Mobility Strategy for Milton Keynes
2018-2036 (LTP4)

Mobility for All
(Consultation Draft)

November 2017

www.milton-keynes.gov.uk/transport-policy
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Foreword

We live in a time of significant change in transport; how we access it, use it and how it supports individuals, communities and the economy generally in everything we do. Since the publication of the Council’s third Local Transport Plan (LTP3) in 2011 the role of technology in transport has vastly increased both in terms of its capability and how we use it. Talk of autonomous vehicles is commonplace and Milton Keynes is playing a leading role in developing driverless vehicles, connected vehicles (we are a pilot authority within the government’s Connected Autonomous Vehicle initiative (C-CAV)) and the city is the leading provider outside London for electric vehicle charge points. This work began in earlier editions of our transport plan but now is the right time to update those plans to reflect how these technologies can be expanded further and become a more permanent feature of our transport network.

But technology has also brought changes to how people use transport, especially public transport, with a huge growth in the number of journey planning apps as smartphones have increased in number. Changes in travel trends are taking place with many people, especially younger generations, preferring to travel by train or bus rather than car so there has never been a better time to set out how we as a transport authority wish to encourage that trend to ensure future generations benefit from fast, comfortable and affordable travel. It is now widely accepted that as our population increases and as technology comes to play a more central role in how we move about we will increasingly come to rely on a transport system based on “mobility as a service” where the majority of journeys are completed without the need for a private vehicle.

Since LTP3 was published Milton Keynes has set out its vision for the future of the city to become an exemplar transport city of the future. In responding to the National Infrastructure Commission’s call for strategies to connect the Cambridge-Milton Keynes-Oxford Corridor we have set out our ambition to create a transport system for the future. This Mobility Strategy updates LTP3 to ensure we can begin to prepare our transport network to achieve these goals. However, it has taken account of the achievements from LTP3 and ensures there is continuity in our programme delivery with a focus retained on the need to increase cycling, reduce transport pollution and invest in both infrastructure and services for the short as well as long term.

In section 4 the strategy sets out the structure of our ambition for the city’s transport system together with four strategic objectives. Section 5 provides details of the interventions needed to achieve our ambitions over three time frames - to 2024 when East West Rail is expected to come into service, to 2031 to support growth ambitions outlined in Plan MK, and to 2050. We need to invest in our transport system now to make sure we have used this time wisely in creating a substantial, long lasting transport system to support the future prosperity of Milton Keynes for a long time into the future.

Councillor Liz Gifford
Cabinet Member Place
Milton Keynes Council
1. Introduction and Context

1.1 Introduction

This document is the updated Local Transport Plan for Milton Keynes. When fully approved it will be called the Mobility Strategy for Milton Keynes and will be the reference point for how the town wishes to maintain, improve and develop its transport system up to 2036. It will also show how Milton Keynes wishes to begin investing in the short term in the development of the town’s long term future transport system to 2050 to deliver the vision for transport set out in MK Futures 2050 and to ensure connectivity to new infrastructure such as East West Rail and Expressway.

With the continued high levels of growth planned in Milton Keynes, it is essential that we continue to invest in our transport infrastructure and embrace technological innovation so that people can continue to move around the city quickly and easily. This strategy shows how Milton Keynes can be an exemplar transport city and a leading example of how to provide a modern, efficient and well run transport system based on exciting new technologies and innovative service models which will underpin the town’s high growth ambitions and ensure our communities are sustainable and able to thrive now and in the future.

The Mobility Strategy covers the full Borough (Figure 1) encompassing urban and rural areas. It considers key corridors and routes to strategic locations including neighbouring authorities and beyond and has been informed by the MK Futures 2050 Commission, the draft spatial strategy Plan:MK and the council's submission to the National Infrastructure Commission's “First Last Mile Strategy" an aspiration for a high technology corridor between Oxford and Cambridge, with Milton Keynes as the hub.

*Figure 1. Milton Keynes*
1.2 Context

Connected

Milton Keynes is a dynamic city, founded with a concept of mobility at its core. Key to its success is its connections with the rest of the country, with fast and efficient strategic road and rail networks via the M1 and West Coast Main Line running North-South between London, Birmingham, the North of England and Scotland, and bringing inward investment and jobs. Combined with its unique layout, this has enabled easy, convenient and efficient movement of people and goods that has supported expansion and growth for over 50 years.

Fast strategic links are complemented by Milton Keynes’ unique grid road system of ‘horizontal’ and ‘vertical’ roads that are designed to transport people and goods quickly, and a network of Redways providing traffic-free routes for pedestrians and cyclists. Users enjoy reliable, quick journey times and relatively low levels of congestion, with the availability of parking at their destination.

Milton Keynes is the hub for the transformational growth corridor between Oxford and Cambridge, with much needed transport improvements such as the East West Rail and East West Expressway radically expanding travel to work capabilities and enabling ambitious economic and housing growth.

Growth

Milton Keynes is one of the fastest growing areas in the country. While growth rates in general have slowed across the country, Milton Keynes has overtaken Cambridge in terms of productivity per worker and also topped the jobs ranking with 1.4% employment growth (Table 1). This has been accompanied by Milton Keynes’ population growth rate exceeding the average for England – Plan:MK forecasts show the population of the city will grow to over 300,000 by the early thirties and over 400,000 around 2050. Improvements in the local transport system will increase opportunities for work and leisure in this high growth environment.

Table 1. Milton Keynes’ economic performance

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Milton Keynes’ Ranking</th>
</tr>
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<tbody>
<tr>
<td>Business start-up rate</td>
<td>4th</td>
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<tr>
<td>Productivity and innovation</td>
<td>5th</td>
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<tr>
<td>Ratio of private vs. public jobs</td>
<td>5th</td>
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<td>Average workplace wage</td>
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Technology

Milton Keynes is at the forefront of technology and innovation. New technologies and service models are personalising the transport experience, empowering users to be informed, multi-modal travellers. Smart, shared and sustainable mobility is just one element of the wider vision which Milton Keynes wants to become realised.
Our population is becoming increasingly used to technology being a central part of everyday life; the connectivity and services that technology can deliver are already shaping and changing behaviours that are having significant impact on transport demand. Research shows 93% of the nation’s adult population own / use a mobile phone with 71% of adults using a smartphone and 17% of all retail sales in the UK are now online. This connectivity provides an access to information, location data and social interaction that is changing expectations of transport and how it can be experienced.

New transport providers, such as ride hailing platforms, are the high profile manifestation of these types of change, as are trials of connected travel services and autonomous vehicles which are making significant changes to the way we think about the car. Milton Keynes is leading in this area, with autonomous pods being developed and tested on its streets by the UK Autodrive project. Full autonomy may still be some years away, but we may expect autonomous vehicles to become available to the public within the period covered by this strategy. The transition to electric power will also accelerate during the strategy period and Milton Keynes Council is already a leader in the field, with significant infrastructure already delivered and more investment secured through the government’s Go Ultra Low programme.

A key challenge presented by technology is the degree to which it constantly changes. Figure 2 illustrates the scale of change and this plan is structured to allow Milton Keynes to respond more dynamically to that demand.

1.3 LTP3 – a strong legacy

LTP3 set out the vision that by 2031 Milton Keynes will have the most sustainable transport system in the country where there will be a real transport choice to encourage more sustainable travel behaviour.

The strategy covers all modes of transport and has a sustainability focus, including making the best use of existing assets, improved provision of sustainable transport to provide a real and attractive transport choice, and promotion of the transport choices available. Notable improvements have been:

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2 https://www.ofcom.org.uk/about-ofcom/latest/media/facts
3 https://www.ons.gov.uk/businessindustryandtrade/retailindustry/bulletins/retailsales/september2017


- Increasing bus use by 25% between 2009-2014; and
- Improving congestion hotspots through the implementation of targeted infrastructure improvements such as the A421 Kingston Roundabout and dualling of A421.

Since LTP3 (Figure 3) was adopted in 2011 the world has moved on: the planning horizon has changed; growth targets have become more ambitious; how transport is and could be delivered has changed as funding arrangements have altered, technology is playing a greater role in transport; and how transport users behave has also changed.

This Milton Keynes Mobility Strategy 2018 – 2036 seeks to build upon the successes of LTP3 and develop a range of initiatives that will help to deliver long term vision and objectives for the future prosperity of the Borough.

Figure 3. LTP3, MK Futures 2050 and Draft Plan:MK

1.4 Strategic and Policy Context

There are a number of relevant local and national policies that have been considered in the context of developing the Mobility Strategy. Of particular importance to the development of a transformative strategy for future mobility for the 2018 – 2036 period for Milton Keynes is the long term aspiration of the MK Futures 2050 Vision and growth ambitions in the current draft of Plan:MK. The Mobility Strategy also accounts for and moves forward the LTP3 and associated sub-strategies, carrying forward objectives from these documents, which are outlined in Section 4.

1.4.1 National Policy

The National Planning Policy Framework (NPPF)

The National Planning Policy Framework defines the UK government's planning policies and how these should be applied. It is the starting point for guidance to local planning authorities in considering future plans. In order to assess all of its relevant Local Plan policies, Milton Keynes Council has produced the Local Plan “2005 and NPPF Conformity Assessment” which outlines where policies do and do not conform to the NPPF Framework.
At the heart of the NPPF is a presumption in favour of sustainable development which should run through all plan making. In the context of planning for transport this means actively managing patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable. The transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel.

**National Infrastructure Delivery Plan**

The National Infrastructure Delivery Plan replaces the previous National Infrastructure Plan (NIP2014) and sets out a long-term plan for investment in infrastructure in the UK. It outlines how the UK will prioritise, finance and deliver transportation, science and other projects from the £300 billion pipeline, covering the years 2016-2021.

The National Infrastructure Delivery Plan prioritises Smart Motorways, Crossrail, HS2 and Network Rail enhancements including East West Rail. It emphasises the importance of “unlocking” growth and jobs in the Cambridge – Milton Keynes – Oxford Corridor as well as supporting innovative transport systems such as intelligent mobility.

**Transport Investment Strategy – Moving Britain Ahead (2017)**

The Transport Investment Strategy sets out the Department for Transport’s priorities and approach for future transport investment decisions and explains how transport investment can deliver a stronger, fairer Britain. It describes what the government is aiming to achieve through:

- Investment in transport infrastructure;
- Priorities and propositions that will guide future investment decisions;
- Institutional frameworks within which those decisions will be taken; and
- Actions being taken at achieving the ambitions.

