. But we know these impressive achievements are not enough. We must now re-double our efforts to accelerate the journey towards a net zero carbon Reading in the short time which the science suggests is available.

The 2018 IPCC report also highlighted the many benefits to people and the environment which would flow from taking action on climate change as the measures required should also contribute to a more equitable and sustainable society. So, responding positively to the climate emergency is also aligned with Reading’s aspiration to achieve clean and inclusive economic development from which the whole community benefits: as well as being a practical necessity, responding to the climate emergency represents a major opportunity. The transition to net zero carbon also needs to be a just transition, so that the costs and benefits are apportioned fairly.

This is really important to bear in mind as we think about people whose home has been flooded, whose health has suffered or whose children have asked whether they have a future they can look forward to: for them the impacts of a changing climate already feel very real, and research shows that the most vulnerable people will bear the brunt of these impacts. Climate change is happening now and the die is cast for the coming decades – preparing for these changes will be an essential part of our future strategy. Public concern for the state of the environment has never been higher, so publication of this strategy has not come a moment too soon.

The aim of the Reading Climate Change Partnership in producing this strategy is to set out a clear pathway to a net zero carbon, resilient Reading and to harness the commitment of everybody who lives, works, studies or plays in Reading to work together to achieve this ambition. In this sense we believe that the Partnership is truly what it describes: a close collaboration and an open and transparent working arrangement between business, academia, NGOs, community groups, the people of Reading and Reading Borough Council.

**“What happens next is up to us all...  
I truly believe that together we can  
bring about the transformative  
change that is needed.**

*– Sir David Attenborough*

The net zero carbon transition presents huge challenges, but it is clear that the costs and risks of embracing it will be far outweighed by the costs and risks of not taking action. We must also recognise that many of the factors which will influence our ability to reach net zero by 2030 remain out of the control of the partners in Reading and will require clear commitment by, for example, our national government. This strategy therefore sets out not only the action we need to take ourselves to tackle the climate emergency, but also the steps we need others to take to help us deliver our ambitious aims.

Ultimately, we cannot ignore the fact that this strategy is being launched in the context of the COVID-19 global pandemic. Indeed, the launch was delayed by four months as the public consultation stage was extended to allow people time to adapt to the new ways of living necessary to reduce infection rates. The imminent existential threat of the virus is clearly an urgent priority for all of us, but the risk of deep and lasting harm from climate change remains, and we cannot wait until we have resolved one threat before we address the other.

The COVID-19 crisis has disrupted our lives in many ways, some of which have reduced carbon emissions and contributed to ‘climate-positive’ behaviour. For example, the reduction in air traffic and commuting has reduced emissions and air quality has improved in many towns and cities, including Reading. Being confined to our homes has brought many of us a new appreciation of the importance of green spaces for health and wellbeing; it has also changed our patterns of consumption. But at the same time there are new waste streams being created by disposable masks and plastic gloves, as well as the manufacturing impacts of producing items that were not necessary previously. This new reality has to be taken into account alongside the extensive feedback received through public consultation.

So, as Reading re-thinks its future in the light of COVID-19, we also need to think about how we plan for the longer-term: to think and re-imagine Reading as a greener, more resilient and net zero carbon urban area to 2030, and beyond to 2050. This also connects to the ongoing work of Reading 2050 and the recovery strategies of various partners, so we will need to collaborate to ensure Reading’s approach is closely integrated and produces a recovery that uses the crisis as an opportunity to tackle climate change and create sustainable, inclusive economic growth.

As we said earlier, this has been very much a partnership effort and we would like to express our appreciation to the members of the Reading Climate Change Partnership Board, the theme leads and group members who have given generously of their time and expertise to develop this strategy. We are especially grateful for the huge enthusiasm and commitment of our predecessor, Chris Beales, who completed his two-year term as Chair in April 2020 and who steered the strategy through most of the development phase.

Finally, we would like to thank all of the individuals and groups who attended our discovery events and responded to the consultation – we look forward to you playing an active role in helping deliver our shared vision for a net zero carbon, resilient Reading.

*Professor Tim Dixon*

*Tracey Rawling Church*

Co-chairs of Reading Climate Change Partnership



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to use his climate stripes imagery.  
The progression from blue (cooler)  
to red (warmer) stripes portrays the  
long-term increase in average global  
temperature for Berkshire from 1850  
(left side of graphic) to the present day.  
#showyourstripes

# 1. INTRODUCTION

## 1.1 The Reading Climate Emergency Strategy

Following the declaration of a climate emergency in Reading in 2019<sup>1</sup>, plans to produce a third Reading climate change strategy, scheduled for the latter part of 2020, were brought forward by six months. As a result, a consultation draft Reading Climate Emergency Strategy for 2020-25 was published in March 2020. The consultation period was extended due to COVID-19, and a planned launch in July 2020 was correspondingly postponed until November 2020.

## 1.2 Purpose of this document

This document, The Reading Climate Emergency Strategy 2020-25, sets out the action required during this critical five-year period to work towards the objective of a net zero carbon Reading by 2030, the target adopted in the climate emergency declaration. It also considers how we can adapt to the impacts of a changing climate. Following engagement and discussion with stakeholders, and a series of events and initiatives to engage the wider public culminating in a formal public consultation to which over 200 responses were received, this document has been compiled by the organisations who come together in the Reading Climate Change Partnership.

## 1.3 Ownership of the strategy

Production of this strategy has been co-ordinated by the Reading Climate Change Partnership with input from over 100 stakeholders across Reading. The Reading Climate Change Partnership is a community partnership established in 2009 to lead the response to climate change in the Reading area. The Partnership's Board includes representation from the community and voluntary sector, the statutory sector, the private sector, the health sector and academia. If the strategy is to succeed, however, the action within it needs to be 'owned' by every organisation, business and resident across Reading. The Partnership therefore invites partners to adopt, endorse or otherwise commit to its delivery via the most appropriate means. To start this process, Reading Borough Council, which passed the Climate Emergency Declaration on behalf of the wider community, endorsed the strategy at a meeting of its Policy Committee on 2nd November 2020.



<sup>1</sup> <https://www.reading.gov.uk/council/climate-change/>

## 2. CLIMATE CHANGE: THE CONTEXT

### 2.1 The global and national context

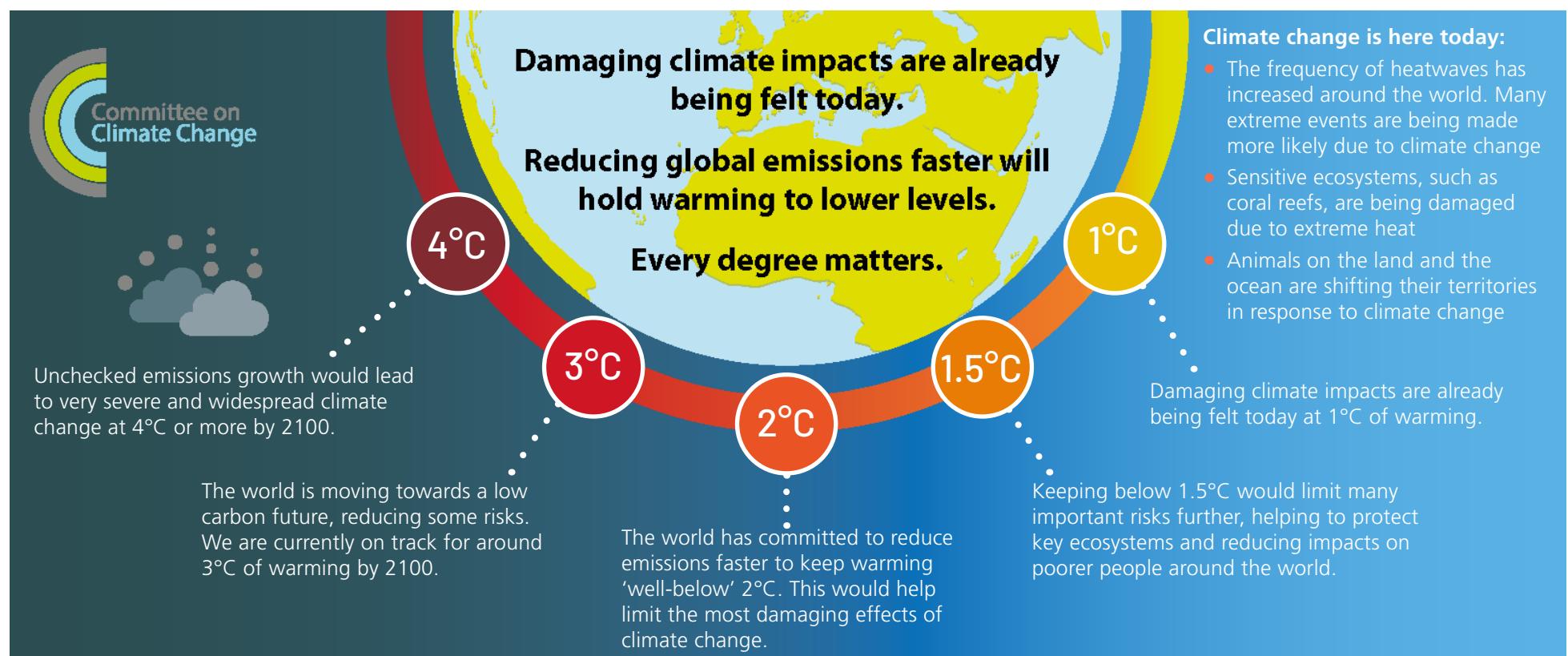
There is an overwhelming scientific consensus that human activity has been responsible for a dramatic increase in emissions of carbon dioxide and other greenhouse gases since the start of the Industrial Revolution, and that this has already been the cause of a rise in average global temperature of around 1°C. We also know that we are already 'locked in' to a further rise in average global temperatures as a result of past emissions which are likely to set off 'feedback' loops which will accelerate warming still further.

For society and our way of life to continue in its current form, it was, until recently, generally held that the rise in global temperature needed to be kept to 2°C. But most

authorities now agree that even a 1.5°C rise is likely to have very significant negative impacts on human society and the critical ecosystems on which it depends.

A key turning point in international climate change policy came in 2018 when the Intergovernmental Panel on Climate Change (IPCC), the UN body created to assess the science on climate change, published a report which advised that the international community should aim to limit global warming to 1.5°C, as opposed to the previous 'target' of 2°C. Their review of over 6,000 sources of evidence found that, with a rise of 1.5°C, there would be very significant risks to health, livelihoods, food security, water supply, human security and economic growth. A rise to 2°C would be even more catastrophic.

This conclusion led to a renewed focus on 2030 as a target to meet emissions reduction goals which had previously been set for 2050. While most of the world's national governments remain focused on achieving net zero carbon dioxide emissions by 2050, many municipalities have adopted the more ambitious goal of net zero by 2030.



**Fig 1:** Why every degree of warming matters (Source: Committee on Climate Change<sup>2</sup>)

<sup>2</sup> <https://www.theccc.org.uk/wp-content/uploads/2019/05/CCC-Net-zero-Infographic.png>

## 2.2 Global and national progress to date

Many agree that the global response to the challenge laid down by the IPCC has fallen well short of what the science suggests is necessary to limit the rise in global average temperatures to ‘safe’ levels. Emissions have continued to rise making the challenge of limiting climate change to 1.5°C in the short time available much harder. The UK has sought to make its contribution through the setting of legally binding emissions reduction targets supported by five yearly carbon budgets. As a result of the policies of successive UK Governments, emissions were 44% below 1990 levels in 2018 – heading in the right direction but not fast enough to meet some of our future carbon budgets.

The UK's first (2008-12) and second (2013-17) carbon budgets have been met and the UK is on track to meet the third (2018-22) carbon budget. However, according to the Committee on Climate Change (CCC), which was established by the Government to monitor performance in this area, the UK is not currently on track to meet the fourth (2023-27) or fifth (2028-2032) carbon budgets. In May 2019<sup>3</sup>, the CCC recommended a new emissions target for the UK of net zero greenhouse gas emissions by 2050 to deliver on the commitment made by the UK in the Paris Agreement.

The CCC advised that this target is achievable with known technologies and could be delivered within the cost that Parliament accepted when it legislated for the existing 2050 target of an 80% reduction on 1990 levels. However, the CCC advised that it was only possible if ‘clear, stable and well-designed policies to reduce emissions further’ are introduced across the economy without delay. The CCC's 2020 Progress Report to Parliament concluded that while ‘Initial steps towards a net zero policy package have been taken...this was not the year of policy progress that the Committee called for in 2019’<sup>4</sup>.

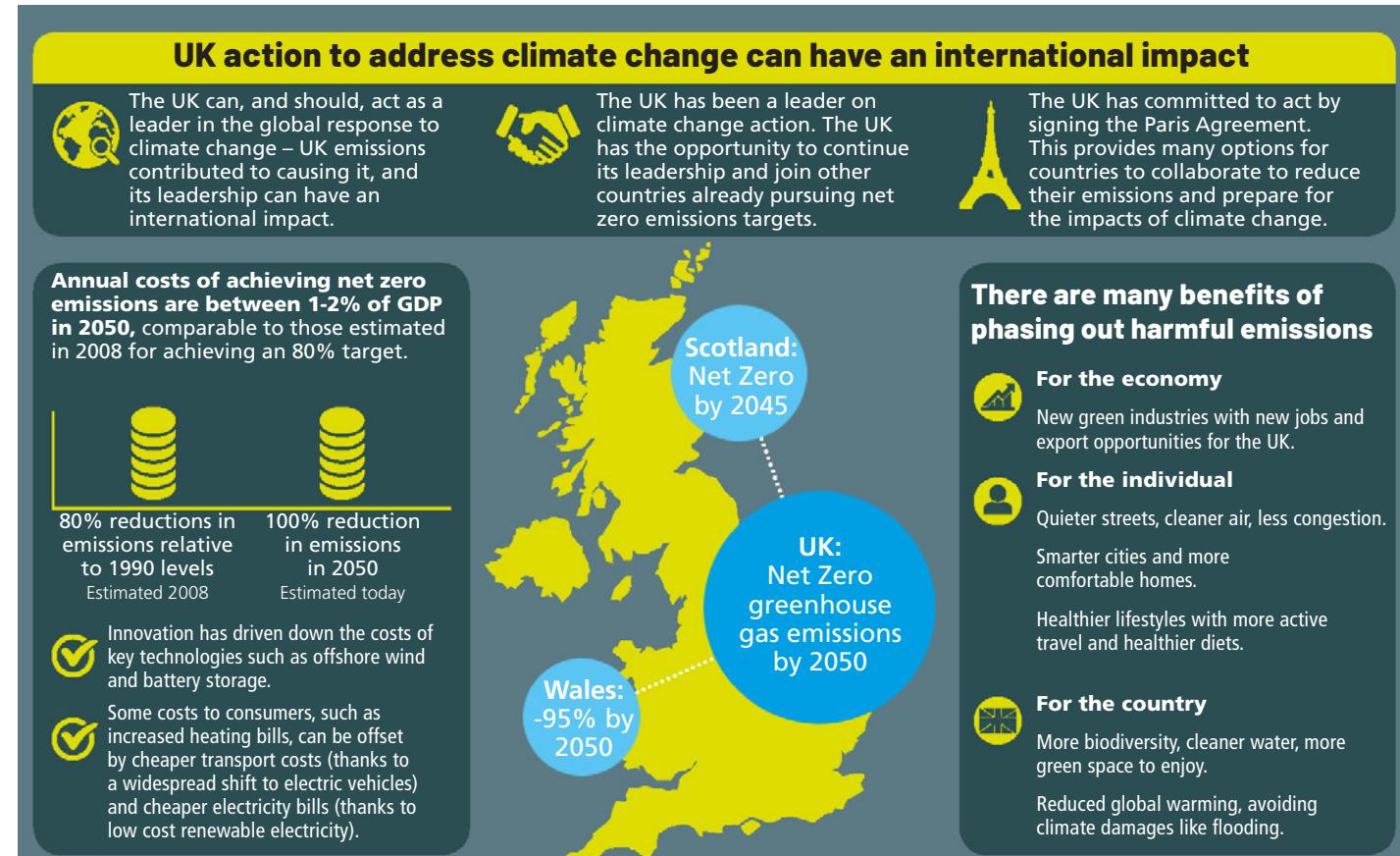


Fig 2: Can one country really make a difference? (Source: Committee on Climate Change<sup>5</sup>)

<sup>3</sup> [https://www.theccc.org.uk/publication/netzero-the-uks-contribution-to-stopping-global-warming/](https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/)

<sup>4</sup> <https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/>

<sup>5</sup> <https://www.theccc.org.uk/wp-content/uploads/2019/05/CCC-Net-zero-Infographic.png>

## 2.3 The local context: Reading's carbon footprint

Reading produces over 500 kilo-tonnes of carbon dioxide emissions annually (2018 figures). As the pie chart shows, around 36% of this 'carbon footprint' arises from industrial and commercial activity, 40% from domestic sources (heating, lighting and appliances) and 21% from transport.

Reading's per capita emissions have fallen significantly since 2005 – by around 52%. Around 17% of this reduction has been due to more low carbon energy going into the national grid. While the trend is positive, the way that emissions are measured hides the fact that many of the emissions for which we in Reading are ultimately responsible are accounted for elsewhere – in the places where the goods we buy are made and the food we consume is produced. As such, our 'real' carbon footprint is substantially larger than the official figures suggest. At the same time our population has increased so gains made through relative reductions in emissions per head are, in part, offset by increases in absolute emissions over all. That said, as the bar chart in Fig.3 shows, total emissions (as opposed to per capita emissions) from the Reading area have still fallen by 47% since 2005.

## 2.4 Reading's progress to date

The Reading Climate Change Partnership and its constituent partners have a long track record of achievement on climate change. The first Reading Climate Change Strategy was adopted in 2008/09 and set priorities for action which were delivered by a wide range of partners. As a result:

- Reading's per capita carbon emissions have fallen by 52% since 2005 – the 4th largest reduction of any local authority area in the country
- Pioneering net zero carbon standards for new homes have been enshrined in the Reading Local Plan which governs future development across the Borough
- Reading Borough Council has reduced its own carbon footprint by 62.5% since 2008/09, avoiding energy costs of £11 million in the process
- Reading's vibrant voluntary sector and active network of community groups have promoted a wide range of climate-related projects, and small grants to local organisations, such as Draughtbusters, Transition Town Reading and Econet, have funded behaviour change campaigns to reduce carbon emissions and test new ideas
- The Reading Community Energy Society has delivered solar arrays on 20 community buildings, creating enough energy to power approximately 125 homes, with plans for installation of a further 4,000 solar panels and a new Reading Hydro power scheme at Caversham Lock

Reading Borough CO<sub>2</sub> Emissions

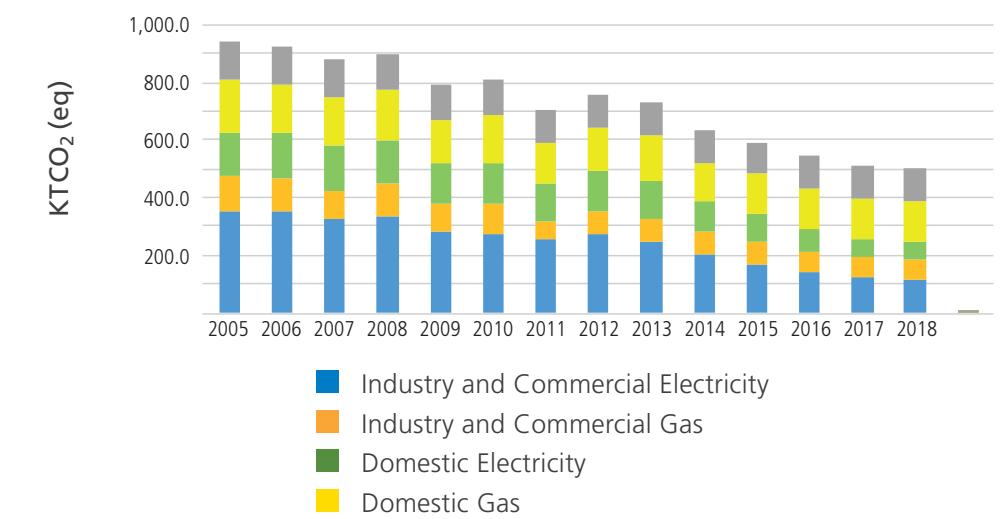
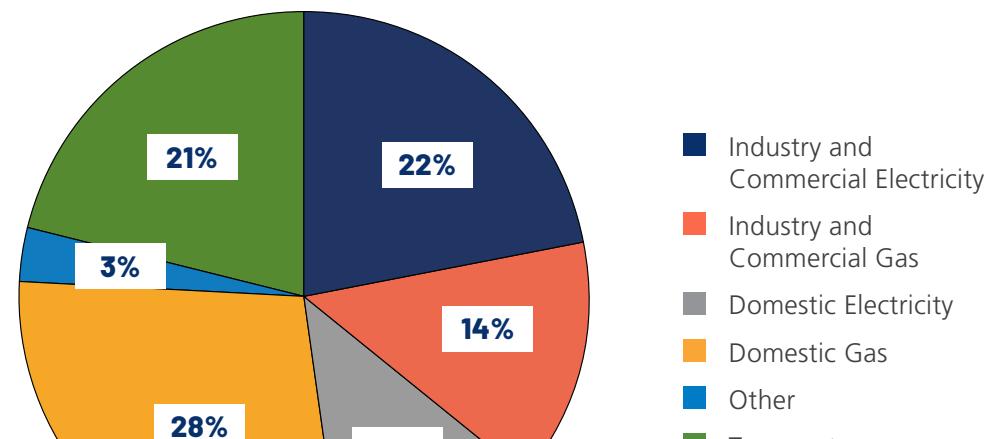


Fig 3: Reading's carbon footprint (Source: UK Government emissions data)

## 2.5 Reading's exposure to climate change impacts

The latest information suggests that 2019 was the second hottest summer on record globally with 2016 being the hottest. The last decade (2010-19) was also the hottest on record with each decade since the 1980s being warmer than the last<sup>6</sup>. As the climate warms, projections for the UK show that we are likely to experience milder, wetter winters and hotter, drier summers, along with an increasing frequency and intensity of extremes:

- Hot summers will become more common – the chance of a summer as hot as 2018, one of the hottest on record, has already increased from less than 10% to between 10-25% in any one year, and is expected to be around 50% by mid-century
- The 2018 heatwave saw Reading reach a high of 32.9°C with no rainfall for 30 consecutive days
- Variability in rainfall is increasing so while we can generally expect wetter winters there will be some dry winters too, increasing the challenge of water resource planning
- Summer rainfall is likely to decrease but when it does rain, it may be more intense

These impacts mean that Reading needs to become more resilient to a wider range of conditions than in the past. This is a particular concern for vulnerable people in Reading as, in general terms, the evidence suggests that the more vulnerable in society will be most exposed to the impacts of a changing climate, underlining the need for a just transition to a net zero carbon Reading.

