



Essex Climate Action Commission
Powering positive change

Essex Climate Action Commission

Final Report Structure

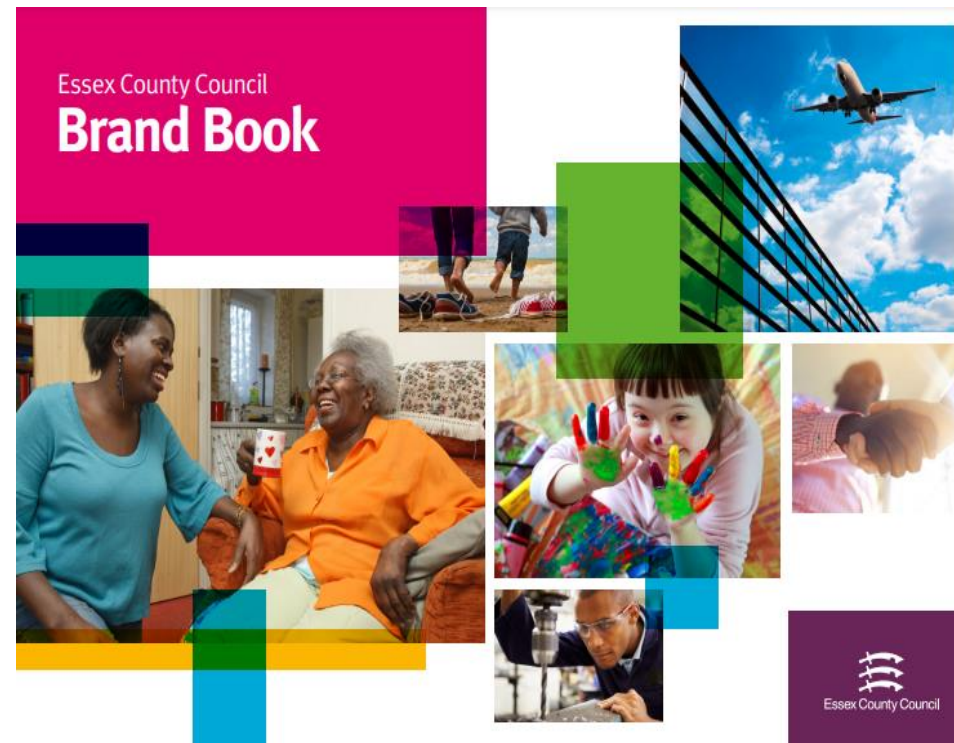
Content

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- Crib Sheets

Essex Design Framework

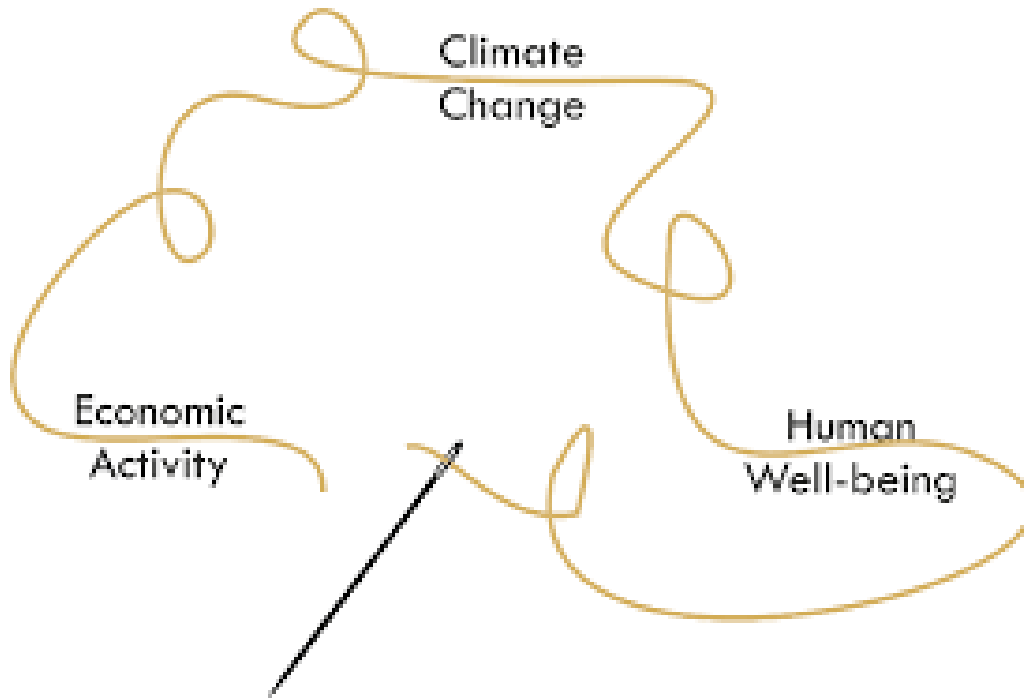
This report will meet the WCAG 2.1 AA accessibility standards as much as possible.

We will follow the Essex County Council brand book guidelines; it is also used with many of our partnerships such as Mitie, Ringway Jacobs and Hadleigh Park



Essex County Council Brand Book

Themes



- Weaved throughout sense of 'all in this together'
- Come away from a corporate look and feel
- Written in layperson terms
- Inject sense of urgency
- To continue the stories

Opening Statement

"Since Barnard's start, it has been defying the odds of women receiving first-class education. This progressive mindset, and the acknowledgment that something is wrong in the world, must be applied to Barnard's outlook on climate change. Barnard should become a leader in climate change."

— Nadia G. '22
Bronx, New York, Governing Board, Neuroscience Major



Barnard Community Climate Action Vision 2019

- To include:
- Engaging statement, everyone is important and role models
- We're all in this together
- Quotes from general public
- Sense of urgency
- Together making change happen
- Seek endorsement from a high profiler
- Scene setting

A word from

To include statements from:

- Lord Randall
- Leader of Council

Forewords

Foreword from Cllr. David Finch,
Leader of Essex County Council



Climate change is a threat to us all. It is a systemic risk that requires action at every level: internationally, nationally and locally.

We are already seeing climate impacts in Essex from water shortages to flooding. These will continue to worsen and alongside overheating and soil degradation, will impact significantly on all

cleaner air, improved biodiversity, smarter buildings and less waste.