The policy document includes a commitment to consult on a new ‘major road network’ which will complement the Strategic Road Network which is managed by Highways England. It also outlines plans for a new ‘rebalancing’ measure, which will judge how investment programmes contribute to a more balanced economy.

**National Infrastructure Commission: Cambridge – Milton Keynes – Oxford Corridor**

The National Infrastructure Commission (NIC) is an independent body set up by the government with the purpose of providing impartial advice on long term challenges.

The NIC was tasked to consider ways in which to maximise the potential of the Cambridge – Milton Keynes – Oxford growth corridor by developing a Joint Plan for providing “sufficient housing, jobs and infrastructure across the corridor and that they also develop credible coherent and co-owned city centre transport strategies”.

The commission recommended that plans are made to finalise and deliver the Oxford – Cambridge Expressway as well as the East West Rail project. This is seen as a once in a generation opportunity.

The Commission also places a particular emphasis on improving the “first last mile” element of journeys. When the East West Railway is in service while the main part of a journey for example, Milton Keynes Central to London, Oxford or Bedford or Cambridge, may be fast and efficient, it is often the start and end of that journey, from a traveller’s house to the station that can be a problem in terms of a lack of travel options, poor frequency of local passenger
transport services, or unreliable journey times giving the perception that the car is the only travel option. Milton Keynes has played its full part in helping devise a fast efficient first last mile approach and this Mobility Strategy includes the strategy devised and submitted to the NIC for a wide variety of travel options including technological solutions such as rapid mass transit, “on-demand” services and autonomous vehicles as well as bike and e-car hire points to ensure travellers can complete their journeys seamlessly.

1.4.2 Regional / sub-regional Policy

South East Midlands Local Enterprise Partnership Transport Strategy

The South East Midlands Local Enterprise Partnership (SEM-LEP) Transport Strategy provides a review of existing evidence to determine the impacts of transport investment and planned developments across the South East Midlands.

Within Section 3 of the report, there is a review of the findings of previous studies; Milton Keynes / South Midlands Transport Strategy (July 2009) highlights the growing pressure on the M1 from longer-distance traffic.

Highways England

Highways England takes responsibility for the Strategic Road Network (SRN) through its Road Investment Strategy 2015/16 – 2019/20 (RIS). Highways England’s remit is to ensure strategic roads are more dependable, durable and safe. Its guiding principles to deliver these aims are to ensure the SRN is:

- Free flowing – where routine delays are infrequent and journeys are reliable;
- Safe and serviceable – where no-one should be harmed when travelling or working;
- Accessible and integrated – so people are free to choose their mode of transport and can move safely across and alongside our roads;

Furthermore, Highways England’s role is to support economic growth with a modern and reliable road network that reduces delays, creates jobs, helps business and opens up new areas for development, and to ensure its activities result in a long term and sustainable benefit to the environment.

The RIS sets the strategic vision for Highways England and shows how it will achieve that vision through this five year plan which is accompanied by a confirmed funding envelope.

It includes investing in upgrading M1 Junctions 13-19 to Smart Motorway standards. Milton Keynes can influence the decision making process through engagement and lobbying to ensure RIS2 (2019/20 – 2024/25) fully reflects its transport needs and this document helps it do that.

Highways England has also been tasked by the Department for Transport to carry out a route options study in readiness for a new Expressway to carry traffic between Milton Keynes and Cambridge.

Network Rail

Government sets out its plans for rail improvements in a strategy published every 5 years (High Level Output Specification (HLOS)). The current strategy runs from April 2014 – March 2019 and aims to ensure the nation’s rail system is fit for purpose against a forecast of further strong average growth of 16% in passenger demand and 23% in freight during that time. A nationwide fund of £16.8bn future investment in the long term already includes £5.2bn of enhancements for the current period (Control Period 5) to reduce crowding, cut journey times,
increase efficiency and improve the passenger experience. This includes a commitment to deliver East West Rail between Oxford and Bedford.

The plan for 2019-24 was published in July 2017 setting out how the Government wishes the rail industry to continue to improve the accessibility of the rail network so that it is open to all passengers.

Milton Keynes can influence the decision making process through engagement and lobbying to ensure the high level strategy (HLOS) for this period fully reflects the needs of Milton Keynes. This can be further enhanced by engaging with Network Rail, Franchise Operators and local Community Rail Partnerships.

1.4.3 Local Policy

**Milton Keynes Council Plan (2016 – 2020)**

The Corporate Plan provides a framework for the way in which the Council works with its partners. It is a driving factor in delivering the Core Strategy as well as drawing upon existing strategies and research to ultimately set out a short to medium term (2-4 year) plan on delivering substantial improvements.

The Plan sets out three key objectives:

- A Place of Opportunity;
- An affordable Place; and
- A Healthy Place.

A set of sixteen priority themes are identified to deliver these objectives. For transport, the priority themes are:

- 11: We recognise the importance of our road network to the quality of life for citizens and the efficiency and productivity of our businesses. In these times of austerity, we will seek to achieve maximum value from our highways investment.
- 12: Milton Keynes is built on great connectivity and mobility. We want to ensure a transport system fit for the challenges of the future so that our economy can continue to grow and people can move about with ease.

**MK Futures 2050**

The Milton Keynes Futures Commission Report *Making a Great City Greater* produced a long-term vision for the Borough to 2050 and recommended population growth in Milton Keynes and the surrounding area to at least 400,000 by 2050.

The vision is based upon two central drivers:

- Access to the best education and training opportunities; and
- Milton Keynes must offer sustainable mobility for all.

The vision is underpinned by ‘Six Big Projects’, which, collectively, the Commission believe are essential in delivering the 2050 vision. It is essential that this mobility strategy provides a very clear foundation to deliver the transport system needed for Milton Keynes to achieve its ambitious long term goals for growth.

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• Project One reflects Milton Keynes’ strategic position in the East-West technology corridor envisaged by HM Treasury and the National Infrastructure Commission

• Project Four which emphasises the importance of mobility and flexibility in travel mode choices as the enabler for living, working and learning.

A series of research papers to underpin the final MK Futures 2050 report provide a further and more detailed look in to long-term opportunities and threats facing Milton Keynes can be found at mkfutures2050. The two papers that are most relevant to the Mobility Strategy are:

• Transport and Structure of the City – highlights future trends in transportation including the move to de-carbonisation of transport through the use of electric cars as well as the integration of smart technologies e.g. managed motorways, the importance of behavioural strategies, focusing on encouraging multi-modal journeys, including cycling and walking through advances in intelligent and sustainable transport systems.

• Intelligent On-Demand Mobility – considers the challenges facing Milton Keynes related to provision of bus services and improved passenger satisfaction, facilitating walking and cycling, increased use of smarter choices, highway improvements, and parking.

Core Strategy (2013)

The Core Strategy for Milton Keynes was adopted in 2013 and is a Local Plan for Milton Keynes up to 2026. It provides the strategy and objectives for development of the Borough and outlines clear policies which enable and support this. The Core Strategy will be superseded by Plan:MK, which is in development in 2017.

Plan:MK (Draft)

The draft version of Plan:MK sets out the Borough of Milton Keynes’ proposed approach and draft policies for growth in the Borough through the period up to 2031. The plan considers and provides the strategy for strategic development and spatial planning, with appropriate referencing and policies relating to the delivery of necessary transport infrastructure. Once adopted, Plan:MK will replace most of the existing policies in the Core Strategy (2013) and Milton Keynes Local Plan (2005). It is due to be adopted in late 2018.

Milton Keynes Economic Development Strategy 2017 – 2027

The Economic Development Strategy seeks to build on the current economic success of Milton Keynes, to capitalise on potential future opportunities and to address the challenges the city faces. The aim of the strategy is to secure strong and inclusive growth which benefits businesses and residents, and to sustain the reputation of Milton Keynes as a prosperous, innovative and culturally vibrant place. The strategy is based on four key priorities, of which the second bears most relevance to this Mobility Strategy:

• Connections – working in local, regional, national and international partnerships to advocate for the city and secure physical and digital infrastructure and other investment to support inclusive growth.

MK: Smart

MK: Smart is an initiative led by the Open University in partnership with MKC and BT and partly funded by the Higher Education Funding Council for England. The initiative manages the development of the 'MK Data Hub', which enables and manages data relating to energy and water consumption, transport data, social media, specialised apps and other data sources. Additionally MK: Smart is leading in non-technical solutions including education and business / community engagement.
2. Review of LTP3 Performance

2.1 Introduction

The current Local Transport Plan for Milton Keynes (LTP3) was adopted in April 2011. It includes a Vision and Strategy for Milton Keynes for a 20-year period, 2011 – 2031. The strategy covers all modes and has a sustainability focus, including making the best use of existing assets, improved provision of sustainable transport to provide a real and attractive transport choice, and promotion of the transport choices available. There is also a strong emphasis on technology and innovation, fitting with Milton Keynes’ role as a leader in transport innovation.

Milton Keynes Council has successfully implemented many initiatives from the LTP3 and has delivered positive outcomes as a result. Many of its interventions remain relevant and will be followed through to this Mobility Strategy.

This chapter summarises the key achievements from LTP3 interventions and reports on progress against indicators from the LTP3 monitoring plan.

2.2 Progress on the interventions

Public Transport

Significant progress has been made on many of the planned improvements to public transport, particularly to the bus network. Infrastructure has been improved with Bletchley’s Bus Station upgraded, Milton Keynes Rail Station forecourt improved and Wolverton Rail Station improved. Over 30 bus stops now have improved accessibility, with raised kerbs and shelter - the outcomes of this progress are shown in Figure 4. The western section of East West Rail, connecting Oxford, Bedford and Milton Keynes via Bletchley is underway and HS2 was approved in 2017.

Figure 4. Bus operations – key performance measures

The Better Bus Area Fund has seen significant improvements to buses, including increased promotion of services, integrated ticketing, Real Time Passenger Information (RTPI) boards (Figure 5), improved information and wayfinding and bus based personalised travel planning.

RTPI can now be found on most bus routes in Milton Keynes and route information available at most stops.

Milton Keynes continues to encourage partnership working, by working with bus operators such as Arriva in the Bus Punctuality Partnership and other operators to improve branding on services. Furthermore, the council is leading the way in innovation by introducing electric buses as part of the Low Emission Bus Scheme.

Improvements are ongoing to the taxi services, with free training now available to all licensed taxi drivers and ensuring all drivers are licensed to carry disabled passengers and qualified to load mobility aids. A safety monitoring programme continues to check taxi vehicles registered in Milton Keynes.

