

Transport Background Paper

1.0 Introduction

1.1 Epping Forest District has a varied transport network. The south of the district is linked to central London by the Central Line of the London Underground and it is bisected by the M11 and M25 motorways. More local road routes include the A414 which links the District with Harlow and Chelmsford. A significant part of the District is rural in nature, with limited access to public transport services, or safe walking and cycling routes.

1.2 The diversity of the transport network, together with capacity constraints on both the road and rail networks, poses challenges in ensuring that the transport network is capable of supporting the level of housing and commercial development proposed. The counter to this is that there are also opportunities to look toward providing alternative transport options through the delivery of new development which provides a balance between continued car usage and widening access to public transport, walking and cycling opportunities.

1.3 How the management and provision of transport infrastructure in its widest sense is approached will be critical to achieving sustainable development which:

- supports access to services for both existing and new residents;
- creates an efficient transport network which is critical to supporting the economy of both Epping Forest District and the wider area;
- maximises the health benefits that walking and cycling can provide; and
- reduces carbon emissions.

1.4 As set out in the NPPF:

‘Transport policies have an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives. Smarter use of technologies can reduce the need to travel. The transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel. However, the Government recognises that different policies and measures will be required in different communities and opportunities to maximise sustainable transport solutions will vary from urban and rural areas.

Encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport.’

(NPPF: Paragraphs 29 and 30)

1.5 Epping Forest District, like many places, has a mix of urban and rural settlements and its transport network is also impacted by what happens outside of its area. Consequently, the Council is clear that a ‘one size fits all’ approach to the development of its transport policies would not be appropriate. It also recognises that the provision of new roads and increases in rail capacity are costly and take a long time to deliver. Therefore, in developing this Local

Plan it aims to ensure that the location of development can, wherever possible, access existing opportunities for walking, cycling and use of public transport, or create new opportunities for the provision of sustainable transport modes which benefit both future and existing residents and businesses. Widening opportunities for existing residents and businesses to access new travel choices can reduce levels of reliance on the existing road network, which itself can contribute to the alleviation of current and future capacity issues, as well as supporting objectives relating to health, air quality and improving access to services.

2.0 The Current Transport context

- 2.1 The levels of accessibility to public transport services, and walking and cycling facilities are extremely varied across the District. In addition, the draw of employment opportunities outside of the District places pressure on the existing local and strategic road network and London Underground Central Line and national rail services.

What we know about the current transport network

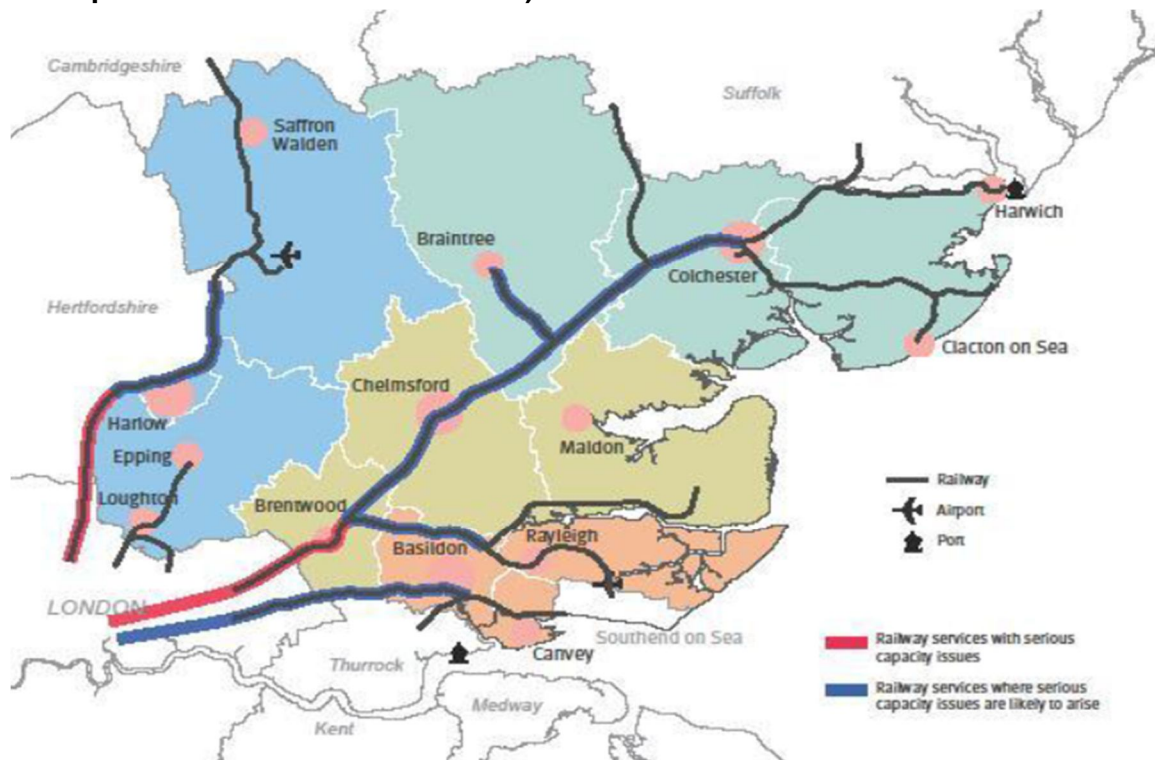
- 2.2 In order to develop a robust and sustainable transport network it is important to understand how all of the various transport modes are currently operating or provided for. Below is a summary of what we know now. Understanding what the current issues and opportunities are in relation to the transport network helps to develop a good understanding of what needs to be done in the future both in terms of where development is located, how it can support sustainable transport options, what investment is currently planned and where investment needs to be made in the future. The objective is to minimise impacts on the current network or, wherever possible, improve it.

