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Foreword



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Executive Summary

The **Birmingham Low Carbon Transport Strategy** has been developed to help address the City's overarching target to reduce CO₂ emissions per capita by 60% from 1990 to 2026. In 2009, Birmingham contributed around 5,785 kilotonnes (kt) of CO₂, with road transport contributing approximately 25%.


The vision is to reduce the environmental impact of the city's mobility needs by providing an efficient, safe and easy to use LOW CARBON transport system which will stimulate economic growth by providing high quality transport choices.

This vision will be delivered through four key themes:

Smarter Choices Providing and promoting a package of techniques (smarter choices) for influencing people's behaviour towards more sustainable modes. Changing travel behaviour can reduce transport carbon emissions, improving quality of life and reducing congestion in the city. These choices often include interventions which are easy, do not restrict choice and work with human behavioural tendencies to encourage "good choices (referred to as "Nudge").

Smarter Infrastructure Promoting growth through the efficient use of existing transport networks, implementing the Vision for Movement, resulting in carbon efficient transport networks.

Smarter Technology Minimising the impact of road transport by continuing to invest in electric and other low emission vehicles and by providing continued support to develop the use of Intelligent Transport Strategy and information technologies.

 **Effective Carbon Management Planning** Considering more comprehensively how the Council's transport and planning services are delivered in a sustainable way, from inception through to implementation, and how wider partnerships can help to reduce carbon impacts on the city.

The Strategy outlines a framework of actions which will contribute towards achieving this vision and reducing the carbon footprint of transport in Birmingham. The successful delivery of the Strategy will rely on both high impact actions and low cost lower impact interventions.

The science of climate change and its links with carbon emissions are now well established and detailed in various published studies, including the 2007 Stern Review of the Economics of Climate Change . Carbon dioxide (CO₂) is one of several greenhouse gas emissions, which are contributing to increases in global temperatures which in turn will lead to major changes to the world's climate.

The total CO₂ emissions for Birmingham in 2009 were around 5,785kt CO₂. This is a 12% reduction from the 2008 total of 6,561kt CO₂. Road transport accounts for approximately 25% of the total carbon emissions. Birmingham contributed 15% of the overall 38,651kt CO₂ emissions for the West Midlands; more than any other local authority in the region.

The City of Birmingham faces the complex challenge of reducing CO₂ emissions and has therefore set an overarching target of a 60% reduction in CO₂ emissions per capita from 1990 to 2026, as set out in

2. Vision

Our vision is to reduce the environmental impact of the city's mobility needs by providing an **efficient, safe and easy to use LOW CARBON** transport system which will stimulate economic growth by providing high quality sustainable transport choices.

This vision will help to ensure transport's contribution towards the city achieving its overarching aim of reducing CO₂ emissions by 60% from 1990 to 2026. The vision will be delivered through four key themes as shown in **Figure 2** and **Figure 3**.

3. Context

Climate change is a global concern, with policies relating to carbon reduction produced at international, national and local levels. This section provides details of the key issues emerging from these and linkages to the **Birmingham Low Carbon Transport Strategy**.

mean achieving an 80% reduction in carbon emissions from developed countries by 2050 (on 1990 levels).

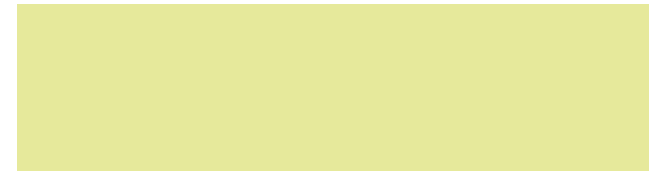
The **European Union** (EU) is committed to reducing greenhouse gas emissions by 20% by 2020 (on 1990 levels) with on-going discussions to seek agreement on a more demanding target (30% cut in emissions by 2020). ToUKTixese gas ement

International Policy

The **Kyoto Protocol** has been ratified by 183 countries, including the United Kingdom, and came into force in 2005. All partaking nations committed themselves to tackling global warming and greenhouse gas emissions with an agreed target of average reduction of greenhouse gas concentrations in the atmosphere of 5.2% from 1990 levels by the year 2012.