Climate action simply cannot wait – it is the responsibility of every organisation and resident in Essex to do our part to help ensure the County has a bright and green future. Essex County Council is committed to taking action on climate change - to lead the way and inspire other authorities to follow. A few examples of this include building our first carbon net zero school in the County, conversion of all street lights to LED to reduce energy usage and our Flooding Team using innovative low carbon techniques, such as Leaky Dams and Natural Flood Management. We have also spearheaded behaviour change campaigns to encourage residents to recycle, avoid single use plastics and minimise car use, by walking and cycling more. However, we need to do much more to make a real difference.

At a meeting of Full Council in October 2019, I announced a million pound tree planting project and that we would create an Essex Climate Action Commission, which would bring together climate experts from academics to scientists to



Councillor Paul Tilsley –
Deputy Leader of the Council and Chairman of the Cabinet Committee
on Climate Change and Sustainability

All of us can see that our weather is becoming more uncertain. And we are also living through one of the most challenging economic periods in modern times. It is therefore essential that developing a resilient and sustainable City will be one of the vital components in growing and strengthening our city's economy - but without losing sight of our environmental responsibilities.

This Action Plan highlights the challenges that Birmingham faces both now and in the future from climate change. Importantly, it also demonstrates the significant opportunities that are available as we adapt to these impacts, which will improve the quality of life for all who live, work and visit our great global city with a local heart.

As Chairman of the Climate Change and Sustainability Cabinet Committee, I am pleased to publish this Action Plan. It is our commitment to ensure Birmingham is preparing for climate change and I welcome your views on the Plan as we need to keep this under review.



Councillor Timothy Huxtable –
Cabinet Member for Transport, Environment and Regeneration
Chair of [Birmingham Environmental Partnership](#)

As the Chairman of Birmingham Environmental Partnership I am delighted that Birmingham is at the forefront of adapting cities to climate change. This is demonstrated by the innovative work which we have undertaken over the past three years through Birmingham Environmental Partnership.

A better and more informed understanding of the impacts from a changing climate will help us to plan the actions that are required and the Council is committed to ensuring that climate change adaptation and the opportunities it presents is at the heart of people's everyday lives.

This Action Plan will help Birmingham to sustain itself as a vibrant and thriving economic hub. I will ensure that adaptation and sustainability is at the heart of planning and regeneration, to make Birmingham a sustainable, resilient city that is prepared for the impacts of climate change. The Action Plan itself will be progressed through the work of the new Green Infrastructure and Adaptation Delivery Group.

Opening Statement

To include:

- About section
- High level summary of the commission and our challenges
 - SIG leads narrative on challenges
- Vision statement (vision for future)

Framework

/06

Section 1 – Carbon Reduction

This plan prioritises carbon reduction measures to increase the chance of staying within our carbon budget and meeting the 2028 carbon neutral ambition. To do this, emission reduction rates would have to be in excess of 22.3% per year.

This section is further broken down into five chapters for activity:

- Transport
- The Built Environment
- Energy Generation
- Waste & Water
- Consumption.

Within each chapter, the plan identifies key objectives for achieving carbon neutrality and the steps we can take towards it. These are summarised in the action tables, which provide timescales for implementation as follows:

- Short term: Actions that can start now and aim to complete within the first three years of the plan (2020 – 2022)
- Medium term: Actions which require further development to be implementable within years three to six of the plan (2023 – 2025)
- Long term: Actions that have dependencies or require substantial development to be implementable within the final three years of the plan (2026 – 2028)

Section 2 – Carbon Removal

The second section of this plan focusses on capturing carbon and offsetting residual greenhouse gas emissions that cannot be removed entirely. Negative emissions technologies and offsetting could be used to neutralise remaining emissions. These are broken down into three groups:

- **1. Local carbon sequestration** – Using nature or geology around the city to take carbon from the atmosphere and store it. This could be stored in plants, trees and soil, or in underground spaces between rocks.
- **2. Carbon capture** – use of negative emissions technologies to capture carbon from the atmosphere and at point of source
- **3. Large scale carbon offsetting** – activities outside the City that can offset the emissions we generate locally through other credible and transparent mechanisms.

Section 3 – Resilience and Adaption

The third section addresses the actions Nottingham must take to protect against unavoidable harmful impacts of climate change. Whilst the global goal remains avoiding dangerous levels of climate change by keeping temperature rises below 1.5°C, impacts such as flooding and extreme temperatures are already experienced locally.

Section 4 – Ecology & Biodiversity

This section explains the importance of green and open spaces, and biodiversity, for climate change mitigation and adaptation - unlocking other positive outcomes such as improvements in our physical and mental wellbeing and enhancing the local landscape.

OUR VISION AND OBJECTIVES

Vision 2050

Manchester is playing its full part in limiting the impacts of climate change, locally and globally. It is a thriving, zero carbon, zero waste, climate resilient city where all our residents, public, private and third sector organisations are actively contributing to and benefiting from the city's success.

We compete and collaborate with cities around the world, ensuring that our collective efforts have limited global average temperature increases to well below 2°C, hopefully to 1.5°C, relative to pre-industrial levels.

Objectives:

- **Sustainable economy and jobs** – action on climate change will become an increasingly important part of the city's sustainable, dynamic and competitive economy. Manchester-based businesses and universities will be playing a strong and growing role in delivering solutions locally and to cities around the world. The city's businesses will have access to a rich pool of Carbon Literate local talent, fed by our world-class universities, and our excellent schools and colleges. All Manchester businesses will save money and improve their performance by increasing their energy and resource efficiency. Businesses, workers and visitors will come from around the world to experience our liveable, resilient, green city.
- **Healthy communities** – Manchester's residents will lead increasingly healthy lifestyles that are underpinned by access to high quality parks and green spaces, clean air, healthy local food, safe walking and cycling routes, energy efficient homes, affordable supplies of energy and an understanding of how they can help to reduce local flood risk and exposure to heat stress.
- **Resilience to a changing climate** – the city's

OUR COLLECTIVE ACTION

'Enabling actions' and 'thematic actions' set out the key areas where action is needed in order to achieve our vision and objectives. For each area, details of the specific strategic actions that need to be delivered within a given five-year period will be set out in the strategy's latest implementation plan. In combination with the strategic actions set out in implementation plans, all stakeholders in the city will also have a role to play. In addition to concerted action within Manchester, supportive GMCA and UK Government policies will be required to enable us to fully achieve our objectives.