The Rail Network

- 2.3 The south-west of the District is served by the London Underground Central Line (both the main line and the 'Hainault via Newbury Park' loop). Epping Station is the eastern terminus and there are 7 other stations in service in the District. These are Theydon Bois, Debden, Loughton and Buckhurst Hill, together with the stations on the branch line at Roding Valley, Chigwell and Grange Hill. The Central line used to run further than Epping, through stations at North Weald and Blake Hall to the end of the line at Ongar. Blake Hall station closed in 1981 with the line closing in 1994. In recent years the 'Epping and Ongar Railway' has been established, a nationally recognised heritage rail service running on this former Central Line track from Epping to Ongar. There is currently no operational rail connection between the heritage rail line and the Central Line track at Epping, but the 'Epping and Ongar Railway' runs some shuttle bus services locally. Demand for rail travel, which has risen significantly in recent years, is set to continue to grow, potentially further increasing pressure on local stations as commuter hubs. Without accompanying investment in new infrastructure, this is likely to add significant pressure to already busy transport links.
- 2.4 There is one national railway station in the District – at Roydon on the Liverpool Street to Stansted and Cambridge line, although other railway stations (Broxbourne, Sawbridgeworth, Harlow Town and Harlow Mill) are close to, and accessible from, the District. Therefore, residents and businesses to the west of the area in particular can access the rail services

operated by Abellio Greater Anglia with destinations including Liverpool Street, Stratford, Cambridge, Stansted Airport and Chelmsford. Again, passenger growth has increased, and is likely to continue to do so.

Figure 1 - Map Showing Rail Capacity Issues (Essex Transport Strategy: the Local Transport Plan for Essex. June 2011)



The Road Network

2.5 As set out above there are two areas of focus with respect to the road network. This comprises:

- the Strategic Road Network i.e. those roads the management of which is the responsibility of Highways England; and
- the local road network i.e. those roads the management of which is the responsibility of Essex County Council as the local highway authority.

The Strategic Road Network (SRN)

2.6 For Epping Forest District this covers the M11 and M25 motorways. The ambition and aims of Highways England, in managing these roads are as follows:

- to ensure its major roads are more dependable, durable and most importantly – are safe;
- to make sure its road network 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; and
- accessible and integrated – so people are free to choose their mode of transport and can move safely across and alongside its roads.

In addition, Highways England aims 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
- ensure that its activities result in a long term and sustainable benefit to the environment.

2.7 The Council, together with its neighbouring authorities, and as part of the London Stansted Cambridge Corridor (LSCC), has been working with Highways England to help support the aims and objectives of Highways England and secure the necessary infrastructure to support the longer term development needs of both Epping Forest District and the wider area, recognising that transport issues go beyond the local authority boundary.

2.8 The Highways England London to Leeds (East) Route Strategy 2015-2020 has identified a number of priority issues of relevance to Epping Forest including:

- inadequate network connectivity on the M11 near Harlow and Stansted; and
- congestion at Junction 7 of the M11 at Harlow.

In addition, it recognises that the area around Harlow is a focal point for future growth. The Road Investment Strategy and Delivery Plan for the 2015-2020 period commits to undertaking works to upgrade Junction 7 and provision of more technology. The indicative start date for the works is in 2019/20. These works are being undertaken to address existing issues on the Strategic Road Network (SRN).

2.9 Future increases in background traffic growth on the SRN, and wider transport proposals (including through the provision of a third Thames crossing between Kent and Essex) are such that further issues could arise across the three north-south routes in this part of the East of England, although some of this may be addressed as a result of improvements proposed to the A1 and M1.

2.10 Importantly, Highways England recognises the role that the SRN can play in enabling new development and supporting the economy (with a focus on delivery of strategic housing developments and supporting Enterprise Zones). Initial work carried out as part of the Duty to Cooperate has highlighted the need to provide a new junction between junctions 7 and 8 (i.e. a junction 7a) on the M11 to unlock housing and economic growth in and around Harlow. Both the Council and the neighbouring local authorities are of the view that this is a critical piece of road infrastructure. The Council with the neighbouring authorities of Harlow, East Herts and Uttlesford Districts is seeking funding for Junction 7a and also improvements to Junction 8.

The Local Transport Network (including the Local Road Network)

2.11 Essex County Council (ECC) is the local transport authority and has responsibility for a range of transport activities including:

- the maintenance and management of all of the roads within the County with the exception of the Strategic Road Network (as set out above);
- co-ordination and support for bus travel;
- school transport;
- walking and cycling provision; and
- the Public Rights of Way Network.

2.12 ECC produced 'The Essex Transport Strategy: the Local Transport Plan for Essex' in June 2011. The Strategy covers the period 2011-2026 and identifies five main outcomes and their associated challenges as follows:

Outcome	Challenges
Provide connectivity for Essex communities and international gateways to support sustainable economic growth and regeneration	a) Providing good connectivity to and within urban areas to support self-contained employment and housing growth and regeneration b) Providing good inter-urban connectivity within Essex and with adjacent major urban areas c) Maximising the benefit to the local economy of Greater Essex's international gateways and strategic transport links to London, the East and South East of England and the rest of the UK
Reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology	a) Reducing the carbon-intensity of travel in Essex b) Reducing pollution from transport to improve air quality in urban areas and along key corridors c) Protecting and enhancing the natural, built and historic environment
Improve safety on the transport network and enhance and promote a safe travelling environment	a) Reducing the number of people killed or seriously injured on Essex roads b) Working with partners to promote a safe and secure travelling environment
Secure and maintain all transport assets to an appropriate standard and ensure that the network is available for use	a) Effectively and efficiently managing our roads and footways b) Effectively and efficiently managing all of the Council's wider transport assets c) Keeping the transport network operational and safe in all seasons d) Effectively managing the impact of planned works
Provide sustainable access and travel choice for Essex residents to help create sustainable communities.	a) Enabling Essex residents to access further education employment and vital services (including healthcare, hospitals and retail) b) Maintaining the vitality of our rural communities c) Encouraging and enabling healthier travel and leisure activities d) Creating strong and sustainable communities

