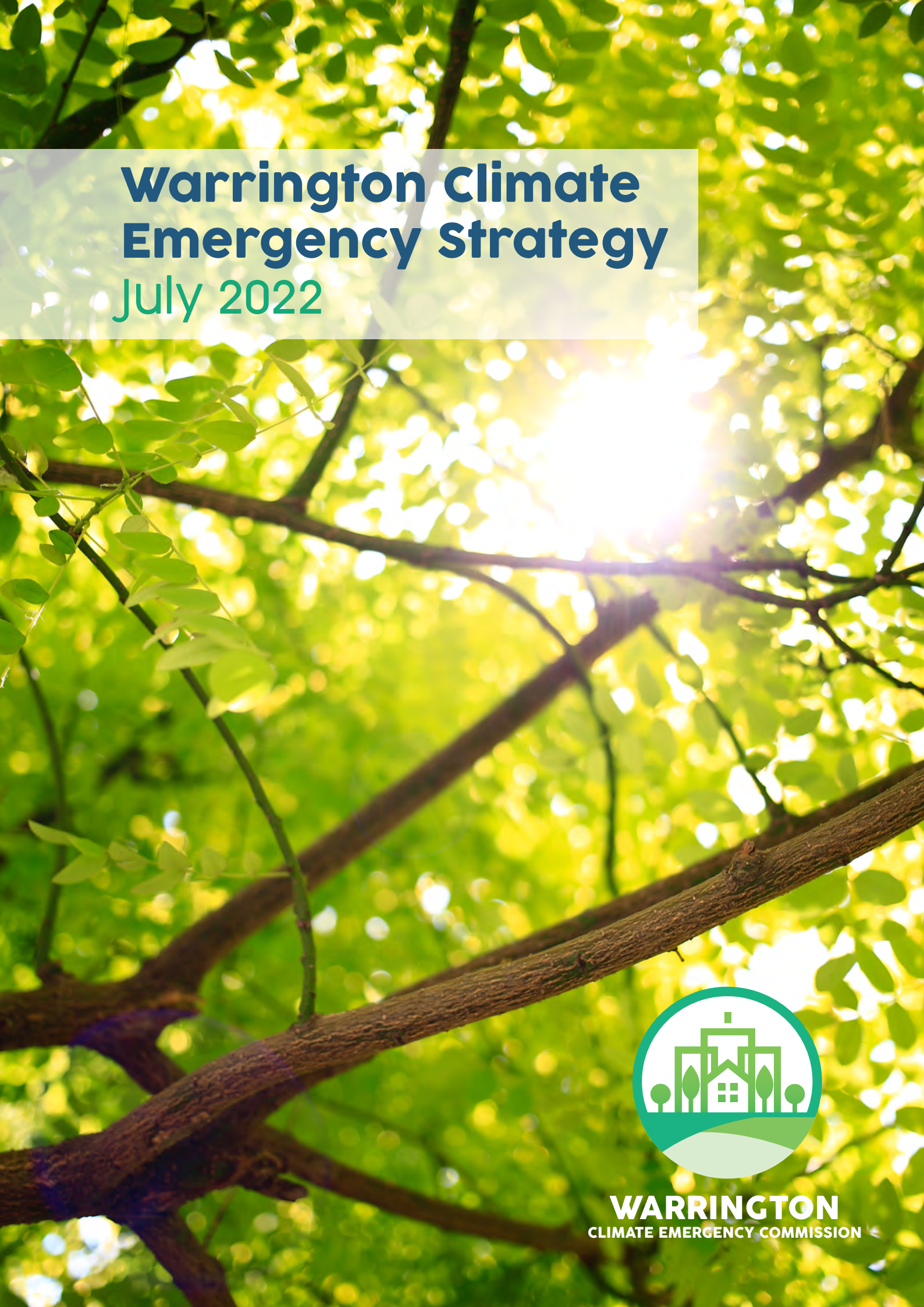
Warrington Climate Emergency Strategy

July 2022



WARRINGTON
CLIMATE EMERGENCY COMMISSION

Contents

WARRINGTON
CLIMATE EMERGENCY COMMISSION

Forewords

"The global climate crisis presents a huge threat to humanity and the natural world. The impacts are already upon us here in Warrington and elsewhere. They will get worse without urgent action.

Some of the changes we need to make to tackle the climate and ecological crisis have started to happen. However, the latest scientific evidence makes clear we need to accelerate these changes. Unfortunately, time is not on our side. The response to the crisis demands action at all levels, including at a local level. It needs action from all quarters too – from the council to local businesses, from households to schools and community organisations.

Warrington's Climate Emergency Commission was set up in recognition that a borough-wide response is needed and that no single organisation can do all of what needs to be done alone. We are a group of advisors with a knowledge and interest of climate issues. Our membership currently includes business, youth, environment and community representatives. We were set up to help lead the public conversation on the wider response in Warrington. This strategy is the outcome of this wider conversation, a conversation that needs to continue 'in action'. It provides a foundation on which to build going forward.

The strategy will mean nothing without action and through it the commission invite you to help bring it to life and play your part."

Cllr David Ellis
Chair, Warrington Climate Emergency Commission

"We need to take collective action to combat the climate crisis. This strategy should act as a guide for everyone in Warrington that ultimately helps us to play our part in this effort. As the strategy makes clear there is much to be done and some hurdles to overcome.

The benefits of climate-related action are many, with the opportunity to improve our health, local environment and create jobs as we green the economy. To realise these benefits, and play our part in the wider global effort, we need everyone on board, working together with other people and organisations across Warrington. In this way, we can achieve more than our individual efforts alone.

This is a strategy for everyone in our borough, and on behalf of the Council I wholeheartedly endorse it. I commend the commission for bringing the strategy together. I will work to ensure the council plays its part and brings forward its own action plan as part of the wider effort. I urge you to use the strategy in a similar way, to consider the climate challenge and your part in the local response to it."

Cllr Janet Henshaw
Cabinet member for sustainability and climate change

Why a climate emergency strategy for Warrington?

This strategy aims to help mobilise people and organisations in the borough of Warrington to ensure we can all play our part to address the climate crisis. It presents a common 'road map' so we can make a bigger impact together.

Why bother?

Whilst we cannot solve the climate crisis taking action locally alone, we do have a role alongside thousands - if not millions - of communities around the planet. There are many positive benefits to acting locally too, beyond doing our bit to avert a potential global catastrophe.

The local prize

Taking action locally we can help create:

- **A healthy Warrington** with better homes, clean air, a healthier and more active population, and less traffic congestion
- **A thriving Warrington** where we all benefit from the economic opportunities presented by the changes needed, and where nobody is left behind
- **A greener Warrington** where nature is in recovery and biodiversity is flourishing bringing benefits for all to enjoy
- **A resilient Warrington** where we are better prepared to cope with the disruption from extreme weather patterns and the wider shocks that climate instability brings
- **A sustainable Warrington** where we use resources wisely, live fulfilling lives, and safeguard opportunities for our children and grandchildren to do likewise

A shared challenge

This strategy does not belong to any one organisation, but presents a route map for us all to use. If you live, work, study, or do business here, this strategy is for you. It requires your attention.

The ask

To make the strategy your own, we ask you to do one thing:
Develop an action plan in support

Under the UN's Paris Agreement on climate change, nations who sign up are pledging to set out their own plan of action in support and to share progress. In a similar way, we need local people and organisations to develop their own action plans in support of this strategy. The strategy will largely stand or fall depending on how many of us do so.

The approach is not to leave you to take action in isolation, but to create a supportive environment so that we make a greater impact together.

To this end, the strategy includes measures designed to:

- Provide support to help more of us to develop an action plan
- Make it easier to do the things that need to be done; and,
- Improve ways we can share progress so we can learn from each other and inspire wider change.

Our shared goals

To play our part we need to bring forward action that helps to:

Eliminate greenhouse gas pollution[1]

For Warrington, this means

- Staying within a carbon dioxide (CO_2) 'emissions budget' of 8.3 million tonnes ($MtCO_2$) for the period of 2020 to 2100
- Delivering cuts in CO_2 emissions averaging a minimum of -13.7% per year from 2020 onwards, reaching near zero emissions no later than 2041

How CO_2 emissions need to fall in Warrington to stay within the remaining 'emissions budget'

Build resilience to the impacts of climate change

For Warrington, this means

- A better understanding of the local risks and vulnerabilities across organisations
- Adapting our infrastructure and practices to cope with disruption and wider shocks to the system including threats to food security, supply chains and public health

Help nature recover

For Warrington, this means

- Ensuring local, semi-natural habitats and ecosystems are protected and more land is managed to make the space and conditions for nature to flourish with 'more, bigger, better and joined up spaces for nature'[2]

---

[1]Greenhouse gas (GHG) pollution to the atmosphere is trapping more heat raising global average temperatures with serious consequences. The main GHG from human activities is carbon dioxide (CO_2) which arises when we burn fossil fuels for heat, power and transport. Other GHGs include methane, nitrous oxide and fluorinated gases. The amount of GHGs is expressed in terms of carbon dioxide equivalent or CO_2e. When people talk about cutting GHGs they often shorten this to 'cutting carbon'.

[2]The Prime Minister has committed to protect 30% of the UK's land by 2030

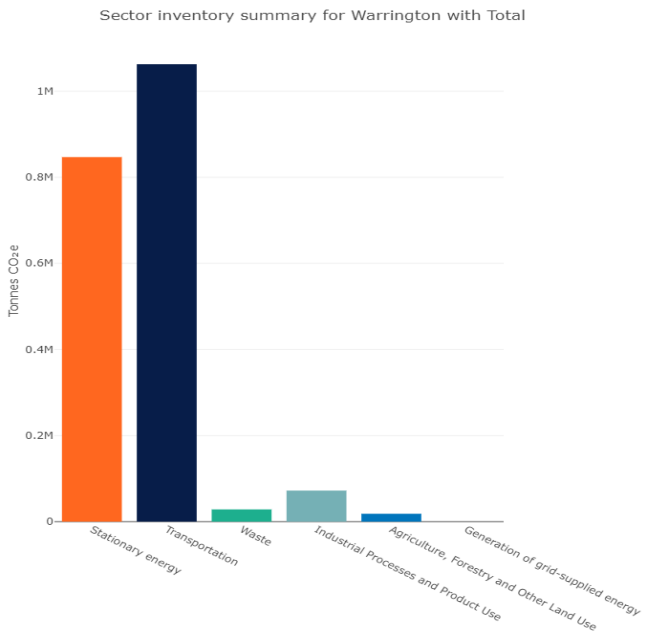
The local emissions reduction challenge

The climate crisis is a global problem with a local dimension. Separating the local and wider picture is difficult, but there is some data available to help guide our local response.

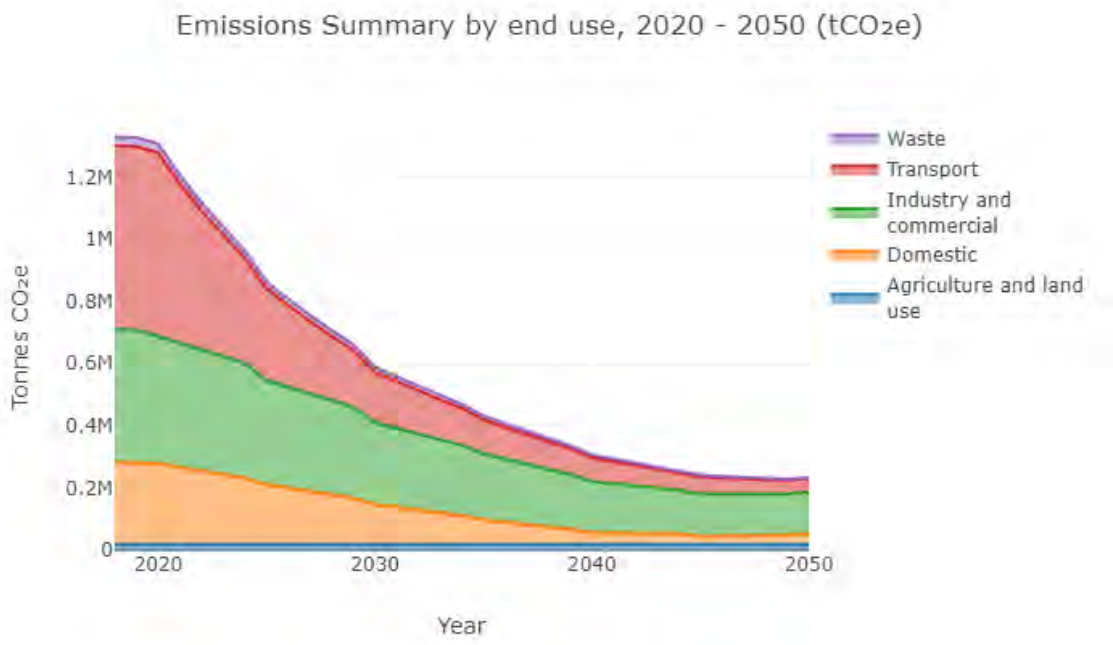
The emissions reduction target set in this strategy is not plucked from the air. It comes from an independent assessment by the Tyndall Centre for climate research. This assessment translates what the UN's Paris Agreement on climate change means for CO_2 emission reductions in Warrington. The speed at which local emissions need to fall demands a step change in progress.