With the Kyoto Protocol expiring in 2012, global action on climate change was agreed by a majority of leaders and countries as part of the "**Copenhagen Accord**". The deal, agreed by 49 countries, endorsed the limit of 2 C warming with participating countries committing to make specific commitments to tackle emissions.

At the 2009 **G8** summit, the 8 nations agreed to aim to limit global warming to 2 C and recognised that this would



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- .. The G8 countries are Canada, France, Germany, Italy, Japan, Russia, the United Kingdom and the United States.
 - .. Creating Growth, Cutting Carbon (January, 2011) <http://www.dft.gov.uk/pgr/regional/sustainabletransport/pdf/whitepaper.pdf>
 - .. The Economics of Climate Change, The Stern Review, N. Stern, 2006
 - .. The Stern Review includes evidence that this is equivalent to stabilising atmospheric concentrations of greenhouse gases at 450-550 ppm CO₂. Evidence published since the Review suggests however that those concentrations might need to be even lower to maintain this target. For example the IPCC's Fourth Assessment Report (AR4), released in 2007, suggests that stabilisation at 400 ppm CO₂ could lead to a temperature rise of up to 2.5 C.
 - .. UK Low Carbon Transition Plan, DECC, July 2009

Local Policy

Birmingham's emerging **Core Strategy** is the City's key planning document and has the need for carbon reduction and sustainability at its heart. The Core Strategy provides vision and direction to guide the future development of Birmingham. The vision identifies the need for sustainable growth in order to meet the target of a 60% reduction in tonnes of CO₂ per person from 1990 to 2026. The Core Strategy states a key factor in minimising the future carbon footprint will be reducing car dependency and ensuring other transport infrastructure and public transport services are continually improved. Low carbon transport will also provide subsidiary benefits in terms of economy, health, sustainability and air quality.

Sustainability and the creation of a low carbon society are also included in the **Birmingham Big City Plan** which provides a planning and regeneration framework for Birmingham City Centre and the **Birmingham Climate Change Action Plan 2010+**. The Action Plan provides an implementation framework that identifies key priority areas to focus the City's climate change reduction aspirations. This includes 'Low Carbon Transport' with a particular focus on sustainable travel and development of transport technologies. To encourage the use of travel modes which have a lower carbon impact on the environment, the City Council promotes local strategies for walking and cycling, including the 2011 cycling strategy **Bike Birmingham**.

As emissions from transport are one of the main contributors to carbon emissions, the City's **Air Quality Action Plan (AQAP)**, originally produced in 2006, also provides important guidance for this Low Carbon Transport Strategy. Since Jan 2003, the whole of Birmingham has been a designated Air Quality Management Area and work has been ongoing over the last decade to address these issues. The AQAP was updated in 2011. The AQAP sets out 12 key actions to concentrate on which closely relate to the content of this Strategy.

In the local region, reducing the carbon impact of transport networks is one of the primary aims of the integrated transport authority, Centro, and the **West Midlands Local Transport Plan 3** (LTP3) (2011-16). The LTP3 prioritises providing sustainable travel and

Birmingham Big City Plan (September 2010) <http://bigcityplan.birmingham.gov.uk/download-the-plan/>
Birmingham Climate Change Action Plan 2010+ (<http://www.birmingham.gov.uk/cs/Satellite/ccap?packedargs=website%3D4&rendermode=live>)
<http://www.centro.org.uk/LTP/LTP.aspx>
The Nottingham Declaration on Climate Change <http://www.energysavingtrust.org.uk/nottingham>



4. Objectives and Key Actions

Smarter Choices (SC)



Providing and promoting a package of techniques (smarter choices) for influencing people's behaviour towards more sustainable modes. This will be achieved through the following objectives and actions:



SC-1: Developing and implementing travel planning initiatives to reducing dependency and use of the private car.

