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Published May 2016

M11 Junction 7a (including Gilden Way)

Consultation Document
11th May – 6th July 2016



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Foreword

Harlow is already one of Essex's success stories with the Enterprise Zone moving forward rapidly and Public Health England relocating to the town. Harlow boasts one of the best locations in the county – with Stansted Airport on the doorstep and well-established road connections along the M11 corridor to London and Cambridge together with the rest of Essex, Hertfordshire and Kent.

As the town continues to attract new commerce, families and investment, it is imperative that we unlock Harlow's potential.

Harlow is severely limited by the lack of road capacity and connectivity, restricting the growth essential to provide the platform for regenerating the area.

To make the most of the town's opportunities – we need to make improvements and investment in roads and infrastructure. This is essential to provide homes and jobs for today's young adults, our children and future generations. Road use is growing year on year and the Local Plans of the councils' around the area, which set out housing and economic growth, will certainly mean significant new infrastructure is required.

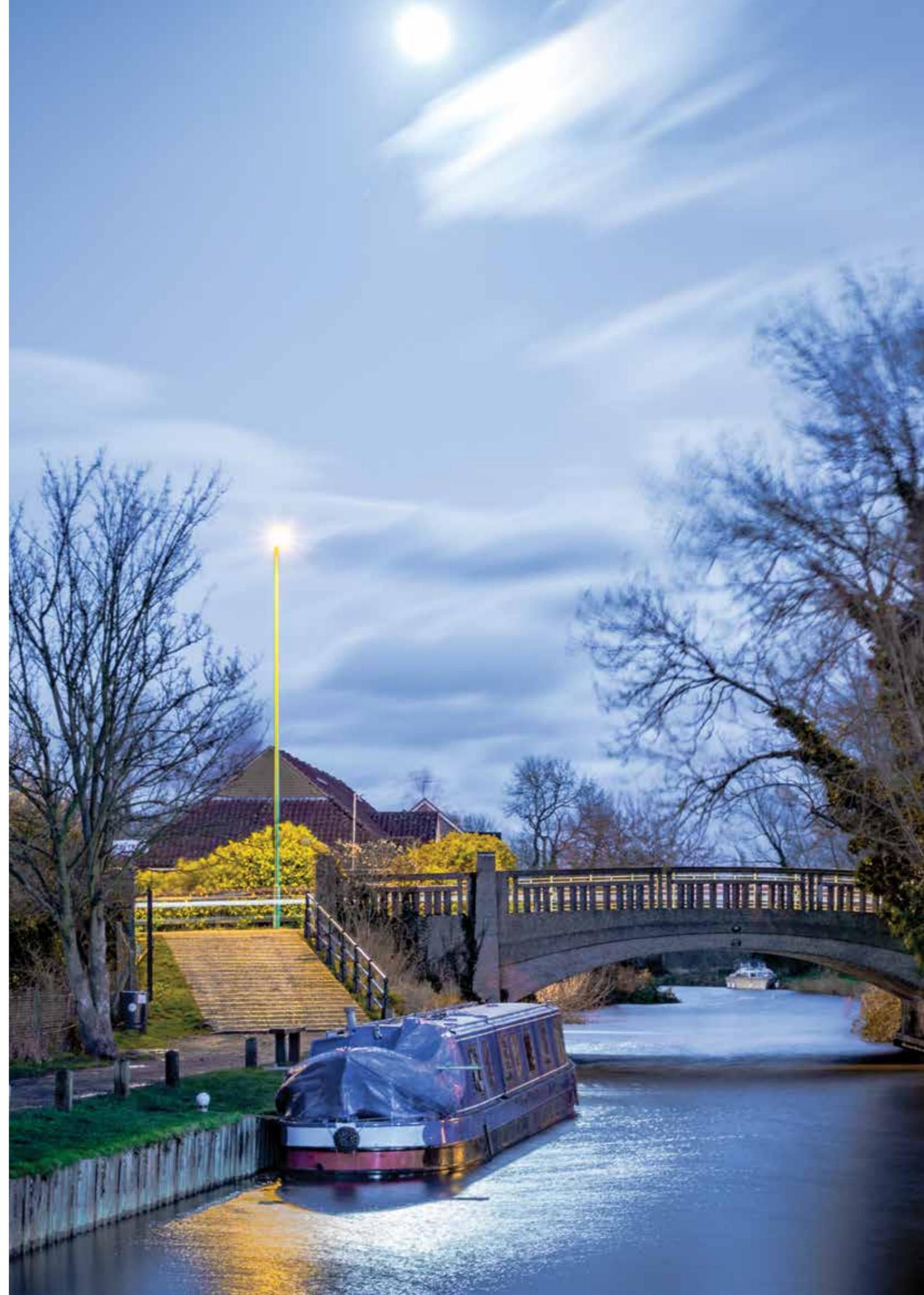
Our study into the road network suggests the proposed M11 Junction 7a provides the best option to develop the road network and ensure that Harlow's growth is supported by the necessary road improvements. Our long term ambition is to create a new relief road, commonly known as the Northern Bypass to support future growth of the town.

It is a big change, but it is necessary, and will benefit everybody in years to come. Planned strategic improvements are necessary to support this economic growth. By acting now, we can ensure that the area continues to prosper and provide opportunities for years to come.



A handwritten signature in black ink that reads "Rodney L. Bass". The signature is written in a cursive, flowing style.

Councillor Rodney L. Bass
Cabinet Member for Infrastructure
Essex County Council



1.0 Introduction

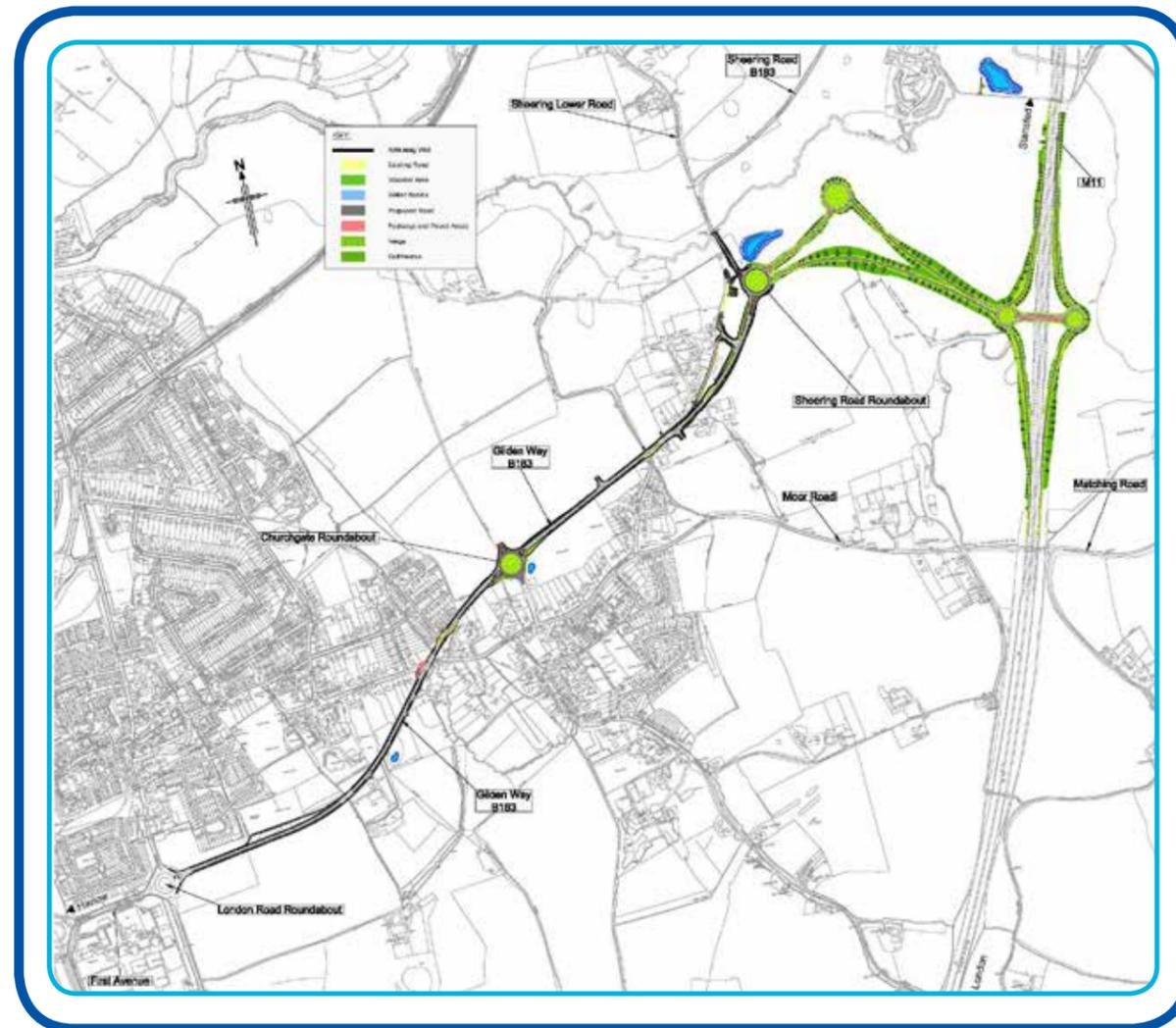


Figure 1: Proposed scheme. M11 Junction 7a and widening of Gilden Way.

Essex County Council are committed to supporting local and regional growth through the improvement of local infrastructure to leave a long-term legacy of jobs, homes, and strong communities for our children and future generations. While also improving the local road network for both commuters and businesses in the short term.

Harlow was designed in the 1950s as a new town. Changes in how we live our lives mean that Harlow's road network is already struggling to cope with current demand. The tightly packed road network in Harlow with only one local access to the motorway network causes congestion on the local roads that will continue to increase. This situation will remain and is likely to get worse as local Councils work to fulfil the Government's focus on generating economic growth and housing development.