Cycling, Walking and Smarter Choices

A Milton Keynes Smarter Choices brand has been developed and a comprehensive joined up approach to smarter choices (including travel planning) is running strong. This was given a boost in 2016 when the council was awarded £420,000 from the Department for Transport’s Sustainable Travel Transition Year (STTY) fund to encourage cycling and walking through revenue based behaviour change measures. Known as the Get Smarter Travel in MK, the project delivered five key elements:

- ‘Get Smarter Travel’ marketing and promotion focused on raising awareness of the newly launched Get Smarter Travel in Milton Keynes sustainable transport brand and mode specific brands including Get Cycling, Get On Board, Get Connected etc.
- ‘Get Cycling’ provided a range of cycling related activities to encourage participation (Figure 6). Around 80 adults received one to one Learn to Ride sessions with free adult Bikeability training and guided rides for families and beginners also on offer to provide entry level, stepping-stone activities.
- A 10 month ‘Beat the Street’ physical activity challenge was delivered by Intelligent Health targeting 100,000 residents and 42 primary and junior schools in Milton Keynes to encourage active travel. Over 13,000 people took part in the six week game phase, walking, cycling and scooting over 85,000 miles in total.
- A range of ‘Travel Planning’ activities took place including a trial scheme to provide personalised travel planning to 5,000 homes in relatively new estates in the eastern expansion area.
• Created specifically for the STTY fund, the new ‘Get to Work’ scheme aimed to increase access to training, education and jobs for the unemployed. Additionally, infrastructure projects are underway to support cycling and walking, including:

• In 2017 the council reopened the newly named ‘Get Changed unit to provide secure cycle parking, shower and changing facilities to cycle commuters in the city centre. Due to high demand for the existing 156 secure cycle lockers at Milton Keynes Central railway station, another 40 secure cycle parking spaces have been installed and are fully occupied.

• The Redway Super Route network consists of 13 cross-city Redway routes (Figure 7) linking key destinations including sustainable transport hubs and residential, commercial and employment areas have been identified. The routes run parallel to the grid road system and provide direct and efficient cycle links for commuters. The project will enhance and upgrade these identified routes by providing extensions and missing links, resurfacing works, new wayfinding, better maintenance, reinstatement of sightlines and vegetation standards and utilise the latest design concepts and standards from across Europe to improve the coherence, directness, safety, comfort and attractiveness of these routes.

• Furthermore, the UK’s first privately funded bike hire scheme, sponsored by Santander and operated by Nextbike was launched in July 2016. In its first year the scheme grew to the second largest dock-based hire scheme in the UK with 50 hire stations and over 500 bikes. By 2017, it had achieved over 70,000 rentals and has 16,000 registered users, enjoying one of the most successful launch periods in the UK and being well received by residents.

Highways and Traffic Management

Milton Keynes has successfully achieved a number of road capacity upgrades, including the Kingston roundabout capacity improvements, A5130 widening, and A421 dualling. The council was awarded funding from the Local Pinch Point Fund, which was secured on a competitive basis, to deliver some of these improvements on budget and to schedule.

The council continues to promote partnership working, which is supporting the case for further improvements to capacity on these roads.

Phase one of Bletchley Fixing the Links, a project to improve the environment and links between the station and Bletchley Town Centre, has been delivered on time and on budget. Phase two is now commencing and will be coordinated with a scheme to provide a link from the new development to the station and onwards to the town centre.

The Council continually monitors air quality at various sites, including Olney, where an Air Quality Management Area (AQMA) has been declared. For two years the annual mean
concentration of NO$_2$ has been below the threshold that triggers an AQMA and if this trend continues the AQMA classification can be revoked. Milton Keynes Council continues to monitor air quality and makes available annual air quality monitoring reports.

**Electric Vehicle Technology**

Milton Keynes is leading the way with promoting and supporting the uptake of alternative fuel vehicles.

The expansion of electric vehicle charging network is ongoing, with currently 170 standard and 56 rapid charge points installed (Figure 8). Additionally, the Go Ultra Low City Scheme to promote low emission transport is being implemented 2016 – 2020, including the opening of the Electric Vehicle Experience Centre in Central Milton Keynes. Funding of £9m has been received towards the scheme from the Office for Low Emission Vehicles (OLEV).

In 2012 Milton Keynes Council set up a partnership to replace seven diesel buses with electric buses on one of the main bus routes in the town. These vehicles are charged wirelessly using coils embedded into the road surface at certain locations. This five year trial has been set up to demonstrate the impact that electric vehicles can have, and to show that such vehicles are economically viable.

Milton Keynes has also introduced free Green Parking Permits for ULEVs using standard (purple) bays.

**Infrastructure Management**

Milton Keynes invested £50m into the road network which has significantly reduced the number of road defects, through its Asset Management Plan. Resurfacing has taken place on many sections of road (Figure 9) and any potholes that meet its criteria have been repaired. As a result the number of claims received for damage caused to vehicles by potholes has fallen again for the fourth year in a row. In 2016, Milton Keynes received just 46 claims for pothole damage compared to 194 in 2012.
2.3 Progress on outcomes

Overall Milton Keynes is showing positive progress across many of the transport monitoring indicators it set out in the LTP3. Headline outcomes of LTP3 progress are summarised in Table 2.

Table 2. Summary of LTP3 progress

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Safety</td>
<td>39% reduction in road casualties</td>
</tr>
<tr>
<td>Bus use</td>
<td>25% increase in the 5 years to 2014&lt;sup&gt;6&lt;/sup&gt;</td>
</tr>
<tr>
<td>Bus Satisfaction</td>
<td>84% (2016), an increase from 73% (2012)</td>
</tr>
<tr>
<td>Public Transport travel time (average minimum)</td>
<td>15% decrease</td>
</tr>
<tr>
<td>Air Quality</td>
<td>Olney Air Quality Management Area emissions remain below the LTP3 target of 40 µg/m&lt;sup&gt;3&lt;/sup&gt;</td>
</tr>
<tr>
<td>Congestion</td>
<td>13% increase in journey time per mile in the morning peak</td>
</tr>
</tbody>
</table>

<sup>6</sup> However, since 2014 performance has been variable.

This shows that while Milton Keynes has enjoyed continued success there is no room for complacency and MKC has more to do, in transport terms, if it is going to meet its potential and deliver its growth ambition.
3. Challenges and Opportunities

3.1 Introduction

While Milton Keynes has made significant progress since the LTP3 was adopted, there remain challenges that need to be addressed if this rate of progress is to be maintained, and if the ambitious growth planned for Milton Keynes is to be delivered.

Existing conditions and future opportunities for transport in Milton Keynes were considered through a review of baseline evidence and future conditions for growth and transport and are set out below.

3.2 Current Transport Conditions

3.2.1 Milton Keynes Multi-Modal Model

The existing Milton Keynes Multi-Modal Model (MKMMM) was produced in 2009 to predict transport demand and movements across the entire Milton Keynes Borough in the future. It was updated in 2016 to provide an up-to-date baseline for option and growth testing, including the testing of the Plan:MK growth scenario.

The new baseline is 2016 and the future scenarios have been modelled for 2031. Transport impacts from the baseline and future scenarios have informed the Mobility Strategy.

3.2.2 Travel Patterns

Travel patterns in Milton Keynes are currently dominated by a high level of private car usage, despite having a substantial walking and cycling network along Redways. The town’s efficient grid road network, relatively stable journey times and the availability of cheap parking are the main reasons for this. The convenience and cost of driving into CMK ensures that for many residents and visitors, the car is the most obvious choice; and in some cases, especially multi-purpose, multi-destination journeys, the only mode of transport available. Residents have above average car ownership at 81%, compared with 74% for the rest of England (2011 Census), with the 2011 Census also reporting an above average car use for the journey to work at 62%, against 54% for England, and 29% for journeys to school made by car. There are also pockets of low car ownership in Milton Keynes, predominantly in those areas where deprivation levels are highest. It is important that the residents of these areas have access to other modes of transport so they can access employment and key services.

Figure 10. Milton Keynes travel patterns

Figure 10 shows that, in 2011, broadly two thirds of all journey to work trips in the town were car based while all other modes accounted for one third of trip. The domination of car based trips is even greater when longer distance trips are considered.

Table 3. Journey to work trips

<table>
<thead>
<tr>
<th>Mode</th>
<th>Live and work in the urban area</th>
<th>Live in the Borough and work in the urban area</th>
<th>Live outside the and work in the Borough</th>
<th>Live in the urban area but work outside the Borough</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>65%</td>
<td>80%</td>
<td>83%</td>
<td>85%</td>
</tr>
<tr>
<td>All other modes</td>
<td>35%</td>
<td>20%</td>
<td>17%</td>
<td>15%</td>
</tr>
</tbody>
</table>

Source: Census 2011

Table 3 shows that for journey to work trips, car is the dominant mode, not only for trips within the town, but particularly for longer distance trips. With additional growth in employment Milton Keynes will become an even more attractive destination and the number of car based trips can be expected to increase.

The grid based road network, the supply and cost of parking in Central Milton Keynes reinforce the decision to drive as a cheap and convenient mode of travel meaning that other modes, such as public transit and cycling, cannot compete. The greater the use of car as a mode the less viable public transit options become, which has an adverse impact on available routes and service frequencies making it less attractive as an option.

In most cases, there is adequate parking available however parking demand can exceed capacity at key trip generator locations, such as weekdays around the employment area in the western half of Central Milton Keynes. Similarly, parking demand exceeds capacity on weekends around the retail core of Central Milton Keynes, particularly in the build up to Christmas. In both cases the issue is not a lack of supply as there is parking available nearby, which wayfinding signage or real time parking information could overcome, but the perception of drivers that they will be able to park at their immediate destination.

The major benefit to drivers is the cost of car parking. The average cost of car parking in Central Milton Keynes is £2.80, based on a 225 day working year. By comparison, the average cost of travelling within Milton Keynes by bus is £2.83, however from neighbouring towns; the cost is considerably higher at £5.53.

Such behaviour is firmly cemented into the mind-set of the town’s residents and employers and the challenge lies in providing viable alternatives. Through LTP3 programme elements, efforts have targeted these patterns, from improving bus services, to travel planning for
workplaces, and schools offering incentives to encourage sustainable travel among the population. Future programmes will seek to improve the urban design and layout of the transport network to increase its accessibility for transport users in a more connected way.

The Mobility Strategy 2018 – 2036 continues these programmes for influencing behaviour which challenge embedded perceptions and tackle the habitual default use of the car. This is especially critical given the town’s growth ambition, and it is important that they are implemented alongside infrastructure improvements and other interventions which will provide residents with real transport choices which enable and encourage more sustainable travel behaviour.