- 2.13 How the Council takes forward its Local Plan, particularly in terms of where new development is located and how it makes provision for transport infrastructure (including levels of car parking), are important considerations which can help to address a wide range of these challenges and achieve the desired outcomes. The importance of linking the Essex Transport Strategy with the Local Plan is identified in the 2011 Strategy.
- 2.14 The Essex Transport Strategy identifies a number of priorities which are of relevance to Epping Forest District as follows:

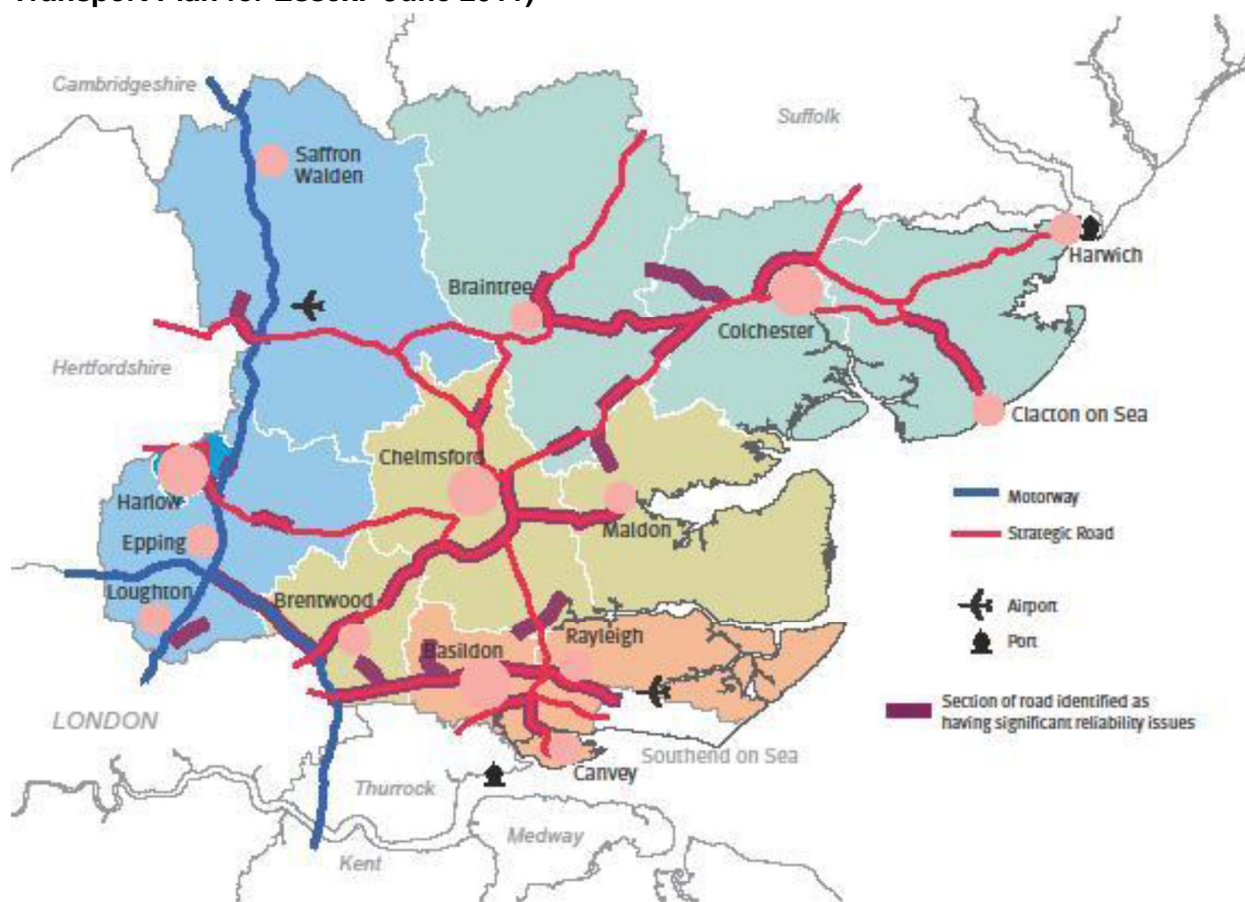
Transport priorities for West Essex

- improving access to and from the M11 corridor;
- tackling congestion and improving the management of traffic in Harlow town centre;
- providing the transport improvements needed to support housing and employment growth;
- improving the attractiveness of bus services;
- improving cycling networks and walking routes and encouraging their greater use;
- improving the attractiveness of public spaces and their ease of use;
- working with Transport for London to improve the journey experience of Essex residents using the Central Line underground services; and
- improving access to Stansted Airport by low carbon forms of transport.

Transport priorities for rural areas

- supporting the economy of historic rural towns and villages, and varied countryside;
- providing support for transport in rural areas to ensure that access is provided to employment, education, healthcare and food shopping;
- ensuring that people in rural areas are able to access important services (including shopping, healthcare, library facilities, etc.), without needing to travel long distances;
- minimising the impact transport has on the character of rural areas.

