

THE READING CLIMATE EMERGENCY STRATEGY 2020-25

Draft for consultation March 2020



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EXECUTIVE SUMMARY

Consultation on the draft Reading Climate Emergency Strategy

- *Following the declaration of a climate emergency in Reading in 2019¹, plans to produce a third Reading climate change strategy, scheduled for the latter part of 2020, were brought forward by six months. This document represents the draft of the new strategy on which we are now inviting comments.*
- *Production of this consultation draft strategy has been co-ordinated by the Reading Climate Change Partnership with input from a wide range of stakeholders across Reading. However, if the strategy is to succeed, the action within it needs to be ‘owned’ by every organisation, business and resident across Reading. The Partnership will therefore co-ordinate the process of finalising the strategy, and will then invite partners to adopt, endorse or otherwise commit to its delivery via the most appropriate means.*
- *This consultation process is being managed on behalf of the Reading Climate Change Partnership by Reading Borough Council. While Reading Borough Council has considered and approved this draft for the purposes of consultation, it is not a Reading Borough Council strategy and does not, at this stage, represent Reading Borough Council policy. The Council does envisage, however, fully endorsing and adopting the Strategy when it is finalised later this year.*

Our vision

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

- ***net zero carbon dioxide emissions by 2030 and***
- ***being resilient to 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.

Our target

Our target is to achieve a net zero carbon Reading by 2030. Progress towards net zero will vary from year to year so rather than setting annual targets for each year to 2030, we will use the average annual reduction in emissions which will be necessary to get there as a benchmark against which to judge progress.

The benefits of taking action on climate change

As well as responding to the climate emergency, we have identified a number of benefits of taking action on climate change. These are summarised in the table:

¹ <https://www.reading.gov.uk/article/12745/Climate-emergency-declaration>

Economic benefits	Social benefits	Environmental benefits
<ul style="list-style-type: none"> • Clean and inclusive growth in the local economy • Reduced energy costs • Increased energy security • High quality employment • Reduced congestion 	<ul style="list-style-type: none"> • Improved air quality • More active, outdoor lifestyles • Healthier diets • Warmer, healthier homes • Quieter, safer streets 	<ul style="list-style-type: none"> • Better access to greenspace and nature • Healthier water • Improved biodiversity • Reduced risk of flooding, heatwaves and extremes

We believe that by taking concerted action on climate change we will be healthier, fitter and happier, and our communities will be more resilient to future change.

The pathway to a net zero Reading by 2030

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:

- *Retrofitting and building new homes and other buildings to low/zero carbon standards*
- *Generating more energy from renewable sources*
- *Reducing the need to travel, promoting walking, cycling and public transport, and phasing out petrol/diesel in favour of electric vehicles*
- *Buying and using less ‘stuff’, reducing waste and developing Reading’s ‘circular economy’*

Improved management of greenspace and the water environment in Reading also offer scope to reduce carbon emissions as natural areas can act as ‘carbon sinks’ as well as helping us adapt to climate change impacts. Embracing technology to accommodate a radically different pattern of local demand for, and supply of, energy will also be important.

Delivering the strategy

We have identified detailed action plans under six themes. The aim for each theme is:

- *Energy and Low Carbon Development: 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*
- *Transport: our aim is for a low carbon future for transport in which emissions are cut by reducing the need to travel, 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*
- *Resources: our aim is that by 2025 Reading will have made good progress towards becoming a zero-waste town by 2030. We continuously innovate to find new ways of using resources more efficiently and thereby minimise our contribution to climate change. We will make it easy for*

everybody to access information and services to help them reduce waste and repurpose things they no longer need

- *Water: our aim is that Reading will 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*
- *Nature: our aim is that by 2025 the people of Reading will see 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*
- *Health: our aim is that by 2025, people in Reading will be well informed about how to self-manage the health impacts of climate change and benefit 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*

Communicating with and engaging the community

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. An informal poll conducted in Broad Street Mall in 2019 suggested that only around 15% of residents were aware that a climate emergency had been declared. As such, we envisage developing 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.

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, circulated to partners and presented to an appropriate Reading Borough Council Committee*
- *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*
- *Individual partners will take responsibility for monitoring and reporting on progress with their own carbon reduction and adaptation plans as appropriate to their organisations*

The future of the Reading Climate Change Partnership

The Reading Climate Change Partnership is a voluntary, multi-stakeholder group including representatives from business, voluntary groups and statutory authorities, originally established in 2007 as part of the Reading Local Strategic Partnership. When the Strategy is finalised we will commence 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 and to clarify its relationship with the wider Reading Climate Action Network and other partners. This review will be initiated and completed within six months of the publication of the final Strategy document.

1. INTRODUCTION

1.1 The Reading Climate Emergency Strategy

Following the declaration of a climate emergency in Reading in 2019², plans to produce a third Reading climate change strategy, scheduled for the latter part of 2020, were brought forward by six months. This document represents the first draft of the new strategy.

1.2 Purpose of this document

The new strategy, *The Reading Climate Emergency Strategy 2020-25*, will set 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, this document has been compiled by the organisations who come together in the Reading Climate Change Partnership. We are publishing the document as a consultation draft on which we are inviting comments before finalising and launching the strategy in the summer.

1.3 Ownership of the strategy

Production of this consultation draft strategy has been co-ordinated by the Reading Climate Change Partnership with input from over 100 stakeholders across Reading. However, if the strategy is to succeed, the action within it needs to be 'owned' by every organisation, business and resident across Reading. The Partnership will therefore co-ordinate the process of finalising the strategy, and will then invite partners to adopt, endorse or otherwise commit to its delivery via the most appropriate means.

1.4 The consultation timeline

This consultation process is being managed on behalf of the Reading Climate Change Partnership by Reading Borough Council. While Reading Borough Council has considered and approved this draft for the purposes of consultation, it is not a Reading Borough Council strategy and does not, at this stage, represent Reading Borough Council policy. The Council does envisage, however, fully endorsing and adopting the Strategy when it is finalised later this year. The planned timescale for this consultation and completion of the strategy is:

- | | |
|--|--|
| - Consultation opens: | Friday 13 th March 2020 |
| - Deadline for consultation responses: | Friday 24 th April 2020 |
| - Consideration of responses: | 27 th April – 22 nd May 2020 |
| - Final draft strategy for endorsement by partners | 29 th May 2020 |
| - Launch of Strategy | June/July 2020 |

1.5 How to give us your views

Please give us your views by completing the online consultation response form at [link to be inserted when consultation starts].

² <https://www.reading.gov.uk/article/12745/Climate-emergency-declaration>

2. CLIMATE CHANGE: THE CONTEXT

2.1 The global and national context

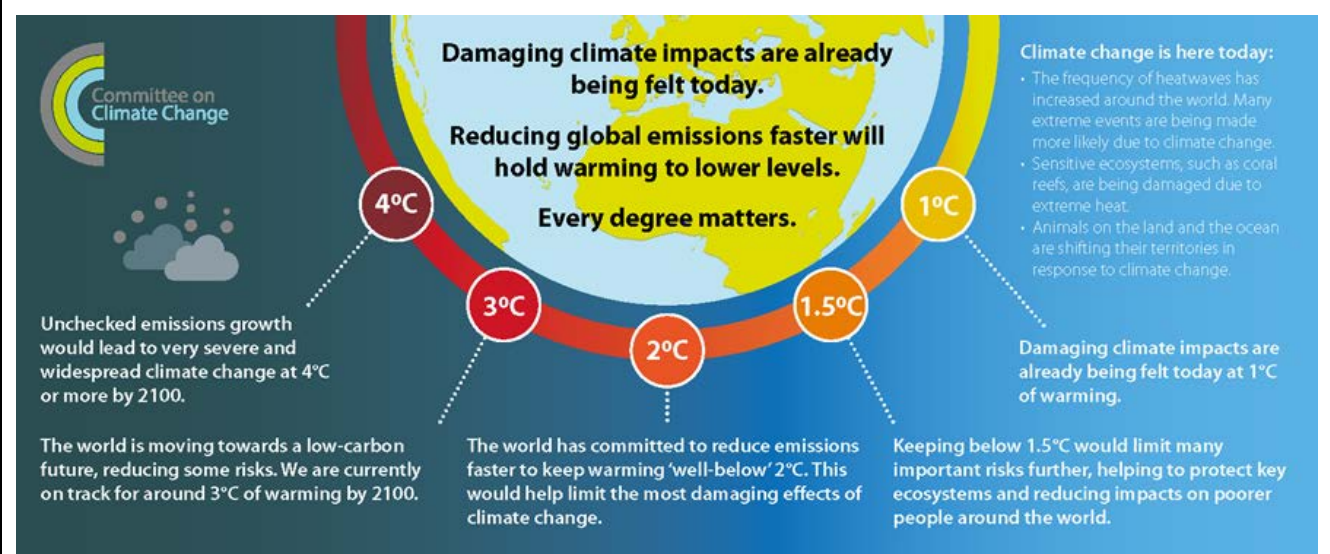
There is an overwhelming scientific consensus that human activity has been responsible for a dramatic increase in emissions of carbon dioxide and other greenhouse gases since the start of the Industrial Revolution, and that this has already been the cause of a rise in average global temperature of around 1°C. We also know that we are already 'committed' 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.