We have spent four years investigating options to improve Harlow's road network. A strategic options appraisal shows that a new junction on the M11, known as Junction 7a, is the optimum solution to overcome the problems. Further work on where and what a new motorway junction would look like was then undertaken, with initial designs being shared with the public at local exhibitions in 2013 and 2015. The design of Junction 7a has been developed further and we are now inviting the public to share their views during this consultation.

The M11 Junction 7a and upgrading of Gilden Way proposals will:

- create a key link for traffic travelling to and from Harlow to the M11;
- reduce congestion on the key routes through Harlow and towards Junction 7;
- provide opportunities for new homes and economic growth.

The proposed scheme is described in Section 5, it would be built in phases to ensure that improvements to Gilden Way are realised first for the benefit of local residents and commuters. The full scheme could be built and operational by 2021, subject to planning permission and funding.

The public consultation will run from the 11th May until 6th July 2016. This document provides further information on the purpose of this consultation, what will happen following the consultation and when we will be in a position to report on the results of it. Alongside this consultation document, a number of documents have been published to provide more technical detail, as well as larger maps, all of which can be found on our website:

www.essex.gov.uk/junction7a

This consultation is your opportunity to tell us what you think of the proposal, what works, what concerns you may have and any local or specialist knowledge that may help us to improve the scheme.

2.0 History of scheme

We have been considering the need for an additional M11 junction to serve Harlow for many years. In 2013 we set out the scheme objectives, which are:

- to improve accessibility to and from Harlow;
- to reduce congestion primarily for the A414 corridor;
- to ensure the proposed infrastructure is of the appropriate scale for future traffic demands; and
- to provide an opportunity for future housing developments and employment across Harlow

A number of strategic options were investigated and six options were considered further.

Option 1: New M11 junction to east of Harlow, (Junction 7a), with local link to Gilden Way.

Option 2: Improved M11 Junction 7.

Option 3: Both Option 1 and Option 2.

Option 4: 'Northern Bypass', which includes a dual carriageway link from Junction 7a through to A414 at Eastwick, and an additional single carriageway access into Harlow via River Way;

Option 5: 'Northern Northern Bypass', which comprises a dual carriageway link from A414 at Eastwick, aligned to the south of Gilston, and then to the west of Sawbridgeworth, connecting with the M11 via a new junction south of Little Hallingbury;

Option 6: 'Southern Relief Road', which comprises a dual carriageway link from the A414 east of Roydon, skirting the western and southern edges of Harlow, and connecting with Junction 7 via the B1393 [*].

The figure below summarises the assessment of these strategic options.

	J7a and Gilden Way Link	J7	J7 and J7a	Northern Bypass and J7a	Northern Northern Bypass & M11 junction	Southern Relief Road	
Strategic Factors							
Scale of Impact	✓✓	✓	✓✓	✓✓	---	✓	
Fit with wider policy	✓✓	---	✓✓	✓	---	---	
Fit with other objectives	✓✓	---	✓✓✓	✓✓	---	---	
Economic Factors							
Economic Growth	✓✓	✓	✓✓	✓✓	✓	✓	
Socio-distributional impacts	✓	---	✓	✓	---	---	
Local environment	✗	---	✗	✗✗	✗✗	✗✗	
Value for Money	✓✓✓	✓✓	✓✓	✓	✓✓	---	
Capital Cost Range	£50-100m	£50-100m	£100m+	£300m+	£200m+	£200m+	
KEY	High positive impact	Medium positive impact	Low positive impact	Negligible impact	Low negative impact	Medium negative impact	High negative impact
Symbol	✓✓✓	✓✓	✓	---	✗	✗✗	✗✗✗

Figure 2: Strategic options summary

Option1 was determined to be the optimal solution and was taken forward to the next stage of design development. For further details on the strategic options developed and sifting process please view the Options Assessment Report. Scheme designs have been shared with the public at key design stages. Information collected during this engagement has influenced the scheme design.

In December 2013 a series of public information events were held to provide information about the scheme, the transport challenges in Harlow and provide indicative design solutions for this best performing strategic option.

A key finding from the public information events and associated engagement was:

- Support for a Northern Bypass as an alternative to the proposal, or as a future scheme. A bypass was seen as an opportunity to remove traffic from the town centre.

Development of the M11 Junction 7a proposal continued in 2014 with an additional objective to design a new junction with greater potential for a link into a future Northern Bypass. Following this work, in July 2015 a second series of public information events was held to show technical designs of a proposed scheme. A number of engagement events were also held with local authorities and organisations to ensure information was cascaded to local communities and feedback taken into account.

Information on the previous public information events can be found on the Essex County Council website:

www.essex.gov.uk/junction7a

Key findings from public information events and engagement:

- Concerns about noise and air quality.
- Concerns about rat-running through Harlow, Old Harlow, Lower Sheering and Sheering.
- Concerns about access primarily from residents of Old Harlow, Churchgate Street, Gilden Way and The Campions.
- Support for a Northern Bypass.
- Concern that the scheme should provide good value for money.

Since July 2015 the scheme design has been progressed in preparation for a consultation on a proposed scheme. Further information on the previous scheme designs can be viewed in the Technical Appraisal Report.

Working together to improve the road network and grow the economy

Essex County Council and Highways England are working together to deliver improvements to the M11 to support growth in Harlow. Improvements at Junction 7 and proposals for a new Junction 7a can come forward independently. However, both Junctions 7 and 7a are needed to support economic growth and a road network with capacity to serve future generations. While the two schemes have different time scales, we are fully committed to working together to ensure a consistent approach and managing the works to minimise inconvenience to local residents and the travelling public.

3.0 This Consultation

3.1 What are we consulting about?

We need to understand the views of everyone who may use or be affected by the scheme. We are asking you:

- Does the proposed scheme meet the scheme objectives set by us (Essex County Council)?
- For your view of the scheme and of the environmental findings.

The consultation will run for 8 weeks, commencing on Wednesday 11th May 2016 and closing at 23:59 on Wednesday 6th July 2016.

Responses will then be analysed and summarised in a consultation report. The project team will consider the results of consultation, investigate route/design refinements and a report will be taken to Essex County Council Cabinet. If approved the route will have a preferred route status and will proceed to a planning application in Winter 2016.

3.2 The consultation questions

1a) To what extent do you agree or disagree with the statement, 'the traffic management for routes connecting to Gilden Way will ensure that Old Harlow, Churchgate Street and Lower Sheering road will not be adversely impacted by the scheme in 2021'.

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

The proposed traffic Management for routes connecting to Gilden Way are:

- Sheering Lower Road restricted to local access only;
- HGV through movements restricted in Old Harlow;
- HGV through movements restricted in Churchgate Street;
- Gilden Way speed limit reduced to 40mph;
- no right turns in or out of Mulberry Green, except for buses.
- Three signalised pedestrian crossings

1b) Please provide any comments about the proposed traffic management.

2a) To what extent do you agree or disagree with the statement 'the scheme will improve accessibility to and from Harlow'?

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

2b) Please provide any comments you have about the impact of the scheme on accessibility to and from Harlow

3a) To what extent do you agree or disagree with the statement 'the scheme will reduce congestion primarily for the A414 corridor';

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

3b) Please provide any comment you have about the impact of the scheme on congestion

4a) To what extent do you agree or disagree with the statement 'the scheme will meet future traffic demands'?

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

4b) Please provide any comments about the ability of the scheme to support future traffic growth

5a) To what extent do you agree or disagree with the statement 'the scheme will provide support for the predicted homes and jobs growth (from Local Plans)?

- Strongly agree
- Agree
- Undecided
- Disagree
- Strongly disagree

5b) Please provide any comments you have about the scheme providing opportunities for future home and jobs growth.

6) Do you have any comments about the environmental findings? Please provide as much detail as possible.

7) Do you have any other comments regarding the proposed scheme? Please provide as much detail as possible.

3.3 How to respond

Please only respond using one of the following channels, which have been set up for the specific purpose of this consultation:

🌐 Online: by following the link at:

www.essex.gov.uk/junction7a

@ Email: you can email your response to:

M11J7a@essex.gov.uk

✉ Post: you can post your response and additional material to the following address.

**Jacobs Ltd
PO Box 73575
LONDON
SE1P 5YH**

You can download a response form at:

www.essex.gov.uk/junction7a

We cannot accept responsibility for ensuring responses that are sent to addresses other than those described above are included in the consultation process.

All responses must include at least your name and postcode. When responding, please state whether you are responding as an individual or representing the views of an organisation. If responding on behalf of an organisation, please make it clear whom the organisation represents and, where applicable, how the views of members were assembled.

3.4 Confidentiality and data protection

The contact information that you provide will be used to perform internal checks to ensure the validity of responses, such as identifying a duplicate response where responses have been submitted via several routes. We may also use this information to inform respondents of any key updates of the consultation.

Information provided in response to this consultation, including personal information, may be subject to publication or disclosure in accordance with the access to information regimes. These are primarily the Freedom of Information Act 2000 (FOI), the Data Protection Act 1998 and the Environmental Information Regulations 2004.

Under the FOI, there is a statutory Code of Practice with which public authorities must comply and which deals with our confidentiality obligations among other things.