Buildings and energy supply	Business and industry	Health and wellbeing
Overheating in housing Overheating in hospitals, care homes, schools and offices Damage to buildings from extreme weather events Increased water stress Changes required in design, construction and management of buildings Increased flood risk to built environment Disruption of power networks and supply Increased urban heat island effect	Disruption to transport, energy and communications Reduced comfort in buildings with impacts on productivity Risks to supply chains (increasing with distance) Price increases for food and other imported commodities Particular exposure is forecast for food, clothing and electronics sectors	Increase in heat-related illness and death Risk to the elderly and very young with heart and respiratory disease Disrupted access to services and facilities Flooding impacts on wellbeing and livelihoods Air quality impacts exacerbated More positively, there is potential for more outdoor lifestyles
Natural environment	Transport	Water environment
Risk to vulnerable species and habitats Impacts on 'eco-system services' enjoyed by people Damage to natural habitats from water stress Impacts of increased drought risk on tree health Risk of invasive/non-native species colonising as suitable 'climate space' shifts northwards	Disruption of transport networks impacting on wellbeing and economy Flood risk to infrastructure Heavy rain/high winds leading to more accidents, treefall, road closures and delays Risk of slope/embankment failures Risk of rails buckling, cables sagging and roads softening Discomfort on public transport Overheating/failure of signalling/comms equipment	Further stress on already stressed water resources Increased competition for water between agriculture, industry, households and the needs of the natural environment Drought impacts on water quality and supply Increased flash flood risk

**Table 1:** Summary of climate risks for key sectors in Reading (Source: Reading Climate Change Adaptation Plan)

<sup>6</sup> <https://public.wmo.int/en/media/press-release/wmo-confirms-2019-second-hottest-year-record>

### 3. VISION AND TARGETS

#### 3.1 Our Vision

Our vision for 2025 is for a Reading which is working rapidly towards:

- Net zero carbon dioxide emissions in the Reading area by 2030
- Being better prepared to deal with the impacts of a changing climate.

We want and need the whole of Reading – residents, communities, businesses and other organisations – to mobilise in pursuit of this vision.

#### 3.2 Our target

Our over-arching target is for Reading – defined as the whole Reading local authority area – to achieve net zero carbon emissions by 2030. This target is based on the sound science outlined by the Intergovernmental Panel on Climate Change, recognising the need for more ambitious and urgent action to avoid catastrophic climate impacts. This recognition manifested itself in the declaration of a climate emergency by Reading Borough Council, on behalf of the wider community, in February 2019, in a resolution which set out the steps necessary to reach the overall goal.

The climate emergency declaration explicitly recognised that the ambitious target of net zero by 2030 ‘can only be achieved with substantial policy changes from national government’, highlighting the need, in particular, for more government support for:

- Retro-fitting private and public housing to low/no carbon standards
- Renewable electricity and heat
- Smart energy technology, local energy storage and connections to local power grids
- Electric vehicle infrastructure and scrappage of older vehicles
- Cycling, walking and public transport
- National recycling standards for industry and supermarkets
- Food waste collection and its use for generation of local, green energy
- Town centre district energy systems to harness heat from local rivers/watercourses
- Widespread deployment of ground-source and air-source heat pumps
- Local authority procurement powers to require the delivery of net zero carbon strategies by suppliers of third party services

As we embark on the journey to a net zero carbon Reading by 2030, reductions in emissions are unlikely to reduce by the same amount every year. If the Government policy changes referred to above are not forthcoming within the lifetime of this strategy (2020-25), then the gains required to reach net zero in the latter part of the decade will obviously need to be greater. However, by calculating what the average annual emissions reduction for Reading would need to be to achieve net zero by 2030, we can give ourselves a benchmark against which progress towards that longer-term goal can be judged. This benchmark does not represent an annual target but will indicate how far we have to go to achieve the goal of net zero by 2030.

#### 3.3 Preparing Reading for the impacts of climate change

The Reading Climate Change Partnership commissioned a first adaptation plan for Reading in February 2020<sup>7</sup>. This is not a detailed action plan, rather, it indicates headline climate impacts for Reading by the end of the century, describing the big picture risks alongside the opportunities for the town to adapt. It sets out key steps for consideration in each category of adaptation and recommends a number of areas of work to advance the development of Reading’s Adaptation Plan.

It is a good introduction to adaptation planning, with very much a Reading focus. Headline climate change impacts for each of the six themes set out in Section 5 of the strategy have been considered in development of the strategy. These include ‘low regret’ and ‘win-win’ options. There is more for us to pick up on and lots of reference information: including links to other Adaptation Planning documents. There is also advice for us to consider in relation to future governance of Adaptation Planning in Reading, which is something we can develop over the next few years.

The Reading Climate Change Adaptation Plan highlights the key stages which we need to progress through in Reading to become more resilient to the impacts of climate change as follows:



**Fig 4:** Key stages for effective planning to adapt to climate change impacts

<sup>7</sup> See Reading Climate Change Adaptation Plan, <https://readingcan.org.uk/our-plan/adaptation>

### 3.4 The benefits of taking action on climate change

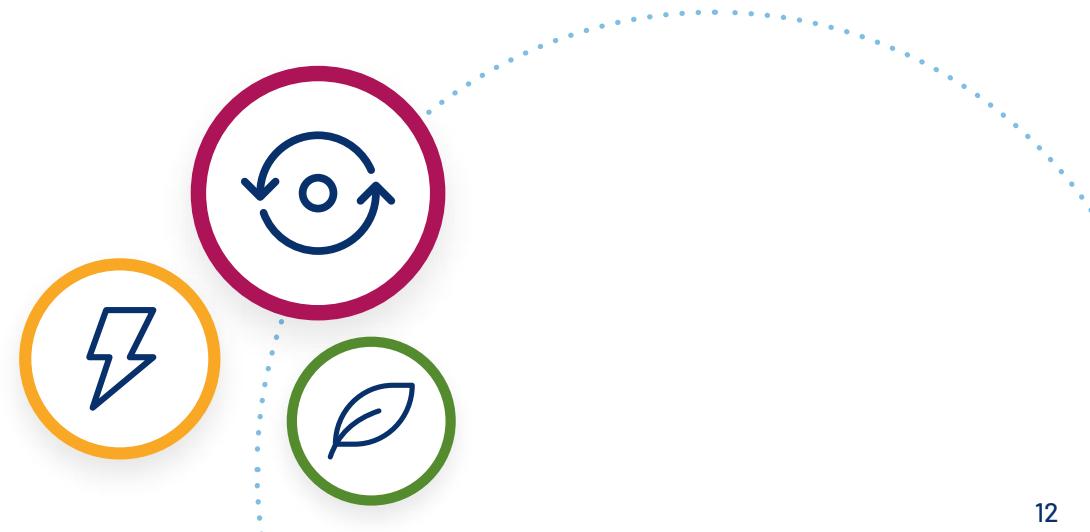
The science is clear that taking urgent action to reduce emissions is a practical imperative. But there is also much to be gained from doing so as an integral part of the wider Reading 2050 vision for a ‘smart and sustainable’ Reading<sup>8</sup>. Since the publication of the Stern report in 2006 on the economic impacts of climate change, it has been well understood that the benefits of action to reduce emissions considerably outweigh the costs. While the challenges associated with reaching the net zero by 2030 target in Reading will be significant, so will be the benefits.

Economic	Social	Environmental
Clean and inclusive growth in the local economy	More active, outdoor lifestyles	Improved air quality
Reduced energy costs	Healthier diets	Better access to greenspace and nature
Increased energy security	Warmer, healthier homes	Healthier water
High quality employment	Quieter, safer streets	Improved biodiversity
Reduced congestion	Vulnerable people protected locally and globally	Reduced risk of flooding, heatwaves and extremes
New opportunities in the low carbon economy	More cohesive, engaged communities	Global environment safeguarded for future generations
Economic costs of climate impacts avoided/reduced	Improved physical and mental health	

**Table 2:** Benefits of taking action on climate change

One of the striking features of the public consultation on the draft Reading Climate Emergency Strategy which took place between March and June 2020 was the large number of positive benefits from taking action on climate change highlighted by those who responded. Residents and organisations who responded to the consultation cited in particular the potential for action on climate change to:

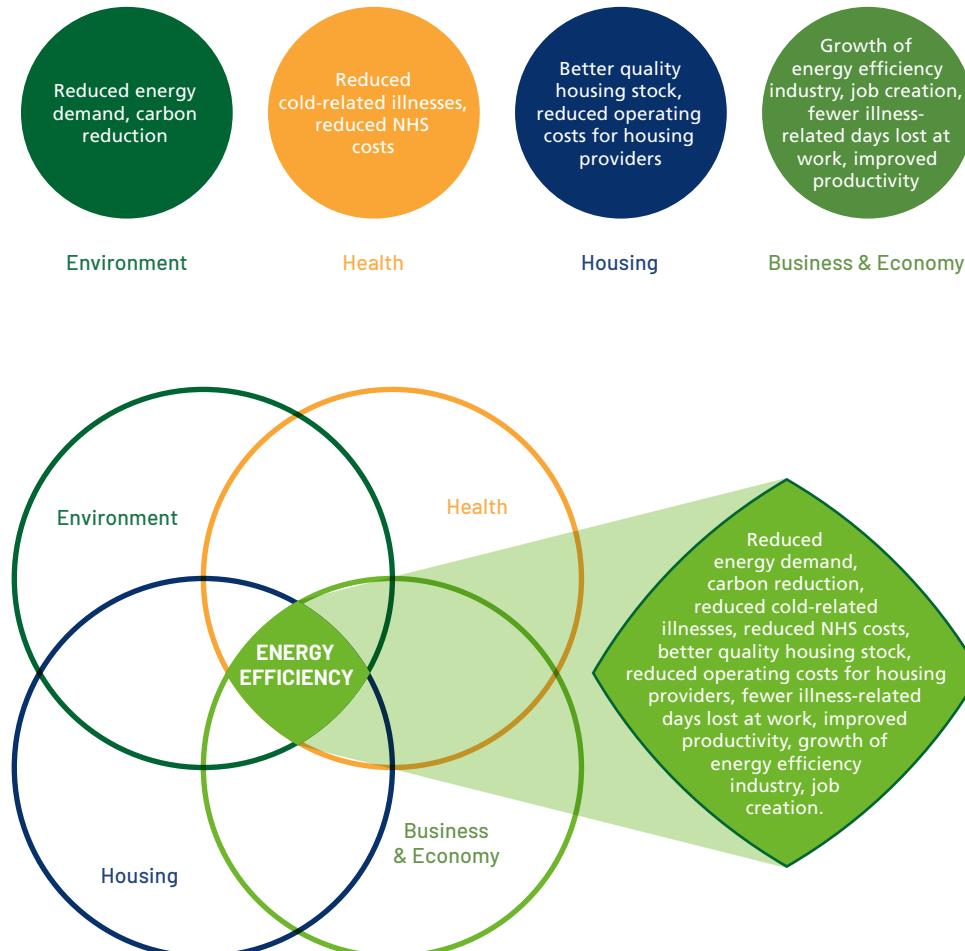
- Improve community cohesion – by bringing communities together, reducing inequalities, encouraging personal responsibility and respect for each other and the environment
- Deliver health benefits – e.g. the physical health benefits associated with more active, less car dependent lifestyles
- Offer global benefits – including reduced climate impacts on poorer countries and reduction in the forces driving mass migration and refugees
- Improve mental health – directly from addressing anxiety about the future and indirectly as a result of healthier lifestyles
- Benefit future generations – reduced risks to younger people who will have to live with the impacts of a changing climate as a result of today’s emissions
- Stimulate new economic/employment opportunities – opportunities to develop new products, services, jobs and skills in the ‘green economy’
- Improve connection with nature – bringing us closer to nature, recognising our place in it, respecting it and recognising the contribution which nature can make to tackling climate challenges.



<sup>8</sup> See Reading 2050 Vision, <https://livingreading.co.uk/reading-2050>

Responses to the consultation also highlighted to a lesser extent benefits such as learning/educational opportunities; improved resilience; improved food security; reduced pollution; reduced waste; lower/more stable energy costs; stronger local supply chains; safer streets; improved biodiversity; and improved quality of life.

Taking action on climate change will also deliver on multiple fronts – so called ‘win-win’ solutions, as illustrated in the diagram below.



**Fig 4:** Example of the benefits of improving domestic energy efficiency to different sectors<sup>9</sup>

## Voices of Reading: A selection of quotes from contributors to our consultation

*“A brilliant modern town for our children to be proud to call home”*

*“Greater social cohesion around this action plan”*

*“People feel less worried about climate change and good about doing something positive”*

*“A better future for our children and grandchildren”*

*“Increased opportunities for technical/IT innovation”*

*“Increased satisfaction/pride in Reading and recognition of it being a dynamic place to live”*

*“Reduced impact on other countries”*

*“The economic benefits in stimulating local green energy technologies”*

*“Setting a better example to our children about how important the environment is”*

<sup>9</sup> <https://www.imperial.ac.uk/media/imperial-college/grantham-institute/public/publications/briefing-papers/Co-benefits-of-climate-change-mitigation-in-the-UK.pdf>

## 4. Reading's Pathway to Net Zero by 2030

### 4.1 Reading's energy demand and priorities on the pathway to net zero

Achieving the net zero carbon target for Reading will require the removal of virtually all fossil fuels from the energy mix. Key priorities in this regard have been identified as:

- Housing (retrofitting and building new homes and other buildings to low/zero carbon standards): we need to reduce energy demand in domestic and commercial properties via 'deep retrofit' of existing property, and ensure that new property is constructed to net zero standards
- Renewable energy (generating more energy from renewable sources): we need more green energy, particularly from local sources, to ensure that the increased demand for electricity which will arise as we move away from gas is met from low/zero carbon sources – an increase of approximately 10-15 times the current level of renewable energy generation is needed
- Transport (de-carbonising transport systems): we need to reduce traffic and the need to travel by more polluting modes of transport, encourage a switch to low/zero carbon modes of transport, and support the phased replacement of petrol/diesel vehicles with electric vehicles
- Consumption and waste: we need to buy and use less 'stuff', reduce waste generation overall, increase recycling and develop Reading's 'circular economy' in which waste will be treated as a resource
- Nature-based solutions: improved management of greenspace and the water environment in Reading also offers scope to reduce carbon emissions as natural areas can act as 'carbon sinks'. This will also have the advantage of helping the town adapt to the impacts of a changing climate by mitigating flood risk, reducing the urban heat island effect, improving air quality and enhancing health and well-being.

At the other end of the technology spectrum, Reading will need to embrace Smart energy technology to accommodate a radically different pattern of local demand for, and supply of, energy. Significant investment is already going into making Reading a 'Smart and sustainable city' so ensuring this investment supports the net zero objective will be important.

Across all of these priorities, effective communication with and engagement of the wider public will be critical to the success of our efforts to deliver the aims of the strategy. Further details of our plans to achieve this are included in section 6 of the strategy.

### 4.2 The pathway to net zero in numbers for energy use in the built environment

In order to establish the feasibility of a net zero carbon Reading we modelled the maximum conceivable action possible with existing technology, putting aside cost and other barriers for the purposes of the assessment, to calculate:

- The potential to reduce energy demand with 'deep retrofit' of the borough's housing stock and commercial buildings, plus deployment of LED lighting and AAA+ appliances
- The potential for renewable energy generation using existing or foreseeable technologies and an initial assessment of available opportunities
- The additional electricity demand generated for electrification of heat and transport as we move away from fossil fuels
- The gap which would remain when all the above are taken into account

These calculations are summarised in table 3. Achieving the demand reductions and renewable energy generation shown would require a massive investment beyond the means of any one agency in Reading – to give just one example, the estimated cost of retrofitting domestic property is approximately £30,000 per house. This is one of the areas which Reading's climate emergency declaration therefore highlighted would require national government policy changes and resources to support the achievement of a net zero target.

The key projects set out in this strategy will help to stimulate the shift to zero carbon energy infrastructure in Reading. Key examples are further installation of solar panels, the installation of heat pumps that use renewable energy from rivers and ground source, the establishment of district heating network(s), bringing forward of the adoption of electric vehicles and the necessary local charging facilities and the uptake of housing and business retrofit projects. The initial projects outlined in the strategy will not in themselves be sufficient to deliver the zero carbon aim but they will help to drive a greater uptake in these areas and enable an acceleration to achieve our end goal as we approach 2030.

Total Reading energy demand	+1889 GWh
Total potential demand reduction (gas and electricity)	-933 GWh
Total potential for renewable energy generation	-846 GWh
Additional load for electrified heating and transport	+315 GWh
Gap remaining	424 GWh

**Table 3:** Potential to reduce Reading's energy demand and generate renewable energy

#### 4.3 Decarbonising power supply and the need for Reading to 'go electric'

Emissions from UK power stations have fallen by 60% since 1990<sup>10</sup> and the 'carbon intensity' of grid energy is expected to fall still further as more low carbon energy is generated. A key part of the pathway to net zero is therefore for Reading to 'go electric': taking advantage of 'greener' grid energy; generating our own energy from local renewable sources; storing this so that it can be used at peak times; and deploying smart technology to make the best use of energy when it is most cost-effective. Reliance on electricity and technology to reach net zero will not be enough: we need to be reducing the amount of energy and other resources we use; drastically cutting the amount of 'stuff' we consume; changing our travel patterns and habits; adopting healthier, lower carbon lifestyles; and working with our natural assets to combat both the causes and impacts of a changing climate. The action plans in Section 5 set out how we can achieve this in more detail.

#### 4.4 Lessons from the COVID-19 pandemic

A few days after the launch of public consultation on this strategy in March 2020, the UK went into a national 'lockdown' as part of the response to the COVID-19 pandemic. Its wide-ranging impacts caused policy-makers across the world to re-assess their priorities and plans to address this and other strategic challenges facing the world today.

It is notable that a global pandemic featured at the top of the UK's national risk register prior to the COVID-19 crisis, yet, when the risk materialised, the country appeared to be poorly prepared in many key respects. Extreme weather events sit not far below a global pandemic on the same risk register. Perhaps the first lesson we can learn from COVID-19 therefore is that we should not be complacent about the chances of worst-case scenarios coming to fruition. This underlines the urgency of our efforts both to reduce the emissions which are causing climate change, and to adapt to climate change impacts.

Many cities have already used the impetus of COVID-19 to re-think 'business as usual' models. For example, we have seen city leaders across the world using the lockdown to implement measures which encourage cycling and walking (for example, London, Milan, Mexico City, Paris, Bogota and New York) and even ambitions to re-design city economies (Amsterdam).

Nevertheless, the lessons to be learnt from COVID-19 and our response to it at individual, community, local and national level are varied and complex. In advice to the Government issued in May 2020, however, the UK Committee on Climate Change successfully distilled them down into six principles which it has highlighted as being key to 'a resilient recovery'. These are:

- Using climate investments to support the economic recovery and jobs
- Leading a shift towards positive long-term behaviours
- Tackling the wider 'resilience deficit' on climate change
- Embedding fairness and the idea of a 'just transition' as a core principle
- Ensuring the recovery does not 'lock-in' greenhouse gas emissions or increase risk
- Strengthening incentives to reduce emissions when considering fiscal changes



<sup>10</sup><https://www.gov.uk/government/collections/energy-and-emissions-projections>

The Committee subsequently elaborated on its advice to Government by setting out five clear investment priorities for the economic recovery:

- Low carbon retrofits and buildings that are fit for the future: the Committee highlighted new employment and reskilling opportunities if Governments support a national plan to renovate buildings and construct new housing to the highest standards of energy and water efficiency, to begin the shift to low carbon heating systems, and to protect against overheating.
- Tree planting, peatland restoration, and green infrastructure: the Committee highlighted the scope for investing in nature, including in towns and cities, to create opportunities for highly-skilled employment, and outcomes that improve people's lives. Such investment, the Committee argued, will bring significant benefits for the climate, biodiversity, air quality, and flood prevention.
- Energy networks must be strengthened for the net zero energy transformation in order to support electrification of transport and heating: the Committee argued that Government has the regulatory tools to bring forward private sector investment and that new hydrogen and carbon capture and storage (CCS) infrastructure will provide a route to establishing new low carbon industries. The Committee also pointed out that fast-tracking electric vehicle charging points will hasten the move towards a full phase out of petrol and diesel cars and vans by 2032 or earlier.
- Infrastructure to make it easy for people to walk, cycle, and work remotely: the Committee called for dedicated safe spaces for walking and cycling, more bike parking and support for shared bikes and e-scooters to help the nation get back to work in a more sustainable way, accompanied by resilient digital technology (5G and fibre broadband).
- Moving towards a circular economy: the Committee called for not only an increase in reuse and recycling rates but also an end to sending biodegradable wastes to landfill within the next five years, specifically highlighting the need to support local authorities to invest in separated waste collections and recycling infrastructure and to create new regional jobs.