Figure 1: Why every degree of warming matters (Source: Committee on Climate Change³)

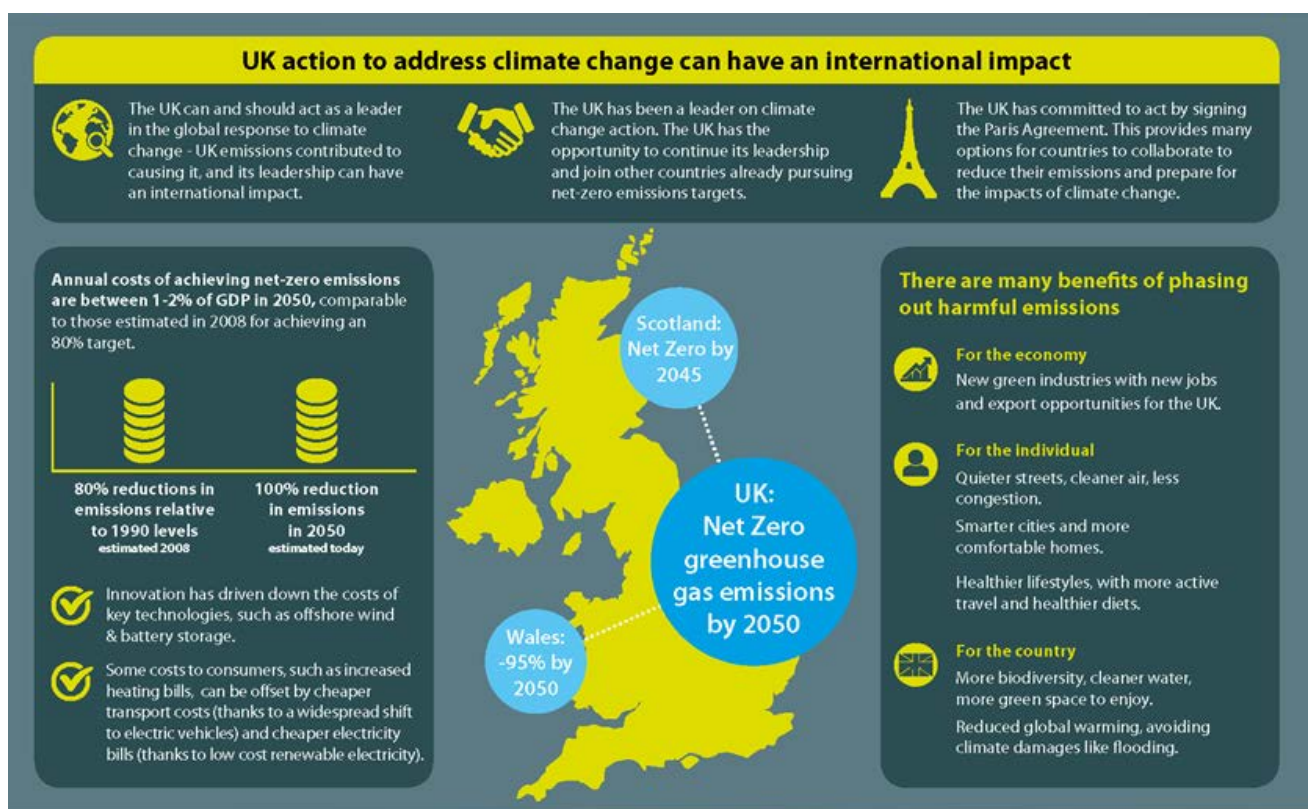


³ <https://www.theccc.org.uk/wp-content/uploads/2019/05/CCC-Net-Zero-Infographic.png>

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.

Figure 2: can one country really make a difference? (Source: Committee on Climate Change⁴)



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 2019⁵, 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.

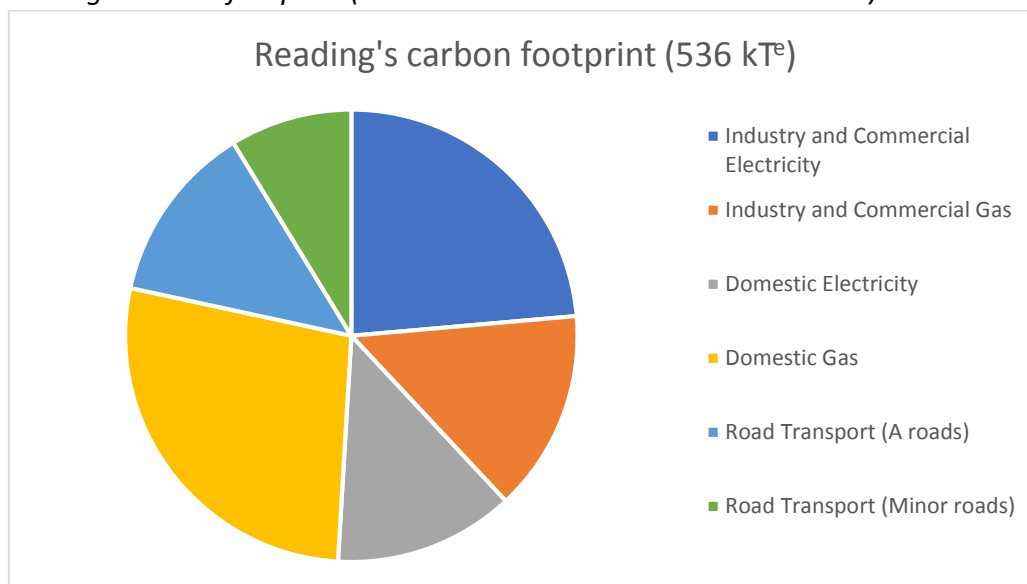
⁴ <https://www.theccc.org.uk/wp-content/uploads/2019/05/CCC-Net-Zero-Infographic.png>

⁵ <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

2.3 The local context: Reading's carbon footprint

Reading produces over 500 kilo-tonnes of carbon dioxide emissions annually (2017 figures). As the pie chart below shows, around 40% of this 'carbon footprint' arises from industrial and commercial activity, 40% from domestic sources (heating, lighting and appliances) and 20% from transport.

Figure 4: Reading's carbon footprint (Source: UK Government emissions data)



Reading's per capita emissions have fallen significantly since 2005 – by around 50%. 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.

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 50% since 2005 – the largest reduction of any local authority area in south east England
- 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

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 (2010-29) was also the hottest on record with each decade since the 1980s being warmer than the last⁶. As the climate warms, projections for the UK in the 21st century show 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.

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

Buildings and energy supply	Business and industry	Health & wellbeing	Natural environment	Transport	Water environment
<ul style="list-style-type: none"> -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 the built environment -Disruption of power networks and supply -Increased urban heat island effect 	<ul style="list-style-type: none"> -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 	<ul style="list-style-type: none"> -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 	<ul style="list-style-type: none"> -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 	<ul style="list-style-type: none"> -Disruption of transport networks impacting on wellbeing and local economy -Flood risk to transport 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 in heat -Discomfort on public transport -Overheating/failure of signalling/ comms equipment 	<ul style="list-style-type: none"> -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

⁶ <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 by 2030** and
- **being resilient to 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 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

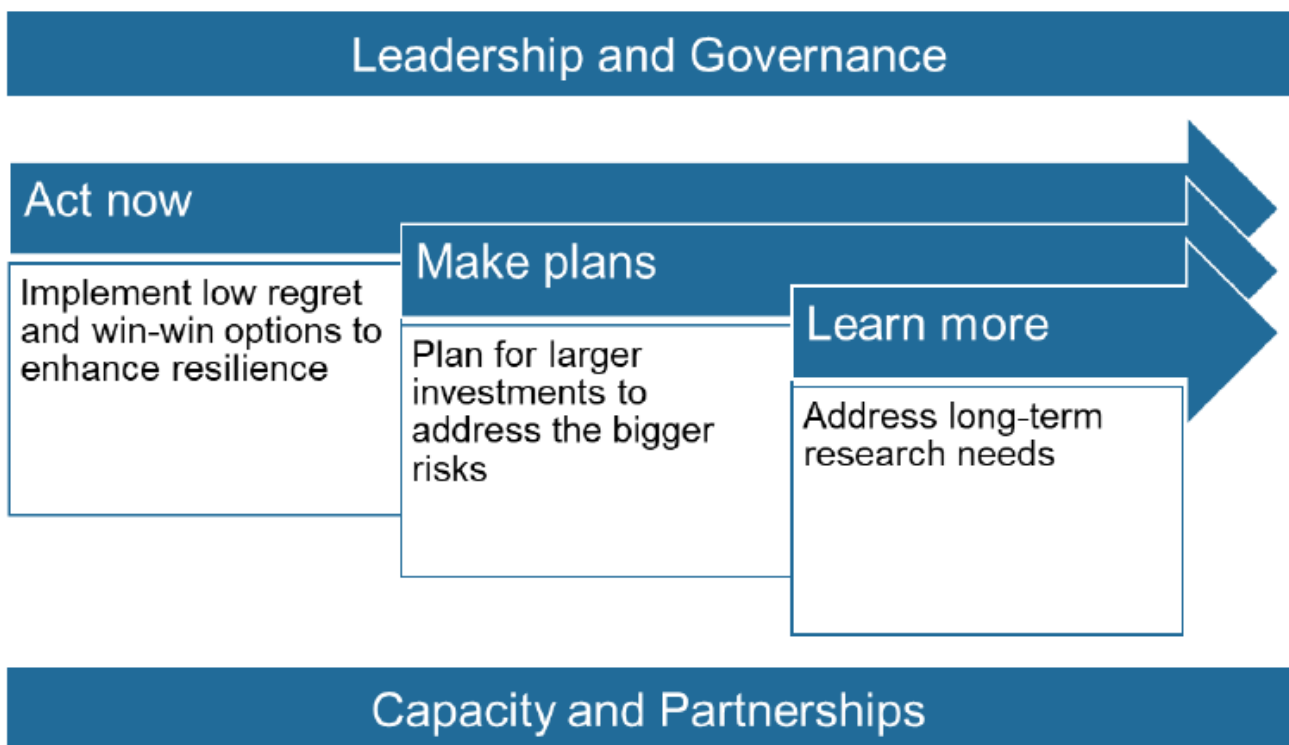
As we embark on the journey to a net zero carbon Reading by 2030, reductions in emissions are unlikely to reduce by the same amount every year. If the Government policy changes referred to above are not forthcoming within the lifetime of this strategy (2020-25), then the gains required to reach net zero 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 2020⁷. 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 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:



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

3.4 The benefits of taking action on climate change

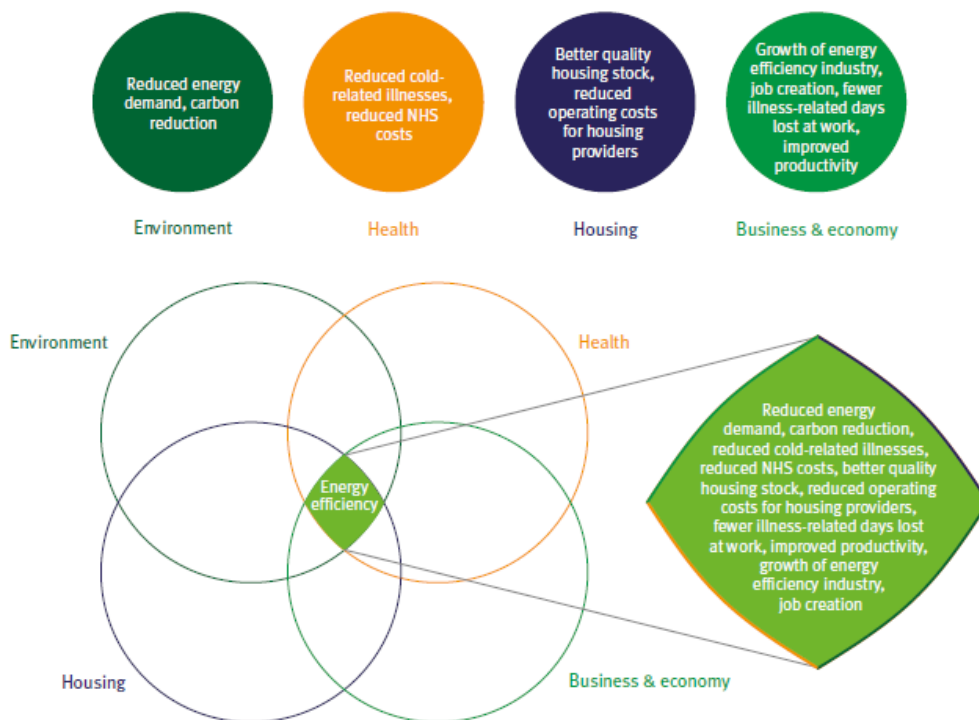
The science is clear that taking urgent action to reduce emissions is a practical imperative. But there is also much to be gained from doing so as an integral part of the wider Reading 2050 vision for a ‘smart and sustainable’ Reading⁸. Since the publication of the Stern report in 2006 on the economic 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 (see summary in table 2).

Table 2: benefits of taking action on climate change

Economic	Social	Environmental
<ul style="list-style-type: none"> • Clean and inclusive growth in the local economy • Reduced energy costs • Increased energy security • High quality employment • Reduced congestion 	<ul style="list-style-type: none"> • Improved air quality • More active, outdoor lifestyles • Healthier diets • Warmer, healthier homes • Quieter, safer streets 	<ul style="list-style-type: none"> • Better access to greenspace and nature • Healthier water • Improved biodiversity • Reduced risk of flooding, heatwaves and extremes

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

Fig 5: example of the benefits of improving domestic energy efficiency to different sectors⁹



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

⁹ <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:

- 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
- 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
- De-carbonising transport systems: we need to reduce the need to travel, 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

Improved management of greenspace and the water environment in Reading also offer scope to reduce carbon emissions as natural areas can act as 'carbon sinks'. This will 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.

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; and
- the additional electricity demand generated for electrification of heat and transport
- 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 in table 3 overleaf 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.

Table 3: potential to reduce Reading’s energy demand and generate renewable energy

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

4.3 Decarbonising power supply and the need for Reading to ‘go electric’

Emissions from UK power stations have fallen by 60% since 1990¹⁰ 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.

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

5. DELIVERING THE STRATEGY

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

The Reading Climate Change Partnership is a community partnership established in 2008 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. In developing this consultation draft Reading Climate Emergency Strategy, the 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 can not solve some of the bigger challenges we face.

The resources of the Reading Climate Change Partnership are also very modest, 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 identified capital funding of £7 million over the next three years for investment in energy efficiency and renewable energy projects, an increase from an annual budget of some £250,000 which had previously existed for energy efficiency projects. In the two full financial years since the climate emergency was declared (2019/20 and 2020/21), the Council has 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, so finance could become available for '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 use 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 have been developed by working groups which have included a range of stakeholders. 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 67% of the total¹¹, with 39% coming from industrial/commercial buildings and 28% from domestic properties respectively. In Reading, the equivalent figure is 76%, with an almost equal split between industrial/commercial and domestic. The vast majority of 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.

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.

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 newer properties is typically LED, which uses 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 towns 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

¹¹https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/790626/2018-provisional-emissions-statistics-report.pdf

Reading has seen a significant reduction in emissions associated with buildings since 2005, with data from 2017 showing a 50% reduction in emissions overall.

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 retrofit 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 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 must quickly build its local skills base and bring forward a step change in retrofitting buildings. It must also increase its local capacity to install 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. 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 from the ground and local water courses. Clusters of houses and businesses will need to be powered using 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.

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: Low Carbon Development

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
E1: Energy Efficiency in New development	Introduce high standards of energy efficiency for new development <ul style="list-style-type: none"> • Large commercial to BREEAM ‘excellent’ standard • Larger housing developments built to zero carbon standards • Ensure standards post construction 	i) % achieving standard ii) Schemes supported though offset	Ongoing	Reading BC
E2: Energy Reduction through Retrofit Programme	Establish a housing retrofit programme in Reading which is compelling for property owners <ul style="list-style-type: none"> • Apply for funding • Complete housing stock survey • Identify partner • Zero carbon offset 	Programme launched	2020/21	Reading BC and developers and/or retrofit companies
E3: Retrofit Design	Establish standards for climate-conscious retrofit (not exhaustive): <ul style="list-style-type: none"> • Heritage sympathetic schemes • Consider damp and ventilation. • Design for climate risks • Heat recovery ventilation • Underfloor heating • Consider embodied energy in construction • Introduce water saving especially hot water. Links: Water, Business	Standard established	2020 to 2022	Reading BC, English Heritage SECBE, University or Reading
E4: Behaviours that save energy in homes and businesses	<ul style="list-style-type: none"> • Develop approaches to reduce energy consumption in homes and businesses • Create information resources 	Publish resources Targeted campaign	2020/21 2021/2022	National/local agencies and organisations

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
	<ul style="list-style-type: none"> Develop targeted behaviour-change campaign <u>Links:</u> Community, Business			materials and resources Reading BC, RCCP
E5: Best in class buildings	<ul style="list-style-type: none"> Develop high standard projects in different sectors, to reduce emissions <u>Link:</u> Business	Publish reports on buildings	April 2021	Housing providers
E6: Reducing fuel poverty	<ul style="list-style-type: none"> Continue to provide Winter Watch service Support new schemes targeting retrofitting for those most in need Build referral mechanisms for those suffering from poor health and/or fuel poverty. <u>Links:</u> Community, Health 	Reading Housing Strategy Design new approaches Establish cross-referral programme	2020/21 2020/22 Ongoing	Reading BC, other agencies (Health Citizen advice etc)
E7: Leadership and Influence	<ul style="list-style-type: none"> Consider legal options for establishing standards that go higher than regulations 	Consider trials nationally	July 2020	Reading BC
E8: 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 by July 2020 and meet its milestones	July 2020	Reading BC
E9: Publish new housing strategy to incorporate energy retrofit	New strategy to include C-rating for all Council and rental accommodation in borough by 2030 <u>Link:</u> Business	i) New housing strategy ii) Implementation	2020/21 2021 onwards	Reading BC

