



Local Transport Plan 4 Strategy 2021-2036



Executive Summary

The Local Transport Plan sets out Norfolk County Council's plans, policies and programmes on transport and transport infrastructure. The plan details how we will deliver a transport network in Norfolk through identifying the projects and programmes important to us, and in their design and direct delivery. The plan also shows how we will seek to influence our key partners in government, communities, the commercial sector and the third sector.

This plan is important because transport is important. Transport enables people to get to work and education. It allows us all to visit friends and relatives. We rely on it for days out, for leisure outings and shopping trips. As such, good transport helps people to improve their skills and qualifications. It allows Norfolk's economy to flourish and ensures that we get good delivered to our factories and our doorsteps. People's physical and mental health can be improved, and social isolation reduced, through good transport, especially if people can be given confidence to walk or cycle, and if we can improve our bus and rail links. The plan will set out how we make sure that transport's impacts are minimised; how we will improve the air quality in our towns and built up areas; and how we plan to reduce carbon emissions.

This plan contains a transport strategy that looks towards 2036. It is accompanied by an Implementation Plan setting out our proposals for implementation.

Achievements

Since the adoption of the previous Local Transport Plan in 2011 some significant achievements have been made. Norfolk County Council has worked closely with local planning authorities to make sure that new growth is in locations that ensure that people are able to access the jobs and services they need; and that this can be done sustainably.

We are a stakeholder in the largest investment in sustainable transport for the last hundred years through the provision of new rolling stock on Greater Anglia routes (which has grown capacity by 30%). London to Norwich rail services in 90-minute services are now a reality, and the Norwich-Cambridge service has recently been extended to Stansted airport. Longer trains now serve King's Lynn.

There are new buses on the county's core bus route on the A47 "Excel" bus service. Our ambitious Transforming Cities and Cycle City Ambition programmes will continue to reap major improvements to bus connections and cycle networks in Norwich. We have grown a network of community transport which increasingly complements the commercial bus network through partnerships with operators and direct operation through transport plus.

We work closely to accelerate housing growth and provide the necessary transport infrastructure including taking forward work on the Long Stratton Bypass and West Winch Housing Access Road. We have completed the Broadland Northway (Norwich Northern Distributor Road). Not only has this allowed a programme of sustainable transport measures to be implemented within the city centre, it has also stimulated housing and jobs growth. We have delivered programmes of sustainable transport improvements including in Great Yarmouth, Attleborough, and Thetford growth areas whilst Norwich has benefitted from roll-out of the cycle city ambition programme of cycle routes.

Government has committed to A47 improvements including dualling from Blofield to Burlingham and Easton to Tuddenham, as well as major junction upgrades in Norwich and Great Yarmouth. Government has also accepted the strategic outline business case for the Norwich Western Link with construction programmed to start in 2023. Construction of the Great Yarmouth Third River Crossing started in early 2021. This will provide improved access to the port directly from the trunk road and reduce traffic within the town.

We have managed and made improvements to the road condition during a period of austerity. The National Highway Transportation Survey shows that Norfolk performs well against and we came out on top in 2019 with the 'Highway Maintenance' and 'Tackling Congestion' categories.

Our New Plan

We have updated the Local Transport Plan to respond to the challenges ahead. These include carbon reduction and addressing air quality. These remain key priorities. In particular, this plan sets out how we will decarbonise the transport network. The council's Environmental Policy has been adopted, setting out a move towards carbon neutrality by 2030. Recently, in July 2021, government published Decarbonising Transport A Better, Greener Britain, its transport decarbonisation plan.

Active travel is increasingly important. Government has set out its vision that half of all journeys in towns and cities being cycled or walked by 2030. More recently government has also published its bus strategy, emphasising the place for buses as at the centre of the public transport network, and outlined its intention for reform of the nation's railways. Our new plan responds to these agendas. In our towns and urban areas, in particular, making sure that we have good transport connections is a challenge because of the amount of planned growth. The plan sets out how we will seek to make sure that shorter journeys can be made by active travel and meet government's objective for England to be "a great walking and cycling nation."

Connections to essential services and facilities remain a challenge, particularly in rural areas. This can reinforce social exclusion by preventing people from accessing key local services. We have committed to an enhanced bus partnership, setting out how we will work together with bus operators, and are developing a Bus Service Improvement Plan.

We also need to respond to the fact that society and the economy are changing. Improved technology and communication have led to people behaving differently, and to different travel patterns. Innovation in vehicle technology brings challenges such as how to deal with new vehicle types on the network, whether this be electric cars, e-scooters or autonomous vehicles. More and more data is becoming available through tools like apps on mobile phones. People are increasingly relying on such tools for their journey choices often putting pressure on certain parts of the system with the county council unable to influence this.

We also need to tackle the infrastructure deficit to ensure journeys on our major bus, road and rail connections are quick and reliable, and can be made by clean modes of transport, or clean-fuelled vehicles. Our priorities include improvements to the major rail links to London and Cambridge, the Norwich Western Link, A140 Long Stratton Bypass, A10 West Winch Housing Access Road, and full dualling of the A47.

A good transport system will encourage investment into the county by businesses including housing developers. This will help meet the future housing needs of a growing population, as well as providing jobs and other essential services.

Covid-19

Since commencing the review of the Local Transport Plan, the Covid-19 pandemic has broken out. This has resulted in many changes to people's everyday life and seen the UK and Norfolk in various stages of lockdown for much of 2020, continuing into 2021. Restrictions around – amongst other things – movement, opening of businesses, retail units and the hospitality sector, physical-distancing and overseas travel have affected the way that people use the transport network; and the reasons why people are travelling. This has been monitored throughout the plan's development at both a local level and nationally. It is too early to say whether life might return to the pre-pandemic-normal or be very different because of it. However, indications suggest that the impact of Covid-19 has accelerated many of the changes that the nation was already going through: more working at home; more online shopping; increased flexibility around working hours and behaviours; major employers looking to reduce office costs resulting in different uses for buildings or in how they are used by employees.

The pandemic and resulting legislation also forced people to change. Workplaces were closed and people no longer travelled into work or for leisure. We saw a reduction in vehicular traffic, down to 50-60% of their usual levels in our urban centres in early April 2020. Bus and train travel reduced by even greater amounts. Traffic levels returned over the summer to pre-pandemic levels, although bus and train travel remain significantly down. We have seen an increase in people walking and cycling. Reports suggest that many large companies are planning for their employees to continue to work remotely whilst property agencies report an increase in people looking for houses outside of urban areas, probably remote from their office base.

We are therefore planning on the basis that it is likely that many of the changes (most of which we were going through in any case) will 'stick.' We also need to plan on the basis that we will encourage people to stick with their new habits of walking and cycling, which bring benefits including reduced carbon and congestion, improved air quality in our urban areas, and better physical and mental health for people participating.

Local Transport Plan Strategy and Policies

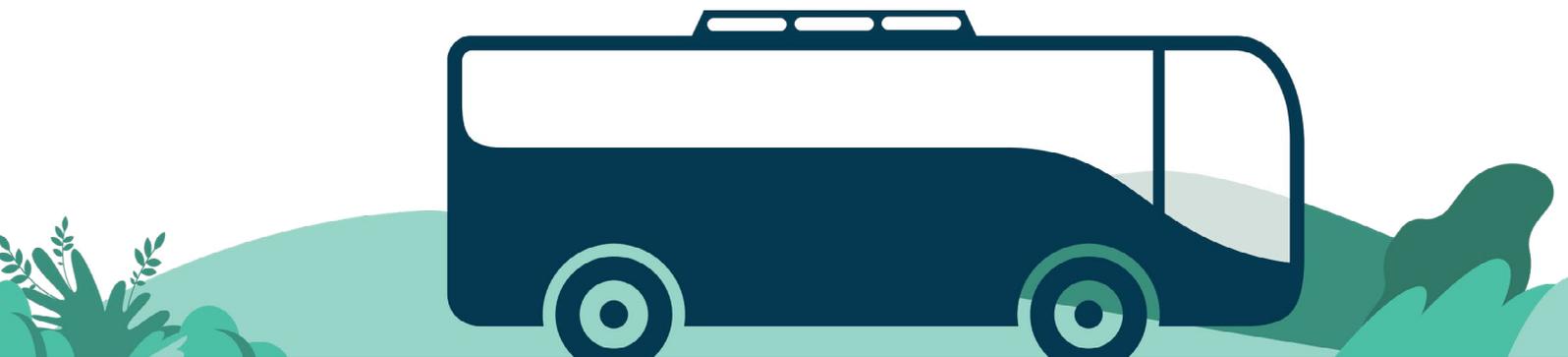
This plan sets out that we will:

- Seek to achieve the environmental policy target of working towards carbon neutrality when we make changes and improvements to our transport network, and through working with users on how they choose to use the transport network. This will include:
 - *Prioritising a shift to more efficient vehicles, including lower carbon technology and cleaner fuels with a particular emphasis on electric vehicles*
 - *Looking at behaviour change and interventions that can help to increase the use of sustainable transport*
- Prioritise tackling poor air quality problems where air quality falls below the recognised thresholds. This includes investigating vehicular restrictions or charging in urban centres
- Prepare the county for future changes and challenges to ensure the best for our society, environment and economy
- Be proactive when it comes to innovating and adopting new technologies
- Work closely with partners to ensure that new developments are located in suitable areas with access to services and leisure facilities via sustainable and active transport and not in areas that would be reliant on the private car
- Seek to mitigate any adverse effects of new development on the transport network
- Work with partners and make the case for investment to the rail network and trunk roads, which the county council does not manage or maintain, to seek improvements, seeking quick, reliable journey times for longer-distance journeys where there is the highest need
- Improve connectivity between rural areas and services in urban centres with a focus on active travel and public transport

- Tackle accessibility problems in partnership, targeting those communities most in need
- Put in dedicated, segregated lanes for public transport and / or cycling on certain corridors in urban areas and prioritise maintenance of those parts of the network used by people walking and cycling in our built-up areas
- Commit to providing a network where transport and movement can be accessed, understood and used to the greatest extent possible by all people, robustly assessing all schemes and paying due regard to the Public Sector Equality Duty (along with our other duties and responsibilities), to identify potential barriers and determine how best to overcome any barriers and facilitate access to the greatest extent possible for all. Where appropriate, on a case-by-case basis, we will make reasonable adjustments
- Design or change transport systems to recognise that people make mistakes and to ensure that survivability is maximised
- Use the annual funding allocation from government predominantly for maintenance and maximise other funding sources for new measures like cycleways, roads or public transport infrastructure
- Focus on identifying the key risks from climate change and directing efforts on tackling these where they are likely to be most disruptive to journeys, especially on those parts of the network identified as critical to keep functioning
- Embrace new and innovative technology so that we can (i) better monitor and maintain our networks and (ii) provide information about travel and current performance of the network to users.

Local Transport Plan Implementation Plan

An Implementation Plan has been developed. This sets out our proposals for implementation. of the strategy.



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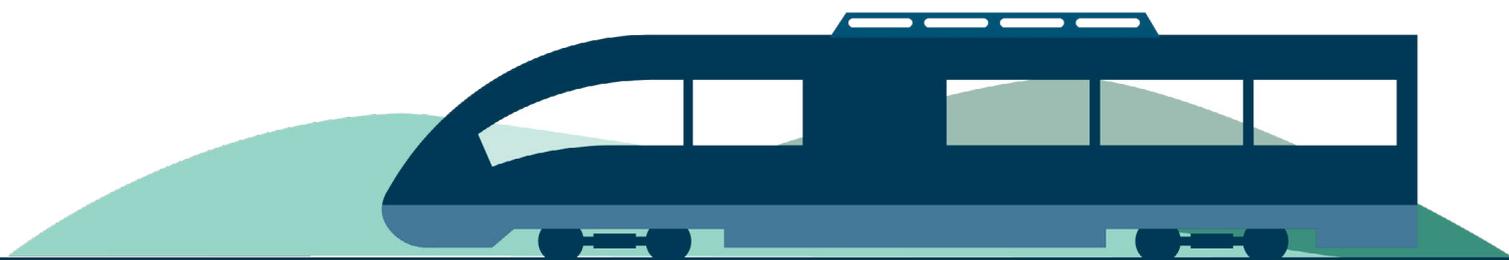
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Chapter 1:

Introduction

The Local Transport Plan details how the county council deals with a wide range of transport matters to achieve council objectives including a strong and stable economy, the health and well-being of our residents and reducing carbon. The plan shapes the nature of our own projects and the design and delivery of these as well as how we influence the plans and programmes of other agencies and partners including in government, communities, the commercial sector and the third sector where these are relevant to transport (such as district council growth plans or government programmes of schemes on the trunk road and rail network).

The key issues this plan explores include how we: achieve the policy aim to work towards carbon neutrality by 2030 as agreed in the environmental policy recently adopted by the county council; improve air quality in urban areas; meet the challenge of technology and innovation in the transport system and the ways in which people work; and support the economy of the county by ensuring that people can make the connections they need.

The Local Transport Plan objectives are:

- Embracing the Future
- Delivering a Sustainable Norfolk
- Enhancing Connectivity
- Enhancing Norfolk's Quality of Life
- Increasing Accessibility
- Improving Transport Safety
- A Well Managed and Maintained Transport Network



The Government's Cycling and Walking policy has placed sustainable modes of transport and active travel at the heart of the way we design transport infrastructure

These objectives support the county council's wider strategic objectives and aims, not least as set out in the county council's business plan for 2019-2025, Together, for Norfolk. This sets out our ambition for economic growth, managed development and a better future for all, working with a host of organisations, businesses and community groups across our county. Recently, the council has adopted its environmental policies which include a target for a move towards carbon neutrality across all sectors by 2030. The Local Transport Plan sets out transport's contribution to this ambitious target. The plan is supported by a Strategic Environmental Assessment, which has been undertaken as part of a sustainability appraisal so that we understand, and can take account of where appropriate, the plan's impact on environmental, economic and social indicators in its development.

Norfolk County Council is the Highways Authority and is responsible for maintenance and management of most public roads and rights of way in Norfolk (except the A47 and A11 which are the responsibility of National Highways, formerly Highways England). The county council has a major influence on provision of other transport services such as public transport, but is not responsible for bus services, ports, airport or rail services. Our significant influence is exercised through working with partners, government and operators to improve these where possible.

The strategy is complemented by an implementation plan. This describes the measures that will be delivered over a shorter time period, in accordance with the government's comprehensive spending review period. This implementation plan has been developed.

The plan is supported by a number of more detailed policies and guidance notes. These include:

- Transport for Norwich Strategy
- Transport strategies for King's Lynn and Great Yarmouth
- Electric Vehicle Strategy, adopted by the county council in October 2021
- Walking and Cycling Strategy, currently being refreshed
- Norfolk Rail Prospectus, currently being refreshed
- Bus Service Improvement Plan, submitted to the Department for Transport October 2021.

These documents contain more detail about individual topics and are signposted within the document.

Chapter 2:

Background

About Norfolk

Norfolk is situated in the east of England, bordered with Suffolk, Cambridgeshire and Lincolnshire.

The county has an exceptional heritage and culture, unique landscapes and diverse wildlife habitats. Norfolk also has over 100 miles of coastline, which is designated as an Area of Outstanding Natural Beauty and The Broads National Park, which is home to over a quarter of the UK's rarest species.

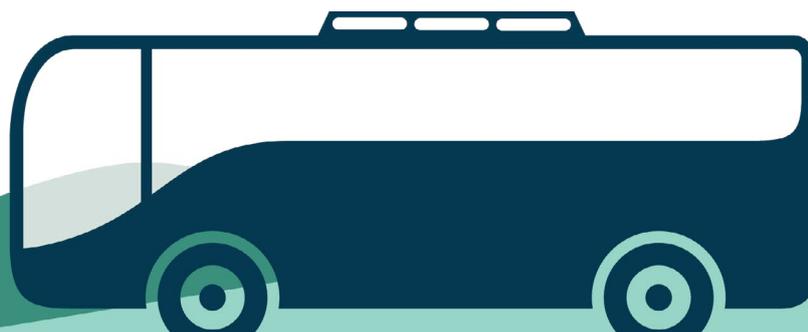
Total population of Norfolk is 908,000 and projected to rise to 985,200 by 2036

2019 population data – Norfolk Insight

Norwich is Norfolk's county town and its only city. Norwich is home to an estimated 117,000 jobs and more than 8,000 businesses, and the city is one of the largest centres of employment in greater south-east England. Norwich is one of the fastest growing cities in the UK and contributes more than £3 billion per annum to the national economy.

58.5% of people in Norfolk are aged 16-64

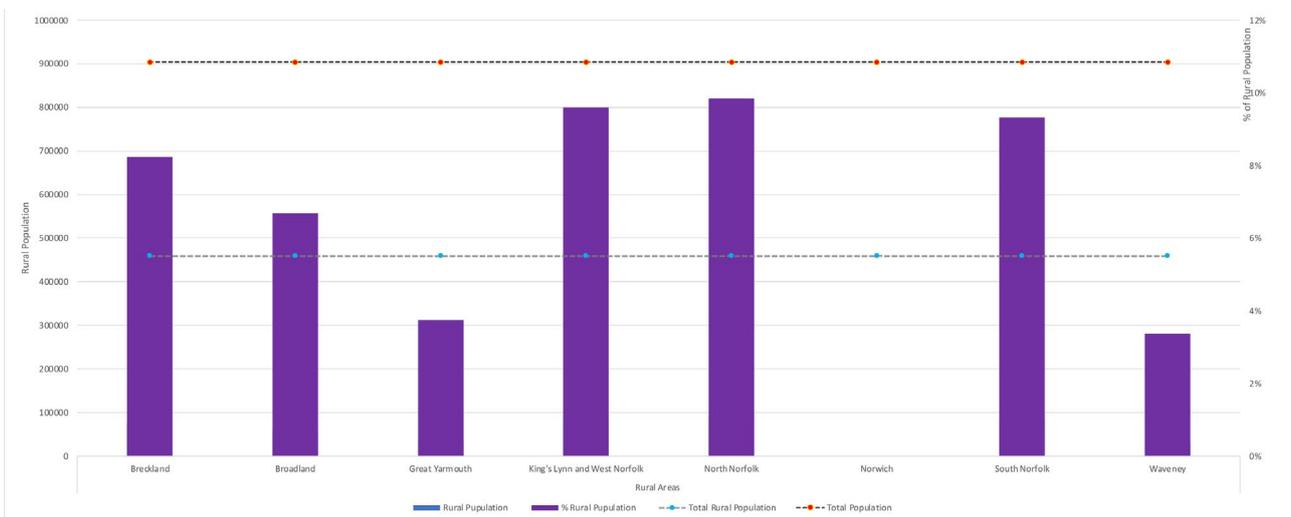
2019 population data – Norfolk Insight



King’s Lynn and Great Yarmouth are also important urban areas within the county, forming important centres for their populations and supporting a wider range of businesses including those associated with offshore energy.

Much of Norfolk is rural, with a large number of small, dispersed villages and market towns. Public services, such as GP surgeries and schools tend to be within the larger villages, market towns or urban areas. Therefore, significant numbers of people have to travel relatively long distances to access everyday facilities, often with the added challenge of variable quality public transport. Norfolk also has one of the largest highway networks in the country, around 10,000km or over 6,000 miles, which provides some significant challenges in terms of travel and maintenance. Norfolk’s transport network is also largely rural, lengthening journey times. Many settlements still retain historic street layouts, leading to congestion on some corridors and a lack of space to provide facilities for all different types of user of the network.

Figure: Rural Population in Norfolk and Waveney



Recent progress and achievements

The previous Local Transport Plan was adopted in 2011. Since its adoption several schemes and projects have been delivered. Norwich to London in 90 minutes rail services and complete replacement of all rolling stock in the Greater Anglia franchise have been delivered, transforming many rail journeys in Norfolk. Longer trains now serve King's Lynn.

Across the county we have made significant improvements to walking and cycling. In Norwich, we have adopted a comprehensive pedalway network and invested significantly in improvements to the pink, yellow, blue and green pedalways and the Marriotts Way section of the red pedalway / National Cycle Network 1. A bike-hire scheme is running, and e-scooter trials are currently underway in Norwich and Great Yarmouth.

The Broadland Northway (formerly known as the Norwich Northern Distributor Road) provides a new link around the northwest of Norwich, meaning that traffic no longer has to use city centre or suburban / rural links. It has stimulated housing and jobs growth around the north of Norwich and allowed a programme of active travel and public realm improvements in the city centre including closure to general traffic of St Stephens and Rampant Horse Street, and pedestrianisation of Westlegate.