4.0 Unlocking Harlow

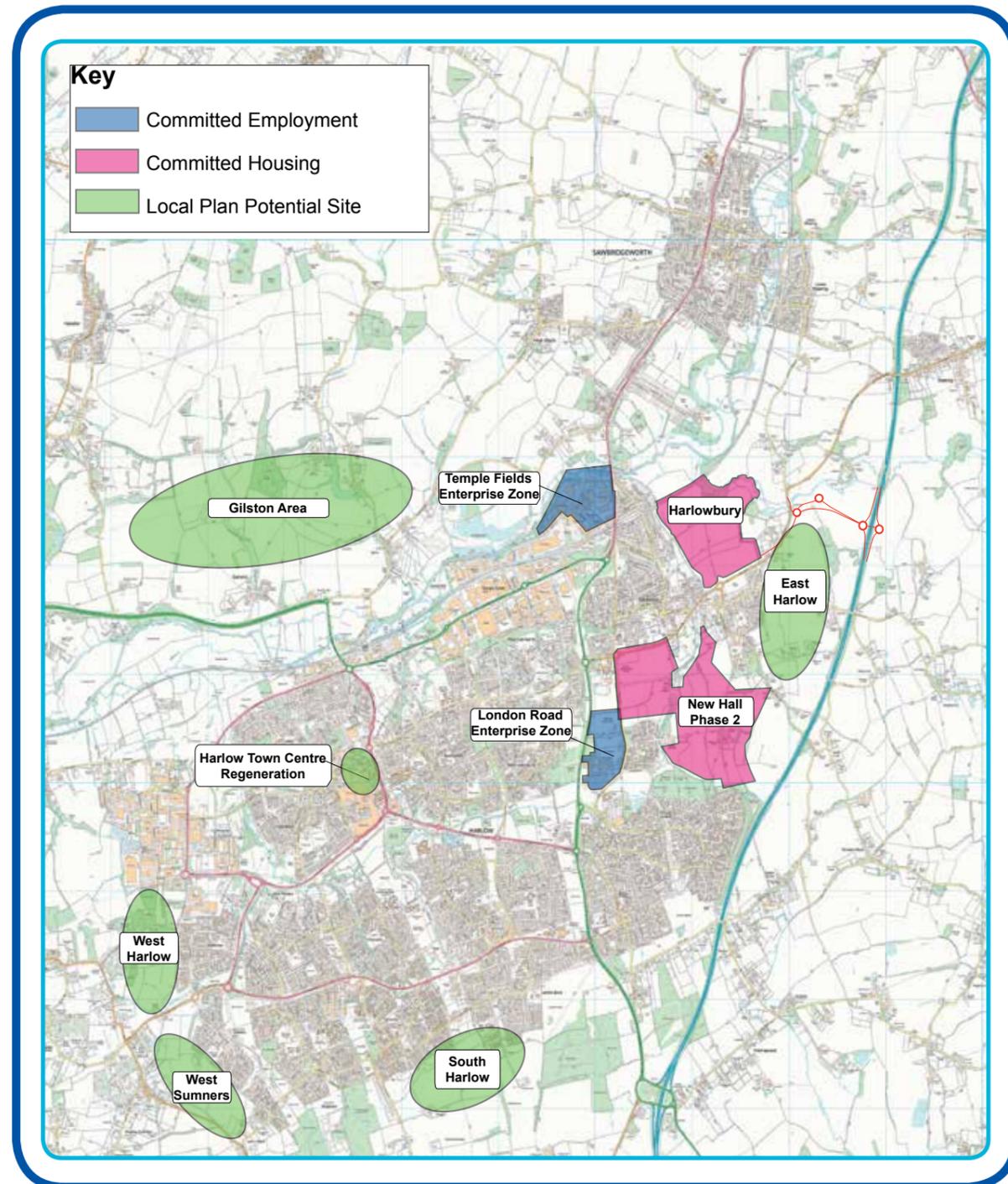


Figure 3: Planned Growth in Harlow

Harlow is a key town in the west of Essex, close to the border of East Hertfordshire. North of Harlow are the smaller towns of Bishop’s Stortford and Sawbridgeworth, to the north-east is Uttlesford and to the south is Epping Forest, while London Stansted Airport is just 13 miles away.

County and country wide connections

The town could have excellent connections with the wider region and the UK. It is situated within the London – Stansted – Cambridge corridor and is close to the M11 and M25 which provides access to London, the South East and beyond. The northern section of Harlow has two railway stations which are served by the West Anglia, connecting this key corridor by rail as well as road.

Continued growth

Since its creation in 1947 Harlow has experienced several periods of rapid growth, most recently in the late 1990’s and throughout the 2000’s, which saw the population rise to 82,200 in 2011. Today, central Government policy is driving local housing and job growth, which is assessed using standard national criteria. For the four districts in the housing market area the growth projections are between 46,100 and 49,600 dwellings and 41,700 jobs for the period 2011-2033.

For Harlow itself this would require a minimum of 7,900 new dwellings, and 8,200 new jobs.

Harlow has significant plans for growth. It has been recognised as one of 24 national Enterprise Zones by the South East Local Enterprise Partnership (SELEP) and there are ambitions to regenerate the town centre. As a result there is a push to create jobs and build new homes in the local area. Current estimates [**] for 2033 put growth in Harlow and its immediate area at up to 15,000 homes, and 12,000 jobs.

This predicted growth will put additional strain on the transport network, which is already experiencing congestion. The constraints of the current network has already limited the delivery of the recent Enterprise Zone development and is one of the most significant barriers to future development.

Congestion restricts growth

Today, the road network is nearing full capacity. With severe congestion at peak times and with a number of junctions operating close to, or in excess of their original design limits. The local road network is based on a grid system with limited east/west and north/south routes. As a result road users frequently experience delays. The north/south situation is worse as there are only two main links from the north (A414 and A1184) and a single link to the south (A414). This means that the majority of the traffic entering or leaving Harlow in a southerly direction is routed through M11 Junction 7. This situation leads to some regular drivers using less suitable minor routes to the north-east and south of the town.

In addition to the limited access into and out of the town, the 2011 Census data indicates that 16,000 outbound and 16,500 inbound ‘travel to work’ trips are made to and from Harlow each day. This situation is made worse by adjacent towns and villages having no alternative to access M11 other than following a route through the town to Junction 7. For towns and villages south of Harlow, there is also no alternative access to the M11, as Junction 5 has southbound access only, and Junction 4 is almost 12 miles away (from Junction 7).

Highways England acknowledges that Junction 7 is already over capacity, with drivers experiencing significant congestion, and has committed to improving the junction as part of the Road Investment Strategy 2015-2020.

The solution, improving road capacity

The objectives we have set for this scheme are focused on supporting the regeneration and future growth of Harlow, which differs from Highways England’s objectives (for Junction 7) that focus on improving the current access to Harlow and congestion problems on the M11. Both schemes will be needed to provide improved access to Harlow.



5.0 The proposed scheme

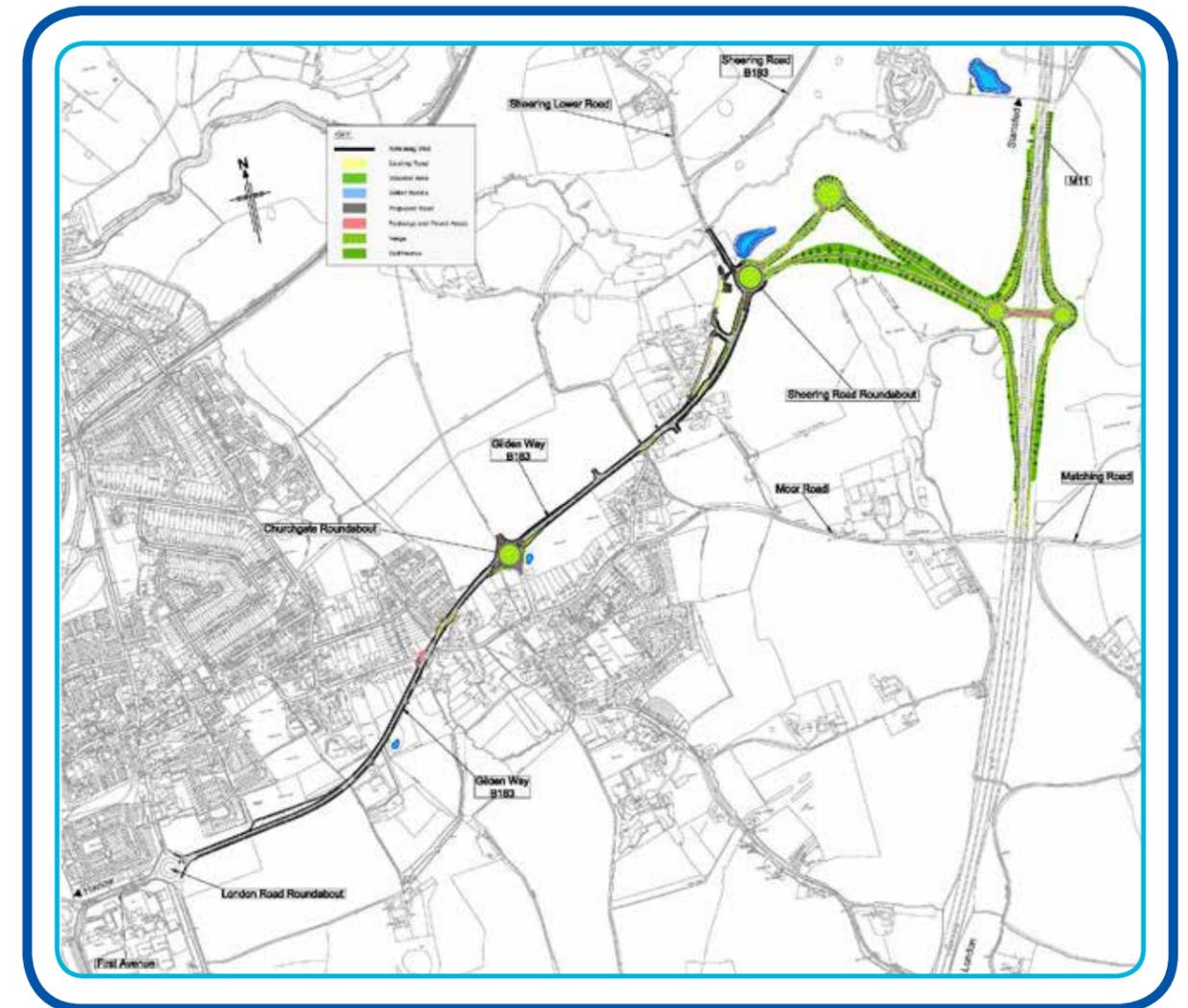


Figure 4: Proposed scheme. M11 Junction 7a and widening of Gilden Way

The proposed new M11 Junction 7a is located on the outskirts of Harlow and within Epping Forest District, between Junction 7 and 8. It is in open arable agricultural land that is part of the Metropolitan Green Belt surrounding Harlow. The agricultural land is gently undulating countryside with small groups of houses, including The Campions and Mayfield Farm.