Sub category: Renewable Energy - Heat

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
E10: Renewable Heat – Ground Source	Work with developers to maximise district energy solutions in line with Local Plan policies on decentralised energy: <ul style="list-style-type: none"> 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 <u>Link:</u> Business	Complete studies Implement scheme	June 2020 April 2022 (dependant on developers)	Reading BC /BEIS University
E11: Renewable Heat Air Source	Consider different types of heat pumps and develop skills of local installers <u>Link:</u> Business	Report on Air Source Heat Pumps Identify installers Conduct trials	Sept 2020 Sept 2020 April 2021	Reading BC
E12: Renewable Heat Anaerobic Digestion	<ul style="list-style-type: none"> Anaerobic digestion for food waste streams Consider biogas generation for buses and inject to grid <u>Links:</u> Resources, Transport	Report informing waste strategy	April 2021	University of Reading
E13: Hydrogen	Investigate renewably sourced hydrogen fuel cell technology in particular for use in Heavy Commercial Vehicles (HCVs) <u>Links:</u> Business, Transport	Identify schemes/trials	DATE TBC	Reading BC Reading UK Reading Transport

Sub category: Renewable Energy – Electricity

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
E14: Solar PV (commercial)	Establish large commercial roof-based schemes that service base loads in large commercial buildings <u>Link:</u> Business	Establish scheme Achieve high proportion of suitable roofs	2020/22 2025	UoR, Reading UK & Reading BC, TVBLEP/Reading UK, SE Energy hub
E15: Solar PV (domestic)	Establish phase 1 of domestic scheme using bulk purchase to reduce price	Develop scheme Scheme up and running	2020 2022	RCCP, Tenants groups, local companies

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
E16: Renewable Energy – hydro	To bring forward Hydro-electric power schemes powered by Reading's rivers Link: Water	Planning approval secured already, investment and commence scheme by	2020/21	Reading Hydro
E17: 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	April 2021	Reading BC

Sub category: Electric Powered Transport - see also Transport Theme Action Plan

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
E18: Energy strategy for Bus Depot and surrounding area	<ul style="list-style-type: none"> Establish potential for solar – depot, car park canopies, Civitas School Investigate Riding Sunbeams option for direct connection to railway network 	Report	2020/21	RBC, Reading Community Energy Society

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

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
E19: Battery Storage	<ul style="list-style-type: none"> Grid side battery storage by Local Energy company (District Network Operator) Behind meter storage on domestic and commercial sites Specialist large scale storage facilities third party 	Establish energy strategy group Develop energy strategy draft	2020 April 2021	SSE Public Sector Private sector
E20: Smart Meters	<ul style="list-style-type: none"> 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 Links: Business, Transport	Energy company schedules/targets	2020 to 2024	Energy Companies RCCP University of Reading

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
E21: Internet of Things projects	<ul style="list-style-type: none"> 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 BC, University of Reading
E22: Heat storage	<ul style="list-style-type: none"> 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
E23: Carbon intensity research	<ul style="list-style-type: none"> 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 BC, University of Reading

READING CLIMATE EMERGENCY STRATEGY: TRANSPORT THEME ACTION PLAN

Transport and climate change

At UK level, emissions from road transport represent around 33% of the total¹². 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 UK's transport infrastructure is 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

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 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 is also bucking 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.

Priorities on the pathway to net zero for transport

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

¹²https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/790626/2018-provisional-emissions-statistics-report.pdf

- 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 will be the subject of its own consultation process in spring 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, 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	Target & measure/ milestone	Target completion date	Delivery partners
T1: 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 <u>Links:</u> Business, Community, Health, Energy and LCD	Reduction in transport-related emissions across Reading Implementation of Reading Local Plan policies	2025	Reading BC Developers
T2: 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: <ul style="list-style-type: none"> • Workplace Parking Levy • Clean Air Zone • Alternative demand management measures <u>Links:</u> Business, Community, Health	Initiate consultation Develop business case for preferred option(s) Implement preferred measure(s)	Spring 2020 2021 2022-23	Reading BC Local Businesses Neighbouring Authorities Department for Transport Reading BID
T3: Enhance provision for Pedestrians & cyclists to encourage low carbon travel choices	Free up space for walking and cycling improvements, including segregation (where feasible), surface improvements, crossing priority, safety improvements and increased cycle parking hubs/facilities as set out in Local Cycling and Walking Infrastructure Plan <u>Links:</u> Health	Increase proportion of adults who walk at least 3 times per week from 30.8% (2019) to 37.2% by 2025 (en route to a 50% target by 2036) Increase proportion of adults who cycle at least 3 times per week from 5.1% (2019) to 6.7% by 2025 (en route to a 10% target by 2036)	2025 as part of the Local Transport Plan targets through to 2036	Reading BC Local User Groups Thames Valley Police

Action name	Description	Target & measure/ milestone	Target completion date	Delivery partners
T4: Enhance Town Centre and Local Centre Public Space to improve air quality and reduce carbon use	<p>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</p> <p><u>Links:</u> Business, Community, Health</p>	<p>Increase active travel trips to/from Reading town centre by 4% from 41,100 (2019) to 44,800 by 2025 (en route to an 11% target by 2036) Increase public transport trips to/from Reading town centre by 10% from 50,700 (2019) to 55,800 per day by 2025 (en route to a 31% target by 2036)</p> <p>Decrease car trips to/from Reading town centre by 9% from 22,100 (2019) to 20,000 per day (en route to a 26% target by 2036)</p>	2025 as part of the Local Transport Plan targets through to 2036	<p>Reading BC Transport Operators Reading BID Local User Groups Developers Businesses Residents</p>
T5: Promote Sustainable Travel to School and other education sites to encourage low carbon travel choices	<p>Establish dedicated and safe walking and cycling routes for each school. Reduce the danger and pollution from 'the school run'</p> <p>Roll-out Play Streets/School Streets programme - supporting local communities and schools who want to organise street closures</p>	<p>Increased shift from private car use to active travel Improved health and fitness of schoolchildren Improved air quality</p> <p>Trial school street closures at selected schools before a wider roll-out across the borough</p>	2025 as part of the Local Transport Plan targets through to 2036	<p>Reading BC School Communities Bikeability Provider Thames Valley Police Local User Groups Residents University of Reading</p>

Sub-category: Encouraging a switch to public transport

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
T6: 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.	As per T3 and T4	2025 as part of the Local Transport Plan targets through to 2036	<p>Reading BC Neighbouring LAs TVB LEP</p>

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
	Links: Business, Community, Education			Transport Operators Local User Groups Residents Businesses
T7: 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 Links: 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 BC Transport Operators Businesses Residents Schools Health Services
T8: 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 BC Wokingham BC West Berkshire BC Oxfordshire CC Transport Operators
T9: 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. Links: Business	Increased use of P&R trips to/from Reading by 25% compared to 2019 levels New P&R at Thames Valley Park opened Winnersh Triangle P&R expanded New P&R sites identified	2025 2020 2021 2025	Reading BC Transport Operators Royal Berks Hospital Businesses Wokingham BC Thames Valley Park W Berks BC Oxfordshire CC TVB LEP Businesses

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
T10: 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 by 10% from 50,700 (2019) to 55,800 per day by 2025 (en route to a 31% target by 2036)	2025 as part of the Local Transport Plan targets through to 2036	Reading BC Network Rail Great Western Railway TVB LEP
T11: Open Reading Green Park Railway Station	Provide new station for access to Green Park and South Reading and interchange with integrated bus services <u>Links:</u> Business	New station completed and served by GWR services. Interchange open with provision of integrated bus services.	2021	Reading BC Network Rail Great Western Railway Transport Operators TVB LEP DfT Businesses
T12: 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 BC Transport Operators Emergency Services

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

Action name	Description	Target & measure/ milestone	Target completion date	Delivery partners
T13: Develop an Electric Vehicle strategy for the Borough	<ul style="list-style-type: none"> Study suitable locations Identify potential network constraints Assess potential demand 	Strategy development to follow Local Transport Plan	2020/21	Reading BC
T14: Decarbonise the Council Vehicle Fleet	<ul style="list-style-type: none"> Increase electric charging points at Council buildings Consider phased replacement of Council vehicles with electric powered units wherever possible 	RBC Carbon Plan Feasibility report, Business case,	June 2020 2022-2024	Reading BC

Action name	Description	Target & measure/ milestone	Target completion date	Delivery partners
	<ul style="list-style-type: none"> Charging points to be installed at depot that can allow vehicles to power buildings Carbon Plan will set targets for reduction in diesel/petrol 	Budget approval * (subject to above)		
T15: Increase Public Electric Vehicle Charging Points	Install electric charging points in <ul style="list-style-type: none"> Council car parks Leisure centres Lamp columns (trials) Business premises Taxi ranks Links: Business, Transport	First car park project All suitable car parks First leisure centre All leisure centres	2020/21 2023 2020/21 2022	Reading BC, Reading UK, Taxi Assoc, Leisure provider
T16: Increase new electric vehicles uptake	Work with vehicle sales outlets in Reading to increase EV uptake Links: Business	EV uptake compared to national benchmarks	Ongoing	Reading UK RCAN
T17: Establish and promote eBikes	Identify charging locations for electrically assisted pedal cycles	Develop strategy for location	TBC	Reading BC Site owners
T18: Planning policy for EV charging in new properties	Monitor number of additional charging units installed in new properties Links: Business	Monitor additional units in line with planning policy	Ongoing	Reading BC Developers
T19: 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 BC Taxi and Private Hire Associations
T20: 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 BC Transport Operators Third Party Landowners
T21: 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 BC Transport Operators
T22: 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	Decrease car trips to/from Reading town centre by 9% from 22,100 (2019) to 20,000	2025 as part of the Local Transport	Reading BC Employers