A11 dualling has been completed. There has also been a commitment to improvements and funding for A47 Great Yarmouth Junctions, Blofield to Burlingham dualling, Thickthorn Roundabout and Easton to Tuddenham dualling. Great Yarmouth Third River Crossing started on site in early 2021. This will significantly improve access to the port as well as taking traffic out of the town.

The Local Transport Plan

The Local Transport Plan for Norfolk describes Norfolk County Council's strategy and policies for funding of roads and other transport infrastructure; and how the county council will work with others on matters relating to transport such as location of new housing growth.

Since the previous plan's adoption time there have been many changes to the way that people travel, and how much.

Technology has meant that we are now increasingly able to live our lives without the need to travel, for example using online resources such as internet shopping. This has also become more widespread since the 2020 Covid-19 outbreak, meaning people are now more comfortable using technology to work and socialise. Because of this people now re-evaluate their need to travel so it is important to ensure that people have the right technology to make informed decisions about travel choices. The way we travel is also changing, with more information and more technology being built into vehicles and more options such as car clubs and bike share schemes. Norfolk County Council has also recently adopted an environmental policy to achieve 'net zero' carbon emissions on our estates by 2030, but within our wider areas, work towards 'carbon neutrality' by 2030.

Evidence and engagement



Chapter 3:

Strategic Objectives and policy context

Objective 1: Embracing the Future

Rapid advances in technology bring opportunities for us to be more innovative and agile in delivering an efficient and effective transport network. Increased data can help to inform how we manage and maintain the network. At the same time, we need to make sure that everyone benefits from the advances that technology can bring.

Objective 2: Delivering a Sustainable Norfolk

Delivering sustainable development is highly important, especially with the planned housing growth. We will seek to preserve and enhance our built, natural and historic environment and seek to ensure new development is beneficial to Norfolk's society, economy and environment.

Objective 3: Enhancing Connectivity

It is our priority to maintain and enhance important connections to enable movement into and around the county and increase our attractiveness as a location both for businesses and people. Good connectivity is very important for getting from A to B easily whether for work, education, visiting family and friends, and deliveries.

Objective 4: Enhancing Norfolk's Quality of Life

Enhancing the quality of life for Norfolk's residents is very important to Norfolk County Council. We want to improve the health of our residents by improving air quality and encouraging active travel options to improve health and fitness. Our commitment is to work towards zero carbon.

Objective 5: Increasing Accessibility

Increasing accessibility is important so that everyone has access to the services and opportunities they require. In this plan we aim to increase the accessibility of Norfolk and address the challenges such a rural county faces and also to adapt to accessibility requirements in the future.

Objective 6: Improving Transport Safety

We aim to improve the safety of our transport network in order to reduce casualties and help people feel safe when using any mode of transport. Norfolk County Council aims to overcome the various challenges on the network and to create a network which encourages safe usage of our roads and to protect vulnerable transport users.

Objective 7: A Well Managed and Maintained Transport Network

Norfolk County Council is responsible for the management and maintenance of 10,000 kms of Norfolk's roads and 4,000 kms of Norfolk's footpaths and other public rights of way. We will apply new and innovative technology where it will be most effective to improve the management and maintenance of the network to keep Norfolk moving.



Strategic Policy Context

International and National Policy and papers

The Road to Zero 2018

Next steps towards cleaner road transport and delivering the Industrial Strategy.

- Ending the sale of new conventional petrol and diesel cars and vans by 2035 (originally 2040)
- Aim for almost every car and van to be zero emission by 2050.

This ambitious target is relevant to Norfolk's LTP4 as it sets the direction of where transport is headed in the future, enabling us to look ahead and plan infrastructure around zero emission vehicles and the phase out of petrol and diesel cars and vans. The strategy drives the uptake of zero emission cars, vans and trucks.

Transport Act 2000

Requires local transport authorities to write a local transport plan with policies for the promotion and encouragement of safe, integrated, efficient and economic transport within their area and an implementation plan explaining how these policies will be carried out.

Climate Change Act 2008

The Climate Change Act 2008 sets the target to reduce the UK's CO2 emissions to 80% of 1990 levels by 2050. This has since been updated in 2019 with the aim of the UK being carbon neutral by 2050.

This is relevant to the LTP4 as the transport sector emits the greatest amount of carbon dioxide emissions in the UK and will therefore need to be transformed to meet such ambitious targets.

Decarbonising Transport: Setting the Challenge 2020

Sets out how DfT will work with others to produce a Transport Decarbonisation Plan later in 2020 to ensure we reach net zero transport emissions by 2050, with a vision for how a net zero transport system will benefit us all.

Future of mobility: urban strategy March 2019. Bus Back Better 2021

This strategy outlines government's approach to maximising the benefits from transport innovation in cities and towns. E-scooters could be a fast and clean way to travel easing the burden on the network. Parts of the county are participating in e-scooter trials to help inform legislation. Bus Back Better sets government's vision for buses to be at the heart of the public transport network.

Net Zero Strategy: Build Back Greener, October 2021

This strategy sets out policies and proposals for decarbonising all sectors of the UK economy to meet our net zero target by 2050. A key commitment in transport is to ensure the UK's charging infrastructure network is reliable, accessible, and meets the demands of all motorists.

Government Cycling and Walking Policy for England July 2020

Government wants to see a step-change in cycling and walking in the coming years.

Increasing cycling and walking can help improve air quality, combat climate change, improve health and wellbeing, address inequalities and tackle congestion on our roads. This policy aims to create connected, healthier and more sustainable communities.

Decarbonising Transport A Better, Greener Britain 2021

Sets out how a plan for how government intends that the emission reductions in Decarbonising Transport will be achieved. Four other documents were published alongside the strategy: Jet Zero Consultation, non-zero emission HGV Phase Out Consultation, Green Paper on a New Road Vehicle CO2 Emissions Regulatory Framework and a Rail Environment Policy Statement.

British Energy Security Strategy, April 2022

This aims to ensure secure, clean and affordable British energy for the long term and includes investment in green public transport, cycling and walking, and provision for hydrogen transport.

Design Transport & Storage business models by 2025 for hydrogen transport and storage infrastructure, which will be essential to grow the hydrogen economy. Norfolk is well placed to support a hydrogen economy we will therefore continue to review Hydrogen studies in the region and how the LTP might support these in the future.

Levelling Up White paper, 2 February 2022

The aim of Levelling Up is to reorganise the relationship between central and local government and put more focus on councils to deliver the Government's programme to improve opportunities and outcomes in all parts of the country.

The White Paper provides details of 12 new missions across four broad areas: boosting productivity and living standards by growing the private sector; spreading opportunities and improving public services; restoring a sense of community, local pride and belonging; and, empowering local leaders and communities.

Levelling-up and Regeneration Bill, 11 May 2022

This bill includes a range of proposed changes to the planning system, including changes to developer contributions, requirement for a design code, environmental assessment and enforcement. The new system will be based on the principles of: beauty, infrastructure, democracy, environment and neighbourhood engagement.

Regional and Local Policy

Norfolk and Suffolk Economic Strategy 2017

The Norfolk and Suffolk Economic Strategy has been formed through the collaboration of businesses, education providers, local councils, the voluntary community sector and the New Anglia LEP. The document outlines the ambitions for future growth across Norfolk and Suffolk.

This is relevant to the LTP4 as the plan should aim to facilitate the achievements of the strategy and take into account the ambitions and future development of the county.

Norfolk County Council's Environmental Policy

A Key part of the Norfolk County Council Environmental Policy was to work towards 'carbon neutrality' in Norfolk by 2030 and to collectively achieve 'net zero' carbon emissions in Norfolk County Council, Suffolk County Council and the Broads Authority estates, also by 2030.

This is relevant to the LTP4 as it sets out an ambition for the County in which transport can have a big effect. The LTP4 should hence aim to help achieve these targets by drastically reducing our transport emissions.

Together, for Norfolk 2019-2025

Together for Norfolk sets out Norfolk County Council's priorities:

- Focussing on inclusive growth and improved social mobility
- Encouraging housing, infrastructure, jobs and business growth across the county
- Developing our workforce to meet the needs of the sectors powering out local economy
- Work to reduce our impact on the environment
- Help Norfolk have a growing economy, full of thriving people living in strong communities we are proud of.

Local Transport Plan 4 should aim to help achieve these priorities.

Relationship of the Local Transport Plan with other Norfolk transport policies, plans and programmes

The Local Transport Plan sets out the overarching strategy across the whole of the county, across all areas including different transport modes and the overall approach for how we will deal with transport issues arising from growth plans. Alongside the Local Transport Plan there is a series of more detailed plans, policies and programmes. These provide more detail about how the strategic policies of the Local Transport Plan will be implemented at the detailed level. Although not an exhaustive list, these include:

- Bus Service Improvement Plan. Following release of the government bus strategy, Bus Back Better, in March 2021, we have developed our bus improvement plan and submitted to government in autumn 2021
- Walking and Cycling Strategy: This is currently being refreshed. The county council is developing a series of Local Cycling and Walking Infrastructure Plans (LCWIPs) to provide more detail in local areas. LCWIPs were adopted for Norwich, Great Yarmouth and King's Lynn in spring 2022 and are progressing for Dereham and countywide
- Transport Asset Management Plan: Sets out the management, operation, preservation and enhancement of the transport infrastructure
- Transport for Norwich: This was refreshed and adopted in autumn 2022 to replace the existing Norwich Area Transportation Strategy. This deals with the built-up area of the city, its growth areas and travel to and from surrounding areas
- King's Lynn Transport Strategy: This has recently been adopted
- Great Yarmouth Transport Strategy: This has recently been adopted
- Market Town Transport Network Improvement Strategies: The council has developed ten such studies looking at the market towns across the county to identify transport measures needed to accommodate growth pressures.

As well as county council documents, such as the Norfolk Access Improvement Plan (NAIP), 2019-2029, there are other significant documents including local plans, setting out development plans across the districts, and documents setting out visions for specific areas, such as, for Norwich, the 2040 City Vision and Norwich City Centre Public Spaces Plan.



Chapter 4:

Embracing the Future

Introduction and chapter summary

This chapter deals with:

- Challenges, changes and trends. This includes changes in the way we travel, and our reasons for travel, and increased awareness of climate change issues
- Policy. Existing national and local policies and targets we need to consider such as the climate change act, and the move towards electric vehicles (EVs)
- Technology. New technology requiring infrastructure such as EVs, connected and autonomous vehicles, and the way we monitor the network such as using sensors
- Behaviour change. Interventions that can work alongside other policies and programmes to help bring about changes in the choices that people make.

The chapter sets out that:

- Norfolk has a growing population which, if we don't act, will increase traffic and put pressure on the transport network, air quality, climate change, the environment and economy
- Awareness of climate change is increasing and there is a growing expectation that this will be a large consideration in decision making
- The increased need to focus on active and sustainable modes of transport such as electric vehicles, cycling and walking
- We should be ready to trial new technology and work in partnership with the private sector to bring about innovation. Use of innovative technology can also be used to monitor the network and provide real time information to users, which is covered further in the Connectivity chapter
- Our desire for transformation mixed with the rapid changes and developments in technology mean we need to prepare for new technology such as electric scooters, charging points for electric cars, and advances in the way we keep people informed of changes on the transport network
- Norfolk has responded well to the Covid-19 pandemic and residents have adjusted to new ways of working, shopping and socialising. As a result, there has been an increased desire to cycle and walk and access green infrastructure. With this has come a heightened awareness of the environment and how transport effects our quality of life, which is covered in the Sustainability and Quality of Life chapters.

We are going through large changes in the transport sector. Our society, economy and environment are all rapidly changing and as a result, the way we travel and the way we will work and shop in the future is also changing.

Policies

This section provides a summary of the policies in this chapter.

Policy 1

We will plan and prepare the county for future challenges and changes to ensure the best for our society, environment and economy, and to actively review these developments through time.

What this means in practice:

- Future changes and challenges in Norfolk may be different from other parts of the country so solutions should be found that are tailored to Norfolk's needs. Working with communities and companies to predict, and respond to, changes can also boost the local economy.
- Norfolk will be best placed to identify and respond to future challenges. We will be able to take a leading role in preparing for the future, and not be left behind the rest of the country.
- Appropriate evidence and data gathering will enable us to identify future challenges and help us react faster to these changes, and therefore avoid the negative consequences.

Policy 2

The priority for reducing emissions will be to support a shift to more sustainable modes and more efficient vehicles, including lower carbon technology and cleaner fuels; this includes the facilitation of necessary infrastructure.

What this means in practice:

- We will facilitate changes in the ways that people travel so that people choose to travel more by walking and cycling or new travel modes like e-bikes and e-scooters.
- We will work with partners in the private sector to make sure that the necessary infrastructure for cleaner vehicles, like charging points, is put in suitable places and are sufficient to encourage people to take up the use of these vehicles. This could include working with the private sector to create a market to provide charging points that satisfies and promotes the demand for electric cars; or to work with passenger transport operators to promote the conversion from diesel operation to electric bus and rail operation.
- Working in partnership to support and deliver infrastructure will enable the council to take a leading role for the market to follow, without shouldering the full financial burden.
- Our Electric Vehicle (EV) strategy will help us build EV technology into future infrastructure decisions. EV technology is integral to achieving environmental targets and carbon neutrality.



Policy 3

Innovation and new technologies will be embraced and used proactively in order to achieve our vision, including responding to new targets set by the recently adopted environmental policy.

What this means in practice:

- We will lead in trialling new technology suitable for Norfolk and learn from developments elsewhere. We can build strong partnerships with other sectors that will make Norfolk more resilient to environmental challenges.
- This might mean the use of apps, where the technology is robust, for monitoring how people use the network, or to monitor air quality, or innovative solutions to encourage electric vehicles or e-scooters. Trials of e-scooters are underway in Norwich and Great Yarmouth. These trials, alongside others across the country, will help to inform future government legislation about this new type of vehicle.
- The use of new technology will come forward more quickly if we are not reliant on other places adopting it first and might not be suitable for Norfolk. New technology is going to be vital in monitoring success on interventions, so money isn't wasted on projects that don't work for Norfolk.
- We will make the most of data from work done at other locations but also lead in trialling innovative technologies and share information.
- Sensors, apps, data, and surveys can better inform where we target our future budget for maintenance, safety and accessibility and sustainability, which will be covered further in the later chapters.



Policy 4

We will work with people to shape the way they travel, why they are travelling and whether they need to travel, encouraging behaviour change and interventions that can help to increase the use of sustainable transport.

What this means in practice:

- The support of people and communities is vital in making successful interventions in sustainable transport. People need to understand and support changes to encourage uptake of sustainable transport. If infrastructure changes are made without the support of Norfolk residents and businesses, they will be less successful, and it will take longer to see any benefit from investment.
- We will engage with communities to understand their needs and encourage and assist people to use more sustainable transport. This includes working with residents of new developments through our AtoBetter programme. How to influence the design of new growth is dealt with in Chapter 5: Delivering a Sustainable Norfolk.
- Covid-19 has accelerated changes in behaviour. We continue to monitor impacts on people's travel and will use this information to enable us to better plan for changes in travel behaviour.



Introduction

Our population and economy are growing and shifting in form, technology is developing fast and increasingly offering new solutions to help solve the social, economic and environmental issues we face.

Environmental policy is setting targets that need to be achieved in ambitious timelines. This chapter covers the challenges, changes and trends transport is facing now, and in the future. We are setting policies that will shape the future of transport and the technologies which will help ease congestion and emissions and improve safety, accessibility and movement in our county.

The chapter also covers behaviour change: what it is, why we need it and how it can help in adapting to and mitigating climate change in the future. The transport sector is the most polluting sector in the UK hence it is vital that we do everything we can to change this in order to reduce our impact on the climate and all the social, environmental and economic consequences that come with this.

It is difficult to predict the future. This is perhaps especially difficult now, given that Covid-19 has had a major disruptive impact in the way that people live, work and travel. However, Covid-19 also shows that people are adaptable to change and has – in many respects – simply accelerated changes, like working from home, that society was in any case going through. This chapter sets out some of the things which could be expected in the years to come. Our population is growing, becoming older and moving to urban centres (although there is some evidence of change to this trend recently). Our lifestyles are becoming more instant and less structured. Our technology is advancing and has the ability to combat the challenges we may face in the future; or react more quickly to change. Our society has the power to make rapid changes to also overcome the challenges of the future.

Evidence and Challenges

Along with the rest of the UK, the population of Norfolk is growing. Currently, Norfolk has a population of 900,000 people. By 2036, this is expected to be over one million. The growth in population needs to be managed if it is not simply to increase pressure and demand on the transport network.

Road traffic growth could have negative effects on air quality, climate change, the environment, society and the economy. This can be minimised through embracing innovative new technologies, like clean fuels where people will still need to travel by car, and focusing on changing people's travel behaviours to those that are more sustainable.

In Norfolk, urbanisation is occurring with more people moving out of rural parts of the county and into the urban centres such as Norfolk's towns and Norwich city centre, although we are seeing evidence that the pandemic might change this. Unless we help people to use more active travel modes, there could be an increase in congestion and higher levels of air pollution.

As people in urban areas and market towns might not need to commute as far for work, cycling and walking will be a more feasible option. Public transport is often well connected in urban areas where transport hubs and interchanges can be found.

We have seen an increase in people walking, cycling and using other forms of active travel recently, especially, during Covid-19 lockdown. New options such as e-scooters are becoming increasingly popular even though, at present, their use is very strictly limited. Through being acceptive of change and encouraging innovation and technology, these moments of change can be harnessed, and have beneficial impacts on the transport network and environment.

Many people live outside our urban areas and market towns, and face challenges of accessing jobs and other services, particularly if they do not have a car. These issues are covered further in Chapter 8. This chapter considers how technology might help people be more connected: through better broadband to enable virtual connections; through electrically assisted cycles, which extend the range of bike journeys; or bus information through phone apps.

The LTP consultation showed that people in rural areas are concerned by the unreliability of the bus service, particularly where older people have to wait outside, not knowing when or if a bus will turn up

Norfolk's population is also ageing. With this comes transportation problems and an increasing risk of isolation. The most common transport issues for elderly people, as identified by Age UK, include:

- The lack of sufficient transport links for elderly people in rural locations to healthcare and other vital services
- Transport not being convenient or comfortable for elderly people
- Lack of encouragement to use more active modes of transport for both physical and mental health.

In the UK, the population aged 65 and over increased by 37% in rural areas between 2001 and 2015 and increased by 17% in urban areas. Rural areas are often disadvantaged in terms of access to services and activities due to the low population density in these areas making the provision and maintenance of service infrastructures difficult and expensive. There is some evidence that, because of the pandemic, there has been an increased demand for people who want to move to rural areas.

Society and the economy are changing. People are behaving differently, due to various external factors such as improved technology and communication, meaning people do not have to travel as much or as far. We have seen an acceleration of this behaviour recently during Covid-19 restrictions. The average number of trips per person across all journey purposes and modes shows a downward trend in the UK. These trends are showing a decrease in trips for work, education, shopping, visiting friends and relatives and personal business between 2001 and 2016. New technologies and ways of communicating such as Skype, online shopping and the ability to work from home are influences on this.

In England there has been a 24% drop in shopping trips between 1995/97 and 2013

Trends are showing that the gig economy has more than doubled in size over the past three years. This is a labour market characterised by the prevalence of short-term contracts or freelance work, as opposed to permanent jobs. The gig economy is driving a shift away from the traditional nine to five working hours and hence rush-hour congestion could ease. The gig economy can also alter people's personal behaviours as it enables near-instant services such as Uber and Deliveroo. Changes to how people work is also influenced by the ability to work from home. Thanks to new super-fast connectivity technologies, it is now easier than ever to work from home by using laptops and carrying out video conferences. With the growth in popularity of flexi working, or the closure of office accommodation by employers following Covid, the future could see a decline in the peak congestion times and rush hour when people start and finish work: a growing number of people will be commuting at different times or not needing to commute at all.

Popularity in ordering goods online has dramatically increased within the last few years. Due to this, fewer people are making journeys to retail areas which could in the future take more vehicles off the road. However, increasing online purchases could see an increase in delivery vans or lorries due to a higher quantity of deliveries being made.

Another behaviour trend is delayed car ownership. The percentage of young people obtaining driving licences has decreased in the last 20 years. This could be put down to the high cost of learning to drive, high cost of insurance for young people and the financial insecurities of millennials. Alongside this, technological change is also influencing the trend and reducing the need to own a car.

Young people especially are increasingly aware of climate change. This awareness is only expected to grow in the future and hence cycling, walking and public transport could become more popular as these are more sustainable modes of transport.