Enabling actions:

- Education and engagement
- Investing in our young people
- Innovation, investment and business growth
- Enabling and incentivising institutional investment
- Supporting our businesses
- Spatial planning, development and infrastructure investment
- Joined-up public services
- Resident-led solutions and the voluntary and community sectors

Vision Statements

Our vision for Essex 2031

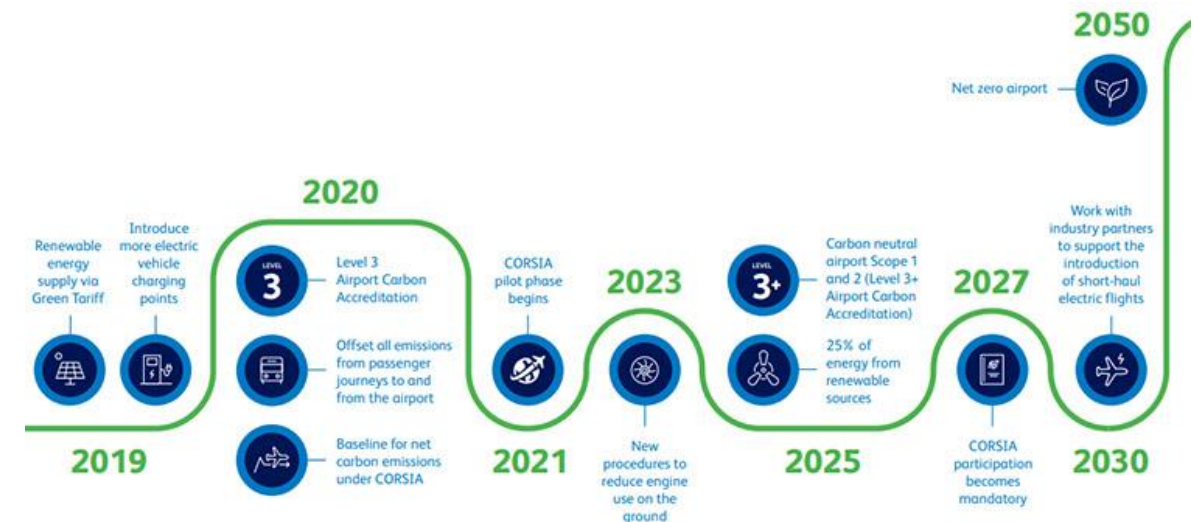
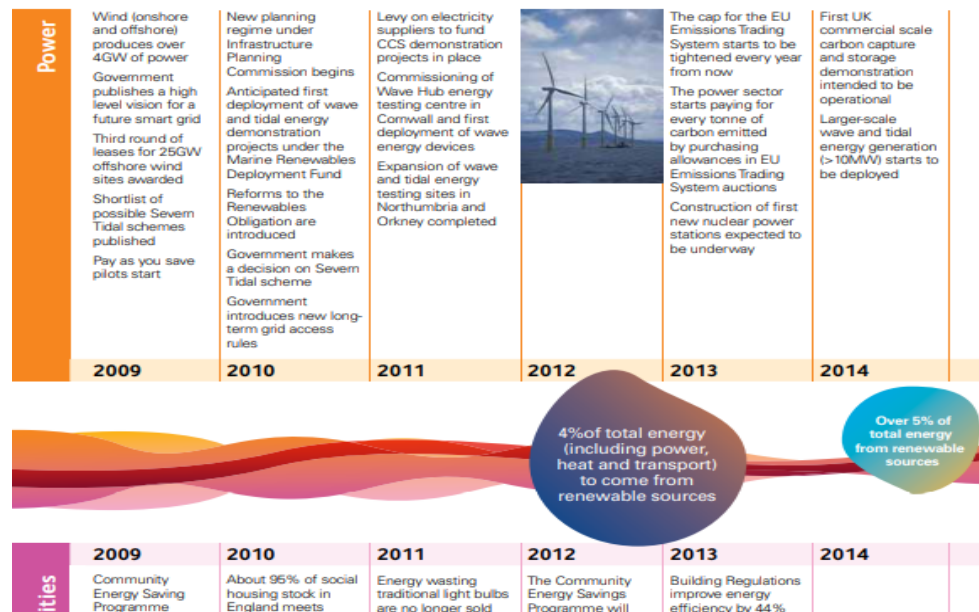
- By 2031 we are well on the way to becoming a net zero county. All the 2030 targets in the Essex Climate Commission's 2021 report have been met, and Essex is well placed to achieve net zero by, or before, 2050
- Residents and visitors value and use the natural environments of Essex. They not only buy local and are committed to achieving zero waste, but also recycle, reuse, repair and refurbish. They travel actively and enjoy our green spaces. Public culture is accessed in nature and public spaces. Universities, colleges and schools generate and inspire people to gain the skills needed to tackle the climate crisis.
- Essex is a key centre of innovation in the UK where green economy is booming and attracting skilled workers into ever growing green industries, low carbon and environmentally responsible organisations. We operate to a Circular Economy whereby waste is eliminated, and closed loop systems are created to ensure the continual and effective use of resources. Universities, colleges and schools generate and inspire people to gain the skills needed to tackle the climate crisis.
- Businesses and citizens are carbon-literate; everyone understands and commits to the Net Zero target and their contribution to climate action, taking personal responsibility for their impact on the environment.
- We have invested in reforestation, renewable energy (including solar and wind), community energy and a new generation of net zero public sector buildings, as well as retrofitting of existing public and private sector buildings, and encouraging others to do so. Our public procurement only supports projects which delivery our vision.
- Nature is recovering, we have doubled the amount of natural greenspace, 50% of Essex farmland is being managed according to sustainable principles, we have established nature recovery networks throughout the county, and iconic species such as otters and skylarks are thriving.
- New developments are being constructed as nature-based, resilient communities. Residents have access to local green spaces, and cycling, walking and public transport is preferred, and most people have access to electric vehicles and can access charging points easily.
- We are resilient to flooding through widespread sustainable drainage systems, flood prevention and coastal flood management, and to extreme heat through commercial and residential space built to adapt to the future.
- We are recognised a leading green tourist destination, having invested in improving our natural capital including our coastline, biodiverse landscapes and reintroduction of iconic wildlife such as beavers.
- All public sectors are committed to leading by example on driving this green transition to the decarbonisation of Essex and has demonstrated this through action e.g. showcasing what we can do through a major pilot project, as well as inspiring and supporting the community to make changes e.g. green retrofits.