Figure 2 - Map showing journey reliability (Essex Transport Strategy: the Local Transport Plan for Essex. June 2011)



Issues identified by Essex County Council within, or relevant to, Epping Forest District:

- Loughton is part of a spur of continuous development extending from London through Buckhurst Hill with a combined population of over 40,000. It is located just 12 miles from the centre of London. It is bypassed by the M11, but only has access to it in the London direction. Congestion within the town is common during peak periods;
- Epping also suffers from significant congestion during peak times of travel. Part of the town centre has been declared as an Air Quality Management Area, as a result of high levels of pollutants from traffic;
- Loughton, Epping and the other settlements in the area have the benefit of easy access to the London Underground Central Line. Growing congestion on the Central Line and issues relating to the way this is accessed are areas of concern;
- access to Harlow is, however, somewhat restricted with only one link to the strategic road network (via Junction 7 of the M11) and two railway stations located on the edge of the town;
- the primary means of road access to Harlow, the A414, also serves as an important through route. With high levels of traffic using this one route, congestion is common with its impacts often felt across the town's wider road network. Innovative solutions are required alongside some road improvements;

- significant growth is planned adjacent to Essex which is likely to add further pressure to strategic transport networks. This includes major development and regeneration within Greater London (for instance the regeneration of the Lower Lea Valley which aims to create 40,000 new homes and 50,000 new jobs).

2.15 ECC has committed to working in partnership with district planning authorities to:

- identify suitable locations for development;
- ensure that proposed developments will adequately provide for and promote sustainable modes of travel to minimise traffic growth;
- identify the priority transport measures needed, particularly to provide good connectivity with local services and nearby employment; and
- deliver transport measures in a co-ordinated and cost-effective way, making best use of all available sources of funding.

2.16 ECC advises that due to limited funding for major infrastructure investment housing and employment growth will be expected to largely be accommodated by making better use of existing transport networks. ECC's focus is therefore on identifying packages of measures which will enable the effective integration of new developments with existing networks and on ensuring that developments are well connected with their surrounding areas.

Essex County Council Priorities for West Essex

2.17 West Essex borders more of Essex's neighbouring authorities than any of the other planning areas. The character of the area is diverse, encompassing the edge of the London commuter-belt, the "new town" of Harlow, as well as historic rural towns and villages. ECC's priorities for the area therefore reflect the importance of cross-boundary movements and the differing needs of local communities.

2.18 With significant housing and employment growth to be delivered in West Essex, particularly within and around Harlow, ECC considers that it will be essential to ensure that this is accompanied by measures which support access and promote the selection of sustainable travel choices. Priorities include:

- Improving access to and from the M11 corridor;
- Tackling congestion and improving the management of traffic in Harlow town centre;
- Providing the transport improvements needed to support housing and employment growth;
- Improving cycling networks and walking routes and encouraging their greater use; and
- Improving the attractiveness of public spaces and their ease of use.

2.19 Links to London are vital, particularly to the south of the area, with much of the local economy closely tied to that of the Capital. Priorities therefore include working with Transport for London to improve the journey experience of Essex residents using the Central Line

underground services, and lobbying government for improvements to Greater Anglia rail services.

- 2.20 With much of the area rural in character, access to employment and services is an important issue. Providing access to the local centres, to Harlow, and to essential services from rural areas and improving choices for travel between the centres are priorities.

Essex County Council Transport Strategy Policies

- 2.21 The Transport Strategy policies which are relevant to the Local Plan are as follows:

LTP Policy 2:

Transport and land-use planning will be used together to secure new development at the most appropriate and sustainable locations by: working closely with district planning authorities to enable a better balance of new homes, jobs and services; locating new developments in areas which are accessible to key services by sustainable forms of transport; ensuring new developments provide for sustainable transport and effective travel planning; requiring new developments to provide appropriate transport infrastructure in line with the Council's current development management policies making the most effective use of all available funding sources by co-ordinating the delivery of ECC and development funded works.

LTP Policy 8 – Promoting Sustainable Travel Choices

The County Council will encourage the use of more sustainable forms of travel by: consistently supporting and promoting sustainable travel; providing infrastructure for sustainable transport; working with partners and service providers to promote the use of sustainable forms of travel and to identify new ways to provide services; requiring effective travel planning for proposed developments in line with the Council's current development management policies; developing effective travel plans with existing work places, schools, and other locations that attract a significant number of people; promoting access by sustainable forms of transport to the county's railway stations, ports and airports.

LTP Policy 9 – The Natural, Historic and Built Environment

The County Council will protect the natural, historic and built environment from the harmful effects of transport by: designing and implementing transport improvements and maintenance works that retain the integrity of the built environment, natural habitats and biodiversity, the natural and historic landscape, and water quality; minimising the visual and noise impacts of transport; addressing air quality issues through appropriate measures, particularly in designated Air Quality Management Areas.

LTP Policy 13 – Access to Services

The County Council will ensure that Essex residents have access to essential services by: working with partners and service providers to make essential services accessible to all; making transport infrastructure accessible for all by continuing to remove barriers to travel for those with disabilities; ensuring that travel information is available in different formats and is accessible to everyone; encouraging and supporting innovation to improve the provision of essential services.

LTP Policy 14 – Cycling

The County Council will encourage cycling by: promoting the benefits of cycling; continuing to improve the cycling facilities within the main urban areas of Basildon, Chelmsford, Colchester and Harlow; developing existing cycling networks in other towns where cycling offers an appropriate local solution; working with schools and employers to improve facilities for cyclists; improving access to local services by integrating the Public Rights of Way, walking and cycling networks to form continuous routes; providing training opportunities to school children and adults.

LTP Policy 15 – Walking and Public Rights of Way

The County Council will promote walking and use of the Public Rights of Way network by: promoting the benefits of walking; facilitating a safe and pleasant walking environment that is accessible to all; improving the signage of walking routes; ensuring that the public rights of way network is well maintained and easy to use by walkers, cyclists and equestrians.