As Norwich in particular has a large young student population, it is likely to see an increase in the usage of these forms of transport as they are cheaper and align with the climate conscious attitudes of the young. However, Norfolk on the whole is a rural county which makes transport via these more sustainable modes difficult for those living in rural areas and the elderly. It is therefore vital in the future that Norfolk embraces new technologies to enable those in rural locations to also move in a low-carbon manner.

Technology, innovation and behaviour change have the ability to bring about rapid change when used together.

Strategy for delivery

- Plan and prepare for future changes and challenges. We will embrace new initiatives where these have positive benefits for Norfolk. This might include initiatives such as the use of autonomous vehicles, but we will only do this where it can be demonstrated that these initiatives will bring positive benefits
- Be proactive in using new technology and new methods, for monitoring outcomes, information provision and in our delivery, where these are shown to be robust and effective
- Support a shift to more sustainable modes and more efficient vehicles, including lower carbon technology and cleaner fuels
- Help people to effect a change in the way that they use the transport system to one that is better for the environment, and people's mental and physical well-being.



Planning for change

Policy 1

We will plan and prepare the county for future challenges and changes to ensure the best for our society, environment and economy, and to actively review these developments through time.

Given its unique geography and socio-demographic make-up, Norfolk will face its own unique challenges. The Local Transport Plan sets out how we will respond to these, whether they be from climate change or lack of rural access to services. Appropriate evidence and data gathering, together with working with local communities, businesses and other interests, will enable us to identify future challenges and help us react more quickly to these changes.

It will be necessary to understand what these future challenges might comprise and be prepared to be agile to act to find tailored solutions. Evidence and data gathering will enable us to identify future challenges and help us react faster to these changes and monitor outcomes. We will take a leading role in preparing for the future, being pro-active in our use of innovation and new technology to ensure that the county is not left behind.



Technology

Policy 2

The priority for reducing emissions will be to support a shift to more sustainable modes and more efficient vehicles, including lower carbon technology and cleaner fuels; this includes the facilitation of necessary infrastructure.

Technology has the potential to reduce transport congestion and emissions and improve safety, accessibility and mobility. Technology therefore plays an important role in shaping how the future of transport will look both in Norfolk and all over the world.

The 2030 ban on the sale of all new petrol and diesel cars and vans will promote the uptake of electric vehicles, which are already becoming popular. The UK government aimed to invest £1.5 billion in ultra-low emission vehicles by 2021, further evidence to suggest that a growth in these vehicles can be expected in the future.

UK Climate Change Committee analysis shows that technological change alone is not enough to reach the UK's net zero goal, social transformation is also required.

Currently, Norfolk lacks an extensive electric vehicle charging network. Most local authorities, including Norfolk County Council, lack the funding and expertise to provide facilities although the market is increasingly providing charging points. With the phasing out of petrol and diesel vehicles and increasing interest in low-emission vehicles, it is likely this will be increasingly rolled-out. Charging points tend to be focussed in urban areas and town centres where there will be most usage. These are also usually the areas with the poorest air quality. The county council has developed an EV strategy that sets out how the council can help facilitate growth in the number of EV charging locations across the county. The county council already works with developers and district councils the planning authorities, on provision in new developments.

The county council is also refreshing its walking and cycling strategy. This responds to government's recently published Gear Change which sees England as "a great walking and cycling nation" with "half of all journeys in towns and cities being cycled or walked by 2030."

Policy 3

Innovation and new technologies will be embraced and used proactively in order to achieve our vision, including responding to new targets set by the recently adopted environmental policy.

We are going through a revolution in transport. Applications like Google mapping have collected data on a scale that could not have been envisaged a decade ago. Trials of autonomous vehicles are ongoing; many vehicles on the road today have technology such as lane-assist systems, adaptive cruise control and self-parking that enable them to be semi-autonomous. Such systems can place demands on the transport network, and will affect how we manage and maintain the transport network in the future, but utilization will make the networks perform more efficiently.

The government is investing significantly into the research and development of Connected and Autonomous Vehicles (CAVs), also known as self-driving or driverless cars or other vehicles. Over time, CAVs are likely to have numerous impacts on how we move people around and how we manage highways. These include:

- Providing opportunities for people to connect
- Improving access, especially for those unable to use traditional vehicles. This consequently reduces isolation especially in rural counties such as Norfolk
- Improving road safety through sensors and communicating with other vehicles
- Reducing congestion by using intelligent technology such as planning routes to avoid traffic and communicating with other vehicles on the road network.

Innovation in the bicycle industry is also shaping the future of transport. E-bikes are becoming increasingly popular as they make cycling accessible to different abilities, make journeys faster and more comfortable and make journeys less exhausting by assisting the rider. A growth in e-bikes in the future would mean a greater demand for safe cycling infrastructure on key routes and a reduction of congestion and carbon emissions, especially in urban areas. (Policy 15, in Chapter 8: Increasing Accessibility, sets out our ambitions and intentions for active travel measures.)

In Spring 2020, Norwich launched its own bike sharing scheme called 'Beryl Bikes'. This placed 600 (manual and electric) bikes on the streets of Norwich

An increase in bike sharing schemes is also leading to the growth of cycling as it makes biking easier, cheaper and more convenient which has the potential to prompt a modal shift towards cycling. Bike sharing initiatives promote the cultural shift towards more sustainable living. Therefore, a future scenario for Norfolk would be improved accuracy in data for popular cycle routes to make informed decisions and plans, increased cycling in urban areas, especially areas with access to bike sharing schemes.

Developments in technology and data collection have also led to the creation of smart traffic management systems. These are systems where centrally controlled traffic signals and sensors regulate traffic flow through a certain area in response to demand. This technology is able to reduce congestion and emissions as it is able to alter signals as and when it is needed and facilitates more efficient driving. Smart traffic signals are able to sense the type of vehicles in a certain traffic flow and hence in some cases provide bus priority. In the long term, this has the potential to make public transport more reliable and possibly change people's perceptions of public transport, prompting greater uptake in its usage.

Advancements in technology and data collection is enabling the growth of Mobility as a Service (MaaS) and seamless transport. MaaS bundles a variety of transport modes together and enables you to plan, pay for and use the modes of transport via one app or card. This makes the use of public transport far easier and seamless hence making it a more attractive choice of travel.

Norfolk is beginning to move towards this with relation to bus services with the AtoBetter journey planner. It is therefore likely that in years to come, multi-modal services will be increasingly used in our county.



Behaviour Change

Policy 4

We will work with people to shape the way they travel, why they are travelling and whether they need to travel, encouraging behaviour change and interventions that can help to increase the use of sustainable transport.

People's behaviour is often deeply engrained. We need to make it easier for people to change their habits and make sustainable choices about how they choose to travel. This requires more than just infrastructure improvements.

Behaviour change in transport is capable of reducing people's dependence on cars in order to reduce congestion and emissions, and increase the use of active modes of transport, all of which have a positive impact on our environment and health and wellbeing. This means working with people and communities in understanding their points of view and working up solutions together with engagement on development and delivery of individual interventions. Behaviour change initiatives, used alongside transport provision, will ensure that infrastructure is used to its full potential.

Integrating behavioural change strategies into transport developments will enable substantial shifts in how we travel. The Department for Transport states that to be successful in enabling change, new behaviours should seem:

- More advantageous: perceptions of costs and benefits change
- More 'me:' behaviour fits in with perceptions of self or aspirations
- More prevalent: increased awareness of who else is doing it
- More doable: increased confidence in ability to change.

OR it should make people's old behaviour seem less of any of the above.

We will engage with communities to understand their needs and encourage and assist people to use more sustainable transport. This will be done as part of our transport delivery to reduce impacts on the environment and benefit society and the economy.

Chapter 5:

Delivering a Sustainable Norfolk

Introduction and chapter summary

This chapter deals with:

- Growth. Consideration of where new development should go to be best placed for the needs of communities and residents.
- Economy. Ensuring good links to services, jobs, education and skills by sustainable transport methods.

The chapter sets out that:

- As a council we need to meet the needs of the present population of Norfolk, local businesses, and tourism industry without restricting future growth and our ability to meet the demands of future generations. This includes making sure we respond to changes in government policy on development to make it work for Norfolk.
- New developments must consider whether they are in an air quality management area (AQMA), where air pollution is above national targets. Where we have declared an AQMA an action plan sets out measures to work towards an improvement of the air quality in the area. Therefore, this should be considered in the location of new development so increased travel doesn't cause further problems. Air quality is also covered in more depth in the Quality of Life chapter.
- We need to embrace new technology to monitor and respond to how journeys are changing to inform how we respond to the developing needs of existing and new communities. Using technology to inform travel plans.

Public highways and transport networks have a significant influence in shaping the place in which we live. Transport infrastructure connects communities and services together and plays a vital role in the way people move around and access the wider world. It also plays an essential part in the economic vibrancy of Norfolk connecting us to each other and the rest of the country.

Policies

This section provides a summary of the policies in this chapter.

Policy 5

We will work with partners to inform decisions about new development ensuring they are well connected to maximise use of sustainable and active transport options. This will make new developments more attractive places to live, thus supporting a strong sense of the public realm.

What this means in practice:

- We will work with partners to try to ensure that new developments are located in suitable areas with access to services and leisure facilities via sustainable and active transport and not in areas that would be reliant on the private car.
- If this were not the case, people will be reliant on private cars or, if they don't have a private car, are likely to struggle to access services, leading to social isolation and economic disadvantage.
- We will seek to ensure new developments are well-connected to bus networks: it can be difficult to add or change bus routes after a development has been inhabited, and changes to routes could take a long time to introduce.
- New developments with insufficient transport options could lead to social isolation and the inability for people to access services.
- Development without considering transport first could lead to unnecessary congestion and strain on the highway network causing more problems in the future.



Policy 6

We will work with the development community and local stakeholders to ensure greener transport solutions are embedded in land-use planning to significantly reduce traffic generation by private car. We will also work to ensure that the necessary infrastructure to support the transition to a clean transport network is in place. We will seek that that any carbon impacts are monitored and offset by locally applicable measures. As part of our ongoing work on developing guidance for how we will deal with new development we will amongst other things consider how to establish carbon plans and budgets and devise methodologies to achieve carbon neutrality.

What this means in practice:

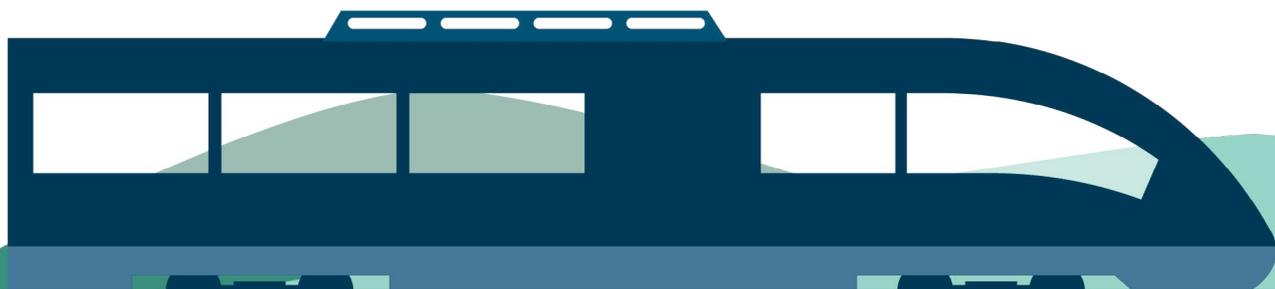
- The county council will engage and work with partners to ensure, where we can, that: development is planned with active and sustainable travel in mind; we secure contributions to active travel infrastructure from developers so that negative impact from developments is minimised; travel plans for new developments are secured and enacted; and carbon (arising from travel to and from the new development) is taken into account.
- We will seek to ensure that measures supporting an uptake of cycling and walking, or by bus, in communities are provided as part of the development. Without developer contributions cycleways to encourage active travel and reduce reliance on private cars can be delayed until funds can be found, or not built at all.
- Development can put unnecessary strain on the network without interventions such as road improvements to access the development without disrupting through traffic.
- We are, however, only able to secure measures that directly mitigate the impact of a development as defined by a planning consent.
- The way that these contributions are secured in the future might change as government reforms planning.

Policy 7

In air quality management areas development will need to demonstrate its positive contribution to tackling the air quality problem.

What this means in practice:

- Air quality management areas are places where the national air quality objective for a specific pollutant is exceeded. New developments will not automatically make these emissions worse but could provide funding to provide positive intervention such as new cycle routes and footways to local amenities and schools so fewer existing and new residents need to use cars.
- We could simply raise an objection to planning applications (on which we are consulted as highway authority) where they fall within an air quality management area, but this would constrain housing from coming forward, particularly in locations where it is otherwise well-sited. The preferred policy will result in new developments helping to address air quality problems. It would mean that developers would need to demonstrate how development would address air quality or bring forward measures to address the issue. The National Planning Policy Framework requirement is for a proposed development to mitigate the impacts on air quality only.
- Interventions made by new developments can help air quality with sustainably built housing (eg including electric vehicle charging points) and interventions such as putting in place robust travel plans, car sharing schemes and better broadband (to minimise travel).



Achievements

- ✓ We have a strong track record of working in partnership with Local Planning Authorities to develop planning policy such as the Greater Norwich Local Plan. The county council is a partner in the process to help develop and influence that plan to align with county transport objectives.
- ✓ AtoBetter is a sustainable travel scheme that works with the community to offer free travel advice to aid people make the best travel choices. This is helping people make journeys as easy as possible and enables more journeys by foot, bike, public transport and car sharing.
- ✓ Bringing forward and supporting large growth areas. New ways of working to deliver growth and bring forward strategic infrastructure together, leveraging in both public and private investment. Working with Transport East, Long Stratton bypass and West Winch Housing Access Road – both required to enable housing growth – have been identified in the Major Road Network programme for government funding.
- ✓ Attleborough, Thetford and Great Yarmouth Growth Deal: Success in securing growth deal funding through the New Anglia Local Enterprise Partnership capital growth programme. This included packages of measures to reduce traffic congestion and improve sustainable transport in order to sustain and bring forward economic growth in the towns.

Evidence

The economy of Norfolk has particular strengths in sectors such as agri-tech and clean energy but lags behind in other areas. Across Norfolk house-building rates are insufficient to meet the calculated need for housing. Investment in housing and jobs growth can be constrained by perceptions that Norfolk is cut-off from the rest of the country; or because significant improvements to the local networks need to be provided to make the developments acceptable, but these cannot be afforded making the development slow to come forward. (Connections between major places within the county, and to major places outside, are dealt with in Chapter 6: Enhancing Connectivity.) As well as encouraging and enabling housing and jobs growth in the right places to come forward, we need to ensure that this growth is sustainable and does not lead to worsening problems.

The Norfolk Strategic Infrastructure Delivery Plan sets out Norfolk's priorities to help deliver significant economic growth in Norfolk for the next ten years. This is a coordinated approach to growth and transport investment to unlock potential and link people to jobs, homes and local amenities.

District Councils' local plans set out the housing requirements and details of where this, and economic growth, is planned. The county council works closely with district councils in the preparation of these plans and is a consultee on individual planning applications. How government takes forward its Planning for the Future White Paper, August 2020, might affect the strategy for delivery in the future. However, government has not yet finalized the full detail of changes to the planning system so it is not clear what changes this could mean for local authorities. This will continue to be monitored and our strategy could be amended accordingly. Natural England released policy for Norfolk Local Authorities to follow to make developments nutrient neutral, March 2022. When nitrogen and phosphate nutrients enter water systems it can cause excessive growth of algae, making it harder for aquatic species to survive. The implications of this policy will continue to be monitored to assess its effect on achieving the objectives of the Local Transport Plan 4.

Challenges

- We must ensure that the impacts of development are fully met to maintain the function of the transport networks
- Delivering housing need in locations that minimise the need to travel
- Forward funding infrastructure to enable growth in the future
- Balancing growth with its transport and environmental impacts
- Over the next ten years the population of Norfolk is set to rise by approx. 50,700. With the increase in population new jobs and homes will be needed and there will be additional journeys as a result. We need to ensure these do not lead to detrimental impacts such as an increase in carbon or road congestion

- Norfolk needs to be attractive for new businesses and industries to come to the county
- Making sure that, where there is an increase in travel, the networks (active and public travel, road and rail) can cope with growth and that public transport options are available.

Strategy for delivery

- Providing advice to local planning authorities and on individual proposals to ensure development is well located and laid out in such a way that it achieves our Local Transport Plan objectives
- Consideration of new settlements to be well connected to services through sustainable and active modes of transport
- Developing the Infrastructure Delivery Plan
- Developing strategies and implementation plans for major growth locations
- Developing the case for funding to promote sustainable growth, housing and employment
- Developing transport strategies to support the vitality of town centres
- Developing our development management and design guidance to enable new growth to deliver increases in sustainable transport (including commercial bus services)
- Travel planning.

Growth and Development

To deliver the most sustainable possible growth in Norfolk, Norfolk County Council needs clear, aligned planning and transport objectives.

The county council recognises the need to develop and follow clear policies and guidance to inform the delivery of growth. Allocation of sites in local plans allows local planning authorities to identify strategic sites that will be delivered, or started, in the period of the plan. By helping local planning authorities to identify sites, we can make sure that development is well-connected to local services, and that consideration is given to the appropriate infrastructure that will be needed to deliver it sustainably.

Policy 5

We will work with partners to inform decisions about new development ensuring they are well connected to maximise use of sustainable and active transport options. This will make new developments more attractive places to live, thus supporting a strong sense of the public realm.

The county council will work with – in particular – the development industry and district councils, who produce local plans, to seek that new development must: take into account access to education and schools; minimise the need to travel; support active travel; support travel planning through schemes such as AtoBetter; and enhance and protect the strategic network. We recognise the role that rural areas including market towns, key service centres and village clusters will play in housing growth.

To support clean growth, our advice will be that new sites must be in locations that promote active travel, and public transport, with good links to local services, but especially education and skills. This was reflected in the public consultation, where people showed a strong desire to see more sustainable transport options championed in the region, particularly in rural areas where this is currently a challenge. Active travel will also help air quality in areas with congestion.

We will:

- Support the production of an evidence base for planned sustainable growth
- Strengthen partnerships and provide clear guidance on the requirements of growth to:
 - Contribute to the Norfolk County Council Environment Policy
 - Promote active travel
 - Work with county council service delivery and help provide access for all.
- Support robust enforceable travel plans.

Infrastructure to Support Growth

What is Known?

The key housing growth sites and strategic infrastructure projects set out in the Infrastructure Delivery Plan

What is Unknown?

What housing allocations and growth sites will emerge from Local Plan evidence and scheme identification

Policy 6

We will work with the development community and local stakeholders to ensure greener transport solutions are embedded in land-use planning to significantly reduce traffic generation by private car. We will also work to ensure that the necessary infrastructure to support the transition to a clean transport network is in place.

We will seek that that any carbon impacts are monitored and offset by locally applicable measures. We will consider how to establish carbon plans and budgets, and devise methodologies, to achieve carbon neutrality in new developments.

As part of our work with local planning authorities on their plans, and in responding to individual planning applications, we also influence the layout and design of new housing areas. This is to ensure, as far as we are able, that they can be served by good bus links and have suitable walking and cycling (as well as general traffic) links. As part of this, we also consider things like the provision of charging points for electric vehicles in new developments. More detail on this is in our separate, more detailed development management and residential estate layout guides. Our guidance documents will be reviewed following adoption of LTP4 strategy.

We will seek to work with the development community to ensure that transport planning is connected to land use planning to significantly reduce traffic generation by private car and ensure greener transport solutions are embedded in the design process. We will also work to ensure that the necessary infrastructure to support the transition to a clean transport network is put in place as part of the development proposals. We will seek that that any carbon impacts are monitored and offset by locally applicable measures. As part of our ongoing work on developing guidance for how we will deal with new development we will amongst other things consider how to establish carbon plans and budgets and devise methodologies to achieve carbon neutrality.

Our travel planning team, AtoBetter, works with developers on the larger housing sites to agree travel plans that set out the measures that will help and encourage people to make sustainable travel choices. These plans, and their implementation, are funded by developers.

New developments in areas of poor air quality

Policy 7

In air quality management areas development will need to demonstrate its positive contribution to tackling the air quality problem.