Carbon Modelling Timeline

To include:

- a timeline which sets out our carbon reduction pathway to Net Zero if all the recommendations re adopted – to show the how Essex can meet Net Zero

Changes over the next



The UK Low Carbon Transition Plan

Bristol Airport roadmap to reduce emissions

Recommendations

Energy and Waste

Energy and waste issues have been raised in all Commission meetings to date, but examples of existing good practice, the available economic benefits and our formal recommendations will be discussed in detail and decided at the upcoming meeting on Energy and Waste in December 2020. Information on emerging proposals are provided in the next section.

Most of the Energy and Waste recommendations agreed by the Commission have been covered in the sectors above, but the key recommendations for this sector are:

- Partnership with businesses to support them to move to carbon zero and use green procurement practices, for example promoting the financial benefits of installing renewables and smart meters

- A feasibility study into Energy Sector Alliance and Innovation Hub by 2021

Light pollution is another aspect of energy wastage to be addressed; needlessly lighting the night sky adds to greenhouse gas emissions, as well as having a negative effect on human health and wildlife.

Good practice already happening:

Energy from Solar Photovoltaic (PV)

ECC has already installed solar PV systems on four of its core estate buildings at County Hall, Ely House, Canvey Island and Freebournes Road in Witham. However, this is just a start and only meets just over 1% of its corporate need for energy, so plans are being developed to set out a pathway to net zero for the ECC core estate. This will include measures such as more solar PV rooftop systems but also energy efficiency measures and low carbon heat

Essex Interim Report

Working Together

/13

Investors

Many of the projects and schemes to create a resilient and carbon neutral Nottingham will be low or no-cost, such as a behavioural change. Most will create a range of social, environmental and economic benefits. The city will embrace new business models and ways of working to ensure everyone can benefit from the opportunities.

However, many will require significant investment and funding, particularly in new or improved infrastructure to achieve their aims. There is strong evidence that investment in infrastructure and the development of new products and services creates significant local value and good returns for investors.

A carbon neutral Nottingham will present many exciting opportunities for equity investors in sustainable solutions and so attracting and involving suitable investors in the projects will be key.

Working with Communities

Working effectively with, and in, Nottingham's local communities and neighbourhoods will be vital. Communities will be engaged in projects' design and implementation throughout in order to create genuinely sustainable solutions. Improving a community's green space, for example, can only be sustainable if local citizens feel a sense of ownership, empowerment and are able to realise its benefits long into the future.

What citizens can do

Becoming a sustainable carbon neutral city is something that requires everyone to take action and already citizens across Nottingham are taking positive steps in their lives. Each step forward is one worth taking, no matter how small it may seem. Everyone is in different circumstances, but we can all do something, not just as individuals but as neighbours, friends and communities. Many of the steps help save money and improve our wellbeing. Citizens who responded to the 2028 consultation have are contributing towards tackling the climate and ecological emergency by:

- Recycling (98.4%)
- Saving energy (88.2%)
- Growing Plants at home (77.3%)

This is a great start and there are many other ways we can all reduce our own emissions, including:

- Walk or cycle more than once a week, instead of using the car
- Take shorter showers
- Fix, reuse and share goods
- Use a renewable energy tariff
- Buy more local and sustainable food and drink
- Lease, share or own an electric car or bike
- Use home or community composting

Nottingham Action Plan

To include:

- Template:
- Will be written similar to interim report in terms of broken down by SIG area
- Background – where we are now
- Where we want to get to – targets
- How we will get there – actions – summary of recommendations
- Case studies
- Annex – crib sheets of recommendations for audiences SIG areas
- Embedding audience groups
- Sense of all in this together
- Different type of audience
 - Businesses
 - Residents (Private Residents, Home owners)
 - Developers (Built Environment)
 - Local authorities (New developments, planning authorities and green infrastructure owners)
 - Other public sectors
 - Landowners and farmers
 - Charity
 - Community groups

Climate Focus Area

To include:

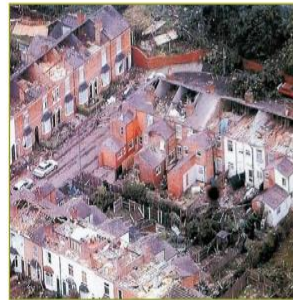
- Going further faster (where are our pilot areas for action – Blackwater and Colne catchments)

Section 2

Climate Change Adaptation Action Plan 2012

Case Study: Birmingham Tornado

Balsall Heath is an inner city neighbourhood in Sparkbrook, Birmingham with 16,000 inhabitants. Located two miles south of Birmingham city centre, Balsall Heath is affected by the UHI. In 2005, it was devastated by a 130mph tornado that swept through the neighbourhood, causing damage to 400 properties, injuring 19 people, causing approximately £50 million worth of damage which took 12 months to reconstruct. The conditions can be seen in part to be caused by the UHI effect. The Adaptation Partnership planted 150 trees to replace those damaged during the tornado in order to increase the tree cover and shading as well as reduce the chance of such high temperatures in future.



Critical Infrastructure and cascade failure

Increasingly, cities rely on critical infrastructure networks to function properly, such as telecommunications, water supply and drainage, road and rail, gas and electricity. These are all dependent upon energy (mostly electricity) to operate, and therefore failures in one part of one system can impact on other systems elsewhere, known as "cascade failures". All of these systems can be affected by extreme weather impacts.

Infrastructure UK estimates that an average of £40-50 billion will need to be spent every year between now and 2030. As a substantial proportion of new infrastructure will be in use long after 2030, the risks from climate change should be factored in to the design and location so that adaptation measures are incorporated where necessary to help ensure infrastructure resilience. The report "*Climate Resilient Infrastructure*" has been produced as a commitment from the Government's National Infrastructure Plan.

The ability to demonstrate resilient energy and transport systems could be attractive to businesses that particularly value or rely on continuity. It could also have significant economic advantage to the city. However achieving this will require decisions to address infrastructure pinch points and thresholds by many organisations, some of whom may have priorities elsewhere.

Monitoring and Evaluation

To include:

- How are we tracking progress

Measuring and monitoring impact

It will be important to measure the contribution of this strategy to mitigating climate change and managing its impacts in Cambridge. We will assess whether the action we have taken and the investment we have made has made a difference.