The Committee also spelt out the opportunities to support the transition to a more sustainable economic recovery by investing in the UK's workforce, and in lower-carbon behaviours and innovation via:

- Reskilling and retraining programmes: the Committee set out how the net zero economy will require a net zero workforce, able to install smart low carbon heating systems and to make homes comfortable; and to design, manufacture and use low carbon products and materials.
- Leading a move towards positive behaviours: the Committee argued there is a window for Government to reinforce the 'climate-positive' behaviours that have emerged during the lockdown, including increased remote working, cycling and walking.
- Targeted science and innovation funding: the Committee called for a kick-start for research and innovation in low carbon and adaptation technologies which will facilitate the changes needed in the decades ahead and build UK competitive advantage.

**The Reading Climate Change Partnership endorses the advice offered by the Committee on Climate Change and has sought to ensure that these insights have informed the final version of this Strategy.**

*Achieving the UK's climate goals and rebuilding the economy fit naturally together. Each makes the other possible. Success demands that we do both. The actions recommended by the CCC will deliver an improved economy, better public health, improved biodiversity and access to nature, cleaner air, more comfortable homes and highly productive and rewarding employment.*

**Committee on Climate Change, Reducing UK Emissions:  
Progress Report to Parliament<sup>11</sup>**

<sup>11</sup> <https://www.theccc.org.uk/publication/reducing-uk-emissions-2020-progress-report-to-parliament/>

## 5. Delivering the Strategy

### 5.1 The role of the Reading Climate Change Partnership and other partners

In developing the Reading Climate Emergency Strategy, the Reading Climate Change Partnership has engaged a wide range of organisations, sectors and groups.

The Partnership Board sits at the head of a wider Reading Climate Action Network which includes an extensive range of voluntary sector bodies, community groups and individuals, between which there is a strong track record of effective collaboration. A new Business Climate Action Network was also recently established to inspire and support action in the commercial sector. As such there is a long-standing tradition in Reading of partnership working across climate change, sustainability, health, nature, the arts and beyond.

The Partnership produced Reading's first climate change strategy in 2008 and a second in 2013. While the Partnership has a role in co-ordinating strategy development, advocating for implementation and monitoring progress, it is not in itself a delivery body – the responsibility for delivery sits with the partners who are identified in the strategy as owning individual actions.

### 5.2 Resources for strategy implementation

Some of the actions included in the action plans below, and the scale and pace at which they can be progressed, will be subject to the prevailing national policy context and/or the provision of additional powers and resources by central government, as made clear in Reading's climate emergency declaration. This does not mean we are not committed to them – on the contrary, we see them as key to achieving the net zero target – it is simply to reflect the reality that the delivery partners in Reading alone cannot solve some of the bigger challenges we face.

The resources of the Reading Climate Change Partnership are limited, and it will be vital for all delivery partners to bring forward plans which enable the actions set out in the strategy to be delivered and to set these in the context of their own organisational plans. This process is underway, with several key partners in Reading already committing to make their own organisations net zero carbon by 2030 and/or setting out the investment needed to achieve this goal. For example:

- Reading Borough Council has developed a new Carbon Plan for the period 2020-25, designed to deliver an 85% reduction in the Council's emissions by 2025 as a key milestone en route to net zero by 2030. In the two full financial years since the climate emergency was declared (2019/20 and 2020/21), the Council committed c.£34 million to capital projects in transport, waste and energy which will contribute directly to carbon reduction.



- The University of Reading has reduced its carbon footprint by 40% since 2008/09 through a programme of investment which has delivered £30 million in cumulative revenue savings since 2011. In 2019 alone over 500 individual solar panels were installed at University campuses.
- Thames Water has committed to making its operations net zero carbon by 2030 and invested in a shift towards self-generated renewable energy from sewage, wind and solar power which currently meet over 20% of its electricity needs. The company recently began sourcing 100% of its remaining electricity needs from external renewable energy generation, supplied via a Power Purchase Agreement with a 'green tariff' energy supplier.
- The Environment Agency has set itself the aim of becoming a net zero organisation by 2030. It will seek to meet the goal by reducing the emissions of its own activities and supply chain by 45%, with the remaining emissions addressed through tree planting or other measures. The Agency will also explore whether it could become an absolute zero organisation – eliminating all carbon emissions from its own activities and supply chain – by 2050.

These are just a few examples, but we need every business and organisation in Reading to take responsibility for its own carbon footprint, and make the investment necessary to reduce it to zero. The action plans in this strategy highlight some of the ways we aim to support them in doing that.

As well as new resources, new financing mechanisms are likely to be needed to support the transition to a net zero carbon Reading. The extent of the change under way was indicated in the announcement by the Bank of England in December 2019 that banks and insurers would be subject to 'stress tests' based on their exposure to climate related risk. This could require them to hold more capital to cover the risks they are bearing, potentially making insurance and mortgages harder to get and more expensive for assets which are exposed to higher climate risks.

As pressure for companies and pensions funds to divest from fossil fuels increases, and economies seek to rebuild after COVID-19, so finance could become available for a 'green' recovery and 'clean' growth. This illustrates how Reading's economy and businesses need to be aware of, and prepared to take advantage of, the economic opportunity which will arise from the transition to a low carbon economy.

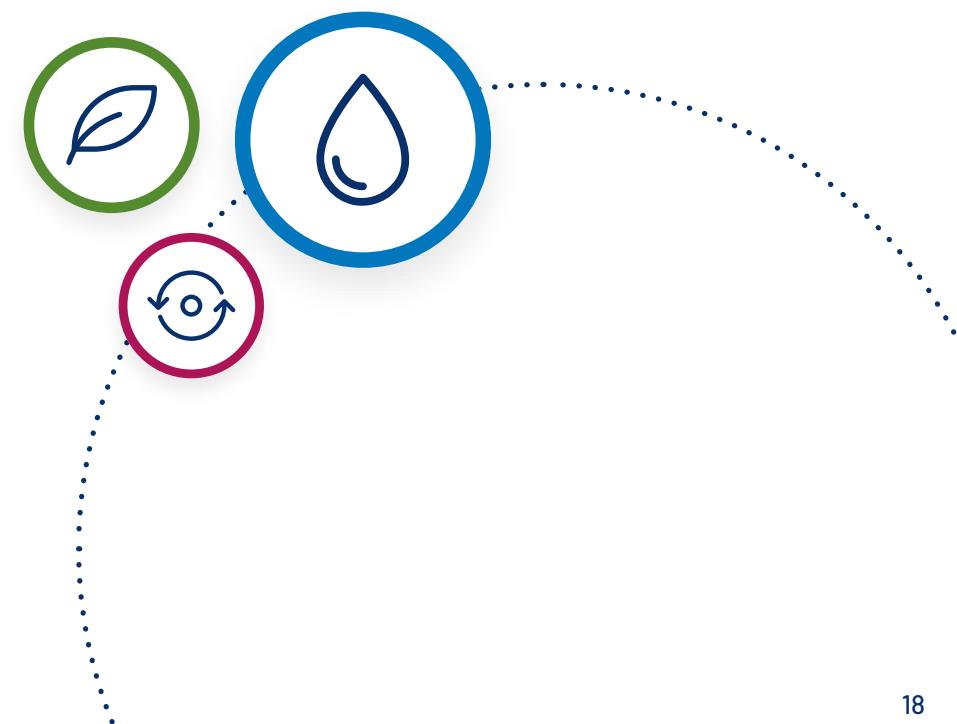
Structural changes are essential, but delivering the strategy requires changes in attitude and behaviours by all residents in the town as well as by the commercial sector. The strategy looks for changes in purchasing, management of private space, optimising water use and modes of transport. The network of voluntary and community groups in Reading will help bring about changes and disseminate the messages.

### 5.3 Action Plans for key themes

The rest of this section of the Strategy consists of six action plans developed for key themes for action on climate change. The action plans set out:

- The title and intention of the action identified
- A description of the main activities envisaged and links with other themes
- Targets, measures or milestones so we can track progress and take corrective action
- Target completion dates, usually within the 5-year lifetime of the Strategy
- Details of partners to be involved in delivery

The action plans were developed by working groups which included a range of stakeholders. Invitations to join working groups were made at public events and no-one who wanted to be involved was excluded. The action plans were revised to take account of comments made during the public consultation process. We are conscious, however, that not everyone who we would like to have been engaged in the process has been engaged thus far. We would therefore welcome new partners coming forward to help deliver the actions set out below, or otherwise commit themselves to new action which they are prepared to take to work towards the net zero carbon objective.



# READING CLIMATE EMERGENCY STRATEGY: ENERGY AND LOW CARBON DEVELOPMENT ACTION PLAN



## Buildings and climate change

At UK level, emissions from energy consumption in buildings represent around 68% of the total<sup>12</sup>, with 35% coming from industrial/commercial buildings and 33% from domestic properties, with the remainder from transport. In Reading, the equivalent figure is 79%, with an almost equal split between industrial/commercial and domestic. The vast majority of building emissions come from electricity (where they are typically generated at power stations) and gas (which is piped to homes and businesses directly). Reducing emissions from buildings requires insulating homes and businesses, using energy efficient devices and appliances and generating more renewable energy.

Gas, oil, petrol and diesel are fossil fuels and therefore have a high carbon footprint. Whilst electricity generated using fossil fuels has even higher carbon emissions, recent reductions in the 'carbon intensity' of electricity in the UK and the planned continuation of this through further investment in renewable energy generation makes electrification of heat and transport a key strategy for the UK.<sup>13,14</sup>

Significant additional demands for electricity must be mitigated by reducing wasted energy and through harnessing local renewable energy resources.

The UK's energy infrastructure is exposed to the impacts of a changing climate and Reading is no exception. In the coming decades we can expect:

- Disruption of power networks impacting on wellbeing and the local economy
- Flood risk to energy infrastructure and networks
- Heavy rain/high winds leading to more impacts on networks such as through pylons and local power networks
- Risk of high loads and changing power use patterns from hot and/or unusual weather
- Increased discomfort in buildings where air conditioning fails
- Urban heat island effects becoming exacerbated by more air conditioning, generating and exhausting heat
- More positively, a warmer climate could lead to lower heating requirements during the winter months which could reduce carbon emissions associated with this source



<sup>12</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/790626/2018-provisional-emissions-statistics-report.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/790626/2018-provisional-emissions-statistics-report.pdf)

<sup>13</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/766109/decarbonising-heating.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/766109/decarbonising-heating.pdf)

<sup>14</sup>[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/739460/road-to-zero.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/739460/road-to-zero.pdf)

## **Progress to date**

Reading has had a lot of new development which means that more efficient buildings are being constructed as building regulations and planning requirements drive higher standards:

- Lighting in many newer properties and streetlighting are now LED, which use much less power
- Newer buildings have been built to higher standards than the national regulations through local planning standards
- Renewable energy generation has been a priority for the Council which owns and operates over 7500 solar panels in the town
- The Council has upgraded its council housing, which represents over 10% of the town's housing, to a good energy efficiency standard
- Early adoption of 'smart city' technology in Reading has potential to support efforts to reduce emissions in future

Reading has seen a significant reduction in emissions associated with buildings since 2005, with data from 2018 showing a 52% reduction in per capita emissions.

## **Priorities on the pathway to net zero for energy and low carbon development**

To achieve the target of a net zero carbon Reading by 2030 will require:

- Substantial reductions in heat loss from buildings through a major retrofitting programme for Reading
- The electrification of transport and heat (as opposed to fossil fuels)
- An order of magnitude increase in renewable heat and electricity generation
- The use of smart technologies such as batteries and varied time of power use

Reducing demand is the first step in achieving a zero carbon future. New developments are built to a higher standard but it will be important to reach the zero carbon standards set out in Reading's Local Plan. While ensuring that new development does not add to Reading's carbon footprint is vital, perhaps more important is the retrofitting of existing buildings that were built to a lower standard but which will remain in place for a long time to come. Many of these have solid walls and may be protected heritage buildings with high heat losses and are more difficult to insulate. Such buildings can cause social and health risks for those who struggle to afford to heat them and who may find themselves in 'fuel poverty' as a result.

Reading has thus far installed solar panels on only a fraction of its roof spaces. With solar PV (photo-voltaic) panels costing significantly less than a few years ago, Reading should quickly move to install solar panels onto viable roof spaces.

Reading must quickly build its local skills base and bring forward a step change in retrofitting buildings. In order to retrofit all the homes in Reading, a total of 17 houses per day would need to be completed. Modelling work shows that if housing could be lifted to an EPC 'B' rating, there would still be a significant amount of clean energy generation needed to bring the gap between that and zero carbon. Previous schemes have shown that householders and business owners will be unlikely to act without significant incentives and availability of finance, so this must be made available locally, especially for those least able to afford it, if Reading is to succeed.

Reading must also increase its local capacity to install energy reduction and renewable energy solutions and stimulate the market in low carbon products and services. There is a need to work closely with the energy companies to plan a low carbon energy future. Significant infrastructure projects need to develop quickly to enable a net zero carbon target to be achieved by 2030 through a new 'energy master plan' for Reading. This plan will map out a technology pathway and seek to establish financially sustainable ways to deliver the energy infrastructure needed which ensures energy is affordable. Supporting the local economy through local ownership of energy assets and local supply chain development are also important. Major town centre developments will need to be serviced by, and will form part of, a district green energy network which accesses local renewable heat reserves which are likely to predominantly be from the ground and local water courses as these are the most prevalent source of renewable heat in Reading. Clusters of houses and businesses will benefit from collective renewable heat and electricity generation equipment.

The choices we all make about how we use power will be a critical success factor in meeting the ambition for a net zero carbon Reading by 2030. Technology can help us and the smart city approaches that will allow us to easily control the way we utilise our local renewable energy to power our transport and buildings will also be vital. Minimising energy losses through distribution and transmission will be a further priority.

## **Key adaptation priorities for energy and the built environment**

As we make an energy transition we need to consider the impacts of climate change and how they will change our needs in terms of buildings and transport and our newly developing local energy infrastructure. We will need to work carefully with our local environment and use it with care to help us meet our low carbon energy needs. New risks to the existing power distribution system will also need to be carefully managed. Risks relating to overheating in Reading's property also needs to be carefully considered.

**Energy and Low Carbon Development Action Plan:** our aim is that by 2025 Reading is taking urgent action to decarbonise its energy networks, increase energy efficiency and create renewable energy capacity. It has concrete plans to achieve sufficient demand reduction to enable its annual energy needs to be 100% covered by its renewable generation, taking account of the increased load from transport and heat becoming electrically powered.

**NB:** Some of the actions included in the action plans below, and the scale and pace at which they can be progressed, will be subject to the prevailing national policy context and/or the provision of additional powers and resources by central government, as made clear in Reading's climate emergency declaration (see section 3.2 above).

### Sub Category: Energy Policy

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>E1</b> An Energy Master Plan for Reading	» Develop an Energy Master Plan for Reading	Develop stakeholder group	Q4 2020	Scottish and Southern Energy (District Network Operator)
		Establish evidence base and technology pathway	Q2 2021	Southern Gas Networks
		Develop cross sector implementation plan	Q2 2021	Ovo Energy Octopus Energy Local renewable energy suppliers Spirit Solar Reading Energy Strategy Forum
<b>E2</b> Energy Efficiency in New development	Introduce high standards of energy efficiency for new development » Large commercial to BREEAM 'excellent' standard with best methods employed » Larger housing developments built to zero carbon standards » Ensure standards post construction with best methods employed » Build new council housing to the highest standards. Net zero carbon and exceeding 50% reduction on building regulations » Consider the embodied energy in building materials in publicly commissioned projects	% achieving standard  Schemes supported through offset	Ongoing	Reading Borough Council
<b>E3</b> Energy Reduction through Retrofit Programme	Establish a housing retrofit programme in Reading which is compelling for property owners: » Apply for funding » Compile high quality information on stock and energy efficiency levels of local housing » Identify partners » Zero carbon offset » Investigate green/community bonds and other finance innovation » Commercial retrofit scheme	Apply MHCLG Local Authority Delivery funding Sept to Dec 20 » Stock condition survey Oct 20 » Supply chain development work TBC » Collect Section 106 funds for zero carbon development » Work with LEP and Reading UK to establish companies to pilot – scheme TBC	2020/21	Reading Borough Council English Heritage South East Centre for the Built Environment University of Reading

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners									
<b>E4</b> Retrofit Design	<p>Establish standards for climate-conscious retrofit (not exhaustive):</p> <ul style="list-style-type: none"> <li>» Develop/utilise standards for different property types           <ul style="list-style-type: none"> <li>- Heritage sympathetic measures e.g. Heritage England Energy efficiency guide</li> <li>- Consider design guides such as Passivhaus Energyphit</li> <li>- Use PAS 2035 where possible</li> <li>- Design for climate risks (e.g. overheating/flooding)</li> <li>- Consider embodied energy in material using LETI guide <a href="https://www.leti.london/">https://www.leti.london/</a> (also design guide)</li> <li>- Introduce water saving especially hot water</li> </ul> </li> <li>» Develop public communication and resources for retrofit</li> </ul> <p><b>Links:</b> Water, Business</p>	Identify pilot projects which target specific solutions for different building types locally	2020 to 2022	Reading Borough Council English Heritage SECBE University of Reading									
<b>E5</b> Behaviours that save energy in homes and businesses and schools	<ul style="list-style-type: none"> <li>» Develop approaches to reduce energy consumption in homes, businesses and schools</li> <li>» Create information resources</li> <li>» Develop targeted behaviour-change campaign</li> </ul> <p><b>Links:</b> Community, Business, schools</p>	<table border="1"> <tr> <td>Publish resources</td> <td>2020/21</td> <td>National/local agencies and organisations materials and resources</td> </tr> <tr> <td>Targeted campaign</td> <td>2021/2022</td> <td>Reading Borough Council Reading Climate Change Partnership Brighter Futures</td> </tr> </table>	Publish resources	2020/21	National/local agencies and organisations materials and resources	Targeted campaign	2021/2022	Reading Borough Council Reading Climate Change Partnership Brighter Futures					
Publish resources	2020/21	National/local agencies and organisations materials and resources											
Targeted campaign	2021/2022	Reading Borough Council Reading Climate Change Partnership Brighter Futures											
<b>E6</b> Best in class buildings	<ul style="list-style-type: none"> <li>» Develop high standard projects in different sectors, to reduce emissions</li> </ul> <p><b>Links:</b> Business</p>	Publish reports on buildings	Q2 2021	Housing providers									
<b>E7</b> Reducing fuel poverty	<ul style="list-style-type: none"> <li>» Continue to provide Winter Watch service</li> <li>» Support new schemes targeting retrofitting for those most in need</li> <li>» Build referral mechanisms for those suffering from poor health and/or fuel poverty</li> </ul> <p><b>Links:</b> Community, Health</p>	<table border="1"> <tr> <td>Reading Housing Strategy</td> <td>2020/21</td> <td>Reading Borough Council</td> </tr> <tr> <td>Design new approaches</td> <td>2020/22</td> <td>Other agencies (Health, Citizen Advice etc.)</td> </tr> <tr> <td>Establish cross-referral programme</td> <td>Ongoing</td> <td></td> </tr> </table>	Reading Housing Strategy	2020/21	Reading Borough Council	Design new approaches	2020/22	Other agencies (Health, Citizen Advice etc.)	Establish cross-referral programme	Ongoing			
Reading Housing Strategy	2020/21	Reading Borough Council											
Design new approaches	2020/22	Other agencies (Health, Citizen Advice etc.)											
Establish cross-referral programme	Ongoing												
<b>E8</b> Leadership and Influence	<ul style="list-style-type: none"> <li>» Consider legal options for establishing standards that go higher than regulations</li> <li>» Buy sustainable LCGES (Low Carbon Goods and Environmental Services) from local suppliers to build supply chains where rules allow</li> <li>» Use social value KPIs</li> <li>» Develop in-house skills for retrofit of Council housing</li> </ul>	<table border="1"> <tr> <td>Consider trials nationally</td> <td>Q3 2020</td> <td>Reading Borough Council</td> </tr> <tr> <td>Project to work with public and private sector to build local supply chain</td> <td>2021 to 2023</td> <td>Reading UK Thames Valley Berkshire Local Enterprise Partnership</td> </tr> </table>	Consider trials nationally	Q3 2020	Reading Borough Council	Project to work with public and private sector to build local supply chain	2021 to 2023	Reading UK Thames Valley Berkshire Local Enterprise Partnership					
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Project to work with public and private sector to build local supply chain	2021 to 2023	Reading UK Thames Valley Berkshire Local Enterprise Partnership											
<b>E9</b> Reading Borough Council Carbon Plan 2020 to 2025	Reading Borough Council to set out plan to achieve emissions reductions and renewable energy generation targets	Published plan to 2025 and meet its milestones	Q4 2020	Reading Borough Council									