3.2.3 Grid Road Network

Milton Keynes’ urban area is centred on a grid network of roads and mainly roundabout junctions, which in general does not suffer from significant congestion. However, there are heavy flows of traffic leading to and from the major gateways, such as the M1 junctions 14 and 13 and to and from CMK on the B4034 and A422.

Figure 11 is an output from the Milton Keynes Multi Modal Model (MKMMM). It shows the model’s representation of current congestion hot spots on links and junctions in the AM Peak period (07.00 – 09.00). Junctions and links which are highlighted in orange show where the volume of traffic flow rises above 85% of the road or junction capacity, those in red show a greater level of congestion at over 100% of link or junction capacity. By introducing forecast employment, housing and general traffic growth the model can be used test alternative interventions, such as increasing capacity at junctions, road layout improvements and new road links to help make decisions on future development and management of transportation systems.

The 2016 Base Model showed that congestion issues were generally worse in the AM peak than the PM peak. This largely reflects the level of in-commuting to CMK and circulation of traffic within CMK (including links to / from the station/shopping centre and other key destinations).
Some of the capacity issues will be dealt with by planned and committed improvements to for example Brinklow and Monkston roundabouts and the A421 between M1 J13 and Eagle Farm. Other committed schemes such as junction improvements at Watling Street / Dansteed Way (Crownhill Junction) and Watling Street / Portway (Loughton Junction) will help to mitigate against future traffic increases arising from new development to the west of Milton Keynes.

3.2.4 Journey Times

What differentiates Milton Keynes from other large towns and cities within the UK is the use of a unique grid road system with speed limits of 60 / 70 mph. Generally the traffic entering Milton Keynes can do so at a higher speed limit to other urban centres, mostly due to the grid road configuration.

The speed limit on Milton Keynes’ non-grid network is predominately 30 / 40mph and there are approximately 14 intersections (all roundabouts, four of which are signalised) with the surrounding grid road network. This in turn provides virtually straight, high speed and continual connectivity to the A5 and the M1.

Whilst the grid road network provides comparatively better network performance than other UK cities, Milton Keynes growth has had an impact on the performance of the network, as shown in Table 4. Average journey times, traffic flows and the volume of traffic entering Milton Keynes have increased over time.

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>2009</th>
<th>2015</th>
<th>% change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Journey Time (minutes per mile on A roads – weekday morning peak)</td>
<td>1.74</td>
<td>1.95</td>
<td>12</td>
</tr>
<tr>
<td>Annual average traffic flow</td>
<td>825,688</td>
<td>874,540</td>
<td>6</td>
</tr>
</tbody>
</table>

Source: Milton Keynes Council

As well as increased journey times, average vehicle speeds along major roads during the weekday peak have decreased. In 2009 the average vehicle speed across all major roads was 35.4 mph. In 2015, this average had decreased to 31.5 mph.

It is evident that the road network is performing well compared to other cities in the UK, however increases in traffic flows have already and will continue to have an impact on journey times and vehicle speeds and will threaten Milton Keynes’ unique journey time reliability in the future.

3.2.5 Redway Network

The Milton Keynes Redway system for pedestrians and cyclists (known locally as Redways) is approximately 330km in length. Both pedestrians and cyclists are free to use the network which is spread across CMK and its surrounding areas and is aligned either next to grid roads or off-road.

However, the Redways are not well used and cycling is does not currently have a large mode share. According to the Active People Survey (2014/15) only 15% of adults in Milton Keynes
cycle at least once per month for any purpose. Furthermore, cycling accounts for only 4% of journeys to work within Milton Keynes which is similar to that in neighbouring Bedford (4%) and less than neighbouring Aylesbury Vale (5%).

Cycling routes are “perceived to be indirect and unsafe”, with the following barriers:

- Low levels of lighting;
- Maintenance issues; and
- Poor wayfinding.

For short journeys made by car, drivers are more likely to agree that they could switch to cycling than other non-cyclists (57% compared to 35%).

What this shows is that there is a need to address barriers facing cyclists as well as encourage mode shift from the car to sustainable transport, such as walking and cycling.

### 3.2.6 Active Travel

Despite benefiting from a comprehensive walking and cycling infrastructure with the Redways network, Milton Keynes experiences a low commuting mode share for cycling and walking. Data from the 2011 Census indicates that for the journey to work of those in employment, just 7% walked and 3% cycled.

The Redways were designed primarily as leisure routes and whilst attractive and making the most of the city’s green open spaces, are not direct nor comprehensively integrated into the city’s road network; therefore they do not provide efficient ‘end to end’ routes for commuters. With the Redways segregated from the main road grid pattern, users sometimes identify wayfinding and signage to be a challenge. Perception of safety is another concern hindering the use of the routes among both pedestrians and cyclists, with users stating that the routes are sometimes poorly lit or overgrown.

The last link between the Redways and a destination can be a potential barrier, with cycle access or a lack of trip end cycling infrastructure exacerbating problems with the network itself. For example, a lack of secure cycle parking around the city at key destinations is a significant barrier to usage, in marked contrast to the wide scale availability of car parking. Similarly, there is a relative lack of facilities such as showers and storage at places of employment, which prevents the journey to work by active modes being an attractive and easy option.

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*British Social Attitudes Survey 2015: Public Attitudes towards Transport, January 2017*
3.2.7 Public Transport

The challenge for public transit is to be able to compete with the ease and convenience offered by a private vehicle.

Accessibility is one of the key issues preventing the use of public transport. Large rural areas, low density neighbourhoods in the city and complexity of urban estate networks make it difficult to provide a fast, frequent and efficient transport service, therefore reinforcing car ownership and car trips.

Furthermore, there are currently over 50 different bus routes serving Milton Keynes, including urban, rural, school, college, shopping and leisure routes. Despite these routes, there are still limited options for children to travel to school other than parents driving them.

Bus use is low for the journey to work, at just 5.5% of all commuting trips, however, ‘enforced ridership’ is an issue, as 40% of bus users are travelling to and from work, and 50% of bus users indicate that they have no other transport option. This suggests a lack of options and bus use by default, not through choice. For the 19% of households in the Borough, the availability of low cost transport options to access education, training and employment opportunities is critical to ensure these residents are able to participate in the economic growth of the city.

It is evident that there are a number of barriers preventing public transport being the most obvious and most convenient mode of travel. However, interventions which focus on public transport alone will not necessarily encourage commuters to switch from the car unless measures are taken to make public transport more attractive than using a car.

3.2.8 Logistics

Within the UK, freight is primarily moved via roads. In 2016 nearly three quarters (76%) of all goods were moved via roads, with the remainder by water (15%) and rail (9%). Evidence shows that when approaching Milton Keynes the A421 experiences a significant amount of freight traffic as does the A5 which passes close to CMK. The MKMMM shows that from 20019-2015 the greatest increase in flows were for LGVs (14%) and HGVs (19%), compared to cars (3%) over the same period. DfT traffic forecasts suggest LGV traffic will grow by at least 42% between 2010 and 2040.

Milton Keynes is home to distribution centres for a number of major national freight companies. Because of this and its location close to the strategic national road network Milton Keynes experiences a high proportion of both ‘passing through’ traffic and traffic with

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either an origin or destination within Milton Keynes, such as at one of the many distribution centres, commercial centres or retail areas.

Milton Keynes is also home to a number of freight distribution centres, many of which receive freight from ports in the north, south, east and west of the country.

According to the Rail Freight Study (Network Rail, 2017) the expectation is of an overall growth rate in rail freight of 2.9% per year (in total tonne kilometres) from 2011 to 2043. HS2, when it opens, will release capacity on the WCML and allow for an increase in freight capacity.

3.2.9 Road Safety

Figure 14 displays by year the number of reported casualties killed or seriously injured in Milton Keynes. The information summarised is taken from the annual DfT STATS19 report.

Since 2006 there has been a reduction in the total number of casualties killed or seriously injured with a spike in 2013 causing the total number to increase again (Figure 14). In 2014, 49% of casualties reported were car occupants, which is 4% higher than the national split of that year.

In 2014 the total number of casualties fell again, with motorcycle numbers reaching the lowest recorded rate in 10 years and car occupants making up nearly half of the total. Pedestrians make up 24%, cyclists 11%, motorcyclists 13% and car occupants 46%.

Nationally in 2015, car occupants accounted for 36% of reported fatalities or serious injuries. Cyclists accounted for 14%, pedestrians 22.4% and motorcyclists 14%. Although it is difficult to make a direct comparison with national statistics, it is clear that Milton Keynes has a significantly higher mode share of car occupant fatalities / serious injuries. This can potentially be attributed to high car use and high speeds on the network which results in a higher severity of injuries when a collision does take place.

MKC will continue to improve the safety of the highway environment through engineering and Road Safety Audit, but the challenge is to take action to affect driver behaviour and encourage use of the highway network in a responsible manner.
3.3 Future Transport Conditions

The impact of growth on transport in Milton Keynes was forecast using the MKMMM. The assessments of the impacts focused on the road network, and also public transport use.

3.3.1 Network Impacts

The MKMMM was used to test the impact of growth in housing and employment, as identified earlier in this chapter, on the road network.

The future growth and committed or planned transport interventions have been integrated into the reference forecast year of the MKMMM of 2031. This helps to predict what the future impacts will be to the road network and travel patterns.

Figure 15 shows the forecast percentage increase in highway trips to, from and within Milton Keynes, when comparing the 2016 base case to the 2031 reference case. It shows that by 2031 there will be a significant increase of 20-32% in trips over current levels, with the greatest increase taking place between the morning and afternoon peak periods. It should be noted that traffic levels in this inter peak period are generally lower than in the peak periods.

Source: STATS 19
This in turn will also impact total travel time, as shown in Figure 16, and consequently network speeds; with the highest traffic volumes being in the AM and PM peaks, the greatest impact of this growth in trips will be felt in these periods. With Milton Keynes currently experiencing relatively stable and quick journey times, the challenge will be to manage the level of traffic growth so that the increases shown in the table below do not become a reality in the future.

Table 5 summarises the overall impact on the network from planned growth in 2031.

<table>
<thead>
<tr>
<th></th>
<th>AM Peak</th>
<th>Inter-Peak</th>
<th>PM Peak</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Distance Travelled</td>
<td>19%</td>
<td>31%</td>
<td>23%</td>
</tr>
<tr>
<td>Total Travel Time</td>
<td>33%</td>
<td>36%</td>
<td>35%</td>
</tr>
<tr>
<td>Average Network Speed</td>
<td>-10%</td>
<td>-4%</td>
<td>-8%</td>
</tr>
</tbody>
</table>

It can be see that travel times are forecast to be higher than in 2016, and average speeds are lower. Furthermore, total distance travelled increases as drivers take longer routes in order to avoid congestion.