The proposed scheme also includes the widening of Gilden Way, a local road which connects the town centre with the suburban residential areas to the east of Harlow.

The scheme begins by widening Gilden Way from the London Road roundabout to Marsh Lane, to create a three lane road. This would allow an additional lane for traffic approaching Harlow. The widening will all be accommodated within the existing highway boundaries or on land owned by Harlow District Council.

The new three lane Gildden Way will

- include an improved wide footway for pedestrians and cyclists;
- include three signalised pedestrian crossings;
- include new street lighting;
- include a reduction in the current speed limit from 60mph to 40mph on Gildden Way;
- make Sheering Lower Road local access only;
- restrict HGV through-movements in Old Harlow;
- restrict HGV through-movements in Churchgate Street;
- restrict right turns in or out of Mulberry Green, except for buses;
- include a new drainage system to reduce discharge of surface run off water into local streams; and
- not sever any existing Public Rights of Way, or impact on existing bus services.

The proposed scheme will increase traffic capacity, improve the standard of Gildden Way and discourage rat-running through the adjacent residential streets, in particular the Mulberry Green area.

From the end of Marsh Lane a new road will be built, replacing part of the existing road, to link the improved Gildden Way to the M11 via a new Sheering Road roundabout.

From the new Sheering Road roundabout, the link continues in a north-easterly direction to a second roundabout located south of Pincey Brook. The road then continues and rises gradually to the new motorway roundabout junction on the western side of the M11. The link road will 'future proof' the scheme to ensure it could connect to a Northern Bypass in the future without the need to alter the junction further. Two new roundabouts will be constructed on either side of the M11 and connected by a new bridge over the M11. There will be slip roads on and off the M11 for both northbound and southbound traffic.

Traffic travelling from the new M11 junction to Harlow will exit the new roundabout, on the western side of the M11, and travel down a wide two lane road to the new Sheering Road roundabout. To allow for phased construction this road will temporarily accommodate three lanes, one exiting Harlow and two entering Harlow. More information on the phased construction is in section 9.

Due to the undulating landscape the new roads connecting the new Sheering Road roundabout and new Junction will rise on an embankment until it meets the M11. The average elevation of this section will be 5-6 meters above local ground level, increasing to a maximum of 9 meters. The location of the M11 junction has been specifically chosen to reduce the extent of earthworks required for construction.

The scheme will enhance:

• Operational Safety

By using existing incident records as the baseline, the scheme design will consider a robust system of safety checks and audits with a target of no increase in the number of casualties or severity of injuries during operation. Road safety will be monitored as part of routine county-wide programmes to verify short and long-term impacts on all groups of road users. The proposed scheme includes:

- Moving the road away from current homes on Sheering Road between Gildden Way and Pincey Brook Bridge.
- The current Sheering Road will then be converted into an access road for residents of The Campions, and connect via a new junction to improve the safety of residents from The Campions (when exiting and entering the main road).
- There is the potential to improve access to Mayfield Farm pending discussion with the landowner.

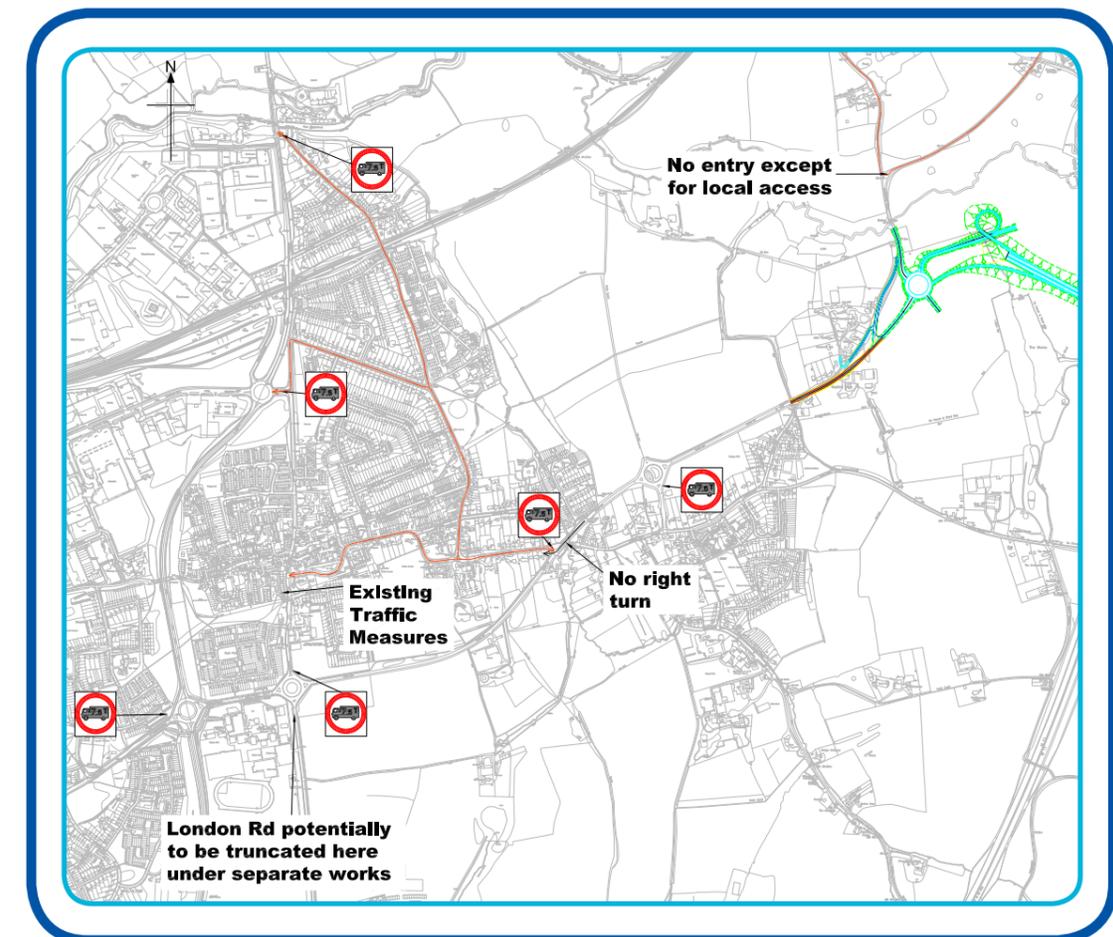
• Traffic Management on Gildden Way

During construction the objectives of temporary traffic management will be to plan all construction activities and closures to optimise safety, road space and work efficiency, whilst minimising road user congestion, delay and inconvenience. Traffic management provisions will comply with the national guidance and best practice.

Once the scheme is open the proposed scheme will include traffic management measures for routes connecting to Gildden Way. These are shown in figure 5 and are described below.

- Sheering Lower Road restricted to local access only.
- HGV through-movements restricted in Old Harlow
- HGV through-movements restricted in Churchgate Street
- Gildden Way speed limit reduced to 40mph
- No right turns in or out of Mulberry Green, except for buses.

Figure 5: Proposed traffic management measures.



• Walking and Cycling

The proposed scheme does not sever but rather provides continuity to existing walking and cycling routes. It includes new crossings at key locations and improves Public Rights of Way. The aim is to provide accessible, safer and user-friendly walking and cycling facilities as part of the sustainable transport system for Harlow. The proposed scheme includes:

- A shared surface access road (providing access to The Campions). This is a safety concept for combined, footway, cycleway and access road.
- A new pedestrian crossing close to Marsh Lane, joining the existing Public Rights of Way and the bus stops on either side of Sheering Road and providing pedestrian access to the shops and businesses at Mayfield Farm.

Northern Bypass

This scheme is future proofed to accommodate a Northern Bypass. As it is the aspiration of Essex County Council and local partners to support future growth and ultimately reduce traffic travelling through the centre of Harlow. Currently, our studies show that a new road/link is unlikely to be needed to support the growth projected in currently emerging Local Plans. Essex County Council will monitor the situation in Harlow and when conditions are right would look to take this forward (after 2033).