Chapter 7: Enhancing Norfolk's Quality of Life deals with air quality in more detail. It notes that there are currently air quality management areas, where the annual average levels of nitrogen oxides (NOx) exceed recognised thresholds, in parts of Norfolk. New development in these areas could, if no action is taken, contribute to a worsening of air quality whilst also increasing the numbers of people living (or working) in areas with poor air quality. However, in other respects, these locations might be well-suited to new development because they are in places with good access to other services and facilities. We will therefore take an approach where we require developers demonstrate how their proposal can address air quality or bring forward measures to address the issue. Interventions could include sustainably built housing (eg including electric vehicle charging points), active travel networks, robust travel plans, car sharing schemes and better broadband (to minimise travel). Rather than automatically recommending a refusal to development in certain areas we will judge each development on how they propose to mitigate air quality issues.

Innovation

Norfolk County Council and the local planning authorities will need to work even closer together to deliver housing and commercial land that benefits the people of Norfolk and allows for growth in a sustainable way. We need to gather more evidence to understand what journeys people are making, and the journeys people will be making in the future, whether social, economic, or for tourism.

New ways of data collection such as sensors can better inform the decisions, and interventions, we make to ensure people can access services and leisure activities without putting additional strain on the highway network. This includes helping people access information on route planning. The use of new technology in the way we monitor air quality can help us better understand causes and therefore make the most suitable interventions in the most suitable areas, maximising investment and benefit.

Chapter 6:

Enhancing Connectivity

This chapter deals with connectivity. This refers to the major connections that people have to make:

- Between the major places within the county; and to major places outside. The strategy sets out that improvement to the major road and rail connections remain a priority for the Local Transport Plan. There must however be a shift to less polluting vehicles using these strategic connections.
- Getting to the major urban centres and market towns to access vital services that people need such as employment, education, health services and retail. For these trips, connectivity will be improved from surrounding rural areas with the focus being on clean transport modes including electric vehicles, public transport and walking and cycling.

Chapter 8: Increasing Accessibility deals with local connectivity and accessibility, such as making trips within built up areas by walking and cycling. The Quality of Life Chapter (Chapter 7) deals with how we will seek improvements to air quality and a reduction in carbon emissions. This considers aspects such as the modes of travel that people choose to make (by bus, car, etc.) and the types of vehicle that people choose, and how these might be made more efficient.

Chapter 8: Increasing Accessibility deals with local connectivity and accessibility, such as making trips within built up areas by walking and cycling. The Quality of Life Chapter (Chapter 7) deals with how we will seek improvements to air quality and a reduction in carbon emissions. This considers aspects such as the modes of travel that people choose to make (by bus, car, etc.) and the types of vehicle that people choose, and how these might be made more efficient.

Good connectivity is vital because when people choose to travel it allows them to easily get to where they need to, whether to work, education or visiting friends and families. Connectivity is especially important for businesses because delays in delivering goods, or unpredictable journey times, cost money. Without good connections to other parts of the country many businesses might not choose to stay in, or move to, Norfolk.

Policies

This section provides a summary of the policies in this chapter.

Policy 8

Our priority will be to improve major road and rail connections between larger places in the county, and to major ports, airports and cities in the rest of the UK.

What this means in practice:

- We will work with partners and make the case for investment to the rail network and trunk roads, which the county does not manage or maintain, to seek improvements
- We will seek quick, reliable journey times for longer-distance journeys where there is the highest need as we see this as important to support, in particular, our economic objectives. Initial analysis of the long-term impacts of Covid-19 suggests that these longer-distance trips will remain important over the longer-term (and might even be of increasing importance as people choose to live in places like Norfolk and visit their workplaces in the capital on a relatively infrequent basis, rather than living in London and commuting to work in the capital every day)
- Our priorities will be the A11 (bottleneck junctions at Thetford and Mildenhall Fiveways) and A47 trunk roads (dualling), Norwich Western Link, the Major Road Network (Long Stratton Bypass, West Winch Housing Access Road, A47/A17 Junction), connections to Norfolk's transport gateways (quick, reliable connections) and the rail lines connecting Norwich to London (more frequent 90 minute journeys, half-hourly frequency), Peterborough and Cambridge/Stansted (more capacity, faster journeys), East West Rail (services from Norwich via Cambridge to the Midlands and southwest England) and King's Lynn to Cambridge/London (half hourly frequency)
- Strategic connections are important for many of the businesses in the county as well as providing vital links for residents and visitors
- It is important to secure investment in their improvement to support, in particular, economic objectives. If journey times, and reliability of journeys, to Norfolk from other major places in the country do not compare well with similar places it is likely that investors would choose instead to invest in other locations, putting the economic prosperity of Norfolk at risk. Policy 9 sets out that there must be a shift to cleaner transport modes on these major links
- The importance of the above rationale will be kept under review whilst considering the long-term implications of changes arising from the pandemic, but initial analysis suggests they still hold true.

Policy 9

Our priority for improved connectivity will be that the network is used by clean transport modes.

What this means in practice:

- When seeking improvements to the strategic connections we will endeavour to secure, design and implement them in a way that encourages clean transport modes. This means low carbon vehicles including cars and buses using cleaner propulsion (eg electric vehicles) and sustainable modes such as walking and cycling
- This means we will seek to influence the choice of vehicle type or how people choose to travel instead of hoping that individuals can make an informed choice, taking into account factors like their journey's impact on climate change, rather than simply their convenience
- The chosen policy will support our environment policy and emerging government policy. The policy will help to contribute to reducing carbon, improving air quality or the better physical and mental health of people through active travel whilst ensuring that major connections – necessary to support the economy – are suitable for their strategic purpose of transport large numbers of people efficiently and effectively.



Policy 10

We will seek to improve connectivity between rural areas and services in urban centres.

What this means in practice:

- Residents in rural areas need to access employment and services, which are often based in urban areas
- To connect rural areas to the services and facilities centred within the market towns and urban areas, we will focus on improving the connections between them. This will comprise a variety of actions including: extending sustainable walking and cycling networks in the urban areas to connect with longer-distance facilities; working with public transport operators to improve services and infrastructure connecting into settlements (this is covered in the Accessibility Chapter; Chapter 8); and – recognising the significant role that car travel will continue to play in the future – improving some of the road links and connections. This ties in with our policies set out in A Well Managed and Maintained Transport Network (Chapter 10) where we state that we will prioritise main roads that have most usage
- This means that resources would be targeted to the above connections, rather than on improving connections in rural areas, which would result in improved connectivity within rural areas, but would not necessarily help people to access the urban areas and market towns
- People are increasingly working at home following changes to their habits during Covid-19 lockdown. Often, people need to make local trips to market towns and urban areas, replacing trips they would have previously combined with their journey to work. An improvement to the connections will help people to make these trips and will support the economies of the service centres.

Achievements

- ✓ Greater Anglia rail franchise has delivered:
 - New rolling stock on all routes
 - Start of Norwich in 90 services
 - Extension of Norwich–Cambridge service to Stansted Airport.

- ✓ Improved connectivity in our built-up areas:
 - Major changes in Norwich including cycle network and removal of traffic from the retail and business centre, ensuring the city centre retains its place as one of the country's top retail areas, supports the visitor economy and remains attractive for business investment
 - New bus station in Thetford
 - Improvement of walking and cycling connections between the rail station and market place in Great Yarmouth. This is a key gateway to the town and the improvements have made a real difference to the impression visitors have on arrival.

- ✓ Completion of Broadland Northway (Norwich Northern Distributor Road), fully opened to traffic in April 2018, and completion of A11 dualling (December 2014)

- ✓ Commitment to over £300m of investment from government for the A47 including:
 - Easton to Tuddenham dualling
 - Blofield to Burlingham dualling
 - Wansford to Sutton dualling
 - Thickthorn (A11/A47, Norwich) junction
 - Guyhirn junction
 - Junctions at Great Yarmouth

- ✓ Large Local Major Road Schemes are in various stages of development:
 - Norwich Western Link. The outline business case was submitted to government in June 2021. Construction is programmed for a start on site in 2023
 - Great Yarmouth Third River Crossing. Development consent and funding was secured, enabling construction to start on this project at the beginning of 2021. We aim to have the bridge finished and operational by early 2023.
- ✓ Major Road Network improvements. Transport East has prioritised Long Stratton Bypass, West Winch Housing Access Road and A47/A17 Pullover Junction King's Lynn for funding under this stream. Government approved the outline business case for Long Stratton Bypass in July 2021 and awarded funding for the next stage of work.



Evidence

Strategic connections are important to Norfolk particularly for its continued economic success. This includes connections to London and Cambridge, and to major gateways like the London airports. These major connections, however, tend to be lengthy due in part to the location of Norfolk, but also because many are not of the same high standard as elsewhere in the UK.

The county has two major trunk road routes: the A11 and A47. The A47 is a mixture of poor standard single carriageway road and dual carriageways. This leads to inconsistency of standard, creating safety issues, as well as slow and unreliable journeys.

Compared to other parts of the country, journey times from other major places to Norfolk are lengthy. The availability of rail is poor, with many places in Norfolk some distance from a rail station. There is also a limited number of destinations available by train from the county. As a result, Norfolk has substantially lower numbers of residents commuting by rail compared to the rest of the UK.

The British Chambers of Commerce (The Congestions Question: Business Transport Survey, London) found that almost 60% of UK firms consider transport infrastructure as a major influence on their business location, suggesting that physical transport connectivity remains important for businesses.

Evidence reports, such as the A47 Economic Impact Study, completed by WSP Consultants for the A47 Alliance in 2019, show the value of good strategic connections on the major road network. This found that the Alliance's three priority dualling schemes would create an uplift in gross value added from new employment of over £330m, generate over £200m in benefits from enhanced productivity and bring about benefits of £40m in regional markets by reducing delay and congestion and increasing efficiency.

The county council is refreshing its Norfolk Rail Prospectus. This sets out in detail the ambitions of the council for rail improvements and the rationale for them. This document will be used to support our work with partners to improve accessibility and connectivity by rail. This work was put on hold until government had completed its review of the railways. Government published its white paper Great British Railways: The Williams-Shapps Plan for Rail in May 2021, setting out government's intentions for reform of the rail sector.

Challenges

- Slow road journey times on strategic east west links
- Limited rail connections, especially east west
- Methods of sustainable transport are often viewed as unsafe, particularly in rural areas
- Norfolk is a largely rural county with services focussed in market towns and urban centres
- Many parts of Norfolk experience slow and unreliable road journeys for motorists and buses, especially on congested networks in the towns and cities
- Many parts of the county are not close to rail stations, and even then, rail services have a limited number of connections
- Journey times between Norfolk and major destinations like London, Cambridge and major airports are lengthy. It can be quicker to get from London to many other parts of the country than to Norfolk, even if these places are further away from London than we are.

Strategy for delivery

The county council will continue to work with partners and key stakeholders to improve transport links such as working with the A47 Alliance to secure improvements to the A47 trunk road, the East West Rail Consortium (to link Norwich with direct rail services via Cambridge to Bedford, Milton Keynes and the south west of England), and other rail groups including the Great Eastern Main Line Task Force (Norwich to London rail link) and Ely Task Force (critical rail junction for King's Lynn to Cambridge / London services and a range of east west services). We will also work with developers, ports and Norwich Airport to make Norfolk an attractive place to live, work and run a business.

Transport gateways

Transport gateways are the major arrival points, and generally where there is a change in transport modes, from land to sea or air. These gateways are generally international, but gateways such as Norwich and King's Lynn railways stations link Norfolk to national transport networks.

Norwich Airport, Great Yarmouth Port and King's Lynn Port are the gateways in Norfolk linking people, business and freight to international markets. International connections are becoming increasingly important, both recreationally and economically. Norwich Airport provides holiday destinations in Europe via its link with Amsterdam Airport Schiphol allowing people to travel globally. The airport also allows for economic links for businesses, such as tech, financial services and pharmaceutical firms, with global markets and the oil industry. The ports at King's Lynn and Great Yarmouth allow manufacturing businesses to ship goods around the world as well as providing vital services for the offshore energy industry. Neither port, nor the airport, has rail connections. We will continue to work with the operators to improve connectivity.

Offshore energy is a major part of business in Great Yarmouth and the port is the principal support port for offshore energy in the southern North Sea. There are also important links to ports just outside Norfolk, such as Wisbech in Cambridgeshire and Lowestoft in Suffolk and other international gateways such as the Port of Felixstowe and Stansted Airport.

As with many transport modes international gateways will need to respond to the pressures of carbon reduction and clean air targets.

Strategic Road and Rail Connections

Policy 8

Our priority will be to improve major road and rail connections between larger places in the county, and to major ports, airports and cities in the rest of the UK.

The foremost road connections into the county are by the A11 and A47. These are both trunk roads and funding for improvements comes directly from government. They are maintained and managed by National Highways, formerly Highways England, rather than the county council, which manages all other roads. Similarly, rail services are currently run by private companies on a franchise basis from government. Network Rail manage and maintain the infrastructure, including the track. Often improvements to the infrastructure are needed before the rail companies can run improved services.

The focus concentrates on improvements to these strategic networks to ensure quick, reliable journey times for longer-distance journeys. Improvements to the road network will help the longer-distance bus networks. Elsewhere in the Local Transport Plan, principally in Chapter 8, we deal with how these bus links will connect into the centres of our towns and employment areas.

Policy 9, below, sets out that, whilst there is a need to improve the strategic connections, there will need to be a shift towards clean transport modes on these links.

Strategic Priority Connections

- The A11 which provides the main road connection to London and the south
- The A47 providing the main east-west road connection and route to the Midlands and north of England
- Connections to Norfolk's transport gateways: Norwich Airport and the ports at King's Lynn and Great Yarmouth
- The Norwich to London rail line, providing links to London and the south
- The Norwich to Cambridge/Stansted and Peterborough rail lines, providing links to the Midlands and the north of England
- East West Rail, supporting rail services from the east through to the south west of England including the construction of a new rail line between Cambridge and Bedford
- The King's Lynn to London rail line, providing links to London, the south and Europe via St Pancras / Thameslink
- Major Road Network: improvements to the A10, A140, A134 and A146 providing regional connections.

- A11 trunk road (bottleneck junctions at Thetford and Mildenhall Fiveways)
- A47 trunk road (full dualling with appropriate grade separation at junctions)
- Major Road Network (Norwich Western Link, Long Stratton Bypass, West Winch Housing Access Road, A47/A17 Junction at King's Lynn)
- Connections to Norfolk's transport gateways (Third River Crossing at Great Yarmouth, currently under construction)
- Norwich to London rail line (at least hourly 90-minute journeys: likely to require infrastructure improvements including – when linked to other improved services – a double track over Trowse Bridge in Norwich)
- Norwich to Peterborough and Cambridge/Stansted rail lines (more capacity, faster journeys, half hourly frequency)
- East West Rail (services from Norwich via Cambridge to the Midlands (via Bedford and Milton Keynes) and southwest England)
- King's Lynn to Cambridge/London (half hourly frequency throughout the day).

All proposed infrastructure schemes and route options will be subject to the appropriate range of assessments in their conception and subsequent phases including taking into consideration their full range of impacts, and consideration of suitable alternatives. (This would be the responsibility of the agency promoting the project.) We would seek early engagement with inter alia the statutory environmental bodies on major schemes so that impacts can be given appropriate consideration from the outset.

Clean Transport Modes

Policy 9

Our priority for improved connectivity will be that the network is used by clean transport modes.

We see the benefit of improved strategic connectivity, as set out above, because of its benefits to the county's economy and our residents, businesses and visitors. The above priorities for strategic connections will improve people's connectivity. However, improved connectivity needs to be achieved in a way that meets our other objectives, especially to reduce carbon and improve air quality. We will therefore look to improve connectivity by clean transport modes. That is, we will seek to achieve a change in the ways that people use the networks towards clean transport.

We use the term Clean Transport to talk about low carbon vehicles including cars and buses using cleaner propulsion (eg electric vehicles) and sustainable modes such as walking and cycling. Increasingly, there is a range of newer ways that people are getting about including e-scooters or, for delivering goods, delivery-by-drone or autonomous pods. We talk in more detail about how clean transport modes will be promoted in our chapters on accessibility and quality of life.

Connectivity from rural areas

Policy 10

We will seek to improve connectivity between rural areas and services in urban centres.

Most services and facilities that people need to get to are sited in our market towns and urban areas. It is important that people can get to these. We set out here how we will improve this at a strategic level; our chapter on Accessibility deals with the details of this including the local connections within settlements.

To connect rural areas to the services and facilities centred within the market towns and urban areas, we will focus on improving the connections between them. This will comprise a variety of actions including: extending sustainable walking and cycling networks in the urban areas to connect with longer-distance facilities; working with public transport operators to improve services and infrastructure connecting into settlements (this is covered in the Accessibility Chapter); and – recognising the significant role that car travel will continue to play in the future – improving some of the road links and connections. As set out above, we will have a focus on clean transport modes in doing this. Good design will be important to make sure that local walking and cycling facilities are attractive to encourage all users. The county council is refreshing its walking and cycling strategy, which will include more detail, but where possible we will seek to provide cycle lanes and footpaths away from busy roads and support their use through behaviour change work including publicity to encourage use.

Innovation

New technologies are being developed at a fast rate but we must choose the right interventions to ensure maximum connectivity in a way that benefits everyone. Innovative thinking as well as technology are needed as we must think radically in order to fulfil environmental targets.

We will trial innovative technology in different parts of the network for walking, cycling, motorcycling and car journeys by developing prototypes, preferably with local companies to also help economic development in the region. We should use technology to monitor the network to better understand which routes are used, when and why so we can then use this to inform evidence-based decisions where connectivity needs improving.

Chapter 7:

Enhancing Norfolk's Quality of Life

Introduction and chapter summary

This chapter deals with:

- Climate change. This includes the equality and social impacts of climate change and emissions and the measures for reducing carbon, increasing active travel and reducing inequalities.
- Strategies. How strategies such as The Joint Norfolk Health and Wellbeing Strategy 2018-22 and The Norfolk Public Health Strategy shape our planning.
- Travel choice and behaviour. How we can encourage cycling and walking and smarter travel choices.
- Air quality and pollution. Understanding causes to design suitable interventions working alongside behaviour change to improve conditions in air quality management areas, street design causes.
- Transport and the environment. Looking at how we can improve our built and historic environments through making changes to the transport network.
- Innovation. Using new technology and innovative ideas to improve journey planning and environmental monitoring.

This chapter deals with:

- The transport sector has the highest carbon emissions, so intervention is needed to reach our environmental target of carbon neutrality.
- There are several areas in Norfolk where air quality falls below defined thresholds due to emissions from transport.
- Priority to reducing carbon and emissions is through cleaner vehicles and mode-shift to public transport and active travel.
- We will look to enhance and conserve our built and historic environments through making changes to the transport network.
- Consideration should be given to health issues in planning decisions to promote air quality (see Chapter 5: Delivering a Sustainable Norfolk).

Enhancing the quality of life of Norfolk's residents is important. The county council wants to improve the health of its residents through improvements in air quality and encouraging active travel options to improve health and fitness. Transport is a significant source of UK greenhouse gas emissions.

Policies

This section provides a summary of the policies in this chapter.

Policy 11

When making changes and improvements to our transport network, and in working with users on how they choose to use the transport network, we will seek to understand the consequences of the decisions on meeting the collective challenge of protecting and improving our global environment to meet the environmental policy target of working towards carbon neutrality.

What this means in practice:

- The Norfolk County Council Environmental Policy, alongside national and international policies and agreements, means that we have a responsibility to meet targets to reach carbon neutrality.
- As transport is a major contributor to climate change these targets can only be met through intervention on the highway network, such as encouraging electric vehicles, and sustainable and active transport options.
- People now have a greater understanding of environmental issues and expect us to take action on climate change.
- If we did not follow the policy, it would mean that we would not make changes that would help us meet carbon targets and we would see a decrease in quality of life for future generations.
- We have adopted an Electric Vehicle strategy, which provides a framework for encouraging the uptake of these types of vehicle and provide guidance on changes to infrastructure to meet these needs.
- As part of the work on development of this plan we also commissioned work to understand the impact that measures will have on carbon reduction. LTP4 Implementation Plan develops this work, taking account of the statement in government's decarbonising transport plan that going forward LTPs will also need to set out how local areas will deliver "ambitious quantifiable carbon reductions in transport, taking into account the differing transport requirements of different areas."

Policy 12

Our priority for tackling air quality will be to take action to improve air quality, including investigating vehicular restrictions or charging, where air quality falls below the threshold for Air Quality Management Areas. We will also embrace new ways of monitoring air quality to inform interventions, including in other areas, where this is deemed necessary.