Local data indicates that transport and energy use account for the lion's share of greenhouse gas pollution arising in Warrington[3]. This data provides a starting point to focus our efforts, but is not the complete picture. Our impact will be wider too. We also need to think about our indirect impacts elsewhere, for example, the impacts associated with the goods we buy made in other places.

To explore the impact of different ways to reduce emissions at a local level, a tool is available called SCATTER. This allows various future scenarios to be tested. Even setting every control in this tool to the highest level of ambition does not get us to where we need to be. Unless we up the pace, we will fail to meet our local 'fair share' of the global effort. The costs of delaying action will also be much higher than taking timely action now.



Just as available data and tools have helped us shape this Warrington-wide strategy, various tools are available to help you understand your own 'carbon footprint' and plan action too. Better understanding your own emissions will help you focus on where you can make the most impact. The final part of this strategy includes pointers to some of the tools available to help you.



[3]A full greenhouse gas emissions inventory for Warrington Borough using 2018 data can be found in the Appendix

Not a typical strategy

This strategy needs many organisations and people - including you - to help to bring it alive. The Warrington Climate Emergency Commission put it together informed by wider consultation[4]. We are an advisory group only[5]. We cannot force people and organisations across Warrington to act, but we can:

- Invite you to take action, make the case for it, and give pointers to help
- Make clear the scale of the challenge, the direction of travel needed, and some of the opportunities presented
- Flag up priority areas for action
- Identify some of the main stakeholders who are key to meeting local objectives
- Help define a process to advance the strategy, and,
- Report progress and flag up areas where further action is needed

Principles underpinning the strategy

A work in progress shaped by action – With an urgent need for action and limited time, the strategy is very much a starting point. It's 'version 1.0' to be updated, improved and shaped by action, and the views of those committed to take action in support.

Common goals with different roles - We do not all have the same role or impact. Some will have a much bigger impact and will need to do particular things. Part of the challenge is to translate what the strategy means into our own circumstances. By working towards common goals in our different ways, we can have a bigger impact together.

Levelling the playing field and taking 'win-win' actions - We don't all have the means to do what needs to be done. There are barriers to action that vary by our circumstances. We must acknowledge that inequalities affect who and how we can act. Part of the challenge is to improve support where needed. It is also to address the inequalities in our communities. Some actions have multiple benefits, e.g. better insulation helps reduces emissions and tackle fuel poverty. Pursuing these 'win-win' actions will help us deliver a greater positive impact.

[4]A report on the main public consultation survey is available via warringtonclimatecommission.org.uk. There was additional direct dialogue with various groups and organisations to shape the strategy.

[5]The Commission was set up by Warrington Borough Council to help guide a borough-wide response to the climate crisis

Making the right choices (and changing the system to make the right choices easier) - Not all of our objectives can be met through simple choices or small changes. Doing easy things can help us make a start, but will not get us all the way. Many things we need to do locally are difficult in present circumstances. Without wider change, they are not choices open to many of us at all. We must therefore use our influence to encourage this wider change. This way we can help make it easier to do the things that need to be done. We will need new products and processes; new laws and regulations; and, changes in incentives and taxation.

Seeking a just transition – With major change needed, our local response should be fair. We need to make sure no one is left behind. New green jobs need to be of equal or higher quality than those they are replacing, sustainable, and accessible to the widest population. We need to ensure that those of us who work in fossil fuel-related activities can adapt our businesses or retrain so we can use our skills in the low-carbon economy. To promote a just transition, we need to consider the impacts of the actions we bring forward on different groups. We must also acknowledge that those with a minimal impact on climate change are often those most vulnerable to its effects.

Navigating the strategy

Navigating the strategy

The strategy indicates the direction we need to move locally.

We need to see change in many areas. Not all will apply to everyone's circumstances. To help navigate through the broad range of topics, we present the direction of travel we need to move in two ways:

By domain

A simple 'snapshot' of the direction we expect to move in set out in the three main contexts for our day-to-day lives

At home

How our homes and lifestyles will need to change

At work

How our places of work and the types of work we do will need to change

In the community

How our neighbourhoods, the spaces we share, services, and community institutions we connect with need to change

By theme

A more detailed run through of the objectives we need to meet and the priority areas for action grouped in five themes

- **Travel, transport and connection**
- **Energy, buildings and infrastructure**
- **Resources, consumption and wider impacts**
- **Resilience and nature**
- **Awareness, engagement and support for action**

Domains for Action

Action at home

Households will:

- Plan and take action
- Use energy more efficiently and smartly
- Use water more wisely
- Consume less stuff, choose more sustainable goods, produce less waste, and recycle more
- Eat healthier diets, with more local and seasonal produce, and less meat and less dairy products
- Be better prepared for severe weather and flooding
- Replace short car trips by walking and cycling, and take advantage of sustainable travel services, including public transport and car clubs
- Consider the track record of banks when making investments and move away from investments in fossil fuels

Existing homes will:

- Have more energy efficient lighting and appliances with smarter controls
- Be better insulated with controlled ventilation
- Be more water efficient with water saving devices and water butts installed where appropriate
- Be adapted to avoid overheating
- Stop using fossil fuels for heating, cooking and hot water
- Generate more power or heat through solar panels
- Switch to heat pumps or connect to new district heat networks as they are created
- Make more space for nature
- Adapt to use more permeable surfaces to limit rainfall runoff
- Use flood protection measures where they are at risk of flooding
- Make provision for vehicle charging and cycle parking

New homes will:

- Be highly efficient with controlled ventilation
- Have zero carbon heating
- Be designed to avoid overheating during hot spells
- Be planned around new district heat networks where appropriate
- Be built in accessible locations and planned around public transport and walking and cycling routes
- Generate some or all of their own heat and power
- Have secure storage for bikes
- Have provision for vehicle charging
- Utilise green roofs and walls, and create space for nature in private gardens and communal green spaces, contributing to Biodiversity Net Gain (BNG) requirements
- Be flood resistant and avoid areas prone to flooding
- Adopt sustainable urban drainage systems

Action at work

Employers will:

- Develop a plan to guide action
- Lobby government for clearer direction to create business confidence
- Improve the energy and water efficiency of buildings and manufacturing processes
- Shift space heating and heat for manufacturing processes to electricity or alternatives to natural gas such as hydrogen or biogas
- Generate more power or heat on site through solar panels
- Connect to new district heat networks as they are created
- Switch to clean energy supply tariffs
- Design out waste in production processes
- Substitute raw materials with reprocessed materials including locally sourced ones wherever possible
- Adopt 'circular' business practices
- Electrify vehicle fleets or shift to sustainable fuelled vehicles
- Provide charging facilities for staff and visitors using E-cars
- Improve infrastructure to encourage sustainable travel, including secure cycle storage, bus stops, real time information, car share spaces, showers and lockers
- Offer alternative travel incentives e.g. the cycle 2 work scheme, and car share databases
- Enable flexible and home working where practical
- Take climate considerations into account in decision making
- Adopt sustainable procurement policies and work with businesses in the supply chain to reduce impacts
- Move investments away from fossil fuel sectors
- Review catering menus to promote climate friendly options
- Raise awareness about the climate crisis amongst employees (e.g. carbon literacy training) and invest in the workforce to ensure the right skills for a low carbon future
- Identify in-house climate champions
- Join local business climate/net zero networks and forums
- Offset residual or hard to eliminate emissions locally via nature-based solutions through accredited schemes.

Action at work

Employees will

- Re-skill to take up low carbon roles
- Contribute to workplace climate actions and planning
- Volunteer to be a workplace climate champion
- Take part in workplace sustainability initiatives or lobby to get them
- Undertake carbon literacy training where it is offered
- Travel to work in different more sustainable ways
- Work flexibly/from home when practical

The type of work will change

Fewer will work in

- Natural gas, oil or coal heating systems
- Supporting the extraction, processing, distribution and sale of fossil fuels and raw materials
- Selling, servicing and fuelling petrol and diesel vehicles
- Disposing "waste"
- Intensive agriculture

More will work in

- Heat pumps, and heat networks
- Renewable and nuclear energy generation and power distribution, and energy storage
- Hydrogen and biogas
- Remanufacture, re-use, re-cycling and re-processing
- Roles related to electric and alternatively fuelled vehicles
- Designing sustainable buildings and retrofitting unsustainable ones
- Regenerative farming and managing nature

Action in the community

Our neighbourhoods will

- Be planned to ensure there are convenient local services which don't rely on cars to access
- Be easier to get around on foot, by bike, and public transport services
- Have well cared for green spaces, managed to support and enhance biodiversity, with local volunteers playing an active part in their care, and street-level initiatives to support wildlife and create nature networks
- Have more public spaces that are resilient to changing weather patterns providing shade, cooling and reducing rainfall runoff
- Have more resilient physical infrastructure and make use of natural 'green and blue' infrastructure to moderate climate impacts and create more space for nature
- Have more opportunities for people to 'grow their own' in allotments and other community spaces, and to visit and buy direct from local producers
- Have more community owned sustainable energy schemes
- Have convenient opportunities for borrowing tools and equipment, repairing goods, re-use and recycling

Local political representatives will

- Take climate and nature issues into account when making decisions
- Support strong and ambitious policy that will facilitate wider action
- Influence national decision making

Warrington Borough Council will

- Show leadership on the local journey to net zero and climate resilience
- Use its influence to encourage wider action
- Ensure climate and biodiversity actions transcend all areas of policy
- Make the case for additional local resources and powers where they are lacking

Community institutions will

- Commit to take action, lead by example, and help to spread the word and encourage the communities they serve to play their part

Parish Councils will

- Help transform local community spaces to work better for climate, people and nature

Action in the community

Schools, colleges and higher education providers will

- Play an active part in finding local climate solutions, educating about the climate emergency, both through the curriculum and wider community activities, and by managing their land and buildings to be 'net zero', 'climate ready' and nature friendly.
- Work with businesses to help ensure young people have the skills needed, and existing workers can retrain, for the green economy

Community groups, clubs and societies will

- Review the impacts of their activities and take action to manage them, and take opportunities to educate and inform their members
- Foster grassroots initiatives to transform spaces in the community to work better for people, the climate and nature.

Faith communities will

- Have programmes of climate action
- Share knowledge with each other, drawing on their wider networks as well as their experience managing their places of worship locally

There will be

- More low carbon and climate resilience groups across Warrington, with more people active in them, taking action and calling for action.
- More opportunities to find out about climate action, through advice services, events and awareness and engagement initiatives

Overview of themes, objectives and priorities

Overview of themes, objectives and priorities

The strategy sets 18 objectives along with associated priority areas for action summarised below. The following pages describe these in more detail under each of the five main themes:

Travel, transport and connection

Objectives

- Reduce the need for travel
- Increase walking, cycling and public transport use
- Shift the way we move goods
- Shift to fossil fuel free vehicles

Priority areas for action

- Develop the cycling and walking (active travel) support offer
- Lay the foundations for a travel offer that can compete for more journeys with the private car
- Post-pandemic public transport recovery
- Address EV charging provision equitably
- Sustainable Logistics

Energy, buildings and infrastructure

Objectives

- Use energy as efficiently as possible
- Shift to fossil fuel free heat
- Shift to fossil fuel free power
- Adopt technology for carbon capture and storage

Priority Areas for Action

- Develop support for home retrofit improvements
- Promote net zero climate ready standards for new developments
- Lay the foundation for developing local ultra-low carbon energy systems
- Increase local renewable energy investment
- Make provision for skills for the energy transition

Resources, consumption and wider impacts

Objectives

- Shift from a wasteful, 'throw away' economy to a circular one
- Adopt climate & nature friendly diets and food production systems
- Make climate and nature friendly decisions

Priority areas for Action

- Support to increase circular business practices
- Education and awareness on consumption, re-use and recycling
- Promote climate and nature friendly diets
- Promote sustainable food and local food production
- Encourage the supply of more sustainable goods and services

Resilience and nature

Objectives

- Understand local climate & ecological risks and vulnerability
- Prepare and adjust to change
- Bring nature into recovery and strengthen natural resilience
- Increase natural carbon capture & storage

Priority Areas for Action

- Develop a co-ordinated programme for climate adaptation
- Lobby government for investment in adaptation infrastructure
- Support business continuity and resilience
- Adopt nature-based solutions informed by natural capital audit
- Secure resources for interventions that deliver climate and nature recovery benefits including improving local natural carbon storage assets

Awareness, engagement & support for action

Objectives

- Raise climate awareness
- Engage people & organisations with local action
- Develop support where it is needed

Priority Areas for Action

- Communications programme
- Outreach and targeted support
- Create engagement infrastructure and mechanisms
- Promote training and the development of appropriate skills to support the changes needed

Travel, transport and connection

The way we connect, travel and make use of transport needs to change. Online communication will need to replace journeys. More of the journeys we make will need to be on foot, by bike and public transport. Vehicles fleets will need to shift to electricity and renewable fuels with charging and fuelling infrastructure in place to support this. More heavy freight will needs to move by rail and waterways. We will need to change our culture to reduce the dominance of cars. Our relationship with cars needs to transform.