Considering specifically car trips to CMK and their impact, the future growth scenario predicts a 25% increase in car trips from Milton Keynes to CMK and a 42% increase from outside
Milton Keynes to CMK during the AM peak hour. Therefore it appears from the MKMMM that the largest impact on car volumes will be from journeys originating outside Milton Keynes.

The challenge, therefore, will be to capture these journeys using alternative modes, possibly through schemes such as East-West Rail, additional park and ride sites, improved public transit, development of Mobility as a Service, and car-pooling.

Figure 17 shows the model forecast situation in CMK for the AM Peak with planned growth and committed transport improvements in place in 2031. The junctions and links coloured orange and red are considered the potential congestion hotspots of the future if this predicted traffic growth occurs and taking into account planned transport improvements. Even with planned improvements it shows that congestion will worsen across the area, particularly in the north-west and south-east, and additionally in the north-east.

Figure 17. Congestion and links at capacity in Milton Keynes in 2031

The entry points into Milton Keynes are generally more ‘stressed’ than in the Base 2016 Model alongside the internal Milton Keynes Central network due to the greater level of in-commuting from outside of Milton Keynes. Of the entry links and in comparison to the Base Model:

- The A421 junctions are more overloaded.
- The A5 links and junctions show congestion issues in part because traffic seeks alternative options into Milton Keynes as well as the general growth in traffic on the network. The southern entry links are also starting to become more congested.
- The A509 from Chicheley Hill Roundabout and down to M1 Junction 14 are more overloaded and more junctions along the A422 are showing over capacity issues.
- M1 J14 in particular shows a greater level of congestion than in the model Base Year of 2016 with increased congestion forecast at Northfield Roundabout, the next junction towards central Milton Keynes.
• The Child’s Way junction on Watling Street is overcapacity in both the AM and PM Peak (in addition to the A421 – Elfield Park Roundabout - already over capacity in the Base year).

More of central Milton Keynes links and junctions, particularly on its perimeter, are over capacity and there is a notable reassignment of traffic around central Milton Keynes resulting forecast growth.

3.3.2 Public transport forecasts

The model forecasts growth in the use of public transport occurs in all three time periods between 2016 and 2031. The percentage increases of public transport usage by time and distance can be seen in Table 6. This is unsurprising if journey times on the network are increasing and speeds are decreasing.

Table 6. Forecast increase in public transport use 2016 - 2031

<table>
<thead>
<tr>
<th></th>
<th>AM</th>
<th>IP</th>
<th>PM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Hours</td>
<td>9%</td>
<td>22%</td>
<td>16%</td>
</tr>
<tr>
<td>Passenger Km</td>
<td>9%</td>
<td>20%</td>
<td>14%</td>
</tr>
</tbody>
</table>

3.4 Opportunities

3.4.1 Growth

Growth is an expectation for Milton Keynes. The town’s population has the potential to grow from 268,000 to over 400,000 people to 2050 with current growth ambition.

With population and employment set to increase, the number of cars on the roads will put a strain on the transport network, further impacting on journey time reliability. The quantum and location of household growth anticipated by 2031 is shown in Figure 18. Most of the growth is focused around the periphery of CMK and up to 500 new homes in the north.

Figure 18. Forecast household growth in Milton Keynes 2016 – 2031

[Map showing forecast household growth]
The quantum of employment, the growth anticipated by 2031 is shown in Figure 19. This is concentrated in Central Milton Keynes as well as to the east and west of the city centre. Additional population and employment growth is expected to come from Plan:MK, which is currently being drafted and tested in the Milton Keynes Multi-Modal Model (MKMMM).

Figure 19. Forecast employment growth in Milton Keynes 2016 – 2031

3.4.2 Future Mobility

Without interventions, some junctions around Central Milton Keynes have been forecast to be over capacity by 2031. However improvements on the train and highway network may attract more car journeys. For example, East West Rail and the Oxford to Cambridge Expressway will attract more car journeys into Central Milton Keynes, placing further pressure on the levels of congestion. Furthermore, without investment in the transport system there is a risk that the significant potential for growth in Milton Keynes will be stifled by congestion. Forecasts for Milton Keynes to 2050 show a steadily increasing congestion risk to the local economy. The challenge arises from seeking to maintain current journey times through encouraging alternative modes, as well as supporting growth in residential and employment areas.

Table 7. Modeshift challenge

<table>
<thead>
<tr>
<th>Journey</th>
<th>Car / Other Modes (%)</th>
<th>2011 (Actual)</th>
<th>2030 (Target)</th>
<th>2050 (Target)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milton Keynes</td>
<td></td>
<td>65 / 35</td>
<td>60 / 40</td>
<td>50 / 50</td>
</tr>
<tr>
<td>Intra-borough</td>
<td></td>
<td>80 / 20</td>
<td>70 / 30</td>
<td>55 / 45</td>
</tr>
<tr>
<td>Inter-borough</td>
<td></td>
<td>85 / 15</td>
<td>80 / 20</td>
<td>60 / 40</td>
</tr>
</tbody>
</table>

Source: Strategy for First Last Mile Travel

The opportunities are, therefore to deliver a transport system and city environment which enables and incentivises mode shift to other modes (Table 7) so that Milton Keynes’ growth is not stifled by increasing congestion.
Whilst future mobility provides opportunity, the sheer pace of change and possible technology and infrastructure solutions in the transport sector makes it hard to plan for the whole period to 2036. Therefore rather than determining specific interventions along a certain time frame the Mobility Strategy provides a framework of interventions which can be used to respond to this uncertainty, managing change by shaping some aspects while being well placed to react and respond to other challenges and opportunities should they emerge sooner than expected. Disincentives on diesel technologies, increasing availability of electric vehicle resources and increasingly rapid advances in autonomous vehicles are examples of how expected timelines for the emergence of these scenarios has become less easy to predict.

Milton Keynes is exceedingly well placed to take advantage of the extensive opportunities for transport innovation. There is an already established partnership with the Open University (MK: Smart) and Transport Systems Catapult and industry partners, which means we are at the cutting edge of emerging technologies and trends. Furthermore, Milton Keynes has the opportunity to lead in innovation and act as a test bed for new solutions as the central hub in the Oxford – Milton Keynes – Cambridge high technology growth corridor.

The current trialling of driverless pods has potential to lead to widespread use or further testing to determine what efficiencies are possible for the transport network. There is also the opportunity for the integration of new technology into transport, such as the autonomous and connected vehicles trials. Linking these autonomous technologies may lead to changes to what people expect from transport and advocates of solutions such as Mobility as a Service (MaaS) and advanced mass transit options suggest that there could be a significant shift from car ownership to more of a service oriented approach, which could have a significant impact on demand for road space and parking in the longer term. The challenge lies in drawing all of these opportunities together in order to create a seamless transportation network which benefits all individuals and ensure the current transport system is developed in ways which accelerate their introduction.
4. The Ambition

4.1 Introduction

This section sets the ambition and the objectives for the Mobility Strategy building on the work of MK Futures 2050 and Plan:MK and LTP3. The ambition sets the foundations for the development of the Mobility Strategy and will contribute to the delivery of longer term vision for Milton Keynes set out in MK Futures 2050. The objectives go on to determine the delivery strands that MKC will use to deliver transport over the strategy period.

4.2 The Ambition

Milton Keynes is one of the fastest growing areas in the country seeking to deliver game changing growth and innovation which will lead to an expected level of population growth in Milton Keynes from 268,000 to c.400,000 people by 2050.

Milton Keynes is a significant attractor for inward investment, partly as a result of its strategic location between London and Birmingham on the M1 and West Coast Main Line. However, growth is forecast to be accompanied by an increase in travel demand over time with a consequential adverse impact on the relatively good journey times experienced in the city which could ultimately constrain growth.

To deliver on the ambition, Milton Keynes needs to:

- Stabilise and protect average journey times while promoting the development of smart shared sustainable mobility for all;
- Enable Mobility as a Service to flourish;
- Develop and promote future technologies such as autonomous and connected vehicles; and
- Ensure transport infrastructure is configured to enable the city’s future development and growth in travel demand to be accommodated within smart, shared, environmentally sustainable mobility services.

4.3 Objectives

Figure 20 illustrates the relationship between LTP3 objectives and the new Mobility Strategy objectives. It shows that the LTP3 objectives remain valid going forward in the Mobility Strategy, but defining them in a different way will help to deliver a more integrated approach to transport planning and delivery in Milton Keynes.
4.4 Strategy Objectives

Listed below are the objectives and their relevant outcomes. Delivery of each objective rests on achieving a number of outcomes that Milton Keynes will need for its transport system to realise the overall ambition of this strategy.

1. **Support Growth and provide mobility for all** – support the growth ambition of Milton Keynes and provide good connectivity throughout the Borough and beyond.

2. **Provide an effective network** – provide a network that is well maintained, free flowing, and operating efficiently at all times.

3. **Maximise Travel Choices** – maximise the use of technology and innovation to both inform the traveller and to provide mobility options.

4. **Protect transport users and the environment** – the safety of all transport users is a key part of this strategy as is the need to reduce transport pollution and CO₂ emissions, protect the natural environment and promote improved public health and wellbeing.
4.5 Strategy Outcomes

Support Growth and provide mobility for all

a. **Reliable journey times** – current journey times are very good when compared to like authorities (Figure 21). For Milton Keynes’ to continue its record of high growth it is essential that current journey times are maintained and the transport network improved to underpin further growth.

b. **A transport system to support growth** – the layout, extent and overall functionality of the transport network is key to supporting increases in population and expansion of business. Work collaboratively with agencies such as Highways England and Network Rail to shape and influence strategic and local transport connections.

c. **Modern regulatory system** – there are also regulatory barriers that prevent the full integration of travel for which work is needed to encourage new, more open regulatory arrangements between types of transport.

Provide an effective network

a. **An integrated urban traffic management system (UTMC) that adapts to changing conditions** – technology exists and is improving that enables better management of road junctions for all modes of travel. Where rapid mass transit is used it is essential that this is allowed swift through journeys where conditions allow. This technology can also allow prioritisation of traffic during peak travel periods.

b. **A proactive approach to asset management** – the quality and reliability of existing and new transport infrastructure must be reliable and available to use which supports reliable journey times.

c. **A network that is available, well maintained and safe for all users** – network availability is a part of the Traffic Management Duty on local transport authorities. It is essential that both maintenance works and utility excavations (Streetworks) are kept to a minimum to reduce congestion and maintain short journey times. A well maintained network is one which helps reduce road accidents and casualties.