What this means in practice:

- Air quality is integral to health and wellbeing. Good air quality enables communities in locations where people want to live and spaces people want to visit. The recent Local Transport Plan consultation showed that there is support for restricting the most polluting vehicles from entering town and city centres.
- If we took no action, urban centres would not achieve air quality targets and will also become places people don't want to visit, widening the gap between quality of life in urban and rural areas. Budget is not unlimited so priority should be given to the areas with the worst problems.
- Road transport accounts for a third of NO_x emissions and is the dominant source in urban, heavily-trafficked areas. The European Environment Agency estimates that road transport contributes to excessive concentrations about 70% for nitrogen dioxide (NO₂). Therefore, transport modes are integral to achieving environmental targets.
- Monitoring outside schools has not shown breaches of the air quality thresholds (where it is shown to be harmful to human health and requires declaration of a management zone). Therefore, we are not proposing to prioritise action outside schools specifically because of air quality. However, we do intend to be more innovative in our collection of data, which should allow a better understanding of air quality outside schools and will also look to respond to school issues either on an individual basis where problems are found, or collectively through implementation of our policies for – amongst other things – mode shift and cleaner vehicles.

Policy 13

We will seek to improve quality of place, conserving and enhancing our built and historic environments, when we take action to improve the transport network.

What this means in practice:

- The way a community is planned, designed, developed and maintained all affect the quality of life of people living and working in it, and those visiting.
- Therefore, a sustainable and healthy transport network is an important part of making Norfolk an attractive place for people to live and work and visit.
- Where we live effects our health and wellbeing and Norfolk residents deserve to live in healthy communities and have healthy transport options.
- Transport networks should remain functional, but budget needs to be targeted in areas that improve quality of life in order to achieve wider outcomes such as better physical and mental health of people, to encourage the tourist and visitor economy, to protect the unique characteristics of our places, and to encourage economic investment and sustainability into areas. Interventions to ensure functionality of the network are covered further in the Maintenance chapter.

Achievements

- ✓ Norfolk County Council has been working with district council partners through an Air Quality improvement network to develop and deliver a countywide approach, reducing transport emissions being one shared objective.
- ✓ Norfolk County Council adopted an Environmental Policy in November 2019. The policy supports the aims of the government's environmental plan and has 'Supporting initiatives that lead to clean air, such as developing new proposals within the forthcoming Local Transport Plan and its supporting strategies' as a key objective.
- ✓ The Norfolk Cycling and Walking Strategy recognises that cycling and walking are not only good for the environment but also our children, our health and our economy so the strategy looks at Norfolk County Council's work to support them both now and in the future. This strategy is currently being refreshed.
- ✓ AtoBetter is run by Norfolk County Council but funded by developers to make journeys as easy as possible and enable more journeys to be made by foot, bike, public transport, car sharing, and to reduce the need to travel in the first place.

Evidence

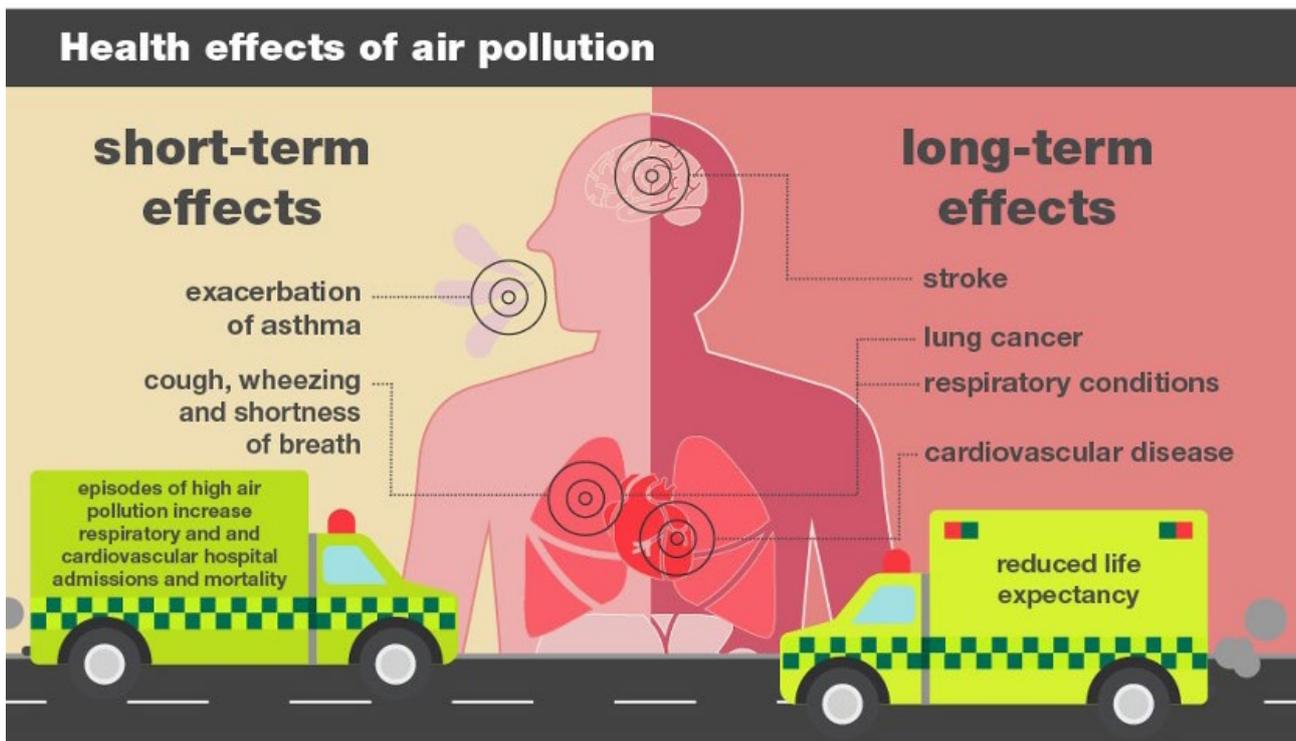
There are various government policies which impose targets on international, national and local scales. These targets are often linked to emissions and due to transport being the most polluting sector in the UK. These targets have a large effect on transport behaviours as this is where the most emissions can be cut.

International agreements and policies are influencing what the future of transport looks like. For example, the Paris Agreement 2015 is a United Nations commitment to keep global temperature rise to well below two degrees Celsius above pre-industrial levels. This will influence the future of transport and provoke a widescale increase in low-carbon modes of transport, with growing encouragement for the usage of public transport, cycling, walking and electric vehicles (EVs).

The Cop26 Declaration 2021 shows that the UK is committed to working towards 100% new zero emission vehicle sales by 2035 at the latest in leading markets, and by 2040 globally. This declaration was signed by national governments, states, regions, cities, vehicle manufacturers, businesses, investors and civil society.

The UK saw a 32.6% rise in the number of EV registrations in August 2019

Similarly, national policies are shaping the future of transport in the UK. The Climate Change Act 2008 sets the target for the UK's net carbon account for the year 2050 to be at least 80% lower than the 1990 baseline. As well as this, the UK's 'Road to Zero' strategy bans the sale of all new diesel and petrol cars and vans from 2040 in order to move towards EVs and reduce greenhouse gas emissions. This was brought forward to 2035 in order to make the 2050 emissions target more achievable. More locally, Norfolk has made emissions commitments of its own. The recent (2019) Norfolk County Council Environmental Policy sets a carbon neutrality target for 2030 which will result in large changes to the way we move people, goods and services in Norfolk and will require rapid decarbonisation. Norfolk County Council has adopted its Electric Vehicle Strategy to encourage the uptake and ownership of EVs.



The EU Air Quality Directive (EU Directive 2008/50/EC) sets legally binding standards for the condition of air in outdoor environments. In the UK district councils are required to regularly review and assess air quality in their area. This has led to Air Quality Management Areas being declared in parts of King's Lynn, Swaffham and Norwich. These have been declared because the annual average levels of Nitrogen Oxides (NO_x) exceed recognised thresholds. There are action plans in each of these areas designed primarily to reduce emissions from traffic, improve traffic flow and support public transport and active travel options.

Data shows that, in terms of estimated fuel usage, Norwich is much lower than other parts of the county and has a lower use of diesel engines. However, air quality is also affected by background levels of pollution, traffic flows, street design, engine idling and in some cases types of green infrastructure. It can also be localised and affected by weather. Consequently, transport solutions may need to consider not only absolute volumes but also factors which may trap or otherwise cause build-up of pollutants which may otherwise be dispersed more rapidly. It is important to make sure we can measure air quality so that we can successfully manage it.

Challenges

There are issues with pollution from vehicles causing both local air quality issues and contributing to climate change. CO2 can be reduced, and air quality improved, by replacing petrol and diesel by electric cars although, beyond the remit of this plan, there will be a need to ensure that the emissions aren't displaced to the power generation for charging these vehicles; and that other environmental impacts, such as materials required for batteries, are minimised. There is currently limited infrastructure to support a significant uptake in electric vehicles and the technology is developing at a fast rate.

Options for how people and goods move across Norfolk is often restricted as we are a dispersed and rural county. It is difficult for some people to get to services, and there are limited alternatives to the car, especially over longer distances in large areas of Norfolk. Therefore, some approaches that can work in urban areas are more difficult in rural areas where there is currently no obvious alternative to the car.

Behaviour change is important to encourage more people to use sustainable transport but can take time and cannot be done in isolation. Reducing single occupancy car journeys in urban areas can be achieved through a modal shift alongside provision of viable alternatives.

The county council adopted an Environmental Policy including an aim to work towards becoming carbon neutral by 2030. The Local Transport Plan sets out the strategy for how we will achieve this. The implementation plan sets out specific targeted interventions taking account of government's decarbonising transport plan, which stated that LTPs will need to set out how local areas will deliver "ambitious quantifiable carbon reductions in transport, taking into account the differing transport requirements of different areas." It is likely that, to be successful – and also to make improvements to air quality – we will all need to change how we travel.

The county council's plan 'Together for Norfolk' sets out Norfolk County Council's ambitions between 2019 and 2025. The priorities outlined in this document include:

- Focusing on inclusive growth and improved social mobility
- Encouraging housing, infrastructure, jobs and business growth across the county
- Developing our workforce to meet the needs of the sectors powering our local economy
- Work to reduce our impact on the environment.

Strategy for delivery

The Joint Norfolk Health and Wellbeing Strategy 2018-22 has a 'prioritising prevention' as a key objective both at a policy level and in decision making. The Norfolk Public Health Strategy prioritises public health action which will:

- Promote healthy living and healthy places
- Work towards the design of healthy streets
- Protect communities and individuals from harm
- Provide services that meet community needs
- Work in partnership.

Specific actions arising from this strategy include:

- Considering health issues in planning decisions and associated policies (including transport policy)
- Increasing physical activity
- Promoting open space, active travel and collaborative approaches to improving air quality
- Addressing the current inequalities in access to a sustainable transport system
- Addressing air quality issues and the impact of air pollution on inequality.

Climate Change

"Effective and proactive planning can mitigate the threat of climate change impacts on transportation systems" – International Transport Forum, 2016

Summer

Warmer and drier with an increased occurrence of heatwaves

Winter

Warmer and wetter with an increased occurrence of flooding, storms and extreme winds

Sea level rise

Leads to an increased rate of coastal erosion and increased occurrence of storm surge events

Policy 11

When making changes and improvements to our transport network, and in working with users on how they choose to use the transport network, we will seek to understand the consequences of the decisions on meeting the collective challenge of protecting and improving our global environment to meet the environmental policy target of working towards carbon neutrality.

Transport is the largest emitter of carbon in the county and, in recent years, emissions have been rising. We have recently (2019) adopted our Environmental Policy, which alongside national policies, means that we have a responsibility to meet targets to reach carbon neutrality. The Norfolk target is to move towards carbon neutrality across all sectors by 2030. Emissions from transport on the networks, including rail, road and waterways, will need to contribute towards achieving this target and the council will have to work in partnership with other agencies as appropriate, or where we do not manage the network. Policy 11 above reflects the adopted environmental policy. There is a separate target for net carbon zero on our own estate (ie the operations that the council directly undertakes) in our Environmental Policy.

Our strategy, set out in this plan, is to achieve a shift towards active travel and cleaner vehicles. LTP4 Implementation Plan sets out how we will deliver the strategy and our ambitious carbon target. This takes account of any guidance issued including government's Toolkit of Guidance to support local authorities. We are already refreshing our walking and cycling strategy and have adopted an electric vehicle strategy, amongst other things. As part of the work on development of this plan we commissioned work to understand the impact that measures will have on carbon reduction. This shows that car and van electrification is likely to have the most significant impact on reducing carbon emissions in the county, but that accelerating the uptake is needed if we are to meet our ambitious targets. The LTP implementation plan sets out how this shift will be made, together with the range of other actions we propose.

The implementation plan has taken account of the statement in government's decarbonising transport plan that going forward, LTPs will also need to set out how local areas will deliver ambitious quantifiable carbon reductions in transport, taking into account the differing transport requirements of different areas. The Transport Decarbonisation: Local Authority Toolkit, April 2022, has been designed to provide advice to local authorities on planning and actions they can take to reduce transport carbon emissions. New guidance in the Zero emission fleets: local authority toolkit, Published 13 April 2022, sets out actions for local authorities to convert to zero emissions fleets. This will support the council's aim to become net zero on its own estate by 2030 and is therefore not considered likely to adversely affect its delivery.

We need to ensure that transport infrastructure both mitigates climate change and adapts to it. Norfolk is a vulnerable county as it consists of a large number of coastal communities, communities close to rivers and The Broads. It is also a relatively flat and low-lying county. Therefore, it is important that transport infrastructure is adapted to climate change to mitigate the effects it will have to ensure the transport network is not compromised with a disruptive effect on the county's economy or in the ability of people to be able to continue to get to jobs and other services.

With the increasing occurrences of extreme weather events, vulnerability assessments of transport networks will become increasingly important. These assessments enhance our understanding of risk areas and certain measures which should be taken. This would provide a basis for strategic choices in order to climate proof our transport infrastructure and maintain stable transport networks and services.



Air quality and pollution

Policy 12

Our priority for tackling air quality will be to take action to improve air quality, including investigating vehicular restrictions or charging, where air quality falls below the threshold for Air Quality Management Areas. We will also embrace new ways of monitoring air quality to inform interventions, including in other areas, where this is deemed necessary.

The reduction of Nitrogen Dioxide (NO₂) and particulate matter in areas of high levels, and / or where there are vulnerable residents, is important in tackling the problem of pollution currently felt in Norfolk. Work also needs to be done to identify future problem areas and tackle emissions before they get too high. We can tackle this by increasing the use of public transport and active travel whilst cleaning up vehicles and facilitating a shift to electric buses and private hire vehicles. Our priority will be to tackle problems in Air Quality Management Areas (AQMA) that have been declared due to transport emissions. These are areas where monitoring has shown that NO_x levels fall below thresholds.

We will also consider people's concerns in other areas, particularly outside schools. An innovative approach to monitoring air quality – through the use of apps or other equipment that has been found to produce reliable results – and the use of data should help to identify the issues and inform appropriate interventions.

In areas where action is taken it must be ensured that those less able to use active and / or public transport options are still able to access services and not left isolated.

Travel choice and behaviour

Whilst the county council can make changes to the transport system this will only be effective if people also choose to adapt the way they use the network. For shorter journeys in urban areas people perhaps have greater choice than for those in rural areas, where journeys tend to be longer and infrastructure – and public transport – provision lower. There will be different solutions for individuals, dependent on their circumstances, and the journeys people wish to make. Behaviour change in the way we travel is integral in improving quality of life in Norfolk by influencing the choices we make, such as reducing single occupancy car journeys. This issue is covered more extensively in Policy 4, in Chapter 4: Embracing the Future.

Shifting travel from private cars to public transport and active travel is becoming increasingly important, particularly post Covid-19. Reducing the dominance of the car – reclaiming the streets for pedestrians and cyclists as well as making provision for improved quality of life such as green space and play areas.

Ways we can improve health and wellbeing through transport:

- Provide viable sustainable transport options, which helps reduce pollution and improve people's mental and physical health
- Develop and implement a systems approach to travel behaviour change, leading to a modal shift to public and active transport
- Education to make people feel safer using the transport network on foot and cycling
- Improve infrastructure such as increasing the number of electric car charging points
- Electrification of the bus services and private hire vehicles will be vital to reduce emissions in the long term. The fuel-price stability of electricity over diesel can also benefit the transport providers
- Restrict some types of vehicles in Air Quality Management Areas or the creation of Low Emission Zones
- Continue to monitor pollution levels across the county and act early to respond to high levels, but also consider interventions to stop levels getting too high or outside of schools or other locations of concern
- Make Norfolk an attractive place to live and work, ensuring access to sustainable and active transport option and recreational space
- Ensure we have a useable transport network, linking people to the services they need to reduce social isolation, which can contribute to poor mental health
- Make improvements for walking and cycling and cycle parking in city/town centres and residential areas to make them a more desirable option
- Work with public transport providers to better move from different modes of transport. This includes better links between bus and train and improved cycle parking at stations.

Quality of place

Policy 13

We will seek to improve quality of place, conserving and enhancing our built and historic environments, when we take action to improve the transport network.

The transport network also has an impact on the environment through which it passes. This is especially true for built up areas where it is often the defining feature of the place. Norfolk is characterised by many ancient settlements that have retained their historic character, and it is important that we continue to respect this, both in changes we make to the existing network and in how new infrastructure, including new areas of housing, is provided. All proposals will be subject to an assessment of impacts, including on designated sites, townscape, landscape and heritage assets and designed accordingly. These assessments will be proportionate to potential impact and scale of the proposals. The importance of place making, however, in highway design should not be underestimated.

The adoption of a 'Healthy Streets' approach to planning and delivering transport, public realm and urban planning puts people, and their health, at the heart of decision making and results in healthier, more inclusive places where people choose to walk, cycle and use public transport. We will apply a Healthy Streets approach in Norfolk.

The Environment Act, which received Royal Assent in November 2021, introduces a requirement for biodiversity net gain as a condition of planning permission in England. We shall seek to meet the objective by assessment of any potential loss of biodiversity as a result of implementation of the transport strategy.

Innovation

Intelligent transport systems improve and innovate services across different modes of transport. Better traffic management enables users to be better informed and make safer, more coordinated, and 'smarter' choices across the transport network. The provision of up-to-date information to bus, train, and even congestion can help create a better-informed traveller. The collection of air quality data can help us tackle the issues of air quality and better understand how it has impacted by different policies in the Local Transport Plan. Working with partners we can introduce new technology, such as sensors, to better understand journeys and develop targeted improvements. Gaining as much data as possible on air pollution means we will be able to use this data to establish a baseline to inform future decision making and better target interventions.

Chapter 8:

Increasing Accessibility

Introduction and chapter summary

This chapter deals with how are able to access essential services like jobs. It includes:

- Access to and within Norwich, King's Lynn, Great Yarmouth and our market towns: Access to and within larger urban areas have their own issues such as poor air quality and congestion. Encouraging interventions such as cycling and walking can contribute to easing both
- Access in rural areas. Public transport is often limited compared to urban areas. We want to encourage alternatives to the private car while acknowledging that there are barriers, as well as continuing to work with public transport providers to improve services in rural areas and overcome barriers to improving these services
- Access for all: We recognise that people who live in, work in and visit Norfolk access the network in different ways, depending on their individual circumstances and characteristics. We want to provide a network where transport and movement can be accessed, understood and used to the greatest extent possible by all people
- Bus Back Better: Government published its bus strategy in March 2021. We are committed to establishing Enhanced Partnerships with bus operators and have developed a local Bus Service Improvement Plan detailing how we propose to improve services
- Alternatives to travel: Encouraging better broadband and other measures without causing increased social isolation. Covid-19 has led to behaviour change and more activities such as shopping being done from home. Further research and monitoring is currently being done to better understand how travel patterns have been affected; and how much they might change in the future.

The chapter sets out that:

- Poor access can lead to social exclusion and restrict some people from being able to live independently
- Access by sustainable and active modes of transport is key to the design of new developments and needs to be part of existing networks
- Norfolk's dispersed population makes it difficult to provide some forms of transport, such as regular buses, in some areas, which is covered further in the connectivity chapter
- Cycling and walking is increasingly important, as people recognise the financial benefits and benefit to physical and mental health by getting active and cutting down car journeys

- Transport networks need to provide for economic growth and reduce emissions while still providing better accessibility to communities and services. This can be achieved by planning sustainable links within new developments and working with bus companies
- Safety, availability and reliability of some forms of transport, particularly in rural areas, can make people feel private cars are their only option
- Research and data collection are vital to gain as much information as possible on how and why people are making journeys so we can make better infrastructure choices
- The utilisation of new and innovative technology can better inform travel journeys and provide people with up to date information, which is also covered in the sustainability chapter. However, access for all groups is important and some people struggle to access information on the network and journey planning digitally.