Where possible, we have identified or proposed potential targets for individual actions included in the action plan plans for each objective. These targets relate to the expected outputs from these activities. For example, for Action 1.5 on the Council's Employee Travel Plan, we have identified a target of '4,619 business miles travelled by bicycle per annum'. Similarly for Action 3.3 on low emissions taxis we have set a target of '100% of vehicles in the private taxi fleet are low emission vehicles' by 2025.

Where projects are still in the early stages of development, or it is more difficult to identify tangible outputs due to the nature of the project, we have identified clear project milestones that will be achieved by the completion date. For example, one of the key milestones for Action 5.4, which focuses on producing planning advice on flood risk, is: 'Cambridgeshire-wide planning advice on minimising flood risk written' by December 2016.

In our new Carbon Management Plan, we have set a target of reducing carbon emissions from the Council's operations and estate by 15% by 2021²⁰, with an aspiration to reduce our emissions by 20% by this date. This target will be measured against our carbon emissions in the baseline year of 2014/15. We will report progress towards this target annually as part of our Greenhouse Gas Report to Government, which we will publish on the Council's website each year.

In our first climate change strategy published in 2008 we set a target of reducing carbon dioxide emissions from 6.2 tonnes per person in Cambridge in 2005 to 0.7 tonnes per person in 2050/51 (an 89% cut). This target was designed to contribute to national and international efforts to limit climate change to 2°C by 2050.

In light of the more ambitious international commitments in the Paris Agreement to limit global temperature increases to 1.5°C and the need achieve zero net global carbon emissions by the second half of this century in order to meet this commitment, we have set an aspiration in this strategy to achieve zero carbon status for Cambridge by 2050.

As shown in Figure 1 on page 8, carbon dioxide emissions per person in Cambridge have reduced by 13.5% over an eight year period from 2005 to 2013 (from 6.7 tCO₂ per person in 2005 to 5.8 tCO₂ in 2013). To be on an even path towards zero carbon status by 2050, carbon dioxide emissions would need to reduce by 18.9% (or 1.1 tCO₂ per person) on 2013 levels by the end of the period of this strategy in 2021.

As outlined on page 10, the Council can help support residents and businesses in Cambridge to reduce their carbon footprint through a range of activities, ranging from improving the energy efficiency of homes to promoting recycling and reduction of waste. The actions set out in this strategy are intended to have an impact on these key areas.

However, as explained on page 10, the City Council will not be able to achieve the required level of emissions reduction on its own, because policies for some major carbon-emitting sectors

7. MEASURING AND REPORTING PROGRESS

The following is an initial set of key performance indicators (KPIs) for measuring progress against the strategy's objectives and key areas of activity. They are aligned with those used for monitoring progress against the Greater Manchester Climate Change Strategy 2011-20 to help us understand our contribution to city-region targets. The KPIs will be further developed in 2017, as an early action in the Implementation Plan for 2017-22.

Primary KPIs:

Sustainable economy and jobs
CO ₂ /£m GVA
Number of employees in the low carbon and environmental goods and services (LCEGS) sector
Value of sales in the LCEGS sector
Annual rate of growth of the LCEGS sector
Healthy communities
% of households in fuel poverty
Index of cycle use
Resilience to climate change
Number of properties in flood warning areas
Zero carbon
% reduction in total CO ₂ emissions, from 2005 levels
Culture change
% of residents certified as Carbon Literate
% of organisations committed to a climate change, environmental or resource efficiency initiative e.g. Carbon Literate Organisation, Green Growth, ISO14001
% of Manchester schools as Eco Schools

Secondary KPIs:

Buildings
% reduction in domestic CO ₂ emissions, from 2005 levels
% reduction in commercial and industrial CO ₂ emissions, from 2005 levels
Energy

Best Practice Examples

To include:

- What are we already doing
- Weave throughout report

Integrate Climate and Energy into Relevant Staff Trainings: Many municipal employees must undertake regular training to achieve certification and/or job requirements. Integrating relevant climate and energy information into these trainings is a great way to educate municipal staff while also presenting information in a safe and familiar environment.



TIP – Educational Opportunities

Providing opportunities for employees to learn new skills or trades can be an effective way to foster support for environmentally friendly practices. For example, encourage/sponsor city staff to become LEED Accredited Professionals or go through an Energy Management certification process. Build this into your ongoing professional development and skills trainings.

Regular Check-in with employees once new measures have been implemented: After a new measure has been implemented, it is critically important to touch base with municipal staff who are/were affected by the change. Gauge their opinions regarding the effectiveness and value of the new measure. Listen to their suggestions and provide an avenue by which they can share their concerns, frustrations, and satisfaction with the relevant parties.



Best Practices

Keene, NH

From fire engines to snowplows, all 77 of the vehicles in the City of Keene, New Hampshire's Public Works Department are running smoothly on B20 biodiesel. The biodiesel performs well in cold temperatures and has improved the air quality inside the fleet maintenance facility. The City regularly checks-in with staff to gauge their opinion of how the biodiesel process is working.

Use Incentives: Incentives can be a great way for a municipality to encourage its employees to embrace new measures. When used appropriately, incentives can help to demonstrate the ease of implementation of a given strategy and help to ease the transition from an old and familiar practice, to a new and different practice. For example, an employee commute program could be paired with free bus passes for all employees who commit to taking public transit or car pooling at least once a week.



Best Practices

What is Birmingham doing already?

Birmingham Resilience Group and the *Chamber of Commerce* both have programmes to help businesses prepare for the impacts of extreme weather. The development of the *Greater Birmingham and Solihull Local Enterprise Partnership (LEP)* provides the opportunity to address climate change adaptation issues in a wider context. This will benefit business and the economy across the LEP, not just in Birmingham, and could include:

- Ensuring that businesses on the River Tame are not affected by upstream regeneration proposals
- Improving the reliability of transport systems for commuters and logistics during extreme weather events
- Reducing the risks of cascade failure affecting businesses by taking an area wide basis to identifying and mitigating pinch points
- Identifying and promoting growth in resilience related business, such as systems management

Case Study: Project Ripple

Run by *Birmingham Resilience Group* promotes business continuity. This offers local businesses at risk from flooding the opportunity to gain an understanding of emergency responders and professional partners involvement prior to, during and after a flood event, consider how their businesses would cope with a flood and what measures they might want to take to make them more resilient. Dedicated advice on preparing for and dealing with emergencies is available on www.birminghamprepared.gov.uk

Birmingham *Chamber of Commerce* also works with individual businesses to help make them more resilient. A major issue for manufacturing industries is



Case Study: West Midlands Fire service

West Midlands Fire Service has proactively considered the impacts of a changing climate on their business operation. They have worked with the Met Office to profile open grassland fires against climate change. This has allowed them to consider whether they have the right resources (personal protective equipment, vehicles, etc) in the right places.