Maximise Travel Choices

a. **Integrated journey planning available on a variety of technology platforms** – essential as today’s travellers increasingly prefer good connectivity over the car both for journey planning and to stay connected on the move.

b. **Making the most of new innovation in autonomous vehicle technology**. Autonomous vehicles could increase utilisation and significantly reduce the cost of travel while increasing frequency and availability of services.

c. **Exploiting Mobility as a Service (MaaS)** – currently commuting by private car results in significant wasted resource being parked instead of used. New technology is now bringing new transport service models which support better use of on demand transport where vehicles are used “borrowed/hired” only as part of a journey enabling transport to be provided as a service reducing the need for car ownership. This is especially true for multiple car ownership allowing families to manage their budgets better.
Mobility Strategy for Milton Keynes

d. **Seamless integration between modes** – with single payment ticketing options travellers must be confident that their whole journey can be completed and that interchanges are as seamless as possible.

**Protect transport users and the environment**

a. **Supporting and encouraging use of active modes which deliver health benefits** – active travel supports the council’s Wellbeing Strategy in helping reduce a number of health conditions and is complementary to the aim to increase walking and cycling by improving urban design layouts to bring workplaces, leisure and retail services closer to residential areas where possible.

b. **Supporting and encouraging use of modes which minimise CO₂ and other pollutant emissions** – as well as travelling efficiently improved engineering technology plays a part here with Electric Vehicles and other low or zero emission freight and public transportation.

c. **Ensuring the safety of all travellers has been a key part of transport planning** – this is an essential outcome for all parts of the transport process. As well as the obvious need for safety there are proven benefits to the wider health, wellbeing and economic aspects of society in general.

![Figure 21. Average Journey Time comparisons 2007/08 – 2014/15](image-url)

<table>
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<tr>
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5. Delivery Plan

5.1 Introduction

In response to the ambition, objectives and outcomes set out previously, a number of high level interventions are needed to deliver these. Development of these interventions has been based on a process whereby the interventions contained in LTP3 have been examined to determine level of progress, whether the interventions are ongoing or should cease (because they no longer deliver the desired outcomes), and their relevance to delivering Mobility Strategy objectives and new interventions devised where they are needed as a result of the recent review of LTP3.

Interventions for each objective are set out over three time frames, short, medium and long term to enable an understanding of what needs to be done to support the wider council objectives for growth over those periods.

- Short term: 2018-2024
- Medium term: 2025-2031
- Long term: 2032-2036

5.2 Support Growth and provide mobility for all

MKC will plan and deliver infrastructure improvements that support growth. The network will be maintained and managed to ensure it operates efficiently. Maintenance will be planned and delivered so that it is future proofed taking account of other measures such as mass rapid transit that are being planned for future implementation.

**Rationale:** Milton Keynes’ high growth is dependent on current businesses being able to deliver high productivity and by attracting a well-qualified and wide labour pool. Inwards investment is attracted to Milton Keynes’ partly by its strong transport links internally and its strategic links. Maintaining and stabilising journey times helps maintain that attractiveness to businesses as a location where they can base themselves, and deliver the growth Milton Keynes wants.

MKC will work with businesses to ensure the efficiency, resilience and effectiveness of the operation of the transport system for people, goods and services.

**Dependencies:** Working with the business sector and technology sector to ensure increased demand for travel does not result in increased congestion. Exploiting future mobility technologies, and influencing travel behaviour such that a variety of modal options are available to travellers for business, commuting and leisure.
Short term 2018 – 2024

- **Review parking:** continue to review and improve the current permit system to establish an appropriate balance between car and non-car travel choices. Benchmark cost of parking in comparison to similar nearby urban centres and consider gradual increase parking fees along with an education campaign to publicise how the additional funding will be reinvested into public transport and technology.

- **Business case development:** prepare outline and Strategic Business Cases for long term strategic infrastructure such as rapid mass transport concepts (e.g. Micro Metro), East West Rail and East West Expressway multi-modal smart hubs at strategic park-and-rides.

- **Prioritise development opportunities:** Potential for a “Fast Track” development option for key pipeline sites via Housing Infrastructure Fund (HIF) bids.

- **Partner with local businesses:** Engage with local businesses to promote sustainable travel among their employees, agile working and flexible working hours to relieve peak hour demand.

- **Premium Bus Route Network:** Identify a core priority network of high frequency bus services that operate from early in the morning until late in the evening linking areas of high-demand. We will work in partnership with commercial providers to deliver these, aiming for levels of quality and journey times comparable to that of other modes. This may require physical road improvements and links to bus priority within an Urban Traffic Control System and in the longer term be converted to Bus Rapid Transit or Micro-Metro.

- **Optimise public transport / mass transit access in new development areas:** Ensure new development areas have capacity for rapid personal and mass transit access including priority routes on main and local along with high quality and well sign-posted walking connections to mass transit boarding points and good quality facilities.

- **Shuttle bus service to retail core at weekends:** Consider free or discounted shuttle bus service to retail centre and rail station in CMK on weekends. Use park and ride services based on the development of out of town park & ride locations that intersect with known high volume commuter routes.

- **Ensure schools, higher education and key employment locations are covered by bus services:** Review access to schools, higher education and key employment locations by bus and consult with site owners to determine whether current services are adequate.

- **Cycle hire:** Expand the cycle hire scheme to other areas of the city including the old towns and locate docks at key locations such as Stadium:MK and railway stations along the East-West Rail route. Working with developers MKC will ensure docks and bikes are located within new estates and provide opportunities for new residents to use the scheme. Use of the scheme will be supported by activities such as training and education via flexible payment systems. Integrate with “hire” models for EVs and other personal travel modes such as pods, autonomous.
• **Freight Quality Partnership:** Establish a Milton Keynes Freight Quality Partnership with membership from industry, freight operators, Police service, local government and other key stakeholders to develop an understanding of freight, delivery and servicing issues and solutions that reconcile the need for access to goods and services in the context of local economic, environmental and social factors.

• **Improved superfast broadband service:** Improve coverage of broadband service to support agile working, real-time journey planning, demand responsive technology, car share opportunities and MaaS. The success of any real-time journey planning, remote working or demand responsive transport will not be possible without high quality internet coverage.

• **Collaborative concept delivery:** in collaboration with Cambridge and Oxford carry out innovation, feasibility and concept development for AVRT / Micro-Metro mass transit approaches and pilot these concepts.

• **Autonomous ‘last mile’ deliveries:** Collaborative approach between the Council, Freight Quality Partnership, Transport Systems Catapult and the Open University to follow and possibly trial emerging autonomous delivery opportunities for the ‘last mile’ delivery.

**Medium term 2025 – 2030**

• **Maintain parking supply:** Work with retail, business and developers to provide car park capacity as point of need for key event driven locations (such as retail, leisure, business sector) to create a better balance between parking supply and land use. Work with residential developers to incrementally reduce parking supply in favour of rapid mass transit commuting options.

• **East West Rail:** Western section expected to be delivered by Network Rail by 2024. It is important to ensure that the rail stations on this corridor are linked to development and key destinations by viable sustainable transport options, such as a bus priority or mass transit network. Develop and promote an MKC position for connection from the rail line to the East West Expressway.

• **Logistical planning:** Freight consolidation centres and clean vehicle use, potentially located close to warehouse land in Milton Keynes.

• **Strategic Highway Infrastructure:** Oxford to Cambridge Expressway. Highways England and the NIC are currently considering alignment options for a new expressway linking Oxford and Cambridge. The Major Road Network in Milton Keynes needs to be well connected to the Expressway.

**Long term 2031 – 2036**

• **Provide new park and ride sites:** Implement new park and ride sites where there is a high trip demand to the city centre, consider serving north (A5 and A509 / M1 J14), south (A4126) and west (A421) of CMK and supporting longer distance trips from outside Milton Keynes. These sites will be aligned with the Micro-Metro concept as well as East West Rail.

• **Future transit corridors:** Plan for bus priority corridors in Milton Keynes to convert to mass transit corridors in the long term and link to Oxford – Milton Keynes – Cambridge future transit corridor.
5.3 Provide an effective network

MKC will plan and implement core routes and a mass rapid transit system that connect both new and existing communities with employment centres.

**Rationale:** The MKMMM shows that there will continue to be congestion issues in the north-west and south-east, and additionally in the north-east. The entry points into Milton Keynes generally become more ‘stressed’ in 2031 with planned growth and transport improvements in place. This is because of higher levels of in-commuting from outside of Milton Keynes. Capacity improvements at key pinch points will help alleviate these congestion hotspots.

**Dependencies:** Improvements will be undertaken in conjunction with assessment of future requirements such as provision of bus priority, or a Mass Transit System. Improvements will be aligned to Milton Keynes Asset Management Programme to exploit efficiencies of scale and deliver value for money. All measures will be done in conjunction with delivering a safe and well maintained network. UTMC implementation will ensure the network performs optimally. Provision of infrastructure and bus priority measures that improves journey time reliability.

**Short term 2018 – 2024**

- **Local Highway Infrastructure:** Providing additional road capacity at congestion hotspots where required and ensuring infrastructure is future proofed to enable more strategic interventions, such as bus priority and rapid mass transit.

- **Milton Keynes Grid Expansion:** Delivering Milton Keynes grid expansion for mixed-uses in parallel with spatial expansion of Milton Keynes’ urban area along a high frequency transit priority and direct cycle corridor(s) that link existing trip generators, transport nodes and CMK to new and existing residential areas.

- **UTMC:** Implementation of an Urban Traffic Management Control System including bus priority measures at key pinch-point junctions. This scheme has already received £2m in funding from the Department for Transport’s National Productivity Investment Fund for Traffic Management. The system will support ongoing innovative initiatives such as sensor deployment to create a city centre scale management system which will reduce journey times for all highway users.

- **Electric Vehicle Charging Infrastructure:** Capitalise on existing excellent city centre and key destination charging infrastructure to further develop EV charging infrastructure strategy for Milton Keynes, including requirements for enabled infrastructure provision for new development.

- **Expanding capacity for Central, Bletchley and Wolverton stations:** improving public transit hub and local boarding points - upgrade these to improve first and last mile connectivity options as part of the East West Rail and East West Expressway configurations, including provision of shelters and real-time passenger information at more stops to build a convincing mass transit infrastructure.