Increasing accessibility is important so that everyone has access to the services and opportunities they require; poor accessibility can lead to social exclusion. Inaccessibility can be caused through a lack of public transport availability, lack of awareness of travel options, the cost of travel, long distances or simply having infrastructure that is not accessible. Accessibility can also include bringing services to communities by making sure developments link communities and provide options such as broadband.

Policies

This section provides a summary of the policies in this chapter.

Policy 14

We will work in partnership with agencies in Norfolk to tackle accessibility problems, targeting those communities most in need. We will seek to ensure that accessibility is planned as part of service delivery.

What this means in practice:

- We are committed to establishing Enhanced Partnerships with bus operators and have developed a local Bus Service Improvement Plan. Amongst other things we will:
 - Facilitate the commercial operation of the bus network through physical design including busways, bus priority and advising local planning authorities on appropriate estate design
 - Deliver transport to fulfil our statutory requirements to take children to school
 - Work with operators on ticketing schemes, education transport passes and information including allowing passenger transfer between operators and different sustainable modes
- In return we will expect operators to commit to the Enhanced Partnership to work with us and other service providers to improve accessibility and, amongst other things, provide clean, efficient and frequent services that run to time and explore new ways of delivering transport services that connect people with where they need to go
- By saying that “Accessibility should be planned as part of service delivery,” we mean that when providers are considering where to site facilities like doctors surgeries, they should consider how people will be able to access them. Therefore, when planning services and facilities, providers will take account of the ability for people to get there as well as other factors such as availability of premises and the cost

- Working in partnership means we get expertise and specialism of other organisations and networks. This allows agencies to consider accessibility problems in the round, taking account of any difficulties and – if necessary – making changes to the way that the services are provided so that people can access them more easily. Building relationships and targeting communities most in need helps us to find out what residents’ needs are, and not what we think they are
- By working in partnership with transport providers we do not simply rely on the market to provide the services that people need to get where they want to.

Policy 15

We will identify routes important for sustainable and active transport and give priority – especially in urban areas – to sustainable and active modes of transport.

What this means in practice:

- On certain routes in urban areas we will put in dedicated, segregated lanes for public transport and / or cycling. This is likely to make travel for general vehicles slower, but it might be possible to put in complementary measures elsewhere
- This means we will prioritise space for certain types of user in urban areas rather than trying to make provision for all types of user on each corridor, because it is not practicable to do this
- Where we have tried to make provision for access in urban areas to all types of user on each corridor, rather than favouring sustainable and active modes on some roads, it has simply resulted in a compromise whereby no user is satisfied with the provision. For example, general traffic movement is compromised by bus or cycle lanes, but these bus or cycle lanes are, in turn, compromised by the need to cater for general traffic. The layout and constrained nature of roads in our urban areas means it is very difficult to make improvements for all types of user
- Recent government guidance discourages shared use (eg paths shared by pedestrians and cyclists) for active forms of transport. People feel less safe where they share the roads with other users, and will be more encouraged to uptake healthier modes of transport if they are given priority and not sharing space
- Government policy, environmental targets and public feeling all support the encouragement and safe infrastructure for sustainable and active travel. The support for active transport intervention has been particularly heightened with Covid-19.

Policy 16

We commit to providing a network where transport and movement can be accessed, understood and used to the greatest extent possible by all people. We recognise that people who live, work in and visit Norfolk access the network in different ways, depending on their individual circumstances and characteristics, and that what enables good access for one person may act as a barrier to another. We will therefore robustly assess all schemes and pay due regard to the Public Sector Equality Duty (along with our other duties and responsibilities), to identify potential barriers and determine how best to overcome any barriers and facilitate access to the greatest extent possible for all. Where appropriate, on a case-by-case basis, we will make reasonable adjustments.

What this means in practice:

- When making or considering changes to the network, we will strive to make sure that it is suitable for all users including people with disabilities or restricted mobility
- Considering all users ensures people don't feel social isolation
- Where possible, we will work with partners to provide more information, support and suitable infrastructure to users to help all people feel confident about the full range of transport options available
- We are following this policy in preference to separating different types of users and providing dedicated provision suitable for different needs. There is often not enough space on the network to segregate everyone and provide separate space for all. We would struggle to find the budget to cover the cost of dedicated facilities for all different types of users
- The council encourages a safe and reliable transport network for all users. More information on the safe systems approach is covered in the Safety chapter.

Achievements

- ✓ Norfolk County Council has a good working relationship with all of Norfolk's public transport operators, at both a strategic and operational level. This has led to a good level of service provision on a commercial basis, with the council funding plugging the gaps where necessary.

- ✓ The county council works in partnership with providers to tackle accessibility issues for everyone and aims to improve movement for all modes of transport.
- ✓ All local bus operations are accessible to people with disabilities. All trains have been replaced by brand new ones for the majority of Norfolk's services.
- ✓ Norfolk has a good network of community transport operators and community car schemes. Many of these receive no funding from Norfolk County Council and are run entirely by volunteers or through donations. This means that many gaps in rural transport provision by conventional bus services are covered by alternative demand responsive services.
- ✓ Norfolk's transport provision is integrated as much as possible, with many school children travelling on local bus services which then enables journeys to be provided throughout the day for shoppers and other travellers.
- ✓ Norfolk's key urban areas and a limited number of market towns are served by good rail services. Through the PlusBus scheme tickets can be bought that then allow passengers to make onward travel by bus for a small additional cost.
- ✓ Norfolk County Council manage approximately 3,900 km (2,400 miles) of Public Rights of Way consisting of footpaths, bridleways, restricted byways and byways open to all traffic. We also manage the Norfolk Trails, a network of 13 long-distance paths and associated circular walks covering 1,900km (1,200 miles).
- ✓ Norfolk Trails team has developed further opportunities for short walks and circuits, many with a geographical focus such as market towns or that integrate with public transport. Access testing has been undertaken on the Norfolk Trails, in order to support people accessing the countryside and improve quality of life. This has led to the production of the Access Tested Booklet, which contains key logistical details and a route map, with a description, maps, photos and details, illustrating the ground conditions, width, etc...
- ✓ Successful access initiatives have strong links with quality of life, with successful projects such as 'Pushing Ahead Norfolk' promoting the health benefits of cycling and walking as well as benefits for the environment, but also traffic reduction and being a cheaper alternative to the private car.

Evidence

Evidence shows that Norfolk has high levels of car ownership and use, reflecting that often this is the only viable option people have to get to services and facilities. Whilst the major towns and urban areas are generally well-served by public transport (bus) services from other centres of population, coverage is sparser elsewhere. Large parts of the county are not close to a rail station, though rail is relatively well-used for commuting into the major centres where it is available. Journeys tend to be lengthy – due to the geography of the county – meaning that active travel is often not an option for travel.

This means that accessibility – people’s ability to get to essential jobs and services – can be poor. This restricts opportunities available for people and can lead to issues such as social isolation or employers finding it difficult to attract people with the right skills to the workplace.

Norfolk County Council uses evidence of access to services like healthcare (hospitals, GPs and other health services), employment and education by public transport. The Local Transport Plan consultation showed that lack of public transport is considered one of the largest barriers to giving up the private car. The House of Commons Transport and accessibility to Public Services Report and Department of Transport ‘The Inclusive Transport Strategy: Achieving Equal Access for Disabled People’ are also useful sources of evidence.

Challenges

- The geography of the county, with its dispersed population and many parishes with low population, makes it difficult to provide public transport on a commercially sustainable basis
- Congestion, high levels of non-bus traffic, cheap parking and lack of bus priority in urban areas make it difficult to make public transport an attractive alternative to the car
- Norfolk is the fifth largest county in England and has a limited rail network
- Public transport is frequently seen as a less attractive mode of transport to the car
- The bus and community transport market are very fragile; the county council subsidises several routes
- There is limited funding for transport interventions
- The natural and historic environment needs to be taken into account when considering transport improvements or route diversions
- Problems with transport provision and the location of services can reinforce social exclusion by preventing people from accessing key local services
- How people travel to work is changing and the challenge of getting people to leave their car at home is exacerbated when people don’t always work standard hours that fit with public transport timetables
- Challenges of encouraging behaviour change to shift transport to sustainable methods, rather than the private car.

Strategy for delivery

Our focus will be to:

- Establish Enhanced Partnerships with bus operators and deliver on our local Bus Service Improvement Plan
- Maintain current commercial bus network and support operators
- Grow rural transport networks and increase frequency on inter-urban routes if further funding becomes available
- Increase bus priority measures on the most important routes
- Tackle congestion in urban areas so that buses can flow freely, and walking and cycling is a more attractive option
- Ensure access is a key consideration when new services are developed (eg health services, employment areas, and growth)
- Ensure access by sustainable modes (public transport, walking and cycling) is considered as part of any new housing developments
- Robustly assess all schemes to identify, and determine how best to overcome, any barriers and facilitate access to the greatest extent possible for all. Where appropriate, on a case-by-case basis, we will make reasonable adjustments.

Tackling poor accessibility

Policy 14

We will work in partnership with agencies in Norfolk to tackle accessibility problems, targeting those communities most in need. We will seek to ensure that accessibility is planned as part of service delivery.

Poor accessibility can affect a range of outcomes including the economy, and people's health, skills and aspirations. It is not only about whether areas are served by public transport, but that this can be used: All providers have a role in ensuring that people are able to use their services.

We will work in partnership to identify and deliver the most appropriate solution to address need. This could include a range of transport provision including scheduled bus services, taxis, car-sharing, demand responsive transport, informal community-based schemes and car clubs.

The majority of bus routes in Norfolk operate on a commercial basis. We have limited ability to influence the routes, timetables or fares. However, in some cases the council subsidises services which otherwise would not operate. We fund these because they are important to the communities and passengers who use them and help people to get, for example, to and from work, or healthcare and other services. We will continue to work in partnership with transport providers including to:

- Establish Enhanced Partnerships with bus operators
- Deliver the objectives and outcomes of the Bus Service Improvement Plan
- Facilitate the commercial operation of the bus network through physical design including bus priority and advising local planning authorities on appropriate estate design
- Deliver transport to fulfil our statutory requirements to take children to school
- Work with operators on ticketing schemes, education transport passes and information including allowing passenger transfer between operators and different sustainable modes.

We want accessibility to be planned as part of service delivery. This means that when providers are considering where to site facilities like doctors surgeries, they should consider how people will be able to access them. Therefore, when planning services and facilities, providers will take account of the ability for people to get there as well as other factors such as availability of premises and the cost.

Managing the network to improve public transport accessibility

The county council has a specific responsibility in maintaining and managing the transport network, and in delivery of this we will, amongst other things, facilitate the commercial operation of bus networks through physical design including busways and bus priority and advising local planning authorities on appropriate estate design.

We will work with operators on ticketing schemes, education transport passes and information including allowing passenger transfer between operators and different sustainable modes. In return we will expect operators to work in partnership with us and other service providers to improve accessibility and, amongst other things, provide clean, efficient and frequent services that run to time and explore new ways of delivering transport services that connect people with where they need to go.

Policy 15

We will identify routes important for sustainable and active transport and give priority – especially in urban areas – to sustainable and active modes of transport.

On certain corridors in urban areas we will put in dedicated, segregated lanes for public transport and / or cycling, recognising that this is likely to make travel for general vehicles slower, although it might be possible to put in complementary measures elsewhere. This would enable us to meet the challenges set out by government in their guidance on cycling, where dedicated, segregated cycle facilities are the only types of provision that they have indicated will receive funding. It will also allow dedicated, segregated bus lanes to be implemented in full on important public transport corridors into the urban centres. This will support government policy and our environmental targets as well as respond to the strong public feedback we got for public transport and safe infrastructure for sustainable and active travel. The support for active transport intervention has been particularly heightened with Covid-19.

In managing the network, and in considering dedicated facilities on some corridors for certain types of user, we will consider access by powered two wheelers (including motorbikes, mopeds, etc...). Powered two wheelers can provide cheap, efficient transport options and can be used by younger people before they are old enough to drive. We will also give consideration to priority for high-occupancy vehicles where this will be effective and can be supported through necessary enforcement.

It is important to ensure good connections for freight, whether this is produce manufactured in the county being brought into the county, or goods delivered to individuals. Improvements to strategic connectivity will help on the main transport corridors. Within urban areas we will need to maintain access balancing this against large vehicles attempting to deliver into the heart of our historic towns and city. Initiatives such as freight consolidation onto smaller vehicles or electric powered cargo bikes might provide an answer.

The county council is refreshing its walking and cycling strategy, taking account of the recently published Gear Change and corresponding local transport note. This sets out, amongst other things, government's vision for active travel as well as the standards for infrastructure provision. We have developed Local Cycling and Walking Infrastructure Plans in our major urban centres and are now working countywide. In the future, the council will need to consider how to deal with newer forms of transport like e-scooters. Although not currently generally legal on the highways network, we are participating in trials in Norwich and Great Yarmouth allowing the use of rental scooters on the carriageway and dedicated cycle facilities.

Access to and within Norwich

The county council has completed its review of its transport strategy for Norwich. This sets out the detail of how we intend to improve access to and within the city and its strategic growth areas; the following provides a summary.

The county council wants to encourage the use of more sustainable forms of transport, such as public transport, cycling and walking. Completion of the A1270 Broadland Northway has enabled traffic to avoid the city, allowing many improvements to be brought forward without compromising the functionality of the road network. Completion of the Norwich Western Link will connect the Broadland Northway to the A47 in the west and will be complemented by sustainable transport measures. The Norwich Western Link would provide a higher standard route between the western end of Broadland Northway and the A47 and significantly improve travel between these two major roads. Traffic congestion, rat-running and delays to journeys are all significant issues on minor roads to the west of Norwich.

Parts of Norwich have been declared as an air quality management area (AQMA). The major pollutant source in the city is road traffic. Source apportionment exercises identify oxides of nitrogen from road traffic to be the most significant source of nitrogen dioxide (NO₂) and, more specifically, buses and taxis to be the main contributor. Interventions need to be made to stabilise traffic levels and as a result improve air quality around Norwich. Chapter 7: Enhancing Norfolk's Quality of Life details how we intend to tackle this.

The county council will continue with the programme of increasing the number of walking and cycling routes. We will also create a new public transport route to connect Norwich Airport to the airport industrial estate, enabling longer-distance connections to the growth areas. Other priorities include the expansion of Thickthorn Park and Ride, quicker buses and new transport links to Norwich Airport, the University of East Anglia and Norwich Research Park, principally with the city centre. One priority is to increase the amount of bus priority in the city area and on the core radial routes into the city. By enhancing the Park & Ride offer we can make it a more attractive solution than the car.

We will also continue to work on accessibility issues to key regeneration sites including the East Norwich Strategic Regeneration Area where redevelopment will need supporting vehicular, pedestrian, cycle and public transport access infrastructure. Anglia Square will also need improvements in connectivity and permeability across the site with new and enhanced pedestrian and cycle links and improved shared transport services (buses, car club and bike share).

It is important to make it easy for passengers and all visitors to Norwich to know how to get to the city and how to get around while they are there. The results of the Local Transport Plan consultation showed that better use of technology to update travellers on traffic conditions, public transport and accidents is a priority for residents.

Access to and within towns and urban areas

Transport networks need to provide for economic growth, reduce social inclusion, contribute to environmental improvements, reduce emissions, and provide better accessibility to and within towns and urban areas. Our focus will be on providing sustainable links to connect in and around towns and urban areas including linking to longer-distance rural networks and to, and within, new developments. We will continue to work with bus companies to provide connections and improve the public transport offer. We recognise the need to better integrate public transport with school transport and provide travel training so more young people can access this.

New growth in urban areas has the potential to worsen current congestion areas during weekday peak hours; a concern also for leisure and tourism in coastal and market towns. The county council has completed market town transport network improvement strategies in the ten towns where need was greatest. These provide more detail on (amongst other things) how, and where, sustainable transport links will be provided and where new transport infrastructure should be considered to accommodate growth.

The council has also adopted transport strategies for King's Lynn and Great Yarmouth where more detail can be found about plans in the two towns. Highlights include, at Great Yarmouth, continuing to improve local connections particularly on the cycle network, working with National Highways on A47 improvements and construction of the Third River Crossing. In King's Lynn there is again a focus on sustainable transport links together with working with the Borough Council on parking, congestion and air quality issues. To the south of the town, partners are working on development proposals at West Winch, including the West Winch Housing Access Road. This is required for 4,000 planned houses and will be complemented by sustainable transport links including links to the town.

Access in rural areas

The Local Transport Plan consultation showed that residents and businesses feel that access in rural areas is the poorest in the county. There is a need, and demand, to enhance walking and cycling connections between parishes, to nearby services and to market towns. Routes for cycling and walking are often seen as too unsafe and public transport seen as too infrequent to be useful, particularly for commuting. The county council is currently refreshing its cycling and walking strategy, which will include development of suitable networks in both rural and urban areas. A Local Cycling and Walking Infrastructure Plan is being developed countywide. Local footpaths and other assets such as longer-distance trails can provide important local connections for

leisure and other uses such as connecting people to services.

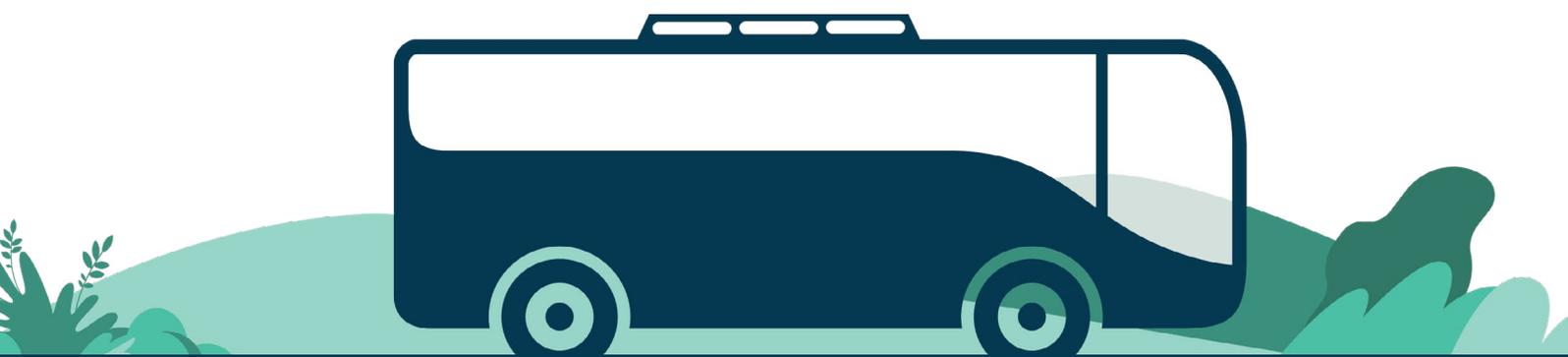
The council currently works with parishes to formulate solutions for transport in their area, such as the use of car schemes, dial a ride, and feeder services. It is also vitally important that we plan for links from new housing developments at an early stage to make sure infrastructure is in place, alongside transport services and incentives not to drive.

We will continue to look at how we get a better understanding of need in rural areas, and how this might be accommodated given the challenges relating to provision of services. Research and data collection will ensure community resilience if we can better understand the real places that people in rural areas want to access to help overcome social exclusion and isolation.

Access for all

It is important to ensure no sector of society is disadvantaged by the local transport offer. Therefore, we need to make sure that transport can cater for those with physical disabilities; that young people have the access they need for education and work opportunities; that the way the roads and streets are laid out does not create difficulties.

Barriers to the network can include mobility issues, disability, age, hidden disabilities and cost and frequency of transport options.



Policy 16

We commit to providing a network where transport and movement can be accessed, understood and used to the greatest extent possible by all people. We recognise that people who live, work in and visit Norfolk access the network in different ways, depending on their individual circumstances and characteristics, and that what enables good access for one person may act as a barrier to another. We will therefore robustly assess all schemes and pay due regard to the Public Sector Equality Duty (along with our other duties and responsibilities), to identify potential barriers and determine how best to overcome any barriers and facilitate access to the greatest extent possible for all. Where appropriate, on a case-by-case basis, we will make reasonable adjustments.