Objectives

We must aim to	We will need to
Reduce the need for travel	• Make more use of information and communications technologies to eliminate unnecessary travel • Encourage roll-out of high speed internet connections to facilitate working remotely • Plan our communities and services to reduce the need to travel
Increase walking, cycling & public transport use	• Create an environment where walking and cycling is easier and safer • Make public transport more attractive • Change our relationship with cars, with more people accessing cars as a service when needed rather than through ownership or leasing
Shift the way we move goods	• Move more heavy freight by rail and waterways. • Make more 'last mile' deliveries by cargo bike, e-bike and electric vans
Shift to fossil fuel free vehicles	• Increase access to electric vehicles • Create the charging infrastructure needed to support electric vehicle adoption • Increase access to vehicles utilising hydrogen and biofuels where electric options are not available • Create the refuelling infrastructure and supply chains for hydrogen and biofuels from sustainable sources

Travel, transport and connection

Challenges

- Warrington has high car ownership and use
- Need to break the vicious cycle of driving short journeys where inactive travel can reinforce inactivity and so perpetuate car dependency
- The Borough's economic development and travel patterns are strongly linked to proximity to local motorways. Many employment sites are adjacent to the motorway including logistics companies using road haulage
- High car usage and Warrington's location with respect to the wider road network impacts on local air quality. The majority of Warrington meets national pollution objectives but there are areas close to major roads that remain of concern.
- There are several different public transport operators, and cross-boundary travel (e.g. from Manchester and Liverpool), so services and tickets may not 'join up'.
- Bus patronage has fallen over time made worse by the pandemic. Services have needed support to continue
- Local power grid capacity is already limited in parts of Warrington. This can restrict opportunities to provide vehicle charging infrastructure
- There are limited options for electric and alternative fuelled heavier vehicles
- Investment in greenways for walking and cycling are not always matched with revenue resources for maintenance

Local activity and opportunities

- The pandemic has accelerated the uptake of information and communication technologies. This has helped to limit travel with the wider adoption of video conferencing and home and flexible working
- The pandemic boosted local walking and cycling
- The Borough is relatively flat, connects to the national cycle network, and has a number of traffic-free greenways.
- Investment has been secured for a new town centre cycle hub
- The main bus service operator Warrington's Own Buses is still owned locally and operates the majority of local bus services
- Funding has been secured to replace Warrington's Own Buses entire fleet with electric buses
- Funding has been secured for bus priority improvements and service improvements through a Bus Service Improvement Plan
- Warrington Borough Council has an up to date Local Transport Plan (LTP4), a Walking and Cycling Infrastructure Plan, and First and Last Mile Transport Masterplan
- Warrington Borough Council has consulted on a draft electric vehicle strategy and has several electric vehicle charging pilot projects in place
- A 'car club' has been launched, initially utilising two electric vehicles based in the town centre
- Scottish Power Energy Networks has developed an interactive map under the 'connect more' electric vehicle innovation project
- Through the REWIRE NW project, various innovations to enable smarter uptake of electric vehicles are under investigation
- Warrington has good rail connections
- Warrington is served by port facilities on the Manchester Ship canal
- Warrington Borough Council has an Air Quality Action Plan that sets out measures to improve pollution levels

Travel, transport and connection

Priority areas for action

Priority area for action	Why early action matters
Develop the local cycling and walking (active travel) support offer	Active travel (walking and cycling) are relatively low cost modes of transport within reach of a wide section of the community and well suited to shorter journeys. Increased active travel will deliver many 'co-benefits' including contributing to positive health outcomes. Cycle commuting levels in Warrington are slightly below the national average. The dominance of the car and lack of priority for cyclists in key areas can make cycling unappealing. Concerns over safety deter inexperienced cyclists. A lack of facilities at journey's end also put potential cyclists off. Work is underway to improve the cycle network. There is a parallel need to improve facilities, and to support those of us who want to return to cycling but lack confidence. Current support is most well developed for young people in schools. There are also fully funded family and adult 1-2-1 training courses available, as well as led rides, but these have had poor take-up. There is a need to raise awareness of and improve the offer in the wider community to help more of us return to cycling who might otherwise lack confidence and experience. There is also a need to improve facilities in workplaces and at destinations for pedestrians and cyclists. Plans for a new cycle hub present a major opportunity to support the wider uptake of cycling and develop the local cycling support offer including more secure parking in the town centre, a bike hire scheme and maintenance workshops.
Lay the foundations for a joined up alternative travel offer that can compete for more journeys with the private car	Not all of us drive, yet cars dominate private travel. Reducing the dominance of car will deliver many benefits including improved air quality and safety. These co-benefits need promoting. To realise them, we need a compelling alternative offer. Work is underway to improve various services and infrastructure, but even with improvements, single modes of transport cannot always compete alone. Improvements in services and facilities matter, but so does integration between them. There has been progress integrating physical infrastructure, e.g., cycle parking and taxi ranks at train stations. However, whilst physical interchange needs to be as seamless as possible, so does timetabling, ticketing and the way we access and promote services. For example, combining public transport passes with access to car club cars, or taxis. The regulatory system and competing interests can be a barrier for co-operation and co-ordination. We can enhance the attractiveness of the alternative transport offer where there is an access advantage, or a deterrence for private car use.
Post-pandemic public transport recovery	Improved low carbon public transport must be a part in the future transport mix. Unfortunately, the pandemic has had an impact on patronage that undermines the viability of services. The number of us choosing to travel by bus in Warrington reduced significantly in recent years prior to levelling off in 2016/17, and then showed small increases until the Covid-19 pandemic.

Travel, transport and connection

Priority area for action	Why early action matters
Post-pandemic public transport recovery	During the pandemic patronage dropped as low as 20% of its expected level. There are some significant investments in public transport in the pipeline. Funding is in place to replace Warrington's Own Buses' entire diesel fleet with electric buses. Government funding is also in place for bus service improvements and more bus priority measures to improve journey time and reliability. We need to ensure public transport recovers so that it can play its part in de-carbonising travel and is more competitive on cost and convenience
Address EV charging demand equitably	Whilst we need to rebalance transport, car use is still likely to be significant. We will not be able to buy new traditionally fuelled cars and vans by the end of the decade. The number of electric and plug in hybrid cars and vans is still low but rising rapidly. The availability of suitable charging infrastructure is critical to support this growth and bring vehicle costs down. In Warrington, some destination charging is already in place, e.g. 56 charging points at Time Square car park and 12 at Warrington West station. Unlike refuelling vehicles, re-charging can take place relatively cheaply at home, but only for those of us with private parking in proximity to a suitable power supply. Charging facilities for those of us who need to use cars but have no off-road parking will need to be developed to avoid disparities in uptake. A pilot project has seen 30 chargers installed on streets close to the town centre, but there is a need for much wider provision. Often there are charging needs in areas with limited power grid capacity where there is less commercial interest in providing it. We need to find ways to ensure investment in the equitable provision of charging infrastructure. We also need to ensure that such provision does not make it harder to walk, cycle or access public transport or divert resources away from these means of transport
Sustainable logistics	Warrington's geographic position and proximity to strategic transport infrastructure means that logistics and freight play a key role in the local and wider economy. Changing shopping habits have meant a greater amount of local delivery traffic too. The borough is well served by motorways meaning large amounts of freight move through the borough. This contributes to transport being a significant element in our local emissions profile. There are opportunities for more freight to move via the Manchester Ship Canal and local rail infrastructure, but it is likely that much will still move via roads. Diesel fuelled heavy vehicles dominate haulage fleets with limited electric or alternative fuelled vehicle opportunities currently on the market. This makes full decarbonisation challenging at present. We must reduce the impact of freight through more efficient operations and vehicles now, whilst simultaneously seeking to develop alternative vehicles to meet future needs. The growth in local delivery traffic creates an opportunity for the wider use of cargo bikes, e-bikes and electric vans.

Energy, buildings and infrastructure

The way we use and get our energy will need to change radically. To reduce demand for energy, we must adopt energy efficient practices and devices and improve the energy efficiency of local buildings and industrial processes. We will need to get our heat and power from clean sources and upgrade local infrastructure to enable this. Where local industrial processes cannot take place without fossil fuels, we will need to use carbon capture and storage (CCS).

Objectives

We must aim to	We will need to
Use energy as efficiently as possible	• Upgrade buildings to use less heat and power • Build new buildings to suitable 'future proof' standards • Change processes, equipment and behaviours • Develop a smarter local energy system
Shift to fossil fuel free heat	• Expand the use of heat pumps and solar energy • Upgrade the power network to enable more electric heating • Develop heat networks to deliver heat in urban areas • Use bio-gas and/or hydrogen in place of natural gas • Build connections with hydrogen facilities in the wider region
Shift to fossil fuel free power	• Expand local renewable energy generation and storage • Upgrade the power network to enable more local generation • Secure renewable and nuclear power from elsewhere to meet local needs (whilst ensuring it does not detrimentally affect the environment at the point of generation)
Adopt technology for carbon capture & storage	• Ensure any 'difficult to decarbonise' industrial processes locally take advantage of emerging carbon capture and storage technologies and infrastructure in the wider region

Energy, buildings and infrastructure

Challenges

- National building regulations set minimum standards that aren't yet good enough - many new properties will still need upgrading
- Initial costs for building retrofit and new heating systems are a barrier to adoption
- There is limited familiarity with some energy efficiency solutions and new heating technologies
- Heat used in industrial processes from burning gas is not always easy to switch to electricity
- The number of homes being improved through funded retrofit programmes in Warrington is not enough
- There aren't enough people with the right skills in the local workforce to do the work on the scale needed
- Grid capacity is already limited in parts of Warrington and the regulatory system can limit pre-emptive investment to improve it
- Current rules and regulations make it difficult to introduce innovations to enable the local energy system to operate more smartly
- National planning policies can limit opportunities for renewable energy developments
- A buoyant local economy impacts the cost of land for renewable energy developments
- Industrial carbon capture and storage solutions are in their infancy and do not exist at scale

Local activity and opportunities

- The cost of living crisis has focussed attention on energy efficiency
- The Fiddlers Ferry coal fired power station closed in 2020
- Local housing company Incrementum is already building homes to the future homes (2025) standard. The homes being built have higher energy efficiency and make use of heat pumps, solar panels and battery storage
- Through the Rewire NW innovation Project, Warrington has become a virtual test bed for exploring the development of a smart local energy system. Future solutions are being explored using a 'digital twin' of the Borough
- Warrington and Vale Royal College is progressing a new Advanced Construction and Civil Engineering Centre to assist the construction industry to build smart, green and efficient buildings faster, cheaper and more sustainably
- Funding has been secured to explore the feasibility of developing heat networks to serve the centre of Warrington
- Scottish Power Energy Networks has been awarded green recovery funding by Ofgem allowing it to bring forward investment to improve power capacity in the centre of Warrington
- Lymm Community Energy is exploring the feasibility of a local community owned solar farm
- Warrington Borough Council owns substantial solar generation assets, although most are outside the borough
- National policy favours building new nuclear power stations including the prospect of small modular reactors. Warrington has a high concentration of businesses with nuclear expertise
- Cheshire has become the centre of an industrial decarbonisation cluster to combine hydrogen production and carbon capture and storage through the Hynet initiative and related projects

Energy, buildings and infrastructure

Priority areas for action

Priority area for action	Why early action matters
Develop support for home retrofit improvements	Without steps to reduce demand for energy, some of the wider changes we need will be more difficult and costly. Improving energy efficiency is even more urgent in the face of the cost of living crisis. Improving homes can deliver many co-benefits, such as improving health, tackling fuel poverty, and limiting exposure to energy price rises. We need to understand the scale, nature and cost of retrofitting homes better. This will help make clear the investment needed and the opportunity this presents. We also need to ensure there are enough people skilled to do the work. Those of us who are home-owners or landlords often do not know where to start to improve our properties.
Promote net zero climate ready standards for new developments	Building standards delivered by the market currently do not address the climate emergency sufficiently. We need to make better building standards the norm and ensure there are enough local skills to deliver them. Buildings built to current minimum standards cost more to run and may need costly future retrofit work. It makes more sense to build to higher standards now so we avoid these costs. We not only need to have highly energy efficient buildings, utilising low carbon heat and power, but we need buildings fit for the future able to cope with higher temperatures, longer dry spells, storms and intense rainfall events that harness nature for this resilience, e.g. green roofs and walls and SUDs. When planning for new development, we must recognise that some undeveloped land can perform many functions, such as for wildlife, recreation, flood risk mitigation, cooling/shading, carbon storage or food production. New buildings must also be located appropriately, avoiding natural carbon stores such as peatlands or woodlands, outside of existing and future flood risk zones and away from the best and most versatile agricultural land.
Lay the foundation for developing local ultra-low carbon energy systems	We need to develop new energy infrastructure. We also need to find ways to use existing infrastructure differently to ensure it can meet future needs. As we connect more clean energy generation and shift to electrify heat and transport, our power distribution networks will need to change. There is a need to increase capacity alongside measures to manage the system in a smarter way. If low carbon heat networks are to meet more of our future space heating needs, we need to make the case to secure investment to create them. We also need to ensure policies are in place to ensure buildings connect to them and skills are in place to create and maintain them.
Increase local renewable energy investment	Warrington has seen numerous renewable energy installations, including solar photovoltaic panels installed on homes and commercial roofs, but there is scope and a need for considerably more. We need to better understand and promote these opportunities and overcome barriers to renewable energy adoption. The local plan already seeks to encourage developments that utilise

Energy, buildings and infrastructure

Priority areas for action

Priority area for action	Why early action matters
Increase local renewable energy investment	decentralised renewable and low carbon energy, but policies, land prices, and grid capacity issues can limit viable investment opportunities. Warrington has local expertise that presents an opportunity to increase investment. There are active community energy groups with established community owned projects and new proposals in the pipeline (e.g. Lymm Community Energy). The council owns several solar farms and has pioneered Community Municipal Investment to raise funds for these.
Make provision for skills for the energy transition	The transformation of the energy system and our buildings and infrastructure creates a huge opportunity for economic activity, but we need to ensure we have the right skills available to meet local demand. Without adequate provision, there will likely be supply bottlenecks that will slow progress and raise costs. There is a need for skills in building retrofit, heat pumps and renewable energy generation.