- **Improve public realm and wayfinding:** Encourage more walking through improved public realm and wayfinding signage. Education and awareness raising programme, and development of partnerships to provide opportunities for walking and to create a walking culture. Possibly link to the reallocation of parking space to public realm.
**Redway network upgrade and extension:** Continue the upgrade programme for the Redway network – resurfacing, increased lighting, improved wayfinding signage and maintenance. Connect the Redway Network to other routes within the city ensuring extensions into new development areas and direct connections to commuter cycle routes (Super Redways). Encourage early uptake of cycling from new residents. Connecting the network to other roads within the city will create a more direct and efficient way of accessing the city centre, supported by the development of a Smartphone App / journey planner as part of the Get Smarter Travel MK scheme offering a sustainable and healthy alternative to private or public transport.

**Increased cycle parking around CMK:** Increased provision of secure cycle storage facilities provided at all parking sites around the town centre, at schools, universities, Milton Keynes Coachway (park and ride site) and rail stations. Ensure a range of cycle parking is provided including space for larger family bikes and disabled access. Avoid two-tiered parking as stakeholder feedback is that it is difficult to use. Storage facilities in new developments to ensure storage facilities at trip ends. Provide sheltered and secure parking.

**Medium / Long term 2025 – 2036**

- **Management of current parking stock:** Re-evaluate the supply and utilisation of parking space in CMK. Where possible, consider converting space for conventional cars to electric vehicle charging spaces, autonomous vehicles, and bicycle parking. Where surface parking can be reduced convert this to public realm or housing where possible. There are some sites identified as underutilised, these could be considered for alternative land uses.

- **Passive preparation:** Establish the infrastructure needed for Milton Keynes’ future transport system based on rapid mass transit, multi-modal hubs and localised remote vehicle, public transit and other features of the future system.

- **Expanding the existing local bus and other mass transit networks:** Reviewing the current bus routes within Milton Keynes and those to outer areas potentially expanding the network based on the application of the future multi-modal system for rapid mass transit, local/personal transit, car share/rent and bike share/rent networks and remote vehicle access points, within achievable budgets and through close partnership working with local providers current and future.

- **Milton Keynes ‘Micro-Metro’:** Milton Keynes is served by six rail stations – improve the connectivity as a ‘Micro-Metro’ rapid mass transit system as capacity is released on the West Coast Main Line after delivery of HS2, particularly in relation to development to the south of the city including investment in station hubs for multi-modal travel behaviour to be expanded – see Milton Keynes’ First Last Mile Strategy submission to the NIC.
5.4 Maximise Travel Choices

MKC will continue to deliver an on-going programme of education, training and promotion so that people are fully aware of the transport options available to them for different journeys. It will continue to work with operators to provide a network of fast, frequent high quality services that are easy to use, supported by priority measures to incentivise increased patronage.

**Rationale:** The Mobility Strategy requires a step-change in how all travel modes are perceived if users are to become informed multi-modal travellers. LTP3 has established programmes for engaging residents, employers, employees and schools for influencing travel behaviours. Using these for the promotion of existing and improved infrastructure, as it is delivered, will help to and generate demand by raising awareness of the transport choices available and to reposition the transport offer to residents, workers and visitors.

MKC will work with its partners and stakeholders to undertake awareness, education and training initiatives which encourage and facilitate responsible and sustainable travel choices.

A new approach for the delivery of bus services would enable a more consistent bus market with an integrated approach to service planning, marketing, fares and ticketing. Making the bus network deliver consistent and low journey times to compete with car based travel making it attractive to use public transit for journeys within Milton Keynes, whether the journeys originate inside or outside the borough boundary.

**Dependencies:** communication and engagement activities to affect travel trends should underpin all aspects of the Mobility Strategy to ensure popular take up of a range of travel choices. Development of a public transit offer which can match car based journey times making it easier to use public transit through the implementation of smart integrated ticketing.

**Short term 2018 – 2024**

- **Smart Sensors:** Installing a network of smart sensors covering MKC roads and parking assets to build a real-time open dataset of traffic flows and parking demand. By collaborating with local transit and bikeshare operators it can help build a shared, open transport data network for deeper understanding of local patterns of human movement across all travel modes, and influence travel patterns.

- **Integrated Journey Planning:** Working to attract / develop an integrated journey planning tool as the foundation for local journey mapping (e.g. Citymapper) in parallel with setting up a smart, integrated ticketing and car park payment system in partnership with local transit / bikeshare operators to establish.

- **Travel Planning in businesses, schools and higher education as well as new and existing developments:** Deliver an engagement, promotion and monitoring programme supporting effective travel plan development and implementation. Update the council’s toolkit of options for travel planning so that it contains options for Mobility as a Service, agile working and on demand car-share.
• **Cycle training in businesses, schools and higher education and community:** A range of Bikeability cycle training provided to suit range of users, from primary school pupils to adults.

• **Quality Bus Partnership:** Re-establish a Milton Keynes Quality Bus Partnership to encourage and facilitate strategic partnership with bus operators to deliver a high quality high frequency bus services to increase bus patronage and a sustainable, commercial operated network wherever achievable.

• **Demand Responsive Transport:** Trials to be undertaken to prepare for medium term capacity city wide including trials of community and other council funded travel arrangements such as home to school travel.

• **Incentivisation:** Consider incentives / rewards for regular use of active modes, such ad money off vouchers.

• **Wider implementation of Smart Parking:** Guiding vehicles to available car parking spaces across the city with real-time parking availability displays or an App.

• **‘MaaS’ Mobility Planning App for Milton Keynes:** Develop a ‘MaaS’ journey planning and travel information mobility app for Milton Keynes, to enable residents and visitors to plan journeys using real-time information for any mode. Integration with public transport ticket purchasing would be advantageous.

• **Bus application for user devices:** Application allowing for easy tracking of buses, live updates and ticket pricing across bus operators. Easy tracking of all bus services would provide convenience for customers. Offering easy journey planning and by providing end to end journey information, users will gain confidence in public transport.

• **Variety of payment options on public transport:** Offer an element of convenience with multi payment methods on buses across all operators – pay via smartcard, Apple pay, contactless cards, and cash.

• **On-demand bus service:** On demand shared mobility for rural areas currently not well served by public transport, perhaps linked to park and ride locations.

**Medium term 2025 – 2030**

• **Mode shift:** demonstrate a long term commitment to alternative travel modes to enable lifestyle choices to be made so travellers can plan for non-car commuting and other journeys with confidence in the system.

• **Trialling future transport technology:** Similar to the current driverless pods trial in CMK, approach universities and or SMEs to collaborate on further opportunities for trialling new transport technology, such as MaaS or demand responsive cars, vans or buses.
5.5 Protect transport users and the environment

MKC will continue with its programme of improving infrastructure that facilitates active travel, and will support this with an ongoing programme of education, training and promotion to reduce barriers that may prevent active travel taking place.

**Short term 2018 – 2024**

- **Promote Sustainable Travel**: Continue promoting the use of ultra-low emission vehicles (ULEVs) and the initiatives in the Milton Keynes Go Ultra Low City scheme. Invest in ultra-low emission modes (e.g. EVs) and associated charging infrastructure, while collaborating with private sector specialists and government innovation bodies to position Milton Keynes as the go-to UK test-bed for on and off-street CAV testing.

- **Road Safety**: Support delivery of new measures that undergo a Road Safety Audit with a targeted programme of education, training and promotion and fully engage with key parties in support of government road safety strategy objectives.

- **Funded Safe Urban Driving courses**: Offer funded Safe Urban Driving courses throughout Milton Keynes to improve HGV driver’ behaviour. It will help to raise awareness of the presence of vulnerable road users and help prevent collisions and encourage commuter cycling on direct routes.

- **Encouraging sustainable logistics**: Encouraging last mile logistics companies which use electric fleets, freight bicycles (battery powered), or cargo bicycles to deliver parcels to CMK and Olney.

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**Case Study: Demand Responsive Public Transport – On-Demand Transit (Minibus)**

The concept is for users to use a taxi-like mode to get around, but share journeys with others heading the same way to reduce costs. Users choose a start point and destination, and then choose whether to share a journey or take a private trip.

The service can employ dynamic / variable pricing, whereby the price could vary depending on whether users wanted a ‘door to door’ or a drop off at a designated point close to a destination, and how far in advance a booking was made (cheaper if further in advance, as services can be better ‘match’ with planned trips).

The system would offer greater flexibility and convenience than buses in terms of where it operates and the timing of services, and it could deliver community based transport. The system would be cashless, which would be more convenient to users, and to speed up trips.

Milton Keynes Council is actively considering the application of the concept in CMK and whether the service could be delivered commercially, while providing benefits to a range of users. Such a system would potentially operate both in CMK and in other areas of the borough.
Case Studies: 
Connected and Autonomous Vehicles
Milton Keynes is hosting the largest demonstration of connected and autonomous vehicles in the UK. The £20 million scheme, branded as UK Autodrive is being delivered in collaboration with vehicle manufacturers, academic institutes, legal/Insurance companies and research testing bodies. The goal is to demonstrate the capabilities of self-driving vehicles in a real urban area addressing local objectives.

Milton Keynes is also developing an autonomous POD service within the central Milton Keynes area. The 40 vehicle fleet will aim to demonstrate how last mile mobility can be achieved within a busy urban environment, increasing mobility options to facilitate the estimated 300,000 trips that take place in the city centre on a daily basis. The electric pods travel at up to 12mph, and can carry four people. They use an autonomous control system, with no need for a driver, utilising high definition cameras and sensors to navigate around obstacles including people, roadworks, and buildings.

The exploration of this technology is part of our MK50 Future City strategy for Smart Shared Sustainable Mobility, embracing the MK:Smart project which, with business and academic partners, has enabled an open data sharing platform or hub with capabilities to develop innovative solutions to support long-term economic growth in Milton Keynes.

The aim of the initiatives sits at the heart of the UKs national ambition to be a global hub for the development of autonomous vehicle technologies and to integrate driverless vehicles into existing urban environment.

Intelligent Transport Systems
Intelligent Transport Systems (ITS) in Milton Keynes has had a limited place so far in assisting Milton Keynes in managing its transport needs. Real time sensors are currently being deployed at every major junction on the MK network, placed on most buses and covering the majority of parking in CMK. The sensors detect movement and can classify that movement through visual recognition via its on board camera. The units process the data and transmit in real time how busy the network is. The initiative is a first of a kind city scale deployment of this technology and has the potential to support a comprehensive UTMC system. The technology also provides artificial intelligence capabilities by machine learning, anticipating network conditions, enabling efficient network management potentially dealing with incidents before they impact the network.