Continued promotion of **School Travel Plans (STPs)** to encourages greater use of cycling, walking and public transport for trips to/from schools. STPs will typically include promotional and education activities, cycle proficiency training for children (e.g. Bikeability), road safety training, local infrastructure improvements (e.g. cycle parking) and transition training (support for young people's move from primary to secondary school).



Continued promotion of **Workplace Travel Plans (WTPs)** to reduce the reliance of commuters on cars and to promote travel to/from work/local centres by cycling, walking and public transport. WTPs will typically include site specific advice, promotional and educational initiatives, proficiency training, travel awareness events and small scale infrastructure improvements.

Continued support to Centro and other partners in promoting **Rail Station Travel Plans (RTPs)** to improve access and promote sustainable travel to/from rail stations.



Continued promotion of **Personalised Travel Plans /Community Travel Plans** in local communities and around local centres. This can include providing cycle training, bike maintenance advice, travel planning advice and small scale infrastructure improvements. Also integrate with local health organisations and sustainable travel charities, to support a range of community-based initiatives including active travel health prescriptions, utility and leisure walking programmes.

Continuation of initiatives to reduce dependency on cars, such as **Car Clubs** and **Car Sharing**. Car club fleets are often more carbon efficient than most private cars and reduce pressure for parking.

SC-2: Promoting the use of walking and cycling to complement targeted travel planning initiatives.

Providing suitable support to encourage walking and cycling as an alternative to some car journeys through promotional events and education activities, cycle hubs (providing bike storage, hire, maintenance advice, etc) and cycle proficiency/confidence training.

Continued working with Centro to provide online **journey planning information for walking and cycling trips** through websites such as www.transportdirect.info (for multi-modal travel information) and Walkit.com (Refer to SC-3).

Continued updating and promotion of hard copies and online versions of city-wide and local area **walking and cycling maps** (Refer to SC-1).

Review and monitoring the progress of the **Bike Birmingham Cycling Strategy** (2011).

SC-3: Improving the attractiveness and perception of public transport to promote their use.

Working with Centro and other partners towards creating a more seamless end-to-end journey for passengers including **smartcard ticketing**, accurate **Real Time Passenger Information** (RTPI), **branding** of public transport and prioritising public transport as appropriate and feasible.

Working with Centro and other partners to develop proposals for **feeder bus services** to rail stations to make interchange between modes more attractive, accessible, safe and secure (Refer to RTPs in SC-1).

Continued working with Centro to provide **journey planning** information for public transport trips through websites such as www.help2travel.co.uk, Network West Midlands (www.networkwestmidlands.co.uk), and [Travelinmidlands](http://www.travelinmidlands.co.uk) (www.travelinmidlands.co.uk) (Refer to SC-2).

Working with partners as a part of Centro's **Transforming Bus Travel** (TBT) initiative to modernise Birmingham's bus travel. TBT aims to deliver a range of quality and performance improvements including high vehicle standards, new vehicle technologies, infrastructure investment, enhanced passenger information and promotion; all increasing customer satisfaction and increased bus patronage. **Birmingham City Centre Interchange project (BCCI)** is a key aspect of TBT and aims to enhance services to better meet passenger needs, enhance the efficiency of bus operations and be practical in traffic engineering terms. Passenger facilities and information systems are being developed to align with

wayfinding improvements being implemented as a part of the **Birmingham Interconnect** project. The City Council and Centro are implementing a bus Quality Partnership Scheme in the city centre. This will set standards for buses entering the city centre including vehicle emissions.

Better access for mobility impaired users to public transport services with equal access to be promoted for all users.

Working with partners to support and expand the **Safer Travel Police Partnership** (West Midlands Police, Safer Birmingham Partnership, bus operators and Centro) in targeting key hot spots to improve the travelling experience of bus users, pedestrians and cyclists (Refer to SC-2).

SC-4: Raising awareness of the benefits of sustainable modes by using a co-ordinated marketing and communications campaign.

Raised awareness through **city-wide marketing campaign** to promote the use of smarter choices. Smarter choice promotional campaigns will be run in part, under the overarching umbrella of wider marketing of promoting a low carbon transport society including promotion of low carbon vehicles, fuels and technologies.