Figure 6: The connection between the new Sheering Road roundabout and M11 Junction 7a

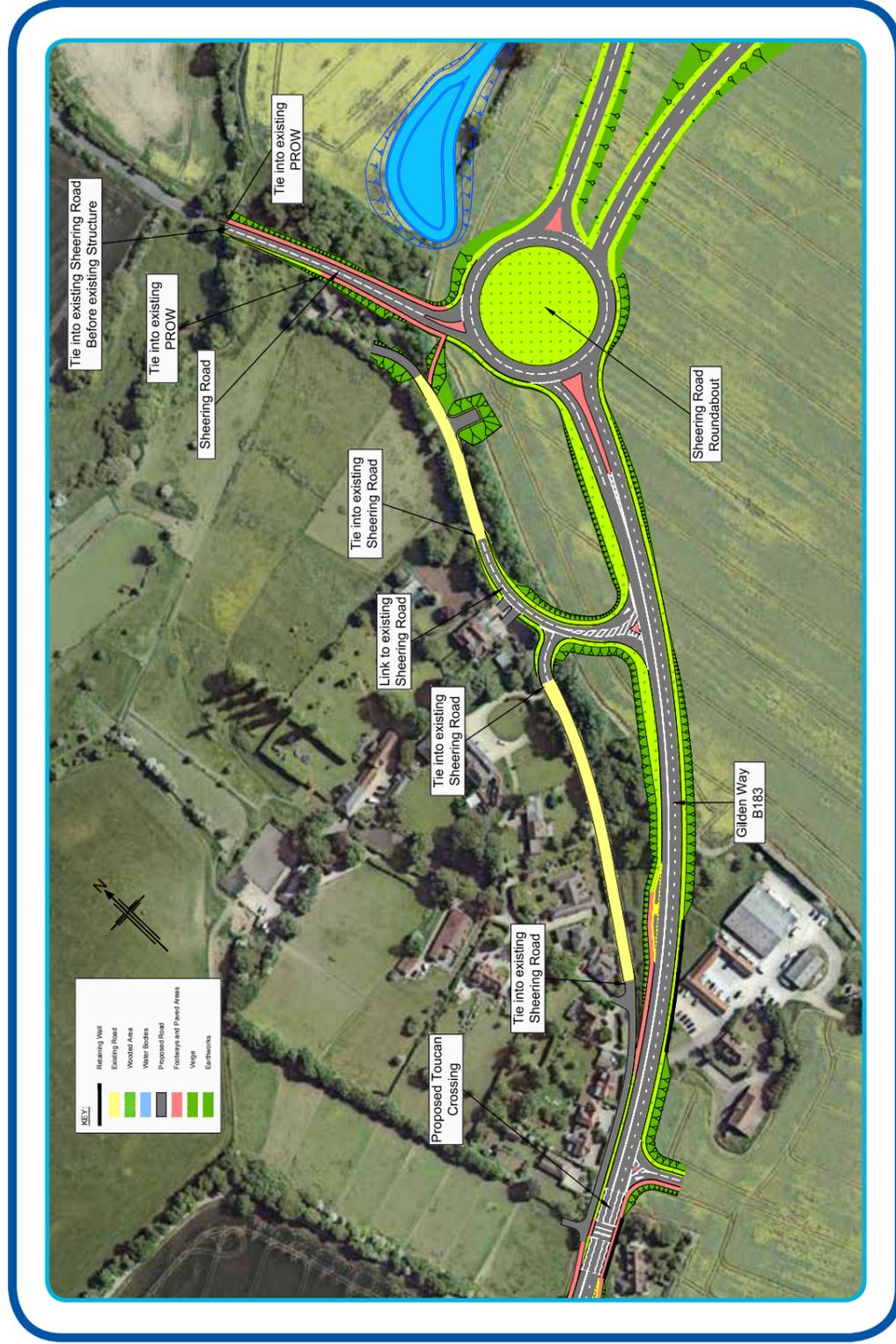


Figure 7: The proposed two roundabouts and slip roads.

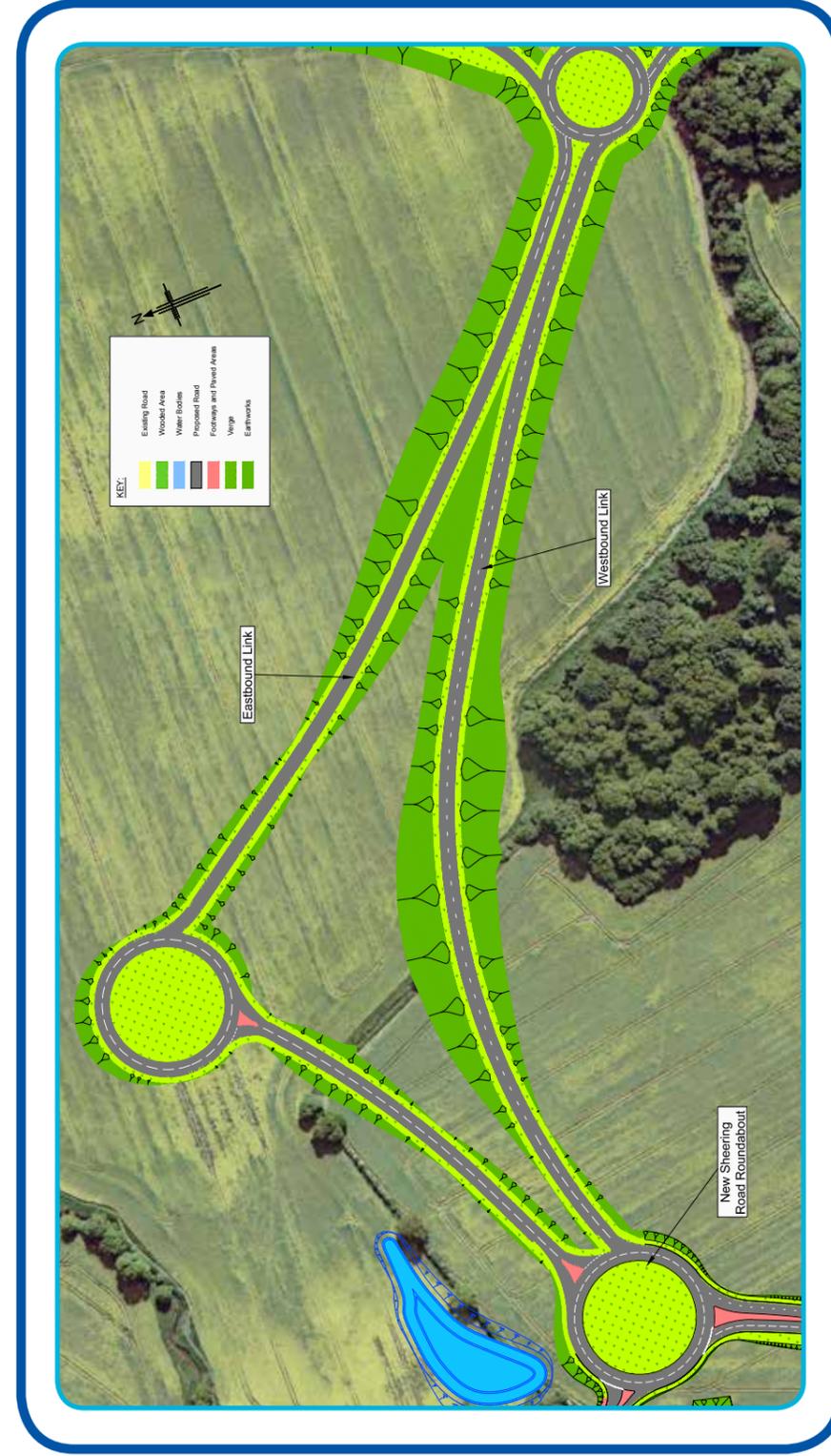




Figure 8: The proposed M11 Junction 7a

6.0 Traffic Forecasts

To determine where future delays and congestion are likely to occur on our road network, we produce computerised traffic models. In the UK traffic modelling follows guidance set out by the Department for Transport. The forecast models used for this scheme have been designed to investigate road usage in the proposed opening year of 2021, and for 15 years later in 2036. This later year, 2036, is used for economic modelling and to show how the local network, with and without the proposed scheme, copes with increasing volumes of traffic.

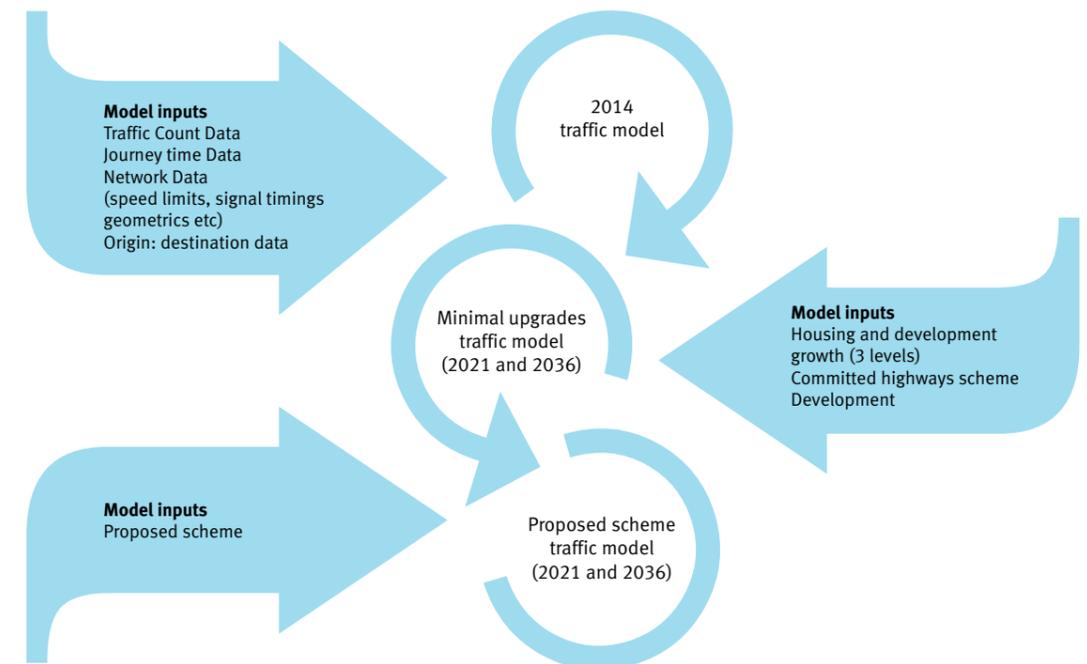
Two traffic models are created for each year. The first is a **minimal upgrades model**, which includes any committed or currently planned development and likely associated minor junction and network improvements. It indicates how the network would be expected to operate in future. The second **proposed scheme model** incorporates the proposed scheme.