Pledges

To include:

- what are all the stakeholders pledging to do
- weaved throughout report

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Best Practices

Energy

"As an already carbon neutral organisation we remain committed to our carbon neutrality pledge. 2020 onwards will see us moving forward in engaging with our supply chain and employees as we challenge our Scope 3 and also the emerging Scope 4 e"

- Will Bros Civil Engineering Ltd

[Full details >](#)

Resources

"To work towards a shared vision of eradicating avoidable single-use plastics from catering, labs and stationery across Manchester Metropolitan University by 2022."

- Manchester Metropolitan University

[Full details >](#)

Energy

"We pledge to reduce our company's carbon emissions to net-zero by 2030."

- Childbase Partnership

[Full details >](#)

Energy

"Interface pledges to be carbon negative by 2040 in terms of products, services and operations."

- Interface

[Full details >](#)

Pledges

As part of this strategy we are seeking firm commitments from businesses and stakeholders to offer support for our city. Some major institutions have already set out what they will do more of or do differently, and these commitments are visible throughout our strategy and highlighted on this page.

We thank those that have showed support so far and welcome and encourage more. If you would like to contribute and make a pledge, it can be made on the 'Make a Pledge' page.

The companies below have made pledges already - clicking on their logo image will open a new page that outlines the pledge they have made.



ICLEI Resource Guide 2009

Pledge Wall – Edie

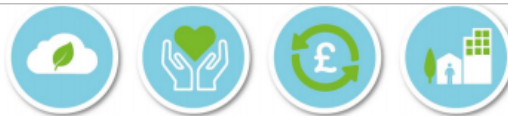
Leeds Growth Strategy

Next Steps

To include:

- critical action in next 5 – 10 years to put us on track

Nottingham in 2028



A Safer City

By becoming the UK's first carbon neutral city, Nottingham will be helping safeguard the future of our children and future generations. Through adaptation and resilience measures we will ensure the City and its residents are protected from the worst impacts of unavoidable climate change.

A Healthy City

Nottingham will be one of the healthiest places to live with clean air, green open spaces and locally produced healthy food. New networks of safe cycling routes and high quality vehicle free public spaces will make it easier for people to get regular exercise.

A City of Opportunities

The Nottingham economy will be built on new sustainable technologies creating high quality employment for our citizens and a worldwide reputation for innovation and excellence. New infrastructure developments will not only create jobs directly, but make Nottingham one of the best places for businesses to thrive.

An Inclusive City

Nottingham will become one of the most equitable cities with new training opportunities to help Nottingham people benefit from the low carbon economy. We will continue to ensure the benefits from economic growth are felt by our citizens and lift people out of poverty.

A City that takes care of its residents

Nottingham will become one of the cheapest places to live and work in with low household fuel bills, affordable low carbon public transport, and high quality public services.

A City where everyone is able to reach their full potential

Nottingham will be one of the happiest places to live. Good quality homes, high employment, attractive public spaces and biodiverse ecosystems will improve the overall wellbeing of citizens and communities.

4.4 5-YEAR IMPLEMENTATION PLANS AND CARBON BUDGETS

Five-year implementation plans will be produced, setting out the actions that will be delivered in relation to each of the areas described above. They will cover both the activities that will contribute directly to achieving our objectives during that period, as well as the preparatory and enabling work that will lead to practical action and progress in following five-year periods.

As set out above, the actions of all organisations and individuals in the city are key to the strategy's successful delivery. However, the breadth and depth of action to be delivered is vast and it would not be realistic or helpful to try to capture all activities that will need to take place within any five-year period. To provide a tool that can practically drive forward the delivery of the strategy, implementation plans will therefore cover the strategic activities that will be delivered by the city's key partners. This will include activities designed to encourage, support and enable all city stakeholders to contribute to the strategy's delivery.

4.5 ACTION BY ALL STAKEHOLDERS

In combination with supportive and enabling policies and programmes by GMCA and UK Government, the action of all stakeholders in Manchester is critical to the successful implementation of this strategy. There are already many examples of action by the public sector, private businesses and local residents that have contributed towards delivering Manchester's first climate change strategy, during 2010-16. From switching to renewable energy suppliers, growing healthy food with neighbours, to major investments in low carbon buildings and cycle routes, all action is part of Manchester's collective efforts and the cumulative impact that has been achieved to date.

Manchester has a number of existing programmes that can support individuals and organisations to take action on climate change, at home, at work, at school and college, and at university. Further information is available from:
www.manchesterclimate.com/getinvolved.

Glossary

Glossary

1.5°C Temperature rise	This refers to the rise in the average global temperature above the pre-industrial period (pre-1750)	Carbon Offsetting	Practices and technologies to neutralise remaining emissions that cannot be removed entirely.
Adaptation	Actions to reduce vulnerability to climate change impacts, reducing its effects on social, economic and natural systems	CO₂e	Carbon dioxide equivalence; this includes all greenhouse gases converted into the equivalent amount of carbon dioxide.
ALMO	Arms Lengths Management Organisation	D2N2	The Local Enterprise Partnership for Derby, Derbyshire, Nottingham and Nottinghamshire.
BEIS	UK government department of Business, Energy and Industrial Strategy	Ecosystem	Community of living organisms and the natural environment
Biodiversity	The variety of animal and plant life on Earth	Future Parks Accelerator	The FPA fund will support Nottingham to grow the contribution parks make to civic life whilst becoming financially sustainable. It will involve discovering how parks and green spaces could be better used, managed and funded to serve community needs and aspirations now and over the next generation.
Business as usual	Future emissions trend if the current state of affairs continue as they are today	Global warming	Increase in temperature of the Earth's atmosphere over long timescales, caused by increased levels of greenhouse gases
Carbon budget	The maximum amount of carbon dioxide that can be emitted to be in line with keeping temperatures well below 2°C and pursue a 1.5°C limit to rising temperatures	Greenhouse gas (GHG)	The Earth can maintain a regular average temperature (about 15°C) despite heat leaving the planet's surface because a layer of gases in the atmosphere absorb and release heat – a process known as the greenhouse effect. Greenhouse gases are those that have this effect, each with differing lifetimes and abilities to capture heat (infrared radiation).
Carbon dioxide (CO₂)	A key greenhouse gas with a long-lifetime in the atmosphere and both natural and human sources.	kWp	The peak power of a PV system or panel.
Carbon neutral	Having no net release of carbon dioxide into the atmosphere		
Climate change	The long-term change of climate, typically measured over decades or longer. This is different to weather, which is now.		
Climate emergency	Climate change presents the greatest threat to life: on the economy, social well-being and the natural environment		