Resources, Consumption & Wider Impacts

We need to shift from a wasteful high consumption 'throw away' economy, to a more circular and sustainable one. Our relationship with the products we use must change, as well as the nature of the products themselves. We need to ensure more value is retained for longer with better durability, opportunities for repair, re-manufacture and re-use. That which can no longer be reused, should be recycled or re-processed, not cast off as 'waste' to landfill or for incineration.

Our food production systems also need to be sustainable. They need to use fewer inputs so that we can restore soil health and biodiversity. Our diets need to shift to healthier ones. We need to eat less meat and less dairy and enjoy more local and seasonal produce. Systems need to be in place to make use of our biological and food wastes for biogas energy, fertilisers and biochemical feedstocks. We need to think about the environmental consequences of our decisions and introduce policies and processes to limit negative impacts elsewhere.

Objectives

We must aim to	We will need to
Shift from a wasteful, 'throw away' economy to a circular one	• Design out waste • Increase remanufacture and reprocessing • Increase re-use • Increase recycling • Create opportunities to loan equipment and repair goods • Encourage new 'circular' businesses and circular business practices
Adopt climate & nature friendly diets & food production systems	• Raise awareness about the climate and ecological impacts of our diets • Encourage less 'meat heavy' menus and promote more local, seasonal and meat-free and dairy-free food choices • Shift to sustainable low carbon farming practices with lower emissions, enhanced biodiversity and improved natural connectivity • Adopt vertical farming methods to reduce land usage • Create opportunities to expand personal and community food growing
Make climate & nature friendly decisions	• Consider the climate and nature implications of our decisions • Adopt policies and use robust standards to guide action • Use investment power to influence decisions and move money away from investments in fossil fuel exploitation and environmentally damaging activities • Raise awareness of key products that cause significant environmental damage here and elsewhere, e.g. peat and palm oil

Resources, Consumption & Wider Impacts

Challenges

- The focus has traditionally been on the 'downstream' management of "waste" and the role of consumers, rather than the 'upstream' responsibility of producers to help conserve resources
- We are bombarded daily with adverts designed to encourage us to consume. Some business models are driven by 'built in obsolescence' or 'fast fashion'
- We have a limited understanding of raw material inputs and 'waste' resource outputs in the local economy. It is therefore difficult for us to spot opportunities to substitute imported raw materials with materials already available locally but currently 'wasted'
- A limited range of materials is currently collected for recycling locally
- There is no collection for reprocessing residential food waste
- The UK has relatively high meat consumption with some of us eating above the recommended intake for both health and environmental criteria
- Agricultural practices can result in damage to soils and to the wider natural environment, impacting biodiversity and natural carbon stores
- Government initiatives to support the financial viability of improving our agricultural sector are in their infancy
- Allotment provision is over-subscribed, with substantial waiting lists on Warrington Borough Council, Parish Council and privately owned sites.
- There is limited opportunity to expand allotment provision on Council land as much of the new town landscape was created from brown field or reclaimed sites where land quality / contamination issues present challenges for food production.
- It's easier to measure our direct impacts in terms of gas, electricity and fuel use, but indirect impacts can often be greater through the goods and services we buy and the investments we make

Local activity and opportunities

- The Government's intent to introduce eco design standards and extend producer responsibility for packaging should help us to limit waste upstream
- Government proposals to tax plastic packaging with less than 30% recycled content should help increase markets for reprocessed plastic
- The Government's intention to require recycling collections to adopt a consistent set of dry recyclable materials across England should help increase recycling rates
- Government proposals to introduce regular food waste collection for households and related businesses should drive investment in reprocessing facilities
- Whilst average UK meat consumption is high, it is falling. Alongside an increase in vegetarian and vegan diets, there are also shifts in the quantity and type of meat being consumed with a shift away from red and processed meats
- Government initiatives to support the financial viability of improving our agricultural sector are being introduced such as Environmental Land Management Schemes and Biodiversity Net Gain
- There are opportunities for us to learn from existing sustainable agriculture and land management initiatives in the sub-region

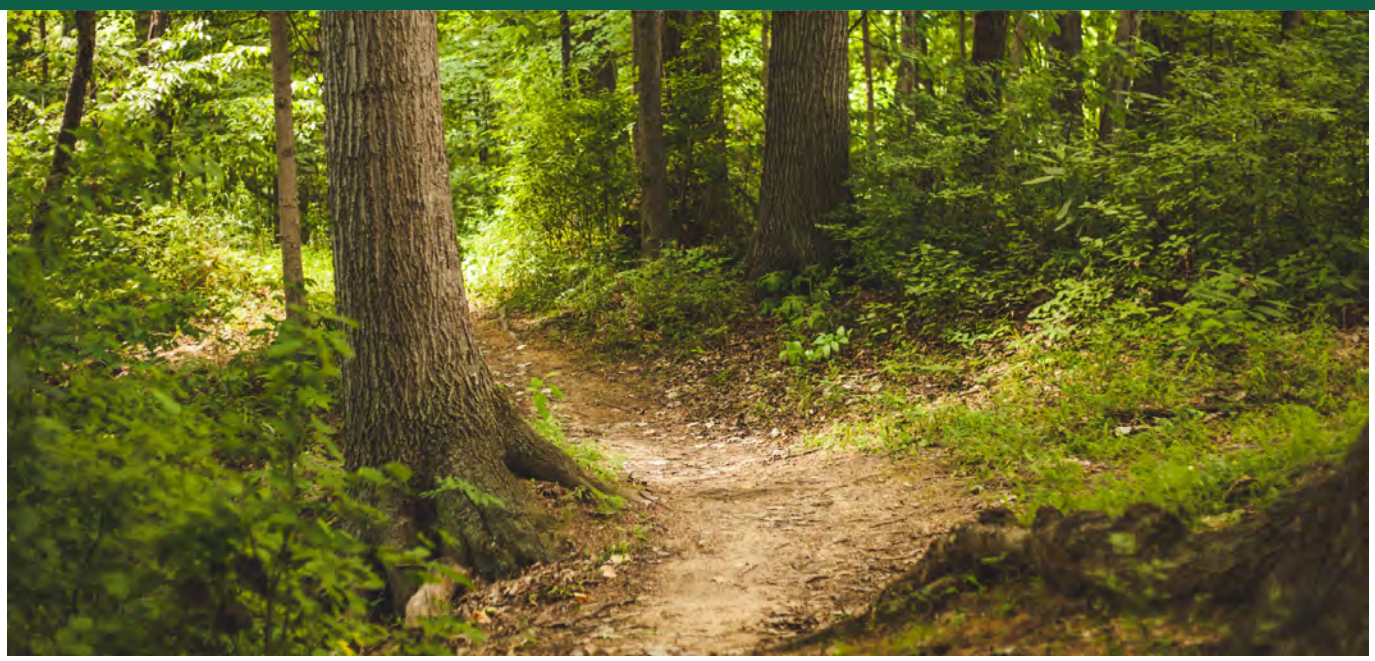
Priority areas for action

Priority area for action	Why early action matters
Support to increase circular business practices	If we are to address the 'waste' problem upstream, we need to support the development of a more circular resource efficient economy. The creation of a resource efficient economy will rely in part on new businesses and services, e.g., reprocessing facilities for a wider range of residual materials including food and biological wastes, new loan and hire services, repair services, and refill shops. It will also need the wider adoption of 'circular' practices and business models by existing businesses, e.g. designing out waste, adopting remanufacture and refurbishment, and the substitution of raw materials with reprocessed ones. Some opportunities will be community-based and driven, for example, tool 'libraries', 'repair cafes' and 'maker spaces'. There is a need to raise awareness about the circular economy, and promote resource efficiency and circular practices. There is also a need to identify local routes for reprocessing resources currently wasted, alongside opportunities to link material inputs and outputs between local businesses.
Education and awareness on consumption, reuse and recycling.	The opportunity to recycle is a key 'point of entry' into a more resource efficient economy for many of us. We can make an early impact by increasing participation in existing recycling services as well as promoting the use of existing opportunities to re-use and eliminate waste. Targeted messages can help where there are different levels of recycling activity in different parts of Warrington. There is a need to prepare for the measures to come in under the Waste and Environment Act. This will bring a shift in attention to more 'up stream' interventions. It will require action from our businesses and so require much wider engagement. Another 'point of entry' to the wider sustainable economy is by considering how our own consumption patterns need to change. In an economic system largely driven by consumption where what we consume can become a key part of our identity, this may be challenging.
Promote climate and nature friendly diets	Our diets affect health, climate and the natural world so changes in diet present opportunities for both personal and planetary health. Food has a significant impact on climate. To meet net zero emissions, most scenarios envisage a shift in diets to reduce meat consumption – particularly red meat – along with a reduction in dairy. Promoting more climate friendly diets is currently going with the grain of national changes in diet, so presents a good opportunity for progress. However, influencing diets is complex. Various factors influence our dietary patterns including our culture, religion, income, upbringing, food skills and access to food preparation equipment. They are also influenced by our access to food shops, catering services, take-away outlets and restaurants, or opportunities to 'grow our own'. With the current cost of living crisis, many more of us face a struggle to make ends meet, without support. This complexity means there is no simple 'one size fits' all intervention on food, but multiple opportunities for engagement.

Priority areas for action

Priority area for action	Why early action matters
Promote sustainable food and local food production	Intensive use of farmland, artificial fertilisers, pesticides, and heavy machinery, alongside poor management of farm wastes, damages biodiversity, pollutes the wider environment, and exacerbates the climate crisis. We need more sustainable regenerative agriculture that recognises the importance biodiversity and soil health for long-term food production and for natural storage of carbon. Our farms need to change to more sustainable land management practices and restore, expand, enhance and protect existing and degraded semi-natural habitats in order to improve connectivity at the landscape scale. New Government initiatives are being introduced to support farmers and landowners with the financial viability of this change. We also need to shift to renewable energy and the processing of farm wastes into soil improvers and biogas. Wider climate instability also undermines the security of our food supply. This underlines the importance of local food production including food from local farms, allotments and grown at home.
Encourage the supply of more sustainable goods and services	We need to recognise that our carbon and ecological footprint often extends beyond the locality. Taking climate and nature action at home whilst simultaneously consuming products that create problems elsewhere fundamentally undermine our own efforts. We must ensure that we do not transfer environmental damage elsewhere through our lifestyles. Palm oil, peat compost and sustainable forestry products offer examples of things we need to be mindful of when making consumer choices. We need to harness the collective buying power of our businesses and households to encourage the supply of more sustainable goods and services. This can help us to begin to address some of the indirect impacts associated with our activities. Our organisations need to raise sustainability issues and climate concerns in conversations with suppliers, or seek supplies that already meet higher standards. In our role as consumers, many of us can also have an influence through the choices we make. We can also exert pressure through how invest our money.

Resilience & Nature



We need to raise awareness about the impacts of climate change and decline in biodiversity so that more of us understand local risks and vulnerabilities and take steps to limit them. We will need to adapt buildings and infrastructure to make them more resilient to overheating and flooding. We need to use water efficiently in the face of longer dry spells. We need to plan for business and service continuity and build resilience in our communities so that we can better cope with weather disruption and wider 'shocks' to the system such as disruption to food production and supply chains.