Essex County Council Priorities for West Essex

Main Town (Harlow):

- improving access to Harlow from the M11;
- providing for and promoting access by sustainable modes of transport to development areas Improving the attractiveness and usability of streets and public spaces;
- tackling congestion and improving the management of traffic in Harlow town centre; improving the Harlow cycle network and promoting greater use; and
- improving public transport connections.

Local Centres (Great Dunmow, Epping, Loughton, Saffron Walden, Waltham Abbey):

- providing for and promoting access by sustainable modes of transport to development areas;
- Improving passenger transport connections to and between the local centres, key services and Harlow
- improving the attractiveness and usability of streets and public spaces Improving cycling and walking routes and promoting their greater use; and
- improving connections to London, working with Transport for London to make best use of and manage access to Underground links Improving links with surrounding rural areas.

Inter-urban Routes:

- lobbying Government for improvements to journey time reliability on the M11 corridor;
- lobbying Government for improvements to West Anglia rail services.

International Gateway (Stansted Airport):

October 2016

- improving access to Stansted Airport from within West Essex by sustainable forms of travel.

3.0 The approach to Transport within the Local Plan

- 3.1 In order to develop a robust and informed approach to support the development of sustainable approaches to transport at a plan-making level it is important to first understand the transport impacts arising from both existing and new development. As the Planning Practice Guidance (PPG) sets out:

It is important for local planning authorities to undertake an assessment of the transport implications in developing or reviewing their Local Plan so that a robust transport evidence base may be developed to support the preparation and/or review of that Plan. A robust transport evidence base can facilitate approval of the Local Plan and reduce costs and delays to the delivery of new development, thus reducing the burden on the public purse and private sector.

The transport evidence base should identify the opportunities for encouraging a shift to more sustainable transport usage, where reasonable to do so; and highlight the infrastructure requirements for inclusion in infrastructure spending plans linked to the Community Infrastructure Levy, section 106 provisions and other funding sources.
(ID 54-001-20141010)

- 3.2 In addition the PPG identifies the key issues that should be considered in developing the transport evidence base to support the Local Plan as follows:

The key issues, which should be considered in developing a transport evidence base, include the need to:

- *assess the existing situation and likely generation of trips over time by all modes and the impact on the locality in economic, social and environmental terms;*
- *assess the opportunities to support a pattern of development that, where reasonable to do so, facilitates the use of sustainable modes of transport;*
- *highlight and promote opportunities to reduce the need for travel where appropriate;*
- *identify opportunities to prioritise the use of alternative modes in both existing and new development locations if appropriate;*
- *consider the cumulative impacts of existing and proposed development on transport networks;*
- *assess the quality and capacity of transport infrastructure and its ability to meet forecast demands;*
- *identify the short, medium and long-term transport proposals across all modes.*

The outcome could include assessing where alternative allocations or mitigation measures would improve the sustainability, viability and deliverability of proposed land allocations (including individual sites) provided these are compliant with national policy as a whole.
(ID 54-003-20141010)

The local road network

3.3 The Council has commissioned ECC to support the development of the transport evidence base. Work has been undertaken to develop a spreadsheet model in order to provide a proportionate approach to understand what is happening on the local road network and what might happen to it in the future, with a focus on key junctions. This was done by developing an understanding of what impacts predicted background growth and development already committed might have i.e. the baseline. The base date used was 2013, with further assessment dates of 2026 and 2036. This approach helped to understand the existing situation and the likely future issues as set out in the PPG.

3.4 As may be anticipated the 'arms' at key junctions in the base year of 2013, for the main part, are operating within capacity during the morning and evening peaks. As we move forward this situation worsens such that by 2036 a significant number of the junctions would have at least one 'arm' operating over capacity. Clearly, if new development is added to the background growth analysis this situation occurs much sooner in the Local Plan period. The impacts of this are numerous but include:

- increasing unreliability of the road network for its users impacting on journeys to work;
- limiting opportunities to provide bus priority measures and improved pedestrian and cycling infrastructure through the junctions;
- Increasing levels of air pollution impacting on residents, walkers and cyclists and reducing the attractiveness of using these ways of travelling; and
- longer times for emergency services to get to where they are needed.

3.5 More information on the methodology and outputs is set out in Technical Notes 1 – 5¹ as follows:

Technical Note 1: Base year junction capacity modelling. (October 2013)

Technical Note 2: Spreadsheet model development, latest study position and next steps (January 2014)

Technical Note 3: Early-Stage Forecast Modelling Results – Background Growth Only and Initial Local Plan 'Scenario'.

Technical Note 4: Forecast Modelling Results from 7 x Development Scenario Tests (June 2014)

Technical Note 5: Preliminary Mitigation Measures Modelling (July 2014)

3.6 Theoretically, improving capacity through the junctions that were assessed by way of physical improvements could be an option. However, in reality, it would be technically or environmentally unfeasible to take this approach on many of the junctions and would be financially costly. It is therefore vital that the travel impacts of new development are managed in a different way rather than taking a 'predict and provide' approach. This does not mean that an 'anti-car' approach is being taken but there is a need to ensure that there is no significant worsening of the operation of the road network over the Local Plan period

¹ See Essex Highways technical notes on the Council's website
<http://eppingforest.consultationonline.co.uk/technical-information>

compared to the baseline date of 2013. Achieving this will not be an easy task but there is much that can be done to achieve this by:

- locating development in places where residents can access services and employment by means other than the car or are capable of supporting improvements to access to services (which may well also benefit existing residents and reduce their current car use);
- ensuring that in larger developments the right services and employment opportunities are provided to make them as self-sufficient as possible;
- working with partners to build capacity into the bus, rail and underground networks.