Capitalise on established brands such as **TravelWise** and **Be Active** to support and raise awareness of smarter choices.

SC-5: Promoting a package of measures to encourage environmentally friendly driving

Promotion of initiatives such as '**Eco-Driving**' to encourage driving behaviour which minimises carbon emissions. Successful initiatives can reduce



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SI-1: Maximising the efficient and reliable operation of the current transport network for all traffic by targeting key delay points across the highway network.



SI-4: Improving the quality and capacity of the public transport network through the implementation of projects.

Review the **bus network** as a part of TBT and implement related projects which emerge to provide a high quality integrated public transport system. The review aims to not only serve existing communities but also consider access by public transport to future developments (Refer to SC-3).

Continued development and expansion of rapid transit corridors within Birmingham. This includes **Birmingham Sprint** and **Midland Metro**. These are the main features of the rapid transit network proposed in **Centro's Integrated Public Transport Prospectus**.

Delivery of proposals to improve bus facilities, including a new **interchange on Moor Street Queensway**.

Upgrade the quality of **waiting environments at bus stops and rail stations**, including providing real time information along all major bus corridors.

Maximise opportunities to increase capacity in the rail network including working with Centro on the construction of the Camp Hill chords to open passenger stations along the line between King's Norton and Snow Hill, and add capacity to services between Birmingham and Tamworth.

Work with partners **to influence investment** to boost service frequency, quality and journey times of **rail services**. Investment would target rolling stock upgrades, electrification of lines and increases in track capacity.

Delivery of major Birmingham projects such as **New Street Station** enhancements, **Midland Metro extension**, and potential **High Speed Rail (HS2)**.

SI-5: Improving the efficiency of parking in high demand areas, including both within and outside the City Centre.

Application of the council's **Parking Policy and Parking Guidelines SPD** to guide the provision and management of parking and to support the management of the City's highway capacity.

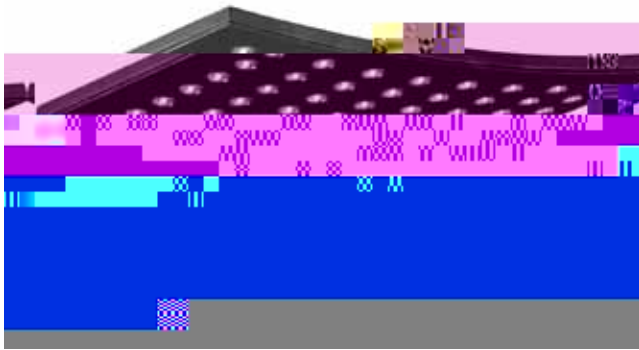
Restricting the amount of additional temporary car parking sites particularly in the city centre.

Continued development of **Controlled Parking Zones (CPZs)** and **Resident Parking Schemes (RPSs)** in the City Centre and in priority locations across the City. Parking controls can help to manage demand, reduce congestion, and encourage mode shift. Restrictions in residential areas, when supported by smarter choices initiatives, can also reduce car dependency, bringing about a longer term shift towards lower car ownership.

SI-6: Minimising the impact of the aviation sector by improving surface access to Birmingham Airport.

Enhance the **quality of public transport** to Birmingham Airport by making **improvements to the fleet** so that it is suitable for its purpose, such as increased luggage space.

The **extension of the runway at Birmingham Airport** would permit a wider range of long haul flights which could mean people choose to fly from Birmingham rather than other UK airports. This will potentially result in savings in annual road vehicle kilometres travelled and the associated carbon emissions.



SI-7: Installing LED lighting technology to reduce the carbon impact of transport lighting.

Implementing of a masterplan to provide the world's most advanced LED lighting system across the whole of Birmingham, to reduce the level of carbon impact by 50%.

SI-8: Providing the suitable infrastructure to support the smarter choices initiatives and marketing campaigns.