We need to recognise that the climate crisis is closely linked with the unfolding ecological emergency too, and take steps to bring nature back into recovery. Nature-based solutions and natural assets can help address some climate impacts by providing cooling, shade and flood prevention. They can also capture and store carbon. To protect and increase natural carbon storage, agriculture and land management practices will need to change to improve soil health, help restore peat habitats and increase tree cover.

Objectives

We must aim to	We will need to
Understand local climate & ecological risks and vulnerability	• Increase awareness about changes in the local climate and the decline in local biodiversity • Assess risks and vulnerabilities, and opportunities to mitigate and reverse damage • Increase awareness about the benefits of preparing for change and the tools to do so
Prepare and adjust to change	• Upgrade critical physical infrastructure and adapt buildings • Plan for business and service continuity • Plan to address the health impacts of a changing climate including preparations for diseases not previous associated with our climate and the physiological impacts, e.g. heat stress • Build community resilience • Use water more efficiently

Resilience & Nature

Objectives

We must aim to	We will need to
Bring nature into recovery and strengthen natural resilience	• Promote local nature recovery through our policies and practices • Protect, enhance, maintain, expand and connect natural assets • Increase 'green and blue infrastructure' harnessing its benefits for shading, cooling, flood regulation, and healthy active transport routes • Promote Sustainable Urban Drainage Systems (SUDS) • Increase urban green space and the use of green roofs and walls
Increase natural carbon capture & storage	• Raise awareness about the importance of nature and local habitats for carbon capture and storage (CCS) • Identify the potential to increase natural CCS • Modify farming and land use management practices to increase natural CCS • Value local natural carbon storage assets such as peatland and woodland habitats and put in place arrangements to improve and manage them

Challenges

- Several watercourses expose the town to both tidal and river flooding. These include the Mersey and its five key tributaries
- Storm conditions already lead to major disruptions e.g. in high winds the M6 Thelwall viaduct may close leading to high levels of congestion through the town as traffic diverts
- Urban drainage systems were overwhelmed by recent storm activity with flooding of roads and houses; notably Storm Christoph in January 2021 where prolonged rainfall led to more than one hundred homes being evacuated
- The majority of Warrington is built on a floodplain, lying between 5 and 12 metres above sea level
- National planning regulations do not yet require stringent enough climate adaptation measures, e.g. maximising opportunities for building heating and cooling or the delivery of Sustainable Urban Drainage systems
- Responsibility for different aspects of climate-related resilience fall to different parties. There is no overall responsibility for the local co-ordination of climate adaptation and no clear picture of current preparedness
- The link between biodiversity decline and climate change is not widely recognised
- There is limited local capacity and co-ordination on ecological matters
- Many of the locally designated nature sites across Warrington are likely to be in an unfavourable condition
- A recent 'natural capital' audit indicates that emissions from agriculture are greater than those taken up by vegetation in the Borough
- Much public land and parkland is already extensively planted limiting opportunities for woodland creation
- Finance is often limited for the long term maintenance of natural assets
- Simply 'planting trees' is too simplistic a response, they need to be the right type of tree in the right place with proper regard and resources for their long term management
- Degraded peat habitats release carbon
- Existing opportunities for nature-based solutions to climate change are limited, accredited carbon offsetting schemes are still developing and land available for new schemes will be a limiting factor
- Space for nature must compete with space for agriculture (food security) and space for development (housing crisis)

Resilience & Nature

Local activity and opportunities

- Woolston Eyes and Rixton Clay Pits are designated Sites of Special Scientific Interest (SSSI) for their respective wetland habitats and protection of Great Crested Newts
- Peat bog restoration at SSSIs Risley Moss and Holcroft Moss demonstrate best practice and are extremely valuable for natural carbon capture and storage and providing habitat to protected species
- Warrington has four Local Nature Reserves (LNRs) and 55 Local Wildlife Sites (LWSs), as well as two Regionally Important Geological Sites (RIGs) identified for their indigenous woodland species
- Warrington has a good proportion of the three most prolific natural carbon storing habitats according to current scientific understanding: Woodland, peatland, and saltmarsh.
- The Mersey Forest programme forms a network of woodlands across Cheshire and Merseyside, improving habitat, biodiversity and offering mitigation and adaptation against climate change through carbon capture, reducing heat stress and aiding flood prevention
- A number of green links and corridors connect the Borough e.g. Sankey Valley and Mersey Valley, providing opportunities for increasing connectivity. The River Mersey Valley Corridor represents a significant opportunity to locate green infrastructure strategically to address both the climate and ecological crises in tandem.
- The Environment Agency have built several flood defences, mostly along the banks of the River Mersey, while the Ship Canal is an effective bypass for floodwater from the main river
- Natural assets in Warrington have high value for recreation and physical health
- The emerging Local Plan seeks to limit development within 8 metres of the banks of a watercourse or flood defence.
- National legislation will also bring in a requirement for biodiversity net gain
- A recent Cheshire and Warrington Natural Capital Audit identified opportunity areas within the Borough with the widest variety of ecosystem service benefits, e.g. biodiversity enhancement, regulating water flow, regulating climate, creating new habitat
- Warrington is part of the evolving Local Nature Recovery Strategy for Cheshire that aims to inform nature recovery across the area, highlighting opportunities for nature-based solutions to climate change.
- Some Government funding is available for developing nature-based solutions to climate change such as tree planting and peatland restoration.
- There are opportunities for investment into local carbon offsetting schemes including to enhance and expand existing woodlands and peatlands for registration into the national carbon woodland and peatland codes. Warrington has significant areas of degraded peat and peatland restoration provides very high value for money green infrastructure improvement
- Warrington Museum & Art Gallery have secured funding to develop a green roof on an area of the Golden Square multi-story car park

Resilience & Nature

Priority areas for action

Priority area for action	Why early action matters
Develop a co-ordinated programme for climate adaptation	Climate adaptation has often played a secondary role to reducing emissions. With climate disruption already 'locked' in there is a need for us to give adaptation greater attention. Whilst some aspects are covered by statute, even this work is fragmented across different organisations so we lack a clear picture. We must build a better understanding of the risks we face locally and where our vulnerabilities lie. This will help us to develop a more co-ordinated programme. Whilst we need to ensure there are arrangements in place to respond to emergencies, we also need to adapt and build resilience so that such emergencies are less likely. All of us have a role in adaptation. We must encourage behavioural change so that more of us take action to develop resilience in our homes and businesses. Our adaptation response needs to be inclusive so that no one is left behind. Some of us will need support. Whilst we need to prepare for extreme weather events, we also need to prepare for wider change. New climate patterns will affect health including the spread of diseases as well as wider pressures e.g. disruptions to food supply.
Lobby government for investment in adaptation infrastructure	Some aspects of adaptation need backing from central government and other key stakeholders. We must upgrade buildings and infrastructure to secure long-term resilience to overheating and flooding. This will require investment to ensure continuity of critical infrastructure and greater use of nature based solutions. We need to make the case for the provision of appropriate resources to adapt to changing conditions. By doing so we can help protect our communities and our businesses vulnerable to the impacts of extreme weather events.
Support business continuity and resilience	Changes in weather patterns can affect our lives and livelihoods. Not all us who run local businesses are aware of how we might be affected, or how we might experience the knock-on effects of wider disruptions. Our businesses need support to ensure they are equipped to cope with instability and are less vulnerable to volatility in supply chains. Our local businesses need to come together and support each other through this work, having a platform to share good practice and effective action. Our local services should be able to operate uninterrupted when faced with the pressures of climate change through forward planning to increase resilience.
Adopt nature-based solutions informed by natural capital audit	Nature is under threat. We cannot take the beneficial services it provides for granted. These include carbon capture and storage, flood resilience and cooling, all helpful to our climate response. We need to invest in natural assets and their upkeep to secure these benefits. The recent natural capital audit records local opportunities. To realise the opportunities local policies and practice should prioritise them. Urban green space and tree cover should be maximised to help drainage, urban cooling, air and water quality, and increase biodiversity. Sustainable urban drainage systems (SUDs) should reduce reliance on the hard drainage system. Local planning policy, and development and infrastructure decisions are key to the

Resilience & Nature

Priority areas for action

Priority area for action	Why early action matters
Adopt nature-based solutions informed by natural capital audit	protection and enhancement of existing natural assets and the creation and maintenance of new ones. We also need to change the way we finance natural infrastructure to ensure we can maintain it in perpetuity.
Secure resources for work that delivers climate and nature recovery benefits including developing local natural carbon storage assets	The climate and ecological emergencies go hand in hand. Our response should too. Resources are currently limited yet the scope for action is significant. We need to accelerate the uptake of good practice across agricultural and land management, with a wider 'pipeline' of projects along with the resources to progress them. This work should include efforts to restore soil health and re-wild degraded farmland, and efforts to protect and enhance existing habitats not just those of designated importance. Amongst local habitats, we need to prevent further loss and degradation to woodlands, peatlands and saltmarsh to avoid releasing carbon, and to take action to expand woodland and saltmarsh coverage and rewet our peatlands. Here, there is an opportunity to show case peat restoration work at Risley Moss as an exemplar of good practice of wider significance. With the introduction of Local Nature Recovery Strategies and Biodiversity Net Gain requirements, businesses will increasingly need to invest in nature. Emerging agri-environment advice and funding schemes will also likely drive change in agricultural practice. Codes for natural offsetting may provide an opportunity to secure longer term investment in peatland and woodland management. Government funding exists for woodland planting and peatland restoration.

Awareness, Engagement & Support for Action

Whilst there is general awareness about climate change and support for action to address it, this does not yet translate into local action of the scale and nature needed to address the crisis. The lion's share of emissions reductions so far have been driven by wider changes in the way we generate electricity. Future progress will depend on more direct involvement and behaviour change locally. To this end, we need to raise awareness and encourage direct engagement. We need to see more organisations and households translate concern into appropriate action. This will also require more support for action in recognition that not everyone is in a position to act, or that help may be needed to overcome initial barriers to early adoption of some technologies and processes. This theme underpins work across the strategy with wider engagement being a fundamental step in driving wider change.

Objectives

We must aim to	We will need to
Raise climate awareness	• Raise profile of the climate crisis • Make the climate story relevant to people and organisations in Warrington • Ensure more of us are 'carbon literate' with an understanding of what the climate crisis means for us and our activities with access to specialist training where needed.
Engage people & organisations with local action	• Develop routes for engaging different sectors, e.g. businesses, schools, community and voluntary sector organisations, and places of worship, as well as individuals and households
Develop support where it is needed	• Secure investment to support local initiatives • Signpost to existing advice and support, and identify and seek to fill any gaps where advice and support may be needed

Awareness, Engagement & Support for Action

Challenges

- The climate 'story' must compete for our attention with many other issues and 'messages'.
- Many of the messages and influences we are exposed to promote behaviours that are at odds with what we need to do, for example, promoting high levels of consumption and associating such consumption with our happiness or success.
- Our behaviours are influenced in many ways. Campaigns based on a 'deficit model' simply filling assumed gaps in our knowledge have not proven to be successful.
- The way the climate story has been communicated can make us think it's a problem elsewhere, or a problem only future generations will face, when in reality its 'here and now' issue that's already impacting families and businesses in Warrington
- The nature of the climate story can be overwhelming. It can trigger fear, despondency, anger and denial. Many of us simply 'switch off' expecting others in positions of greater power will sort the problem out.
- There is often a mismatch between the scale of the crisis and some of the simple solutions promoted in response. This can lead some to think they are already doing enough, and others to question the point of such actions altogether.
- Warrington does not currently have a clear route for people and organisations to get involved in local efforts to respond to the climate crisis or to access support
- Some support for climate action is available, but this support is not always widely known about, or may be time limited, or targeted at particular groups or places. Some financial support is subject to competition with other areas. Accessing this may require prior work for which funding is not available.

Local activity and opportunities

- There is evidence[6] of wider local interest in addressing the climate challenge and a willingness for people and organisations to share knowledge and experience to help each other when doing so
- There are active local groups and campaigns promoting engagement in climate-related issues, for example, Low Carbon Lymm and the Warrington Climate and Ecological Emergency Bill Alliance
- There is a wealth of research and information on climate communications and behavioural insights to inform potential interventions to raise awareness and encourage action
- Several local organisations are actively promoting 'Carbon Literacy' training including Warrington Borough Council, the Environment Agency and the University of Chester
- The Diocese of Liverpool is undertaking Net Zero and Eco Church work
- Some schools have engaged with the eco schools programme and Lets Go Zero campaign
- The Climate Emergency Commission now has some of the foundations in place upon which to raise the profile of local climate work with a web page www.warringtonclimatecommission.org.uk and some social media channels
- A local climate pledge campaign has been launched

[6]See for example the report on the public consultation available via www.warringtonclimatecommission.org.uk

Priority areas for action

Priority area for action	Why early action matters
Communications programme	This strategy will count for little if only a few of us know about it. We need a wider communications programme to raise awareness about it and local climate matters more generally. We need to communicate the strategy in different ways to reach different audiences, online, in print and face-to-face through events, talks, art and cultural activities. Various existing local organisations have an interest in communicating climate issues. To make a bigger impact it makes sense to co-ordinate this effort so we are reinforcing each other's messages and sharing the effort and cost. We need the communications programme to be informed by the latest research and behavioural insights to have the best chance of success.
Outreach and targeted support	To translate the strategy into action in different contexts we need to reach out to different sectors and connect interests within them. Some of us will already be progressing work. Some of us have yet to start. Helping us connect and find relevant support for each of our sectors should help us make progress and provide an opportunity to learn from each other.
Create engagement infrastructure/ mechanisms	The Climate Emergency Commission in an advisory panel only with a limited size. Wider engagement is important to the success of the strategy but the commission is not set up as an open membership forum for interested parties to join. There needs to be a wider 'engagement infrastructure' so more can connect with the process and have opportunities to share experiences to help progress the strategy. It is important that we create mechanisms that are fit for purpose, not overly complex or bureaucratic. The focus needs to be on engagement around action and progress.
Promote training and the development of appropriate skills to support the changes needed	Many issues relating to climate, nature and sustainability are complex and often require expert input. We will need to develop training and skills in different sectors across Warrington so we have the right input at the right time. In this way we can help ensure we are taking appropriate action and can avoid ineffective or, worse still, counterproductive actions (e.g. planting trees on peatlands resulting in more CO_2 being emitted through the drying of the peat than will be stored in the trees).