Each traffic model considers future road usage at three key times, between 8am and 9am, between 11am and 12noon, and between 5pm and 6pm. This approach indicates how the roads perform across the different times of the day.

The local councils are in the process of agreeing Local Plans, which will set out the proposed level and locations of housing and jobs in their areas over the next 15 years. As Local Plans are still in development we have looked at three levels of future housing and jobs growth to see how the road network might be affected by growth. These levels are: low (based on National Trip End Model (NTEM)), medium and high.

We believe that the medium growth level is most likely to represent the level of growth in the emerging Local Plans.

Figure 9: shows the type of information and data used to create the traffic model.



6.1 Traffic key findings

Key findings have been reviewed from two viewpoints:

1. We look at the 'wider Harlow road network' to assess usage and flow of traffic in the Harlow area, and
2. We look at the scheme's local road network to see how predicted traffic flows affect how each junction works. The local road network traffic modelling has focussed on three key junctions. These are:
 - A414 / First Avenue / B183 Gilden Way;
 - B183 Gilden Way / London Road (south); and
 - B183 Gilden Way / Sheering Road (Churchgate Roundabout).

The following sections 6.2 and 6.3 summarise the key findings of the traffic modelling.

6.2 Traffic flows with minimal upgrades

6.2.1 Wider Harlow road network

Our traffic model suggests that in Harlow by 2021 and 2036 there are likely to be:

- Significant increases in traffic around key growth sites (such as committed developments at Harlowbury and New Hall) and potential Local Plan sites; and
- Significant traffic growth along key routes, for example the A414 and Gilden Way, caused by the extra trips to these developments.

6.2.2 Local road network

Our junction traffic models suggest that in 2021 and 2036,

- At the A414 / First Avenue / B183 Gilden Way junction in 2021 traffic should flow through the junction without any issues. However, in 2036 traffic is likely to experience queuing on the A414 northbound approach to the junction and on the B183 Gilden Way westbound approach to the junction
- At the B183 Gilden Way / Sheering Road (Churchgate) roundabout in 2021 traffic should flow through the junction without any issues. However, in 2036 traffic is likely to experience queuing on both the Gilden Way approaches to the junction.

In summary, by 2036 it is expected that there would be significant delays at junctions along Gilden Way as a result of the committed and planned development growth within and around the town. This is likely to necessitate junction layout changes along Gilden Way to improve their capacity - even without the new M11 junction in place.

6.3 Traffic flows with the proposed scheme

6.3.1 Wider Harlow road network

Our traffic model suggests that, by 2021 and 2036, with M11 Junction 7a in place:

- To the north of Junction 7a, traffic on the M11 would be expected to increase significantly as Harlow-bound vehicles are attracted to the new Junction 7a. For trips to and from north Harlow Junction 7a provides a much shorter route than Junction 7 and is likely to reduce the use of less suitable local roads to and from Bishop's Stortford and Stansted Airport. This traffic would no longer need to use Junction 7 of the M11, so traffic on the M11 south of Junction 7a would decrease.
- In the afternoon traffic on the M11 south of Junction 7 is predicted to increase. This is likely to result from freeing up capacity at M11 Junction 7, which is currently very congested in the afternoon peak.
- A consequence of traffic using Junction 7a to access Harlow is that traffic levels would be expected to significantly increase along Gilden Way to the west of the new link, over and above the expected increase detailed in the minimal upgrades scenario above.
- The location of the new Junction improves access by road to the north and east of the town. This is expected to result in reductions in traffic on the A414 between Gilden Way and M11 Junction 7. This reduction in traffic, which would likely be greatest immediately to the north of Junction 7, is due to traffic using the new motorway junction instead.
- Within Harlow there are likely to be traffic increases along the key links in northern Harlow, including the A414 Edinburgh Way, First Avenue and A414 London Road. This results from traffic to and from the northern part of Harlow using the more northerly M11 access point. Key links in the southern section of Harlow are shown to experience a complementary reduction in flows.

Re-routing of traffic as a result of the proposed scheme will help to relieve these locations:

- A414 (north-west of Junction 7), which is the only principal road linking Harlow to the M11, would be likely to have a significant decrease in traffic as a result of traffic re-routing to use the new M11 Junction 7a;
- A1184 Cambridge Road – this road is near to capacity and heavily congested in peak periods, the M11 Junction 7a scheme removes some traffic from this link; and
- M11 (south of junction 7a) – the M11 between Junction 7 and Junction 7a is likely to have a reduction in flow as a result of the scheme enabling traffic to access the motorway at a more northerly location.

The scheme encourages some traffic to make greater use of the motorway, which results in increases in the level of traffic on major roads in the local area, such as:

- As previously stated a significant increase in traffic on the M11 between Junction 7a and Junction 8 would be expected, as the scheme provides better access to Harlow from the north; this encourages changes in routing to the motorway for trips between Harlow and Bishop's Stortford or Stansted Airport;
- a small increase on the A120; and
- a small increase on the A414 (north of Gilden Way) and a slight increase in the A414 (east of M11 junction 7).

The model suggests the most significant traffic growth for any link may be on Gilden Way near the M11 Junction 7a scheme itself. This link sees up to a 71% increase in traffic over and above the minimal upgrades model. This road will become a key link between Harlow and the M11 and traffic will grow accordingly. The proposed scheme design manages this growth in traffic flow with proposed widening of Gilden Way and introducing speed management measures to reduce the speed to 40mph.

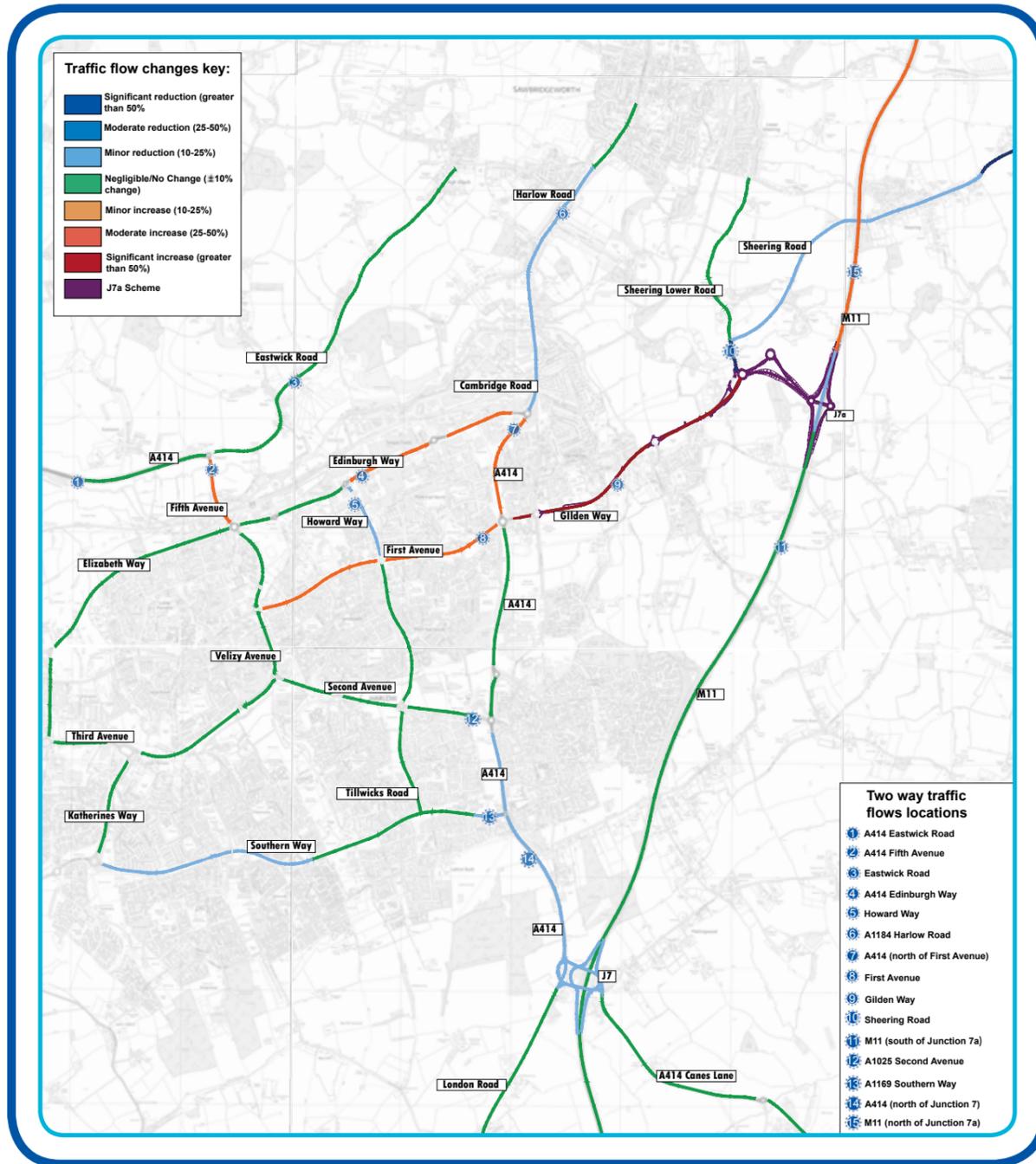
Figure 10 shows the change in traffic flows in 2021 between only doing the minimal upgrades and doing the proposed scheme.