Targeted investment in walking and cycling infrastructure to enhance the quality of pedestrian and cyclist environments including improvements to lighting, surfaces, wayfinding and crossings. This includes the extension of cycling and walking routes, dedicated on-street cycle lanes, local safety schemes and better connectivity to the canal network.



Smarter Technology (ST)



Minimising the impact of road transport by promoting electro mobility - through supporting electric and other low emission vehicles; and encouraging the use of efficient fuels and technologies, which will be achieved through the following objectives and actions:

ST-1: Continuing to invest in low carbon fuel and vehicle technology to encourage the use of low carbon and electric vehicles, to minimise the carbon impact on the network.

Continued support to Birmingham's universities and businesses to **increase the frequency of use of electric vehicles** as part of the **CABLED** Consortium Project.

Promote the vision of Birmingham's emerging Electric Vehicle Infrastructure Strategy to develop a **network of electric charging points** across Birmingham. This includes 64 new charging points spread across the city in City Council car parks, leisure sites, on-street and in Centro Park & Ride car parks.

Introduction of more **fuel efficient buses** into the region's network. This is initially through **hybrid buses** to be introduced to the 22 and 23 routes in 2012, utilising funds secured by National Express West Midlands and Centro through the Department for Transport's Green Bus Fund. (Refer to SC-3).

All **vehicles procured by the Council** to be electrically powered or run on liquefied petroleum gas by 2015.

Support the use of electric powered two wheelers across Birmingham.

Work with partners to explore the potential to roll out a national level project demonstrating the use of **hydrogen fuel cell buses** and/or small passenger and fleet vehicles. Further exploration of how supply chain infrastructure can support this should also be promoted.

Extending the electrification of the rail network to reduce the carbon footprint of rail travel and improve local air quality at stations like New Street Station and Snow Hill Station.

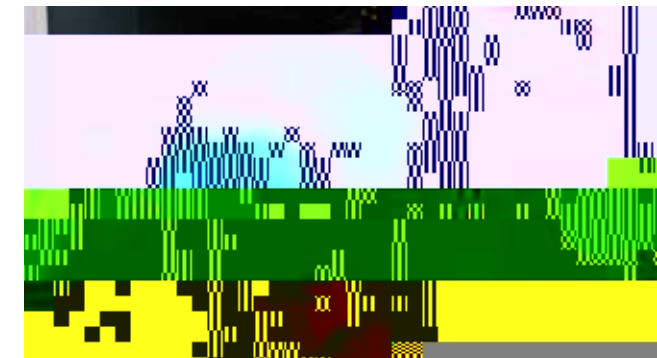
Working with/support partners to promote the use of alternate low carbon fuels and technologies for routine applications to improve carbon footprint by Light Goods Vehicles in particular. As a part of University of Birmingham's Zero Emissions Campus project, it is aimed to demonstrate the carbon reductions achieved due to 5 fuel cell vehicles in routine utility applications such as postal deliveries on the University of Birmingham Campus over a year.

ST-2: Providing significant opportunities to reduce the environmental burden of transport networks through the use of ITS technology.

Continue to implement **Variable Messaging Signs** and **car park management systems** which will improve journey reliability and reduce delays whilst consequently reducing emissions.

Continue the use of **SCOOT** at signalised junctions to ensure that vehicle emissions are reduced by management of traffic flows.

Integration of existing systems and upgrading to **Urban Traffic Management and Control (UTMC)** in a phased manner as they are renewed or as required.