The new UTC system aims to be a central hub for any future traffic monitoring, control or information systems. The new system will conform to the Urban Traffic Management and Control (UTMC) specification and will allow for automated changes to network management in real time to take place to alleviate congestion hotspots.

RTPi in conjunction with the new UTC / sensor system can allow for automated bus priority at traffic signals improving public transport journey times and journey time reliability.

Future aspirations for ITS in Milton Keynes are high, led by the need to provide more information to motorists, cyclists and pedestrians. Variable message signs, websites, and mobile apps can provide live updates about on street conditions to allow travellers to make an informed decision about mode choice and route options. MaaS in operation!
6. Monitoring Plan

6.1 Introduction

In order to evaluate the success of the Milton Keynes Mobility Strategy over time a monitoring plan has been established. As the strategy progresses, data, information and views will be gathered to monitor, benchmark and measure the results of the strategy on a regular basis. This will inform future interventions and ensure the Mobility Strategy is constantly under review and is kept up to date.

6.2 Monitoring

MKC will monitor delivery of the strategy objectives and outcomes by using LTP3 indicators, where relevant, and developing new indicators as required. The approach will consist of data collection and surveys, the MKMMM, public, stakeholder and partner involvement, and performance monitoring.

6.3 Monitoring Delivery

Primarily the monitoring plan contains four high level targets in response to the objectives and set out in the Mobility Strategy:

1. **Support Growth and provide mobility for all** – support the growth ambition of Milton Keynes and provides good connectivity throughout the Borough and beyond.

2. **Provide an effective network** – provide a network that is well maintained, free flowing, and operating efficiently at all times.

3. **Maximise Travel Choices** – maximise the use of technology and innovation to both inform the traveller and to provide mobility options.

4. **Protect transport users and the environment** – the safety of all transport users is a key part of this strategy as is the need to reduce CO\textsubscript{2} emissions, protect the natural environment and promote improved public health and wellbeing.

A number of other measurable indicators linked to the objectives have been established to help track delivery of the Mobility Strategy’s objectives. These use LTP3 indicators, and further work will be done to develop a number of new indicators (Table 8).

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<th>Outcomes</th>
<th>Indicators</th>
<th>LTP3 Baseline</th>
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<td>Support Growth and enhance connectivity</td>
<td>Reliable journey times for all modes</td>
<td>Average vehicle journey times during the weekday morning peak on locally managed ‘A’ roads by local authority (Milton Keynes data)</td>
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<td>Average bus journey times</td>
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<td>Support Growth and enhance connectivity</td>
<td>Modernise regulatory system</td>
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*Table 8. Mobility Strategy indicators*
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<th>Outcomes</th>
<th>Indicators</th>
<th>LTP3 Baseline</th>
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<tr>
<td>Provide an effective network</td>
<td>An integrated UTMC system that adapts to changing conditions</td>
<td>Reduction in average queue lengths at junctions</td>
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<td></td>
<td>A proactive approach to asset management</td>
<td>Network Condition Average cost and time to complete repairs</td>
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<td>A network that is available, well maintained and safe for all users</td>
<td>Streetworks Inspection and fail rates</td>
<td>2011/12</td>
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<td>Maximise Travel Choices</td>
<td>Integrated journey planning available on a variety of technology platforms</td>
<td>Deliver bus user App by 2025</td>
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<td>Making the most out of new innovation in autonomous vehicle technology</td>
<td>Continue AV trials and deliver AV for use on Milton Keynes’ roads</td>
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<td>Exploiting MaaS</td>
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<td></td>
<td>Integrated ticketing</td>
<td>Deliver an integrated ticketing system using smart card and other technology options by 2025</td>
<td>N/A</td>
</tr>
<tr>
<td></td>
<td>Seamless integration between modes</td>
<td>Establish baseline and test with user surveys</td>
<td>N/A</td>
</tr>
<tr>
<td>Protect road users and the environment</td>
<td>Supporting and encouraging use of active modes which deliver health benefits</td>
<td>Walking and cycling mode share for trips originating in Milton Keynes (Census 2011)</td>
<td>2011</td>
</tr>
<tr>
<td></td>
<td>Supporting and encouraging use of models which minimise CO₂ and other pollutant emissions</td>
<td>Mean annual concentration of nitrogen dioxide (NO₂) at continuous monitoring site at the Olney AQMA encompassing all properties fronting Bridge Street and High Street South, and also including part of Market Place (Milton Keynes Council Air Quality Annual Status Report 2017)</td>
<td>2011</td>
</tr>
<tr>
<td></td>
<td>Ensuring the safety of all travellers is a key part of transport planning</td>
<td>Number killed or seriously injured on all roads (DfT STATS19 Report)</td>
<td>2005/6-2009/10 average</td>
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## Appendix A Implementation Programme

<table>
<thead>
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<tbody>
<tr>
<td><strong>Support Growth and provide mobility for all</strong></td>
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<tr>
<td>Review parking</td>
<td>37</td>
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<td>Business case development</td>
<td>37</td>
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<tr>
<td>Prioritise development opportunities</td>
<td>38</td>
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<tr>
<td>Partner with local businesses</td>
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<td>Public mass transit priority services</td>
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<td>✓</td>
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<tr>
<td>Optimise public transport / mass transit in new development areas</td>
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<tr>
<td>Shuttle bus service to retail core at weekends</td>
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<td>Ensure schools, higher education and key employment locations are covered by bus services</td>
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<tr>
<td>Cycle hire</td>
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<td>Freight Quality Partnership</td>
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<td>Improved superfast broadband service</td>
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<td>Increase bus frequency and longer services</td>
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<tr>
<td>Maintain parking supply</td>
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<td>East West Rail</td>
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<tr>
<td>Logistical planning</td>
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<tr>
<td>Strategic highway infrastructure</td>
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<td>Provide new Park and Ride sites</td>
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<td>Future transit corridors</td>
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<td>Collaborative concept delivery</td>
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<td>Autonomous ‘last-mile’ delivery</td>
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<td><strong>Provide an effective network</strong></td>
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<td>Milton Keynes grid expansion</td>
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<td>Expanding capacity for Central, Bletchley and Wolverton stations</td>
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<td>Improve public realm and wayfinding</td>
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<td>Redway network upgrade and extension</td>
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<td>Increased cycle parking around CMK</td>
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<td>Management of current parking stock</td>
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<td>Passive preparation</td>
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<td>Expanding the existing local bus and other mass transit networks</td>
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<tr>
<td>Milton Keynes ‘Micro-Metro’</td>
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<td>Maximise Travel Choices</td>
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<tr>
<td>Smart sensors</td>
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<td>Integrated journey planning</td>
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<td>Travel planning in businesses, schools and higher education as well as new and existing developments</td>
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<td>Cycle training in businesses, schools and higher education and community</td>
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<tr>
<td>Quality Bus Partnership</td>
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<td>Demand Responsive Transport</td>
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<td>Incentivisation</td>
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<td>Wider implementation of Smart Parking</td>
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<td>MaaS mobility planning app for Milton Keynes</td>
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<td>Bus application for user devices</td>
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<td>Variety of payment options on public transport</td>
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<td>On-demand bus service</td>
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<td>Mode shift</td>
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<td>Trialling future transport</td>
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<td>technology</td>
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<td>Protect transport users and the environment</td>
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<td>Promote sustainable travel</td>
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<tr>
<td>Road safety</td>
<td>44</td>
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<tr>
<td>Funded safe urban driving courses</td>
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<tr>
<td>Encouraging sustainable logistics</td>
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</table>
### Appendix B Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
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<tbody>
<tr>
<td>Active travel</td>
<td>Travel using a type of non-motorised transport, principally walking or cycling.</td>
</tr>
<tr>
<td>Bikeability</td>
<td>A cycle training scheme funded by Department for Transport that aims to give cyclists the skills and knowledge they need to cycle on today’s roads.</td>
</tr>
<tr>
<td>Bus priority</td>
<td>Measures that can be used to improve the speed and reliability of bus services; such as bus lanes, changes to rights of way and alterations to traffic signals at junctions, usually by giving buses priority over other road vehicles.</td>
</tr>
<tr>
<td>Grid Roads</td>
<td>Grid Roads are urban clearways with lay-bys for bus-stops, with no direct building frontages and generally no at-grade pedestrian crossings. Some are dualled, and the remainder normally have land reserved for future dualling, or other transport purpose (e.g. mass passenger transit system).</td>
</tr>
<tr>
<td>Integrated transport</td>
<td>A comprehensive transport network that provides door-to-door travel where different modes meet different needs, including journeys where more than one mode is used. This careful integration of two or more modes may include a high frequency bus route that serves a railway station or the provision of secure cycle parking at a transport hub that allows you to continue your journey by bus.</td>
</tr>
<tr>
<td>Intelligent Transport Systems</td>
<td>An Intelligent Transport System is a group of traffic technologies linked by internet-based communication methods. An example of an ITS would be road sensors collecting traffic flow data and passing data to traffic lights which would allow for dynamically controlled phasing as traffic levels fluctuate throughout the day.</td>
</tr>
<tr>
<td>Interchange</td>
<td>The act of changing between different services or modes of transport during a journey, and/or the facility at which the change occurs, such as a rail-bus station.</td>
</tr>
<tr>
<td>Local Transport Plan (LTP)</td>
<td>LTPs are statutory documents required by the Transport Act 2000 and retained by the Local Transport Act 2008.</td>
</tr>
<tr>
<td>Modes of transport</td>
<td>Different ways of travelling such as by car, train, bus, motorbike, cycling, and walking.</td>
</tr>
<tr>
<td>Mode share</td>
<td>The level of use of each mode of transport, calculated as the proportion of trips taken by each mode out of total trips made.</td>
</tr>
<tr>
<td>Park &amp; Ride</td>
<td>Car parking facilities, usually in an edge of town location, with public transport links into the town centre or key destinations.</td>
</tr>
<tr>
<td>Term</td>
<td>Description</td>
</tr>
<tr>
<td>--------------------------</td>
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</tr>
<tr>
<td>Personalised travel planning</td>
<td>A form of travel awareness and marketing, personalised travel planning is the provision of tailored public transport information to households based on their specific travel patterns and needs.</td>
</tr>
<tr>
<td>RTPI</td>
<td>Real Time Passenger Information systems use Automatic Vehicle Location technology to pin point bus location on the network and provide an estimated time of arrival at stops, interchanges and termini. This information can be provided on at-stop screens, on mobile phones or on information kiosks.</td>
</tr>
<tr>
<td>Redway network</td>
<td>The network of off-road cycleways and pedestrian footpaths in Milton Keynes.</td>
</tr>
</tbody>
</table>