6.3.2 Local Road Network

Our junction traffic models suggest that in 2021 and 2036, with the M11 Junction 7a scheme in place:

- At the A414 London Road / B183 Gilden Way junction in 2021 traffic should flow through the junction without any issues. However, in 2036, traffic may experience long queues on the A414 London Road northbound approach to the junction, as well as on the First Avenue eastbound approach to the junction. This could be resolved by maintaining the roundabout layout and putting in place further interventions before 2036.
- At the London Road (south) / Gilden Way junction in both years traffic is likely to flow through the junction without any major issues.
- At the B183 Gilden Way / Sheering Road (Churchgate) roundabout in 2021 traffic should flow through the junction without any issues. However, in 2036 traffic may experience long queues on Gilden Way on both approaches to the Churchgate junction. This could be resolved with further interventions being put in place before 2036.

Figure 10: Traffic flows with and without the proposed scheme in 2021



Reference number	Road	Without scheme	With scheme	% change of proposed J7a scheme
1	A414 Eastwick Road	30100	32200	7 %
2	A414 Fifth Avenue	28000	30900	10 %
3	Eastwick Road	13000	13100	1 %
4	A414 Edinburgh Way	25100	28500	14 %
5	Howard Way	7500	6800	-9 %
6	A1184 Harlow Road	20500	17600	-14 %
7	A414 (north of First Avenue)	27100	33300	23 %
8	First Avenue	15200	17500	15 %
9	Gilden Way	17700	30200	71 %
10	Sheering Road	11900	9200	-23 %
11	M11 (south of junction 7a)	53300	48800	-8 %
12	A1025 Second Avenue	35700	34400	-4 %
13	A1169 Southern Way	18400	16900	-8 %
14	A414 (north of junction 7)	50600	39500	-22 %
15	M11 (north of junction 7a)	112900	127500	13 %



7.0 Environmental assessments

We are committed to minimising, where practicable, the environmental impacts of any new scheme. A comprehensive assessment of the scheme's impact on the environment, called an Environmental Impact Assessment (EIA), will be completed and an Environmental Statement submitted with the planning application. A summary of the assessment undertaken so far is provided in this section.

7.1 The study area

The minimum study area for environmental assessment covers the area described below and illustrated in figure 11. Many environmental topics encompass a much larger area and this information will be detailed in the environmental assessment.

The minimum study area:

- Moor Hall Road/Sheering Road and a line 200m from Gilden Way to the south;
- a strip of land directly to the east of the M11 motorway;
- a line approximately 200m to the north of Pincey Brook, extending towards Watlington Road/New Road and High Street to the north; and
- London Road to the west.



Figure 11: Environmental study area

7.2 How environmental impact assessments are carried out

Environmental assessment has been carried out in line with national guidance [***] for all highway schemes. These include the following environmental topics:

- Air Quality
- Cultural Heritage
- Landscape
- Nature Conservation
- Geology and Soils
- Noise and Vibration
- Effects on All Travellers
- Community & Private Assets
- Road Drainage and the Water Environment

7.3 Environmental findings

7.3.1 Air quality

Assessments are currently looking at gas pollutants such as nitrogen oxides and particulate matters (soot) pollution within the local area and carbon dioxide within the regional area. A number of residential and community properties border the scheme in the study area. There are also two designated Air Quality Management Areas within the local area including Sawbridgeworth and Bishop's Stortford.

Likely impacts during construction and once the proposed scheme is open:

- Increase in dust nuisance and particulate matter exposure;
- A small impact due to dust during construction; and
- A possibility of a medium increase in nitrogen dioxide along Gilden Way, but a medium decrease in Sheering and Sawbridgeworth once the scheme is open.

Mitigation of these impacts may include:

- Considerate Constructor methods including an environmental management plan would reduce construction impacts.

Overall, the proposed scheme is not anticipated to have a significant impact on either local or regional air quality. Further assessment undertaken at the next stage would confirm this.

7.3.2 Cultural Heritage

A total of 104 cultural heritage assets have been identified within the study area. These include 39 archaeological remains, 56 historic buildings, and nine historic landscape types. There is also potential for unknown archaeological remains to be present within the study area.

Likely impacts during construction and once the proposed scheme is open:

- Potential for minor impacts to 20 identified cultural assets (12 historic buildings, and one Grade II Registered Park and Garden (Gibberd Garden).

Mitigation of these impacts may include:

- Sensitive scheme design such as signage, lighting, earth bunds, sound barriers and landscape planting to reduce impact;
- Preservation in-situ;
- Archaeological excavation, investigation and monitoring of archaeological remains; and
- Cultural heritage recording;

Overall, It is considered possible that following implementation of mitigation and offsetting measures, slight or minor residual impacts could remain on the setting of one Grade II* Listed Building and two Grade II Listed Buildings at Sheering Hall, and on the undesignated Sheering Hall Ringwork.

7.3.3 Landscape

The study area falls within the National Landscape Character Area [****] of '86 South Suffolk and North Essex Claylands', and regionally forms part of the Central Essex Farmlands. The Stort Valley Character Area includes land either side of the Pincey Brook west of the M11. Urban areas predominate to the southwest, towards Harlow. Part of the proposed scheme is within the London Metropolitan Green Belt.

Likely impacts during construction and once the proposed scheme is open:

- Visual impact in some areas (i.e. properties at Moor Hall Road during construction);
- Temporary or permanent losses of trees and hedges; and
- Loss of agricultural land and creation of small land parcels.

Mitigation of these impacts may include:

- Fencing around construction compounds;
- Planting of belts of trees, hedges and shrubs to screen traffic and structures;
- Off-site planting of trees and vegetation to supplement replacement hedge planting along the highway boundary; and
- Improved traffic screening for a terrace of houses near the road (i.e at Chippingfield).

Overall, the landscape effects of the proposed scheme would reduce over time as the planting grows. When the proposed scheme opens the landscape impact would be minor in Harlow. In the Stort Valley Character Area and the Central Essex Farmlands Area the impact would be significant due to the loss of protected trees and effects on views across the valley. However, both impacts would reduce over time as the proposed screen planting matures.

7.3.4 Nature Conservation

Nature conservation assessments look primarily at wildlife in the study area. At this stage the potential for a number of protected species or habitats have been identified. These are:

- Protected bird and nesting sites;
- Bats;
- Otters (along Pincey Brook);
- Great Crested Newts (near Gilden Way); and
- Badgers.

Likely impacts during construction and once the proposed scheme is open:

- Potential harm to wildlife as a result of construction activities and vegetation removal for construction;
- Disturbance to wildlife from dust and noise and vibration;
- Habitat loss from soil stripping and vegetation removal; and
- Potential harm to wildlife from pollution (i.e. spillage of polluting substances during construction activities).

Mitigation of these impacts may include:

- Scheme design including lighting and landscaping to accommodate wildlife (i.e. Multi-species underpass) and prevention of pollution (i.e. drainage system);
- Appropriate seasonal timing of site work to suit wildlife;
- Habitat enhancement;
- Good 'housekeeping' practices; and
- Supervision by a licenced ecologist during potential habitat disturbance.

Overall, it is considered unlikely that with mitigation the proposed scheme would lead to a significant negative impact on wildlife.

7.3.5 Geology and soils

There are aquifers and groundwater in the study area as well as high grade agricultural soil east of the proposed scheme.

Likely impacts during construction and once the proposed scheme is open:

- Possibility of groundwater contamination;
- Potential soil damage and loss of high grade agricultural land.

Mitigation of these impacts may include:

- Best practice approaches and mitigation to protect groundwater, aquifers and drainage – such as water level balancing (attenuation ponds). Such measures would reduce any impacts to neutral or slight.

Overall, the proposed scheme with mitigation would have a neutral to slight impact. The loss of agricultural land could not be mitigated but soils would be reused within the site footprint and would therefore only result in a slight impact.

7.3.6 Noise and Vibration

Noise and vibration assessment focuses on both the proposed scheme and roads in the existing network.

Likely impacts during construction and once the proposed scheme is open:

- Potential for high short term noise and vibration impacts to sensitive receptors near to the proposed scheme during construction; and
- Potential for an increase and decrease in sound levels.

Mitigation of these impacts may include:

- Considerate Constructor methods would reduce impact, such as operational times and suitably maintaining the local roads used by construction vehicles ;
- Options for reducing noise include noise barriers and/or low noise road surfaces especially along Gilden Way; and
- Once the scheme is open noise levels may reduce in some areas such as Sheering Road, to the north of the scheme. This would be due to traffic using alternative routes and the realignment of the road further away from homes.

Overall, at this stage, it is likely that Considerate Constructor methods would greatly reduce impacts. Once the proposed scheme is open, mitigation would result in minor noise and vibration impacts. Some short term impacts would occur due to the traffic increase on the local road network that is not attributed to the proposed scheme.

7.3.7 Effects on all travellers

Assessments address potential impacts on pedestrians, cyclists, other non-motorised-users, public transport users, and vehicle travellers.

Likely impacts during construction and once the proposed scheme is open:

- Construction could impact on local road conditions (including congestion and variable speeds), bus routes and public rights of way;
- Loss of amenity to pedestrians and cyclists due to construction activities; and
- During operation the scheme would enhance the local road network, reduce congestion and contribute to an overall reduction in driver stress.

Mitigation of these impacts may include:

- Traffic management measures such as variable speed limits, signage and maintenance of access for bus users; and
- Use of landscaping would reduce the negative amenity impact of the proposed scheme on pedestrians, cyclists and other non-motorised users.

Overall, with mitigation and best practice methods, there would be little or slight impact on all travellers. The scheme objective is to improve access to Harlow and reduce congestion, and it is anticipated that once the scheme has opened it would have a generally positive impact on all travellers.

7.3.8 Community & Private Assets

These include private properties, community facilities, local businesses, tourist attractions, agricultural land and proposed developments subject to planning.