Action name	Description	Target & measure/ milestone	Target completion date	Delivery partners
	<p>demand) and more flexible working hours to encourage commuter travel outside of the peak periods</p> <p>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</p> <p><u>Links:</u> Business</p>	per day (en route to a 26% target by 2036)	Plan targets through to 2036	Transport Operators Emergency Services Highways England Motoring Organisations

Sub-category: Adaptation, Communication & Engagement

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
T23: 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>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>Roll-out Mode-shift STARS accreditation scheme to all schools in Reading to recognise efforts encouraging sustainable travel</p> <p><u>Links:</u> Education, Health</p>	<p>As per T4</p> <p>Achieve 33% of all schools accredited (either Bronze, Silver or Gold) by 2025. Currently 2% in 2019.</p>	2025 as part of the Local Transport Plan targets through to 2036	Reading BC Stakeholders Reading BC School Communities Bikeability Provider Thames Valley Police Local User Groups Residents
T24: Research and plan for Carbon Reduction and Climate Change Adaptation	Participate in research programmes investigating the carbon footprint related to transport and the air quality impact of transport	Research completed and recommendations made	2022 2025 and beyond	Reading BC Transport operators

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
	Design climate adaptation into the planning and operation of transport network to improve resilience to climate change impacts <u>Links:</u> Adaptation	Climate Change Adaptation key consideration in planning of all schemes		University of Reading DfT Other Stakeholders

READING CLIMATE EMERGENCY STRATEGY: RESOURCES THEME ACTION PLAN

Resources, consumption and climate change

Whether it's a car or a sandwich, every item we buy, use, consume and discard has a carbon footprint. This may be direct, for example the energy used by electrical appliances, or indirect, including the energy consumed in mining raw materials, shipping components and finished products, fuelling production processes and processing items discarded as waste. As a society we are accustomed to being able to easily buy whatever we need whenever we want and to replace it whenever a more appealing version comes along. These patterns of consumption are well established and deeply embedded into society; indeed, our entire economic model relies on them.

Most of us are by now aware of the consequences of unbridled consumerism and many of us are already making efforts to change our behaviour. Thanks to the broadcast media and individual influencers we now realise that consumer products cause deforestation, habitat destruction, pollution and increased carbon emissions. The more we understand the impact that our purchases have on the local and global environment, the more we are motivated to make choices that have lower environmental impact; however, the market needs to respond by putting low-carbon products into mainstream markets and making them affordable. Consumers cannot change their behaviour unless supported by the suppliers of goods and services providing more sustainable alternatives.

The creation of waste impacts on climate change in numerous ways: the disposal of materials leads to the use of virgin materials for replacement products; the decomposition of waste releases greenhouse gases directly; the transportation and processing of waste uses energy. Extending the useful life of products is one way to reduce their contribution to carbon emissions, as is designing out waste in their manufacture and operation, but every product will one day reach the end of its useful life and become no more than the sum of its components.

As a town, we aim to increase the pace of this transition by focusing on the most significant sources of environmental harm. We have set ambitious targets to reduce use of key resources and minimise waste. The action plan considers the challenge from three perspectives: materials and material flows, alternative systems of consumption and behaviour change interventions.

Progress to date

Reading has excellent facilities for recycling plastic, paper and card, metals and glass, with high recovery rates that return valuable materials back to the economy; however, collection rates are well below national averages and too many recycling bins have to be diverted to general waste because of contamination. Better education is needed to ensure people know what can be recycled and collection infrastructure is being improved so that people are encouraged to recycle more. Reading Borough Council will be introducing domestic food waste collection from 2020-21 as part of its drive to increase recycling rates from their current level of around 32% to nearer the national 2020 target of 50%. Reading's general waste does not go to landfill – it is incinerated and the energy captured to create electricity – however this destroys materials that might otherwise have been conserved or reused.

Priorities on the pathway to net zero

The top priorities for the resources theme are:

- To use and consume less 'stuff'
- To make more efficient use of that which we do use and consume
- To reduce waste and develop Reading's 'circular economy'

The over-arching ambition of this section of the plan is to enable the people of Reading to live well while using fewer resources and creating less waste. Some fear that using fewer resources means a reduced standard of living when the converse is likely to be true: using resources more efficiently and minimising waste has the potential to increase access and reduce costs, cutting the risk that increased scarcity will drive up prices. The increase of swapping and sharing could lead to increased community cohesion and the development of new business models would create opportunities for local businesses to compete more effectively with national and multinational companies.

Even after reducing resource use and increasing efficiency there will still be residual waste to deal with, and the challenge is to avoid these materials reaching the waste stream at all. The problem of single-use plastics has been widely documented; by minimising their use we can reduce both carbon emissions and environmental pollution. For all materials, the aim should be to minimise single use and retain them in the economy for as long as possible at the highest possible quality and value. This is a key principle of the Circular Economy and applying this principle opens up innovative systems of consumption like peer-to-peer lending and sharing, as well as repair and reuse.

To achieve 'zero waste', it is necessary to establish markets based on the value of materials that would otherwise be considered as waste. As well as continued focus on moving towards zero waste in the household collection waste stream, a focus is also needed on commercial waste, including construction and other industrial processes. The Circular Economy makes waste from one process into feedstock for another, opening up opportunities for businesses to collaborate and entrepreneurs to find new applications for discarded materials.

Food - which is estimated to account for around 20% of the UK's greenhouse gas emissions¹³ - is an emotive subject that has come under increasing scrutiny. What is beyond doubt is that food waste is a major issue. Waste in the supply chain and in the home needs to be minimised and residual food waste that does arise needs to be dealt with appropriately, with residues returned to the soil locally where possible. The provenance of food also needs to be considered – eating local and seasonal reduces the need for energy-intensive cultivation methods and reduces transport emissions. Finally, there is growing recognition that some types of meat production are fuelling climate change and that moving to a more plant-based diet can help both reduce emissions as well as being a healthier and more efficient source of nutrition in terms of resources per calorie. While it is beyond the remit of this action plan to dictate what people eat, it is appropriate to support and enable people to make informed choices about their diet.

The provision of information, education, and skills to support people to make informed and responsible purchasing and consumption choices is crucial across the theme. People need easy access to good information, not just about the environmental impacts of different choices but also where to find help and support and how to access services.

Iconic, high profile action can galvanise activity and increase motivation and for this reason we have selected festivals as a visible symbol of our ambition. Reading Festival has been singled out in the past as a symbol of waste but Reading hosts a wide range of festivals and events which share common challenges. As well as setting the bold ambition that Reading Festival will become zero waste, we plan to convene all events organisers and venue operators to encourage a collaborative approach to reducing waste.

¹³ <https://link.springer.com/article/10.1007/s10584-014-1169-1>

Resources Theme Action Plan: *our aim for 2025 is that Reading is working strenuously to become a zero waste town by 2030. We continuously innovate to find new ways of using resources more efficiently and thereby minimise our contribution to climate change. It is easy for everybody to access information and services to help them 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: Material Streams

Action name	Description	Target & measure/ milestone	Target completion date	Delivery partners
R1: Plastics: Plastic-Free Accreditation	<ul style="list-style-type: none"> Gain Plastic-Free Community accreditation for Reading Adopt the Surfers Against Sewage Plastic-Free Community methodology which includes dedicated tools for businesses and schools RBC to lead the way by becoming avoidable single-use plastic-free across all its operations including public buildings and venues <p><u>Links:</u> Business, Community, Education</p>	<p>First schools and businesses accredited by:</p> <p>Plastic-free community accreditation gained by:</p> <p>Annual targets for #/% of schools and businesses to be set by:</p>	<p>July 2021</p> <p>December 2022</p> <p>July 2022</p>	<p>Reading BC (Council and schools lead)</p> <p>Reading UK CIC (businesses lead)</p> <p>Reading Business CAN</p>
R2: Food: Kerbside Food Waste Recycling	<ul style="list-style-type: none"> Maximise take-up of kerbside food waste recycling when introduced. Appropriate annual targets to be set in conjunction with RBC/Re3 Communications programme required to drive behaviour change <p><u>Links:</u> Community, Education</p>	<p>Increase Reading’s recycling rate by 7% through food waste collection by October 2021</p>	<p>October 2021</p>	<p>Reading BC / Re3</p>
R3: Food: Reducing Domestic Food Waste	<ul style="list-style-type: none"> 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. <p><u>Links:</u> Community</p>	<p>Baseline research completed:</p> <p>Comms programme in place, targets set and tracked annually:</p>	<p>October 2020</p> <p>January 2021 onwards</p>	<p>Reading BC (lead)</p> <p>University of Reading (research)</p>
R4: Food:	<ul style="list-style-type: none"> Establish baseline and set meaningful targets for reducing commercial food waste 	<p>Baseline research completed:</p>	<p>September 2021</p>	<p>RCAN (lead)</p> <p>Reading UK CIC</p> <p>University (research)</p>