The ability to physically access places people need to get to is fundamental. However, street environments can be difficult to navigate for some. An understanding of the barriers that people face is needed so that these barriers can be taken into account at all stages of policy making and scheme implementation. When making or considering changes to the network, including to public transport services, we will strive to make sure that it is suitable for all users. To help people access the transport network, information needs to be easily accessible to all people and in a format people can use. Where possible, we will work with partners to provide more information, support and suitable infrastructure to users to help all people feel confident about the full range of transport options available.

The county council will continue to work to support all groups being able to use the transport network. This includes:

- Removing and consolidating signs that restrict footway space and installing dropped kerbs and tactile paving
- Supporting the expansion of the use of talking bus stops outside Norwich city centre and Park & Ride sites, which are fitted with RNIB React software. With these you can use a RNIB React key fob to obtain information about the name of the bus stop and the next bus departure
- A large tactile map that provides bus travellers with audible information is also now available at Norwich bus station. The map offers live travel information on bus station facilities, nearby bus stop locations and departure times. Designed to be fully inclusive, the map is fitted with an RNIB React module and responds with a location message and sound when a user with a React key fob approaches. If the user presses a button on the fob, the map will announce any message that is being displayed
- Braille bus hailers are hand-held flipbooks, which are designed to clearly signal to the bus driver which bus you are waiting for. Simply use the braille flipbook to show the number bus you need, or the word bus, and hold it out at the bus stop

- Our Transforming Cities programme will address (lack of) step-free access to Wymondham rail station. We will continue to explore how we can improve step-free access at others, with priorities being Thetford and Diss
- We will explore how we can improve the provision of information for public transport. Elderly people report that they are reluctant to use the bus network as they are left waiting at rural bus stops with no information on buses that have been delayed or cancelled
- A report by Age UK states that 1.45 million of those 65 and over in England find it difficult to travel to hospital, whilst 630,000 of those 65 and over find it difficult or very difficult to travel to their GP. It is the people with the worst health and the lowest incomes who struggle the most to travel to health services. The most frequent reasons for not using public transport among those 65 and over are that it's not convenient and does not go where you want
- We will encourage active travel. Walking and cycling for older people could help health and wellbeing, and reduce feelings of social isolation
- Streetscape, spacing and infrastructure design for (including for electric infrastructure eg charging, parking, signposting) will need to take account of accessibility for all including those with reduced mobility or disability
- Consideration will be given to those who may not have the same understanding of, or access to, emerging technology.

Alternatives to travel

Increased broadband coverage, particularly in rural areas and ensure new developments include this to enable more people to work and shop at home.

According to the Norfolk Infrastructure Delivery Plan the Better Broadband for Norfolk (BBfN) Programme is expected to increase access to superfast broadband to 95% of Norfolk properties by the end of March 2020. At the time the plan was written, BBfN has seen access to superfast broadband speeds increase from 42% in 2013, to over 95% of Norfolk properties in spring 2020. These figures are taken from the independent organisation "Think Broadband" data.

Behaviour change due to Covid-19 has meant that more people are working from home and accessing services virtually, such as online shopping. Therefore, it is important to monitor the way people are travelling going forward to assess what will be the 'new normal', and how we can support it.

Innovation

We will work towards cleaner bus fleets. This will include investigating how we overcome the challenges of electric vehicle fleets that can meet the – often longer distance journey – needs of the county. We will also consider safe and better journey cards. These cards have been designed for bus users who might need some extra assistance when communicating with drivers. They include messages such as “please give me time to find a seat” and “please speak slowly”.

It is important to embrace innovative technologies to increase data collection to better understand how people use the network and the services they want to access. The publication of data on transport, journey times and performance can also help people plan journeys and select the most suitable mode of transport. Data Collection using Sensors can help us plan more reliable journey times and improve decision making. Making data available to people through prototype technologies can help users with accessibility needs better access the right forms of transport for their needs.



Chapter 9:

Improving Transport Safety

This chapter deals with Transport Safety.

The chapter sets out that the council will seek to reduce the number of killed and serious injured on the road network by adopting a safe systems approach and working with partners to achieve this vision. The safe systems approach acknowledges that road users will make mistakes and interventions should be designed to tackle that and increase survivability if a collision occurs. It has five pillars of:

- Safe speeds
- Safe roads
- Safe road users
- Safe vehicles
- Post-crash responses.

The priorities will be to reduce the rate of casualties who are killed or seriously injured. This will be achieved in conjunction with other partners and organisations through the road safety partnership. The road safety team in Public Health is prioritising development of communities work and reframing the schools offer.

Safety is important on the transport network, both to reduce casualties and help residents feel safe on the network when using any mode of transport. We also need to consider how we can encourage people to use the roads in a safer manner by encouraging a change in behaviour.

Policies

This section provides a summary of the policies in this chapter.

Policy 17

Using the safe systems approach, the county council and road safety partners will work together to contribute to a reduction in the number of people killed and seriously injured on the road network.

What this means in practice:

- The safe systems approach recognises that road users will make mistakes, and that there are many variables which can cause a collision. A range of factors influence survivability if a collision occurs, including how the road network is designed, the safety of the vehicle, the condition of the road, amongst other factors, many of which are outside the control of a road user.
- A safe system which does not rely on the skills of the road user to avoid a crash but considers the whole experience, can be demonstrated in the following ways:
 - Transport systems and roads are designed to maximise road user survivability
 - The safe separation or integration of different road users are integral to the design process
 - Safety schemes and maintenance of networks are prioritised to enhance the road user experience
 - Speed management policy and interventions include environmental solutions and don't rely on road user compliance alone
 - Road users are encouraged to choose alternative modes of transport, and the safest vehicles possible
 - Compliance is encouraged through initiatives which influence road user behaviour, and enforcement action is taken where required
 - There are fast and efficient emergency responses at the roadside.
- If we followed the alternative policies we have considered, it would mean that we rely on road users to take full responsibility for collisions and focus resource on improving their skill sets and behaviours as sufficient to reduce mistakes and crashes

- The new approach allows partners to take into consideration the variables involved in a collision
- Promoting alternative, safe forms of transport through active travel initiatives will have health and environmental benefits
- Using intelligence and evidence to inform action will contribute towards effective allocation of resources to maximise impact
- Nationally the Department for Transport, and the police chief's council have adopted the safe systems approach following international guidance from the WHO to tackle collisions on the road. Locally Norfolk County Council adopted the safe systems approach in November 2018, followed by the Road Safety Strategic Partnership in 2019
- In 2009 there was a commitment to reduce the number of killed and seriously injured on the roads by a third by 2020. This has not been achieved, therefore a step change in policy and practice has been agreed by partners.

Achievements

- ✓ Design and continual implementation of cycling schemes within the greater Norwich area has required significant cross working between differing disciplines across different organisations. The long-term goal of providing accessible cycling facilities should contribute to many strategic aims regarding congestion and air quality in the built environment as well as making cycling a generally safer and more attractive mode of travel.
- ✓ Campaigning and engagement with National Highways regarding improvements to single carriageway sections of A47 will lead to safer journeys on one of Norfolk's longest, busiest roads. A route which experiences high numbers of killed or seriously injured casualties (KSIs) due to its busy nature and intermittently poor standard.
- ✓ Refreshing the Road Safety Partnership and agreeing the safe systems approach as a county council. The wider partnership has also adopted the approach, including Norfolk Constabulary, National Highways and the Office of the Police and Crime Commissioner.

Evidence

The safe systems approach accepts that road users will make mistakes, and that the system itself should reduce the likelihood of serious harm occurring when these mistakes do happen.

Norfolk County Council is keen to explore the ViDA approach to roadway analysis which will enhance our understanding of key routes and will enable us to explore a more proactive rather than a reactive approach to road safety and road improvements by reducing risk on roads based on the safe systems approach. Use of a standardised risk analysis tool enables meaningful comparisons with similarly developed European neighbours.

ViDA – Road safety assessment tool which uses data to suggest interventions to roads

Challenges

Seeking to reduce the number of people killed or seriously injured on our roads after a decade of stagnant performance in accident reduction. This is the single largest challenge which we face and is the primary reason for work in road casualty reduction.

Addressing risk reduction is made harder by challenging financial circumstances. Opportunities to engage new technologies may help but these are likely to require significant investment.

There is currently a lack of evidence on effective behaviour change interventions aimed at road users of working age, which are a critical target group.

Dealing with Norfolk's continuing aging population. Whilst older people are not necessarily more likely to be involved in road traffic collisions and tend to selectively adapt their driving habits to account for any late life degeneration, they are more at risk of injury in the event of any collisions.

Priorities for road safety

- ✓ Reducing the rate of casualties who are killed or seriously injured is the key priority for the road safety partnership.
- ✓ The road safety partnership is developing shared data sets through Powerbi dashboards to help target interventions more accurately.
- ✓ The road safety team in Public Health is prioritising development of communities work and reframing the schools offer.

Strategy for delivery

Adopting the safe systems approach means using the following sub-topics to formulate our responses to road safety collisions in the county:

- Safe speeds
- Safe roads
- Safe road users
- Safe vehicles
- Post-crash responses

Safe Systems Approach – Design roads to reduce the risk of crashes by segregating different road users to make routes safer

This is to ensure that the emphasis is not entirely on the road user, since the approach accepts that people will make mistakes and that this needs to be considered when designing the system.

A key focus for delivery in engineering should be on maximising survivability and including it in the design of networks and interventions.

A key focus for the road safety partnership is to use intelligence to target particular behaviours when developing interventions.

Policy 17

Using the safe systems approach, the county council and road safety partners will work together to contribute to a reduction in the number of people killed and seriously injured on the road network.

Safe speeds

Norfolk County Council is responsible for setting speed limits on local roads and does this through the Norfolk Speed Management Strategy which aims to address road safety issues as well as economic considerations and the environment.

The basis of the Norfolk Speed Management Strategy is to both set appropriate speed limits and achieve a reasonable level of driver compliance with those limits.

Between 2000 and 2010 speed management contributed to a 59% reduction of road collisions in Norfolk with a reduction in killed and seriously injured (KSI) from 862 to 353

This approach to speed reduction and traffic management is informed by the Safe Systems approach to road safety, which refers to the four components of the System as:

- Road Users
- Vehicles
- Roads and roadsides
- Speed Limits.

Potential or proposed changes to speed limits should be based on the following assessments:

1. What is the function of the highway corridor and the surrounding environment? Where ease of access or a sense of place are of greater importance, quality of life and social interaction may benefit from a lower speed limit.
2. Casualty numbers. Are the accident rate and/or severity pattern higher than expected? A lower speed limit or interventions to improve existing speed limit compliance may be appropriate.
3. The need to increase walking and/or cycling and whether a lower speed limit would help encourage this. Whilst likely to apply in urban areas and in the vicinity of schools this may also warrant consideration in tourism areas.

The 'Self-Explaining' Road (SER)

Physical measures such as speed humps or chicanes force the road user to reduce speed. Another approach is called the 'Self Explaining' Road, to redesign the road environment in order that drivers are persuaded to choose to reduce speed. The SER concept advocates a traffic environment that elicits safe behaviour through its design.

Safe Roads

Intelligence-led route risk identification and targeted reduction methods enable progression towards a safe system. Risk mapping via VIDAS and analysis by Road Casualty Reduction Analyst.

Continuing identification of cluster sites and targeted intervention.

Ongoing programme of pedestrian crossing assessments and implementation, ensuring that sites with the greatest potential benefit are prioritised.

Safe Road Users

Norfolk County Council continues to deliver court diversion and other courses aimed at educating drivers about road safety and awareness. A memorandum of understanding with the Constabulary is in place to enable this work, and much of it is regulated by national requirements. The following courses are delivered:

- National Speed Awareness Course
- National Motorway Awareness Course
- What's Driving Us
- Safe & Considerate Driving
- Rider Intervention Development Experience
- Your Belt Your Life, online course facilitated by the Safety Camera Partnership.

Upwards of 30,000 clients per year access courses. These is a blend of behaviour change interventions with an element of on road coaching within the Safe and Considerate Driving course. Each course is delivered by nationally licensed self-employed trainers and courses can be deliver anywhere in the country. Those delivered in Norfolk are internally quality assured and monitored by the Road Safety Team at Norfolk County Council.



The road safety partnership priorities will be supported by the Road Safety Communities Team. This is a partnership commitment, and is outlined as follows:

Opportunity for Norfolk	Potential goal
Contributing to the road safety evidence base	For interventions to be monitored, evaluated and adapted as necessary to ensure effectiveness for the residents of Norfolk and to contribute to the national and international evidence base
Habitual/Automated behaviours	Influence the road user to be mindful and alert during their regular journeys
Risk taking behaviours	Target risk-taking behaviours such as speeding, distraction while driving, drink and drug driving and promote desirable behaviours. To achieve this, utilise all elements of the safe systems approach
Build capacity in the community	Work collaboratively with key stakeholders to achieve a Safe Systems approach in Norfolk
Road safety education in schools	Support schools to incorporate road safety education into everyday learning, integrating the messages within other subject lessons to achieve a continuum of learning. This could be through the development of evidence-based resources and training for teachers and schools
Sharing the road	Agree an approach including campaigns and interventions to keep two-wheeled road users safe whilst promoting sustainable active travel

Internal schemes of work consist of the following:

- Taxi assessments for district councils (Broadland, Norwich City, Breckland and South Norfolk)
- Minibus assessments for schools, colleges and academies
- Additional Driver development sessions
- Driving for work guidance and delivery
- Older driver assessments (GOLD) banner
- Motorbike rider Interventions.

Safe vehicles

Modern cars are designed to protect occupants in a crash. Increasingly vehicles are being designed and fitted with systems for collision avoidance and injury mitigation and protection. Driver assistance technologies help keep drivers to speed limits and traffic lanes, ensure occupants wear seat belts and are often able to warn drivers about the proximity of hazards or other vehicles; or take direct intervention and action.

There is a strong track record of Norfolk industries taking the lead in advanced manufacturing and technology and, particularly with the Lotus Group sited within the county, we are well-placed to work with partners to innovate in this area.

Post-crash responses

Working in partnership with other organisations and the emergency services will ensure fast and efficient emergency medical help, diagnosis and care. This forms the final pillar of the Safe Systems Approach.

Innovation

Governance:

Annual delivery plan for the road safety partnership with a range of interventions. A Road Safety Operational Group reports to the Road Safety Strategic Board. There is also a Safety Camera Partnership. All oversee the activities of partners.

The road safety partnership has agreed in addition to business as usual, to work together to target specific road user behaviours such as risk taking and habitual, automated behaviour. It should be noted that efforts to reduce casualties in young drivers and riders (motorbike users) will remain, due to the disproportionately high number of casualties in these areas.

Norfolk County Council has taken steps in the staff structure to make safety a key focus in transport strategy. Our previous 'Team Manager – Network Safety & Sustainability' role, with oversight of safety engineering, traffic signal design, traffic modelling and traffic surveys, has been replaced with a 'Highway Network & Digital Innovation' Manager. This new post will be looking at the issues discussed in this chapter and how new technology and innovation will both affect transport safety and how it can improve it.

Chapter 10:

A Well Managed and Maintained Transport Network

Introduction and chapter summary

This chapter deals with:

- Maintenance. This is how the county council looks after the transport network and includes keeping roads, pavements and cycleways in good condition
- Management of the network. This is how the county council deals with issues like information provision, and how the network is used. For example, the principles about which types of road should have bus lanes or cycle lanes on them.

This chapter sets out how we will manage and monitor the network so that we achieve the objectives set out in the other chapters.

The chapter sets out that:

- The county council receives a funding allocation each year from government for its local transport plan. We will use this predominantly for maintenance and maximise our use of other funding sources for new measures like cycleways, roads or public transport infrastructure. The county council has a good record of drawing down such funding
- We will prioritise spending money on maintenance on the most-used parts of the network: the main roads between urban areas and within the urban areas themselves. In our built-up areas we will prioritise maintenance of those parts of the network used by people walking and cycling
- Within urban areas we will focus on providing bus priority or cycling on certain corridors, even if this means it might take longer for other general traffic to use the routes. We will aim to make all journeys reliable so that people know how long a trip is likely to take. This is something that came across strongly in our consultation. The chapters on accessibility and connectivity set out how we will choose corridors we consider as important, dependent on the journey being made and how people choose to make it

- We will focus on identifying the key risks to the transport network from climate change, such as potential flooding, and focus tackling these where they are likely to be most disruptive to journeys. Our chapter on quality of life shows the strategy for reducing carbon
- We will embrace new and innovative technology so that we can better monitor and maintain our networks and provide information to users. This links strongly with the policy on technology in our future chapter, where we explain this further.

Norfolk has one of the largest transport networks in England, with the County Council being responsible for over 6,000 miles of road, managing all aspects of this network. This includes road maintenance, water drainage arising from the roads and street lighting. The County Council also has responsibility for maintaining 2,400 miles of public footpaths and other public rights of way and cycleways.



Policies

This section provides a summary of the policies in this chapter.

Policy 18

Maintaining the current highway asset will be a key priority for funding. Works should be targeted to ensure A and urban / inter-urban routes are in good condition.

What this means in practice:

- We will use the annual allocation of Local Transport Plan funding from government predominantly for maintenance and maximise other funding sources, like from bids, for new measures like cycleways, roads or public transport infrastructure
- It is not possible to maintain all of the network to the same standard as we currently maintain the most well-used roads. If we didn't prioritise, given the levels of funding available, the network would still be maintained so that it is kept safe, but the condition of the main roads would not be as good as they are currently. The proposal is to prioritise the major roads, even if this means that we cannot maintain the condition of other roads, pavements or cycleways to the same standards
- There is a substantial transport network across Norfolk with only a small proportion of this being A and urban / inter-urban routes. Much of the network comprises minor roads where there is less vehicular (and other) traffic leading to less degradation and therefore less requirement for maintenance at the same standard as A roads and significant multi-purpose routes into urban areas and market towns
- As there is insufficient funding to maintain all roads to the current standards of the most well-used roads, our value for money assessment shows the major roads, which carry much greater volumes would not be kept to their current standard if this alternative was chosen. Solutions should always be cost-effective in context and provide for a safe environment
- All roads, pavements and cycleways (and other parts of the transport network) will be kept safe with repairs when required.

Policy 19

We will identify corridors important for sustainable and active transport and focus maintenance on provision for these users where its impact would be most beneficial in market towns and urban areas.

What this means in practice:

- We will prioritise maintenance of those parts of the network used by people walking and cycling in our built-up areas. This will mean that the condition of cycle lanes and pavements on the most well-used routes is at the highest standard possible
- If more people choose to walk or cycle for short journeys it would help to achieve some of the county council's objectives including contributing towards the carbon target in our environmental policies as well as health outcomes including through air quality improvements. It will also help meet government policy and other environmental challenges
- Ensuring that the most well-used walking and cycling routes are well-managed and maintained will result in more people travelling sustainably
- If we focussed on keeping the carriageway for general traffic at the highest standard possible, rather than focussing on pavements and cycleways, it would not help meet the wider policy objectives and challenges, or support government policy.



Policy 20

In urban areas we will focus on measures to improve public transport corridors to make those journeys quicker and, in areas identified as having less congestion, we will aim to make all journeys more reliable.

What this means in practice:

- In our urban areas the management of the network will favour improving conditions for public transport through the implementation of measures such as bus priority lanes, giving priority to buses at traffic signals and restrictions of general traffic. This is likely to mean that it might take longer for general traffic to use the routes in urban areas
- Outside urban areas, the roads are generally less congested and do not require bus priority measures. Here we will aim to make all journeys reliable so that people know how long a trip is likely to take, even if this means that sometimes journeys might take longer than they might do on a 'good day' (but less time than on a 'bad day')
- In our consultation, public transport improvements came across as very strongly supported. Also, people wanted more reliable journeys, even if this meant that, on some days, journeys might take a little longer
- Focussing only on car traffic would have knock-on consequences such as slower or more unreliable journeys for other users in buses or walking and cycling. (It might mean buses getting caught in general congestion because there are no dedicated bus lanes for them; pedestrians might find it more difficult to cross roads because the focus would be on keeping car traffic moving; cyclists would need to cycle on the main carriageway as dedicated cycle lanes would not be a priority.) This would not support wider objectives including reducing congestion, improving health outcomes, reducing carbon or support government policy or environmental challenges.

Policy 21

The likely impacts of climate change on the highway network should be addressed to ensure assets are resilient. Where assets can't be made resilient to impacts of climate change, such as coastal erosion, we should have planned alternatives so we can respond faster and avoid disruption. We will use a risk-based approach to determine the priority for action.