Likely impacts during construction and once the proposed scheme is open:

- There may be a temporary impact on community and private assets due to dust and traffic delay;
- Construction may create temporary jobs in the region, with potential benefits to local suppliers and services;
- Land take of agricultural fields (including areas of Mayfield Farm and other local farms);
- Impacts on residential properties (i.e. properties on Sheering Road) due to proposed scheme would neither be a positive or negative impact as the design of the scheme moves the main road away from homes; and
- Economic benefits would be expected as a result of reduced journey times, and improved driver safety.

Mitigation of these impacts may include:

- The scheme design and Considerate Constructor methods would help reduce construction impacts;
- It would not be possible to mitigate the loss of agricultural land; however the scheme design at present and as it develops would aim to reduce land take; and
- Improved access and reduced congestion may have a positive impact on private property and community facilities in the area. Businesses may benefit from increased passing trade.

Overall, the proposed scheme with mitigation would be unlikely to have a significant adverse impact on community and private assets.

7.3.9 Road Drainage and the Water Environment

Assessments for the water environment include flood risk, water quality, groundwater and Water Framework Directive Compliance. Pincey Brook and Harlowbury Brook are the key watercourses in the study area.

Likely impacts during construction and once the proposed scheme is open:

- There is a moderate chance that sediment may be released into watercourses;
- Incidents during construction may impact alkalinity and quality of surface and groundwater; and
- Potential impacts on groundwater (dewatering).

Mitigation of these impacts may include:

- A flood risk compensation area may be needed to compensate for temporary use of the floodplain during construction;
- Considerate Constructor and good working practices would reduce the impacts and risk to water quality and groundwater; and
- Scheme design would mitigate flood risk and impacts on water quality and groundwater, such as sustainable drainage systems;

Overall, following mitigation, all impacts on flood risk, groundwater and water quality would be slight to neutral.

7.4 Environmental mitigation

In following the national guidance for highway schemes, there is a requirement to mitigate impacts, where practicable, as part of the environmental assessment process. We are committed to delivering mitigation measures through the design to reduce levels of impact to acceptable levels. Bespoke mitigation measures will be considered in full detail during the assessment process. The list below describes examples of mitigation measures used on similar road schemes. Whilst these may not all be appropriate for the scheme proposals, they will be considered during the assessment process.

- Sensitive scheme design, including signage, lighting, earth bunds, sound barriers and landscape planting, to minimise the effects on the setting of heritage assets;
- Planting of grassland, hedgerows, groups of trees and woodland to screen traffic and structures;
- Sensitive design and construction to prevent damage to sensitive species and their habitats;
- Sensitive scheme design to include measures to ensure no additional flood risk to the area as a result of the scheme; and
- Considerate construction programme and works, including traffic management and early installation of screening, to minimise any potential disruption to the local community and road network.

Whilst it is considered that the majority of these impacts would be reduced to acceptable levels with the implementation of mitigation measures, some residual impacts are anticipated due to part of the proposed scheme being built on what is currently Green Belt arable land. The loss of this land to development cannot be fully mitigated; it would not be possible to reduce anticipated increased traffic, noise, and night time light levels back to current baseline levels. For the same reason, the proposed scheme is also anticipated to have a residual impact on the setting of historic buildings in the area, most notably the Listed Buildings at Sheering Hall. The environmental impact assessment will determine likely magnitude of potential impacts and incorporate as far as practical site-specific mitigation measures.

8.0 Business case summary

Strategic Case

The Scheme is a priority infrastructure intervention and has been demonstrated to align with local, regional and national objectives. There is a clear policy fit for the Scheme and it demonstrates positive contributions against the intervention-specific objectives identified.

Economic Case

The assessment demonstrates that the Scheme would bring substantial benefits and value for money. The value is reflected by a current BCR of 3.8 representing 'high' value for money.

Financial Case

Phase 1, the widening of Gilden Way is estimated to cost approximately £12million. Phase 2, (a and b) is estimated to cost approximately £68million.

9.0 Construction and Phasing

To reduce the impact of construction in Harlow and to ensure that the benefits to local residents are realised as early as possible it is proposed that the scheme is constructed in three phases. Each phase will open once construction is complete.

These are:

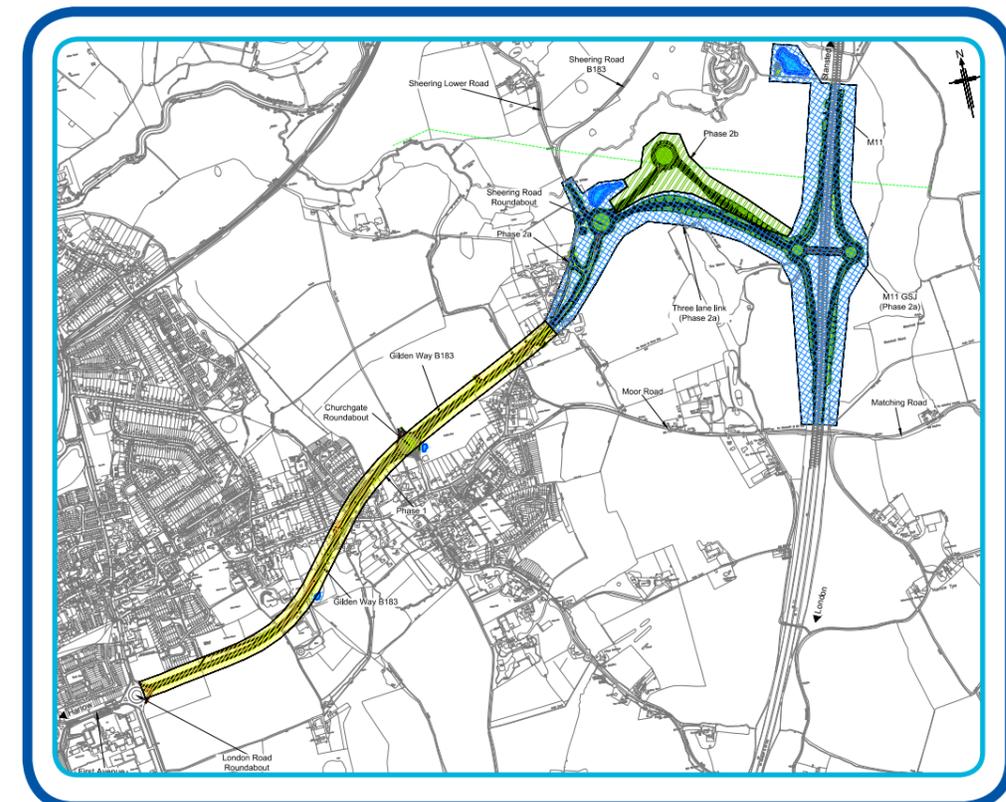
- **Phase 1** – the widening of Gilden Way to address the existing capacity issues and to minimise inconvenience to residents by taking account of the development activity at Harlowbury.
- **Phase 2a** – construct the grade-separated motorway junction, a three lane link road, and new roundabout and links to Gilden Way and Sheering Road, which also creates a new access for residents of The Campions.
- **Phase 2b** – construct the eastbound link road to the new junction

Phase 2a has been designed to enable two-way traffic so that it can open before Phase 2b. Once Phase 2b is complete, the road layout of Phase 2a will be modified to flow westbound only.

The advantages of construction phasing are:

- The widening of Gilden Way will make sure that any construction traffic needed for Phase 2 has a wider road to travel along. This will decrease potential traffic and environmental impacts compared with construction traffic traveling along the existing road.
- Phase 2a will make sure that the new motorway junction is complete for the construction of Phase 2b. This last phase involves the largest amounts of earthworks, which may result in high levels of construction traffic. By building Phase 2a first, Phase 2b construction traffic will be able to exit the M11 at the new Junction 7a and move directly to site without travelling through Harlow.
- Phased opening provides benefits to the local road network at the earliest possible time.

Figure 12: Phased construction of proposed scheme



10.0 Next Steps



Figure 13: Timeline

Once the consultation has closed on the 6th July 2016, all responses will be analysed and compiled into a consultation report for consideration by our technical teams. Our technical teams will consider consultation feedback and undertake route/design refinements where practicable. A final proposal will then be put forward to Essex County Council Cabinet for a decision in the Autumn of 2016. Should the scheme be approved, a planning application will then be submitted to the Local Planning Authority during the Winter of 2016. For this scheme, the Local Planning Authority is Essex County Council.

When a planning application is submitted to a Local Planning Authority there is a legal requirement for that organisation to consult with people and organisations most affected by the proposal. Under the terms of the Town and Country Planning (Development Management) Order 2015, this planning application will be accompanied by an Environmental Assessment Statement (ES) and therefore under Article 15, the planning application will be:

- advertised in the local paper;
- advised by written notice to immediately adjoining owners or occupiers of properties; and,
- detailed in a notice to be placed in prominent locations along the application site.

People will be given at least 21 days to comment to the Local Planning Authority on the planning application. The advertisement and notices will include a planning application reference number, details of the location and description of the proposal, where the application and supporting documentation can be viewed, and how to make representations.

We expect the planning approval process to take up to 6 months. Following planning approval, we anticipate starting construction of Phase 1 in 2019, with completion and opening to road users of the full scheme in 2021.

Footnotes:

* Please note that the capacity improvement required at Junction 7 in conjunction with this scheme has not been modelled or assessed.

** All forecast numbers taken from West Essex & East Herts Strategic Housing Market Assessment, Report of Findings, Sept 2015, Opinion Research Services; <http://www.uttlesford.gov.uk/CHttpHandler.ashx?id=5344&p=0>

*** Highways Agency (1993) Design Manual for Roads and Bridges. Volume 11.

**** National Character Area Profiles, Sep 2014, Natural England