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>E10</b> Publish new housing strategy to incorporate energy retrofit	New strategy to include C-rating and where possible B rating for all Council and rental accommodation in borough by 2030  <b>Link:</b> Business	i) New housing strategy	2020/21	Reading Borough Council
		ii) Implementation	2021 onwards	

### Sub category: Renewable Energy – Heat

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>E11</b> Renewable Heat Ground Source	Work with developers to maximise district energy solutions in line with Local Plan policies on decentralised energy: » Establish District Heating » Investigate the potential of rivers, ground and aquifers in Reading for renewable heat » Implement heat pump schemes » Develop skills of local installers  <b>Link:</b> Business	Complete studies	Q2 2020	Reading Borough Council Department for Business, Energy and Industrial Strategy University of Reading
<b>E12</b> Renewable Heat Air Source	Consider different types of heat pumps and develop skills of local installers  <b>Link:</b> Business	Implement scheme	Q2 2022 (dependant on developers)	Reading Borough Council
		Report on Air Source Heat Pumps	Q3 2020	
		Identify installers	Q3 2020	
<b>E13</b> Renewable Heat Anaerobic Digestion	» Anaerobic digestion for food waste streams » Consider biogas generation for buses and inject to grid  <b>Links:</b> Resources, Transport	Conduct trials	Q2 2021	University of Reading
		Report informing waste strategy	Q2 2021	
<b>E14</b> Hydrogen	Investigate renewably sourced hydrogen fuel cell technology in particular for use in Heavy Commercial Vehicles (HCVs)  <b>Links:</b> Business, Transport	Identify schemes/trials	Date TBC	Reading Borough Council Reading UK Reading Transport Southern Gas Networks
	Investigate hydrogen injection to gas network	Discussions with SGN		

## Sub category: Renewable Energy – Electricity

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>E15</b> Solar PV (commercial)	Establish large commercial roof-based schemes that service base loads in large commercial buildings  <b>Link:</b> Business	Establish scheme	2020/22	Reading Borough Council University of Reading Reading UK TVBLEP SE Energy Hub
		Achieve high proportion of suitable roofs	2025	
<b>E16</b> Solar PV (domestic)	Establish phase 1 of domestic scheme using bulk purchase to reduce price	Develop scheme	2020	RCCP Tenants groups local companies
		Scheme up and running	2022	
<b>E17</b> Solar PV (Public buildings including schools)	Install solar panels onto public buildings including housing, community buildings, schools, hospitals, leisure centres, police and fire authorities	Council target 50% of electricity from renewables (mainly solar)	2025	RBC NHS Police Fire authorities
<b>E18</b> Renewable Energy Hydro	To bring forward Hydro-electric power schemes powered by Reading's rivers  To publicise sustainable energy through educational programme  <b>Link:</b> Water	Planning approval secured already, investment and commence scheme	2020/21	Reading Hydro
		Launch educational programme, tours etc	2022	
<b>E19</b> Investment in Renewable Energy at Regional level	Consider investment in land and sites in and outside of Reading that have potential to supply renewable electricity to Reading  Investigate suitable land with (potential) planning and connections for renewable energy generation	Initial report by	Q2 2021	Reading Borough Council

## Sub category: Electric Powered Transport. See also Transport Theme Action Plan

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>E20</b> Energy strategy for Bus Depot and surrounding area	» Establish potential for solar – depot, car park canopies, Civitas School » Investigate Riding Sunbeams option for direct connection to railway network	Report	2020/21	Reading Borough Council Reading Community Energy Society

## Sub category: Electricity Storage, Management and Metering – Smart Cities Solutions

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>E21</b> Battery Storage	» Grid side battery storage by Local Energy company (District Network Operator)	Establish energy strategy group	2020	SSE Public Sector Private sector
	» Behind meter storage on domestic and commercial sites » Specialist large scale storage facilities third party	Develop energy strategy draft	Q2 2021	
<b>E22</b> Smart Meters	» Roll out of smart meters in households » Identify 'Internet of Things' solutions linked to smart meters » Explore linkages to 'time of use' tariffs (different rates for different times of day) linked to IoT devices and 'vehicle to grid' (vehicles powering buildings) » Establish trials with vehicles/buildings and local network <b>Links:</b> Business, Transport	Energy company schedules/targets	2020 to 2024	Energy Companies University of Reading RCCP
<b>E23</b> Internet of Things projects	» Introduction of in-building solutions for projects that use the cloud and smart response approaches including machine learning to optimise energy flows	Smart Cities projects	2020 to 2022	Reading Borough Council University of Reading
<b>E24</b> Heat storage	» Investigate the potential of natural and engineering based heat storage systems in urban context for stabilising heat supply and balancing summer storage and winter loads	Set up energy working group	TBC	TBC
<b>E25</b> Carbon intensity research	» Work with University and or third parties to develop accurate real time assessment of carbon intensity of electricity and optimise energy flows to minimise carbon emissions	Set up energy working group	TBC	Reading Borough Council University of Reading

# TRANSPORT THEME ACTION PLAN



## Transport and climate change

At UK level, emissions from road transport represent around 33% of the total<sup>15</sup>. In Reading, the equivalent figure is just over 20%. As well as carbon emissions, pollutants from vehicles are a major source of air quality problems in the town. Taking action to reduce emissions from transport therefore offers scope to improve public health, reduce congestion, stimulate low carbon sectors of the local economy and improve the quality of life for Reading residents.

The COVID-19 'lockdown' had an immediate and a profound impact on travel behaviour, and although the long-term impacts on future travel demand and mode share are difficult to predict, some changes, such as more working from home, seem set to endure. Our Transport theme action plan was developed before the 'lockdown' and therefore our baselines and targets may need to be reviewed as the longer-term impact of the crisis become better understood. Reading Borough Council has, however, set ambitious targets for walking and cycling and is implementing a large number of active travel measures, including segregated facilities, in an attempt to ensure that positive changes in travel habits, such as more walking and cycling, are sustained. The ongoing success of our active travel targets will, however, be partly subject to Central Government funding to implement measures on a permanent basis.

Whatever happens to future transport demand, the UK's transport infrastructure remains exposed to climate impacts and Reading is no exception. In the coming decades we can expect:

- Disruption of transport networks impacting on wellbeing and the local economy
- Flood risk to transport infrastructure and access to key transport hubs
- Heavy rain/high winds leading to more accidents, treefall, road closures and delays
- Risk of slope/embankment failures due to heavy rain
- Risk of rails buckling, cables sagging and roads softening in extreme heat
- Increased discomfort on public transport
- Overheating/failure of signalling and communications equipment

These risks underline the importance of continuing to reduce the need to travel by more polluting modes of travel in the first place. More positively, a warmer climate may enable more outdoor lifestyles, making 'active' forms of travel – walking and cycling – more attractive.



## Progress to date

Investment in the transport network in recent years means that Reading currently has enjoyed a good level of sustainable transport provision in terms of:

- Public transport with good rail links, an extensive bus network with a modern, clean fleet using bio-gas fuel, fast-track public transport priority routes and the initial phases of an effective series of park and ride schemes
- Provision for active, sustainable modes of travel via an extended cycle network and a pedestrian and cycle bridge over the Thames
- Early adoption of 'smart city' technology which has potential to support efforts to reduce emissions in future

Reading has also bucked the national trend for bus use – while bus use went down 0.7% across England in 2018/19, in Reading it rose by 4.2%. The figures mean bus use in Reading has increased by 40% since 2011/12. However, despite these advantages Reading still experiences high levels of traffic and congestion, with carbon emissions and air quality problems arising from this. While transport related emissions temporarily reduced during the peak of the COVID-19 pandemic, action is required to make these reductions permanent, particularly as use of public transport has been reduced at the same time.

## Priorities on the pathway to net zero for transport

To achieve the target of a net zero carbon Reading by 2030 will require:

- Substantial reductions in the need to travel: to be achieved through careful planning to locate employment, services and leisure facilities close to where people live, and to integrate opportunities for sustainable living, working and shopping in new developments
- A significant switch from cars to more sustainable modes of travel: requiring a shift from the most polluting modes of transport (cars, HGVs) to less polluting modes (public transport, walking and cycling) and from motorised transport to the 'active' modes of travel (walking and cycling)
- Electrification of the vehicle fleet: even after reducing demand and encouraging modal shift, there will still be a significant need for motorised transport. As electricity supply is decarbonised, replacing fossil fuel-based vehicles with electric vehicles will be a key stage on the journey to a net zero carbon Reading

The key mechanism through which Reading's transport future is shaped is Reading's Local Transport Plan, produced by Reading Borough Council. A new Local Transport Plan, entitled the Reading Transport Strategy 2036, has been prepared and was the subject of public consultation process during 2020.

Ensuring that the new transport strategy supports the ambition of achieving net zero carbon by 2030 will therefore be important. This is a statutory process and as such needs to go through a formal process before the ambitions set out in the action plan below can be adopted – however, Reading Borough Council has already made a commitment in the climate emergency declaration that the 'forthcoming revision to the Local Transport Plan... reflect the urgency of this resolution'.

Beyond this, the choices we all make about how we get around will be a critical success factor in meeting the ambition for a net zero carbon Reading by 2030. This means we may all need to make difficult decisions about flying less, driving less, and using public transport, walking or cycling for essential journeys. If we do so, we will be fitter and healthier, our air will be cleaner, our public transport services will be better supported and more frequent, and the high cost of maintaining our roads should fall, freeing up resources for other much needed public services and/or further improving sustainable transport options.

## Key adaptation issues for transport

As we make these changes, we need to prepare for increased disruption and damage to transport systems and infrastructure arising from climate impacts. As with mitigation, the best way to increase our resilience to these impacts will be to reduce the need to travel in the first place, with technology and digital access to information and services playing a key role in this. Beyond that, transport planners and operators need to consider individually and collectively how to make their infrastructure and services more resilient to the inevitable impacts of a changing climate.

**Transport Theme Action Plan:** Our aim is for a low carbon future for transport in which emissions are cut by reducing the need to travel by more polluting modes of transport, shifting more journeys to sustainable modes of transport and supporting the transition from petrol/diesel to electric vehicles. In the process, we will improve health and wellbeing, while making transport infrastructure more resilient to climate impacts.

**NB:** Some of the actions included in the action plans below, and the scale and pace at which they can be progressed, will be subject to the prevailing national policy context and/or the provision of additional powers and resources by central government, as made clear in Reading's climate emergency declaration (see section 3.2 above).

### Sub category: Reducing need and demand for travel, promoting walking and cycling

Action name	Description	Targets and measure/milestone (NB numerical targets subject to confirmation in final Local Transport Plan still in development at time of publication)	Target completion date	Delivery partners
<b>T1</b> Reduce the need to travel through well planned development	Ensure that services, leisure facilities and employment opportunities are located close to where people live and/or in locations easy to access by sustainable transport services via planning policy and decisions <b>Links:</b> Business, Community, Health, Energy and LCD	Reduction in transport-related emissions across Reading Implementation of Reading Local Plan policies	2025	Reading Borough Council Developers
<b>T2</b> Develop demand management measures to reduce traffic and encourage shift from high carbon transport	Consider introduction of individual or combined policies via the forthcoming Local Transport Plan such as: » Workplace Parking Levy » Clean Air Zone » Alternative demand management measures <b>Links:</b> Business, Community, Health	Initiate consultation	Q2 2020	Reading Borough Council
		Develop business case for preferred option(s)	2021	Local Businesses Neighbouring Authorities
		Implement preferred measure(s)	2022-23	Department for Transport Reading BID
<b>T3</b> Enhance provision for Pedestrians and cyclists to encourage low carbon travel choices	Provide space for walking and cycling improvements, including segregation and road reallocation (where feasible), surface improvements, crossing priority, safety improvements and increased cycle parking hubs/facilities as set out in Local Cycling and Walking Infrastructure Plan <b>Links:</b> Health	Increase proportion of adults who walk at least 3 times per week from 30.8% (2019) to 40% by 2025 (en route to a 60% target by 2036) Increase proportion of adults who cycle at least 3 times per week from 5.1% (2019) to 9% by 2025 (en route to a 15% target by 2036)	2025 as part of the Local Transport Plan targets through to 2036	Reading Borough Council Local User Groups Thames Valley Police
<b>T4</b> Enhance Town Centre and Local Centre Public Space to improve air quality and reduce carbon use	Improve the pedestrian experience in Central Reading and local centres by providing better access to key destinations for walking, cycling and bus passengers Green up the local environment to encourage use and enjoyment of local facilities <b>Links:</b> Business, Community, Health	Increase active travel mode share of trips to/from Reading town centre from 32% (2017-2019 avg) to 34% by 2025 (en route to a 38% target by 2036) Increase public transport trips to/from Reading town centre from 44.5% mode share (2017-2019 avg) to 45.5% mode share per day by 2025 (en route to a 48% target by 2036) Decrease car trips mode share to/from Reading town centre from 23.5% (2017-2019 avg) to 20.3% mode share by 2025 per day (en route to a 14% target by 2036)	2025 as part of the Local Transport Plan targets through to 2036	Reading Borough Council Transport Operators Reading BID Local User Groups Developers Businesses Residents

Action name	Description	Targets and measure/milestone (NB numerical targets subject to confirmation in final Local Transport Plan still in development at time of publication)	Target completion date	Delivery partners
<b>T5</b> Promote Sustainable Travel to School and other education sites to encourage low carbon travel choices	Establish dedicated and safe walking and cycling routes for each school. Reduce the danger and pollution from 'the school run' Roll-out Play Streets/School Streets programme – supporting local communities and schools who want to organise street closures	Increased shift from private car use to active travel Improved health and fitness of schoolchildren Improved air quality Trial school street closures at selected schools before a wider roll-out across the borough	2025 as part of the Local Transport Plan targets through to 2036	Reading Borough Council School Communities Bikeability Provider Thames Valley Police Local User Groups Residents University of Reading
<b>T6</b> Improve major and radial routes to promote switch to sustainable modes of travel	Improve the transport options on main corridors and radial routes including A4, A33, A327, A329, A4074, A4155 and the Inner Distribution Road. Make space to encourage changes in travel choice to low/zero carbon modes  <b>Links:</b> Business, Community, Education	As per T3 and T4	2025 as part of the Local Transport Plan targets through to 2036	Reading Borough Council Neighbouring Authorities TVB LEP Transport Operators Local User Groups Residents Businesses
<b>T7</b> Improve Quality Bus Corridors	Improve branded local routes with faster, more reliable and more frequent services, changing people's travel habits away from dependency on cars especially for commuter and school journeys  <b>Links:</b> Business, Community, Education	Increase bus journeys per year by 9% from 22.5M (2019) to 24.6M (en route to a target increase of 25% by 2036)	2025 as part of the Local Transport Plan targets through to 2036	Reading Borough Council Transport Operators Businesses Residents Schools Health Services Department for Transport
<b>T8</b> Establish Fast-Track Public Transport Corridors	Improve speed and reliability of key public transport routes through establishment of key Fast-Track Public Transport (FTPT) corridors on strategic routes (including south, west, east and north)	As per T7	2025	Reading Borough Council Wokingham BC West Berkshire BC Oxfordshire CC Transport Operators

Action name	Description	Targets and measure/milestone (NB numerical targets subject to confirmation in final Local Transport Plan still in development at time of publication)	Target completion date	Delivery partners
<b>T9</b> Extend Park and Ride provision to encourage car users to change onto low carbon alternatives to access Reading	Provision of new and expanded Park & Rides to intercept traffic on main corridors into Reading  <b>Links:</b> Business	Increased annual number of P&R trips to/from Reading by 25% from 550,000 trips in 2019 to 690,000 trips by 2025	2025	Reading Borough Council Transport Operators Royal Berks Hospital Businesses
		New P&R at Thames Valley Park opened	2020	Wokingham Borough Council
		Winnersh Triangle P&R expanded	2021	Thames Valley Park W Berks BC
		New P&R sites identified	2025	Oxfordshire Borough Council TVB LEP Businesses
<b>T10</b> Deliver Railway Station upgrades to encourage car users to use low carbon alternatives to and from Reading	Improved access to railway stations at Reading, Reading West and Tilehurst by walking, cycling and public transport. Improved customer experience (including fully accessible platforms), interchange and public space enhancements, including new and improved cycle parking hubs and facilities	Increase public transport trips to/from Reading town centre from 44.5% mode share (2017-2019 avg) to 45.5% mode share per day by 2025 (en route to a 48% target by 2036)	2025 as part of the Local Transport Plan targets through to 2036	Reading Borough Council Network Rail Great Western Railway TVB LEP
<b>T11</b> Open Reading Green Park Railway Station	Provide new station for access to Green Park and South Reading and interchange with integrated bus services  <b>Links:</b> Business	New station completed and served by GWR services  Interchange open with provision of integrated bus services	2021	Reading Borough Council Network Rail Great Western Railway Transport Operators TVB LEP Department for Transport Businesses
<b>T12</b> Implement traffic management schemes to support low carbon travel choices	Provide effective management of the existing network to meet changing mobility demands of Reading  Provide safe roads and pavements including crossings and reduce crossing conflicts and interruptions to the flow of walking and cycling	As per T4	2025 as part of the Local Transport Plan targets through to 2036	Reading Borough Council Transport Operators Emergency Services

## Sub category: Reducing emissions from the vehicle fleet and using new technology

Action name	Description	Targets and measure/milestone (NB numerical targets subject to confirmation in final Local Transport Plan still in development at time of publication)	Target completion date	Delivery partners
<b>T13</b> Develop a zero emission vehicle strategy for the Borough	» Study suitable locations » Identify potential network constraints » Assess potential demand	Strategy development to follow Local Transport Plan	2020/21	Reading Borough Council
<b>T14</b> Decarbonise the Council Vehicle Fleet	» Increase electric charging points at Council buildings » Consider phased replacement of Council vehicles with electric powered units wherever possible » Charging points to be installed at depot that can allow vehicles to power buildings » Carbon Plan will set targets for reduction in diesel/petrol	RBC Carbon Plan  Feasibility report, Business case, Budget approval* (subject to above)	Q4 2020  2022-2024	Reading Borough Council
<b>T15</b> Increase Public Electric Vehicle Charging Points	Install electric charging points in » Council car parks » Leisure centres » Lamp columns (trials) » Business premises » Taxi ranks <b>Links:</b> Business, Transport	First car park project  All suitable car parks  First leisure centre  All leisure centres	2020/21  2023  2020/21  2022	Reading Borough Council  Reading UK  Taxi and Private Hire Associations  Leisure provider
<b>T16</b> Increase zero emission vehicles uptake	Work with vehicle sales outlets in Reading to increase zero emission vehicle uptake <b>Links:</b> Business	Zero emission vehicle uptake compared to national benchmarks	Ongoing	Reading UK  Reading Climate Action Network
<b>T17</b> Establish and promote eBikes	Identify charging locations for electrically assisted pedal cycles and investigate potential for e-bike hire scheme	Develop strategy for location	TBC	Reading Borough Council  Site owners
<b>T18</b> Planning policy for EV charging in new properties	Monitor number of additional charging units installed in new properties <b>Links:</b> Business	Monitor additional units in line with planning policy	Ongoing	Reading Borough Council  Developers
<b>T19</b> Reduce emissions from the Taxi Fleet	Require all taxis and private hire vehicles to be electric or hybrid by 2030	Improved air quality, reduced carbon emissions	Beyond 2025	Reading Borough Council  Taxi and Private Hire Associations

Action name	Description	Targets and measure/milestone (NB numerical targets subject to confirmation in final Local Transport Plan still in development at time of publication)	Target completion date	Delivery partners
<b>T19A</b> Reduce emissions and improve efficiency of freight movements	Work with the freight operators and businesses to encourage use of cleaner vehicle technology, consolidate deliveries, encourage 'out of hours' deliveries during quieter times and trial e-cargo bikes and freight consolidation parks where feasible	Improved air quality, reduced carbon emissions and reduced congestion	Beyond 2025	Reading Borough Council Road Haulage Association Logistics UK Freight operators and local businesses
<b>T20</b> Improve Electric Vehicle Charging infrastructure	Develop and implement policy for appropriate provision of electric vehicle charging points across the borough	Provision of EV charging installed as per the policy to accommodate anticipated increases in demand	2022	Reading Borough Council Transport Operators Third Party Landowners
<b>T21</b> Deploy Intelligent Transport Systems to encourage change to low carbon transport	Use technology and real-time data to improve safety, efficiency environmental performance and journey experience of users of the transport system, particularly at signal-controlled junctions	As per T4	2025 as part of the Local Transport Plan targets through to 2036	Reading Borough Council Transport Operators
<b>T22</b> Embrace Smart Solutions to reduce use of carbon in transport	Smarter Working – maximise benefits of flexible working patterns including working from home (to cut transport demand) and more flexible working hours to encourage commuter travel outside of the peak periods  Smart City Initiatives – use different types of electronic Internet of Things (IoT) sensors to collect data and then use insights gained to manage assets, resources and services efficiently  Implement Micromobility and Mobility-as-a-Service (MaaS) schemes as they evolve to facilitate shift from personally-owned modes of transportation towards mobility provided as a service, combining public and private transportation services through a unified gateway that manages the trip, which users can pay for with a single account  <b>Links:</b> Business	Decrease car trips mode share to/from Reading town centre from 23.5% (2017-2019 avg) to 20.3% mode share by 2025 per day (en route to a 14% target by 2036)  Reduced need for car ownership across the borough	2025 as part of the Local Transport Plan targets through to 2036	Reading Borough Council Employers Transport Operators Emergency Services Highways England Motoring Organisations Department for Transport Car Clubs

Action name	Description	Targets and measure/milestone (NB numerical targets subject to confirmation in final Local Transport Plan still in development at time of publication)	Target completion date	Delivery partners
<b>T23a</b> (General): Develop education, initiatives, promotion and advice to encourage low carbon travel choices	<p>Undertake marketing activities promoting sustainable transport, including national events such as Bike Week, Clean Air Day, In Town Without My Car Day, and organising local events and activities</p> <p>Enable access to any adults who want to undertake Bikeability training. Provide courses through schools as well as to individuals and to groups</p> <p>Provide up-to-date travel information to enable people to make informed travel choices including open data apps, real time passenger information and roadside Messaging Signs</p> <p>Develop programme of training, education and initiatives to promote sustainable transport usage</p> <p><b>Links:</b> Education, Health</p>	As per T4	2025 as part of the Local Transport Plan targets through to 2036	Reading Borough Council Stakeholders School Communities Bikeability Provider Thames Valley Police Local User Groups Residents
<b>T23b</b> (Schools): Develop education, initiatives, promotion and advice to encourage low carbon travel choices in school	<p>Roll-out Mode-shift STARS accreditation scheme to all schools in Reading to recognise efforts encouraging sustainable travel</p> <p>Implement School Streets, working with the schools to provide temporary restriction on motorised traffic at school drop-off and pick-up times resulting in a safer, healthier and a more pleasant environment</p> <p>Enable access to anybody who want to undertake Bikeability training. Provide courses through schools as well as to individuals and to groups</p> <p><b>Links:</b> Education, Health</p>	<p>Achieve 50% of all schools accredited to at least Bronze by 2025</p> <p>Improvements to air quality and road safety as well as encouraging healthier lifestyles</p>	2025	Reading Borough Council School Communities
<b>T24</b> Research and plan for Carbon Reduction and Climate Change Adaptation	<p>Participate in research programmes investigating the carbon footprint related to transport and the air quality impact of transport</p> <p>Design climate adaptation into the planning and operation of transport network to improve resilience to climate change impacts</p> <p><b>Links:</b> Adaptation</p>	<p>Research completed and recommendations made</p> <p>Climate Change Adaptation key consideration in planning of all schemes</p>	<p>2022</p> <p>2025 and beyond</p>	<p>Reading Borough Council</p> <p>Transport operators</p> <p>University of Reading</p> <p>Department for Transport</p> <p>Other Stakeholders</p>

# RESOURCES THEME ACTION PLAN



Most people around the world now live in urban areas with towns and cities being the major drivers of carbon emissions. But cities and towns, like Reading, are also where people meet, mingle and innovate, and are therefore central to developing positive responses to climate change.