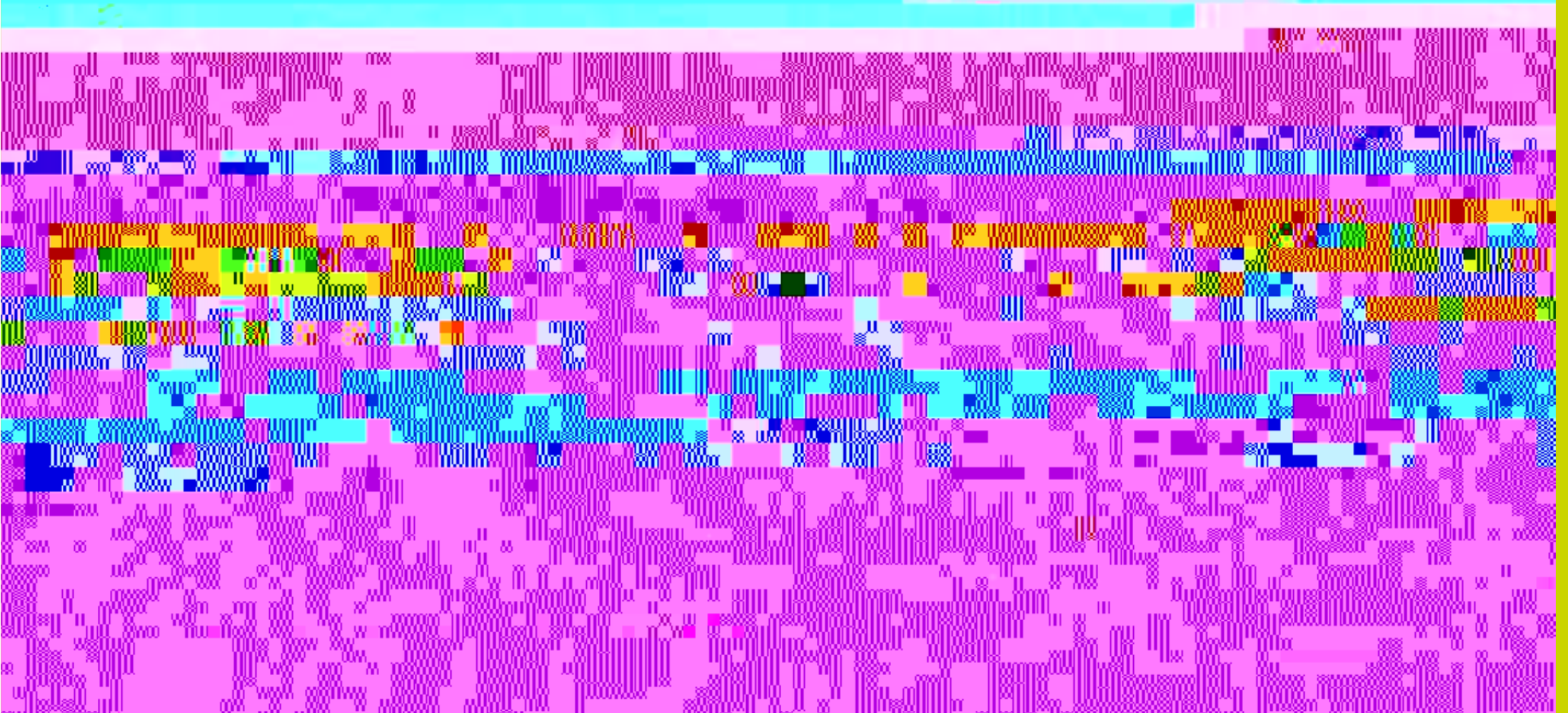
EC-1: Promoting a low carbon culture with regard to the overall delivery of Council's transport and planning services.

The Birmingham Low Carbon Transport Strategy outlines the vision, the objectives and a series of actions to contribute towards achieving the challenging target of a 60% reduction in CO₂ emissions from 1990 to 2026.

The level of contribution that each of these actions can make towards achieving the reduction in CO₂ emissions per person will depend upon:

- Individual carbon reduction potential of the actions;
- The rate of implementation;
- Availability of funding opportunities to support the implementation of these actions; and
- Successful delivery of each of these options based on the level of ownership.

At this stage, whilst detailed modelling of the carbon reduction potential of each of these actions has not been undertaken, results from other studies provide a relative indication of the contribution that each of these actions can make towards achieving reductions in carbon. Figure 4 summarises the performance potential of the actions based on the potential to reduce carbon emissions and implementation costs.²





In terms of achieving the maximum possible reduction in transport sector CO2 emissions, the focus will have to be on interventions which target the largest amount of