What this means in practice:

- Climate change is resulting in, amongst other things, longer, hotter summers and increased incidences of heavy rainfall, leading potentially to the risk of flooding on parts of the network. Our policy will see us focussing on identifying the key risks from climate change and directing efforts on tackling these where they are likely to be most disruptive to journeys, especially on those parts of the network identified as critical to keep functioning
- Taking a risk-based approach to interventions will allow the council to identify the highest risks, both in terms of where the network is likely to be affected, and also the consequences of that risk. As we don't have sufficient resource to tackle all potential impacts, this approach will mean that the areas with highest risk, on the parts of the network considered to be of most consequence, can be focused on first.

Policy 22

New and innovative technology to collect data about the network, inform decisions, assess where to target funding on the network and share information with the public will be embraced and used proactively.

What this means in practice:

- We will be proactive in using new and innovative technology so that we can better monitor and maintain our networks and provide information to users
- This will mean continuing to move away from labour intensive data collection measures that largely rely on manual counts or – at some sites across the county – the use of specialist equipment to record usage. These do not, in any case, provide the level of analysis that innovative technology can provide
- Public behaviour, electric vehicle technology and priorities for traveling are changing rapidly and Norfolk County Council has a responsibility to respond to this change. We feel this can only be done by adopting new technology and being more innovative.

Achievements

- ✓ We have managed and made improvements to the road condition during a period of austerity. The National Highway Transportation (NHT) Survey shows that Norfolk performs well against its peer group and came out on top in 2019 with the 'Highway Maintenance' and 'Tackling Congestion' categories, both above the NHT peer group average
- ✓ We secured £10.3m through a successful bid for the Greater Norwich Area Surface Water Drainage scheme, which delivered upgrades to key drainage infrastructure, addressing long standing flooding issues across a wide residential area
- ✓ Additional funding has been secured from government, including £22.3m from the Department for Transport in May 2020, a higher sum than that given to any other local authority in the east of England, which will be used to repair and maintain roads, bridges, pavements and cycle paths
- ✓ The Norfolk Permit Scheme was established in 2014 and continues to work well. It ensures that disruption to road users is kept to a minimum by managing and coordinating activities on our network, including for our own road maintenance programme, utility works and community events
- ✓ Opening of A1270 Broadland Northway in 2018; a £205m road scheme around the north of Norwich to ease congestion and unlock economic growth, which is integral to the development of growth and new sustainable transport measures in Norwich
- ✓ Infrastructure changes to support sustainable growth, such as Push the Pedalways in Norwich, which was improvements to Norwich's eight-mile pink pedalway and the connections leading to it.

Evidence

Successful maintenance is assessed in terms of highway condition. Annual condition results look at roads, footways, traffic signals and bridges. The National Highway Transportation survey collects public perspectives on, and satisfaction with, highway and transport services in local authority areas. Around 3,300 Norfolk people were chosen at random to rate a range of highways and transportation services in the 2019 survey. These responses have been compared against our peer group consisting of 28 large counties. In the latest survey Norfolk County Council was ranked first in our peer group.

The county council also has a strong track record in securing additional funding and has been successful in receiving competitive funding from government's Maintenance Challenge Fund. In Tranche 1 (2015-18), funding was received for the Greater Norwich Surface Water Scheme, which was a £10.3m scheme to make improvements to Highway Drainage and resilience to flooding. A £2.5m grant has also been received for Tranche 2B (2019-20) towards resurfacing A1122 Marham & A1066 Brettenham to Riddlesworth; £2.8m scheme for delivery in 2020-21. More recently we received £22.3m for the repair and maintenance of roads, bridges, pavements and cycle paths.

Challenges

Maintenance

- There is a great deal of funding uncertainty around highway maintenance and development of the plan has been completed in the absence of longer term funding certainty
- There are limited times when roadworks can be undertaken, which leads to a conflict between closing roads and increasing congestion for a limited period.

Managing the Network

- Increased demands on the network push capacity to its limits, causing disruption to road users' journeys. There is a major challenge in being able to provide capacity for fast journeys at the same time as making sure that journeys are reliable
- Influencing decisions made on the trunk roads in Norfolk (A11 and A47) which are managed and maintained by National Highways. These are the main routes used to travel between the three largest urban areas in Norfolk, Norwich, King's Lynn and Great Yarmouth, and have a big impact on journey performance for a large proportion of highway users in Norfolk
- We need to strike a balance between maintaining accessibility for car users whilst encouraging walking and cycling and bus use

- Planning for walking and cycling intervention is becoming increasingly important but we currently have limited data on its usage. Therefore, we need to innovate and develop more tools to monitor and evidence future improvement schemes. Traditional automatic traffic counters do not detect pedestrians, nor do signalled crossings detect walking/cycling particularly well
- More and more data is becoming available through tools like apps on mobile phones. However, the county council currently has no influence over some of the information provided by these technologies and therefore has little or no control over how people use the network, especially route planning or choosing diversions. We will therefore actively consider and deploy technology to collect data and provide information to the public to encourage behaviour change.

“we need to encourage a move away from car use and encourage people to use more sustainable transport options”

Response to the Local Transport Plan consultation

Priorities

Highway Asset Maintenance Policy and Strategy was refreshed and approved by Norfolk County Council’s Cabinet in January 2020 for 2020-23 and – in March 2021 – Cabinet agreed a Highways Capital Programme 2020/21 to 2022/23 and Transport Asset Management Plan 2020/21 to 2024/25. We will consider the need for a refresh following government budget announcements or the comprehensive spending review.

It is increasingly important to support an increase in sustainable transport to promote healthier lifestyles and a healthier environment. This shift in need was reflected in the Local Transport Plan consultation, which showed that a large number of people in Norfolk feel that focus should move away from the private car, to focus more on improving infrastructure for walking, cycling and sustainable public transport. The need for, and public support of, active travel has increased since Covid-19, so this should become an even more integral part of planning and managing the network.

Achieving value for money from our funding remains a priority.

Strategy for delivery

Maintenance

We have established delivery mechanisms to deliver maintenance of the network.

- Works
 - Norse Highways are principally involved in delivering routine and winter maintenance with some small works
 - Tarmac are concerned with improvement and maintenance, and seasonal maintenance such as gullies, weeds, and grass
 - Eastern Highway Alliance 3 is a Regional Framework contract designed to reduce the time and cost of maintenance by creating a bank of contractors to manage highway maintenance and management schemes
 - Norfolk County Council has an in-house design function, enabling us to respond quickly to need
 - The council has a contractor partnership with WSP to support the highway works programme
- Major Projects
 - Includes projects such as the Great Yarmouth Third River Crossing, Long Stratton Bypass, West Winch Housing Access Road, and the Norwich Western Link
 - Bespoke procurement routes depending upon size and complexity of project
 - Possible use of Eastern Highway Alliance 3 (a bank of contractors set up across ten councils in the east of England for delivering highway maintenance and improvement schemes).

Network Management

- Developing local indicators for journey reliability and congestion that can evidence the need for future improvement schemes
- Exploring the use of innovative technology, such as Artificial Intelligence cameras to better capture walking and cycling usage data in order to drive future efficiencies.

Various agencies have responsibility for different infrastructure. National Highways, formerly Highways England, is responsible for trunk roads, train operating companies and Network Rail for railways (although government will reform this arrangement with Great British Railways), and utility companies for the pipes and cables underneath the streets providing water, gas, telecommunications (including broadband) and electricity. We will aim to work in partnership with these bodies to provide the most effective and efficient networks.

Maintaining the network

Norfolk County Council has a Highway Asset Management Policy and Strategy of individual asset types such as roads, footways and bridges, aligned with the six-year Council Plan “Together for Norfolk,” which sets out the council’s priorities for 2020-21 and beyond. A performance framework is in place, with targets agreed by members to monitor at annual review.

The county council receives a funding allocation each year from government for its local transport plan. Given the levels of this allocation, we will make sure that we put enough of this into maintaining the roads, prioritising this above using the allocation to fund improvements to roads, pavements or cycleways. This makes it critically important that we successfully access additional sources of funding, usually through competitive bidding processes, for improvements like new cycleways, roads or public transport infrastructure.

Policy 18

Maintaining the current highway asset will be a key priority for funding. Works should be targeted to ensure A and urban / inter-urban routes are in good condition.

We will prioritise maintenance spend on the most used parts of the network: main roads and urban areas. The whole of the network will be maintained so that it is kept safe, but the condition of other roads, pavements or cycleways will not be maintained to the same standards as urban / inter-urban routes.

Policy 19

We will identify corridors important for sustainable and active transport and focus maintenance on provision for these users where its impact would be most beneficial in market towns and urban areas.

We will prioritise maintenance of those parts of the network used by people walking and cycling in our built-up areas. This will mean that the condition of cycle lanes and pavements is at the highest standard possible in areas where they get most use. We will also consider the implications of banning parking on pavements. This can be a particular problem in narrower streets with parked vehicles blocking pedestrian routes.

Getting the most out of our highway network

Capacity: we have approved a performance framework strategy to capture network congestion and capacity data. This will highlight areas of relatively poor performance on our Primary and Main Distributor Network. This will be used to drive future improvement schemes and support future funding bids by evidencing the need for investment. This is covered in more detail in the chapter on Connectivity.

Reliability: consultee responses tell us that this is an important issue to them, we have therefore developed this in conjunction with congestion data to deliver similar aims. We will trial technology to monitor the network to inform us about capacity to keep the network reliable. We are exploring ways we can better capture data including for public transport, cycling and walking (eg we now have access to Strava, a mobile phone app for runners and cyclists, analysis tools). This will help identify areas of greatest need for investment. This is covered in more detail at the end of this chapter, and also in the chapter on the future which explores innovation and technology.

Policy 20

In urban areas we will focus on measures to improve public transport corridors to make those journeys quicker and, in areas identified as having less congestion, we will aim to make all journeys more reliable.

In Policy 15, we set out that we will identify routes important for sustainable and active transport and give priority – especially in urban areas – to sustainable and active modes of transport. On corridors identified as ones important for public transport we will focus on providing bus priority even if this means it might take longer for general traffic to use the routes. This is because we recognise the importance of bus travel for people to access essential jobs and services.

Outside urban areas, the roads are generally less congested and do not require bus priority measures. Here we will aim to make all journeys reliable so that people know how long a trip is likely to take, even if this means that sometimes journeys might take longer than they might do on a 'good day' (but less time than on a 'bad day').

Highway network resilience

A key recommendation of the 2014 Transport Resilience Review for Local Roads is "that Local Highway Authorities identify a 'resilient network' to which they will give priority, in order to maintain economic activity and access to key services during extreme weather."

Norfolk has established a number of defined networks within the overall transport network:

1. Our route hierarchy is based upon the functional importance of the route and provides a route of access for all parishes and generators of heavy goods vehicles. This is 2,394km, 25% of our network
2. Our winter service priority network is 3,403km, 35% of our network
3. Our core 'snow plough routes.' These vary based upon severity of the event and resources available.

Local highway authorities have many resilience responsibilities such as to mitigate the risk posed by flood risk, reduce emissions, reduce carbon footprint, maintain and protect the resilience of the highway network and manage the effects of climate change. A resilient network has been identified taking into account key sites and will become the focus to keep operational in the event of a major incident. The network comprises mainly A roads.

The proposed resilient network has been informed by these defined networks. The resilient network is 741km, 7.5% of our network, and represents a core network to give priority to in extreme weather. It contains key strategic sites which include access to RAF Marham (Defence), Bernard Matthews Gt Witchingham (Food Production (livestock)) and Bacton (Energy production).

The resilient network will be used as a basis for decision-making and is included in the prioritisation criteria for relevant assets. A process will be put in place for annually reviewing the resilient network, alongside the winter service network.

Policy 21

The likely impacts of climate change on the highway network should be addressed to ensure assets are resilient. Where assets can't be made resilient to impacts of climate change, such as coastal erosion, we should have planned alternatives so we can respond faster and avoid disruption. We will use a risk-based approach to determine the priority for action.

Climate change is having an increasing impact on the network with more incidences of severe flooding, as well as other impacts such as soil 'heave' or the requirement to use different materials because of hotter temperatures. We will identify the key risks from climate change and direct efforts on tackling these where they are likely to be most disruptive to journeys, especially on those parts of the network identified as critical to keep functioning.

Climate change resilience for new projects will be assessed through appropriate project level design and assessment. We will also work across disciplines to provide infrastructure that is better adapted for climate change, such as might be achieved through the use of vegetation or permeable surfaces.

Innovation

We have adopted the use of 'warm' asphalt with carbon saving benefits, although its use in Norfolk is limited by the distance from the asphalt plants. We hope to use this method more extensively, depending upon the widened use in asphalt plants and improved distribution in the supply chain. Norfolk County Council seeks to adopt new materials if they are proven to be robust in whole-life costing terms. We are also monitoring developments in the use of Graphine, and recycled materials.

Norfolk County Council developed a method of strengthening the existing sub-grade on the Broadland Northway (formerly known as the Norwich Northern Distributor Road) in Norwich allowing a thinner traditional pavement design. This could be adopted by National Highways in the future.

We are exploring the use of connected vehicle and mobile phone data in order to better understand how our network is used as well as journey performance. We are also currently trialling artificial intelligence cameras to better capture walking and cycling data. We will also exploit key contracts with companies such as Microsoft to trial use of AI technology to improve decision making.

We have developed a prototype for network management data using vehicle movement data, which, subject to committee approval, will provide an objective assessment of our network performance. Building on the Norfolk Innovation network we will trial sensor technology to collect information about air quality and network use. This information would help us understand if changes in the network improve air quality and how use affects the climate. This could be published to the public so people can make decisions that will improve their communities. The information could also be used to inform route planning, how road works affect journey times and tourism.

Policy 22

New and innovative technology to collect data about the network, inform decisions, assess where to target funding on the network and share information with the public will be embraced and used proactively.

Chapter 11:

Approach to delivery

Norfolk County Council is committed to working in partnership with district councils and other key partners to deliver a sustainable future for Norfolk. This Local Transport Plan will focus on working together for mutual benefit: A better connected county benefits residents and businesses alike.

Partnership working

Norfolk and Suffolk Economic Strategy places strong emphasis on working in partnership.

Norfolk County Council Environmental Policy includes working with neighbours Suffolk County Council and the Broads Authority. New targets set by the policy have also meant that we need to work in even closer collaboration with colleagues across the council such as highways, planning, public health and education.

Together, for Norfolk stresses the importance of working collaboratively and in partnership:

- 'Working with a host of organisations, businesses and community groups county-wide'
- 'Wherever possible, we'll continue to collaborate with our partners'
- 'Genuine desire to work together', working in a more 'joined-up way'

Working with existing partners and suppliers to develop new technology and trial technologies already on the market to kick start innovation.

Example: A11 Cambridge-Norwich Tech Corridor

Norfolk County Council is working in partnership with the private sector, Cambridgeshire County Council and district councils in Norfolk, West Suffolk and Cambridgeshire, bringing together business, and academic and political leaders to grow the region's economy, attract funding and promote the region.

Community action and influence

A consultation on the themes for the plan was conducted Monday 13 Jan to Friday 28 Feb 2020, enabling the community to have their say on current transport in Norfolk, their priorities for the future of transport in Norfolk, and to influence the Local Transport Plan. We used feedback from the public, stakeholders and special interest groups to help us update our Local Transport Plan, making sure that it considers local peoples' current and future priorities for transport to help us shape the future transport provision in Norfolk.

As well as the online consultation we:

- Spoke to Norfolk Youth Parliament and collated their response as well as encouraging them to promote the consultation with the under 18s
- Commissioned an evidence report
- Commissioned a Strategic Environmental Assessment scoping report, which has been consulted on with the statutory environmental bodies (SEBs).
- Commissioned a Strategic Environmental Assessment
- Commissioned a study to test a number of policy levers to assess their impact on carbon emissions.

We undertook further consultation, in autumn 2020, on the Strategic Environmental Assessment (SEA). Alongside this, we published a draft version of the plan and invited comments. We have used these to help refine the plan. The SEA statement, included as an annex to the plan, sets out how the SEA has affected development of the final strategy.

Value for money and resource availability

Value for money is a key component of delivery and one of county council's core values.

Not all projects and ideas have dedicated funding. Therefore, we have created project pipelines, making sure that projects are ready to be implemented when funding becomes available.

Norfolk County Council is seeking funding from wide variety of sources including:

- Capital funding from the Local Transport Plan maintenance and integrated transport blocks
- Large local majors, a government funding stream
- Major road network government funding stream
- Developer funding - Community Infrastructure Levy and S106 contributions
- Norfolk Infrastructure Fund
- Local Sustainable Transport Fund
- Active Travel Fund
- EU funding and its successor
- Tax Incremental Financing
- Delivery partners, such as Sustrans
- New homes bonus
- DfT "Cycle ambition in national parks" funding
- Cycle City Ambition Grant
- Roads Investment Strategy (trunk roads)
- National Productivity Investment Fund
- Growth Deal and its successor
- City Deal
- Business Rates Pool
- Enterprise Zone Fund
- Enterprise Zone business rates retention fund
- Local Investment Fund
- Housing Infrastructure Fund
- Homes England
- Transforming Cities
- Heritage Lottery fund
- Levelling Up funding.

Many of these funding sources are being reviewed, and we are aware that new ones will be announced during the course of the plan's implementation. We will keep funding sources under review and continue to tap into them to keep the pace of delivery high. The county council has a strong track-record of securing funding and is confident that this can be maintained.

The plan sets out that we will seek to address air quality issues in urban centres and reduce carbon. Other areas have introduced schemes such as congestion charging or levying a charge against parking places at workplaces in urban areas. The revenue from this type of measure can be reinvested in transport. We are already reinvesting revenue generated from on-street parking charges back into transport.

Local Transport Plan Implementation Plan

The Implementation Plan sets out our proposals for implementation of the strategy.

Glossary

Active Transport	Active mobility, active travel, active transport or active transportation is transport through non-motorised means. The best-known forms of active mobility are walking and cycling, though other modes include running, skateboarding, non-motorised scooters and roller skates. We will mainly be discussing this in terms of walking and cycling.
Carbon neutral	Carbon neutrality refers to achieving net zero carbon dioxide emissions by balancing carbon dioxide emissions with removal (often through carbon offsetting) or eliminating carbon dioxide emissions altogether.
Clean Transport	Low carbon vehicles including cars and buses using cleaner propulsion (eg electric vehicles) and sustainable modes such as walking and cycling. Increasingly, there is a range of newer ways that people are getting about including e-scooters or, for delivering goods, delivery-by-drone or autonomous pods.
Emissions	Emissions is the term used to describe the gases and particles which are put into the air or emitted by various sources. We will focus on tailpipe emissions, Car fuel and CO2 emissions which are a serious threat to human and environmental health.

<p>Highway Asset</p>	<p>Highways assets are all the parts that make up the highway infrastructure, including (but not restricted to):</p> <ul style="list-style-type: none"> • roads • pavements • public rights of way • cycleways • bridges and structures • street lighting • signals and traffic management systems • some drainage systems • signs and road markings • fences and bollards • weather stations.
<p>Micromobility</p>	<p>Small, lightweight vehicles designed for individual use, operating at speeds typically below 25 km/h (15 mph). This includes mobility scooters, electric bicycles, electric scooters, electric skateboards, shared bicycles, and electric pedal assisted (pedelec) bicycles.</p>
<p>NCC</p>	<p>Norfolk County Council</p>
<p>Net Carbon Zero</p>	<p>Net zero means that any emissions are balanced by absorbing an equivalent amount from the atmosphere. In order to meet the 1.5°C global warming target in the Paris Agreement, global carbon emissions should reach net zero around mid-century.</p>

<p>Safe Systems Approach</p>	<p>Safe System is based on the underlying principles that:</p> <ul style="list-style-type: none"> • human beings make frequent mistakes that lead to road collisions; • the human body by nature has a limited ability to sustain collision forces with known tolerance to injury thresholds; and • it is a shared responsibility between stakeholders (road users, road managers, vehicle manufacturers, etc.) to take appropriate actions to ensure that road collisions do not lead to serious or fatal injuries. <p>A key part of the Safe System approach requires that the road system be designed to take account of these errors and vulnerabilities so that road users are able to avoid serious injury or death on the road.</p>
<p>Sustainable Transport</p>	<p>Sustainable transportation is the capacity to support the mobility needs of a society in a manner that is the least damageable to the environment and can make a positive contribution to the environmental, social and economic sustainability of communities.</p> <p>These modes include walking and cycling but also public transport, electric bicycles, electric vehicles, e-scooters and mobility scooters. Many methods of micromobility and active transport are considered sustainable transport.</p>



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