Nottingham Action Plan

Appendix 2

Climate Change Adaptation Action Plan 2012

Appendix 2 GLOSSARY

Big City Plan

This master plan, forming a key element of the Big City Plan, is about delivering transformational change in Birmingham city centre by supporting sustainable growth, creating new and improved public spaces, giving streets back to pedestrians and bringing the cultural life of Birmingham to the heart of the city.

Birmingham Climate Change Action Plan sets the strategic direction of BCC to deliver on carbon emissions targets, adapt to climate change and make Birmingham greener. A Cabinet Committee will monitor progress.

Climate

Climate refers to the average weather experienced in a region over a long period, typically at least 30 years. This includes temperature, wind and rainfall patterns.

Climate Change

Climate change refers to any change in climate over time, whether due to natural variability or as a result of human activity.

Climate Change Adaptation is taking action to deal with the consequences of climate change resulting from increased levels of greenhouse gases.

Climate Change Mitigation is taking action to tackle the causes of climate change, by reducing concentrations of greenhouse gases, such as CO₂ in the atmosphere.

Climate Change Risk

Additional risk to investments (such as buildings and infrastructure) and actions from potential climate change impacts. E.g. As winter rainfall increases,

many buildings in the UK may be at an increased risk of severe flooding such as that seen in Cumbria in 2009.

Emerging Core Strategy

All future development and investment in Birmingham will be considered against the approach and policies in the Core Strategy. Once finalised it will be the principal strategic planning policy document within The Birmingham Plan, the city's Local Development Framework.

Emissions Scenarios

A plausible representation of the future development of emissions of substances (e.g. *greenhouse gases* and *aerosols*) that can influence global climate. These representations are based on a coherent and internally consistent set of assumptions about determining factors (such as demographic and socio-economic development, technological change) and their key relationships. The emissions scenarios used in UKCP09 do not include the effects of planned mitigation policies, but do assume different pathways of technological and economic growth which include a switch from fossil fuels to renewable sources of energy. Source: *UK Climate Projections*.

Environmental deprivation

Environmental Deprivation is the lack of environmental benefits to people in a given area. There is no agreed definition, but the example given in this report uses river water quality, fly tipping, green space, air quality, derelict land, biodiversity, flood risk and proximity to regulated sites. There is often a strong correlation between environmental and other forms of deprivation.

Extreme weather events

Extreme weather events include weather phenomena

that are at the extremes of the historical distribution, especially severe or unseasonal weather. Extreme weather events are rare.

Flooding

Flooding is the inundation of land that is normally dry from one of several causes:
Fluvial – overtopping of rivers
Pluvial – surface water run-off due to large quantities of rain in a short time where the drains cannot cope with the flow, water holding areas are not sufficient and seepage into the ground is not quick enough
Groundwater – rising levels of subterranean water
Sewerage – caused by blocked sewers.

Green Infrastructure

Green infrastructure is a strategically planned and delivered network of high quality green and blue spaces and other environmental features. It should be designed and managed as a multifunctional resource capable of delivering a wide range of environmental and quality of life benefits for local communities. Green Infrastructure includes parks, open spaces, playing fields, woodlands, rivers, canals and ponds, allotments and private gardens. Green infrastructure strategies provide an over-arching vision for developing and managing all green and blue spaces in an area.

Heatwave

A continuous spell of unusually hot weather, where day temperatures reach at least 30°C and night times are at least 15°C for at least 3 days.

Index of Multiple Deprivation

The Multiple Deprivation index shows the overall level of social and economic deprivation in an area. It is based on six indicator domains, each consisting of a separate set of indicators. The domains are as follows:

Birmingham Climate Action Plan 2012

Technical Annex

To include:

- Evidence base in detail

WHERE ARE WE NOW?



694,000 tonnes of waste is collected by Essex Councils, as much again is produced by Essex businesses.

54% is recycled, improvements in recycling are stagnating.

Total waste has **remained static** despite population growth. Product design improvements has driven this with some behaviour change

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IMPACTS OF CONGESTION



The UK ranked in the **top ten most congested countries** in the world, the third most congested in Europe behind Russia and Turkey (Inrix)



The average amount of **CO2 emitted by new cars** has risen for the third year in a row – by 2.7% to 127.9g/km (SMMT)



Direct and indirect **costs of congestion** is **£37.7 billion**, an average of £1,168 per driver. (IPPR)



People in the UK are **64 times as likely to die** of air pollution as those in Sweden and twice as likely as those in the US (WHO)



Poor air quality causes **40,000 to 50,000 early deaths** in the UK and the cost of these health impacts is estimated at £20 billion every year

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Crib Sheet Annex

To include:

- Separate recommendations broken down by audience groups
- Separate recommendations broken down by SIG areas
- Section for audiences to pledge