Mechanisms to drive progress

The Warrington Climate Emergency Commission have been tasked with developing this strategy and helping to drive its progress. To help drive it forward, the commission will:

- Act as an advisory forum to help encourage and co-ordinate local action
- Provide a conduit to share information and signpost support via a website, social media channels and directly
- Promote the production of action plans in support of the strategy
- Help organise a wider public climate emergency forum to encourage wider participation
- Help arrange representative citizen assemblies or panels when needed to consider further development of the climate strategy particularly in areas where progress is slow or controversial
- Encourage sharing of experience
- Help gather and present data on progress and the barriers and risks to progress
- Produce annual progress reports, through which the strategy is reviewed and revised, and make these reports available publicly and via Warrington Borough Council.
- Advise Warrington Borough Council on its climate emergency response in support of this strategy

From priority areas to priority action

From priority areas to priority action

Here we set out anticipated interventions, stakeholders and indicative time frames ('Short' - First year; 'Medium' - second to fourth year; 'Long' - fifth year onwards)

Priority Area	Key stakeholders	Anticipated Interventions	Time frame
Develop the local cycling and walking (Active Travel) support offer	• Warrington Borough Council • Local business • Large employment sites • Schools and education providers • Shopping centre managers • Visitor attractions • Cycle shops • Sustrans and other cycle support bodies • Cyclists • Pedestrians	• Site active travel audits • Site active travel improvements • Open a Town Centre Cycle Hub • Promote 'return to cycling' or 'starting cycling' support and training offer for adults • Launch a bike hire scheme • Continue to promote cycling to work and school by offering maintenance sessions, training and cycle2work schemes. • Stimulate a cultural and behavioural change by regular positive messaging	Ongoing Ongoing Medium Ongoing Short – medium Ongoing Ongoing
Lay the foundations for a joined up alternative travel offer that can compete for more journeys with the private car	• Warrington Borough Council • Bus operators • National Rail • Train Operators • Car clubs • Taxi operators • Employers	• Bring key interests together • Identify initial opportunities for co-promotion of services • Identify barriers to better coordination • Highlight barriers with appropriate bodies • Develop a joined up alternative travel offer • Increase geographic coverage of car clubs based on evidence of need	Short Medium Medium Medium Medium Medium
Post pandemic public transport recovery	• Bus operators • train operators • Warrington Borough Council • UK Government • Bus users • Rail passengers • Employers	• Introduce zero emission buses • Implement Enhanced Partnership • Support delivery of the Bus Service Improvement Plan actions • Deliver measures to improve the journey time and reliability of bus services • Promotion of services at businesses	Medium Short Short Medium Short
Address EV charging demand equitably	• Local Distribution Network operators (DNOs) - Scottish Power Energy Networks and Electricity NorthWest • EV charger providers/ Operators	• Promotion of Car club • Promotion of existing EV charging infrastructure • Investigate funding opportunities for EV infrastructure	Short Short Short

Priority Area	Key stakeholders	Anticipated Interventions	Time frame
Address EV charging demand equitably	• Warrington Borough Council • Residents	• Roll out of EV infrastructure • Support fleet operators to switch to zero emission vehicles	Medium Medium
Sustainable logistics	• Warrington Borough Council • Peel Ports • National Rail • Rail freight operators • Road haulage operators • Delivery companies • Retailers	• Bring key interests together • Review existing practice and identify opportunities for progress • Develop programme of action • Explore potential for 'last mile' cargo bike scheme	Short Medium Medium Medium
Develop support for home retrofit improvements	• Warrington Borough Council • Social landlords • Private landlords • Retrofit advisors • Building companies and associated trades • Mortgage providers/ lenders • Local public sector bodies (Fire and Rescue, Police and NHS) • Warrington Community Energy • Advisory services (e.g. Energy Projects Plus and Groundwork Green Doctor)	• Promote home energy efficiency advice • Assess the energy efficiency performance of the existing housing stock and detail the type and cost of retrofit pathways • Bid for/access funding for retrofit improvements where opportunities present • Develop a retrofit support service for owner occupiers and landlords	Short Medium Ongoing Medium
Promote 'net zero', 'climate ready' standards for new developments	• Warrington Borough Council • Architects • Planning consultants • Developers • Mortgageproviders/ lenders	• Bring together interests • Review existing standards and identify best practice, including existing local best practice • Promote standards through available opportunities including supplementary planning guidance, planning briefs, construction sector events, sharing of best practice	Short Short Medium
Lay the foundation for developing local ultra-low carbon energy systems	• Warrington Borough Council • Developers • Distribution Network Operators (DNOs) • Engineering companies	• Identify opportunities for heat networks with heat mapping • Assess the feasibility and develop the business case to secure investment where opportunities present	Short Medium

Priority Area	Key stakeholders	Anticipated Interventions	Time frame
Lay the foundation for developing local ultra-low carbon energy systems	• Heat Network Operators • Rewire NW stakeholders • Local public sector bodies as potential anchor loads (Fire and Rescue, Police and NHS)	• Develop opportunities • Identify opportunities to take forward learning from the Rewire NW programme to build a smarter local energy system • Access innovation funding to pilot and develop new approaches	Medium to Long Short to medium Medium
Increase local renewable energy investment	• Warrington Borough Council • Households • Businesses • Local Community Energy organisations (e.g. Warrington Community Energy, Lymm Community Energy) • Developers • Local Distribution Network Operators (DNOs) - Scottish Power Energy Networks and Electricity NorthWest • Energy companies	• Identify local opportunities and constraints • Develop business case for investment in schemes and enabling infrastructure • Seek investment • Develop schemes	Medium Medium Medium/Long Medium/Long
Make provision for skills for the energy transition	• Cheshire & Warrington Local Enterprise Partnership • Higher education providers • Local Distribution Network operators (DNOs) - Scottish Power Energy Networks and Electricity NorthWest • Energy companies • Developers • Colleges • Schools • Businesses	• Review skills needs assessment and update as required • Develop skills offer where needed in schools, colleges, higher education providers and 'in house'	Medium Medium

Priority Area	Key stakeholders	Anticipated Interventions	Time frame
Support to increase circular business practices	• Cheshire & Warrington Local Enterprise Partnership • Higher education providers • Warrington BID • Warrington Business Exchange • Businesses • Warrington Borough Council	• Bring together interested parties and establish a local Circular Economy Club • Review current activity and opportunities • Develop circular economy support programme	Short Medium Medium
Education and awareness on consumption, reuse and recycling.	• Warrington Borough Council • Schools • Retailers	• Identify all local reuse and recycling opportunities and promote • Review school, college and university resource conservation education offer • Review residential recycling patterns and develop targeted interventions in communities with lower recycling rates • Prepare for the measures to come in under the Waste and Environment Act.	Short/Medium Short/Medium Short/Medium Short/Medium
Promote climate and nature friendly diets	• Schools • Catering companies • Food retailers • Restaurants • Takeaways • Warrington Borough Council	• Bring together interested parties • Develop targeted interventions • Review catering contracts to improve local, seasonal and sustainable options • Review menus to introduce local, seasonal and sustainable options • Take advantage of existing promotions and campaigns to raise awareness about the climate and nature impacts of our diets	Short Medium Medium Short Short/Medium
Promote sustainable food and local food production	• Farmers • Agricultural colleges • University of Chester • Warrington Borough Council • Natural England • Cheshire Wildlife Trust	• Bring together key interests • Review current practice • Explore Environmental Land Management pilot schemes with local farmers • Explore options within the local Planning process for new provision of allotments.	Short Short/ Medium Medium Medium

Priority Area	Key stakeholders	Anticipated Interventions	Time frame
Encourage the supply of more sustainable goods and services	• Businesses • Warrington Borough Council • Local public sector bodies (Fire and Rescue, Police and NHS) • Schools/Colleges/ University • Cheshire & Warrington Local Enterprise Partnership	• Review procurement policies and processes • Work with supply chains • Raise awareness of environmentally damaging products e.g. peat and palm oil and more sustainable alternatives	Medium Medium/ongoing Short/Medium
Develop a co-ordinated programme for climate adaptation	• Warrington Borough Council • Environment Agency • Highways England • Utility providers - United Utilities, Scottish Power Energy Networks, Electricity Northwest • Local public sector bodies (Fire and Rescue, Police and NHS)	• Bring key interests together • Review current activity and opportunities • Assess current vulnerabilities • Develop adaptation programme	Short Short/Medium Medium Medium
Lobby government for investment in adaptation infrastructure	• Warrington Borough Council • Environment Agency • Cheshire & Warrington Local Enterprise Partnership • Local public sector bodies (Fire and Rescue, Police and NHS)	• Bring interested parties together • Identify investment needs • Make the case for investment	Short Short/Medium Medium
Support business continuity and resilience	• Warrington Borough Council • Environment Agency • NW Flood hub • Business groups e.g. Warrington Chamber of Commerce, and Warrington and Co	• Bring interested parties together • Identify risks and raise awareness of vulnerabilities • Develop business support offer and signpost to existing information and advice	Short Medium Medium

Priority Area	Key stakeholders	Anticipated Interventions	Time frame
Secure resources for projects that deliver climate and nature recovery benefits including developing local natural carbon storage assets	• Warrington Borough Council • Cheshire Wildlife Trust • Natural England • Environment Agency • Developers • Farmers	• Seek funding opportunities to deliver nature recovery and local nature-based carbon offsetting schemes • Use the Local Nature Recovery Strategy development process to identify investible projects • Develop Environmental Land Management proposals with local farmers • Develop Biodiversity Net Gain opportunities for developer investment • Utilise codes of practice to develop local natural offsetting opportunities. e.g. peatland code • Explore potential to promote and develop Risley Moss as a hub to demonstrate good practice for peat restoration	Short/Medium Medium Medium Medium Medium Medium
Adopt nature-based solutions informed by natural capital audit	• Warrington Borough Council • Cheshire Wildlife Trust • Natural England • Environment Agency • Developers • Local public sector bodies (Fire and Rescue, Police and NHS)	• Review natural capital audit and the emerging local nature recovery strategy to identify priority opportunities • Gather sound and up-to-date ecological data where needed • Review policies and funding arrangements for the support of natural based solutions, e.g. SUDs versus hard drainage • Ensure new local planning policies and guidance help protect and enhance natural assets and make provisions for their upkeep • Utilise new government funding instruments for environmental land management to support the upkeep of natural infrastructure	Short/Medium Medium/ ongoing Medium Medium Ongoing
Communications programme	• Warrington Climate Emergency Commission • Warrington Borough Council • Local public sector bodies (Fire and Rescue, Police and NHS)	• Bring interests together • Strategy launch programme across various media and formats • Promote pledge campaign • Promote 'top five things you can do' campaign • Develop long term communications programme	Short Short Short Medium Medium

Priority Area	Key stakeholders	Anticipated Interventions	Time frame
Communications programme	• Environment Agency • Natural England • Cheshire Wildlife Trust • University of Chester • Local climate change groups • Business groups e.g. Warrington Chamber of Commerce, and Warrington and Co • Faith networks • Parish Councils • Organisations promoting carbon literacy • Schools/Colleges • Voluntary sector networks		
Outreach and targeted support	• Warrington Climate Emergency Commission • Warrington Borough Council • Business groups • Faith networks • Parish Councils • Organisations promoting carbon literacy • Schools • Voluntary sector networks	• Develop community outreach programme including series of events • Promote school participation and commitment in the 'Let's go zero' campaign and develop local support • Promote business participation and commitment under the 'Together for Our Planet' campaign and develop local support • Promote faith community participation in faith related programmes and develop local support • Promote parish council climate emergency declarations and develop local support • Promote community organisation commitment and develop local support • Develop a central repository/ point for help advice (a website, or wider support service) for households • Bring together organisations already delivering carbon literacy training	Medium Short/Ongoing Short/Ongoing Short/Ongoing Short/Medium Short/Medium Medium Short