Current accessibility

3.7 It is important to understand the capacity of the existing road network but also what current provision is made for rail, bus, walking and cycling journeys. This understanding has been developed by mapping:

- The bus network, bus stop locations and service frequency;
- The National Rail and London Underground network and station locations;
- The National Cycle Network and local cycle network (Harlow); and
- Public Rights of Way (PRoW) and bridleways.

This has shown that there is a significant variation in levels of accessibility across the District. This corresponds with the character of the District with its main urban areas surrounded by a large rural hinterland.

Influencing the location of new development

3.8 Having set the ‘ambition’ of minimising impacts on the road network and recognising the wider social, economic and environmental benefits that arise from getting more people to use walking, cycling and public transport for their journeys it is important to understand how the selection of development sites could support this. This is in accordance with the approaches to transport set out in the NPPF, the PPG, as expected by Highways England and as set out in Circular 02/2013 ‘The strategic road network and the delivery of sustainable development’ as follows:

The preparation and delivery of Local Plans provides an opportunity to identify and support a pattern of development that minimises trip generation at source and encourages the use of sustainable modes of transport, minimises journey lengths for employment, shopping, leisure, education and other activities, and promotes accessibility for all. This can contribute to environmental objectives and also reduce the cost to the economy arising from the environmental, business and social impacts associated with traffic generation and congestion.

In framing its contribution to the development of Local Plans, the Highways Agency's² aim will be to influence the scale and patterns of development so that it is planned in a manner which will not compromise the fulfilment of the primary purpose of the strategic road network.

Through the production of Local Plans, development should be promoted at locations that are or can be made sustainable, that allow for uptake of sustainable transport modes and support wider social and health objectives, and which support existing business sectors as well as enabling new growth.

The Highways Agency will work with local authorities and developers to identify opportunities to introduce travel plan and demand management measures through the Local Plan. These will be based on existing and proposed patterns of development in a manner that will support sustainable transport choice and retain capacity within the transport network so as to provide for further development in future Plan periods.

Assessing Sustainable Accessibility of sites

3.9 The location of potential housing sites with a potential yield of 25 or more homes were mapped to better understand which performed best in terms of access to key services by modes other than the car or which could be made more accessible through investment in public transport, walking and cycling facilities. The threshold of 25 or more units was used as it represented the scale of residential development over and above which it was considered would begin to have an effect on the highway network. A scoring system was developed based on the following sustainable accessibility measurements:

- typical commuter journey time (economy);
- commuter journey time reliability (economy);
- noise and air quality linked to vehicle flow and congestion (environment);
- typical non-commuter journey time (social);
- non-commuter journey time reliability (social);
- physical activity related to walking and cycling (social); and
- access to services (social).

3.10 The indicators of sustainable accessibility used were:

- walking distance to nearest bus stop;
- rail access (distance, bus service frequency, bus journey time);
- town access (distance, bus service frequency, bus journey time);
- health access (distance, bus service frequency, bus journey time);
- education access (distance to nearest nursery/pre-school, infant/primary school, secondary school and bus service frequency and proximity of bus route to nearest secondary school);
- pedestrian/cycle access (current level of pedestrian facilities and cycle access to/from the site);

² Now Highways England

- traffic impact (proximity to an identified key congested junction; scale of peak hour congestion expected in vicinity of the site; existing propensity to drive); and
- potential access opportunities (bus stops, bus services, improved frequency of public transport, cycle use and walking).

3.11 To ensure that the methodology is ‘fit for purpose’ sensitivity testing has been undertaken.

3.12 This approach has provided important evidence to assist in determining the most suitable sites to be proposed to for development during the Local Plan period – albeit not the only consideration - as set out in the ‘Site Selection Report’ (Arup 2016). It should be noted that all potential housing sites, whether identified through the Strategic Land Availability Assessment, and included within the Technical Notes, or identified through other means, have been assessed using this methodology.

3.13 More information on the methodology and outputs can be found in the following technical notes³:

Technical Note 6: Sustainable Accessibility Mapping and Analysis (December 2014)

Technical Note 7: Sustainable Ranking, Mapping and Analysis (July 2016)

Technical Note 8: Sensitivity and Stress Testing the Site Sustainability Scoring System / Epping Forest District Car Ownership and Use Mapping (August 2016).

3.14 Further work will be undertaken in due course to review the future impacts on the local highway network based on alternative Trip Generation rates taking into account a modal split based on a change in car usage. This approach will take into account the potential of sites to access existing sustainable transport alternatives, or opportunities to enhance those alternatives.

3.15 The approach taken above accords with that advocated in national policy and guidance, and the Essex County Council Local Transport Plan policies, and the outputs have been used to inform the development of Draft Policy T 1 ‘Sustainable Transport Choices’ and the Draft Infrastructure Delivery Plan.

The Strategic Road Network

3.16 Epping Forest District Council has been working with Harlow, East Hertfordshire and Uttlesford District Councils, as well as Essex County Council, Hertfordshire County Council and Highways England through the Cooperation for Sustainable Development Member Board (see Chapter 3 of the Draft Local Plan) to assess the impacts of development on the strategic road network. A Draft Memorandum of Understanding (MoU) has been developed by the four councils, Essex County Council, Hertfordshire County Council and Highways England in relation to the provision of Strategic Highways and Transport Infrastructure to support the delivery of the strategic housing and economic needs of the wider area. This draft MoU is available as part of the evidence base for the Draft Local Plan. See

³ See technical notes on the Council’s website <http://eppingforest.consultationonline.co.uk/technical-information>

<http://eppingforest.consultationonline.co.uk/wp-content/uploads/sites/5/2016/08/2016-08-29-DRAFT-Highways-Trans.-Infra.-MoU-v8.pdf>