## Resources, consumption and climate change

Whether it's a car or a sandwich, everything we buy, consume and discard has a carbon footprint. This may be direct, for example the energy used by electrical appliances, or indirect, such as the energy consumed in mining raw materials, shipping parts and products, fuelling production and processing items discarded as waste. At the other end of a product's life, direct carbon impacts include the energy used to collect, transport and process waste or greenhouse gases released by the decomposition of biodegradable waste in landfill sites, while indirect carbon impacts include the need to mine more scarce virgin materials.

In our consumer society, we have become accustomed to buying whatever we need, whenever we want it, and discarding or replacing it on a whim. These patterns of consumption are well established and deeply embedded into society; indeed, our entire economic model relies on them. At the same time the consequences of unbridled consumerism are becoming increasingly difficult to ignore. There is plenty of very visible evidence of how the products we consume, and the way we use and discard them, cause deforestation, habitat destruction, pollution and increased emissions.

The COVID-19 pandemic has also influenced our waste habits for better and for worse: it was reported that, as people were taking time to pre-plan shopping and be more creative with ingredients, food waste dropped during the lockdown<sup>16</sup>. But the need to wear masks in public and concerns about hygiene also led to a resurgence in single-use products and associated litter.

So, the question for this theme is what can we do now to ensure that succeeding generations have the opportunity to live well whilst using fewer scarce resources and creating less waste?



<sup>16</sup><https://wrap.org.uk/content/citizens-and-food-waste-lockdown-eases>

## Progress to date

- Reading, through its Re3 partnership, has developed excellent facilities for recycling plastic, paper, card, metals and glass. Recycling is, however, well below the national average and too many recycling bins are diverted to general waste due to contamination
- Collection infrastructure is being improved so that people are encouraged to recycle more with domestic food waste collections to start in 2021
- Reading has reduced the proportion of domestic waste which is sent to landfill to 17% (April-Sept 2020 figures) and a large proportion of domestic general waste is incinerated with energy captured to generate electricity
- Refill Reading was launched by Transition Town Reading in 2016 to help independent shops overcome the costs of a reusable cup scheme and has since been expanded to promote other opportunities to Refill
- In 2019 Caversham became the first community in Reading to start working towards Surfers Against Sewage Plastic Free Community accreditation
- In 2019 Reading Borough Council passed a motion committing the Council to eliminate wherever possible single use plastic from Council premises and commissioned services<sup>17</sup>.

## Priorities on the pathway to net zero

The top priorities for the resources theme over the coming five years are:

- To reduce the amount we throw away, including by encouraging more initiatives that offer people the option to rent, share and reuse as alternatives to single-use and disposability
- To recycle more of what we discard, using the infrastructure that already exists and making targeted interventions to reduce contamination and address gaps in provision
- To strategically identify products and systems that can be redesigned to make it easier to keep materials circulating at their highest value – developing Reading’s ‘circular economy’

The long-term goal is for Reading to become a ‘zero waste’, circular economy. To achieve near ‘zero waste’ to landfill or incineration, it is necessary to establish markets based on the value of materials that would otherwise be considered as waste. If we cannot reduce or reuse materials before they become waste, the first step is to get better at separating what can be recycled. As well as a continued focus on moving towards zero waste in the household collection waste stream, attention also needs to be given to commercial waste, including construction and other industrial processes.

Even after reducing waste and getting better at reusing and recycling what is left, there will still be some residual waste. The challenge then becomes to redesign the

systems of production and use to avoid these materials reaching the waste stream. For all materials, the aim has to be to keep them circulating for as long as possible at the highest possible quality and value. Applying this principle opens up innovations like peer-to-peer lending and sharing, as well as repair and reuse.

The action plan includes three strands that focus on experimenting at a system level, with actions designed to support behaviour change. These are chosen as iconic, high profile initiatives that have the potential to inspire and galvanise wider engagement.

- Plastic Free Reading: with the support of the Council and businesses there is an opportunity to encourage others to follow Caversham’s lead in working towards plastic-free community status, possibly leading to Plastic Free Reading accreditation for the town as a whole
- Climate friendly food: food is estimated to account for around 20% of UK emissions. Food waste needs to be minimised and food waste residues returned to the soil locally where possible. Eating local, seasonal produce will reduce emissions from production and transport. And there is growing recognition that moving to a more plant-based diet can both reduce emissions and improve health. While it is beyond the remit of this action plan to dictate what people eat, we can support and enable people to make informed choices about diet
- Zero Waste Festivals: a growing number of festivals have made sustainability a central principle. Fields of abandoned tents stick in the public memory but there is much good practice within Reading’s wide range of festivals. We plan to work with local festival organisers to explore opportunities to reduce waste. Reading Festival has already set itself the target of ending the sale of single-use plastic at its festival by 2021. But we are inviting them to go further and set a goal to become zero waste within five years. The aspiration of this theme is for Reading to become known as a town that champions zero waste at festivals

Underpinning this theme is the need for effective engagement and communication. The action plan therefore includes a number of initiatives that focus on the provision of information, education and skills to support people to make informed and responsible purchasing and consumption choices.

## Key adaptation issues for production, consumption and waste

Historic carbon emissions are already having an effect on our climate. For Reading this means adapting to the possibility of disruption to global supply chains, with the manufacture and supply of food, clothes and electronic equipment particularly exposed. The best way to increase our resilience to these impacts is to move away from the ‘take-make-waste’ approach to production and towards a more circular one, where resources are valued and circulated for as long as possible. There are also opportunities for innovation and business growth, with recognised growth in an “adaptation economy” in the UK and worldwide, as new products and services come to market in response to adaptation-related opportunities.

<sup>17</sup><http://news.reading.gov.uk/reading-council-to-go-plastic-free/>

**Resources Theme Action Plan:** our aim for 2025 is that Reading is on track to become a zero waste town by 2030, is actively innovating to find new ways of using resources more efficiently and thereby minimising our contribution to climate change. To facilitate this transition, by 2025 it is easy for everybody to access information and services to help them find ways to reduce waste and repurpose things they no longer need.

**NB:** Some of the actions included in the action plans below, and the scale and pace at which they can be progressed, will be subject to the prevailing national policy context and/or the provision of additional powers and resources by central government, as made clear in Reading's climate emergency declaration (see section 3.2 above).

### Sub category: Reduce – questioning our need to generate waste in the first place

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>R1</b> <b>Food:</b> Reducing domestic food waste	» Establish baseline and set meaningful targets for reducing domestic food waste » Adopt the Love Food, Hate Waste toolkit from WRAP and drive behaviour change through communications <b>Links:</b> Business	Baseline research completed by March 2021	Q1 2021	Reading Borough Council (lead) University of Reading (research)
		Communications programme in place, targets set and tracked annually from July 2021	Q3 2021 onwards	
<b>R2</b> <b>Food:</b> Reducing commercial food waste	» Establish baseline and set meaningful targets for reducing commercial food waste » Create a programme combining reduction measures, well-managed charity donations and best outcome waste processing » Collaborative programme by and for business <b>Links:</b> Community, Business, Education	Baseline research completed by September 2021	Q3 2021	RCAN (lead) Reading UK CIC University of Reading (research) Connect Reading Waste/recycling contractors Reading Borough Council Commercial parties
		Communications programme in place, targets set and tracked annually from January 2022	Q1 2022	
		Commercial food waste collection from TBC	TBC	
<b>R3</b> <b>Food:</b> Reducing food waste in schools	» Establish baseline and set meaningful targets for reducing food waste in schools » Create a programme combining reduction measures, well-managed charity donations and best outcome waste processing » Commercial food waste collection to be introduced by Reading BC for schools <b>Links:</b> Community, Business, Education	Baseline research completed by September 2021	Q3 2021	RCAN (lead) University of Reading (research) Reading Borough Council Commercial waste partners
		Communications programme in place, targets set and tracked annually from January 2022	Q1 2022	
		Commercial food waste collection from TBC	TBC	

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>R4</b> <b>Other:</b> Clothing	» Establish baseline and set meaningful targets for reducing the amount of clothing wasted » Introduce programmes to divert unwanted clothing from general waste through various means including donation, swapping, sharing, leasing/rental, etc. » Investigate the potential for emulating the WearNext project pioneered in New York  <b>Links:</b> Business, Community	Establish baseline and identify areas for improvement	Q1 2021	Reading Circular Economy Club (lead) Reading UK CIC Connect Reading Re3 (baseline data)
		Publish programme of targeted interventions	Q4 2021	
<b>R5</b> <b>Other:</b> Resource efficiency	» Publish easy to access and understand best practice guidance covering all common household purchases (in and out of home) » Focus on extended life, zero waste, energy efficiency » Signpost established labels and standards, advisory bodies, etc. » Establish communications programme to reinforce behaviour change  <b>Links:</b> Communications and Engagement	Guidance published and communications programme launched	Q2 2021	ReadingCAN (lead) Re3 Reading UK CIC

#### **Sub category: Reuse – keeping products in use for longer; delaying the point at which they need to be recycled**

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>R6</b> <b>Reuse and repair:</b> Establish a definitive information source on reuse and repair	» Compile and maintain a comprehensive directory of reuse and repair resources in Reading, and encourage new ones, especially through social enterprise » Include information resources like ifixit and services like Reading Repair Café and Reading Bicycle Kitchen » Establish communications programme to reinforce behaviour change  <b>Links:</b> Community	Directory published, update process and communications programme in place by April 2021	Q2 2021	ReadingCAN (lead) Organisations offering reuse and repair services Reading UK CIC Transition Towns Re3
<b>R7</b> <b>Sharing, renting and swapping</b>	» Compile and maintain a comprehensive directory of sharing, renting and swapping resources, and encourage new ones » Include peer to peer systems like Freecycle, rental and “as a service” systems, charity outlets and platform services like Too Good to Go  <b>Links:</b> Community	Directory published, update process and communications programme in place	Q2 2021	ReadingCAN (lead) Organisations offering sharing, rental and swapping services Transition Towns

### **Sub category: Recycle – seeing what we end up throwing away as still having value, and doing our best to retain and recover that value at its highest level**

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>R8</b> <b>Food:</b> Kerbside food waste recycling	<ul style="list-style-type: none"> <li>» Maximise take-up of kerbside food waste recycling when introduced</li> <li>» Appropriate annual targets to be set in conjunction with Reading BC/ Re3</li> <li>» Communications programme required to drive behaviour change</li> </ul> <b>Links:</b> Community, Education	Increase Reading's recycling rate by 7% through food waste collection	Q4 2021	Reading Borough Council Re3
<b>R9</b> <b>Other:</b> Glass	<ul style="list-style-type: none"> <li>» Establish a baseline and set meaningful targets for increasing glass collection</li> <li>» Improve access to glass recycling facilities for residents</li> <li>» Focus on areas with high density housing/low car ownership</li> <li>» Work with hospitality industry to introduce colour segregated glass collection</li> </ul> <b>Links:</b> Community, Business	Establish baseline and identify areas for improvement	Q1 2021	Reading Borough Council (Domestic lead)
		Publish plan to introduce improved provision for residents and businesses, including targets for collection	2023	Reading UK CIC (Business lead) UoR (research) Waste/recycling contractors
<b>R10</b> <b>Other:</b> Kerbside recycling	<ul style="list-style-type: none"> <li>» Maximise kerbside collection and minimise contamination</li> <li>» Increase awareness of what can go in kerbside recycling</li> <li>» Implement communications programme to encourage and improve confidence in recycling</li> <li>» Set annual targets to improve collection/contamination rates</li> </ul> <b>Links:</b> Community	Increase in Reading's overall recycling rate by 4% by October 2021 arising from efforts to reduce contamination	Q4 2021	Reading Borough Council Re3

### **Sub category: Rethink and redesign – Looking for opportunities to redesign products and systems to avoid waste, making Reading circular**

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>R11</b> <b>Plastics:</b> Plastic-Free Reading	<ul style="list-style-type: none"> <li>» Continued implementation of single-use plastic-free pledge by RBC and sharing the learning</li> <li>» Encouraging adoption of the Surfers Against Sewage Plastic-Free Community methodology and tools by communities, businesses and schools</li> <li>» Replicate Plastic Free Caversham concept to achieve the critical mass of groups, schools and businesses required to secure Plastic Free accreditation for Reading</li> </ul> <b>Links:</b> Business, Community, Education	Reading BC to share own lessons in becoming plastic free	Q3 2021	Reading Borough Council (Council and schools lead)
		Caversham to secure accreditation as a Plastic Free Community, with first schools and businesses accredited	Q3 2021	Reading UK CIC (business lead)
		Plastic-Free Community accreditation gained by at least one other Reading community	Q4 2021	Reading Business CAN
		Set annual targets for the number/percentage of schools and businesses to be Plastic-Free	Q3 2022	

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
R12 <b>Food:</b> Climate-friendly diet	<ul style="list-style-type: none"> <li>» Publish reliable and authoritative information on how to eat more sustainably</li> <li>» Focus on dietary choices, sustainable sourcing, child nutrition</li> <li>» Guidance for caterers as well as individuals</li> </ul> <p><b>Links:</b> Community, Business, Health, Nature, Education</p>	<p>Best practice identified and guidance prepared</p> <p>Communications programme developed and campaign launched</p>	Q1 2021 Q3 2021	University of Reading Subject-matter specialists (e.g. breastfeeding, food growing networks)
R13 <b>Plastics:</b> Zero waste and circular festivals	<ul style="list-style-type: none"> <li>» Work with Reading's festival organisers to develop resource-stewardship systems to reduce waste at festival venues (and campsites, where appropriate)</li> <li>» Explore different approaches to engage and encourage organisers, vendors and festival goers in addressing waste</li> <li>» Establish baseline and set meaningful targets for reducing waste and maximising recovery of resources</li> <li>» Engage with Reading Festival to understand the challenge of campsite waste and explore opportunities to reduce unrecyclable tent waste</li> <li>» Connect with and draw on the experiences of Green Deal Circular Festivals and other sustainable events bodies (A Greener Festival, Julie's Bicycle, Vision 2025)</li> </ul> <p><b>Links:</b> Business</p>	<p>Work with ReadingUK CIC local festival organisers group to understand the challenges and share best practice</p> <p>Collect baseline data</p> <p>Co-produce programme of knowledge sharing and local collaboration</p> <p>All of Reading's festivals to have a statement or page describing their approach to sustainability on their website</p> <p>Zero tents to be left behind on site at Reading Festival</p>	Q3 2020 Q1 2021 Q2 2021 Q3 2021 Q3 2025	Reading Circular Economy Club (lead) Reading UK CIC University of Reading (research) Waste/recycling contractors Festival organisers
R14 <b>Circular economy:</b> Establish Reading Circular Economy Club to grow the Circular Economy in Reading	<ul style="list-style-type: none"> <li>» Establish Reading Circular Economy Club – part of international network of Circular Economy Clubs</li> <li>» Peer to peer information exchange and networking for businesses/organisations</li> <li>» Develop resource exchange to create closed resource loops, reducing use of virgin resources and finding new uses for waste products</li> </ul> <p><b>Links:</b> Business</p>	<p>Reading Circular Economy Club set up</p> <p>Regular scheduled meetings and events established and publicised</p> <p>Resources exchange set up and operational</p>	Complete Q4 2020 Q2 2021	Reading Circular Economy Club (lead) Reading CAN/Reading Business CAN Re3

## READING CLIMATE EMERGENCY STRATEGY: WATER THEME ACTION PLAN



### Climate change and the water environment

Our changing climate is expected to lead to more extreme weather events for Reading. These will include more intense rainfall and floods, heat-waves and droughts. The impacts are predicted to increase over time, with winters getting warmer and wetter, while summers become hotter and drier.

Reading is located in one of the most water stressed parts of the country, with a similar water availability per head to some communities in the Middle East.

Approximately 80% of Reading's water is abstracted from the River Kennet, at the Fobney Water Treatment works. The chalk aquifer under the Berkshire Downs is the source of most of the water in the Kennet. Fortunately this gives Reading a good level of resilience for its water supply. However, we are vulnerable: with the potential for more intense future droughts – coupled with the expected growth of the town – we need to make sure we manage our use of water carefully.

As with other sectors, COVID-19 has had a huge impact on the water sector. We have seen a big increase in peak water usage, and a dramatic shift in the balance between domestic and commercial water consumption. Some of these changes, including more working from home, are likely to be permanent. Hence it will be a priority for us to understand how much more vulnerable Reading's water supply is, and it will make delivery of our actions even more important so we can prepare for the added impacts of the changing climate.

The risk of flooding will increase for Reading, particularly from the River Thames and from surface water, as a result of more intense storms. We have a large area of land at risk of flooding which is predicted to get worse due to climate change: increasing the frequency, duration and depth of floods; and increasing the area of land at risk. This needs to be taken into account when considering new development, including buildings. A Strategic Flood Risk Assessment (SFRA) has already been undertaken which describes and analyses how Reading is affected by flood risk and the nature of that risk. The flood plain plays an important role in protecting the built-up area of Reading and the surrounding area as it accommodates floodwater. This has been recognised in Reading's adopted Local Plan and reflected within its policies to ensure that: the capacity of the floodplain is not reduced; flood flow paths are not obstructed; and that inappropriate development in the flood-plain is avoided.



## Progress to date

We have a strong community of water industry experts in Reading, who will help guide us towards our vision and targets. These include:

- Thames Water (who have their head office in Reading) supply all of our water, and most of our drainage, and have a lot of information and expertise to share
- The Environment Agency regulate our water environment and will help us to understand what the environmental limits are, as climate change increases our drought and flood risk

There are also a number of policies in the Reading Local Plan, adopted in November 2019, which are designed to encourage more efficient use of water and prepare for the impacts described above.

## Priorities on the pathway to net zero for emissions related to water use

A big focus for the water theme will be on learning over the next 5 years, as we help everyone to become more 'water aware'. The need to save water is primarily an adaptation issue. However, approximately 1% of the UK's total greenhouse gas emissions are associated with pumping and treating water, so being more water efficient will make a notable difference. Of greater significance is the energy involved in heating water in our homes. This can be a very large part of the carbon footprint of a house. Measures to tackle this are picked up in the Energy and Low Carbon Development theme.