Priority Area	Key stakeholders	Anticipated Interventions	Time frame
Create engagement infrastructure/ mechanisms	• Warrington Climate Emergency Commission • Warrington Borough Council	• Promote the uptake of carbon literacy training • Promote a general climate emergency mailing list and social media channels • Produce a regular climate emergency newsletter • Organise an annual public community climate forum • Establish sector networks • Organise a citizens assembly/ panels when needed to consider further development of the climate strategy	Short/Ongoing Short/Ongoing Short/Ongoing Short/Ongoing Medium Medium/long
Promote training and the development of appropriate skills to support the changes needed	• Cheshire & Warrington Local Enterprise Partnership • University of Chester • Schools • Colleges • Employers • Warrington Borough Council and local public sector bodies	• Promote general training using the carbon literacy standard across organisation and sectors • Identify specialist training pathways to develop necessary sector specific expertise	Short/ongoing Medium

Develop an Action Plan at Home

Travel, transport and connection

- Make use of Warrington's cycle map to walk or cycle short distances
- Download Warrington's Own Buses app to track bus services and buy tickets
- Consider an EV if possible, use Zap Map to find chargers nearby
- Join Warrington's Car Club and hire a car only when you need it
- If you fly regularly, take fewer flights – holiday closer to home or travel by rail

Energy, buildings and infrastructure

- Check if you qualify for support via the LEAP programme or Green Doctor to make your home more energy efficient
- Be more energy efficient at home
- Consider switching to a green energy tariff

Resources, consumption and wider impacts

- Shop wiser – Can you buy local Warrington produce or have your milk delivered? Use local refill shops and refill services'
- Check what you can and cannot recycle locally
- Cook with less meat and dairy, or try Meat Free Mondays
- Harvest rainwater to water your plants, take fewer baths or use the dishwasher less often to help save water

Resilience and nature

- Encourage wildlife in your garden by building a bird box, a bee house or a bug hotel
- Plant a variety of flowers or even add a small pond
- Limit paving in your gardens to maximise drainage
- Use tips from the Flood Hub to prevent flooding in your home
- Support the Mersey Forest to increase tree cover and carbon capture

Awareness, engagement and support for action

- Calculate your personal carbon footprint – WWF, Carbon Independent, Carbon Savvy, Global Footprint Network
- Pledge your Commitment to Act
- Talk about climate change to your friends and family
- Lobby national government and your MPs to take action
- Send a Letter to the Earth

Develop an Action Plan at Work

Travel, transport and connection

- Work from home or adopt hybrid working wherever possible
- Investigate cycle to work or EV salary sacrifice schemes, install EV chargers at work, and secure cycle parking and utilise car share databases
- Run promotional campaigns to encourage sustainable travel - Consider how you get to work – can you car share, walk or cycle? Can you travel by bus or train?
- Reduce the need for essential car users and consider pool cars

Energy, buildings and infrastructure

- Purchase REGO backed 100% renewable electricity
- Invest in energy efficiency technologies and investigate the options for low carbon energy
- Identify retrofit opportunities and build a business case

Resources, consumption and wider impacts

- Embed carbon emissions and a circular supply chain into procurement policies
- Increase plant-based food options in workplace catering provision
- Adopt a zero waste-to-landfill policy

Resilience and nature

- Increase green space where possible
- Could you install a green wall or roof garden on your building?
- Understand the risks your organisation faces and build resilience

Awareness, engagement and support for action

- Measure and report your organisations carbon emissions – GHG Protocol, The Carbon Trust
- Deliver carbon literacy training to employees and work to become a carbon literate organisation
- Declare a climate emergency and align this with your business strategy
- Set up a group of 'Climate Champions' to encourage low carbon initiatives in the workplace
- Develop a climate communications strategy for wider engagement

Develop an Action Plan in your Community

Volunteer Groups

- See the carbon footprint of your community – Impact Tool
- Investigate and apply for community funding opportunities e.g. Local Nature Innovation Fund, Climate ActionFund, Woodlands Trust, Veolia Environmental Trust
- Support local environmental or climate action groups e.g. Cheshire Wildlife Trust, Warrington CEE Bill Alliance
- Host community events or initiatives, e.g. repair cafes or clothes swaps
- Fundraise for environmental charities and sign petitions

Schools, Colleges & Universities

- Bring climate change issues into the school curriculum
- Offer Carbon Literacy Training to staff and students
- Join the Lets Go Net Zero campaign and use their Climate Action Planner tool to determine what actions you need to prioritise
- Apply for funding pots for green initiatives e.g. Woodlands Trust, Royal Society
- Engage with Eco Schools and take action
- Offer careers guidance including green skills and jobs

Faith Groups

- Explore relevant resources available here to help take climate action
- Join, support or work with local organisations that support faith based climate and ecological action tackle climate and conservation e.g. faiths 4 change or connect with those supporting climate action more widely

Youth Groups

- Join Warrington Youth Voice
- Write a letter to your head teacher asking them to join the Lets Go Zero schools campaign Campaign

Glossary

Active travel: Ways of travelling that involves physical activity, such as walking, wheeling and cycling.

Air pollution: The contamination of the air with gases and particles. Polluted air can be harmful to our health and impact the wider environment.

Adaptation: In the context of climate change, adaptation refers to the ways in which we adapt to the changes taking place to reduce their impact. This could involve adapting our natural and built environment, or our cultural practices to cope with warmer temperatures and more extreme weather or wider impacts.

Alternatively fuelled vehicles: The majority of vehicles currently run using 'conventional' fossil fuels petrol and diesel. Alternatively fuelled vehicles are those that run on alternatives to these conventional fuels.

Alternative travel: Alternative travel usually refers to alternatives to the private car such as bus, train, walking and cycling.

Biochemical feedstocks: Raw materials of biological origin that are used to feed industrial or manufacturing processes.

Biodiversity: Short for biological diversity, the variety of different types of life including plants, animals and micro-organisms in a particular place. A high level of biodiversity is usually considered to be healthier. Various human activities have damaged the environment and reduced biodiversity. This undermines the natural systems upon which we ultimately rely.

Biodiversity Net Gain (BNG): An approach to planning that seeks to provide a measurable increase in habitat for biodiversity in developments compared to their pre-developed state.

Biofuels: Fuels derived from biological materials, such as ethanol, biodiesel, wood pellets and biogas.

Biofuels from sustainable sources: Biofuels that have been produced taking into account wider environment impacts so that they can be produced over the longer term in a sustainable way.

Biogas: Gas that is released during the breakdown of organic matter, such as food waste and sewage.

Built in obsolescence: A tactic employed by some businesses to sell products that are deliberately designed to become obsolete after a limited time so that the purchaser needs to replace the item with a new product.

Business continuity: Taking pre-emptive action and putting plans and procedures in place to ensure an organisation can continue to function in the face of conditions that might otherwise jeopardise this.

Car clubs: An alternative to car ownership where members of the club have access to a pool of vehicles that can be booked, used and paid for as and when they are needed.

Car dependency: A situation where people become dependent on cars. Car dependency can be exacerbated by the way places are designed, e.g. shops moving from town centres to out of town retail parks, or highways designed without facilities for cyclists or pedestrians. Car dependency can lead to a vicious circle where car traffic deters other means of travel, or where car users become more sedentary and less likely to walk or cycle for shorter journeys.

Car share databases: Databases set up to help link drivers who drive alone with others travelling a similar route in order to encourage people to share vehicles and so reduce traffic.

Carbon capture and storage (CCS): Methods of removing carbon from the atmosphere naturally or via artificial means at the emission source and then storing it long term so that it does not enter the atmosphere and so add to global heating.

Carbon dioxide (CO_2): A colourless gas comprised of an atom of carbon with two atoms of oxygen. It occurs naturally in the atmosphere, but as a result of human activities, principally the burning of fossil fuels, the concentration of the gas has been rising. It is the principal greenhouse gas which acts like glass in a greenhouse to trap heat in. As the concentration of CO_2 has risen the warming effect has increased with a resultant rise in temperatures. This extra heat is driving climate change and sea level rises.

Carbon footprint: The amount of carbon dioxide (or CO_2 plus other greenhouse gases expressed as CO_2e) released into the atmosphere as a result of a particular activity. A carbon footprint can be calculated for individuals, organisations, events, products, communities and countries.

Carbon Literacy: An awareness of the carbon emissions associated with activities and an understanding of how these can be reduced. Carbon Literacy training is an initiative of the Carbon Literacy Trust that aims to help educate individuals across all sectors. The trust accredit courses run by others. They also award certificates to those who complete accredited courses.

Carbon literate: A person who has completed carbon literacy training, or an organisation that has trained its employees or volunteers to be carbon literate in line with the Carbon Literacy Trust Carbon Literate Organisation standard.

Carbon offsetting: A way of compensating for carbon emissions produced by removing emissions elsewhere, such as capturing carbon via planting trees and enhancing natural carbon stores.

Cargo bike: A purpose made bike designed to carry a load. Cargo bikes often have a pedal assist electric motor to make carrying the load easier (electrically assisted bikes may be referred to as e-cargo bikes).

Circular economy: A way of describing an economy where resources flow in loops through the economy in a sustainable way. The idea of a circular economy is used in contrast to the way the economy currently operates in a more linear fashion. In a linear economy resources are extracted from the environment, processed, used then thrown away as waste. This is both inefficient, environmentally damaging and ultimately unsustainable. In a circular economy we seek to: stop waste and pollution by design; ensure products and resources circulate again and again, and, regenerate natural systems. Common practices include designing out waste, designing for durability, making provision for remanufacture, reuse, repair and ultimately recycling and reprocessing for residual resources.

'Circular' business practices: Approaches to business in tune with developing a circular economy (See Circular Economy).

Citizen's assembly: Bringing together members of the public from all areas of the community to discuss a particular issue. The assembly group should be representative of the demographics and attitudes of the wider population.

Clean energy supply tariffs: An energy supply deal that customers can sign up to where the energy retailer buys non fossil fuel derived energy (renewable energy or renewable and nuclear energy) to match the energy used by the customer. By choosing such a tariff the customer is helping to drive demand for clean energy.

Climate Adaptation: See Adaptation.

Climate change: Shorthand for unnatural climate change: the changes we are seeing in the climate driven by the rise in global average temperature due to an increased concentration of greenhouse gases in the atmosphere. Since the industrial revolution burning fossil fuels for human activities has released large concentrations of carbon dioxide the principal greenhouse gas.

Climate crisis: See climate emergency.

Climate emergency: The urgent and grave situation that we are currently in where unnatural climate change driven by human activities is happening at a scale and pace that threatens potentially catastrophic and irreversible impacts unless immediate and significant action is taken. There is a growing movement of organisations declaring a climate emergency to draw attention to the problem and acknowledge the need to take urgent action.

'Climate ready': Being prepared for the changing climate so that plans or adaptations have been made in anticipation of expected conditions. Further changes in the climate are 'locked in' from pollution already in the atmosphere so it is prudent to get ready for them to reduce their impacts.

Climate resilience: Adapting to climate change so that we are more resilient to its impacts.

CO_2: See carbon dioxide.

CO_2e: Carbon dioxide equivalent. The main greenhouse gas (GHG) from human activities is carbon dioxide (CO_2). Other GHGs include methane, nitrous oxide and fluorinated gases. Different gases have different ability to trap heat. To account for this variation the combined warming potential of GHGs is expressed in terms of carbon dioxide equivalent or CO_2e.

Co-benefits: In the context of climate change, these are the additional benefits gained from taking climate action that go beyond just cutting emissions or improving climate resilience. For example, encouraging active travel not only reduces carbon impact, but improves air quality and overall physical and mental wellbeing.

Community Municipal Investment (CMI): A bond issued by a council directly to the public to crowdfund a particular project or initiative, to supplement or replace sources of borrowing.

COP – Conference of the Parties: Annual meetings organised by the United Nations that bring together representatives from nations who are parties to an international treaty. In the case of climate change COP26 (the 26th Conference of the Parties) was the most recent. It was held in Glasgow in November 2021. These meetings often attract media coverage and wider events and protests.

Cycle Hub: Often operated as a social enterprise, cycle hubs are places from which a variety of services are provided to support the uptake of cycling in the wider community such as cycling courses, bike repair facilities, and cycle hire.

Cycle to Work Scheme: In order to support the uptake of cycling the government allow employers to operate salary sacrifice schemes where employees can agree to give up part of their pre-tax salary in exchange for access to a cycle and associated safety equipment.

Decarbonisation: The process of bringing in measures across an organisation or area to reduce the carbon footprint.

Decentralised energy: Our power system is evolving from a system with a relatively small number of larger power stations distributing power through the grid to users, to a more decentralised system with a larger number of generators spread across the system including smaller generators generating their own power and adding the surplus to the grid.

Deficit model: Communication work based on the information 'deficit model' attributes a lack of public action to a lack of information or understanding. As a result campaigns based on this view give priority to imparting the missing information from experts to non-experts.