Appendix 1: Recommendations Summary

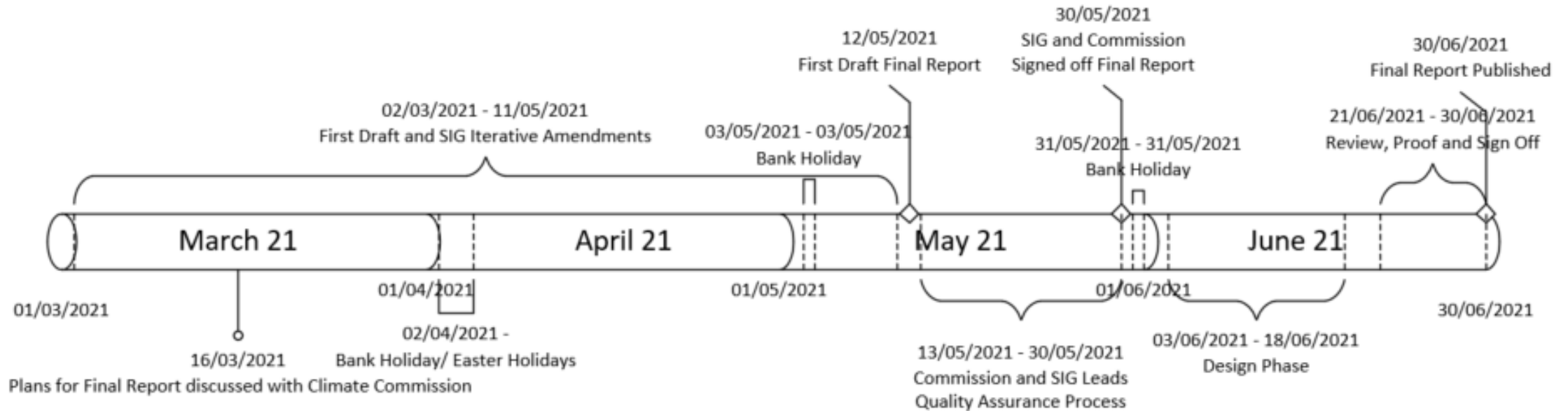
Commission Meeting 2: Core discussion on adapting to an already changing climate - recommendations

- Stronger policy on sustainable urban drainage to ensure it is included as the default for new developments
- Make green SuDS the default in all new developments (buildings and infrastructure) – this is set out in the NPPF but needs implementation
- Automatic right to connect new developments to the sewer system should be made conditional on national SuDS standard being met
- Clarify arrangements for who is adopting and maintaining SuDS
- Set goals for reversing the national decline in urban greenspace
- Greenspace 'retrofit' programmes should be included in local plans.
- Incorporate national green infrastructure from the 25 Year Environment Plan into local planning
- Include water efficiency measures in energy efficiency retrofit programmes
- Overheating risk needs integrating into local plans. Plans are also needed for care homes, hospitals, schools, prisons
- Ensure that adaptation (and mitigation) are integrated into the Environmental Land Management system
- Diversifying land use is likely to build in resilience. Diversifying agricultural land, afforestation, peatland restoration and catchment management have positive impacts on the condition of natural habitats and habitat creation.
- Resources are needed that explain local climate impacts and risks to land managers – e.g. regional risk assessments
- Support should be provided to help land managers transition to alternative land uses. This includes help with skills, training and information to implement new uses of land, and support with high up-front costs and long-term pay-backs of investing in alternative uses
- Encourage large businesses to disclose physical risks, using frameworks such as the Taskforce on Climate-related Financial Disclosure, or the Adaptation Reporting Power
- Local government and the Environment Agency need to be enabled by national

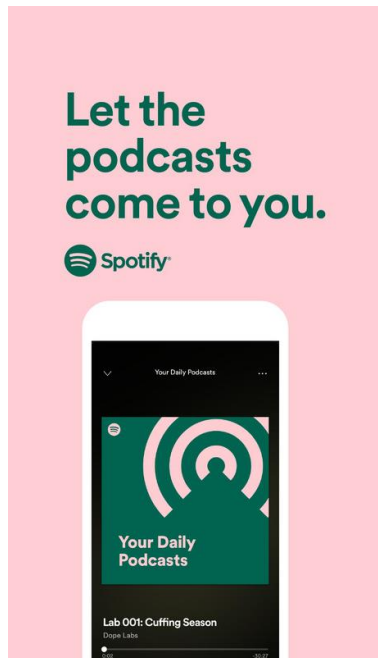
Objective	Action	Timescale
1.3 Increase in the quality, accessibility and frequency of public transport for all	How Central Government can help	
	1.2.7 Department for Transport will be consulted on the local cycling and walking infrastructure plans and asked to support its recommendations	
	1.2.8 Provide support for investment into cycling and walking infrastructure and complementary promotional activities (e.g. encourage people to walk/cycle for short journeys and review signage of active travel routes)	
	Actions Nottingham City Council can take	
	1.3.1 Continue to promote the use of the most sustainable forms of public transport in the city, demonstrate value for money and journey time savings	Ongoing
	1.3.2 Actively seek to expand the tram network to cover more of the city and conurbation of Nottingham bringing High Quality high frequency public transport to more of the population of Nottingham	Long Term
	1.3.3 The Council will commit to investing in Real Time Public Transport information through on street variable message signs and mobile devices	Medium Term
	1.3.4 Continue to run the link bus network using 100% electric buses linking key points to areas not served by the commercial network	Ongoing
	1.3.5 Improve bus infrastructure and priority measures e.g. bus lanes, high quality bus stops and new technologies	Medium Term
	Actions we can take in partnership	
	1.3.6 Expand Public Transport networks in partnership with public transport operators and large employers e.g. hospitals	Medium Term
	1.3.7 Work with drivers and operators to ensure that we have a cleaner hackney carriage and private hire fleet by 2025	Medium Term
	1.3.8 Develop a Mobility As A Service platform in partnership with public transport operators and service providers of shared transport solutions such as car clubs and bike hire	Medium Term
	1.3.9 The city council will continue to invest in ticketing integration rolling out new ways to pay for Public Transport E.g. by using mobile devices bank cards and contactless payment systems and developing mobility credits packages for low income households	Ongoing
1.4 A clean system for freight to enter and move around the city	How Central Government can help	
	1.3.10 Central Government can help with the electrification of the Midland Mainline rail link into Nottingham and enable more accessible, affordable and frequent services	
	1.3.11 Provide support for investment into public transport	
	Actions Nottingham City Council can take	
	1.4.1 Investigate the possibility of freight consolidation centres in the city to reduce freight journeys by road	Short Term
	1.4.2 The City Centre Clear Zone will be modified to ensure that only the cleanest delivery vehicles will be able to access the city centre	Medium Term
	1.4.3 Encourage freight organisations to make the switch to electric vehicles and promote the use of cargo-bikes for final stage deliveries	Medium Term
	Actions we can take in partnership	

Timeline

ECAC Final Report High Level Time Line



Publishing report



- Produce toolkit containing:
 - Printable simple quick wins leaflet
 - Tailored audience focused action plans
 - Templates to allow everyone to create own pledge
- Campaign
- Website
- Launch event for the final report
- Podcasts
- Audio version of the report
- Infographics
- Fringe events
- COP26
- Broadcast platforms