## Key adaptation issues for the water environment

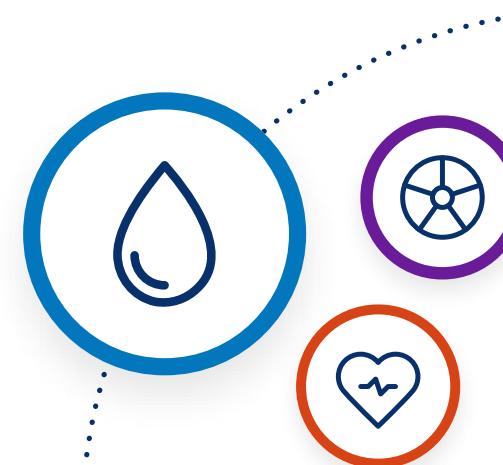
Reducing our water consumption is a vital response to the increasing risk from drought with the changing climate. Ambitious national targets on water efficiency are anticipated within the next year. Rather than set additional targets on water we intend to develop these, during the life of this strategy, into robust 2050 targets for Reading. These will aim to make us the most water efficient town in the country. Following on from this, we intend to:

- Contact Defra and volunteer Reading as a case study town to benchmark this new 2050 target
- Work with council planners and Thames Water to develop our already good Local Plan policies to explore the concept of 'Water Neutrality' in new development
- Research into water reuse, and help us understand our potential to help reduce future water demand
- Support Thames Water's future rollout of smart water meters on household and commercial properties

Our other key priority for Reading is to improve flood resilience:

- Through education we will help people and businesses prepare. By 2025 we want everyone at risk of flooding in Reading to be signed-up to the EA Flood Warning service
- We will advise on and encourage the reshaping of the town: breaking-up hard surfaces and encouraging green roofs, natural flood management measures and sustainable drainage systems to slow the flow of storm water. This will give it a chance to irrigate rather than flood the town

We also want to improve understanding about where our water goes so that we can minimise the impacts of waste water on the environment.



**Water Theme Action Plan:** Reading will aim to become the most water aware and water efficient town in the UK, going beyond national targets. We will achieve this by developing and implementing a dedicated communications and education strategy and delivering a range of water saving improvements in Reading's homes and businesses. Climate change will also increase the risk of flooding: significantly from the River Thames and from urban storm water. We will help residents and businesses understand these risks and to get ready for them.

**NB:** Some of the actions included in the action plans below, and the scale and pace at which they can be progressed, will be subject to the prevailing national policy context and/or the provision of additional powers and resources by central government, as made clear in Reading's climate emergency declaration (see section 3.2 above).

### Sub category: Water supply and water conservation

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>W1</b> Educate the public about Reading's water situation	<ul style="list-style-type: none"> <li>» Share and explain our 2050 target and how this compares to current consumption, e.g.:           <ul style="list-style-type: none"> <li>- Domestic water consumption by activity</li> <li>- Info on non-domestic water consumption</li> <li>- Where our water comes from</li> </ul> </li> <li>» Develop Comms Strategy for engaging public, including schools</li> </ul> <b>Links:</b> Education, Community, Business, Communication and Engagement	Available material published on RCAN website  New material prepared and published	2020  2021	Thames Water
<b>W2</b> Educate households about their water consumption and the need to save water	<ul style="list-style-type: none"> <li>» Share information on the risks of drought and importance of water conservation</li> <li>» Provide tips and information on how to save water in the home and garden</li> <li>» Develop and implement Comms Strategy for engaging households</li> </ul> <b>Links:</b> Energy & LCD, Nature, Communication and Engagement	Information resource compiled and published  Comms programme underway	2021  2025	Thames Water
<b>W3</b> Educate businesses about water use, efficiency benefits, and dry weather preparedness/response	<ul style="list-style-type: none"> <li>» Share the Thames Water Drought Plan</li> <li>» Signpost relevant information and case studies from reputable sources</li> <li>» Create industry-specific advice and case studies</li> <li>» Run a drought exercise with Local Resilience Forum (LRF), partners and businesses</li> <li>» Communicate the Environment Agency 'incident management' approach to drought</li> </ul> <b>Links:</b> Business, Energy and LCD, Communication and Engagement	Information resource compiled and published  Industry-specific guidance available  Drought exercise and incident management response	2020  2021  2022	Thames Water (lead) Environment Agency RCAN Reading Business Climate Action Network
<b>W4</b> Educate the public about water quality and sewer abuse	<ul style="list-style-type: none"> <li>» Publish sewer abuse and water quality stats, messages and content to RCAN website</li> </ul> <b>Links:</b> Business, Community, Communication and Engagement	Content published	2021	Thames Water

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>W5</b> Water efficiency measures	<ul style="list-style-type: none"> <li>» Promote installation of water saving and efficiency devices during refurbishment</li> <li>» Promote Thames Water's 'Smarter Business Visit' scheme to all schools in Reading</li> <li>» Increase awareness of leaky-loos and benefits of fixing plumbing losses</li> <li>» Engage with building management companies to promote retrofitting/leak fix</li> <li>» Expand the provision of water info packs from new homes to all households</li> <li>» Promote Thames Water's 'Smarter Home' visit scheme to homes with smart meters</li> <li>» Support the roll-out of smart meters</li> <li>» Conduct periodic research on understanding and engagement with water saving</li> </ul> <p><b>Links:</b> Community, Business, Communication and Engagement</p>	Refurbishment programme  Schools visits, building management company engagement and leaky loos programme  Water info packs, smart meters and research project	2020  2021  2025	RCAN Reading Borough Council Thames Water University of Reading (research)
<b>W6</b> 'Water Neutrality' as a planning requirement	<ul style="list-style-type: none"> <li>» Investigate whether the RBC Sustainable Planning Document can be modified to include: <ul style="list-style-type: none"> <li>- the requirement for all new major developments to contribute to funding water saving measures equivalent to the development's water consumption</li> <li>- adopting the 'fittings approach' within Building Regulations rather than a pcc calculation approach</li> </ul> </li> </ul> <p><b>Links:</b> Energy and LCD</p>	Share the contents of the Sustainable Planning Document on RCAN website  Feedback on required amendments  Amendments implemented	2020  2022  2025	Reading Borough Council Thames Water
<b>W7</b> Leadership and Influence	<ul style="list-style-type: none"> <li>» Lobby MPs and Defra to introduce a mandatory water label to help consumers make water-efficient choices</li> <li>» Lobby MPs and Defra to strengthen building regulations and planning process, to drive water efficiency within all new developments and procurement schemes</li> </ul>	Water labelling  Building regs and planning	2021  2025	RCAN

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>W8</b> Research to drive future improvements	<ul style="list-style-type: none"> <li>» Research the costs, benefits and suitability, of rainfall harvesting and grey water recycling schemes.</li> <li>» Use UKCP18 climate modelling and local river flow models, to develop projections for future drought / water resource availability.</li> <li>» With RBC and LEP update our estimates of Reading population growth to 2050</li> <li>» Develop a new evidence-based 2050 water target</li> <li>» Review the first Adaptation Plan and identify and deliver initial win-win opportunities</li> <li>» Identify thresholds, risks, solutions and case studies for the second Adaptation Plan</li> <li>» Work with Thames Water to understand the changes to household and business water use due to COVID-19 impacts</li> </ul> <p><b>Links:</b> Adaptation</p>	Develop research proposals	2020-25	RCAN University of Reading (research)

### Sub category: Flooding Resilience

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>W9</b> Raise awareness of fluvial (river) flood risk	<ul style="list-style-type: none"> <li>» Raise awareness of flood risk from the River Thames and the proposed Reading and Caversham Scheme by carrying out various engagement activities</li> <li>» Update the flood maps on the Gov.UK website to show the areas at risk of flooding based on the latest flood modelling</li> </ul> <p><b>Links:</b> Education, Business, Transport, Community, Adaptation</p>	Engagement activities	Q2-3 2020	Environment Agency Reading Borough Council Local councillors Local businesses and community groups
		Flood maps updated	2022	
<b>W10</b> Raise awareness of the Flood Warning and flood alert service	<ul style="list-style-type: none"> <li>» Increase the number of at-risk homes and businesses signed-up to receive Flood Alerts</li> <li>» Signpost advice on the Flood Warning Service and what to do before, during and after a flood</li> <li>» Develop "what if" scenarios to help people and businesses understand the importance of self-preparation, and education about flood risk</li> </ul> <p><b>Links:</b> Education, Business, Community, Adaptation</p>	90% sign-up to FW service	Q4 2021	Environment Agency Reading Borough Council Community groups
		100% sign-up to FW service	Q4 2025	
		'What if' scenarios developed and posted on ReadingCAN	Q4 2025	

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>W11</b> Reducing fluvial flood risk from River Thames	<ul style="list-style-type: none"> <li>» Work in partnership with Risk Management Authorities and local stakeholders to identify ways to reduce fluvial flood risk</li> <li>» Gain support from all Reading communities on action to reduce flood risk from the River Thames</li> <li>» Seek funding through partnership funding and local grants.</li> </ul> <p><b>Links:</b> Education, Business, Community, Adaptation</p>	Reading community makes decision about favoured River Thames flood reduction option	Q2-3 2021	Environment Agency Reading Borough Council Local councillors Thames Water Local Resilience Forum Community groups and local businesses
		Funds raised to deliver favoured option	2025	
<b>W12</b> Implement sustainable urban drainage systems (SuDS)	<ul style="list-style-type: none"> <li>» Explain the importance of SuDS and their practical application</li> <li>» Find out what post scheme monitoring is happening and recommend how this can be improved</li> </ul> <p><b>Links:</b> Nature, Adaptation, Transport</p>	Share planning information	2020	Reading Borough Council
		Monitoring, reporting and research	2025	
<b>W13</b> Investigate the use of green infrastructure to reduce and slow down storm water	<ul style="list-style-type: none"> <li>» Investigate measures to slow the flow of storm water, eg by planting and creating scrapes and swales</li> <li>» Follow up on research by Reading University and the Landwise project</li> <li>» Transfer learning to RBC Sustainable Design and Construction (supplementary planning document)</li> </ul> <p><b>Links:</b> Nature, Transport, Adaptation, Business</p>	Scope project brief and costs	2020	Water theme group Environment Agency University of Reading
		Deliver results	2023	
<b>W14</b> Improve the resilience of the Kennet Meadows	<ul style="list-style-type: none"> <li>» Develop a plan for the Kennet Meadows to make it a resilient wetland</li> <li>» Make sure the plans preserve the need for the meadows to act as flood plain</li> <li>» Consider the drought risk and make sure the needs of the meadows are considered in EA / TW drought plans. There will be a limit to their protection... is it possible to develop a recovery plan early to try and mitigate?</li> </ul> <p><b>Links:</b> Nature, Adaptation, Energy</p>	Workshop to bring partners together and agree scope	2021	Environment Agency CEH (Wallingford) University of Reading Water theme group member
		Develop and share plan	2023	
<b>W15</b> Improve our flood risk adaptation plans	<ul style="list-style-type: none"> <li>» Improve our understanding of climate change adaptation thresholds</li> <li>» Investigate the latest UK climate projections to find out what extreme rainfall events we need to prepare for</li> <li>» Check the developing EA guidance for fluvial flooding and develop our own understanding of the changing flood risk for the River Thames and River Kennet</li> <li>» Develop our flood adaptation plans through to 2050 and beyond</li> </ul> <p><b>Links:</b> Education, Adaptation</p>	Post information on revised future flood modelling, as it is released	Ongoing	Environment Agency Reading Borough Council Local interest groups
		Deliver report on change in storm rainfall, and Thames and Kennet flood peaks	Q4 2024	

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>W16</b> Investigate opportunities for Green roofs	» Develop recommendations for green roofs, green walls and landscaping for new build » Explore opportunities for retrofitting homes and offices » Develop advice for home owners on the benefits of breaking up hard surfaces in driveways and gardens  <b>Links:</b> Transport, Nature, Community, Business	Create research proposals	2021	University of Reading Reading Borough Council Environment Agency
		Deliver results	2025	
<b>W17</b> Develop links to the Thames Valley Local Resilience Forum	» Investigate the limits of our emergency plans and explore what the community of Reading can do to become more resilient » Share the developing adaptation planning and vision for Reading with the LRF to inform long term strategic decisions » Share advice on being prepared for an incident including "Thames Valley: Are you ready?" booklet and advice from the Environment Agency » Use resources from Business in the Community Business Resilience Group to help businesses improve resilience  <b>Links:</b> Community, Business, Adaptation	Organise meeting with LRF  Public workshop/ event on resilience and adaptation	2021  2022	Environment Agency Reading Borough Council Thames Water University of Reading Local Resilience Forum



# READING CLIMATE EMERGENCY STRATEGY: NATURE THEME ACTION PLAN



## Nature and climate change

The natural environment is generally considered an ally in the battle against climate change as woodland, grassland, wetland and soils can all lock up carbon if managed correctly. But the natural environment is also threatened by the impacts of climate change. Rising temperatures will be higher in the town than that in the surrounding countryside due to the 'urban heat island' effect. More intense periods of rain and drought are expected, with impacts on natural habitats and increased competition for water resources to meet the needs of people, business and the environment.

Changes to vegetation and soil will affect many species and in ways that we have not seen before. More research is needed to gauge the way different species are affected, but we can expect more intense competition for food in times of drought and flood and impacts on the life cycle of certain species if they, or their prey, are dependent on particular plants at specific times. Whether climate change could lead to local or regional extinction is yet to be determined, but we know that certain species have not yet recovered from population crashes in the 1970s. Climate change also means that new, non-native and invasive species could colonise the area.

The COVID-19 lockdown highlighted the importance of people having access to greenspace where they live as it became even more vital for the health and wellbeing of people and communities as other activities were subject to restrictions. This underlines the importance of managing greenspace in a way which helps addresses climate challenges whilst improving access for people.

## Progress to date

While Reading is predominantly an urban borough, the importance of its green areas and open spaces is increasingly recognised – not just for their own sake, but for the benefits they offer to our health and wellbeing. Examples of this include:

- The adoption of policies in the Local Plan to ensure that green spaces are joined up and that new development delivers a 'net gain' for biodiversity
- The launch of the 'Trees for Reading' initiative which seeks to increase tree cover in the town
- 'Rewilding' trials have been initiated by Reading Borough Council, reducing the frequency of mowing on selected highway verges to benefit wildflowers and wildlife, with initial feedback from the public proving very positive

## Priorities on the pathway to net zero for nature and key adaptation issues

There is growing recognition of the role which 'nature-based solutions' can play in delivering climate change mitigation, and more information on this can be downloaded from the ReadingCAN website. Key priorities in this respect are:

- Managing existing natural habitats to sequester and store more carbon: by increasing the amount of permanent cover (including but not restricted to tree cover) and managing greenspace differently in the town and, perhaps even more important, increasing the storage of carbon within the soil, the natural environment can make a significant contribution to reducing Reading's carbon footprint
- Managing dead and dying plant material to leave in situ wherever possible or managed to return carbon and minerals to the soil
- Ensuring that new development delivers a 'net gain' for the environment: as Reading grows we need to ensure that national and local planning policies requiring a 'net gain' for biodiversity are observed, so that new and restored habitats can help us mitigate the causes and adapt to the impacts of climate change
- Creating and enhancing wildlife corridors through Reading: by joining up natural and semi-natural habitats we can increase the value of Reading's greenspaces as carbon stores and sinks, as well as making it easier for people and wildlife to adapt to climate impacts

Increasing vegetation cover will reduce the urban heat island effect and improve air quality. Street trees will provide shade in the town and encourage cycling and walking, while hedgerows will offer shade and some protection from wind.

By increasing permeable surfaces in the town, we can allow water to infiltrate the soils rather than run-off to increase flood risk. Some green spaces may also be able to store water for lengthy periods to mitigate flood risk in the town. The type of planting, the management of top growth and soils, and the management of water all need to change across the town; not just in gardens and green spaces, but also in car parks, road verges and vertical spaces.

Green corridors – along transport routes, waterways as well as in parks and open spaces – provide a route for wildlife to move through the town and colonise different spaces which will improve their resilience as local conditions change. Since we expect higher temperatures and risk of drought, as well as more intense periods of rain, these corridors need to contain areas that are big enough to provide shade and shelter as well as areas of higher ground.

Creating and improving these wildlife corridors will be beneficial to people as well. They will provide shade for people as they move through the town and additional greenery to reduce the urban heat island effect, improve air quality and enhance the townscape.

Gardens are an important resource for nature and higher temperatures, more intense rainfall and periods of drought in the future means that changes are needed in the way we manage our gardens to mitigate the impact of climate change and continue to provide a useful habitat for a range of species.

The green corridors and gardens referred to above are very important for wildlife, but the town needs a coherent approach as well to mitigate the direct impact of high temperatures on human health as well as on biodiversity. Emergency cool areas may be created in hospitals and public buildings, but most buildings could benefit from tree planting to provide shade, and perhaps green walls and roofs reducing internal temperature gains (as well as warming in winter). The nature theme action plan therefore looks at ways to modify the built environment to mitigate the climate change impacts, complementing actions in the water, health and low carbon development themes.



Photo Scott Webb

**Nature Theme Action Plan:** By 2025 the people of Reading will live in a greener town with changes to the management of open spaces and the green links between them that store more carbon as well as giving shade for hot summers, corridors for wildlife and some flood control. New developments will include biodiversity net gain and water management, and there will be exemplar sites showing how to change planting and soil management around buildings to mitigate the impacts of climate change.

**NB:** Some of the actions included in the action plans below, and the scale and pace at which they can be progressed, will be subject to the prevailing national policy context and/or the provision of additional powers and resources by central government, as made clear in Reading's climate emergency declaration (see section 3.2 above). They are also dependent upon recruiting enough volunteers to the Nature Task Force to supplement the existing nature theme group.

### Sub Category: Carbon Sequestration

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
N1 Increasing tree cover across the town	» Plant more street trees	Targets per updated Biodiversity Action Plan & RBC Tree Strategy (NB resources for and timing of implementation may be influenced by England Tree Strategy, publication of which is awaited)	RBC to adopt Tree Strategy 2020 Planting programme to 2025	Reading Borough Council Ethical Reading Tree Wardens (RTWN) Nature Task Force Eonet Food4Families Thames Water
	» Test new planting options in town centre and on the road network			
	» Promote trees in private gardens/ business/ schools			
	» Encourage tree and hedge planting in air pollution hotspots esp. schools			
	» Enable more street tree planters			
N2 Managing land to store more carbon and increase biodiversity	» Promote use of degradable tree planting maps and tubes	Publish guidance on RCAN website 2 school hedges/year Review policies for traffic restrictions Policy for council planting; publish guidance for householders	2020 2021 2021 2021	Reading Borough Council University of Reading Nature Task Force Berks, Bucks & Oxon Wildlife Trust
	<b>Link:</b> Education, Transport			
	» Review methods to protect existing stored carbon and relative benefits of different land uses			
	» Identify optimum practical and effective management systems for retaining carbon in Reading			
	» Feedback into review of management of Council land			
N3 Explore use of biochar and charcoal	» Research on cost benefit of charcoal and biochar	Research undertaken RBC ground maintenance policies and planting policies revised accordingly Advice leaflets for householders on RCAN website	2023	University of Reading Reading Borough Council Local charcoal makers BBOWT Coppice Federation
	» Expect results to show that expensive to purchase but beneficial for tree growth and resilience to climate change and should be part of planting plans			
	» Seek opportunities to make charcoal from local forestry waste to sell locally and reduce imports and to dig into the soils to sequester carbon			

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>N4</b> Review Council parks and woodlands	<ul style="list-style-type: none"> <li>» Survey land, including allotments, and make recommendations that increase carbon storage, flood control, and Biodiversity Action Plan delivery, compatible with increased public use for health</li> </ul> <p><b>Link:</b> Water, Health</p>	Survey minimum four sites per year Recommend management changes	From 2020	Reading BC Nature Task Force Econet RDNHS Reading Tree Wardens Network
<b>N5</b> Test different management of parks, verges and roundabouts	<ul style="list-style-type: none"> <li>» Review mowing regimes in parks</li> <li>» Consider measures like extending tree cover, scrub regeneration and conservation grassland</li> <li>» Consider options for managing roadside verges/roundabouts</li> <li>» Test, review and implement preferred options</li> <li>» Accompany changes with public education campaign</li> </ul>	Annual meeting to review options for evidence-based changes	From 2021	Reading Borough Council Nature Task Force Community groups
		Consider options for changing mowing/planting on 6 area/yr of verge/roundabouts and 2 areas in parks	From 2021	
		Review impact and extend across town	From 2020	
<b>N6</b> Planning for replacement for ash dieback	<ul style="list-style-type: none"> <li>» Decide which areas to be left for regeneration with resistant ash</li> <li>» Decide on replacement species on Council land where necessary</li> <li>» Grow on local material to plant out (potential schools project)</li> </ul> <p><b>Link:</b> Education</p>	Review Council woodlands and revise management plans	2022	RBC Parks 'Friends of' groups Nature Task Force Community groups
		2 year collection of seeds with schools	2 per year	
<b>N7</b> Kennet Meadows	Review options to increase carbon storage and biodiversity through: <ul style="list-style-type: none"> <li>» Maintaining water levels through the year</li> <li>» increasing granularity of livestock management to form a mosaic of swards</li> <li>» Before and after surveys required for carbon capture and biodiversity</li> </ul> <p><b>Links:</b> Water</p>	Discussions underway. Completion targets and dates to be agreed	TBA	Land Owners Environement Agency Reading Borough Council Nature Task Force Thames Water
<b>N8</b> Increase hedgerows	<ul style="list-style-type: none"> <li>» Survey existing hedgerows and suggest new hedgelines/infill</li> <li>» Schools encouraged to have hedge boundaries to mitigate air pollution</li> <li>» Hedgerows promoted along cycle routes/ walking routes for air pollution mitigation and shade</li> <li>» Links: Health</li> </ul>	Review hedgerows as part of wildlife corridor survey at 10km/year	Annual report	Nature Task Force to survey Landowners to plant and maintain
		Target schools and park boundaries for priority planting	2 per year from 2021	
<b>N9</b> Food waste/green waste	<ul style="list-style-type: none"> <li>» Support no dig cultivation, home composting/ worm bins</li> <li>» Disseminate information on food fermentation and support larger scale waste trials</li> <li>» Seek University research to quantify effects</li> </ul>	Information on RCAN website and links to other sources	2020	Nature Task Force Food4Families Community groups University of Reading Museum of English Rural Life
		Support 2 trials: data required before end of RE3 contract	2024	