District heat networks: A heating network that delivers heat from a centralised source (such as waste heat from industry) to a number of domestic and non-domestic buildings within an area. Heat is distributed through a network of pipes, rather than each building having its own individual heating source.

e-bike: Electric powered bikes.

e-cars: Electric powered cars.

Ecological emergency: The urgent situation we are currently in whereby natural habitats and species are declining at an alarming rate due to pressures from pollution, development, agriculture and climate change.

Emissions budget/Carbon budget: The maximum amount of greenhouse gas emissions/carbon dioxide emissions that can be released within a particular period of time in order to stay on track to reach climate goals.

Enhanced Partnership: An Enhanced Partnership in the context of transport is a type of partnership created by law for a local transport authority to work with local bus operators to deliver bus service improvements in a particular place.

Environmental Land Management Scheme (ELMS): A scheme offering farmers and landowners financial incentive to undertake actions to improve the natural environment. There are currently three new government schemes that reward environmental land management practice: the Sustainable Farming Incentive; Local Nature Recovery and Landscape Recovery schemes.

Fast fashion: The rapid production of relatively cheap clothing for the mass market following the latest fashion trends often influenced by designer 'cat walks' or celebrity culture. Instead of buying durable clothes relatively infrequently, fast fashion contributes to a much greater consumption of clothes that may be worn only a few times before being thrown away.

Food security: A measure of the availability of the necessary amount and quality of food and access to it.

Fossil fuel: Carbon based fuels such as oil, coal or natural gas, that are based on the remains of living organisms from long ago that arise in certain geological formations and are extracted from them. The burning of fossil fuels for energy releases the carbon that was previously stored in the ground into the atmosphere as CO_2.

Fuel poverty: A situation whereby households cannot afford to adequately heat their home given their income.

Future Homes Standard: Planned changes to the national Building Regulations to increase the energy efficiency of new homes to be introduced in 2025.

'Green and blue' infrastructure: Green and blue infrastructure describes the network of natural and semi-natural features in an area designed and managed to deliver a range of services such as drainage, flood prevention, air quality, cooling, shade, and space for recreation. This infrastructure can include both land (green) and water (blue) elements.

Green economy: The operation of the economy in a manner that is sustainable and does not damage the environmental systems upon which we ultimately rely. Reference to the green economy can sometimes refer to the parts of the economy that concern the services, products and technologies necessary for human activities to be environmentally sustainable, e.g. renewable energy.

Greenhouse gases (GHGs): Gases that reside in the atmosphere with the ability to absorb and emit infrared radiation. They can be both naturally occurring and human produced. The main gases are carbon dioxide, methane, nitrous oxide, water vapour and ozone.

Greenhouse Gas Pollution: Excessive greenhouse gas emissions over and above that which would naturally occur that contribute to climate change.

Green roofs and walls: Roofs and walls where vegetation is deliberately incorporated into the fabric to provide green infrastructure benefits.

Greenways: Traffic free routes for pedestrians and/or cyclists which run through lengths of undeveloped land including linear parks, old railway lines and canal tow paths. Greenways also serve as wildlife corridors helping to connect natural and semi natural habits.

Grid capacity: The maximum amount of electricity output that can be carried on a power distribution grid. Once capacity is reached no additional connections can be made without further investment in the grid to improve capacity.

Heat networks: See district heat networks .

Heat pumps: Pumps used to transfer heat from one place to another. Powered by electricity heat pumps can harness ambient heat from the air, ground or water and convert it into useable heat. Heat pumps are expected to have a key role in heating buildings efficiently with minimum carbon impact.

Hydrogen (H2): A colourless flammable gas. Hydrogen is anticipated to become an important clean fuel as it has a high energy content for its weight. Whilst it can be burnt it can also be used in fuel cells to generate electricity.

Hynet: A regional hydrogen energy and carbon capture and storage project that aims to help decarbonise industry, homes and transport across the northwest. The initial phase of the project is focused on the production of hydrogen from natural gas and includes the development of a new hydrogen pipeline alongside the creation of carbon capture, usage and storage infrastructure.

Indigenous woodland species: Native tree species that naturally occur in the area.

Industrial decarbonisation cluster: A group of industries and businesses concentrated in a particular area working in tandem to decarbonise.

'Last mile' deliveries: The final leg in the journey in a distribution process to the customer. It is usually the journey from the final local distribution centre in a longer delivery chain. It might also be direct from a local supplier to the customer.

Local emissions profile: A summary of the source and quantity of the various emissions arising from a particular local area.

Local Nature Recovery Strategy (LNRS): Spatial strategies that establish priorities and map proposals for specific actions to drive nature's recovery and provide wider environmental benefits.

Local Nature Reserves (LNRs): Areas of land that a local authority has formally declared as a reserve for local nature. The local authority must either own, lease or have agreement with the owner of the land. It should be managed to care for and protect its natural features. It is good practice to have some public access to LNRs.

Local plan: The Local Plan is the principal land use planning framework setting out policies and land use allocations for a local area. Local authorities are required to create them through a formal process involving wider consultation. Local plans provide a key foundation for determining planning applications for new developments.

Local Wildlife Sites (LWSs): Sites that have been locally identified as being important for their wildlife.

Logistics: Involved in organising the process of transporting goods to customers.

Low-carbon economy: An economy based on energy sources that produce low levels of greenhouse gas emissions.

Maker spaces: Places where people can come together to share skills and access tools in order to create things.

Modes of transport: The different ways of travelling, e.g. by car, by bus and by bike.

Natural capital: The stock of natural assets, e.g., soils, water and, biodiversity, that provide a wide range of services that we benefit from, e.g., pollination of crops, regulation of flooding, recreation spaces. We ultimately depend of natural capital, but because the services it provides are not charged for they are often taken for granted. Natural capital assets are prone to being overused, damaged and lost with implications for our long term welfare.

Natural carbons stores: Natural assets which store carbon, e.g. forests and peatland.

Natural connectivity: Over time as natural and semi-natural habitats have been lost to other land uses the remaining areas become fragmented and isolated. Natural connectivity makes use of natural corridors between isolated sites allowing species to move so helping maintain the health of species and ecosystems.

Natural gas: A fossil fuel comprised of a mixture of gases, e.g. methane, nitrogen and CO_2. Reserves of natural gas are usually found trapped in geological deposits near to other fossil fuels such as coal and oil.

Nature-based solutions: Using nature to address societal challenges, providing benefits for both human well-being and biodiversity.

Net-zero: Reducing carbon emissions as far as possible to near zero before offsetting any residual emissions by capturing and storing them elsewhere.

Offset: See carbon offsetting

Ofgem: The Office of Gas and Electricity Markets. Ofgem is the principal regulator covering the energy sector in Great Britain.

Paris Agreement: A UN international treaty that seeks to prevent the impacts of climate change getting out of hand. The Agreement aims to stabilise rising global average temperatures so they do not rise more than 2°C above the pre-industrial average. The focus on trying to limit the rise to 1.5°C or as near as possible.

Plug in hybrid: A hybrid powered vehicle with both electric motor and internal combustion engine, where the battery pack can be plugged in to recharge it. Plug-in hybrids can usually be driven in an electric only mode as well as in combined mode with the electric motor and combustion engine working together.

Power storage: Capturing power produced at one time for use at a later time often with batteries. Storage helps over some imbalances between energy demand and energy production.

Raw materials: The basic materials needed to produce a particular product.

Refill shops: Shops that sell non-packaged goods such as food and cleaning products where customers bring their own re-useable containers to be refilled in the shop.

Regenerative agriculture: An approach to agriculture that focuses on long term sustainability by restoring the health of soils and increasing biodiversity.

Regionally Important Geological Sites (RIGs): Sites identified to be of regional and local importance for their geology.

Remanufacture: Taking a used product and restoring it to a brand new condition both in appearance and performance.

Renewable energy: Energy that comes from a source that is not depleted when used, e.g. solar power, wind power and tidal power.

Repair cafes: Organised session often held in community spaces where people gather to repair items. A variety of tools are usually available with volunteers on hand available to assist.

Reprocessed materials: Materials that would otherwise have been wasted that have been collected and reprocessed so they can be used as raw materials in new or different products.

Resilience: In the context of climate change, resilience is the capacity to cope with the effects of a warming climate. This includes our preparedness and ability to respond and recover from incidents such as severe weather.

Retrofit: The retrospective addition of new technology or feature to an existing property. In the case of climate change retrofit is usually used to discuss the works needed on existing buildings to reduce energy use, make the property better adapted to new conditions, and provide heat and power from low carbon sources.

Re-wild: To restore land to its natural uncultivated state often involving the reintroduction of species no longer present on the land in question.

Rewire NW: An innovation project launched in spring 2020 led by charity Pure Leapfrog. The project is focussed on exploring the development of a Smart Local Energy System for Warrington. It is considering how existing energy assets can be optimised and adapted and how a variety of projects brought forward to progress this.

SCATTER (Setting City Area Targets and Trajectories for Emissions Reduction): A local authority focussed emissions measurement and modelling tool.

Semi-natural habitats: Habitats that have been modified by human activity but which retain many natural features.

Sites of Special Scientific Interest (SSSI): A protective conservation designation covering the most important habitats, species and geological features. The sites are notified by Natural England (the principal conservation body in England). Local authorities are required to have policies to protect SSSIs in their local plans.

Smart Local Energy System: A way to bring together and manage the various energy assets and infrastructure in particular place so that they operate in a smarter way for the benefit of that area. The smarter use of energy systems is seen as a key part in decarbonisation as we need to connect more local generation assets and shift to electricity for heat and power.

Small modular reactors: Nuclear reactors that are a fraction of the size of conventional reactors. Being smaller makes it possible to make them using factory assembled components that are then taken to the site for installation.

Solar energy: Energy from the sun.

Solar photovoltaic panels: Panels that convert sunlight (photons of light) into electrical energy

Sustainable energy: Energy that comes from resources that can be maintained without undermining energy options for future generations. Often the term is used interchangeably with renewable energy.

Sustainable food production: Ways of producing food that does not compromise the ability of future generations to produce food.

Sustainable procurement: The process by which organisations secure goods and services in a way that takes account of environmental sustainability, e.g. minimising environmental impact, waste and pollution, and social considerations (e.g. assurances on working conditions in production) into account. Working with suppliers, organisation can have a much greater influence over their wider impact.

Sustainable Urban Drainage Systems (SUDS): A natural approach to managing the drainage of surface water in urban environments.

Throw away economy: An unsustainable economy dominated by the production of goods that only have a short life that are then thrown away as waste and new goods bought to replace them.

UN – United Nations: An international organisation founded in the wake of WW2 to promote peace, security and co-operation between nations. It provides a place where the nations of the world can come together to address common problems.

UN's Paris Agreement: See Paris Agreement.

Vertical farming: Crops grown in stacked layers, usually indoors, with controlled light, temperature and water provision.

Appendix

Green House Gas Emissions Inventory for Warrington Borough 2018 (SCATTER)

Summary Greenhouse Gas emissions (tonnes CO2e)		Scope 1	Scope 2	Scope 3	
Sector	Sub-sector	Total tCO2e	Total tCO2e	Total tCO2e	Total tCO2e
		DIRECT	INDIRECT	OTHER	TOTAL
Stationary energy	Residential buildings	218,399.43	87,123.68	45,917.10	351,440.21
	Commercial buildings & facilities	56,066.47	68,777.06	18,968.76	143,812.30
	Institutional buildings & facilities	45,490.29	14,933.33	8,726.55	69,150.17
	Industrial buildings & facilities	131,625.97	83,954.36	35,007.49	250,587.83
	Agriculture	1,824.21	0.49	430.49	2,255.20
	Fugitive emissions	29,612.26	-	NE	29,612.26
Transportation	On-road	584,329.47	IE	351,740.22	936,069.69
	Rail	10,378.56	IE	2,444.21	12,822.77
	Waterborne navigation	NO	IE	IE	-
	Aviation	NO	IE	107,932.66	107,932.66
	Off-road	5,843.29	IE	NE	5,843.29
Waste	Solid waste disposal	28,364.17	-	IE	28,364.17
	Biological treatment	NO	-	IE	-
	Incineration and open burning	NO	-	IE	-
	Wastewater treatment and discharge	12,335.07	-	NO	12,335.07
IPPU	Industrial process	72,143.19	-	NE	72,143.19
	Industrial product use	0.00	-	NE	0.00
AFOLU	Livestock	6,223.37	-	NE	6,223.37
	Land use	12,033.16	-	NE	12,033.16
	Other AFOLU	NE	-	NE	-
Generation of grid-supplied energy	Electricity-only generation	NO	-	NO	-
	CHP generation	NO	-	NO	-
	Heat/cold generation	NO	-	NO	-
	Local renewable generation	23.58	NO	NO	23.58

Notation keys:
Not Occurring
Integrated Elsewhere
Not Estimated
Confidential
Combination of notation keys
N/A
Required
Optional

WARRINGTON
CLIMATE EMERGENCY COMMISSION