Residential Car Parking

- 3.17 Residential car parking provision is an important element of consideration in the determination of planning applications. At present the Council uses ECC's adopted parking standards when determining planning applications. ECC's standards take a generic approach which is not related to a local analysis of car ownership or consideration of the location of development, sets a minimum standard for residential parking, requires allocated parking spaces with visitor spaces in addition (unallocated) and do not differentiate between houses and flats or tenure types. However, there is a need to recognise that car parking provision can be land hungry, has an effect on the design of development and density levels that can be achieved. Consequently, some analysis has been undertaken to inform whether the Council should consider developing its own residential car parking standards.
- 3.18 The overall change in car ownership in the District between the 2001 and 2011 census is as follows:

Increase in car ownership per household between 2001 and 2011 (4.6%)

No car -	15.30% (2011)	16.99% (2001)
1 car –	42.20% (2011)	42.20% (2001)
2 cars –	30.30% (2011)	30.72% (2001)
3 cars –	8.50% (2011)	7.37% (2001)
4 + cars –	2.73% (2011)	3.70% (2001)

- 3.19 However, as can be seen from the Census 2011 information set out below car ownership levels vary significantly across the District:

Epping Forest District Local Plan – Draft Plan Consultation 2016
BGP2 - Transport Background Paper

Parish/Town Council Area	No cars or vans in household		1 car or van in household		2 cars or vans in household		3 cars or vans in household		4 or more cars or vans in household		No or 1 car or van	
	number	%	number	%	number	%	number	%	number	%	number	%
Loughton	2,636	20.3	5,890	45.4	3,330	25.7	822	6.3	287	2.2	8,526	65.7
Buckhurst Hill	771	15.8	2,425	49.6	1,313	26.8	295	6.0	90	1.8	3,196	65.4
Epping	858	17.0	2,308	45.8	1,421	28.2	333	6.6	119	2.4	3,166	62.8
Waltham Abbey	1,592	17.4	4,056	44.2	2,602	28.4	654	7.1	266	2.9	5,648	61.6
Lambourne	115	12.7	380	41.9	294	32.4	87	9.6	31	3.4	495	54.6
Sheering	103	7.9	585	44.9	473	36.3	93	7.1	49	3.8	688	52.8
Chigwell	661	13.5	1,866	38.1	1,588	32.4	516	10.5	267	5.5	2,527	51.6
Ongar	372	14.2	963	36.7	931	35.5	249	9.5	111	4.2	1,335	50.9
Moreton	15	10.5	57	39.9	42	29.4	16	11.2	13	9.1	72	50.4
Theydon Bois	181	11.2	624	38.7	561	34.8	165	10.2	82	5.1	805	49.9
North Weald Bassett	280	11.2	953	38.2	885	35.4	275	11.0	104	4.2	1,233	49.4
Nazeing	130	7.3	617	34.5	702	39.2	213	11.9	129	7.2	747	41.8
Roydon	96	8.6	354	31.6	416	37.2	173	15.5	80	7.1	450	40.2
High Ongar	31	6.6	156	33.0	170	35.9	72	15.2	44	9.3	187	39.6
Epping Upland	28	8.4	98	29.5	144	43.4	33	9.9	29	8.7	126	37.9
Stapleford Tawney	2	3.2	21	33.9	23	37.1	8	12.9	8	12.9	23	37.1
Fyfield	15	4.7	97	30.3	126	39.4	57	17.8	25	7.8	112	35.0
Willingale	11	5.4	59	29.1	84	41.4	38	18.7	11	5.4	70	34.5
Stanford Rivers	17	5.8	82	28.0	126	43.0	39	13.3	29	9.9	99	33.8
Bobbingworth	9	8.0	29	25.7	47	41.6	18	15.9	10	8.8	38	33.7
Stapleford Abbotts	17	4.3	109	27.7	146	37.2	81	20.6	40	10.2	126	32.0
Matching	14	5.5	67	26.3	109	42.7	46	18.0	19	7.5	81	31.8
High Laver	4	2.0	55	27.5	93	46.5	31	15.5	17	8.5	59	29.5
Magdalen Laver	4	4.3	23	25.0	27	29.3	21	22.8	17	18.5	27	29.3
Abbees Beauchamp	1	0.6	46	26.1	78	44.3	38	21.6	13	7.4	47	26.7
Theydon Mount	2	2.9	16	23.2	26	37.7	14	20.3	11	15.9	18	26.1
Theydon Garnon	0	0.0	8	17.8	18	40.0	11	24.4	8	17.8	8	17.8

Residential Car Parking Standards and Car Usage

- 3.20 There are differing professional views as to whether reducing car parking in residential development leads to reduced car ownership. It is also important to recognise that there is a difference between car ownership and car usage and that managing car usage is often approached by restricting/managing parking at ‘destination’ i.e. offices/commercial rather than at ‘origin’ i.e. the home.
- 3.21 There have been a number of reports undertaken as to whether restricting parking provision in residential developments leads to a reduction in car ownership. They vary in terms of their conclusions. A report undertaken by TRL (the Transport Research Laboratory) for the Department of Transport published in May 2010 (Parking measures and Policies Research Review) sets out (at page 27) that: *‘Given the value that is potentially placed on parking spaces, the policy of having maximum parking spaces is somewhat controversial’*. Minimum standards can result in inefficient provision, and, by implication, encourage car ownership. However, the counterargument is that the demand for parking is led by variables other than parking supply, such that maximum standards can result in spill-over, fly parking and general conflict and they fail to take account of residents’ aspirations for car ownership.
- 3.22 Research undertaken by Berkeley Homes in response to the 2011 London Plan car parking standards (Does car ownership increase car use?) showed that reasonable levels of car parking can be provided without resulting in high levels of car usage at peak hours. Whilst the report was focussed on London it looked at areas with different levels of Public Transport Accessibility. This report has looked at a range of evidence from occupied developments, concluding that no relationship between car ownership and car use can be discerned. The surveys suggest that most London residents who own cars will walk, cycle or use public

transport for their peak period journeys. The report therefore puts forward the proposition that residential car parking can therefore be provided to reflect the “appropriate balance” sought by the Mayor between development viability and excessive car parking provision which could undermine cycling, walking and public transport use.