## Sub category: Supporting wildlife habitats and biodiversity

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
N10 Compensatory habitat restoration/offsets for urban development	<ul style="list-style-type: none"> <li>» Baseline review of the likely requirements for habitat compensation and biodiversity net gain due to development of sites in the Local Plan</li> <li>» Financial mechanism developed</li> </ul>	System to be set up  Implementation	2020  Continuous	RBC planning
N11 Identifying wildlife corridors	<ul style="list-style-type: none"> <li>» Working from the green links shown in the Local Plan, and revision of the Biodiversity Action Plan, identify primary and secondary routes</li> <li>» Agree any changes/additions changes with RBC planning department and Council</li> </ul>	Identify routes and mark on plan for transfer to RBC Geographical Information System	2020	
N12 Assessing the quality of wildlife corridors	<ul style="list-style-type: none"> <li>» Review existing data</li> <li>» Walk through and rapid assessment of accessible land</li> <li>» List priorities for enhancement on public land and community land</li> </ul> <p><b>Link:</b> Community, Health</p>	Start within year 1, 10km a year reports on the corridor survey	Annual from 2020-2025	Reading Borough Council Nature Task Force Community groups Network Rail BBOWT
N13 Managing the impact of development areas on wildlife corridors	<ul style="list-style-type: none"> <li>» Ensure design and planting on development sites contributes to wildlife corridors</li> <li>» Ensure connectivity through developments with appropriate supplemental planning guidance</li> <li>» Align with objectives of revised Biodiversity Action Plan and/or green infrastructure strategy/plan</li> </ul>	Supplementary Planning Document published	2021  Implementation ongoing	Reading Borough Council Berkshire Local Nature Partnership BBOWT
N14 Species protection/recovery	<ul style="list-style-type: none"> <li>» Biodiversity Action Plan develops objectives for increasing/recovery of identified key species</li> <li>» Ensure these are fed into management methods and changes in wildlife corridors</li> </ul>	Develop land management objectives  Implement from:	2020  2021	Reading Borough Council Nature Task Force University of Reading
N15 Biodiversity enhancement pilots	<ul style="list-style-type: none"> <li>» Meet/work with residents associations/ community groups</li> <li>» Offer regular workshops/newsletter input/other methods to support changes in these areas</li> </ul> <p><b>Link:</b> Community</p>	Identify 2 areas to participate including an area of deprivation  Review impact relative to other areas	2020  2023	
N16 Data recording/monitoring	<ul style="list-style-type: none"> <li>» Request that all new data go onto TVERC, irecord or data systems that link with TVERC (Thames Valley Environmental Records Centre)</li> <li>» Recruit volunteers for recording</li> <li>» Encourage householders to take part in garden surveys/ TV projects</li> </ul> <p><b>Link:</b> Community</p>	Contact all local groups  Recruit volunteers  Publicise surveys undertaken by others	2021  2020  Each year	Nature Task Force Community groups University of Reading

## Sub category: Planting for biodiversity and resilience

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
N17 Provide Information on adaptation	<ul style="list-style-type: none"> <li>» Provide information on climate resilience and wildlife friendly gardening</li> <li>» Improving soil structure and promote water reuse</li> <li>» Promote exemplar sites – eg council, church, school</li> </ul> <p><b>Links:</b> Water, Health, Education</p>	Information published on RCAN website  2 exemplar projects by:	Q4 2020  2025	Nature Task Force RISC Community groups Reading Borough Council
N18 Greening front gardens and reducing hardstanding	<ul style="list-style-type: none"> <li>» Provide information and links to potential designs for increasing green cover and reducing hardstanding</li> <li>» Hold seminar for developers</li> <li>» Seek TV support for project, eg Gardener's World</li> </ul> <p><b>Links:</b> Water, Energy and LCD</p>	Information by end 2021  Seminar  Contact TV options	2022  2023  2020	RCAN Nature Task Force RHS
N19 Interaction with garden centres	<ul style="list-style-type: none"> <li>» Encourage garden centres to introduce a wildlife friendly and climate change adaptation section</li> <li>» Peat-free labelling of composts</li> </ul> <p><b>Link:</b> Business</p>	Programme introduced	2020	Nature Task Force BBOWT

## Sub category: Green Spaces for Cooling/well-being

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
N20 Green Infrastructure	Using green infrastructure to reduce carbon emissions from buildings and promote urban cooling, e.g.: <ul style="list-style-type: none"> <li>» Promote green walls and roofs on new build</li> <li>» Promote green roofs on existing single storey structures</li> <li>» Plant for shading of cycle/pedestrian routes</li> <li>» Research on impacts of green infrastructure required</li> </ul> <p><b>Links:</b> Energy &amp; LCD, Water, Transport, Health</p>	In local plan. May need supplementary planning document  Advice published on RCAN website  Research projects to evaluate effects	SPD 2022  2022  2021	Reading Borough Council Nature Task Force University of Reading
N21 Develop green space to enable increased health benefits	Tree/hedge planting to provide shade, reduce particulate pollution and oxides of nitrogen  <p><b>Links:</b> Health</p>	Part of reviews referred to in N4 above	Ongoing from 2020	Landowners

## Sub category: Communication and Engagement

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>N22</b> Raising awareness in the community	<ul style="list-style-type: none"> <li>» Identify two areas in the town, including an area of deprivation, to concentrate existing resources to test ideas and communication methods for dissemination</li> <li>» Extend proven ideas to other areas</li> </ul> <b>Links:</b> All themes, Business, Community	2 target areas identified and developed	Identify test areas by 2021; Extend to four areas by 2025	Nature Task Force
<b>N23</b> Advice service for adaptation	<ul style="list-style-type: none"> <li>» Provide advice to schools/ community groups/for wildlife friendly gardening/ water efficient gardening/recycling in the garden</li> </ul> <b>Links:</b> Water, Education, Community, Adaptation	Offer half day advice service to up to 20 organisations a year, plus online leaflets	Advice service from 2021	Nature Task Force BBOWT
<b>N24</b> Support schools in their climate change initiatives	<ul style="list-style-type: none"> <li>» Provide list of support actions available through ReadingCAN or external sources to enhance existing systems (e.g. ecoschools), and distribute</li> </ul> <b>Links:</b> Education, Communication and Engagement	Create option list for schools	2020	RCAN Nature Task Force
		Offer 8 support activities a year	From 2021	
<b>N25</b> Supporting Businesses and NGOs in their climate change initiatives	<ul style="list-style-type: none"> <li>» Make opportunities for groups to do practical work via Team Challenge</li> </ul> <b>Link:</b> Business, Communication and Engagement	6 actions a year	Set up by 2021	Reading Borough Council Nature Task Force Eonet The Conservation Volunteers
<b>N26</b> Identify opportunities for green prescribing	<ul style="list-style-type: none"> <li>» Produce a list of groups willing to provide options for social prescribing and make available to local GPs</li> </ul> <b>Links:</b> Health	List available to RBC Public Health	2021	Nature Task Force

## READING CLIMATE EMERGENCY STRATEGY:

# HEALTH & WELLBEING THEME ACTION PLAN



Health is a 'State of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity'. The Health and wellbeing strand of the strategy takes account of the Social Determinants of Health (SDH) and enables us to make the link between health equity and climate change. SDH is a term to describe the social and environmental conditions in which people are born, grow, live, work, and age, which shape and drive health outcomes.

This theme therefore considers the wellbeing of Reading's people holistically, with the emphasis on living healthily in a changing climate and addressing health inequities by supporting the most vulnerable communities who are disproportionately exposed to climate impact including the elderly, homeless people, BAME communities and those living in our most deprived wards. It also recognises that the health impacts of climate change will be exacerbated by the additional risks associated with COVID-19.

The actions we need to take to reduce CO<sub>2</sub> and adapt to climate change also have the potential to improve our community's health and wellbeing. Most of the themes of the Reading Climate Change Strategy contribute to the 2030 carbon zero target directly: they are primarily concerned with mitigation. The Health & Well-being Theme focuses on aligning health and climate goals as well as dealing with the consequences of climate change that are likely to negatively affect the health of people in Reading over the next 10 years, despite best efforts at mitigation.

We have used the WHO analysis of the health impacts of climate change<sup>18</sup> to define three categories of risk which are expected to significantly impact Reading – increased heat waves and related air quality issues, increased rainfall and associated flooding, and changing transmission patterns for infectious diseases. All of these can negatively affect the physical and mental health and wellbeing of Reading's residents. Alongside these are the underlying issues of health issues associated with fuel poverty and the potential for mental health challenges associated with anxiety and stress caused by climate change.

Many of the themes include outreach and education strategies; we propose that an integrated resource base and education programme be supported by appropriate partners. In order to monitor progress under many of the themes, monitoring of environmental characteristics will be needed. We propose that these be linked to monitoring of health data, potentially via a Lancet Countdown<sup>19</sup> project. This could make environmental and health data visible to the public e.g. on public billboards or through apps.



<sup>18</sup>[https://www.who.int/globalchange/181008\\_the\\_1\\_5\\_healthreport.pdf](https://www.who.int/globalchange/181008_the_1_5_healthreport.pdf)

<sup>19</sup><https://www.lancetcountdown.org/>

This is the first time that health has been included in Reading's climate change strategy, therefore many of the actions are about linking with existing local and national frameworks and strategies, researching external sources, setting up resources, systems and processes for Reading and establishing networks to link health professionals to climate change planning. Outcome based targets could include falling levels of asthma, lower rate of heat-related fatalities and increase of journeys by zero carbon modes of walking and cycling.

**Health Theme Action Plan:** By 2025, people in Reading will be well informed about how to embed climate-friendly activities into their lives and self-manage the health impacts of climate change, benefiting from policies and programmes that enable them to thrive despite its effects. All climate change mitigation and adaptation strategies will consider the impact on health; with particular emphasis on heat-related health risks, air quality and mental wellbeing.

**NB:** Some of the actions included in the action plans below, and the scale and pace at which they can be progressed, will be subject to the prevailing national policy context and/or the provision of additional powers and resources by central government, as made clear in Reading's climate emergency declaration (see section 3.2 above).

### Sub category: Heat

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>H1</b> Adaptation and anticipation in health facilities	<p>Facilities in hospitals and care homes adapted to extreme heat, e.g.</p> <ul style="list-style-type: none"> <li>» Provision of cool space for residents</li> <li>» Storage for medicines requiring cool temperatures</li> <li>» Risk register of those at risk from heat</li> </ul>	CQC reports on facilities in Reading all positive on these aspects.	2023	Public Health Berkshire (lead)
<b>H2</b> Publicise cool public spaces	<ul style="list-style-type: none"> <li>» Explore potential for air-conditioned places to be opened to the public during heatwaves</li> <li>» Maps and lists in libraries, public spaces, buses</li> <li>» Publicity in local media when heatwaves are forecast</li> <li>» Support tree planting initiatives and man-made (canopies) solutions</li> </ul> <p><b>Links:</b> Energy &amp; LCD, Nature, Business, Communication and Engagement</p>	Completion and publication of list	Initial list 2022 List updated yearly	Reading Borough Council RCAN
<b>H3</b> Increase the number of cooling public spaces/ nature-based solutions	<ul style="list-style-type: none"> <li>» Implement urban greening and tree-planting initiatives</li> <li>» Create man-made solutions where necessary (canopies)</li> </ul>	See action N1 in Nature Theme		

## Sub category: Flooding

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>H4</b> Anticipation in health and social care facilities  <b>Link:</b> Water	» Flexible accommodation for peak loads in emergencies » Flood risk planning and preparation for in-patient facilities	Establish baseline	2020	Public Health Berkshire (lead) Reading Borough Council
		Set targets	2021	
		Plan published	2022	
<b>H5</b> Minimising health impacts from flooding	» Convene a group to determine what support is needed to minimise the health impacts from anticipated flooding and to make recommendations about appropriate interventions  <b>Link:</b> Water	Group to report by end:	2022	RCAN

## Sub category: Air pollution – see also Transport Theme Action Plan

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>H6</b> Supporting citizens to self-manage air quality risks	» Explore the application of dynamic real time air quality data to help citizens protect themselves » Raising awareness of green/ blue corridor and urban travel routes with lower pollution levels » Reach those most in need by prioritising areas measuring high pollution levels and areas of deprivation » Possible collaboration with Adept Live Lab project  <b>Links:</b> Nature	TBC	TBC	Reading Borough Council (lead) University of Reading Adept Live Lab Stakeholders

## Sub category: Infectious diseases

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>H7</b> Minimising the health impacts from infectious diseases	» Convene a group to determine what support is needed to minimise the health impacts from infectious diseases associated with climate change and to make recommendations about appropriate interventions	Group to report by end:	2022	RCAN

## Sub category: Reducing emissions from the health sector in Reading

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>H8</b> 'For a Greener NHS' campaign	» Adopting the national 'For A Greener NHS' campaign in Reading to determine the quickest feasible path to get the NHS to 'net zero carbon' » Royal Berks NHS Foundation Trust to produce action plan subsequently	NHS staff and establishments to feed into Expert Panel to report by Summer 2020 (local action plans to be produced subsequently)	Q2-3 2020	Royal Berks NHS Foundation Trust Other NHS facilities
<b>H9</b> Implementation of NHS Standard Contract	» New national contract requiring hospitals to reduce carbon from buildings and estates, whilst switching to less polluting products, and encouraging more active travel for staff	Contract implemented	Q2 2021	Royal Berks NHS Foundation Trust
<b>H10</b> Development of Green Plan for Royal Berks Hospital	» New plan covering asset management, travel and transport, use of resources and greenhouse gas emissions	Plan completed	Q2 2021	Royal Berks NHS Foundation Trust
<b>H11</b> Cooperation with local GP practices	» Link GP practices with sustainability initiatives including 'The Green Impact for Health Toolkit' <sup>20</sup>	Health Theme Group to make contact with GPs or representative body	2021	RCCP RCAN GP Practises

## Sub category: Communication, engagement and education

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>H12</b> Cooperation with local health authorities	» Create strong links to ensure climate change is at the centre of strategy » Initiate discussions with Health and Wellbeing Board <a href="https://democracy.reading.gov.uk/mgCommitteeDetails.aspx?ID=176">https://democracy.reading.gov.uk/mgCommitteeDetails.aspx?ID=176</a>	Meet to determine next steps	Q3 2020	RCAN lead
<b>H13</b> Cooperation with local planning authorities	» Supporting Planning Team in climate impact assessment, ecosystem services tools and mitigation measures in relation to new builds and health and wellbeing of existing communities and future generations	Meet to determine next steps	Q4 2020	
<b>H14</b> Cooperation with Brighter Futures for Children and schools	» Align with health and wellbeing targets » Connect with young people in their own right and as a route to influence their parents » Create repository of sustainable frameworks and climate change learning resources for schools » Increase tree and hedge planting in schools, for heat reduction and improving air quality » Support outdoor learning initiatives in school grounds and urban green spaces <b>Links:</b> Nature	Meet to determine next steps	Q4 2020	RCAN Brighter Futures for Children Primary Schools Secondary Schools

<sup>20</sup><https://www.greenimpact.org.uk/giforhealth>

Action name	Description	Targets and measure/milestone	Target completion date	Delivery partners
<b>H15</b> Improve cooperation between RBC Parks and Open Spaces team, conservation and therapeutic nature and horticulture sectors	<ul style="list-style-type: none"> <li>» Increasing amount and quality of green space to enable residents to benefit from the improved physical and mental health</li> <li>» Mapping nature recovery priorities against indices of deprivation data to support people and wildlife where needed most</li> <li>» Supporting Reading Tree Strategy</li> <li>» Promoting green prescribing initiatives</li> </ul> <p><b>Links:</b> Nature</p>	Ongoing – measure quality using Natural England's guidance	Ongoing	Reading Borough Council Nature Task Force
<b>H16</b> Publicise the health and well-being benefits to be gained from taking action on climate change	<ul style="list-style-type: none"> <li>» Awareness raising linking health &amp; well-being with climate friendly choices, including diet (less food miles, less processing, more plant-based), travel choices and housing retrofit</li> <li>» Encourage behaviour change by highlighting positive impact of climate action, such as air quality improvements reducing asthma attacks and supporting brain development</li> <li>» Awareness raising to highlight the importance of greenspace to health and well-being and climate adaptation including boosting conservation volunteering and tree planting</li> </ul> <p><b>Links:</b> Education, Community, Business</p>	Explore carbon literacy training and positive climate action campaign tailored to specific target audiences	2021	RCAN Reading Green Christians
<b>H17</b> Support for mental health and wellbeing, targeting those suffering health inequalities	<ul style="list-style-type: none"> <li>» Extension of existing mental health programmes to include the mental health issues associated with heat, flooding or air pollution; also climate anxiety</li> <li>» Supporting the local nature sector to deliver green prescribing, especially for vulnerable groups</li> <li>» Sustainable greenspace management boosting biodiversity, carbon sequestration and supporting health and wellbeing</li> </ul>	Extended programme in place	2022	Reading Borough Council Public Health
<b>H18</b> Support the community gardening and food growing sector	<ul style="list-style-type: none"> <li>» Encourage the use of greenspace/ gardens for growing food in public and private spaces and educational opportunities</li> <li>» Education around healthy and climate-friendly diets, including basic cookery skills</li> </ul>	Measure number and size of spaces and volunteer numbers	Ongoing	Reading Gardening for Health and Wellbeing Network Food4Families Reading Food Growing Network
<b>H19</b> Research, measuring and monitoring	<ul style="list-style-type: none"> <li>» Explore what data is already available on public health impacts of climate change in Reading</li> <li>» Identify data gaps and establish research projects</li> <li>» Measure, monitor and report on correlation of illnesses with climate change impacts to improve adaptation planning</li> <li>» Possible link with Lancet Countdown project</li> </ul>	Scoping meeting	December 2019 DONE	RCAN University of Reading

## 6. COMMUNICATIONS AND ENGAGEMENT

### 6.1 Our ambition for community engagement in action on climate change

Our goal for climate action in our community is that everyone who lives, works, studies or plays in Reading understands Reading's pathway to net zero carbon, is equipped with the knowledge, tools and support required to make their contribution to it, and takes ownership and responsibility for the corporate and individual action required to get there.

Following the declaration of a climate emergency in 2019, an extensive programme of community engagement took place, following the guiding principles for City Climate Action Planning recommended by the International Council for Local Environmental Initiatives (ICLEI). This commenced with a public forum attended by over 120 people. This gathering identified the key themes for the strategy and led to the creation of theme groups which have been open for anyone to join since June 2019. The groups have been advertised online and via conventional media, meeting physically and virtually. The community-led theme groups have had a fundamental influence on the development of action plans within the Reading Climate Emergency Strategy.

Individuals and communities have a huge part to play in tackling the climate emergency via the choices they make and the signals they send through, for example, their purchasing and consumption decisions. We therefore need to equip them with the advice and tools they require to understand and reduce their impact on climate change.

The consultation process which informed development of this strategy highlighted the enthusiasm and commitment which the people of Reading are willing to bring to the challenge of tackling climate change. We asked what changes people would be willing to make to this end and a selection of responses is shown here.

### 6.2 A climate change communications and engagement plan for Reading

While the community in Reading is relatively engaged in the climate change debate, we know that we have a long way to go before we reach everyone. As such, we have developed a detailed communications and engagement plan, encompassing the launch of the final version of this strategy, and a programme of events and initiatives to support engagement of the whole community in its implementation. A summary of this plan is below.