Action name	Description	Target & measure/ milestone	Target completion date	Delivery partners
Reducing Commercial Food Waste	<ul style="list-style-type: none"> • Create a programme combining reduction measures, well-managed charity donations and best outcome waste processing • Collaborative programme by and for businesses • Commercial food waste collection to be introduced by RBC for schools and commercial partners <p><u>Links:</u> Community, Business, Education</p>	<p>Comms programme in place, targets set and tracked annually</p> <p>Commercial food waste collection</p>	<p>January 2022</p> <p>From 2020</p>	<p>Connect Reading Waste/recycling contractors</p> <p>RBC/commercial parties</p>
R5: Food: Climate-friendly Diet	<ul style="list-style-type: none"> • Publish reliable and authoritative information on how to eat more sustainably • Focus on dietary choices, sustainable sourcing, child nutrition • Guidance for caterers as well as individuals <p><u>Links:</u> Community, Business, Health, Nature, Education</p>	<p>Best practice identified and guidance prepared by:</p> <p>Comms programme developed and campaign launched by:</p>	<p>December 2020</p> <p>September 2021</p>	<p>Reading University</p> <p>Subject-matter specialists (eg breastfeeding, food growing networks)</p>
R6: Other: Clothing	<ul style="list-style-type: none"> • Establish baseline and set meaningful targets for reducing the amount of clothing wasted in Reading • Introduce programme to divert unwanted clothing from general waste through various means including donation, swapping, sharing, lease/rental etc. • Investigate the potential for emulating the WearNext project pioneered in New York <p><u>Links:</u> Business, Community</p>	<p>Establish baseline and identify areas for improvement:</p> <p>Publish programme of targeted interventions:</p>	<p>March 2021</p> <p>December 2021</p>	<p>Reading Circular Economy Club (lead)</p> <p>Reading UK CIC</p> <p>Connect Reading ReF (baseline data)</p>
R7: Other: Glass	<ul style="list-style-type: none"> • Establish baseline and set meaningful targets for increasing glass collection • Improve access to glass recycling facilities for residents • Focus on areas with high density housing/low car ownership • Work with hospitality industry to introduce colour-segregated glass collection <p><u>Links:</u> Community, business</p>	<p>Establish baseline and identify areas for improvement:</p> <p>Publish plan to introduce improved provision for residents and businesses, including targets for collection:</p>	<p>September 2020</p> <p>September 2021</p>	<p>Reading BC (domestic lead)</p> <p>Reading UK CIC (business lead)</p> <p>University (research)</p> <p>Waste/recycling contractors</p>

Action name	Description	Target & measure/ milestone	Target completion date	Delivery partners
R8: Other: Kerbside Recycling	<ul style="list-style-type: none"> • Maximise kerbside collection and minimise contamination • Increase awareness of what can go in kerbside recycling • Implement communications programme to encourage and improve confidence in recycling • Set annual targets to improve collection /contamination rates <p><u>Links:</u> Community</p>	Increase in Reading's overall recycling rate by 4% by October 2021 arising from efforts to reduce contamination	2021	Re3/Reading BC
R9: Other: Zero Waste/Circular Festivals	<ul style="list-style-type: none"> • Work with festival organisers to implement resource-stewardship systems to reduce waste at festival venues and campsites • Develop an engagement programme that uses a combination of techniques to motivate festival-goers to use the resources • Establish baseline and set meaningful targets for reducing waste and maximising recovery of resources • Draw on experiences of Green Deal Circular Festivals <p><u>Links:</u> Business</p>	<p>Convene festival organisers and secure buy-in:</p> <p>Baseline research:</p> <p>Programme launch:</p> <p>Zero tents left behind on site at Reading Festival:</p>	<p>Spring 2020</p> <p>Dec 2020</p> <p>April 2021</p> <p>August 2025</p>	<p>Reading Circular Economy Club (lead)</p> <p>Reading UK CIC University of Reading (research) Waste/recycling contractors Festival organisers</p>
R10: Other: Resource Efficiency	<ul style="list-style-type: none"> • 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 comms programme to reinforce behaviour change <p><u>Link:</u> Communication and Engagement</p>	Guidance published and comms programme launched	April 2022	<p>RCAN (lead)</p> <p>Re3 Reading UK CIC</p>

Sub category: Resource Systems

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
R11: Re-use and repair: Establish a definitive information source on re-use and repair	<ul style="list-style-type: none"> • Compile and maintain a comprehensive directory of re-use and repair resources in Reading, and encourage new ones, especially through social enterprise • Include info resources like ifixit and services like repair café/bicycle kitchen • Establish comms programme to reinforce behaviour change <p><u>Links:</u> Community</p>	Directory published, update process and comms programme in place by:	April 2021	RCAN lead Organisations offering re-use and repair services Reading UK CIC Transition Towns Re3
R12: Sharing, renting and swapping: Establish a definitive information source on the sharing economy	<ul style="list-style-type: none"> • Compile and maintain a comprehensive directory of sharing, renting and swapping resources, and encourage new ones • Include peer to peer systems like Freegle, rental and “as a service” systems, charity outlets and platform services like Too Good to Go • Establish comms programme to reinforce behaviour change <p><u>Links:</u> Community</p>	Directory published, update process and comms programme in place by:	April 2021	RCAN lead Organisations offering sharing, rental and swapping services Transition Towns
R13: Circular economy: Reading Circular Economy Club	<ul style="list-style-type: none"> • Establish Reading Circular Economy Club - Part of the international network of Circular Economy Clubs • Peer to peer information exchange and networking for interested businesses and organisations • Develop resources exchange to create closed resources loops in the town, reducing use of virgin resources and finding new uses for waste products <p><u>Links:</u> Business</p>	<p>Club set up</p> <p>Regular schedule of meetings and events established and publicised</p> <p>Resources exchange set up and operational.</p>	<p>DONE</p> <p>June 2020</p> <p>June 2021</p>	<p>Reading Circular Economy Club lead</p> <p>RCAN/RBCAN</p> <p>Re3</p>

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. The risk of flooding will increase for Reading, particularly from the River Thames and from surface water flooding as a result of more intense storms.

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 eighty-percent 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.

Progress to date

We have a strong community of water industry experts in Reading, who will help guide us towards our vision 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 water

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 a robust 2050 targets for Reading. These will 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

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

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery Partners
	<ul style="list-style-type: none"> Communicate the Environment Agency 'incident management' approach to drought <u>Links:</u> Business, Energy and LCD, Communication and Engagement			
W4: Educate the public about water quality and sewer abuse	<ul style="list-style-type: none"> Publish sewer abuse and water quality stats, messages and content to RCAN website <u>Links:</u> Business, Community, Communication and Engagement	Content published	2021	Thames Water
W5: Water efficiency measures	<ul style="list-style-type: none"> Promote installation of water saving and efficiency devices during refurbishment Promote Thames Water's 'Smarter Business Visit' scheme to all schools in Reading Increase awareness of leaky-loos and benefits of fixing plumbing losses Engage with building management companies to promote retrofitting/leak fix Expand the provision of water info packs from new homes to all households Promote Thames Water's 'Smarter Home' visit scheme to homes with smart meters Support the roll-out of smart meters Conduct periodic research on understanding and engagement with water saving. <u>Links:</u> Community, Business, Communication and Engagement	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)
W6: "Water Neutrality" as a planning requirement	<ul style="list-style-type: none"> Investigate whether the RBC Sustainable Planning Document can be modified to include: <ul style="list-style-type: none"> the requirement for all new major developments to contribute to funding water saving measures equivalent to the development's water consumption. adopting the 'fittings approach' within Building Regulations rather than a pcc calculation approach <u>Links:</u> Energy and LCD	Share the contents of the Sustainable Planning Document on RCAN website Feedback on required amendments Amendments implemented	2020 2022 2025	Reading BC Thames Water

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery Partners
W7: Leadership and Influence	<ul style="list-style-type: none"> Lobby MPs and Defra to introduce a mandatory water label to help consumers make water-efficient choices Lobby MPs and Defra to strengthen building regulations and planning process, to drive water efficiency within all new developments and procurement schemes. 	<p>Water labelling</p> <p>Building regs and planning</p>	<p>2021</p> <p>2025</p>	RCAN
W8: Research to drive future improvements	<ul style="list-style-type: none"> Research the costs, benefits and suitability, of rainfall harvesting and grey water recycling schemes. Use UKCP18 climate modelling and local river flow models, to develop projections for future drought / water resource availability. With RBC and LEP update our estimates of Reading population growth to 2050 Develop a new evidence-based 2050 water target Review the first Adaptation Plan and identify and deliver initial win-win opportunities Identify thresholds, risks, solutions and case studies for the second Adaptation Plan <p><u>Links:</u> Adaptation</p>		2020-25	<p>RCAN</p> <p>University of Reading (research)</p>

Sub category: Flooding Resilience

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
W9: Raise awareness of fluvial (river) flood risk	<ul style="list-style-type: none"> Raise awareness of flood risk from the River Thames and the proposed Reading and Caversham Scheme by carrying out various engagement activities Update the flood maps on the Gov.UK website to show the areas at risk of flooding based on the latest flood modelling <p><u>Links:</u> Education, Business, Transport, Community, Adaptation</p>	<p>Engagement activities</p> <p>Flood maps updated</p>	<p>Summer 2020</p> <p>2022</p>	<p>Environment Agency</p> <p>Partners: Reading BC, local councillors, local businesses and community groups</p>