- 3.23 A post-occupation review of a number of developments by CABI found that: ‘Only 46% of respondents scored the layout of car parking as good or very good. Apparently this was often less about the design of parking and more about the level of provision, which was felt by most people to be inadequate for the scale of car ownership and demands for visitor parking. Attempts to restrict parking spaces as a means of curbing car ownership were felt to be unrealistic and to have little or no impact on the number of cars a household would acquire.’

Considerations

- 3.24 Residential car parking provision is not just a transport issue. The more car parking provided means the more land needed to accommodate housing. This affects densities so higher parking standards result in fewer homes on any one site and can provide less flexibility in achieving high quality developments. This is further exacerbated by the need for larger spaces to accommodate modern cars which have often increased in size and depth, an issue which has been reflected in Essex County Council’s residential parking standards being amended to increase the size of car parking spaces that should be sought on new developments.
- 3.25 To illustrate this point an example of the impact of changes to the size of residential car parking spaces on land take is set out below:

Essex County Council parking space standard pre 2009 - 4.8m x 2.4m
Essex County Council parking space standard 2009 onwards - 5.0m x 2.5m
Essex County Council proposed parking space standard - 5.5m x 2.9m

For every 100 cars: the new proposals would result in 16 less cars for the same area than using the current standards and 20 less cars than pre-2009.

The land take per 100 spaces pre 2009 = 1152 m²
The land take per 100 spaces with new proposals = 1595m²

This results in a 38% increase in land which is more land than needed for an average pair of semi-detached 3/4-bed homes.

- 3.26 There is also, however, a need to consider the consequences of not providing sufficient car parking for housing including:
- on-street parking impacting on the width of roads which can prevent access for emergency and refuse vehicles;
 - environmental impacts as a result of parking on verges and visual intrusion;

- safety – if parked in the wrong place cars can impact on visibility of other drivers, pedestrians and cyclists.

3.27 The Council is very clear that the implications of not providing sufficient parking need to be considered. Insufficient residential parking or parking provided some distance from a property such that it is not convenient can lead to greater, and often inappropriate, on-street parking. On-street parking, if designed in from the start can be done in such a way which is safe, can be an effective speed deterrent, and can be sensitively landscape (trees and hard surfacing) so that it is not overly dominant visually and also doesn't stop the road functioning safely and efficiently. Therefore, there is a need to find the right balance between accommodating the car and making the best use of land.

3.28 Encouraging changes to the way people travel and reductions in car parking need to be supported by other measures rather than done in isolation. These include:

- Residential travel planning - examples include incorporating car clubs, provision of information packs, bus/rail passes;
- Provision of Information technology in buses – the use of on-board GPS systems can help people to access real-time information thus providing more certainty for passengers of the timing of services;
- Ensuring buses operate from first occupation of a development (on larger development sites);
- Considering the timing of supporting infrastructure e.g. doctors' surgeries;
- Understanding the implications to on-street parking through requiring the submission of local parking 'stress' surveys, and on-street parking restrictions paid for by the development.

The location of development and its size will influence what works work best in relation to individual developments. Taking such an approach, based on local circumstances and local evidence, will help to achieve an appropriate balance between accommodating the car and making best use of land.

3.29 It is important to ensure that when encouraging people to change the way they travel and introducing lower car parking standards that these are supported by a range of measures. The timing of their introduction is key. For example, car clubs should be planned in as part of the design of a development to ensure that the location of supporting infrastructure is attractive and central to a scheme; making sure that bus services are operating from 'Day 1'. If people get used to driving their car because there is no service to start with it makes it much harder to get them to change. On larger sites having facilities in place at the start has a similar effect.

National Policy

3.30 The NPPF sets out, in relation to local parking standards, that:

if setting local parking standards for residential and non-residential development, local planning authorities should take into account:

- *the accessibility of the development;*
- *the type, mix and use of development;*
- *the availability of and opportunities for public transport;*
- *local car ownership levels; and*
- *an overall need to reduce the use of high-emission vehicles.*

(Paragraph 39)

- 3.31 An Addendum published in March 2015 by Ministerial Statement to be read alongside paragraph 39 states that:

“Local planning authorities should only impose local parking standards for residential and non-residential development where there is clear and compelling justification that it is necessary to manage their local road network.”

- 3.32 The NPPF must be taken into account in the preparation of local and neighbourhood plans, and is a material consideration in planning decisions (paragraph 3). However, Plans and decisions need to take local circumstances into account so that they respond to the different opportunities for achieving sustainable development in different areas (paragraph 10). The Council is of the view that this enables flexibility to achieve the balance needed in relation to residential car parking provision based on the information and evidence set out above.

Conclusion

- 3.33 Having considered the evidence in relation to car ownership, and taking into consideration access to other forms of transport, the Council is proposing to develop Epping Forest District specific residential parking standards. This would allow for a more bespoke approach based on local evidence based on different standards for different locations, linked to car ownership, access to other transport opportunities and housing mix. The approach currently being considered is set out in the Department for Communities and Local Government ‘Residential Car Parking Research’ published in 2007. This can be viewed at:

http://webarchive.nationalarchives.gov.uk/20120919132719/http://communities.gov.uk/pub/295/ResidentialCarParkingResearch_id1510295.pdf