### Voices of Reading: A selection of quotes from contributors to our consultation

*"I'm veggie choosing not to own a car and use plastic-free toiletries"*

*"I just wish there were greener options around me. I would really like to shop plastic free but that isn't really possible with the options around in Caversham"*

*"We are discussing how to reduce our carbon emissions in our street and are already changing behaviour"*

*"Helping with school walking trains"*

*"As a school we are particularly keen to make our building more energy efficient and tackle the issues of resources and food"*

*"To promote awareness and action in local churches and to support local environmental NGO"*

*"My organisation is planning improvements to its building and looking to a net zero building and ways to reduce waste"*

*"Cycle more, use the car less"*

# Communications & Engagement Plan summary

## Sub category: General

Action name	Description (With bulleted list of activities needed to achieve action and links)	Target and measure/milestone (i.e. How will we know that we have completed the action?)	Target completion date	Action owner + list of delivery partners	Any resource or capacity challenges? (In funding, in skills, in capacity, missing key partners)
C1 Information hub	<ul style="list-style-type: none"> <li>» Establish and maintain a hub on the website where all themes are supported with relevant, practical information for all stakeholders, so that everything is available in a single place</li> <li>» Mixture of bespoke content (Reading-centric) and signposts to reliable sources of information eg WRAP, Wildlife Trust, Energy Saving Trust, Carbon Trust etc</li> <li>» Supported by comms programme (conventional and social) to drive traffic</li> <li>» This should also have info on how we are doing. Achievements, measurement etc (does this need to be a separate workstream or do the theme heads take care of this?)</li> </ul>	Published	Set up by November 2020, continuously updated thereafter	Comms and Engagement Team Theme leads	Website needs professional design to make sure it's engaging and mobile-optimised
C2 Dashboard	<ul style="list-style-type: none"> <li>» Develop a dashboard with KPIs that track progress against the targets in the strategy</li> <li>» Publish on the RCAN website but also strategic media around the town, eg large digital sign at the station, buses, The Oracle, Reading Borough Council venues</li> </ul>	Published	Set up by December 2020 and continuously updated thereafter	RCAN	Some of the indicators will be lagging, these needs to be clearly communicated
C3 Brand Book and Stakeholder Map	<ul style="list-style-type: none"> <li>» Develop brand guidelines, style guide and messaging matrix</li> <li>» Confirm role of RCCP versus RCAN and relationship with other organisations within Reading</li> </ul>	Brand Book and stakeholder map created	By end September	Comms and Engagement Team	Will need to be revised and updated after the governance audit is completed
C4 Campaign Calendar	<ul style="list-style-type: none"> <li>» Develop and publish a calendar of campaigns to encourage action on different issues, eg Beat the Street, Fair Trade Fortnight</li> <li>» Align with RBC campaigns and initiatives led by other organisations in the town, as well as national "days" eg Earth Day</li> <li>» Support with social media and conventional media such as bus advertising, outdoor, The Oracle, council magazine</li> </ul>	Quarterly Rolling Comms Plan devised and published	By November 2020	Comms and Engagement Team	May require funding for creative and media

Action name	Description (With bulleted list of activities needed to achieve action and links)	Target and measure/milestone (i.e. How will we know that we have completed the action?)	Target completion date	Action owner + list of delivery partners	Any resource or capacity challenges? (In funding, in skills, in capacity, missing key partners)
<b>C5</b> Climate Literacy Training	<ul style="list-style-type: none"> <li>» Offer carbon and climate training, tailored to support the RCAN Action Plan, to all who live, work or study in Reading</li> <li>» Begin by training all RBC staff</li> <li>» Potential to build on the University's MOOC and/or Climate Reality training</li> <li>» Accreditation available from the UNEP endorsed Carbon Literacy Project</li> </ul>	Development of training  Targets for delivery	December 2021	RCAN	Carbon Literacy accreditation depends on securing funding
<b>C6</b> Third party events	<ul style="list-style-type: none"> <li>» Take part in/support local public events eg Town Meal, Beanpole day, Waterfest, Meadows day, school fêtes etc etc</li> </ul>	Events calendar published and theme support agreed	10 events per year	RCAN	Requires portable display materials as well as volunteer help
<b>C7</b> Funding hub	<ul style="list-style-type: none"> <li>» Establish and maintain a list of sources of outside funding that can be drawn on to support RCAN initiatives</li> <li>» Offer grants to support small local initiatives that align with RCAN goals</li> </ul>	List	Set up by end of 2020, continuously updated thereafter	RCAN	Opportunity to offer advice on preparing bids subject to resource
<b>C8</b> Volunteer Programme	<ul style="list-style-type: none"> <li>» Work with Reading Voluntary Action to establish process to recruit volunteers to support delivery of RCAN activities</li> </ul>	Relationship built and process established	December 2020	RCAN RVA	
<b>C9</b> Research Programme	<ul style="list-style-type: none"> <li>» Establish a research programme to support the actions in the strategy</li> <li>» Work with the University of Reading to develop a structured approach to matching research needs with students seeking research projects</li> </ul>	Programme developed and approach defined	April 2021	RCAN University of Reading	
<b>C10</b> Climate Action Pledge	<ul style="list-style-type: none"> <li>» Develop a pledge that residents can sign to commit to taking action on climate change across a relevant range of impacts</li> <li>» Possible "eco-journey" starting with simple things and becoming more advanced</li> </ul>	Pledge defined and published	November 2020	RCAN	

## Sub category: Business Focus

Action name	Description (With bulleted list of activities needed to achieve action and links)	Target and measure/milestone (i.e. How will we know that we have completed the action?)	Target completion date	Action owner + list of delivery partners	Any resource or capacity challenges? (In funding, in skills, in capacity, missing key partners)
<b>C11</b> Climate-friendly Organisations Pledge	» Define a set of commitments for organisations to sign up to in order to gain "Climate Friendly" status	Pledge defined and published	November 2020	RCAN	
<b>C12</b> Climate-Aware Business	» Embed climate change into the workstreams of the LEP, IOD, Chamber of Commerce and other local business networks » Work with leaders of those organisations to convince them of the strategic importance of climate change for their own organisations and their membership	All nominated organisations have climate change as part of their mission	Summer 2021	RBC	
<b>C13</b> Lobbying for better business practice	» Identify barriers preventing use of sanctions to address "carbon crimes", eg: - Leaving lights on all night in office buildings - Having doors of restaurants/retail units open - Incorporate the GHG Protocol (Scope 1, 2 & 3) ? » Lobby central government for the policy changes	Issues identified and lobbying programme launched	Spring 2021	RCAN	
<b>C14</b> Reading Business Climate Action Network	» Establish business network for sharing of expertise and knowledge on sustainable business » Hold regular events » Publish business-centric advice and guidance and signpost tools and models from reputable sources on the RCAN website » Encourage all Reading Businesses to nominate an employee who is their representative and can help to engage the company	Network already launched Events programme published Information hub launched	November 2020	RCAN Ethical Reading Sustainability Champions	
<b>C15</b> Sustainable Business Accreditation	» Investigate the suitability of BCorp and BITC frameworks and other accreditations » Ideally have a free-to-use dashboard system » Introduce an accreditation scheme for businesses that recognises achievement at different levels, eg bronze, silver, gold, to create a race to the top	Research completed and proposal published	Summer 2021	RCAN	May require funding

Action name	Description (With bulleted list of activities needed to achieve action and links)	Target and measure/milestone (i.e. How will we know that we have completed the action?)	Target completion date	Action owner + list of delivery partners	Any resource or capacity challenges? (In funding, in skills, in capacity, missing key partners)
C16 Divestment	<ul style="list-style-type: none"> <li>» Divestment from fossil fuels is an important signal of intent as well as a way to divert capital investment from carbon-based to cleantech/Greentech innovation</li> <li>» Run a campaign encouraging all institutional investors in Reading to divest</li> </ul>	Campaign launched	November 2021	RCAN	
C17 Business volunteering	<ul style="list-style-type: none"> <li>» Create opportunities for staff to support delivery of actions from the strategy via Team Challenge</li> </ul>	6 business actions a year	First actions Q1 2021	RCAN Connect Reading RBC Nature Task Force Econet TCV	

### Sub category: Community Focus

Action name	Description (With bulleted list of activities needed to achieve action and links)	Target and measure/milestone (i.e. How will we know that we have completed the action?)	Target completion date	Action owner + list of delivery partners	Any resource or capacity challenges? (In funding, in skills, in capacity, missing key partners)					
C18 Working with other organisations	<ul style="list-style-type: none"> <li>» Establish links with other groups working on the sustainability agenda across Reading and showcase their work through the RCAN website</li> <li>» Enable sharing of events, expertise, knowledge and resources by other groups</li> </ul>	Partner hub set up with ability for representatives to contribute content	Partner hub set up by end 2020	Comms and Engagement team						
C19 Community focused work	<ul style="list-style-type: none"> <li>» Identify 2 geographical areas in Reading (up to 10 streets) – and support the residents in these streets to lead more Climate friendly lives. Develop competition (eg 'green streets initiative')</li> <li>» Identify and work with community groups (i.e. religious, ethnic, age related) – and support the members to lead more Climate friendly lives, through community talks and projects</li> </ul>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;">2 areas per year</td> <td style="padding: 5px;">First area identified by Q2 2021</td> <td rowspan="2" style="vertical-align: middle; text-align: center; width: 10%;">RCAN</td> </tr> <tr> <td style="padding: 5px;">6 groups per year</td> <td style="padding: 5px;">First group identified by Q1 2021</td> </tr> </table>	2 areas per year	First area identified by Q2 2021	RCAN	6 groups per year	First group identified by Q1 2021	First group identified by Q1 2021		
2 areas per year	First area identified by Q2 2021	RCAN								
6 groups per year	First group identified by Q1 2021									

## Sub category: Education Focus

Action name	Description (With bulleted list of activities needed to achieve action and links)	Target and measure/ milestone (i.e. How will we know that we have completed the action?)	Target completion date	Action owner + list of delivery partners	Any resource or capacity challenges? (In funding, in skills, in capacity, missing key partners)
C20 Schools-based interventions	<ul style="list-style-type: none"> <li>» Working with the Education team and Brighter Futures for Children, to establish a programme of climate change interventions for schools.</li> <li>» To cover physical changes (i.e install solar panels, heat pumps etc) and support with lessons/curriculum/local community engagement (use Eco Schools framework?)</li> <li>» Draw on established tools and programmes where possible</li> </ul>	Programme launched	September 2021	RCAN admin Brighter Futures for Children RBC	<a href="http://www.eco-schools.org.uk/">www.eco-schools.org.uk/</a> <a href="http://www.greenschoolsproject.org.uk/">www.greenschoolsproject.org.uk/</a> <a href="http://www.wwf.org.uk/get-involved/schools/green-ambassadors">www.wwf.org.uk/get-involved/schools/green-ambassadors</a> <a href="http://www.youngclimatewarriors.org/">www.youngclimatewarriors.org/</a>
C21 Reading Schools Climate Action Network	<ul style="list-style-type: none"> <li>» Establish teacher network for sharing of expertise and knowledge on sustainable schools (for primary and secondary)</li> <li>» Hold regular events</li> <li>» Publish school-centric advice and guidance and signpost tools and models from reputable sources</li> <li>» Link to home schooling networks</li> </ul>	Network launched Events programme Information hub launched	September 2021	Brighter Futures for Children RCAN	Nature Task Force?
C22 Model Climate Conference	<ul style="list-style-type: none"> <li>» Expand the model climate conference to include all schools in Reading</li> <li>» Bring the outputs back to the RCAN website</li> <li>» Legacy – Supporting the schools to make the changes they committed to on the day, through the RSCAN</li> </ul>	50% increase in schools participating in the Model Climate Conference	November 2021	Just ideas	Subject to funding
C23 Young Persons Climate Assembly	<ul style="list-style-type: none"> <li>» Explore the potential to set up a Young Persons activist Network – for young people to meet up with like minded individuals to develop ideas and support</li> <li>» regular meetings, Intragram account?</li> <li>» Work with existing programmes</li> </ul>	Research appetite and develop proposal if appropriate	June 2021	RCAN	Must be youth led and with proper safeguarding

## 7. GOVERNANCE, MONITORING AND REPORTING

### 7.1 Monitoring and reporting

It is vital that progress in delivering both the aims and actions within the strategy is monitored so that corrective action can be taken if needed. With this in mind:

- Progress of delivery against action plans and targets will be monitored at quarterly meetings of the Reading Climate Change Partnership Board
- A short annual report summarising progress will be prepared for the Board and published more widely
- In the fourth year of the five-year strategy a comprehensive review will be conducted to inform development of the fourth Reading climate change strategy to cover the period 2025-30.

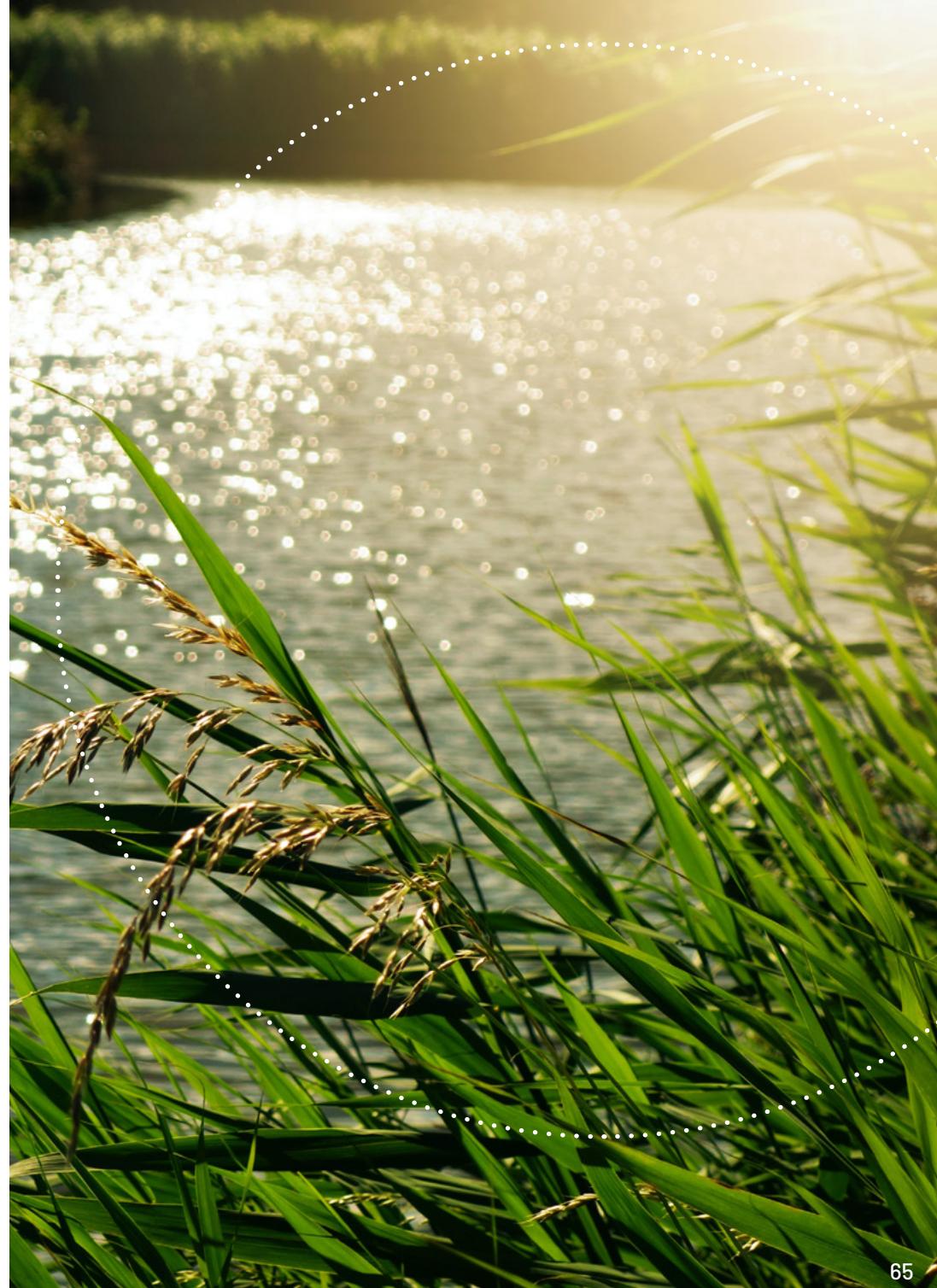
When completed, the strategy will be available on the Reading Climate Change Partnership website ([www.readingcan.org.uk](http://www.readingcan.org.uk)). Theme groups will regularly post updates, which will both show progress on delivering action, as well as creating a useful information resource for Reading.

In addition, individual partners will of course take responsibility for monitoring and reporting on progress with their own carbon reduction and adaptation plans as appropriate to their organisations.

### 7.2 Governance

The many strands of activity proposed in this strategy represent an ambitious programme of activity which will require some co-ordination to maximise the impact of individual actions, avoid duplication and enable effective monitoring and reporting. We therefore aim to review the constitution and operating model of the Reading Climate Change Partnership Board, its relationship with its constituent partners and the Reading Climate Action Network, to address this.

On the basis that form should follow function, now that the strategy is finalised, we have initiated a review of the Reading Climate Change Partnership to ensure that it is fit for the purpose of delivering the strategy over the next five years. This review will be completed within six months of the publication of the final strategy document.



# GLOSSARY OF TERMS

**Adaptation** Adjustment designed to prepare for the consequences of a changing climate, e.g. floods or heat-waves.

**Biodiversity** The number and variety of organisms found in a particular habitat or eco-system – see also ‘resilience’.

**Carbon emissions** The release of carbon dioxide (CO<sub>2</sub>) gases into the atmosphere.

**Carbon footprint** The total amount of greenhouse gas emissions caused directly or indirectly by an individual, group or organisation.

**Carbon neutral** Achieving an overall balance between CO<sub>2</sub> emissions produced and CO<sub>2</sub> emissions taken out of the atmosphere – see also ‘net zero’.

**Carbon offsetting** Attempting to compensate for CO<sub>2</sub> emissions by participating in schemes designed to make equivalent reductions of CO<sub>2</sub> in the atmosphere.

**Carbon sequestration** The process of removing CO<sub>2</sub> from the atmosphere.

**Circular economy** A concept which encourages more efficient use, and greater reuse and recycling, of materials through the economy, rather than the conventional approach of ‘take-make-waste’.

**Decarbonisation** The reduction or removal of CO<sub>2</sub> emissions from a product or process.

**District energy system** A local system for distributing heat generated in a centralized location for residential and commercial heating, generally using waste heat from local power plants or renewable energy.

**Embodied carbon/energy** The sum of energy or carbon involved in the production of goods and services, including the extraction and transportation of raw materials, manufacture, assembly and maintenance.

**Green Deal** A government scheme to retrofit buildings in order to make them more energy efficient, allowing householders to use future energy savings to pay for energy efficient measures to be installed in their homes.

**Greenhouse gas emissions** Gases which exaggerate the ‘greenhouse effect’, thus contributing to global warming – the main greenhouse gas being carbon dioxide (CO<sub>2</sub>), but also methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF<sub>6</sub>).

**Heat supply networks** The method of supplying heat to multiple buildings using waste heat from local power plants or renewable energy, as part of a district energy scheme.

**Low carbon** Generating relatively few carbon emissions.

**Mitigation/climate mitigation** Efforts to reduce or prevent the emission of greenhouse gases.

**Modal shift** A change in the type of transport used.

**Modes of transport** Different methods of transport, such as car, public transport, walking and cycling.

**Net zero/net zero carbon** Achieving an overall balance between CO<sub>2</sub> emissions produced and CO<sub>2</sub> emissions taken out of the atmosphere – see also ‘carbon neutral’.

**Quality of life** The conditions in which we live, including social factors such as education, environment, and physical and mental health, as well as material and economic factors.

**Renewable energy** Energy which is generated using natural resources which are renewed such as wind, sun, ground heat or biomass.

**Resilience/climate resilience** The ability to anticipate, prepare for, and respond to hazardous events, trends, or disturbances related to climate change – see also ‘adaptation’.

**Retrofit** The addition of new technology or features into existing older buildings, often applies to energy efficiency measures.

**Sharing economy** An economy measured by social interactions and exchanges and sharing of goods.

**Smart energy** Systems which allow energy to be stored, and enables communication between the user and supplier, in order to provide a better understanding of variations in power supply and consumption.

**Smart meter** A device for recording and displaying the consumption of electricity in real-time, for the purpose of monitoring energy use by both customers and energy suppliers.

**Sustainable** Capable of being maintained at a certain level without depleting natural resources.

**Sustainable development** Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

**Sustainable Urban Drainage Systems (SuDS)** An approach to drainage which attempts to mimic natural drainage and reduce the risk of flooding, through a range of techniques in developments and redevelopments.

## ACRONYMS

<b>BAP</b>	Biodiversity Action Plan
<b>BBOWT</b>	Berks, Bucks & Oxon Wildlife Trust
<b>BC</b>	Borough Council
<b>BEIS</b>	(Department for) Business, Energy and Industrial Strategy
<b>BID</b>	Business Improvement District
<b>CC</b>	County Council
<b>CEHUK</b>	Centre for Ecology & Hydrology
<b>DfT</b>	Department for Transport
<b>EA</b>	Environment Agency
<b>LA</b>	Local Authority
<b>LRF</b>	Local Resilience Forum
<b>MERL</b>	Museum of English Rural Life
<b>RBC</b>	Reading Borough Council
<b>RCES</b>	Reading Community Energy Society
<b>RDNHS</b>	Reading and District Natural History Society
<b>NTF</b>	Nature Task Force
<b>RBCAN</b>	Reading Business Climate Action Network
<b>RCAN</b>	Reading Climate Action Network
<b>RCCP</b>	Reading Climate Change Partnership
<b>RISC</b>	Reading International Solidarity Centre
<b>RTWN</b>	Reading Tree Wardens Network
<b>SECBE</b>	South East Centre for the Built Environment
<b>SGN</b>	Southern Gas Networks
<b>SSE</b>	Scottish and Southern Energy
<b>TCV</b>	The Conservation Volunteers
<b>TVB LEP</b>	Thames Valley Berkshire Local Enterprise Partnership
<b>TW</b>	Thames Water
<b>UoR</b>	University of Reading



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