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
W10: Raise awareness of the Flood Warning and flood alert service	<ul style="list-style-type: none"> • Increase the number of at-risk homes and businesses signed-up to receive Flood Alerts • Signpost advice on the Flood Warning Service and what to do before, during and after a flood • Develop “what if” scenarios to help people and businesses understand the importance of self-preparation, and education about flood risk <p><u>Links:</u> Education, Business, Community, Adaptation</p>	<p>90% sign-up to FW service</p> <p>100% sign-up to FW service</p> <p>“What if” scenarios developed and posted on ReadingCAN</p>	<p>Dec 2021</p> <p>Dec 2025</p> <p>Dec 2025</p>	<p>Environment Agency</p> <p>Partners: Reading BC and community groups</p>
W11: Reducing fluvial flood risk from River Thames	<ul style="list-style-type: none"> • Work in partnership with Risk Management Authorities and local stakeholders to identify ways to reduce fluvial flood risk • Gain support from all Reading communities on action to reduce flood risk from the River Thames • Seek funding through partnership funding and local grants. <p><u>Links:</u> Education, Business, Community, Adaptation</p>	<p>Reading community makes decision about favoured River Thames flood reduction option</p> <p>Funds raised to deliver favoured option</p>	<p>Summer 2021</p> <p>2025</p>	<p>Environment Agency</p> <p>Partners: Reading BC, local councillors, Thames Water, Local Resilience Forum, community groups and local businesses</p>
W12: Implement sustainable urban drainage systems (SuDS)	<ul style="list-style-type: none"> • Explain the importance of SuDS and their practical application • Find out what post scheme monitoring is happening and recommend how this can be improved <p><u>Links:</u> Nature, Adaptation, Transport</p>	<p>Share planning information</p> <p>Monitoring, reporting and research</p>	<p>2020</p> <p>2025</p>	<p>Reading BC</p>
W13: Investigate the use of green infrastructure to reduce slow down storm water	<ul style="list-style-type: none"> • Investigate measures to slow the flow of storm water, eg by planting and creating scrapes and swales. • Follow up on research by Reading University and the Landwise project • Transfer learning to RBC Sustainable Design and Construction (supplementary planning document). <p><u>Links:</u> Nature, Transport, Adaptation, Business</p>	<p>Scope project brief and costs</p> <p>Deliver results</p>	<p>2020</p> <p>2023</p>	<p>Water theme group</p> <p>Partners: Environment Agency and University of Reading</p>
W14: Improve the resilience of the Kennet Meadows	<ul style="list-style-type: none"> • Develop a plan for the Kennet Meadows to make it a resilient wetland • Make sure the plans preserve the need for the meadows to act as flood plain 	<p>Workshop to bring partners together and agree scope</p> <p>Develop and share plan</p>	<p>2021</p> <p>2023</p>	<p>EA</p> <p>Partners: CEH (Wallingford), UoR</p>

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
	<ul style="list-style-type: none"> 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? <p><u>Links:</u> Nature, Adaptation, Energy</p>			Water theme group member
W15: Improve our flood risk adaptation plans	<ul style="list-style-type: none"> Improve our understanding of climate change adaptation thresholds Investigate the latest UK climate projections to find out what extreme rainfall events we need to prepare for. 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. Develop our flood adaptation plans through to 2050 and beyond <p><u>Links:</u> Education, Adaptation</p>	<p>Post information on revised future flood modelling, as it is released</p> <p>Deliver report on change in storm rainfall, and Thames + Kennet flood peaks</p>	<p>Ongoing</p> <p>Dec 2024</p>	Partners: EA, Reading BC and local interest groups
W16: Investigate opportunities for Green roofs	<ul style="list-style-type: none"> 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 <p><u>Links:</u> Transport, Nature, Community, Business</p>	<p>Create research proposals</p> <p>Deliver results</p>	<p>2021</p> <p>2025</p>	<p>UoR</p> <p>Partners: Reading BC and EA</p>
W17: Develop links to the Thames Valley Local Resilience Forum	<ul style="list-style-type: none"> 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 <p><u>Links:</u> Community, Business, Adaptation</p>	<p>Organise meeting with LRF</p> <p>Public workshop/ event on resilience and adaptation</p>	<p>2021</p> <p>2022</p>	<p>EA</p> <p>Partners: Reading BC, TW, UoR, LRF</p>

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.

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

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. 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 needs 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.

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).

Sub Category: Carbon Sequestration

Action name	Description	Target & measure/ milestone	Target completion date	Delivery partners
N1: Increasing tree cover across the town	<ul style="list-style-type: none"> Plant more street trees 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 <p><u>Link:</u> Education</p>	<p>Targets per updated Biodiversity Action Plan & RBC Tree Strategy</p> <p>Publish guidance on RCAN website</p> <p>2 school hedges/year</p> <p>Review policy for traffic restriction</p>	<p>RBC to adopt Tree Strategy 2020</p> <p>Planting programme to 2025</p> <p>2020</p> <p>2021</p> <p>2021</p>	<p>Reading BC, Ethical Reading; Tree Wardens (RTWN); Nature Task Force (NTF) Econet</p>
N2: Managing land to store more carbon and increase biodiversity	<ul style="list-style-type: none"> Review methods to protect existing stored carbon and relative benefits of different land uses Identify optimum management systems for retaining carbon Feedback into review of management of Council land 	<p>Conduct literature review</p> <p>Feedback into review of Council land management and planting programme</p>	<p>2021</p> <p>2021</p>	<p>Reading BC University NTF BBOWT</p>
N3: Review Council parks and woodlands	<ul style="list-style-type: none"> Survey land, including allotments, and make recommendations that increase carbon storage, flood control, and Biological Action Plan delivery compatible with public use <p><u>Link:</u> Water</p>	<p>Survey minimum 4 sites per year</p> <p>Recommend management changes</p>	<p>From 2020</p>	<p>Reading BC NTF Econet, Reading and District Natural History Society (RDNHS), RTWN</p>

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

Sub category: Supporting wildlife habitats and biodiversity

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
N9: Compensatory habitat restoration/offsets for urban development	<ul style="list-style-type: none"> Baseline review of the likely requirements for habitat compensation and biodiversity net gain due to development of sites in the Local Plan Financial mechanism developed 	<p>System to be set up</p> <p>Implementation</p>	<p>2020</p> <p>continuous</p>	Reading BC planning
N10: Identifying wildlife corridors	<ul style="list-style-type: none"> Working from the green links shown in the Local Plan, and revision of the Biodiversity Action Plan, identify primary and secondary routes Agree any changes/additions changes with RBC planning department and Council 	Identify routes and mark on plan for transfer to RBC Geographical Information System	2020	Reading BC planning BAP review/NTF Reading BC parks and Highways
N11: Assessing the quality of wildlife corridors	<ul style="list-style-type: none"> Review existing data Walk through and rapid assessment of accessible land List priorities for enhancement on public land and community land <p><u>Link:</u> Community</p>	Start within year 1, 10km a year reports on the corridor survey	Annual from 2020-2025	NTF/Reading BC community groups Network rail BBOWT
N12: Managing the impact of development areas on wildlife corridors	<ul style="list-style-type: none"> Ensure design and planting on development sites contributes to wildlife corridors Ensure connectivity through developments with appropriate supplemental planning guidance Align with objectives of revised Biodiversity Action Plan and/or green infrastructure strategy/plan 	Supplementary Planning Document published	<p>2020</p> <p>Implementation ongoing</p>	Reading BC Berkshire Local Nature Partnership BBOWT
N13: Species protection/ recovery	<ul style="list-style-type: none"> Biodiversity Action Plan develops objectives for increasing/recovery of identified key species Ensure these are fed into management methods and changes in wildlife corridors 	<p>Develop land management objectives</p> <p>Implement from:</p>	<p>2020</p> <p>2021</p>	<p>Reading BC/NTF</p> <p>University of Reading</p>

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
N14: Biodiversity enhancement pilots	<ul style="list-style-type: none"> Meet/work with residents associations/ community groups Offer regular workshops/newsletter input/other methods to support changes in these areas <p><u>Link:</u> Community</p>	Identify 2 areas to participate Review impact relative to other areas	2020 2023	NTF Adopt-a street Community groups
N15: Data recording/ monitoring	<ul style="list-style-type: none"> Request that all new data go onto TVERC, irecord or datasystems that link with TVERC (Thames Valley Environmental Records Centre) Recruit volunteers for recording Encourage householders to take part in garden surveys/ TV projects <p><u>Link:</u> Community</p>	Contact all local groups Recruit volunteers Publicise surveys undertaken by others	2021 2020 Each year	NTF Community groups UoR

Sub category: Planting for biodiversity and resilience

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
N16: Provide Information on adaptation	<ul style="list-style-type: none"> Provide information on climate resilience and wildlife friendly gardening Improving soil structure and promote water reuse Promote exemplar sites – eg council, church, school <p><u>Links:</u> Water, Health, Education</p>	Information published on RCAN website 2 exemplar projects by:	End of 2020 2025	NTF RISC community groups, Reading BC
N17: Greening front gardens and reducing hardstanding	<ul style="list-style-type: none"> Provide information and links to potential designs for increasing green cover and reducing hardstanding Hold seminar for developers Seek TV support for project, eg Gardener's World <p><u>Links:</u> Water, Energy and LCD</p>	Information by end 2021 Seminar Contact TV options	2021 2022 2023	RCAN/ NTF
N18: Interaction with garden centres	<ul style="list-style-type: none"> Encourage garden centres to introduce a wildlife friendly and climate change adaptation section Peat-free labelling of composts <p><u>Link:</u> Business</p>	Programme introduced	2020	NTF BBOWT
N19: Sustainable Urban Drainage Systems	<ul style="list-style-type: none"> Provide advice on planting and design on SUDS for existing or new developments 	Suggested wording to include on planning permissions	2020	NTF/ Reading BC/ BBOWT

	<ul style="list-style-type: none"> Native plants for marginal and aquatic species; tall plants for aquatic invertebrates; different depths of water and sides for exit. <p><u>Links:</u> Water</p>			
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Sub category: Green Spaces for Cooling/well-being

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
N20: Green Infrastructure	Using green infrastructure to reduce carbon emissions from buildings and promote urban cooling, eg: <ul style="list-style-type: none"> Promote Green walls and roofs on new build Promote green roofs on existing single storey structures Plant for shading of cycle/pedestrian routes Research on impacts of green infrastructure required <p><u>Links:</u> Energy & 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 BC NTF NTF/UoR

Sub category: Communication and Engagement

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
N21: Raising awareness in the community	<ul style="list-style-type: none"> Identify two areas in the town to concentrate existing resources to test ideas and communication methods for dissemination Extend proven ideas to other areas <p><u>Links:</u> All themes, Business, Community</p>	2 target areas identified and developed	Identify test areas by 2021;Extend to four areas by 2025	Nature Task Force
N22: Advice service for adaptation	<ul style="list-style-type: none"> Provide advice to schools/ community groups/ for wildlife friendly gardening/ water efficient gardening/recycling in the garden <p><u>Links:</u> Water, Education, Community, Adaptation</p>	Offer half day advice service to up to 20 organisations a year, plus online leaflets	Advice service from 2021	NTF BBOWT
N23: Support schools in their climate change initiatives	<ul style="list-style-type: none"> Provide list of support actions available through ReadingCAN or external sources, and distribute <p><u>Link:</u> Education, Communication and Engagement</p>	Create option list for schools Offer 8 support activities a year	2020 2020	RCAN Nature Task Force
N24: Supporting Business in their climate change initiatives	<ul style="list-style-type: none"> Make opportunities for staff to do practical work via Team Challenge <p><u>Link:</u> Business, Communication and Engagement</p>	6 business actions a year	Set up by 2021	Reading BC/NTF Econet/TCV,

READING CLIMATE EMERGENCY STRATEGY: HEALTH THEME ACTION PLAN

Health is a 'State of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity'. This theme therefore considers the wellbeing of Reading's people holistically, with the emphasis on living healthily in a changing climate.

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 Theme is primarily focused on dealing with the consequences of climate change that are likely to affect people in Reading over the next ten years, despite best efforts at mitigation. We have used the UN categorisation of health impacts of climate change to define three categories of risk which are expected to significantly impact Reading – heat related, flooding related and related to air pollution. All of these can cause both physical and mental health problems. 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 Reading Borough Council. 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 in a Lancet Countdown project. This could make environmental and health data visible to the public e.g. on public billboards or through apps.

This is the first time that health has been included in Reading's climate change strategy, therefore many of the actions are about 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 or other conditions normally related to increased heat, reduced due to the climate change strategic actions.

Health Theme Action Plan: *By 2025, people in Reading will be well informed about how to self-manage the health impacts of climate change and benefit 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 & measures/ milestones	Target completion date	Delivery partners
H1: Adaptation and anticipation in health facilities	Facilities in hospitals and care homes adapted to extreme heat, eg <ul style="list-style-type: none"> Provision of cool space for residents Storage for medicines requiring cool temperatures Risk register of those at risk from heat 	CQC reports on facilities in Reading all positive on these aspects.	2023	Public Health Berkshire - lead
H2: Publicise cool public spaces	<ul style="list-style-type: none"> Get agreement from air-conditioned places to welcome the public during heatwaves Maps and lists in libraries, public spaces, buses. Publicity in local media when heatwaves are forecast <p><u>Links:</u> Energy & LCD, Business, Communication and Engagement</p>	Completion and publication of list	Initial list 2022 List updated yearly	RBC/RCAN

Sub category: Flooding

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
H4: Anticipation in health and social care facilities	<ul style="list-style-type: none"> Flexible accommodation for peak loads in emergencies Flood risk planning and preparation for in-patient facilities <p><u>Link:</u> Water</p>	Establish baseline Set targets Plan published	2020 2021 2022	Public Health Berkshire - lead RBC

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
H5: 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. Link: Water	Group to report by end of	2022	RCAN

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

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
H6: Supporting citizens to self-manage air quality risks	<ul style="list-style-type: none"> • Explore the application of dynamic air quality data to help citizens protect themselves • Possible collaboration with Adept Live Lab project 			Reading BC (lead) Adept Live Lab Stakeholders

Sub-category: reducing emissions from the health sector in Reading

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
H7: 'For a Greener NHS' campaign	<ul style="list-style-type: none"> • 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)	Summer 2020	Royal Berks NHS Foundation Trust Other NHS facilities
H8: Implementation of NHS Standard Contract	<ul style="list-style-type: none"> • 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	April 2021	Royal Berks NHS Foundation Trust
H9: Development of Green Plan for Royal Berks Hospital	<ul style="list-style-type: none"> • New plan covering asset management, travel and transport, use of resources and greenhouse gas emissions 	Plan completed	Spring 2021	Royal Berks NHS Foundation Trust

Sub category: Communication and engagement

Action name	Description	Targets & measures/ milestones	Target completion date	Delivery partners
H10: Cooperation with local health authorities	<ul style="list-style-type: none"> • Create strong links to ensure climate change is at the centre of strategy. • Begin by initiating discussions with Health and Wellbeing Board https://democracy.reading.gov.uk/mgCommitteeDetails.aspx?ID=176 	Meet to determine next steps	Q3 2020	RCAN lead
H11: Publicise health risks of climate change	Public awareness and engagement campaign about the physical and mental health risks of climate change as a way of encouraging action <u>Links:</u> Education, Community, Business	Implement Carbon Literacy Training	2021	RCAN
H12: Support for mental health and well being	<ul style="list-style-type: none"> • Extension of existing mental health programmes to include the mental health issues associated with heat, flooding or air pollution; also climate anxiety 	Extended programme in place	2022	Reading BC Public Health
H13: Research, measuring and monitoring	<ul style="list-style-type: none"> • Explore what data is already available on public health impacts of climate change in Reading • Identify data gaps and establish research projects to fill them • Measure, monitor and report on correlation of illnesses with climate change impacts to improve adaptation planning • Possible link with Lancet Countdown project 	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 every organisation, sector, generation and resident 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 this consultation draft 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.

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. An informal poll conducted in Broad Street Mall in 2019 suggested that only around 15% of residents were aware that a climate emergency had been declared. As such, we envisage developing 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.

Some of the elements of this communications and engagement strategy are included in the action plans in section 5, but we also envisage that it will include:

- Mechanisms to promote 'climate commitments' for organisations and businesses
- Mechanisms to promote 'climate commitments' for citizens
- Programmes to improve 'carbon literacy'
- Support for schools in their climate change initiatives
- Support for businesses in their climate change initiatives
- Engagement with neighbouring towns and local authority areas
- Holding themed events and workshops to reach more people
- The creation of comprehensive information resources providing Reading-focused tools, advice and services to support low-carbon behaviours and promote resilience

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 circulated to partners
- 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 ReadingCAN.org.uk website. 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.

7.3 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, when the strategy is finalised, we will commence 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 initiated and 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 (CO₂) 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 CO₂ emissions produced and CO₂ emissions taken out of the atmosphere – see also ‘net zero’
- Carbon offsetting – attempting to compensate for CO₂ emissions by participating in schemes designed to make equivalent reductions of CO₂ in the atmosphere
- Carbon sequestration - the process of removing CO₂ from the atmosphere
- Circular economy - a concept which encourages more efficient use, and greater re-use and recycling, of materials through the economy, rather than the conventional approach of ‘take/make/waste’
- Decarbonisation - the reduction or removal of CO₂ 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 (CO₂), but also methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF₆)
- 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 CO₂ emissions produced and CO₂ emissions taken out of the atmosphere – see also ‘carbon neutral’
- Quality of life - the conditions in which we live, including social factors such 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 USED

BAP	Biodiversity Action Plan
BBOWT	Berks, Bucks & Oxon Wildlife Trust
BC	Borough Council
BID	Business Improvement District
CC	County Council
CEH	UK Centre for Ecology & Hydrology
BEIS	(Department for) Business, Energy and Industrial Strategy
BID	Business Improvement District
DfT	Department for Transport
EA	Environment Agency
LRF	Local Resilience Forum
RBC	Reading Borough Council
LAs	Local authorities
NTF	Nature Task Force
RBCAN	Reading Business Climate Action Network
RCAN	Reading Climate Action Network
RCCP	Reading Climate Change Partnership
RISC	Reading International Solidarity Centre
RTWN	Reading Tree Wardens Network
SECBE	South East Centre for the Built Environment
SSE	Scottish and Southern Energy
TCV	The Conservation Volunteers
TVBLEP	Thames Valley Berkshire Local Enterprise Partnership
TW	Thames Water
UoR	University of Reading